Review

Naturally Occurring Iridoids. A Review, Part 1

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A compilation of new naturally occurring iridoid glycosides, iridoid aglycones, iridoid derivatives and bis-iridoids reported during 1994—2005 is provided with available physical and spectral data: mp, $[\alpha]_D$, UV, IR, ^{1}H- and ^{13}C-NMR as well as natural source with family and references. 418 compounds with 202 references are cited.

Key words iridoids; physical and spectral data; source

Iridoids are secondary metabolites of terrestrial and marine flora and fauna and are found in a large number of plant families usually as glycosides. Structurally they are cyclopentano [c] pyran monoterpenoids and biogenetically and chemotaxonomically they provide a structural link between terpenes and alkaloids.[1)] A bicyclic H-5/H-9β, β-*cis*-fused cyclopentanopyran ring system **1a** is the most common structural feature of these compounds, however several enantiomeric iridoids also exist in nature.[2,3)] Cleavage of cyclopentane ring of iridoids produces seco-iridoids **1b**, while cleavage of pyran ring produces iridoid derivatives **1c** and hence cyclopentane ring is known as basic skeletal ring of iridoids. In plant kingdom, these are derived from 9-hydroxy nerol by phosphorylation followed by cyclisation, oxidation and glycosidation in several steps.[11)] Possibly iridodial **1e** or 8-*epi*-iridodial **1f** is the predecessor of iridoids in many plant families.[81,200,201)] Iridoids are present in a number of folk medicinal plants used as bitter tonics, sedatives, antipyretics, cough medicines, remedies for wounds, skin disorders and as hypotensives. This fact encouraged to investigate the bioactivities of these phytochemicals. Intensive study of their bioactivity revealed that these compounds exhibit a wide range of bioactivity: cardiovascular, antihepatotoxic, choleretic, hypoglycemic and hypolipidemic, antiinflammatory, antispasmodic, antitumor, antiviral, immunomodulator and purgative activities.[4)] Chemotaxonomically they are useful as markers of several genus in various plant families, such as, aucubin **2** of *Plantago* (Plantaginaceae),[5,6)] asperuloside **3** of *Galium* (Rubiaceae)[7)] and aucuboside (aucubin) **2** and harpagide **4** of *Scrophularia* (Scrophulariaceae).[8)]

Several review articles on different aspects of iridoids are available elsewhere. The compilation of iridoids are provided in four review articles, namely of El-Naggar and Beal,[9)] which covered the new iridoids reported in the literature upto January, 1980; of Boros and Stermitz,[3,10)] which covered the new iridoids reported during 1980—1989 and of Hazimi and Alkhathlan,[12)] which covered the new iridoids reported during 1990—1993. Among these four the former three review articles presented the iridoids with structures and available physical and spectral data.

The present review is a compilation of new iridoids namely, iridoid glycosides, iridoid aglycones, iridoid derivatives and bis-iridoids that have appeared in the literature during the period, 1994—2005, with their physical constants, spectral data, plant source and references. For each compound these data were listed in the following order: name; structure; molecular formula; calculated molecular weight using most abundant isotopic atoms of C, H, O, S, Cl; melting point (°C); optical rotation (concentration, solvent); UV (solvent, λ_{max} in nm, log ε); IR (medium, absorption band in cm^{-1}); ^{1}H-NMR (spectrometer frequency, solvent, chemical shift values in δ ppm, starting with H-1 and listed in order); ^{13}C-NMR (spectrometer frequency, solvent, chemical shift in δ values starting with C-1 and listed in order); plant source (family); reference(s). In ^{13}C-NMR assignments with same superscript the δ values may be interchanged. MS data is omitted although it was reported in the referenced papers because in most cases, the fragmentation pattern is not diagnostic of skeletal structure. Data for derivatives were not usually listed unless the derivative rather than the free compound was isolated. The seco-iridoids and detailed bioactivity of the iridoids will be published later on. The main aim of this review is to provide knowledge to researchers for rapid identification of isolated iridoids by comparison of physical and spectral data. The ^{1}H-NMR data have been rounded to the second decimal point and the ^{13}C-NMR in to the first decimal point. The molecular weight data have been rounded in to the fourth decimal point. Numbering of iridoid skeleton and of the most common substituents is given in Fig. 1. The substituent on the C-1 of the aglycone portion is given the single prime (′) designation, while the additional substituents are designated as double prime (″), triple prime (‴), *etc.*, according to their substitution position on the main skeleton, except in cases of substituents on other substiuents. The designation of substituents on other substituents is done by succeeded primes; for instance a coumaroyl on sugar unit at C-1 will be designated double prime and a sugar on coumaroyl unit as triple prime (*e.g.* **1d**). For bis-iridoids, the monomeric units

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are designated as parts a and b, and then these units are numbered as per usual numbering. Cinnamoyl, coumaroyl, caffeoyl, feruloyl, isoferuloyl groups are in the *trans* configuration unless otherwise stated. Some abbreviations used in representation of structures are: glc: β-D-glucopyranosyl; rha: α-L-rhamnopyranosyl; xyl: β-D-xylopyranosyl; api: β-D-apiofuranosyl; α-gal: α-D-galactopyranosyl; fru: β-D-fructofuranosyl; Me: methyl; OMe: methoxy. Suspected errors in a numbering of an unit were not corrected unless there was some ambiguity in the numbering of a particular compound.

In Table 1, new iridoids are arranged in the list in a fashion similar to that of El-Naggar and Beal,[9] and of Boros and Stermitz.[3,10] Group 1 contains iridoids with an eight-carbon skeleton; Group 2 contains iridoids with a nine-carbon skeleton and is further divided in to subgroups depending on whether the ninth carbon is attached to C-4 (Group 2a) or C-8 (Group 2b); Group 3 contains iridoids with ten-carbon skeletons and subdivided into four subgroups; Group 4 consists of iridoid aglycones; Group 5 contains iridoid derivatives; and Group 6 contains bis-iridoid glycosides. The oxidation state of C-10 and C-11 (Fig. 1) is used in the arrangement of compounds in all groups except Group 6. For instance, a C-10 or a C-11 Me group precedes one with C-10 or C-11 CH_2OH group, and a C-11 Me and a C-10 Me groups precedes one with a C-11 Me and C-10 CH_2OH groups, which precedes with a compound with a C-11 CH_2OH and a C-10 Me groups. In Table 2, the alphabetical index of the iridoids (Table 1) is provided.

In spite of exhaustive literature searches, some new iridoids may be omitted in the list because of non-availability of the published papers and hence this review should not be used as the only source for determining the new iridoids reported during the period of review.

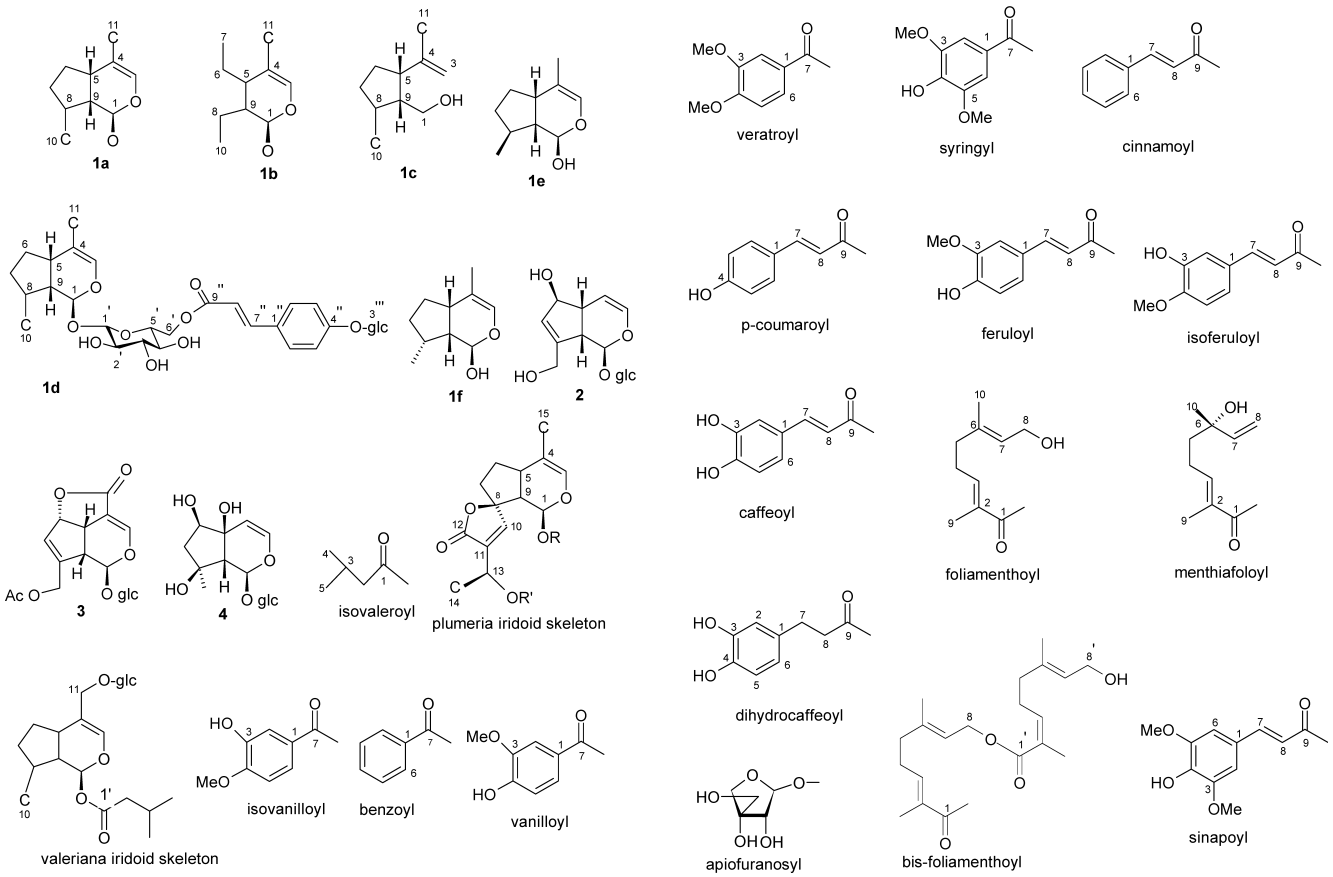
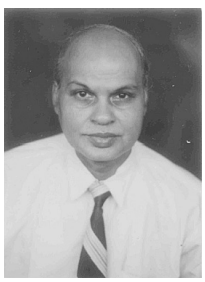


Fig. 1



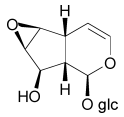
Biswanath Dinda

Biswanath Dinda was born on August 4, 1947 in India. He received his B.Sc. (1967), M.Sc. (1969) and Ph.D. (1974) from the University of Calcutta. Then he joined as a Lecturer in Chemistry in an undergraduate college of Burdwan University. He carried out his post doctoral research work in the group of Prof. J. L. Beal, Department of Pharmacognosy, Ohio State University, USA for the period 1976—1978 on interferron inducers. He joined as a Senior Lecturer in Chemistry in Calcutta University Post-Graduate Centre, Agartala in 1981 and became Reader later on. He was appointed as Professor of Chemistry in the Department of Chemistry, Tripura University in 1993 and is holding this position till now. Last couple of years he was busy in several administrative activities like Head, Department of Chemistry; Dean, Faculty of Science; Senate and Syndicate member of the University. His current research interest is natural products chemistry.

Table 1. List of New Iridoids

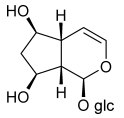
Group-1 (8-Carbon skeleton)

1. Isounedoside



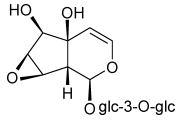
$C_{14}H_{20}O_9$: 332.1107; $[\alpha]_D^{20}$ −52.0° (c=0.35, MeOH); ^{1}H-NMR (D_2O): 5.35 (d, 1.2, H-1), 6.14 (dd, 6.3, 1.8, H-3), 4.72 (dd, 6.3, 1.2, H-4), 2.86 (ddd, 8.7, 6.3, 1.8, H-5), 3.48 (d, 2.1, H-6), 3.52 (dd, 2.1, 1.5, H-7), 4.06 (dd, 8.1, 1.5, H-8), 1.78 (ddd, 8.7, 8.1, 1.5, H-9), 4.58 (d, 11.7, H-1′), 3.12 (dd, 9.2, 7.9, H-2′), 3.19—3.41 (m, H-3′, 4′, 5′), 3.54—3.78 (m, H_2-6′); ^{13}C-NMR (D_2O): 97.0 (C-1), 141.8 (C-3), 104.2 (C-4), 37.2 (C-5), 79.2 (C-6), 59.4 (C-7), 56.6 (C-8), 42.8 (C-9), 100.2 (C-1′), 73.7 (C-2′), 76.7 (C-3′), 70.4 (C-4′), 77.0 (C-5′), 61.5 (C-6′). *Thunbergia grandiflora* (Acanthaceae).[13]

2. Alatoside



$C_{14}H_{22}O_9$: 334.1263; crystals; mp 113—116 °C; $[\alpha]_D^{20}$ −147.5° (c=0.3, EtOH); ^{1}H-NMR (250 MHz, D_2O): 5.49 (d, 3.0, H-1), 6.26 (dd, 6.5, 2.1, H-3), 4.91 (dd, 6.5, 2.1, H-4), 2.69 (dm, 7.5, H-5), 4.06 (m, H-6), 2.50 (m, H-7), 1.58 (bd t, 14.0, 6.0, H-7), 4.23 (q, 6.9, H-8), 2.46 (m, H-9), 4.82 (d, 8.3, H-1′), 3.33 (dd, 9.5, 8.3, H-2′), 3.53 (t, 9.5, H-3′), 3.43 (t, 9.5, H-4′), 3.51 (ddd, 9.5, 6.0, 2.5, H-5′), 3.95 (dd, 12.5, 2.5, H-6′), 3.75 (dd, 12.5, 6.0, H-6′); ^{13}C-NMR (62.5 MHz, D_2O): 94.8 (C-1), 140.3 (C-3), 105.1 (C-4), 41.9 (C-5), 72.9 (C-6), 48.3 (C-7), 76.4 (C-8), 40.0 (C-9), 99.2 (C-1′), 73.5 (C-2′), 76.5 (C-3′), 70.4 (C-4′), 77.0 (C-5′), 61.5 (C-6′). *Thunbergia alata* (Acanthaceae).[14]

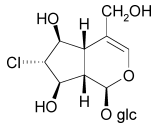
3. 3′-*O*-*β*-Glucopyranosylstilbericoside



$C_{20}H_{30}O_{15}$: 510.1584; amorphous powder; $[\alpha]_D^{19}$ −105.3° (c=0.69, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.21 (d, 8.7, H-1), 6.37 (d, 6.1, H-3), 4.92 (d, 6.1, H-4), 4.06 (d, 1.5, H-6), 3.53 (m, H-7), 3.62 (d, 2.7, H-8), 2.45 (d, 8.7, H-9), 4.71 (d, 8.0, H-1′), 3.25—3.47 (m, H-2′, 2″, 3′, 3″, 4′, 4″, 5′, 5″), 3.84—3.91 (m, H_2-6′, 6″), 4.58 (d, 7.8, H-1″); ^{13}C-NMR (100 MHz, CD_3OD): 96.5 (C-1), 143.1 (C-3), 108.2 (C-4), 73.6 (C-5), 79.2 (C-6), 59.4 (C-7), 56.3 (C-8), 50.7 (C-9), 100.0 (C-1′), 74.1 (C-2′), 87.4 (C-3′), 70.1 (C-4′), 77.9 (C-5′)[a], 62.7 (C-6′), 105.3 (C-1″), 75.6 (C-2″), 78.1 (C-3″)[a], 71.6 (C-4″), 78.2 (C-5″)[a], 62.7 (C-6″). *Thunbergia laurifolia* (Acanthaceae).[15]

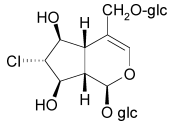
Group-2a (9-Carbon skeleton; ninth carbon on C-4)

4. Mentzefoliol



$C_{15}H_{23}O_{10}Cl$: 398.0980; isolated as heptaacetate; $[\alpha]_D^{20}$ −39.3° (c=1.7, $CHCl_3$); ^{1}H-NMR (200 MHz, $CDCl_3$): 5.25 (d, 2.2, H-1), 6.48 (br s, H-3), 2.41 (dddd, 8.7, 1.6, 1.3, 0.8, H-5), 5.21 (br s, H-6), 4.09 (ddd, 5.2, 2.6, 1.6, H-7), 5.30 (dd, 5.2, 0.9, H-8), 2.53 (ddd, 8.7, 2.2, 0.9, H-9), 4.83 (d, 8.6, H-1′), 4.96 (dd, 9.6, 8.6, H-2′), 5.19 (t, 9.6, H-3′), 5.05 (t, 9.6, H-4′), 3.88 (ddd, 9.6, 5.4, 2.2, H-5′), 4.18 (dd, 12.5, 2.2, H-6′), 4.31 (dd, 12.5, 5.4, H-6′), 1.97, 1.98, 2.01, 2.03, 2.05, 2.06, 2.07 (each s, 7×Ac); ^{13}C-NMR (50 MHz, $CDCl_3$): 90.9 (C-1), 140.1 (C-3), 109.9 (C-4), 37.0 (C-5), 80.1 (C-6)[a], 64.5 (C-7), 80.6 (C-8)[a], 44.8 (C-9), 63.4 (C-11), 96.5 (C-1′), 71.0 (C-2′), 72.7 (C-3′), 68.7 (C-4′), 73.0 (C-5′), 62.1 (C-6′), 20.9, 21.0, 21.4×2, 21.6×2, 21.8, 169.6, 169.9, 170.2×2, 170.4, 170.9×2, 171.1 (7×Ac). *Mentzelia cordifolia* (Loasaceae).[16]

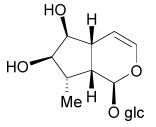
5. Glucosylmentzefoliol



$C_{21}H_{33}O_{15}Cl$: 560.1507; isolated as decaacetate; $[\alpha]_D^{20}$ −19.3° (c=1.1, $CHCl_3$); ^{1}H-NMR (200 MHz, $CDCl_3$): 5.28 (d, 2.4, H-1), 6.26 (br s, H-3), 2.64 (dddd, 8.5, 1.5, 1.3, 0.5, H-5), 5.20 (br s, H-6), 3.99 (ddd, 5.4, 2.6, 1.5, H-7), 5.23 (dd, 5.4, 0.8, H-8), 2.73 (ddd, 8.5, 2.4, 0.8, H-9), 4.80 (d, 8.2, H-1′), 4.82 (d, 8.6, H-1″), 4.91—5.17 (H-2′, 2″, 3′, 3″, 4′, 4″), 3.63 (ddd, 9.5, 4.5, 2.3, H-5′), 3.67 (ddd, 9.7, 4.6, 2.2, H-5″), 4.08 (m, H-6′, 6″), 4.17 (m, H-6′, 6″); ^{13}C-NMR (50 MHz, $CDCl_3$): 91.3 (C-1), 140.3 (C-3), 110.0 (C-4), 37.0 (C-5), 80.3 (C-6)[a], 64.9 (C-7), 80.7 (C-8)[a], 45.2 (C-9), 68.8 (C-11), 96.3 (C-1′), 70.9 (C-2′), 72.5 (C-3′)[b], 68.8 (C-4′), 73.1 (C-5′), 62.3 (C-6′), 100.9 (C-1″), 71.9 (C-2″), 72.8 (C-3″)[b], 68.8 (C-4″), 73.1 (C-5″), 62.5 (C-6″), 20.6, 20.8, 21.2×2, 21.4×2, 21.6×2, 21.8, 21.9, 169.7, 169.8×2, 170.1×2, 170.5×2, 170.7×2. 171.1 (10×Ac). *Mentzelia cordifolia* (Loasaceae).[16]

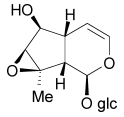
Group-2b (9-Carbon skeleton; ninth carbon on C-8)

6. Angeloside



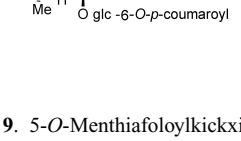
$C_{15}H_{24}O_9$: 348.1420; amorphous form; $[\alpha]_D^{20}$ −37.0° (c=0.3, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.39 (d, 2.3, H-1), (dd, 6.2, 1.9, H-3), 4.37 (dd, 6.2, 2.9, H-4), 2.62 (dddd, 8.5, 2.4, 1.9, 1.9, H-5), 3.75 (dd, 3.9, 1.9, H-6), 3.71 (dd, 8.4, 1.9, H-7), 2.19 (ddq, 11.1, 8.4, 2.3, H-8), 2.69 (ddd, 11.1, 8.5, 2.3, H-9), 1.12 (d, 7.3, H_3-10), 4.61 (d, 8.1, H-1′), 3.24 (dd, 9.2, 8.1, H-2′), 3.37 (dd, 9.2, 9.2, H-3′), 3.30 (H-4′), 3.29 (H-5′), 3.88 (dd, 11.9, 1.6, H-6′), 3.67 (ddd, 11.9, 4.1, 1.6, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 95.0 (C-1), 140.3 (C-3), 105.7 (C-4), 36.7 (C-5), 80.0 (C-6), 77.4 (C-7), 37.3 (C-8), 38.7 (C-9), 13.9 (C-10), 98.8 (C-1′), 73.5 (C-2′), 76.4 (C-3′), 70.4 (C-4′), 77.0 (C-5′), 61.5 (C-6′). *Angelonia integerrima* (Scrophulariaceae).[17]

7. 5-Deoxyantirrhinoside



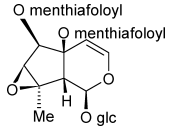
$C_{15}H_{22}O_9$: 346.1263; amorphous powder; $[\alpha]_D$ −48.0° (c=0.2, MeOH); IR (KBr): 3500, 1640, 1250; ^{1}H-NMR (500 MHz, D_2O): 4.99 (d, 10.0, H-1), 6.30 (dd, 6.2, 1.6, H-3), 5.07 (dd, 6.2, 4.3, H-4), 2.21 (m, H-5), 3.99 (dd, 7.0, 1.5, H-6), 3.44 (br d, 1.5, H-7), 2.40 (dd, 9.5, 7.5, H-9), 1.49 (s, H_3-10), 4.80 (d, 8.0, H-1′), 3.82 (dd, 13.2, 4.3, H-6′), 3.66 (dd, 13.2, 2.0, H-6′); ^{13}C-NMR (125 MHz, D_2O): 95.8 (C-1), 145.2 (C-3), 104.2 (C-4), 38.4 (C-5), 78.9 (C-6), 66.0 (C-7), 64.9 (C-8), 45.5 (C-9), 17.7 (C-10), 99.3 (C-1′), 74.0 (C-2′), 77.0 (C-3′), 70.4 (C-4′), 76.6 (C-5′), 61.5 (C-6′). *Linaria arcusangeli*, *L. flava* subsp. *sardoa* (Scrophulariaceae).[18] Reported earlier from deacetylation of genistifolin, a iridoid from *L. genistifolia*.[19]

8. 6′-*O*-(*p*-Coumaroyl)antirrinoside



$C_{24}H_{28}O_{12}$: 508.1580; isolated as pentaacetate; amorphous powder; mp 198—200 °C (EtOH); $[\alpha]_D^{25}$ +25.0° (c=0.12, $CHCl_3$); UV (MeOH): 218, 284; IR (KBr): 3520, 2922, 1753, 1638, 1601, 1508, 1433, 1371, 1222, 1162, 1038, 957, 909; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.99 (s, H-1), 6.31 (d, 6.0, H-3), 5.16 (d, 6.0, H-4), 4.97 (d, 3.8, H-6), 3.51 (s, H-7), 3.18 (s, H-9), 1.49 (s, H_3-10), 4.94 (d, 7.8, H-1′), 4.96—5.31 (H-2′, 3′, 4′), 3.82 (m, H-5′), 4.33 (dd, 12.3, 4.2, H-6′), 4.39 (dd, 12.2, 2.3, H-6′), 7.58 (d, 8.7, H-2″, 6″), 7.14 (d, 8.7, H-3″, 5″), 7.70 (d, 15.6, H-7″), 6.42 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, $CDCl_3$): 94.1 (C-1), 141.4 (C-3), 106.7 (C-4), 73.1 (C-5), 78.0 (C-6), 63.1 (C-7), 62.7 (C-8), 52.0 (C-9), 17.0 (C-10), 96.2 (C-1′), 70.8 (C-2′), 72.3 (C-3′), 68.5 (C-4′), 72.3 (C-5′), 61.7 (C-6′), 131.4 (C-1″), 129.4 (C-2″, 6″), 122.2 (C-3″, 5″), 152.2 (C-4″), 117.2 (C-7″ ?), 144.8 (C-8″ ?), 166.3 (C-9″). *Caryopteris mongholica* (Verbenaceae).[20,21]

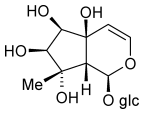
9. 5-*O*-Menthiafoloylkickxioside



$C_{35}H_{50}O_{14}$: 694.320; amorphous powder; $[\alpha]_D^{20}$ −85.5° (c=1.47, $CHCl_3$); ^{1}H-NMR (250 MHz, $CDCl_3$): 5.64 (d, 1.0, H-1), 6.48 (d, 6.5, H-3), 5.49 (d, 6.5, H-4), 5.13 (d, 2.3, H-6), 3.70 (d, 2.3, H-7), 2.91 (d, 1.0, H-9), 1.45 (s, H_3-10), 4.68 (d, 7.6, H-1′), 3.87 (dd, 12.0, 2.4, H-6′), 3.70 (dd, 12.0, 5.0, H-6′), 6.75, 6.65 (each dt, 7.1, 1.2, H-3″, 3‴), 2.17 (m, H_2-4″, 4‴), 1.58 (m, H_2-5″, 5‴), 5.87, 5.89 (each dd, 17.3, 10.7, H-7″, 7‴), 5.20 (dd, 17.3, H_a-8″, H_a-8‴), 5.07 (dd, 10.7, 1.2, H_b-8″, H_b-8‴), 1.74 (br s, H_3-9″, H_3-9‴), 1.28 (s, H_3-10″, H_3-10‴); ^{13}C-NMR (62.5 MHz, $CDCl_3$): 92.6 (C-1), 144.6 (C-3), 103.1 (C-4), 79.7 (C-5), 76.2 (C-6), 63.8 (C-7), 64.3 (C-8), 49.3 (C-9), 16.8 (C-10), 98.6 (C-1′), 73.7 (C-2′), 76.1 (C-3′), 69.9 (C-4′), 75.2 (C-5′), 62.0 (C-6′), 166.6 (C-1″), 127.5 (C-2″), 144.8 (C-3″), 24.0 (C-4″), 41.1 (C-5″), 73.3 (C-6″), 143.7 (C-7″), 112.7 (C-8″), 12.6 (C-9″), 28.1 (C-10″), 167.3 (C-1‴), 128.3 (C-2‴), 144.6 (C-3‴), 24.2 (C-4‴), 41.1 (C-5‴), 73.6 (C-6‴), 143.5 (C-7‴), 113.0 (C-8‴), 12.5 (C-9‴), 27.6 (C-10‴). *Kickxia*

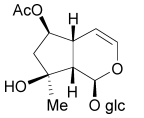
elatine, *K. spuria*, *K. commutata* (Scrophulariaceae).[22)]

10. 8-*epi*-Muralioside



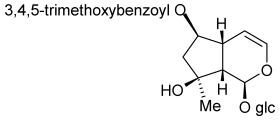
$C_{15}H_{24}O_{10}$: 364.1369; white amorphous powder; $[\alpha]_D^{20}$ −50.0° (c=0.2, MeOH); IR (KBr): 3500, 1645, 1250; ^{1}H-NMR (300 MHz, D_2O): 5.70 (d, 1.0, H-1), 6.31 (d, 6.5, H-3), 5.11 (dd, 6.5, 0.5, H-4), 4.10 (d, 4.2, H-6), 3.96 (d, 4.2, H-7), 2.68 (m, H-9), 1.68 (s, H_3-10), 4.68 (d, 8.0, H-1′), 3.21 (dd, 9.2, 8.0, H-2′), 3.32 (t, 9.2, H-3′), 3.40 (t, 9.2, H-4′), 3.39 (ddd, 9.2, 4.6, 2.2, H-5′), 3.62 (dd, 12.5, 4.6, H-6′), 3.74 (dd, 12.5, 2.2, H-6′); ^{13}C-NMR (75 MHz, D_2O): 93.4 (C-1), 141.1 (C-3), 107.7 (C-4), 68.5 (C-5), 76.1 (C-6), 73.3 (C-7), 81.0 (C-8), 56.7 (C-9), 27.5 (C-10), 98.7 (C-1′), 70.4 (C-2′), 77.2 (C-3′)[a], 73.6 (C-4′), 77.1 (C-5′)[a], 61.5 (C-6′). *Linaria arcusangeli* (Scrophulariaceae).[23)]

11. 6-*O*-Acetylajugol



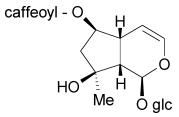
$C_{17}H_{26}O_{10}$: 390.1526; amorphous hygroscopic powder; $[\alpha]_D^{20}$ −103.5° (c=0.07, MeOH); UV (MeOH): 210 (4.32), 232 (4.31); IR (KBr): 3400, 1725, 1665; ^{1}H-NMR (300 MHz, CD_3OD): 5.47 (d, 2.5, H-1), 6.19 (dd, 6.3, 2.5, H-3), 4.92 (dd, 6.3, 2.5, H-4), 2.85 (dd, 9.1, 2.5, H-5), 4.80 (m, H-6), 2.18 (dd, 14.2, 6.5, H_α-7), 1.91 (dd, 14.2, 4.0, H_β-7), 2.51 (dd, 9.1, 2.5, H-9), 1.36 (s, H_3-10), 2.04 (s, AcO-6), 4.66 (d, 7.8, H-1′), 3.19 (dd, 9.0, 7.8, H-2′), 3.26—3.40 (m, H-3′-5′), 3.65 (dd, 12.0, 5.6, H-6′), 3.89 (dd, 12.0, 1.9, H-6′); ^{13}C-NMR (75 MHz, CD_3OD): 93.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.2 (C-5), 80.5 (C-6), 47.8 (C-7), 79.0 (C-8), 51.6 (C-9), 25.9 (C-10), 21.1, 172.8 (AcO-6), 99.4 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.8 (C-4′), 78.3 (C-5′), 62.9 (C-6′). *Leonurus persicus* (Lamiaceae).[24)]

12. 6-*O*-(3″,4″,5″-Trimethoxybenzoyl)ajugol



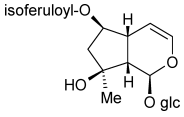
$C_{25}H_{34}O_{13}$: 542.1999; yellow amorphous powder; $[\alpha]_D$ −78.6° (c=0.3, MeOH); IR (KBr): 3387, 1710, 1659, 1591, 1505, 1461, 1417, 1334, 1228, 1128, 764; ^{1}H-NMR (400 MHz, CD_3OD): 5.51 (d, 2.5, H-1), 6.24 (dd, 6.3, 2.1, H-3), 4.99 (dd, 6.3, 2.7, H-4), 3.01 (m, H-5), 2.06 (m, H-6), 2.28 (dd, 14.3, 6.2, H-7), 2.06 (dd, 14.3, 3.4, H-7), 2.62 (br d, 9.0, H-9), 1.41 (s, H_3-10), 4.66 (d, 7.9, H-1′), 3.18 (t, 8.7, H-2′), 3.36 (t, 8.7, H-3′), 3.26 (m, H-4′), 3.34 (m, H-5′), 3.65 (dd, 11.8, 5.8, H-6′), 3.88 (m, H-6′), 7.36 (br s, H-2″, 6″); ^{13}C-NMR (100 MHz, CD_3OD): 93.5 (C-1), 141.3 (C-3), 104.4 (C-4), 39.6 (C-5), 81.2 (C-6), 47.7 (C-7), 79.2 (C-8), 51.8 (C-9), 26.2 (C-10), 99.4 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.3 (C-5′), 62.9 (C-6′), 126.9 (C-1″), 108.2×2 (C-2″, 6″), 154.4×2 (C-3″, 5″), 143.7 (C-4″, 1), 167.4 (C-7″), 56.8×2 (3″, 5″-OMe), 61.2 (4″-OMe). *Tabebuia impetiginosa* (Bignoniaceae),[25)] *Maytenus laevis* (Celastraceae).[26)]

13. 6-*O*-Caffeoylajugol



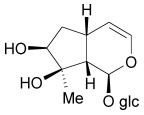
$C_{24}H_{30}O_{12}$: 510.1737; pale yellow amorphous powder; $[\alpha]_D^{30}$ −128.0° (c=1.2, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.49 (d, 2.4, H-1), 6.20 (dd, 6.2, 2.2, H-3), 4.95 (dd, 6.2, 2.9, H-4), 2.91 (br d, 9.3, H-5), 4.85 (m, H-6), 2.22 (dd, 13.6, 6.3, H-7), 2.00 (dd, 13.6, 4.6, H-7), 2.57 (dd, 9.3, 2.4, H-9), 1.37 (s, H_3-10), 4.66 (d, 7.8, H-1′), 3.20—3.42 (m, H-2′, 3′, 4′, 5′), 3.65 (dd, 12.0, 4.6, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.03 (d, 1.7, H- 2″), 6.76 (d, 8.3, H-5″), 6.93 (dd, 8.3, 1.7, H-6″), 7.54 (d, 15.9, H-7″), 6.27 (d, 15.9, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 93.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.3 (C-5), 80.3 (C-6), 47.8 (C-7), 77.9 (C-8)[a], 51.6 (C-9), 26.0 (C-10), 99.3 (C-1′), 74.7 (C-2′), 78.1 (C-3′)[a], 71.6 (C-4′), 79.1 (C-5′), 62.8 (C-6′), 127.7 (C-1″), 115.3 (C-2″), 146.9 (C-3″), 149.5 (C-4″), 116.6 (C-5″), 122.9 (C-6″), 146.7 (C-7″), 115.1 (C-8″), 169.0 (C-9″). *Phyllarthron madagascariense* (Bignoniaceae).[27)]

14. 6-*O*-Isoferuloyl ajugol



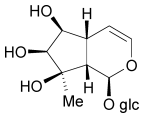
$C_{25}H_{32}O_{12}$: 524.1893; amorphous powder; $[\alpha]_D^{30}$ −132.0° (c=0.5, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.48 (d, 2.4, H-1), 6.25 (dd, 6.2, 2.1, H-3), 4.92 (dd, 6.2, 2.9, H-4), 2.92 (br d, 9.0, H-5), 4.98 (m, H-6), 2.23 (dd, 14.2, 6.3, H-7), 2.00 (dd, 14.2, 4.1, H-7), 2.57 (dd, 9.0, 2.4, H-9), 1.37 (s, H_3-10), 4.66 (d, 7.8, H-1′), 3.19—3.45 (m, H-2′, 3′, 4′, 5′), 3.67 (dd, 12.0, 4.6, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.05 (d, 1.9, H- 2″), 6.95 (d, 8.3, H-5″), 7.02 (dd, 8.3, 1.9, H-6″), 7.57 (d, 15.9, H-7″), 6.35 (d, 15.9, H-8″), 3.88 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.5 (C-1), 141.1 (C-3), 104.6 (C-4), 39.4 (C-5), 80.4 (C-6), 47.9 (C-7), 78.2 (C-8)[a], 51.7 (C-9), 26.1 (C-10), 99.4 (C-1′), 74.8 (C-2′), 78.0 (C-3′)[a], 71.7 (C-4′), 79.0 (C-5′), 62.9 (C-6′), 128.9 (C-1″), 112.5 (C-2″), 151.5 (C-3″), 148.0 (C-4″), 116.4 (C-5″), 122.8 (C-6″), 146.6 (C-7″), 115.6 (C-8″), 168.8 (C-9″), 56.4 (MeO). *Phyllarthron madagascariense* (Bignoniaceae).[27)]

15. Stegioside II



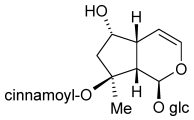
$C_{15}H_{24}O_9$: 348.1420; ^{1}H-NMR (400 MHz, D_2O): 5.37 (d, 1.5, H-1), 6.05 (dd, 6.5, 1.8, H-3), 4.83 (dd, 6.5, 3.0, H-4), 2.67 (m, H-5), 1.62 (dt, 13.5, 4.8, H-6), 1.84 (ddd, 13.5, 9.0, 5.3, H_β-6), 3.66 (t, 5.3, H-7), 2.30 (br d, 10.2, H-9), 4.62 (partly covered by HDO signal, H-1′), 3.18 (dd, 9.0, 8.3, H-2′), 3.38 (t, 9.0, H-3′), 3.28 (t, 9.0, H-4′), 3.36 (m, H-5′), 3.59 (dd, 12.8, 6.0, H-6′), 3.80 (dd, 12.8, 2.3, H-6′); ^{13}C-NMR (100 MHz, D_2O): 93.9 (C-1), 137.6 (C-3), 109.3 (C-4), 25.3 (C-5), 36.3 (C-6), 78.3 (C-7), 78.9 (C-8), 48.0 (C-9), 21.4 (C-10), 98.4 (C-1′), 73.2 (C-2′), 76.1 (C-3′), 70.1 (C-4′), 76.7 (C-5′), 61.2 (C-6′). *Physostegia virginiana* ssp. *paemorsa* (Lamiaceae).[28)]

16. Stegioside III



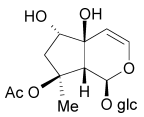
$C_{15}H_{24}O_{10}$: 364.1369; $[\alpha]_D^{25}$ −157.1° (c=0.19, H_2O); ^{1}H-NMR (400 MHz, D_2O): 5.40 (s, H-1), 6.10 (br d, 6.0, H-3), 4.93 (dt, 6.0, 1.8, H-4), 2.53 (br s, H-5, 9), 3.83 (dd, 3.8, 1.7, H-6), 3.60 (d, 3.8, H-7), 1.14 (s, H_3-10), 4.63 (d, 7.8, H-1′), 3.16 (dd, 9.0, 8.3, H-2′), 3.38 (t, 9.0, H-3′), 3.26 (t, 9.0, H-4′), 3.36 (ddd, 9.8, 6.0, 2.3, H-5′), 3.58 (dd, 12.8, 6.0, H-6′), 3.79 (dd, 12.8, 2.3, H-6′); ^{13}C-NMR (100 MHz, D_2O): 93.5 (C-1), 138.9 (C-3), 105.8 (C-4), 34.9 (C-5), 77.0 (C-6)[a], 78.4 (C-7)[a], 77.7 (C-8), 47.9 (C-9), 21.8 (C-10), 98.4 (C-1′), 73.1 (C-2′), 76.1 (C-3′), 70.1 (C-4′), 76.6 (C-5′), 61.2 (C-6′). *Physostergia virginiana* ssp. *paemorsa* (Lamiaceae).[28)]

17. 8-Cinnamoylmyoporoside



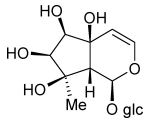
$C_{24}H_{30}O_{10}$: 478.1839; amorphous powder; $[\alpha]_D^{20}$ −28.6° (c=0.001, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.87 (d, 1.9, H-1), 6.34 (dd, 6.4, 2.0, H-3), 4.96 (m, H-4), 2.89 (m, H-5), 4.42 (dt, 6.2, H-6), 2.32 (dd, 13.2, 6.4, 1.0, H_a-7), 1.86 (dd, 13.2, 11.7, H_b-7), 2.64 (d, 8.1, H-9), 1.61 (s, H_3-10). 4.66 (d, 7.9, H-1′), 3.18 (dd, 9.0, 7.9, H-2′), 3.37 (t, 9.0, H-3′), 3.26 (dd, 9.6, 9.0, H-4′), 3.31 (m, H-5′), 3.90 (dd, 12.1, 2.4, H-6′), 3.68 (dd, 12.1, 6.3, H-6′), 7.58 (m, H-2″, 6″), 7.39 (m, H-3″, 4″, 5″), 6.47 (d, 16.0, H-7″), 7.62 (d, 16.0, H-8″), ^{13}C-NMR (100 MHz, CD_3OD): 94.2 (C-1), 142.1 (C-3), 111.3 (C-4), 37.2 (C-5), 72.0 (C-6), 47.5 (C-7), 88.9 (C-8), 49.5 (C-9), 22.6 (C-10), 100.2 (C-1′), 74.8 (C-2′), 78.2 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 63.1 (C-6′), 135.7 (C-1″), 129.3 (C-2″, 6″), 130.0 (C-3″, 5″), 131.6 (C-4″), 146.2 (C-7″), 120.0 (C-8″), 168.7 (C-9″). *Harpagophytum procumbens* (Pedaliaceae).[29)]

18. 6-*epi*-8-*O*-Acetylharpagide



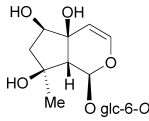
$C_{17}H_{26}O_{11}$: 406.1475; white amorphous powder; $[\alpha]_D$ −36.0° (c=0.0035, MeOH); UV (MeOH): 204; ^{1}H-NMR (D_2O): 5.95 (s, H-1), 6.51 (dd, 6.4, 1.0, H-3), 5.11 (d, 6.5, H-4), 4.27 (dd, 12.5, 6.6, H-6), 1.57 (dd, 13.5, 12.5, H_a-7), 2.24 (dd, 13.5, 6.6, H_b-7), 2.70 (s, H-9), 1.44 (s, H_3-10), 2.03 (s, AcO-8), 4.71 (dd, 8.0, 1.0, H-1′), 3.25 (ddd, 9.3, 8.2, 1.1, H-2′), 3.44—3.50 (m, H-3′, 5′), 3.38 (dd, 9.9, 10.0, H-4′), 3.71 (dd, 12.4, 5.6, H-6′), 3.91 (d, 12.4, H-6′); ^{13}C-NMR (D_2O): 95.8 (C-1), 145.3 (C-3), 104.0 (C-4), 74.6 (C-5), 77.8 (C-6), 46.1 (C-7), 86.6 (C-8), 56.7 (C-9), 23.5 (C-10), 24.3, 176.8 (OAc), 100.1 (C-1′), 75.2 (C-2′), 78.1 (C-3′), 72.3 (C-4′), 79.0 (C-5′), 63.3 (C-6′). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).[30)]

19. Muralioside (7β-Hydroxyharpagide)



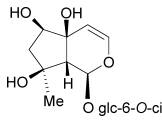
$C_{15}H_{24}O_{11}$: 380.1318; amorphous powder; $[\alpha]_D^{20}$ −43.0° (c=0.2, MeOH); IR (KBr) 3500, 1650, 1240; ^{1}H-NMR (500 MHz, D_2O) 5.61 (d, 0.7, H-1), 6.32 (d, 6.3, H-3), 5.05 (d, 6.3, H-4), 3.82 (d, 5.7, H-6), 3.77 (t, 5.7, H-7), 2.42 (br s, H-9), 1.34 (s, H_3-10), 4.70 (d, 7.5, H-1′), 3.24 (dd, 9.2, 7.5, H-2′), 3.43 (t, 9.2, H-3′), 3.34 (t, 9.2, H-4′), 3.40 (ddd, 9.2, 5.8, 2.2, H-5′), 3.86 (dd, 13.0, 2.2, H_a-6′), 3.66 (dd, 13.0, 5.8, H_b-6′); ^{13}C-NMR (125 MHz, D_2O) 94.3 (C-1), 143.3 (C-3), 108.3 (C-4), 69.6 (C-5), 80.7 (C-6), 78.9 (C-7)[a], 80.4 (C-8), 56.3 (C-9), 25.8 (C-10), 100.0 (C-1′), 74.4 (C-2′), 78.1 (C-3′)[a], 71.6 (C-4′), 77.3 (C-5′)[a], 62.6 (C-6′). *Cymbalaria muralis* ssp. *pilosa* (Scrophulariaceae).[31)]

20. 6′-*O*-*E*-*p*-Methoxycinnamoylharpagide



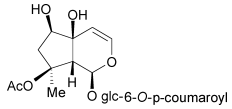
$C_{25}H_{32}O_{12}$: 524.1893; pale brown amorphous powder; $[\alpha]_D^{15}$ −26.7° (c=0.5, MeOH); UV (MeOH): 226.4 sh, 286.5 (2.80), 306.5 sh; IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; ^{1}H-NMR (500 MHz, CD_3OD): 5.68 (br s, H-1), 6.34 (d, 6.4, H-3), 4.97 (dd, 6.8, 1.4, H-4), 3.70 (m, H-6), 1.81 (dd, 15.1, 4.4, H_α-7), 1.90 (d, 15.1, H_β-7), 2.56 (s, H-9), 1.17 (s, H_3-10), 4.62 (d, 7.8, H-1′), 3.20—3.40 (m, H-2′, 3′, 4′, 5′), 4.47 (dd, 11.2, 5.9, H-6′), 4.50 (dd, 11.2, 1.9, H-6′), 6.44 (d, 16.0, H-8″), 7.70 (d, 16.0, H-7″), 7.58 (d, 8.8, H-2″, 6″), 6.98 (d, 8.8, H-3″, 5″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.2 (C-1), 141.0 (C-3), 108.6 (C-4), 72.9 (C-5), 78.5 (C-6), 47.2 (C-7), 90.0 (C-8), 59.7 (C-9), 23.5 (C-10), 99.6 (C-1′), 74.6 (C-2′), 78.1 (C-3′), 71.8 (C-4′), 56.1 (C-5′), 62.9 (C-6′), 168.1 (C-9″), 119.3 (C-8″), 146.6 (C-7″), 130.2 (C-1″), 131.2 (C-2″, 6″), 116.0 (C-3″, 5″), 162.4 (C-4″), 56.0 (MeO-4″). *Scrophularia buergeriana* (Scrophulariaceae).[32)]

21. 6′-*O*-*Z*-*p*-Methoxycinnamoylharpagide



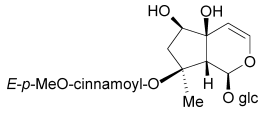
$C_{25}H_{32}O_{12}$: 524.1893; pale brown amorphous powder; $[\alpha]_D^{15}$ −29.1° (c=0.5, MeOH); UV (MeOH): 226.4 sh, 286.0 (2.31), 306.2 sh; IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; ^{1}H-NMR (500 MHz, CD_3OD): 5.64 (br s, H-1), 6.31 (d, 6.4, H-3), 4.94 (dd, 6.8, 1.4, H-4), 8.69 (m, H-6), 1.81 (dd, 15.1, 4.4, H_α-7), 1.87 (d, 15.1, H_β-7), 2.53 (s, H-9), 1.19 (s, H_3-10), 4.57 (d, 7.8, H-1′), 3.20—3.40 (m, H-2′, 3′, 4′, 5′), 4.29 (dd, 11.2, 5.9, H-6′), 4.46 (dd, 11.2, 1.9, H-6′), 5.83 (d, 12.7, H-8″), 6.93 (d, 12.7,, H-7″), 7.70 (d, 8.8, H-2″, 6″), 6.91 (d, 8.8, H-3″, 5″), 3.81 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.3 (C-1), 142.7 (C-3), 108.6 (C-4), 72.9 (C-5), 78.5 (C-6), 47.2 (C-7), 89.1 (C-8), 59.7 (C-9), 25.2 (C-10), 99.5 (C-1′), 74.6 (C-2′), 78.3 (C-3′), 71.8 (C-4′), 56.0 (C-5′), 64.6 (C-6′), 167.5 (C-9″), 117.4 (C-8″), 145.1 (C-7″), 129.4 (C-1″), 133.6 (C-2″, 6″), 114.7 (C-3″, 5″), 162.1 (C-4″), 56.0 (MeO-4″). *Scrophularia buergeriana* (Scrophulariaceae).[32)]

22. 8-*O*-Acetyl-6′-*O*-(*p*-coumaroyl)harpagide



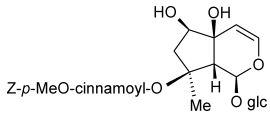
$C_{26}H_{32}O_{13}$: 552.1842; isolated as hexaacetate; amorphous powder; mp 208—210 °C (EtOH); $[\alpha]_D^{25}$ −35.0° (c=0.72, $CHCl_3$); UV (MeOH): 220, 281; IR (KBr): 3521, 2960, 1760, 1646, 1602, 1509, 1435, 1374, 1246, 1219, 1163, 1037, 960; ^{1}H-NMR (400 MHz, $CDCl_3$): 6.02 (s, H-1), 6.35 (d, 6.5, H-3), 5.49 (d, 6.5, H-4), 5.39 (d, 3.9, H-6), 1.94 (d, 16.0, H-7), 2.36 (d, 15.9, H-7), 3.17 (s, H-9), 1.46 (s, H_3-10), 4.88 (d, 7.8, H-1′), 5.04—5.30 (H-2′, 3′, 4′), 3.85 (m, H-5′), 4.38 (dd, 12.3, 4.7, H-6′), 4.41 (dd, 12.3, 2.6, H-6′), 7.58 (d, 8.7, H-2″, 6″), 7.13 (d, 8.7, H-3″, 5″), 7.73 (d, 16.0, H-7″), 6.48 (d, 16.2, H-8″); ^{13}C-NMR (100 MHz, $CDCl_3$): 94.0 (C-1), 141.6 (C-3), 107.0 (C-4), 71.4 (C-5), 77.6 (C-6), 43.3 (C-7), 86.0 (C-8), 54.5 (C-9), 22.1 (C-10), 173.3, 22.4 (AcO-8), 96.4 (C-1′), 71.0 (C-2′), 72.0 (C-3′), 68.7 (C-4′), 72.0 (C-5′), 62.1 (C-6′), 132.1 (C-1″), 129.3 (C-2″, 6″), 122.1 (C-3″, 5″), 152.1 (C-4″), 117.5 (C-7″ ?), 144.4 (C-8″ ?), 166.3 (C-9″). *Caryopteris mongholica* (Verbenaceae).[20,21)]

23. 8-*O*-*E*-*p*-Methoxycinnamoylharpagide



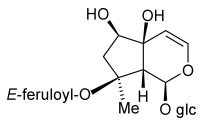
$C_{25}H_{32}O_{12}$: 524.1893; pale brown amorphous powder; $[\alpha]_D^{15}$ −37.4° (c=0.5, MeOH); UV (MeOH): 226.0 (1.13), 286.5 (1.70), 306.5 (1.35); IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; ^{1}H-NMR (400 MHz, CD_3OD): 6.14 (br s, H-1), 6.37 (d, 6.4, H-3), 4.88 (dd, 6.3, 1.4, H-4), 3.70 (m, H-6), 2.02 (dd, 15.1, 4.4, H_α-7), 2.20 (d, 15.1, H_β-7), 2.89 (s, H-9), 1.47 (s, H_3-10), 4.59 (d, 7.8, H-1′), 3.23 (t, 8.0, H-2′), 3.30 (t, 8.3, H-4′), 3.39 (dd, 5.8, 2.1, H-5′), 3.76 (dd, 11.0, 5.8, H-6′), 4.00 (dd, 11.0, 2.1, H-6′), 6.30 (d, 16.0, H-8″), 7.55 (d, 16.0, H-7″), 7.48 (d, 8.8, H-2″, 6″), 6.89 (d, 8.8, H-3″, 5″), 3.71 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 94.8 (C-1), 144.1 (C-3), 106.9 (C-4), 73.6 (C-5), 77.7 (C-6), 46.4 (C-7), 88.2 (C-8), 55.9 (C-9), 22.9 (C-10), 100.1 (C-1′), 74.6 (C-2′), 77.8 (C-3′), 71.9 (C-4′), 77.8 (C-5′), 63.1 (C-6′), 169.2 (C-9″), 117.5 (C-8″), 146.0 (C-7″), 128.4 (C-1″), 131.1 (C-2″, 6″), 115.5 (C-3″, 5″), 163.2 (C-4″), 56.0 (MeO-4″). *Scrophularia buergeriana* (Scrophulariaceae).[32)]

24. 8-*O*-*Z*-*p*-Methoxycinnamoylharpagide



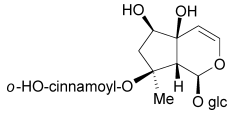
$C_{25}H_{32}O_{12}$: 524.1893; pale brown amorphous powder; $[\alpha]_D^{15}$ −54.3° (c=0.5, MeOH); UV (MeOH): 226.5 (1.24), 286.2 (1.96), 306.0 (1.64); IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; ^{1}H-NMR (400 MHz, CD_3OD): 6.11 (d, 1.0, H-1), 6.38 (d, 6.3, H-3), 4.92 (dd, 6.3, 1.5, H-4), 3.73 (m, H-6), 1.98 (dd, 15.2, 4.6, H_α-7), 2.18 (d, 15.2, H_β-7), 2.91 (s, H-9), 1.50 (s, H_3-10), 4.59 (d, 7.8, H-1′), 3.22 (t, 8.0, H-2′), 3.54 (t, 8.5, H-3′), 3.31 (t, 8.3, H-4′), 3.34 (dd, 5.7, 2.2, H-5′), 3.64 (dd, 12.2, 5.7, H-6′), 3.72 (dd, 12.2, 2.2, H-6′), 5.81 (d, 12.7, H-8″), 6.83 (d, 12.7, H-7″), 7.64 (d, 8.8, H-2″, 6″), 6.90 (d, 8.8, H-3″, 5″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 94.6 (C-1), 143.7 (C-3), 107.3 (C-4), 73.3 (C-5), 77.8 (C-6), 46.2 (C-7), 88.3 (C-8), 55.8 (C-9), 22.7 (C-10), 99.9 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.9 (C-4′), 77.8 (C-5′), 63.0 (C-6′), 168.8 (C-9″), 119.4 (C-8″), 143.9 (C-7″), 131.1 (C-1″), 133.3 (C-2″, 6″), 114.7 (C-3″, 5″), 162.1 (C-4″), 55.9 (MeO-4″). *Scrophularia buernergeriana* (Scrophulariaceae).[32)]

25. 8-*O*-Feruloylharpagide



$C_{25}H_{32}O_{13}$: 540.1842; amorphous powder; mp 150—152 °C; $[\alpha]_D$ −24.2° (c=0.231, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 6.01 (s, H-1), 6.25 (d, 6.4, H-3), 4.77 (dd, 6.4, 1.4, H-4), 3.59 (d, 4.0, H-6), 1.85 (dd, 15.3, 4.0, H_a-7), 2.08 (d, 15.3, H_b-7), 2.76 (s, H-9), 1.35 (s, H_3-10), 4.46 (d, 7.9, H-1′), 3.05 (t, 9.1, H-2′), 3.24 (t, 8.8, H-3′), 3.14 (t, 7.9, H-4′), 3.19 (dd, 5.7, 2.0, H-5′), 3.55 (dd, 12.1, 5.7, H-6′), 3.77 (dd, 12.1, 2.0, H-6′), 7.01 (d, 1.6, H-2″), 6.64 (d, 8.4, H-5″), 6.90 (dd, 8.4, 1.6, H-6″), 7.42 (d, 15.8, H-7″), 6.18 (d, 15.8, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.2 (C-1), 144.4 (C-3), 107.4 (C-4), 73.9 (C-5), 78.2 (C-6), 46.8 (C-7), 88.9 (C-8), 56.2 (C-9), 23.4 (C-10), 100.6 (C-1′), 75.2 (C-2′), 78.2 (C-3′), 72.3 (C-4′), 78.7 (C-5′), 63.6 (C-6′), 128.1 (C-1″), 112.2 (C-2″), 147.1 (C-3″), 149.9 (C-4″), 117.0 (C-5″), 124.6 (C-6″), 144.4 (C-7″), 117.3 (C-8″), 169.6 (C-9″), 57.0 (MeO-3″). *Scrophularia ningpoensis* (Scrophulariaceae).[33)]

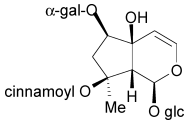
26. 8-*O*-(2-Hydroxycinnamoyl)harpagide



$C_{24}H_{30}O_{12}$: 510.1737; gum; $[\alpha]_D$ −35.7° (c=0.0187, MeOH); ^{1}H-NMR (400 MHz, DMSO-d_6): 5.99 (s, H-1), 6.39 (d, 6.3, H-3), 4.90 (d, 6.3, H-4), 3.61 (d, 4.0, H-6), 1.83 (dd, 14.8, 4.0, H_a-7), 2.16 (d, 14.6, H_b-7), 2.67 (s, H-9), 1.44 (s, H_3-10), 4.41 (d, 8.0, H-1′), 2.99 (t, 8.4, H-2′), 3.14 (m, H-3′), 3.08 (t, 9.0, H-4′), 3.14 (m, H-5′), 3.49 (dd, 11.8, 5.7, H-6′), 3.70 (br d, 11.8, H-6′), 6.91 (d, 7.6, H-3″), 7.23 (t, 7.8, H-4″), 6.82 (t, 7.6, H-5″), 7.57 (d, 7.8, H-6″), 7.78 (d, 16.0, H-7″), 6.53 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, DMSO-d_6): 92.5 (C-1), 141.3 (C-3), 107.3 (C-4), 71.5 (C-5), 75.7 (C-6), 44.6 (C-7), 86.6 (C-8), 54.3 (C-9), 22.3 (C-10), 97.2 (C-1′), 73.1 (C-2′), 76.1 (C-3′), 70.1 (C-4′), 77.2 (C-5′), 61.0 (C-6′), 120.8 (C-1″), 156.8 (C-2″), 116.1 (C-3″), 131.6 (C-4″), 119.5 (C-5″), 129.2 (C-6″), 139.9 (C-7″), 118.7 (C-8″), 166.5 (C-9″). *Scro-*

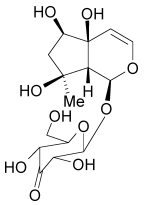
phularia ningpoensis (Scrophulariaceae).[33)]

27. 6-*O*-α-D-Galctopyranosylharpagoside



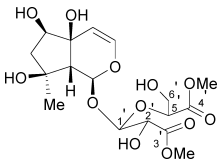
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder; mp 169—173 °C; $[\alpha]_D$ −7.4° (c=0.336, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 6.02 (s, H-1), 6.29 (d, 6.4, H-3), 4.79 (dd, 6.4, 1.0, H-4), 3.55 (d, 4.0, H-6), 1.88 (dd, 15.4, 4.0, H_a-7), 2.31 (d, 15.3, H_b-7), 2.75 (s, H-9), 1.38 (s, H_3-10), 4.44 (d, 7.8, H-1′), 3.06 (t, 8.3, H-2′), 3.24 (t, 8.8, H-3′), 4.14 (dd, 8.7, 6.4, H-4′), 3.20 (dd, 6.4, 2.0, H-5′), 3.55 (m, H-6′), 3.78 (dd, 12.0, 2.0, H-6′), 4.85 (d, 3.8, H-1″), 3.63 (dd, 10.0, 3.7, H-2″), 3.50 (dd, 9.9, 3.2, H-3″), 3.67 (d, 2.9, H-4″), 4.08 (t, 6.3, H-5″), 3.55 (m, H_2-6″), 7.46 (m, H-2‴, 6‴), 7.24 (m, H-3‴, 4‴, 5‴), 7.51 (d, 16.1, H-7‴), 6.36 (d, 16.1, H-8‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 145.4 (C-3), 106.0 (C-4), 75.2 (C-5), 87.8 (C-6), 45.7 (C-7), 89.5 (C-8), 56.7 (C-9), 23.1 (C-10), 101.0 (C-1′), 75.0 (C-2′), 78.0 (C-3′), 72.5 (C-4′), 78.6 (C-5′), 63.7 (C-6′), 104.0 (C-1″), 71.3 (C-2″), 72.3 (C-3″), 71.3 (C-4″), 73.4 (C-5″), 62.9 (C-6″), 136.1 (C-1‴), 130.6 (C-2‴, 6‴), 129.8 (C-3‴, 5‴), 132.1 (C-4‴), 146.8 (C-7‴), 120.3 (C-8‴), 168.9 (C-9‴). *Scrophularia ningpoensis* (Scrophulariaceae).[33)]

28. Clandonoside



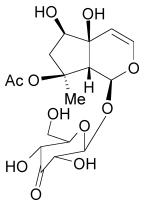
$C_{15}H_{22}O_{10}$: 362.1213; white amorphous powder; UV: 204; ^{1}H-NMR (400 MHz, D_2O): 5.76 (d, 1.0, H-1), 6.34 (d, 6.5, H-3), 5.03 (dd, 6.5, 1.4, H-4), 3.80 (dd, 4.6, 4.4, H-6), 1.81 (dd, 14.2, 4.2, H_a-7), 1.98 (dd, 14.1, 4.8, H_b-7), 2.59 (s, H-9), 1.23 (s, H_3-10), 4.85 (d, 8.2, H-1′), 4.32 (dd, 8.2, 1.6, H-2′), 4.37 (dd, 10.3, 1.6, H-4′), 3.59 (ddd, 10.3, 4.8, 2.0, H-5′), 3.83 (dd, 12.5, 4.8, H-6′), 3.98 (dd, 12.5, 2.0, H-6′); ^{13}C-NMR (100 MHz, D_2O): 95.7 (C-1), 143.9 (C-3), 109.2 (C-4), 73.8 (C-5), 79.0 (C-6), 48.1 (C-7), 79.7 (C-8), 59.6 (C-9), 26.7 (C-10), 102.2 (C-1′), 78.7 (C-2′), 208.7 (C-3′), 74.7 (C-4′), 78.9 (C-5′), 63.3 (C-6′). *Caryopteris clandonensis* (Verbenaceae).[34)]

29. Clandonoside II



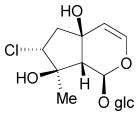
$C_{17}H_{26}O_{12}$: 422.1424, white amorphous powder; UV: 204; ^{1}H-NMR (D_2O): 6.05 (s, H-1), 6.42 (d, 6.4, H-3), 4.97 (dd, 6.4, 1.4, H-4), 3.80 (d, 4.2, H-6), 1.98 (dd, 15.7, 4.2, H_a-7), 2.14 (d, 15.7, H_b-7), 2.54 (s, H-9), 1.24 (s, H_3-10), 5.26 (d, 3.3, H-1′), 4.45 (d, 3.3, H-2′), 4.55 (dd, 4.6, 3.8, H-5′), 3.65 (dd, 11.4, 3.9, H-6′), 3.68 (dd, 11.3, 4.5, H-6′), 3.76, 3.78 (each s, 2×OMe); ^{13}C-NMR (D_2O): 97.1 (C-1), 143.5 (C-3), 109.3 (C-4), 73.9 (C-5), 79.0 (C-6), 48.0 (C-7), 79.7 (C-8), 59.4 (C-9), 26.6 (C-10), 102.8 (C-1′), 75.1 (C-2′), 175.0 (C-3′, 4′), 79.2 (C-5′), 65.0 (C-6′), 55.5, 55.6 (2×OMe). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).[30)]

30. 8-*O*-Acetylclandonoside



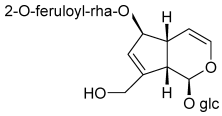
$C_{17}H_{24}O_{11}$: 404.1318; white amorphous powder; UV: 203; ^{1}H-NMR (400 MHz, D_2O): 6.12 (d, 1.2, H-1), 6.42 (d, 6.4, H-3), 4.98 (dd, 6.3, 1.7, H-4), 3.82 (t, 4.3 H-6), 2.00 (ddd, 15.7, 4.3, 1.8, H_a-7), 2.14 (dd, 15.7, 4.0, H_b-7), 2.90 (s, H-9), 1.43 (s, H_3-10), 2.07 (s, AcO-8), 4.87 (d, 8.2, H-1′), 4.30 (dd, 8.2, 1.7, H-2′), 4.38 (dd, 10.3, 1.7, H-4′), 3.55—3.61 (m, H-5′), 3.83 (dd, 12.3, 4.7, H-6′), 4.01 (dd, 12.7, 2.1, H_b-6′); ^{13}C-NMR (100 MHz, D_2O): 96.8 (C-1), 145.0 (C-3), 107.6 (C-4), 75.0 (C-5), 78.9 (C-6), 47.0 (C-7), 90.6 (C-8), 55.7 (C-9), 24.0 (C-10), 102.6 (C-1′), 78.7 (C-2′), 208.7 (C-3′), 74.7 (C-4′), 78.9 (C-5′), 63.2 (C-6′). *Caryopteris clandonensis* (Verbenaceae hybrid spp.).[34)]

31. Stegioside I



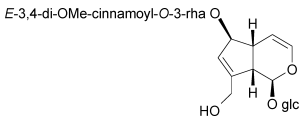
$C_{15}H_{23}O_9Cl$: 382.1030; $[\alpha]_D^{25}$ −179.4° (c=0.32, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.67 (s, H-1), 6.20 (d, 6.8, H-3), 5.09 (dd, 6.6, 1.5, H-4), 1.88 (dd, 14.7, 12.0, H_α-6), 2.40 (dd, 14.3, 8.7, H_β-6), 4.32 (dd, 12.0, 8.3, H-7), 2.42 (br s, H-9), 1.18 (s, H_3-10), 4.58 (d, 8.3, H-1′), 3.20 (dd, 9.8, 7.9, H-2′), 3.38 (t, 9.0, H-3′), 3.28 (partly covered by solvent signal, H-4′, 5′), 3.88 (dd, 12.8, 2.7, H-6′), 3.36 (dd, 12.8, 6.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 92.1 (C-1), 139.5 (C-3), 110.9 (C-4), 66.4 (C-5), 48.7 (C-6), 66.1 (C-7), 80.2 (C-8), 59.3 (C-9), 17.2 (C-10), 99.0 (C-1′), 74.6 (C-2′), 77.6 (C-3′), 71.8 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Physostegia virginiana* ssp. *virginiana* (Lamiaceae).[28)]

32. Unbuloside (6-*O*-[(2″-*O*-*trans*-Feruloyl)-α-L-rhamnopyranosyl]-aucubin)



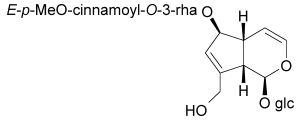
$C_{31}H_{40}O_{16}$: 668.2316; amorphous powder; $[\alpha]_D$ −61.6° (c=0.63, MeOH); UV (MeOH): 300 (4.05), 312 (4.20); ^{1}H-NMR (200 MHz, CD_3OD): 4.99 (d, 7.0, H-1), 6.44 (dd, 6.0, 1.5, H-3), 5.23 (dd, 6.0, 3.5, H-4), 2.90 (m, H-5), 4.53 (m, H-6), 5.95 (br s, H-7), 2.90 (m, H-9), 4.22 (d, 13.0, H-10), 4.44 (d, 13.0, H-10), 4.74 (d, 8.0, H-1′), 3.92—3.08 (H-2′, 3′, 4′, 5′, 6′), 4.11 (dd, 12.0, 1.5, H-6′), 4.95 (d, 1.5, H-1″), 5.13 (dd, 3.5, 1.5, H-2″), 3.92—3.08 (H-3″, 4″, 5″), 1.38 (d, 6.0, H_3-6″), 6.53 (d, 16.0, H-8‴), 7.76 (d, 16.0, H-7‴), 7.33 (d, 2.0, H-2‴), 6.92 (d, 9.0, H-5‴), 7.20 (dd, 9.0, 2.0, H-6‴), 3.94 (s, MeO-3‴); ^{13}C-NMR (50 MHz, CD_3OD): 98.0 (C-1), 142.0 (C-3), 105.5 (C-4), 44.3 (C-5), 89.2 (C-6), 127.0 (C-7), 149.4 (C-8), 48.4 (C-9), 61.5 (C-10), 100.0 (C-1′), 74.9 (C-2′), 78.2 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 62.6 (C-6′), 98.4 (C-1″), 74.3 (C-2″), 70.5 (C-3″), 74.3 (C-4″), 70.3 (C-5″), 18.1 (C-6″), 166.6 (C-9‴), 115.7 (C-8‴), 147.4 (C-7‴), 129.3 (C-1‴), 111.7 (C-2‴), 149.4 (C-3‴), 150.8 (C-4‴), 116.3 (C-5‴), 124.4 (C-6‴), 56.5 (MeO-3‴). *Verbascum undulatum* (Scrophulariaceae).[35)]

33. 6-*O*-[3-*O*-(*trans*-3,4-Dimethoxycinnamoyl)-α-L-rhamnopyranosyl]-aucubin



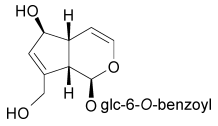
$C_{32}H_{42}O_{16}$: 682.2472; amorphous powder; $[\alpha]_D$ −80.5° (c=0.1, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 4.95 (d, 7.0, H-1), 6.35 (dd, 5.9, 1.8, H-3), 5.17 (dd, 5.9, 3.9, H-4), 2.86 (m, H-5), 4.50 (m, H-6), 5.89 (br s, H-7), 2.91 (t, 7.0, H-9), 4.38 and 4.19 (each d, 15.2, H_2-10), 4.69 (d, 7.9, H-1′), 3.26 (dd, 9.0, 7.9, H-2′), 3.41 (t, 9.0, H-3′), 3.31 (t, 9.0, H-4′), 3.30 (m, H-5′), 3.87 (m, H-6′), 3.68 (m, H-6′), 4.85 (d, 1.6, H-1″), 4.09 (dd, 3.5, 1.6, H-2″), 5.07 (dd, 9.5, 3.5, H-3″), 3.70 (t, 9.5, H-4″), 3.87 (dq, 9.5, 5.8, H-5″), 1.33 (d, 5.8, H_3-6″), 7.23 (d, 1.7, H-2‴), 6.98 (d, 8.5, H-5‴), 7.19 (dd, 8.5, 2.0, H-6‴), 7.71 (d, 16.0, H-7‴), 6.48 (d, 16.0, H-8‴), 3.86, 3.87 (each s, 2×MeO); ^{13}C-NMR (100 MHz, CD_3OD): 98.0 (C-1), 141.9 (C-3), 105.5 (C-4), 44.3 (C-5), 89.0 (C-6), 127.1 (C-7), 149.6 (C-8), 48.0 (C-9), 61.5 (C-10), 99.9 (C-1′), 74.9 (C-2′, 3″), 77.9 (C-3′), 70.4 (C-4′, 2″), 78.3 (C-5′), 62.7 (C-6′), 101.1 (C-1″), 71.6 (C-4″, 5″), 18.0 (C-6″), 128.9 (C-1‴), 111.4 (C-2‴), 150.5 (C-3‴), 152.5 (C-4‴), 111.2 (C-5‴), 123.9 (C-6‴), 147.1 (C-7‴), 115.5 (C-8‴), 169.1 (C-9‴), 56.5 (2×OMe). *Verbascum undulatum* (Scrophulariaceae).[36)]

34. 6-*O*-[3-*O*-(*trans*-*p*-Methoxycinnamoyl)-α-L-rhamnopyranosyl]-aucubin



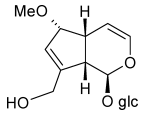
$C_{31}H_{40}O_{15}$: 652.2367; amorphous powder; $[\alpha]_D$ −82.5° (c=0.1, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 4.93 (d, 7.0, H-1), 6.35 (dd, 5.9, 1.8, H-3), 5.17 (dd, 5.9, 3.9, H-4), 2.83 (m, H-5), 4.48 (m, H-6), 5.89 (br s, H-7), 2.90 (t, 7.0, H-9), 4.38 and 4.18 (each d, 15.2, H_2-10), 4.68 (d, 7.9, H-1′), 3.26 (dd, 9.0, 7.9, H-2′), 3.41 (t, 9.0, H-3′), 3.31 (t, 9.0, H-4′), 3.30 (m, H-5′), 3.87 (m, H-6′), 3.68 (m, H-6′), 4.85 (d, 1.6, H-1″), 3.99 (dd, 3.5, 1.6, H-2″), 5.07 (dd, 9.5, 3.5, H-3″), 3.70 (t, 9.5, H-4″), 3.87 (dq, 9.5, 5.8, H-5″), 1.29 (d, 5.8, H_3-6″), 7.55 (d, 8.7, H-2‴, 6‴), 6.95 (d, 8.7, H-3‴, 5‴), 7.71 (d, 16.0, H-7‴), 6.44 (d, 16.0, H-8‴), 3.81 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 98.0 (C-1), 141.9 (C-3), 105.5 (C-4), 44.3 (C-5), 89.0 (C-6), 127.1 (C-7), 149.6 (C-8), 48.0 (C-9), 61.5 (C-10), 99.9 (C-1′), 74.9 (C-2′, 3″), 77.9 (C-3′), 70.4 (C-4′, 2″), 78.3 (C-5′), 62.7 (C-6′), 101.1 (C-1″), 71.6 (C-4″, 5″), 18.0 (C-6″), 128.5 (C-1‴), 130.0 (C-2‴, 6‴), 115.4 (C-3‴, 5‴, 8‴), 162.8 (C-4‴), 146.3 (C-7‴), 169.6 (C-9‴), 56.5 (OMe). *Verbascum undulatum* (Scrophulariaceae).[36]

35. Dumuloside



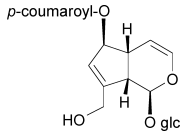
$C_{22}H_{26}O_{10}$: 450.1526; amorphous powder; $[\alpha]_D^{20}$ −70.0° (c=0.1, MeOH); UV (MeOH): 207, 233, 273; IR (KBr): 3460, 1718, 1654, 1603, 1559, 1542, 1508; ^{1}H-NMR (300 MHz, CD_3OD): 4.73 (d, 7.7, H-1), 6.30 (dd, 6.1, 1.8, H-3), 5.08 (dd, 6.1, 4.0, H-4), 2.59 (m, H-5), 4.25 (overlapped, H-6), 5.63 (d, 1.0, H-7), 2.84 (t, 7.7, H-9), 4.23 and 4.11 (each d, 15.4, H_2-10), 4.70 (d, 7.8, H-1′), 3.26 (dd, 8.6, 7.8, H-2′), 3.39 (overlapped, H-3′), 3.38 (overlapped, H-4′), 3.60 (m, H-5′), 4.62 (dd, 11.8, 2.3, H-6′), 4.47 (dd, 11.8, 6.8, H-6′), 8.00 (dd, 7.5, 1.3, H-2″, 6″), 7.48 (t, 7.5, H-3″, 5″), 7.61 (m, H-4″); ^{13}C-NMR (75.5 MHz, CD_3OD): 98.4 (C-1), 141.7 (C-3), 105.6 (C-4), 46.7 (C-5), 83.0 (C-6), 130.7 (C-7), 147.7 (C-8), 47.7 (C-9), 61.5 (C-10), 100.1 (C-1′), 74.8 (C-2′), 77.8 (C-3′), 72.0 (C-4′), 75.6 (C-5′), 65.1 (C-6′), 131.3 (C-1″), 130.6 (C-2″, 6″), 129.6 (C-3″, 5″), 134.4 (C-4″), 167.8 (C-7″). *Globularia dumulosa* (Globulariaceae).[37]

36. 6-*O*-Methyl-*epi*-aucubin



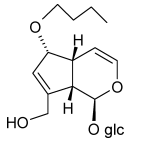
$C_{16}H_{24}O_9$: 360.1420; amorphous powder; $[\alpha]_D^{20}$ −62.4° (c=0.25, MeOH); UV (MeOH): 203; IR (KBr): 3254, 1707, 1652, 1481, 1356, 1083, 1048; ^{1}H-NMR (400 MHz, DMSO-d_6): 4.99 (d, 4.2, H-1), 6.34 (dd, 6.1, 1.8, H-3), 4.83 (dd, 6.1, 3.6, H-4), 2.65 (m, H-5), 4.90 (d, 6.4, H-6), 5.84 (br s, H-7), 2.74 (dd, 6.2, 5.0, H-9), 4.21 (br d, 11.2, H_2-10), 3.41 (br s, MeO-6), 4.48 (d, 7.9, H-1′); ^{13}C-NMR (100 MHz, DMSO-d_6): 95.5 (C-1), 140.6 (C-3), 101.6 (C-4), 38.4 (C-5), 84.6 (C-6), 125.8 (C-7), 149.3 (C-8), 46.2 (C-9), 59.4 (C-10), 56.3 (MeO), 98.2 (C-1′), 73.3 (C-2′), 77.0 (C-3′), 69.9 (C-4′), 76.6 (C-5′), 60.8 (C-6′). *Pedicularis artselaeri* (Scrophulariaceae).[38]

37. 6-*O*-*p*-Coumaroylaucubin



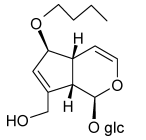
$C_{24}H_{28}O_{11}$: 492.1631; solid foam; $[\alpha]_D^{21}$ −152° (c=0.5, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.13 (d, 6.0, H-1), 6.30 (dd, 6.0, 1.8, H-3), 5.06 (dd, 6.0, 3.5, H-4), 2.95 (m, H-5), 5.43 (m, H-6), 5.85 (m, H-7), 3.07 (br t, 6.5, H-9), 4.21, 4.38 (each br d, 15.5, H_2-10), 4.67 (d, 8.0, H-1′), 3.20—3.40 (H-2′, 3′, 4′, 5′), 3.65 (dd-like, 12.0, 5.0, H-6′), 3.87 (dd, 12.0, 1.5, H-6′), 7.44, 6.79 (each d, 8.5, H-2″, 6″, 3″, 5″), 7.59 (d, 16.0, H-7″), 6.30 (d, 16.0, H-8″); ^{13}C-NMR (62.5 MHz, CD_3OD): 95.4 (C-1), 140.6 (C-3), 103.9 (C-4), 41.2 (C-5), 83.9 (C-6), 124.8 (C-7), 150.5 (C-8), 47.2 (C-9), 60.0 (C-10), 98.6 (C-1′), 73.7 (C-2′), 76.7 (C-3′), 70.4 (C-4′), 77.1 (C-5′), 61.5 (C-6′), 125.9 (C-1″), 130.0 (C-2″, 6″), 115.7 (C-3″, 5″), 160.2 (C-4″), 145.5 (C-7″), 114.0 (C-8″), 167.9 (C-9″). *Utricularia vulgaris* (Lentibulariaceae).[40]

38. 6-*O*-Butyl-*epi*-aucubin



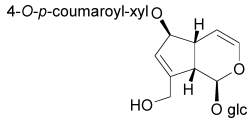
$C_{19}H_{30}O_9$: 402.1889; isolated as a mixture with 6β-epimer in a ratio 1 : 2; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.00 (d, 4.7, H-1), 6.33 (dd, 6.0, 1.5, H-3), 4.85 (dd, 6.0, 3.5, H-4), — (H-5), 4.93 (d, 6.7, H-6), 5.78 (br s, H-7), 2.87 (dd, 6.7, 4.7, H-9), — (H_2-10), 4.46 (d, 7.8, H-1′), 0.85 (t, H_3-1″), 1.32 (m, H_2-2″), 1.35 (m, H_2-3″), 4.28 (t, H_2-4″); ^{13}C-NMR (100 MHz, DMSO-d_6): 95.2 (C-1), 140.7 (C-3), 101.7 (C-4), 38.4 (C-5), 83.1 (C-6), 126.4 (C-7), 148.6 (C-8), 46.2 (C-9), 60.4 (C-10), 98.2 (C-1′), 73.4 (C-2′), 77.0 (C-3′), 70.0 (C-4′), 76.6 (C-5′), 60.6 (C-6′), 13.9 (C-1″), 18.7 (C-2″), 34.7 (C-3″), 68.2 (C-4″). *Pedicularis chinensis* (Scrophulariaceae).[41]

39. 6-*O*-Butylaucubin



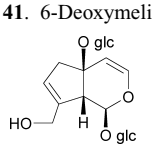
$C_{19}H_{30}O_9$: 402.1889; isolated as a mixture with 6α-epimer in a ratio 2 : 1; IR (MeOH): 3331, 2958, 2930, 1660, 1377, 1226, 1076, 1049, 699, 586; ^{1}H-NMR (400 MHz, DMSO-d_6): 4.95 (d, 5.0, H-1), 6.28 (dd, 6.0, 1.5, H-3), 4.83 (dd, 6.0, 5.6, H-4), 2.64 (m, H-5), 4.90 (d, 6.0, H-6), 5.74 (br s, H-7), 2.76 (dd, 6.8, 5.0, H-9), — (H_2-10), 4.47 (d, 7.8, H-1′), 3.00—3.50 (m, H-2′, 3′, 4′, 5′, 6′), 0.85 (t, H_3-1″), 1.30 (m, H_2-2″), 1.45 (m, H_2-3″), 4.35 (t, H_2-4″); ^{13}C-NMR (100 MHz, DMSO-d_6): 94.8 (C-1), 140.2 (C-3), 104.9 (C-4), 41.1 (C-5), 88.4 (C-6), 125.7 (C-7), 148.2 (C-8), 46.4 (C-9), 59.4 (C-10), 98.0 (C-1′), 73.4 (C-2′), 77.1 (C-3′), 70.1 (C-4′), 76.6 (C-5′), 61.0 (C-6′), 13.9 (C-1″), 18.9 (C-2″), 31.7 (C-3″), 68.7 (C-4″). *Pedicularis chinensis* (Scrophulariaceae).[41]

40. Phlomoidoside (6-*O*-(4″-*O*-*p*-Coumaroyl-β-D-xylopyranosyl)-aucubin)



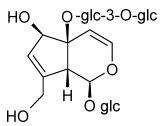
$C_{29}H_{36}O_{15}$: 624.5884; UV (MeOH): 225, 312; IR (KBr): 3400, 1690, 1650, 1620, 1605, 1510; ^{1}H-NMR (300 MHz, CD_3OD): 4.91 (d, 6.0, H-1), 6.31 (dd, 6.0, 1.4, H-3), 5.14 (dd, 6.0, 4.0, H-4), 2.89 (br s, H-5), 4.51 (br s, H-6), 5.90, (br s, H-7), 2.89 (br s, H-9), 4.18, 4.38 (each d, 15.4, H_2-10), 4.68 (d, 7.8, H-1′), 3.25 (dd, 9.0, 7.0, H-2′), 3.38 (t, 9.0, H-3′), 3.27 (t, 9.0, H-4′), 3.30 (m, H-5′), 3.85 (dd, 12.5, 1.5, H-6′), 3.64 (dd, 12.0, 4.0, H-6′), 4.38 (d, 7.5, H-1″), 3.20 (dd, 9.0, 7.8, H-2″), 3.65 (t, 9.0, H-3″), 4.81 (ddd, 9.5, 9.1, 5.5, H-4″), 3.25 (dd, 12.1, 9.0, H_a-5″), 4.05 (dd, 11.3, 5.4, H_b-5″), 7.47 (d, 8.5, H-2‴, 6‴), 6.81 (d, 8.5, H-3‴, 5‴), 7.68 (d, 16.0, H-7‴), 6.36 (d, 16.0, H-8‴); ^{13}C NMR (75 MHz, CD_3OD): 97.9 (C-1), 141.6 (C-3), 104.6 (C-4), 44.4 (C-5), 91.2 (C-6), 127.1 (C-7), 149.4 (C-8), 50.3 (C-9), 61.4 (C-10), 99.9 (C-1′), 75.1 (C-2′), 78.2 (C-3′), 71.5 (C-4′), 77.8 (C-5′), 62.6 (C-6′), 105.7 (C-1″), 73.1 (C-2″), 75.1 (C-3″), 74.8 (C-4″), 63.7 (C-5″), 127.6 (C-1‴), 131.2 (C-2‴, 6‴), 116.9 (C-3‴, 5‴), 161.3 (C-4‴), 147.1 (C-7‴), 114.7 (C-8‴), 168.6 (C-9‴). *Verbascum phlomoides* (Scrophulariaceae).[42]

41. 6-Deoxymelittoside



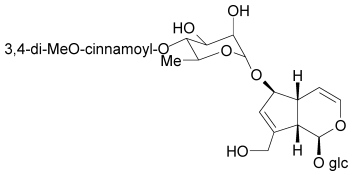
$C_{21}H_{32}O_{14}$: 508.1791; ^{1}H-NMR (500 MHz, D_2O): 5.31 (d, 6.8, H-1), 6.53 (d, 6.4, H-3), 5.20 (d, 6.4, H-4), 2.79 (br d, 17.5, H-6), 2.66 (d, 17.5, H-6), 5.85 (m, H-7), 3.32 (br d, 6.4, H-9), 4.79 (d, 8.1, H-1′), 3.24 (dd, 9.4, 8.0, H-2′), 3.35—3.54 (H-3′, 4′, 5′, 2″, 3″, 4″, 5″), 3.89 (H-6′, 6″), 3.72 (H-6′, 6″), 4.60 (d, 8.1, H-1″); ^{13}C-NMR (125 MHz, D_2O): 97.4 (C-1), 143.5 (C-3), 108.3 (C-4), 84.5 (C-5), 46.2 (C-6), 127.6 (C-7), 140.6 (C-8), 52.7 (C-9), 60.6 (C-10), 99.3 (C-1′), 73.5 (C-2′), 76.3 (C-3′), 70.3 (C-4′), 76.9 (C-5′), 61.5 (C-6′), 98.5 (C-1″), 73.9 (C-2″), 76.3 (C-3″), 70.2 (C-4″), 76.3 (C-5″), 61.3 (C-6″). *Plantago subulata* (Plantaginaceae).[39]

42. Sammangaoside C (Melittoside 3″-*O*-β-glucopyranoside)



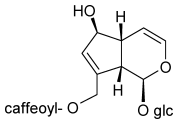
$C_{27}H_{42}O_{20}$: 686.2269; amorphous; $[\alpha]_D^{20}$ −36.1° (c=0.7 MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.63 (d, 3.7, H-1), 6.65 (d, 6.7, H-3), 5.15 (dd, 6.4, 1.1, H-4), 5.79 (br s, H-7), 4.59 (d, 7.8, H-1′), 4.74 (d, 7.8, H-1″), 4.54 (d, 7.8, H-1‴); ^{13}C-NMR (100 MHz, CD_3OD): 93.8 (C-1), 143.4 (C-3), 105.0 (C-4), 79.8 (C-5), 79.6 (C-6), 128.0 (C-7), 147.6 (C-8), 51.4 (C-9), 60.9 (C-10), 98.0 (C-1′), 74.9 (C-2′), 78.2 (C-3′)[a], 71.6 (C-4′)[b], 77.2 (C-5′), 62.8 (C-6′)[c], 99.3 (C-1″), 74.4 (C-2″), 88.3 (C-3″), 69.3 (C-4″), 77.8 (C-5″), 62.0 (C-6″), 105.2 (C-1‴), 75.5 (C-2‴), 78.5 (C-3‴)[a], 71.7 (C-4‴)[b], 77.8 (C-5‴), 62.6 (C-6‴)[c]. *Clerodendrum inerme* (Verbenaceae).[43]

43. Scrolepidoside (6-*O*-(4″-*O*-*trans*-(3,4-Dimethoxycinnamoyl)-α-L-rhamnopyranosyl)-aucubin)



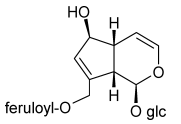
$C_{32}H_{42}O_{16}$: 682.2472; amorphous powder; $[\alpha]_D^{22}$ −140.0° (c=0.23, MeOH); UV (MeOH): 214, 240, 280 sh, 316; IR (film): 3374, 2922, 1705, 1632, 1599, 1514, 1453, 1260; ^{1}H-NMR (600 MHz, CD_3OD): 4.93 (d, 7.3, H-1), 6.34 (dd, 6.1, 1.8, H-3), 5.13 (dd, 6.1, 3.9, H-4), 2.82 (m, H-5), 4.48 (dd, 3.5, 1.7, H-6), 5.89 (br s, H-7), 2.92 (m, H-9), 4.19 and 3.38 (each d, 16.1, H_2-10), 4.69 (d, 8.0, H-1′), 3.22 (dd, 9.2, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.29 (overlapped, H-4′), 3.28 (overlapped, H-5′), 3.64 (dd, 12.0, 5.4, H-6′), 3.85 (overlapped, H-6′), 4.86 (d, 1.2, H-1″), 3.83 (overlapped, H-2″), 3.89 (overlapped, H-3″), 5.08 (t-like dd, 9.7, H-4″), 3.92 (overlapped, H-5″), 1.19 (d, 6.3, H_3-6″), 7.22 (d, 1.9, H-2‴), 6.97 (d, 8.4, H-5‴), 7.19 (dd, 8.4, 1.9, H-6‴), 7.67 (d, 15.9, H-7‴), 6.45 (d, 15.9, H-8‴), 3.87, 3.86 (each s, 2×MeO); ^{13}C-NMR (150 MHz, CD_3OD): 98.1 (C-1), 142.1 (C-3), 105.6 (C-4), 44.4 (C-5), 89.4 (C-6), 127.3 (C-7), 149.8 (C-8), 48.3 (C-9), 61.6 (C-10), 100.1 (C-1′), 75.1 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 101.4 (C-1″), 70.5 (C-2″), 72.8 (C-3″), 75.7 (C-4″), 68.5 (C-5″), 18.1 (C-6″), 128.9 (C-1‴), 111.8 (C-2‴), 150.9 (C-3‴), 153.0 (C-4‴), 112.8 (C-5‴), 124.2 (C-6‴), 146.9 (C-7‴), 116.6 (C-8‴), 168.8 (C-9‴), 56.6, 56.7 (2×OMe). *Scrophularia lepidota* (Scrophulariaceae).[44]

44. 10-*O*-Caffeoylaucubin



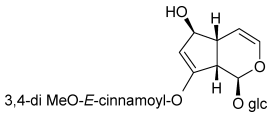
$C_{24}H_{28}O_{12}$: 492.1631; solid foam; $[\alpha]_D^{21}$ −73.0° (c=0.3, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 4.95 (d, 7.5, H-1), 6.33 (dd, 6.0, 1.8, H-3), 5.11 (dd, 6.0, 4.0, H-4), 2.68 (m, H-5), 4.46 (m, H-6), 5.79 (m, H-7), 2.95 (br t, 7.5, H-9), 4.80, 4.98 (each br d, 15.0, H_2-10), 4.69 (d, 8.0, H-1′), 3.20—3.40 (H-2′, 3′, 4′, 5′), 3.66 (dd, 12.0, 5.5, H-6′), 3.85 (dd, 12.0, 1.5, H-6′), 7.05 (br d, 1.5, H-2″), 6.78 (d, 8.0, H-5″), 6.95 (dd, 8.0, 1.5, H-6″), 7.58 (d, 16.0, H-7″), 6.30 (d, 16.0, H-8″); ^{13}C-NMR (62.5 MHz, CD_3OD): 96.8 (C-1), 140.5 (C-3), 104.3 (C-4), 45.0 (C-5), 81.6 (C-6), 131.2 (C-7), 141.5 (C-8), 47.2 (C-9), 62.2 (C-10), 98.9 (C-1′), 73.5 (C-2′), 76.6 (C-3′), 70.2 (C-4′), 76.9 (C-5′), 61.5 (C-6′), 126.4 (C-1″), 115.3 (C-2″)[a], 145.5 (C-3″), 148.4 (C-4″), 114.0 (C-5″)[a], 121.9 (C-6″), 146.2 (C-7″), 113.5 (C-8″), 166.6 (C-9″). *Utricularia vulgaris* (Lentibulariaceae).[40]

45. Acuminatuside (10-(*E*)-Feruloylaucubin)



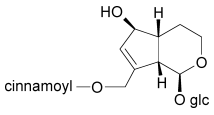
$C_{25}H_{30}O_{12}$: 522.1737; $[\alpha]_D^{23}$ −82.0° (c=0.1, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 4.89 (d, 7.4, H-1), 6.24 (dd, 6.1, 2.0, H-3), 5.04 (dd, 6.1, 3.8, H-4), 2.58 (m, H-5), 4.36 (ddd, 5.6, 1.9, 1.6, H-6), 5.71 (dd, 1.6, 1.3, H-7), 2.86 (br dd, 7.7, 7.4, H-9), 4.73 (H_2-10), 4.62 (d, 7.8, H-1′), 3.13 (dd, 9.1, 7.8, H-2′), 3.38 (dd, 9.1, 8.7, H-3′), 3.27 (H-4′), 3.16 (m, H-5′), 3.55 (dd, 12.0, 5.5, H-6′), 3.78 (dd, 12.0, 2.0, H-6′), 7.12 (d, 1.9, H-2″), 6.71 (d, 8.2, H-5″), 6.98 (dd, 8.2, 1.9, H-6″), 7.55 (d, 15.9, H-7″), 6.31 (d, 15.9, H-8″), 3.79 (s, MeO-3″); ^{13}C-NMR (75.5 MHz, CD_3OD): 98.0 (C-1), 141.8 (C-3), 105.5 (C-4), 46.4 (C-5), 82.9 (C-6), 132.5 (C-7), 142.8 (C-8), — (C-9), 63.4 (C-10), 100.2 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 126.9 (C-1″), 111.7 (C-2″), 151.4 (C-3″), 149.6 (C-4″), 116.6 (C-5″), 124.4 (C-6″), 147.4 (C-7″), 114.9 (C-8″), 168.9 (C-9″), 56.4 (MeO-3″). *Penstemon acuminatus* (Scrophulariaceae).[45]

46. 10-*O*-(3,4-Dimethoxy-(*E*)-cinnamoyl)-aucubin



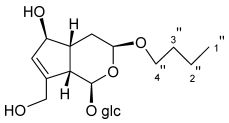
$C_{26}H_{32}O_{12}$: 536.1894; white amorphous powder, $[\alpha]_D^{24}$ −60.1° (c=0.28, MeOH); UV (?): 234, 296, 322; IR (?): 3448, 1700, 1630, 1598, 1510; ^{1}H-NMR (500 MHz, DMSO-d_6): 4.87 (d, 7.4, H-1), 6.37 (dd, 6.0, 2.0, H-3), 5.06 (dd, 6.0, 3.8, H-4), 2.58 (m, H-5), 4.37 (br s, H-6), 5.81 (br s, H-7), 2.85 (dd, 7.9, 7.4, H-9), 4.82 (s, H_2-10), 4.56 (d, 7.5, H-1′), 3.14 (dd, 9.1, 7.5, H-2′), 3.42 (dd, 9.1, 8.7, H-3′), 3.20 (m, H-4′), 3.19 (m, H-5′), 3.60 (m, H-6′), 3.65 (d, 11.9, H-6′), 6.60 (d, 15.9, H-8″), 7.64 (d, 15.9, H-7″), 7.35 (d, 1.9, H-2″), 7.00 (d, 8.0, H-5″), 7.26 (dd, 8.0, 1.9, H-6″), 3.81 (s, MeO), 3.82 (s, MeO); ^{13}C-NMR (125 MHz, DMSO-d_6): 95.7 (C-1), 140.3 (C-3), 104.6 (C-4), 44.6 (C-5), 80.5 (C-6), 132.4 (C-7), 139.8 (C-8), 46.5 (C-9), 61.7 (C-10), 98.3 (C-1′), 73.3 (C-2′), 76.5 (C-3′), 70.0 (C-4′), 77.0 (C-5′), 61.1 (C-6′), 166.2 (C-9″), 115.2 (C-8″), 148.9 (C-7″), 126.8 (C-1″), 111.5 (C-2″), 144.9 (C-3″), 151.0 (C-4″), 110.4 (C-5″), 148.9 (C-6″), 55.5, 55.6 (OMe). *Lagotis yunnanensis*.[46]

47. Sintenoside



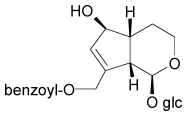
$C_{24}H_{30}O_{10}$: 478.1839; amorphous powder; $[\alpha]_D^{20}$ −73.9° (c=0.1, MeOH); UV (MeOH): 217, 275; IR (KBr): 3421, 1704, 1636, 1450; ^{1}H-NMR (600 MHz, CD_3OD): 4.95 (d, 5.7, H-1), 4.02 (m, H-3), 3.06 (m, H-3), 1.84 (m, H-4), 1.69 (m, H-4), 2.45 (m, H-5), 4.58 (br d, 5.3, H-6), 5.86 (br s, H-7), 2.86 (t, 6.6, H-9), 4.99 and 4.86 (each d, 14.5, H_2-10), 4.64 (d, 7.9, H-1′), 3.25 (dd, 8.7, 7.9, H-2′), 3.39 (t, 8.7, H-3′), 3.33 (t, 8.7, H-4′), 3.30 (m, H-5′), 3.88 (dd, 11.9, 1.6, H-6′), 3.68 (dd, 11.9, 5.3, H-6′), 7.67 (m, H-2″, 6″), 7.44 (m, H-3″, 4″, 5″), 7.77 (d, 16.2, H-7″), 6.62 (d, 16.2, H-8″); ^{13}C-NMR (150 MHz, CD_3OD): 99.4 (C-1), 61.7 (C-3), 25.3 (C-4), 46.1 (C-5), 79.3 (C-6), 132.1 (C-7), 143.8 (C-8), 48.6 (C-9), 63.5 (C-10), 99.6 (C-1′), 75.0 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.2 (C-5′), 62.9 (C-6″), 135.7 (C-1″), 129.3 (C-2″, 6″), 130.6 (C-3″, 5″), 131.6 (C-4″), 146.7 (C-7″), 118.6 (C-8″), 168.3 (C-9″). *Globularia sintenisii* (Globulariaceae).[47]

48. 3β-Butoxy-3,4-dihydroaucubin



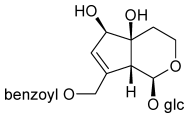
$C_{19}H_{32}O_{10}$: 420.1995; amorphous light yellow powder; $[\alpha]_D^{15}$ −26.2° (c=0.275, MeOH); IR (MeOH): 3334, 2991, 1661, 1446, 1240, 1076, 1036, 633; ^{1}H-NMR (400 MHz, D_2O): 4.85 (d, 5.8, H-1), 4.73 (dd, 9.0, 3.7, H-3), 1.75 (m, H_2-4), 2.63 (m, H-5), 4.88 (d, 6.0, H-6), 5.53 (br s, H-7), 2.28 (m, H-9), 4.50 (br d, 15.5, H_2-10), 5.05 (d, 7.8, H-1′), 3.00—4.25 (m, H-2′, 3′, 4′, 5′, 6′), 0.66 (t, H_3-1″), 1.10 (m, H_2-2″), 1.35 (m, H_2-3″), 4.00 (t, H_2-4″); ^{13}C-NMR (100 MHz, D_2O): 98.6 (C-1), 99.1 (C-3), 30.2 (C-4), 44.8 (C-5), 80.6 (C-6), 130.4 (C-7), 147.5 (C-8), 48.1 (C-9), 60.8 (C-10), 99.0 (C-1′), 74.1 (C-2′), 77.4 (C-3′), 70.8 (C-4′), 77.0 (C- 5′), 61.8 (C-6′), 14.3 (C-1″), 19.8 (C-2″), 32.1 (C-3″), 70.3 (C-4″). *Pedicularis chinensis* (Scrophulariaceae).[41]

49. Davisioside



$C_{22}H_{28}O_{10}$: 452.1682; white amorphous powder; $[\alpha]_D^{20}$ −69.0° (c=0.48, MeOH); UV (MeOH): 229, 274; IR (KBr): 3421, 1715, 1654, 1508, 1451; ^{1}H-NMR (400 MHz, CD_3OD): 4.96 (d, 6.0, H-1), 3.99 (m, H_α-3), 3.58 (m, H_β-3), 1.66 (m, H_α-4), 1.81 (m, H_β-4), 2.43 (m, H-5), 4.56 (br d, 5.5, H-6), 5.86 (br s, H-7), 2.86 (t, 6.0, H-9), 5.08 and 4.94 (each d, 14.7, H_2-10), 4.60 (d, 7.8, H-1′), 3.20 (dd, 8.9, 7.8, H-2′), 3.36 (t, 8.9, H-3′), 3.26 (overlapped, H-4′), 3.25 (overlapped, H-5′), 3.80 (dd, 11.9, 1.6, H-6′), 3.64 (dd, 11.9, 5.2, H-6′), 8.06 (dd, 7.4, 1.3, H-2″, 6″), 7.49 (t, 7.4, H-3″, 5″), 7.62 (tt, 7.4, 1.3, H-4″); ^{13}C-NMR (100 MHz, CD_3OD): 95.5 (C-1), 61.7 (C-3), 25.3 (C-4), 46.1 (C-5), 79.3 (C-6), 132.2 (C-7), 143.8 (C-8), 48.6 (C-9), 63.9 (C-10), 99.6 (C-1′), 74.9 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.2 (C-5′), 62.8 (C-6′), 131.3 (C-1″), 130.6 (C-2″, 6″), 129.6 (C-3″, 5″), 134.4 (C-4″), 167.7 (C-7″). *Globularia davisiana* (Globurariaceae).[48]

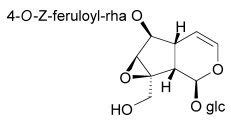
50. 5-Hydroxydavisioside



$C_{22}H_{28}O_{11}$: 468.1631; amorphous powder; $[\alpha]_D^{20}$ −76.0° (c=0.1, MeOH); UV (MeOH): 231, 275; IR (KBr): 3415, 1739, 1475, 1438; ^{1}H-NMR (500 MHz, CD_3OD): 5.26 (d, 3.4, H-1), 4.15 (overlapped, H_a-3), 3.50 (m, H_b-3), 1.88 (m, H-4), 1.62 (m, H-4), 4.15 (overlapped, H-6), 5.89 (br s, H-7), 2.81 (br s, H-9), 5.00 (d, 12.5, H-10), 4.96 (d, 12.5, H-10), 4.57 (d, 7.9, H-1′), 3.24 (dd, 9.0, 7.9, H-2′), 3.37 (t, 9.0, H-3′), 3.27 (overlapped, H-4′), 3.25 (overlapped, H-5′), 3.79 (dd, 11.9, 1.8, H-6′), 3.59 (dd, 11.9, 5.5, H-6′), 8.07 (dd, 7.5, 1.5, H-2″, 6″), 7.50 (t, 7.5, H-3″, 5″), 7.62 (m, H-4″); ^{13}C-NMR (125 MHz, CD_3OD): 96.5 (C-1), 58.2 (C-3), 33.3 (C-4), 77.4 (C-5), 79.3 (C-6), 130.3 (C-7), 143.5 (C-8), 53.6 (C-9),

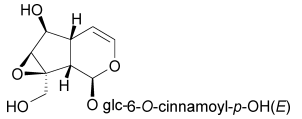
63.5 (C-10), 99.7 (C-1′), 74.7 (C-2′), 77.7 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.8 (C-6′), 131.2 (C-1″), 130.7 (C-2″, 6″), 129.7 (C-3″, 5″), 134.4 (C-4″), 167.6 (C-7″). *Globularia cordifolia* (Globulariaceae).[49]

51. 6-*O*-α-L-(4″-*O*-*cis*-Feruloyl)-rhamnopyranosylcatalpol



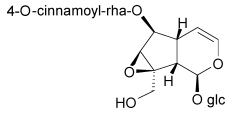
$C_{31}H_{40}O_{17}$: 684. 2265; isolated as a mixture with 4″-*O*-*trans* feruloyl isomer; pale yellow powder; ^{1}H-NMR (400 MHz, CD_3OD): 5.07 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.03—5.10 (m, H-4, 4″), 2.41 (m, H-5), 4.20 (dd, 8.0, 2.0, H-6), 3.64 (br s, H-7), 2.55 (dd, 10.0, 8.0, H-9), 3.81 and 4.14 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.25 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.24 (dd, 10.0, 8.0, H-4′), 3.30 (m, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.85—3.93 (m, H-6′, H-2″, 3″, 5″), 4.98 (d, 2.0, H-1″), 1.15 (d, 6.0, H_3-6″), 7.76 (d, 2.0, H-2‴) 6.75 (d, 8.0, H-5‴), 7.13 (dd, 8.0, 2.0, H-6‴), 6.90 (d, 13.0, H-7‴), 5.83 (d, 13.0, H-8‴). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).[50]

52. Picroside IV



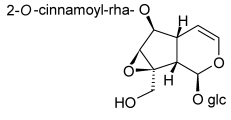
$C_{24}H_{28}O_{12}$: 508.1580; yellow amorphous powder; $[\alpha]_D$ −84.8° (c=0.08, MeOH); UV (MeOH): 195 (4.12), 203 (4.50), 227 (4.33), 313 (4.58), 377 (2.57); IR (KBr): 1720, 1650, 1600, 1580, 1210; ^{1}H-NMR (400 MHz, C_5D_5N): 5.53 (d, 10.0, H-1), 6.46 (dd, 6.0, 1.5, H-3), 5.32 (dd, 6.0, 4.5, H-4), 2.84 (tdd, 8.0, 4.5, 1.5, H-5), 4.32 (d, 8.0, H-6), 3.87 (s, H-7), 2.92 (dd, 10.0, 8.0, H-9), 4.66 and 4.46 (each d, 13.0, H_2-10), 5.50 (d, 8.0, H-1′), 4.16 (t, 8.0, H-2′), 4.29 (dd, 9.0, 8.0, H-3′), 4.18 (t, 9.0, H-4′), 4.09 (m, H-5′), 5.01 (dd, 12.0, 2.0, H-6′), 4.87 (dd, 12.0, 5.0, H-6′), 7.52 (d, 8.5, H-2″, 6″), 7.11 (d, 8.5, H-3″, 5″), 7.94 (d, 16.0, H-7″), 6.56 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, C_5D_5N): 95.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.2 (C-5), 79.1 (C-6), 62.3 (C-7), 66.1 (C-8), 43.5 (C-9), 60.9 (C-10), 100.4 (C-1′), 74.9 (C-2′), 78.1 (C-3′), 71.1 (C-4′), 75.9 (C-5′), 63.8 (C-6′), 126.1 (C-1″), 130.7 (C-2″, 6″), 116.7 (C-3″, 5″), 161.4 (C-4″), 145.4 (C-7″), 115.0 (C-8″), 167.4 (C-9″). *Picrorhiza scrophulariiflora*.[51]

53. 6-*O*-α-L-(4″-*O*-*trans*-Cinnamoyl)rhamnopyranosylcatalpol



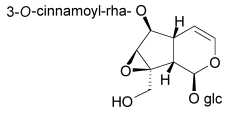
$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; $[\alpha]_D^{24}$ −150.0° (c=0.20, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.08 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.42 (m, H-5), 4.04 (dd, 8.0, 2.0, H-6), 3.65 (d, 2.0, H-7), 2.56 (dd, 10.0, 8.0, H-9), 1.81 and 4.13 (each d, 13.0, H_2-10), 4.77 (d, 8.0, H-1′), 3.25 (dd, 9.0, 8.0, H-2′), 3.40 (dd, 9.0, 8.0, H-3′), 3.24 (dd, 10.0, 8.0, H-4′), 3.30 (m, partially overlapped by solvent signal, H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 4.99 (d, 2.0, H-1″), 3.88—3.95 (overlapped, H-2″, 3″, 5″), 5.09 (t, 10.0, H-4″), 1.17 (d, 6.0, H_3-6″), 7.62 (m, H-2‴, 6‴), 7.41 (m, H-3‴, 4‴, 5‴), 7.73 (d, 16.1, H-7‴), 6.58 (d, 16.0, H-8‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.2 (C-1), 142.3 (C-3), 103.5 (C-4), 37.4 (C-5), 84.2 (C-6), 59.5 (C-7), 66.6 (C-8), 43.4 (C-9), 61.5 (C-10), 99.8 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 100.5 (C-1″), 72.5 (C-2″), 70.3 (C-3″), 75.6 (C-4″), 68.3 (C-5″), 17.9 (C-6″), 135.8 (C-1‴), 129.3 (C-2‴, 6‴), 130.0 (C-3‴, 5‴), 131.6 (C-4‴), 146.7 (C-7‴), 118.9 (C-8‴), 168.3 (C-9‴). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).[50]

54. 6-*O*-α-L-(2″-*O*-*trans*-Cinnamoyl)-rhamnopyranosylcatalpol



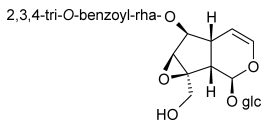
$C_{30}H_{38}O_{15}$: 638.2210; isolated as a mixture with 3″-*O*-cinnamoyl isomer; ^{1}H-NMR (400 MHz, CD_3OD): 5.08 (d, 10.0, H-1), 6.37 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4), 2.45 (m, H-5), 4.03 (dd, 8.0, 2.0, H-6), 3.65 (br s, H-7), 2.56 (dd, 10.0, 8.0, H-9), 3.81 and 4.15 (each d, 13.0, H_2-10), 4.77 (d, 8.0, H-1′), 3.22—3.29 (overlapped, H-2′, 4′), 3.38 (t, 9.0, H-3′), 3.30 (m, partially overlapped by solvent signal, H-5′), 3.63 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 5.04 (d, 2.0, H-1″), 5.16 (dd, 4.0, 2.0, H-2″), 3.92 (dd, 9.0, 4.0, H-3″), 3.48 (t, 9.0, H-4″), 3.73—3.86 (overlapped, H-5″), 1.30 (d, 6.0, H_3-6″), 7.63 (m, H-2‴, 6‴), 7.41 (m, H-3‴, 4‴, 5‴), 7.75 (d, 16.0, H-7‴), 6.60 (d, 16.0, H-8‴). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).[50]

55. 6-*O*-α-L-(3″-*O*-*trans*-Cinnamoyl)-rhamnopyranosylcatalpol



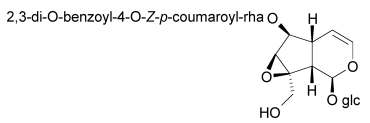
$C_{30}H_{38}O_{15}$: 638.2210; isolated as a mixture with 2″-*O*-cinnamoyl isomer; ^{1}H-NMR (400 MHz, CD_3OD): 5.10 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.13 (dd, 6.0, 5.0, H-4), 2.45 (m, H-5), 4.05 (dd, 8.0, 2.0, H-6), 3.66 (br s, H-7), 2.57 (dd, 10.0, 8.0, H-9), 3.83 and 4.15 (each d, 13.0, H_2-10), 4.78 (d, 8.0, H-1′), 3.22—3.29 (overlapped, H-2′, 4′), 3.39 (t, 9.0, H-3′), 3.30 (m, partially overlapped by solvent signal, H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 4.98 (d, 2.0, H-1″), 4.09 (dd, 4.0, 2.0, H-2″), 5.12 (dd, 9.0, 4.0, H-3″), 3.69 (t, 9.0, H-4″), 3.73—3.86 (overlapped, H-5″), 1.32 (d, 6.0, H_3-6″), 7.63 (m, H-2‴, 6‴) 7.41 (m, H-3‴, 4‴, 5‴), 7.78 (d, 16.0, H-7‴), 6.61 (d, 16.0, H-8‴). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).[50]

56. 6-*O*-α-L-(2″-*O*-,3″-*O*-,4″-*O*-Tribenzoyl)-rhamnopyranosylcatalpol



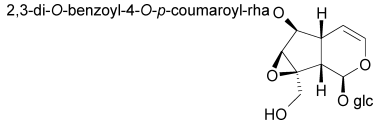
$C_{42}H_{46}O_{17}$: 822.2734; white amorphous powder; $[\alpha]_D^{22}$ −56.0° (c=0.11, MeOH), ^{1}H-NMR (500 MHz, CD_3OD): 5.13 (d, 10.0, H-1), 6.43 (dd, 6.0, 2.0, H-3), 5.19 (dd, 6.0, 5.0, H-4), 2.59 (m, H-5), 4.18 (dd, 8.0, 1.0, H-6), 3.75 (br s, H-7), 2.63 (dd, 10.0, 8.0, H-9), 3.83 and 4.18 (each d, 13.0, H_2-10), 4.78 (d, 8.0, H-1′), 3.27 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.24 (dd, 10.0, 8.0, H-4′), 3.30 (m, overlapped by solvent signal, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.32 (d, 2.0, H-1″), 5.72 (dd, 3.0, 2.0, H-2″), 5.79 (dd, 10.0, 3.0, H-3″), 5.64 (t, 10.0, H-4″), 4.35 (m, H-5″), 1.35 (d, 6.0, H_3-6″), 8.08 (m, H-2‴, 6‴), 7.55 (m, H-3‴, 5‴), 7.68 (m, H-4‴), 7.74 (m, H-2⁗, 6⁗), 7.27 (m, H-3⁗, 5⁗), 7.46 (m, H-4⁗), 7.95 (m, H-2⁗, 6⁗), 7.41 (m, H-3⁗, 5⁗), 7.55 (m, H-4⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 142.6 (C-3), 103.3 (C-4), 37.3 (C-5), 85.4 (C-6), 59.6 (C-7), 66.6 (C-8), 43.4 (C-9), 61.5 (C-10), 99.8 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′), 98.1 (C-1″), 72.1 (C-2″), 71.6 (C-3″), 73.1 (C-4″), 68.3 (C-5″), 17.9 (C-6″), 130.7 (C-1‴), 130.8 (C-2‴, 6‴), 129.9 (C-3‴, 5‴), 134.9 (C-4‴), 166.9 (C-7‴), 130.4 (C-1⁗), 130.5 (C-2⁗, 6⁗), 129.4 (C-3⁗, 5⁗), 134.5 (C-4⁗), 166.8 (C-7⁗), 130.5 (C-1⁗′), 130.6 (C-2⁗′, 6⁗′), 129.7 (C-3⁗′, 5⁗′), 134.7 (C-4⁗′), 167.3 (C-7⁗′). *Gmelina philippensis* (Verbenaceae).[52]

57. 6-*O*-α-L-(2″-*O*-,3″-*O*-Dibenzoyl,4″-*O*-*cis*-*p*-coumaroyl)rhamnopyranosylcatalpol



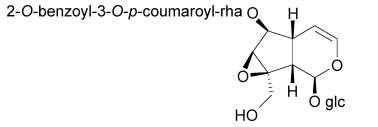
$C_{44}H_{46}O_{18}$: 862.2683; isolated as a mixture with 4″-*O*-*trans* coumaroyl isomer; ^{1}H-NMR (500 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 5.0, H-4), 2.57 (m, H-5), 4.13 (dd, 8.0, 1.0, H-6), 3.72 (d, 1.0, H-7), 2.61 (dd, 10.0, 8.0, H-9), 3.82 and 4.16 (each d, H_2-10), 4.77 (d, 8.0, H-1′), 3.26 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.24 (dd, 10.0, 8.0, H-4′), 3.30 (m, overlapped by solvent signal, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.27 (d, 2.0, H-1″), 5.69 (dd, 3.0, 2.0, H-2″), 5.57 (dd, 10.0, 3.0, H-3″), 5.46 (t, 10.0, H-4″), 4.15 (m, H-5″), 1.31 (d, 6.0, H_3-6″), 8.05 (m, H-2‴, 6‴), 7.53 (m, H-3‴, 5‴), 7.66 (m, H-4‴), 7.82 (m, H-2⁗, 6⁗), 7.29 (m, H-3⁗, 5⁗), 7.49 (m, H-4⁗), 7.48 (m, H-2⁗′, 6⁗′), 6.63 (m, H-3⁗′, 5⁗′), 6.83 (d, 13.0, H-7⁗′), 5.67 (d, 13.0, H-8⁗′); ^{13}C-NMR (125 MHz, CD_3OD): 95.1 (C-1), 142.6 (C-3), 103.2 (C-4), 37.2 (C-5), 84.8 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′), 97.7 (C-1″), 71.8 (C-2″)[a], 71.8 (C-3″)[a], 72.2 (C-4″), 68.1 (C-5″), 17.9 (C-6″), 130.7 (C-1‴), 130.8 (C-2‴, 6‴), 129.8 (C-3‴, 5‴), 134.8 (C-4‴), 167.0 (C-7‴), 130.5 (C-1⁗), 130.6 (C-2⁗, 6⁗), 129.5 (C-3⁗, 5⁗), 134.6 (C-4⁗), 166.8 (C-7⁗), 127.0 (C-1⁗′), 133.8 (C-2⁗′, 6⁗′), 116.1 (C-3⁗′, 5⁗′), 161.1 (C-4⁗′), 147.3 (C-7⁗′), 114.9 (C-8⁗′), 167.0 (C-9⁗′). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).[52]

58. 6-*O*-α-L-(2″-*O*-,3″-*O*-Dibenzoyl,4″-*O*-*trans*-*p*-coumaroyl)rhamnopyranosylcatalpol



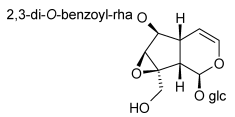
$C_{44}H_{46}O_{18}$: 862.2683; isolated as a mixture with 4″-*O*-*cis*-coumaroyl isomer; ^{1}H-NMR (500 MHz, CD_3OD): 5.12 (d, 10.0, H-1), 6.42 (dd, 6.0, 2.0, H-3), 5.17 (dd, 6.0, 5.0, H-4), 2.57 (m, H-5), 4.15 (dd, 8.0, 1.0, H-6), 3.74 (d, 1.0, H-7), 2.63 (dd, 10.0, 8.0, H-9), 3.83 and 4.17 (each d, 13.0, H_2-10), 4.78 (d, 8.0, H-1′), 3.27 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.25 (dd, 10.0, 8.0, H-4′), 3.30 (m, overlapped with solvent signal, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.28 (d, 2.0, H-1″), 5.70 (dd, 3.0, 2.0, H-2″), 5.67 (dd, 10.0, 3.0, H-3″), 5.51 (t, 10.0, H-4″), 4.25 (m, H-5″), 1.32 (d, 6.0, H_3-6″), 8.06 (m, H-2‴, 6‴), 7.53 (m, H-3‴, 5‴), 7.66 (m, H-4‴), 7.80 (m, H-2⁗, 6⁗), 7.31 (m, H-3⁗, 5⁗), 7.49 (m, H-4⁗), 7.36 (m, H-2⁗′, 6⁗′), 6.70 (m, H-3⁗′, 5⁗′), 7.57 (d, 16.0, H-7⁗′), 6.20 (d, 16.0, H-8⁗′); ^{13}C-NMR (125 MHz, CD_3OD): 95.1 (C-1), 142.6 (C-3), 103.2 (C-4), 37.3 (C-5), 85.1 (C-6), 59.5 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′), 97.9 (C-1″), 71.8 (C-2″), 71.8 (C-3″), 71.9 (C-4″), 68.4 (C-5″), 17.9 (C-6″), 130.7 (C-1‴), 130.8 (C-2‴, 6‴), 129.8 (C-3‴, 5‴), 134.8 (C-4‴), 166.8 (C-7‴), 130.5 (C-1⁗), 130.6 (C-2⁗, 6⁗), 129.5 (C-3⁗, 5⁗), 134.5 (C-4⁗), 166.8 (C-7⁗), 126.1 (C-1⁗′), 131.5 (C-2⁗′, 6⁗′), 117.3 (C-3⁗′, 5⁗′), 163.1 (C-4⁗′), 148.2 (C-7⁗′), 113.2 (C-8⁗′), 168.4 (C-9⁗′). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).[52]

59. 6-*O*-α-L-(2″-*O*-Benzoyl,3″-*O*-*trans*-*p*-coumaroyl)rhamnopyranosylcatalpol



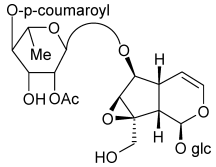
$C_{37}H_{42}O_{17}$: 758.2421; ^{1}H-NMR (500 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.39 (dd, 6.0, 2.0, H-3), 5.14 (dd, 6.0, 5.0, H-4), 2.52 (m, H-5), 4.10 (dd, 8.0, 1.0, H-6), 3.68 (br s, H-7), 2.59 (dd, 10.0, 8.0, H-9), 3.81 and 4.15 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.26 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.24 (dd, 10.0, 8.0, H-4′), 3.30 (m, overlapped with solvent peak, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H_b-6′), 5.16 (d, 2.0, H-1″), 5.54 (dd, 3.0, 2.0, H-2″), 5.32 (dd, 10.0, 3.0, H-3″), 3.76 (t, 10.0, H-4″), 3.95 (m, H-5″), 1.38 (d, 6.0, H_3-6″), 8.05 (m, H-2‴, 6‴), 7.51 (m, H-3‴, 5‴), 7.65 (m, H-4‴), 7.27 (m, H-2⁗′, 6⁗′), 6.71 (m, H-3⁗′, 5⁗′), 7.50 (d, 16.0, H-7⁗′), 6.19 (d, 16.0, H-8⁗′); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.2 (C-5), 84.4 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′), 97.7 (C-1″), 72.2 (C-2″), 73.0 (C-3″), 71.9 (C-4″), 70.3 (C-5″), 18.1 (C-6″), 130.7 (C-1‴), 130.8 (C-2‴, 6‴), 129.8 (C-3‴, 5‴), 134.7 (C-4‴), 166.9 (C-7‴), 126.5 (C-1⁗′), 131.2 (C-2⁗′, 6⁗′), 117.1 (C-3⁗′, 5⁗′), 162.5 (C-4⁗′), 147.2 (C-7⁗′), 114.2 (C-8⁗′), 168.5 (C-9⁗′). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).[52]

60. 6-*O*-α-L-(2″-*O*-,3″-*O*-Dibenzoyl)rhamnopyranosylcatalpol



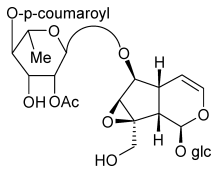
$C_{35}H_{40}O_{16}$: 716.2316; ^{1}H-NMR (500 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.16 (dd, 6.0, 5.0, H-4), 2.54 (m, H-5), 4.12 (dd, 8.0, 1.0, H-6), 3.71 (br s, H-7), 2.60 (dd, 10.0, 8.0, H-9), 3.82 and 4.16 (each d, 13.0, H_2-10), 4.78 (d, 8.0, H-1′), 3.26 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.25 (dd, 10.0, 8.0, H-4′), 3.30 (m, overlapped with solvent signal, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H_b-6′), 5.19 (d, 2.0, H-1″), 5.61 (dd, 3.0, 2.0, H-2″), 5.47 (dd, 10.0, 3.0, H-3″), 3.48 (t, 10.0, H-4″), 3.99 (m, H-5″), 1.41 (d, 6.0, H_3-6″), 8.02 (m, H-2‴, 6‴), 7.51 (m, H-3‴, 5‴), 7.64 (m, H-4‴), 7.89 (m, H-2⁗′, 6⁗′), 7.35 (m, H-3⁗′, 5⁗′), 7.53 (m, H-4⁗′); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.3 (C-5), 84.5 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′), 97.8 (C-1″), 72.1 (C-2″), 73.8 (C-3″), 71.9 (C-4″), 70.4 (C-5″), 18.1 (C-6″), 130.7 (C-1‴), 130.8 (C-2‴, 6‴), 129.8 (C-3‴, 5‴), 134.7 (C-4‴), 166.9 (C-7‴), 130.5 (C-1⁗′), 130.6 (C-2⁗′, 6⁗′), 129.4 (C-3⁗′, 5⁗′), 134.3 (C-4⁗′), 167.3 (C-7⁗′). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).[52]

61. Scrophuloside A_2



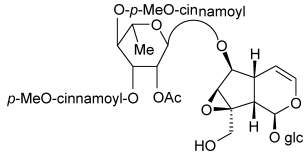
$C_{32}H_{40}O_{17}$: 696.2265; amorph. powder, $[\alpha]_D^{23}$ −151.0° (*c*=0.15, MeOH); UV (MeOH): 226 (4.19), 301 sh (4.28), 314 (4.34); ^{1}H-NMR (400 MHz, CD_3OD): 5.08 (d, 1.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.06 (superimposed, H-4), 2.44 (m, H-5), 4.03 (dd, 8.0, 1.0, H-6), 3.64 (br s, H-7), 2.57 (dd, 10.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.77 (d, 7.5, H-1′), 3.26 (superimposed, H-2′), 3.39 (dd, 9.0, 9.0, H-3′), 3.26 (superimposed, H-4′), 3.32 (m, H-5′), 3.62 (dd, 12.6, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.02 (d, 2.0, H-1″), 5.11 (dd, 3.0, 2.0, H-2″), 4.12 (dd, 10.0, 3.0, H-3″), 5.03 (dd, 10.0, 10.0, H-4″), 3.93 (m, H-5″), 1.18 (d, 6.0, H_3-6″), 2.16 (s, AcO-2″), 6.38 (d, 16.0, H-8‴), 7.67 (d, 16.0, H-7‴), 7.48 (d, 9.0, H-2‴, 6‴), 6.81 (d, 9.0, H-3‴, 5‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.0 (C-4), 37.2 (C-5), 84.8 (C-6), 59.5 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1′), 75.1 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 97.7 (C-1″), 74.2 (C-2″, 6″), 68.4 (C-3″), 74.8 (C-4″), 68.3 (C-5″), 17.8 (C-6″), 20.8, 172.2 (AcO-2″), 168.6 (C-9‴), 114.9 (C-8‴), 147.1 (C-7‴), 127.1 (C-1‴), 131.2 (C-2‴, 6‴), 116.8 (C-3‴, 5‴), 161.3 (C-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

62. Scrophuloside A_3



$C_{32}H_{40}O_{17}$: 696.2265; amorphous powder, $[\alpha]_D^{23}$ −161.3° (*c*=0.19, MeOH); UV (MeOH): 228 (4.30), 302 sh (4.34), 315 (4.41); ^{1}H-NMR (400 MHz, CD_3OD): 5.10 (d, 10.0, H-1), 6.40 (dd, 6.0, 2.0, H-3), 5.10 (superimposed, H-4), 2.47 (m, H-5), 4.05 (dd, 8.0, 1.0, H-6), 3.67 (br s, H-7), 2.58 (dd, 10.0, 7.5, H-9), 3.83 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.78 (d, 8.0, H-1′), 3.26 (superimposed, H-2′), 3.40 (dd, 9.0, 9.0, H-3′), 3.26 (superimposed, H-4′), 3.31 (m, H-5′), 3.92 (dd, 12.6, 2.0, H-6′), 5.02 (d, 2.0, H-1″), 4.08 (dd, 3.0, 2.0, H-2″), 5.22 (dd, 10.0, 3.0, H-3″), 5.27 (dd, 10.0, 10.0, H-4″), 4.12 (m, H-5″), 1.20 (d, 6.0, H_3-6″), 2.00 (s, AcO-3″), 6.31 (d, 16.0, H-8‴), 7.63 (d, 16.0, H-7‴), 7.47 (d, 9.0, H-2‴, 6‴), 6.81 (d, 9.0, H-3‴, 5‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.3 (C-3), 103.0 (C-4), 37.2 (C-5), 84.3 (C-6), 59.4 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 100.3 (C-1″), 70.1 (C-2″), 73.1 (C-3″), 72.2 (C-4″), 68.3 (C-5″), 17.8 (C-6″), 20.8, 172.0 (AcO-3″), 168.2 (C-9‴), 114.3 (C-8‴), 147.3 (C-7‴), 127.0 (C-1‴), 131.3 (C-2‴, 6‴), 116.8 (C-3‴, 5‴), 161.5 (C-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

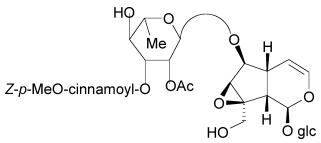
63. Scrophuloside A_4



$C_{43}H_{50}O_{19}$: 870.2945; amorphous powder, $[\alpha]_D^{23}$ +49.3° (*c*=0.74, MeOH); UV (MeOH): 227 (4.43), 300 sh (4.69), 311 (4.73); ^{1}H-NMR (400 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.12 (superimposed, H-4), 2.52 (m, H-5), 4.09 (dd, 8.0, 1.0, H-6), 3.69 (br s, H-7), 2.61 (dd, 10.0, 7.5, H-9), 3.84 (d, 13.0, H-10), 4.17 (d, 13.0, H-10), 4.79 (d, 8.0, H-1′), 3.27 (superimposed, H-2′), 3.41 (dd, 9.0, 9.0, H-3′), 3.27 (superimposed, H-4′), 3.33 (m, H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.93 (dd, 12.0, 2.0, H-6′), 5.11 (superimposed, H-1″), 5.39 (dd, 3.0, 2.0, H-2″), 5.48 (dd, 10.0, 3.0, H-3″), 5.28 (dd, 10.0, 10.0, H-4″), 4.13 (m, H-5″), 1.25 (d, 6.0, H_3-6″), 2.17 (s, AcO-2″), 6.34 (d, 16.0, H-8⁗′), 7.64 (d, 16.0, H-7⁗′), 7.48 (d, 9.0, H-2⁗′, 6⁗′), 6.89 (d, 9.0, H-3⁗′, 5⁗′), 3.79 (s, MeO-4⁗′), 6.23 (d, 16.0, H-8‴), 7.55 (d, 16.0, H-7‴), 7.44 (d, 9.0, H-2‴, 6‴), 6.88 (d, 9.0, H-3‴, 5‴), 3.79 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 84.9 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 97.7 (C-1″), 71.5 (C-2″), 70.6 (C-3″), 72.2 (C-4″), 68.3 (C-5″), 17.8

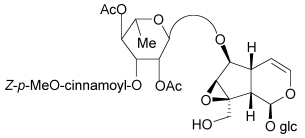
(C-6″), 20.7, 171.6 (AcO-2″), 167.7 (C-9‴), 115.0 (C-8‴), 147.2 (C-7‴), 128.0 (C-1‴), 131.1 (C-2‴, 6‴), 115.3 (C-3‴, 5‴), 163.3 (C-4‴), 55.8 (MeO-4‴), 168.0 (C-9⁗), 115.0 (C-8⁗), 147.7 (C-7⁗), 128.0 (C-1⁗), 131.0 (C-2⁗, 6⁗), 115.3 (C-3⁗, 5⁗), 163.2 (C-4⁗). *Scrophularia nodosa* (Scrophulariaceae).[53]

64. Scrophuloside A_5



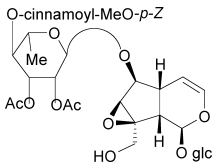
$C_{33}H_{42}O_{17}$: 710.2421; amorphous powder, $[\alpha]_D^{23}$ −94.8° (c=0.30, MeOH); UV (MeOH): 225 (4.10), 300 sh (4.26), 310 (4.29); ^{1}H-NMR (400 MHz, CD_3OD): 5.09 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.10 (superimposed, H-4), 2.47 (m, H-5), 4.04 (dd, 8.0, 1.0, H-6), 3.65 (br s, H-7), 2.57 (dd, 9.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.14 (d, 13.0, H-10), 4.77 (d, 7.5, H-1′), 3.25 (superimposed, H-2′, 4′), 3.39 (dd, 9.0, 9.0, H-3′), 3.32 (m, H-5′), 3.61 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.00 (d, 2.0, H-1″), 5.27 (dd, 3.0, 2.0, H-2″), 5.19 (dd, 10.0, 3.0, H-3″), 3.56 (dd, 10.0, 10.0, H-4″), 3.86 (m, H-5″), 1.31 (d, 6.0, H_3-6″), 2.02 (s, AcO-2″), 5.80 (d, 13.0, H-8‴), 6.91 (d, 13.0, H-7‴), 7.69 (d, 9.0, H-2‴, 6‴), 6.89 (d, 9.0, H-3‴, 5‴), 3.82 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.3 (C-3), 103.3 (C-4), 37.2 (C-5), 84.3 (C-6), 59.3 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1′), 74.8 (C-2′), 78.6 (C-3′), 71.8 (C-4′), 77.7 (C-5′), 62.9 (C-6′), 97.5 (C-1″), 71.4 (C-2″), 71.6 (C-3″), 72.6 (C-4″), 70.3 (C-5″), 17.9 (C-6″), 20.6, 171.7 (AcO-2″), 167.3 (C-9‴), 117.1 (C-8‴), 144.9 (C-7‴), 128.7 (C-1‴), 133.3 (C-2‴), 114.4 (C-3‴, 5‴), 162.1 (C-4‴), 113.3 (C-6‴), 55.7 (MeO-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

65. Scrophuloside A_6



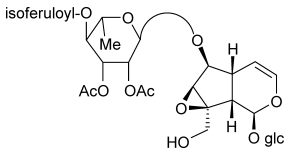
$C_{35}H_{44}O_{18}$: 752.2527; amorphous powder; $[\alpha]_D^{23}$ −77.5° (c=1.15, MeOH); UV (MeOH): 224 sh (4.10), 291 sh (4.09), 311 (4.19); ^{1}H-NMR (400 MHz, CD_3OD): 5.09 (d, 10.0, H-1), 6.39 (dd, 6.0, 2.0, H-3), 5.07 (superimposed, H-4), 2.48 (m, H-5), 4.05 (dd, 8.0, 1.0, H-6), 3.66 (br s, H-7), 2.58 (dd, 10.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.77 (d, 8.0, H-1′), 3.26 (dd, 9.0, 8.0, H-2′), 3.40 (dd, 9.0, 9.0, H-3′), 3.25 (dd, 9.0, 9.0, H-4′) 3.25 (m, H-5′), 3.63 (dd, 12.0, 5.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.05 (d, 2.0, H-1″), 5.31 (dd, 4.0, 2.0, H-2″), 5.35 (dd, 10.0, 4.0, H-3″), 5.08 (dd, 10.0, 10.0, H-4″), 4.01 (m, H-5″), 1.20 (d, 6.0, H_3-6″), 2.01 (s, AcO-2″), 2.06 (s, AcO-4″), 5.70 (d, 13.0, H-8‴), 6.92 (d, 13.0, H-7‴), 7.69 (d, 9.0, H-2‴, 6‴), 6.90 (d, 9.0, H-3‴, 5‴), 3.82 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 84.8 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 97.6 (C-1″), 71.3 (C-2″), 70.2 (C-3″), 72.2 (C-4″), 68.1 (C-5″), 17.7 (C-6″), 20.6, 171.6 (AcO-2″), 20.7, 171.7 (AcO-4″), 166.7 (C-9‴), 116.3 (C-8‴), 146.0 (C-7‴), 128.5 (C-1‴), 133.6 (C-2‴), 114.5 (C-3‴, 5‴), 162.2 (C-4‴), 113.6 (C-6‴), 55.8 (MeO-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

66. Scrophuloside A_7



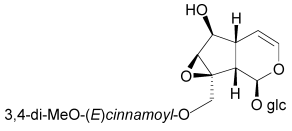
$C_{35}H_{44}O_{18}$: 752.2527; amorphous powder, $[\alpha]_D^{23}$ −141.2° (c=0.70, MeOH); UV (MeOH): 224 sh (4.07), 300 sh (4.20), 311 (4.25); ^{1}H-NMR (400 MHz, CD_3OD): 5.08 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.00 (dd, 6.0, 4.0, H-4), 2.45 (m, H-5), 4.03 (dd, 8.0, 1.0, H-6), 3.65 (br s, H-7), 2.57 (dd, 10.0, 7.5, H-9), 3.18 (d, 13.0, H-10), 4.14 (d, 13.0, H-10), 4.76 (d, 8.0, H-1′), 3.25 (superimposed, H-2′, 4′), 3.39 (dd, 9.0, 9.0, H-3′), 3.29 (superimposed, H-5′) 3.62 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.5, H-6′), 5.05 (d, 2.0, H-1″), 5.29 (dd, 4.0, 2.0, H-2″), 5.24 (dd, 10.0, 4.0, H-3″), 5.10 (dd, 10.0, 9.5, H-4″), 3.94 (m, H-5″), 1.18 (d, 6.0, H_3-6″), 2.15 (s, AcO-2″), 1.96 (s, AcO-3″), 5.81 (d, 12.5, H-8‴), 7.00 (d, 12.5, H-7‴), 7.69 (d, 9.0, H-2‴, 6‴), 6.91 (d, 9.0, H-3‴, 5‴), 3.82 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.1 (C-4), 37.1 (C-5), 84.6 (C-6), 59.3 (C-7), 66.5 (C-8), 43.2 (C-9), 61.3 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 97.6 (C-1″), 71.0 (C-2″), 70.7 (C-3″), 71.8 (C-4″), 68.1 (C-5″), 17.7 (C-6″), 20.6, 171.6 (AcO-2″), 20.6, 171.5 (AcO-3″), 166.7 (C-9‴), 116.5 (C-8‴), 146.5 (C-7‴), 128.6 (C-1‴), 133.4 (C-2‴), 114.4 (C-3‴, 5‴), 162.2 (C-4‴), 113.4 (C-6‴), 55.8 (MeO-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

67. Scrophuloside A_8



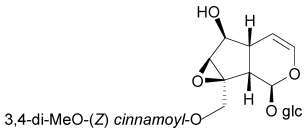
$C_{35}H_{44}O_{19}$: 768.2476; amorphous powder; $[\alpha]_D^{23}$ −91.5° (c=0.56, MeOH); UV (MeOH): 216 sh (4.29), 231 sh (4.11), 243 sh (4.03); ^{1}H-NMR (400 MHz, CD_3OD): 5.09 (d, 10.0, H-1), 6.39 (dd, 6.0, 1.5, H-3), 5.08 (superimposed, H-4), 2.48 (m, H-5), 4.05 (d, 8.0, H-6), 3.67 (s, H-7), 2.59 (dd, 10.0, 7.5, H-9), 3.82 (d, 13.0, H-10), 4.16 (d, 13.0, H-10), 4.79 (d, 8.0, H-1′), 3.28 (dd, 9.0, 8.0, H-2′), 3.42 (dd, 9.0, 9.0, H-3′), 3.27 (dd, 9.0, 9.0, H-4′), 3.34 (m, H-5′) 3.64 (dd, 12.0, 6.0, H-6′), 3.92 (dd, 12.0, 1.0, H-6′), 5.07 (d, 1.5, H-1″), 5.31 (dd, 3.0, 1.5, H-2″), 5.36 (dd, 10.0, 3.0, H-3″), 5.17 (dd, 10.0, 10.0, H-4″), 4.07 (m, H-5″), 1.22 (d, 6.0, H_3-6″), 2.16 (s, AcO-2″), 1.93 (s, AcO-3″), 6.31 (d, 16.0, H-8‴), 7.61 (d, 16.0, H-7‴), 7.09 (d, 2.0, H-2‴), 6.94 (d, 8.0, H-5‴), 7.07 (dd, 8.0, 2.0, H-6‴), 3.88 (s, MeO-4‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.4 (C-4), 37.1 (C-5), 84.9 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 97.7 (C-1″), 71.6 (C-2″), 70.6 (C-3″), 71.9 (C-4″), 68.2 (C-5″), 17.8 (C-6″), 20.7, 171.7 (AcO-2″), 20.0, 171.6 (AcO-3″), 167.9 (C-9‴), 115.0 (C-8‴), 147.7 (C-7‴), 128.6 (C-1‴), 114.9 (C-2‴), 148.6 (C-3‴), 151.7 (C-4‴), 112.5 (C-5‴), 123.1 (C-6‴), 56.4 (MeO-4‴). *Scrophularia nodosa* (Scrophulariaceae).[53]

68. 10-*O*-(3,4-Dimethoxy-(*E*)-cinnamoyl)catalpol



$C_{26}H_{32}O_{13}$: 552.1843; isolated as a mixture with Z-isomer in ratio (2 : 1); UV (?): 230, 294, 321; IR (?): 3367, 1700, 1630, 1598, 1508; ^{1}H-NMR (500 MHz, CD_3OD): 5.05 (d, 9.2, H-1), 6.36 (dd, 6.0, 1.8, H-3), 5.08 (dd, 6.0, 4.9, H-4), 2.66 (m, H-5), 3.95 (dd, 7.9, 1.2, H-6), 3.64 (br s, H-7), 2.98 (dd, 9.2, 7.7, H-9), 4.25 (d, 12.8, H-10), 4.98 (d, 12.8, H-10), 4.75 (d, 7.8, H-1′), 3.21 (dd, 9.1, 7.8, H-2′), 3.42 (dd, 9.1, 8.4, H-3′), 3.17 (dd, 10.0, 8.4, H-4′), 3.38 (m, H-5′), 3.64 (dd, 11.9, 6.0, H-6′), 3.92 (dd, 11.9, 2.0, H-6′), 6.45 (d, 16.0, H-8″), 7.66 (d, 16.0, H-7″), 7.32 (d, 1.9, H-2″), 6.98 (d, 8.4, H-5″), 7.19 (dd, 8.4, 1.9, H-6″), 3.86 (s, MeO), 3.87 (s, MeO); ^{13}C-NMR (125 MHz, CD_3OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 37.4 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.4 (C-10), 100.3 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 63.0 (C-6′), 168.7 (C-9″), 116.3 (C-8″), 146.7 (C-7″), 128.9 (C-1″), 117.7 (C-2″), 150.8 (C-3″), 152.9 (C-4″), 112.7 (C-5″), 124.1 (C-6″), 56.6, 56.7 (OMe). *Lagotis yunnanensis*.[54]

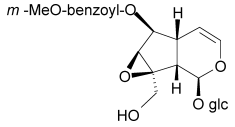
69. 10-*O*-(3,4-Dimethoxy-(*Z*)-cinnamoyl)catalpol



$C_{26}H_{32}O_{13}$: 552.1842; isolated as a mixture with *E*-isomer in ratio (1 : 2); UV (?): 230, 294, 321; IR (?): 3367, 1700, 1630, 1598, 1508; ^{1}H-NMR (500 MHz, CD_3OD): 5.03 (d, 9.2, H-1), 6.34 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.9, H-4), 2.66 (m, H-5), 3.93 (dd, 7.9, 1.2, H-6), 3.64 (br s, H-7), 3.01 (dd, 9.2, 7.7, H-9), 4.20 (d, 12.7, H-10), 4.94 (d, 12.7, H-10), 4.74 (d, 7.8, H-1′), 3.19 (dd, 9.1, 7.8, H-2′), 3.40 (dd, 9.1, 8.4, H-3′), 3.16 (dd, 10.0, 8.4, H-4′), 3.38 (m, H-5′), 3.62 (dd, 11.9, 6.0, H-6′), 3.90 (dd, 11.9, 2.0, H-6′), 7.70 (d, 1.9, H-2″), 6.94 (d, 8.4, H-5″), 7.12 (dd, 8.4, 1.9, H-6″), 6.91 (d, 12.9, H-7″), 5.88 (d, 12.9, H-8″), 3.85 (s, 2×MeO); ^{13}C-NMR (125 MHz, CD_3OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 37.4 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.4 (C-10), 100.3 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′),

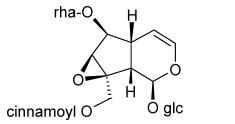
63.0 (C-6′), 129.2 (C-1″), 112.1 (C-2″), 149.8 (C-3″), 151.8 (C-4″), 115.0 (C-5″), 126.2 (C-6″), 145.2 (C-7″), 117.5 (C-8″), 167.9 (C-9″), 56.4 (2×MeO). *Lagotis yunnanensis*.[54]

70. Picroside V (6-*m*-Methoxybenzoylcatalpol)



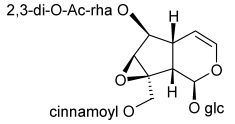
$C_{23}H_{28}O_{12}$: 496.1580; isolated as its pentaacetate; amorphous powder; mp 158—160 °C; $[\alpha]_D^{28}$ −79.2° (c=0.84, $CHCl_3$); IR (KBr): 3449, 2945, 1753, 1653, 1598, 1513, 1430, 1374, 1286, 1221, 1103, 932, 763, 600, 532; ^{1}H-NMR (300 MHz, $CDCl_3$): 4.88 (d, 9.6, H-1), 6.32 (d, 5.7, H-3), 4.99 (d, 5.0, H-4), 2.70 (m, H-5), 5.24 (m, H-6), 3.75 (br s, H-7), 2.69 (m, H-9), 4.02 (d, 12.7, H-10), 4.90 (d, 12.7, H-10), 5.13 (d, 9.0, H-1′), 5.0, 5.24, 5.18, 5.27 (m, H-2′—5′), 4.23 (dd, 12.6, 4.2, H-6′), 4.32 (dd, 12.6, 4.2, H-6′), 7.55 (d, 1.5, H-2″), 6.95 (d, 8.4, H-4″), 7.68 (d, 8.4, H-5″), 7.73 (d, 8.4, H-6″), 3.97 (s, MeO-3″), 2.04, 2.07, 2.08, 2.12, 2.13 (5×Ac); ^{13}C-NMR (75 MHz, $CDCl_3$): 94.7 (C-1), 141.5 (C-3), 102.6 (C-4), 35.5 (C-5), 80.2 (C-6), 59.3 (C-7), 63.1 (C-8), 42.1 (C-9), 61.7 (C-10), 97.1 (C-1′), 71.1 (C-2′), 72.7 (C-3′), 68.7 (C-4′), 73.0 (C-5′), 62.7 (C-6′), 121.8 (C-1″), 112.3 (C-2″), 146.6 (C-3″), 114.5 (C-4″), 133.9 (C-5″), 125.1 (C-6″), 166.6 (C-7″), 56.6 (MeO-3″), 20.94, 21.02×2, 21.07×2, 169.5, 169.7, 170.6, 170.9, 171.1 (5×Ac). *Picrorhiza kurroa* (Scrophulariaceae).[199]

71. Gmelinoside A



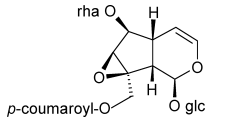
$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; $[\alpha]_D^{25}$ −98.8° (c=0.72, MeOH); UV (MeOH): 222 (4.18), 312 (4.32); IR (KBr): 3400, 1720, 1630, 1655, 1540; ^{1}H-NMR (600 MHz, CD_3OD): 5.01 (d, 9.6, H-1), 6.38 (dd, 6.5, 1.7, H-3), 5.06 (dd, 6.5, 4.5, H-4), 2.45 (m, H-5), 4.04 (dd, 8.0, 1.7, H-6), 3.66 (s, H-7), 2.57 (dd, 9.6, 7.6, H-9), 4.65 (d, 13.1, H-10), 5.69 (d, 13.1, H-10), 4.78 (d, 7.9, H-1′), 3.26 (dd, 9.2, 7.9, H-2′), 3.40 (t, 9.2, H-3′), 3.27 (t, 9.2, H-4′), 3.30 (m, H-5′), 3.63 (dd, 11.9, 6.6, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 5.10 (d, 1.7, H-1″), 3.89 (dd, 3.7, 2.0, H-2″), 3.81 (dd, 9.3, 3.7, H-3″), 3.49 (t, 9.5, H-4″), 3.97 (dd, 10.6, 6.2, H-5″), 1.18 (d, 6.3, H_3-6″), 7.62 (d, 8.0, H-2‴, 6‴), 6.93 (t, 8.0, H-3‴, 5‴), 7.40 (m, H-4‴), 7.73 (d, 16.0, H-7‴), 6.58 (d, 16.0, H-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.5 (C-4), 37.4 (C-5), 84.2 (C-6), 59.5 (C-7), 63.2 (C-8), 43.3 (C-9), 64.9 (C-10), 100.5 (C-1′), 75.5 (C-2′), 77.7 (C-3′), 71.9 (C-4′), 78.1 (C-5′), 61.7 (C-6′), 99.8 (C-1″), 72.3 (C-2″), 72.2 (C-3″), 73.6 (C-4″), 69.3 (C-5″), 18.3 (C-6″), 135.8 (C-1‴), 130.1 (C-2‴, 6‴), 129.3 (C-3‴, 5‴), 146.7 (C-7‴), 118.9 (C-8‴), 168.3 (C-9‴). *Gmelina arborea* (Verbenaceae).[56]

72. Gmelinoside B



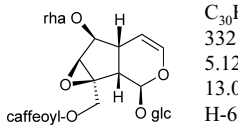
$C_{34}H_{42}O_{17}$: 722.2421; amorphous powder; $[\alpha]_D^{25}$ −138.6° (c=0.65, MeOH); UV (MeOH): 218 (4.31), 300 (4.27), 315 (4.30); IR (KBr): 3425, 1725, 1665, 1620, 1520; ^{1}H-NMR (600 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.36 (dd, 6.0, 1.7, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.53 (m, H-5), 4.07 (dd, 8.0, 1.0, H-6), 3.67 (s, H-7), 2.60 (dd, 9.6, 7.7, H-9), 4.76 (d, 12.5, H-10), 5.72 (d, 12.5, H-10), 4.76 (d, 7.9, H-1′), 3.27 (dd, 9.3, 7.9, H-2′), 3.40 (t, 9.1, H-3′), 3.25 (t, 9.1, H-4′), 3.34 (m, H-5′), 3.67 (dd, 11.9, 6.7, H-6′), 3.94 (dd, 11.9, 2.1, H-6′), 5.12 (d, 1.7, H-1″), 5.31 (dd, 3.4, 1.7, H-2″), 5.37 (dd, 9.9, 3.4, H-3″), 3.41 (t, 9.9, H-4″), 3.95 (dd, 10.0, 6.0, H-5″), 1.22 (d, 6.2, H_3-6″), 7.42 (d, 8.2, H-2‴, 6‴), 6.79 (t, 8.5, H-3‴, 5‴), 7.43 (m, H-4‴), 7.77 (d, 16.0, H-7‴), 6.52 (d, 16.0, H-8‴), 1.89, 2.12 (each s, 2×Ac); ^{13}C-NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.5 (C-3), 103.2 (C-4), 37.2 (C-5), 84.2 (C-6), 59.4 (C-7), 63.1 (C-8), 43.6 (C-9), 64.1 (C-10), 99.7 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 77.8 (C-5′), 62.4 (C-6′), 97.9 (C-1″), 72.3 (C-2″), 72.2 (C-3″), 72.8 (C-4″), 69.0 (C-5″), 17.8 (C-6″), 135.5 (C-1‴), 129.8 (C-2‴, 6‴), 129.5 (C-3‴, 5‴), 132.0 (C-4‴), 147.6 (C-7‴), 117.9 (C-8‴), 167.5 (C-9‴), 20.7×2, 171.7, 171.9 (2×Ac). *Gmelina arborea* (Verbenaceae).[56]

73. Gmelinoside C



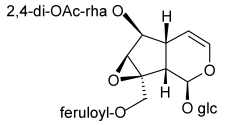
$C_{30}H_{38}O_{16}$: 654.2159; white amorphous powder; $[\alpha]_D^{25}$ −187.3° (c=0.82, MeOH); UV (MeOH): 231 (4.03), 304 (4.13), 338 (4.39); IR (KBr): 3385, 1695, 1650, 1610, 1515; ^{1}H-NMR (600 MHz, CD_3OD): 5.13 (d, 9.5, H-1), 6.34 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.5, H-4), 2.55 (m, H-5), 4.04 (dd, 8.2, 1.7, H-6), 3.63 (s, H-7), 2.63 (dd, 9.5, 8.0, H-9), 4.71 (d, 13.0, H-10), 5.65 (d, 13.0, H-10), 4.83 (d, 7.8, H-1′), 3.34 (dd, 9.5, 7.8, H-3′), 3.67 (t, 9.5, H-3′), 3.44 (t, 9.5, H-4′), 3.18 (m, H-5′), 3.54 (dd, 12.0, 5.8, H-6′), 3.95 (dd, 12.0, 1.8, H-6′), 5.11 (d, 1.8, H-1″), 3.94 (br d, 3.8, H-2″), 3.90 (dd, 9.0, 3.7, H-3″), 3.68 (t, 9.2, H-4″), 3.88 (dd, 10.0, 6.3, H-5″), 1.29 (d, 6.5, H_3-6″), 7.46 (d, 8.7, H-2‴, 6‴), 6.81 (d, 8.7, H-3‴, 5‴), 7.59 (d, 16.1, H-7‴), 6.29 (d, 16.1, H-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.2 (C-3), 103.4 (C-4), 37.2 (C-5), 84.1 (C-6), 59.6 (C-7), 63.1 (C-8), 43.6 (C-9), 64.1 (C-10), 101.0 (C-1′), 74.4 (C-2′), 78.1 (C-3′), 71.9 (C-4′), 78.4 (C-5′), 62.9 (C-6′), 100.0 (C-1″), 72.8 (C-2″), 72.3 (C-3″), 73.1 (C-4″), 69.0 (C-5″), 18.3 (C-6″), 127.2 (C-1‴), 130.7 (C-2‴, 6‴), 116.4 (C-3‴, 5‴), 161.4 (C-4‴), 147.3 (C-7‴), 114.6 (C-8‴), 169.1 (C-9‴). *Gmelina arborea* (Verbenaceae).[56]

74. Gmelinoside D



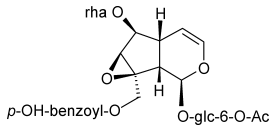
$C_{30}H_{38}O_{17}$: 670.2108; amorphous powder; $[\alpha]_D^{25}$ −158.5° (c=0.54, MeOH); UV (MeOH): 223 (4.10), 248 (3.98), 304 sh (4.17), 332 (4.28); IR (KBr): 3415, 1686, 1660, 1623, 1528; ^{1}H-NMR (600 MHz, CD_3OD): 5.10 (d, 9.5, H-1), 6.43 (dd, 6.2, 1.8, H-3), 5.12 (dd, 6.2, 4.4, H-4), 2.67 (m, H-5), 4.01 (dd, 8.0, 1.6, H-6), 3.63 (s, H-7), 2.59 (dd, 9.5, 8.5, H-9), 4.68 (d, 13.0, H-10), 5.86 (d, 13.0, H-10), 4.98 (d, 8.0, H-1′), 3.43 (dd, 9.1, 8.0, H-2′), 3.49 (t, 9.1, H-3′), 3.38 (t, 9.0, H-4′), 3.12 (m, H-5′), 3.65 (dd, 11.7, 5.7, H-6′), 3.88 (dd, 11.7, 1.8, H-6′), 5.19 (d, 1.6, H-1″), 4.03 (dd, 3.5, 1.8, H-2″), 3.88 (dd, 9.5, 3.5, H-3″), 3.48 (t, 9.5, H-4″), 3.73 (dd, 10.2, 6.3, H-5″), 1.23 (d, 6.0, H_3-6″), 7.06 (d, 2.0, H-2‴), 6.78 (d, 8.23, H-5‴), 6.95 (dd, 8.2, 2.0, H-6‴), 7.65 (d, 15.9, H-7‴), 6.36 (d, 15.9, H-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 95.6 (C-1), 142.4 (C-3), 103.5 (C-4), 37.3 (C-5), 84.4 (C-6), 59.6 (C-7), 63.3 (C-8), 43.5 (C-9), 64.1 (C-10), 101.3 (C-1′), 74.6 (C-2′), 78.9 (C-3′), 71.4 (C-4′), 78.1 (C-5′), 62.5 (C-6′), 99.9 (C-1″), 72.7 (C-2″), 71.3 (C-3″), 73.5 (C-4″), 69.6 (C-5″), 18.1 (C-6″), 126.9 (C-1‴), 114.6 (C-2‴), 149.6 (C-3‴), 146.3 (C-4‴), 116.2 (C-5‴), 123.6 (C-6‴), 147.8 (C-7‴), 115.7 (C-8‴), 168.2 (C-9‴). *Gmelina arborea* (Verbenaceae).[56]

75. Gmelinoside E



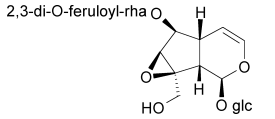
$C_{35}H_{44}O_{19}$: 768.2476; white amorphous powder; $[\alpha]_D^{25}$ −116.8° (c=0.43, MeOH); UV (MeOH): 216 (4.21), 228 (4.12), 245 (4.18), 279 (4.27), 310 (4.33); IR (KBr): 3460, 1695, 1650, 1630, 1590; ^{1}H-NMR (600 MHz, CD_3OD): 5.07 (d, 9.5, H-1), 6.53 (dd, 6.0, 1.7, H-3), 5.10 (dd, 6.0, 4.3, H-4), 2.46 (m, H-5), 4.11 (dd, 8.2, 1.7, H-6), 3.65 (s, H-7), 2.65 (dd, 9.5, 8.2, H-9), 4.81 (d, 12.5, H-10), 5.69 (d, 12.5, H-10), 4.79 (d, 7.8, H-1′), 3.28 (dd, 9.1, 7.8, H-2′), 3.45 (t, 9.0, H-3′), 3.28 (t, 9.0, H-4′), 3.29 (m, H-5′), 3.77 (dd, 11.8, 5.7, H-6′), 3.85 (dd, 11.8, 2.0, H-6′), 5.12 (d, 1.7, H-1″), 5.43 (dd, 3.5, 1.8, H-2″), 3.97 (dd, 9.5, 3.5, H-3″), 4.92 (t, 9.6, H-4″), 3.82 (dd, 10.2, 6.2, H-5″), 1.22 (d, 6.2, H_3-6″), 7.19 (d, 2.0, H-2‴), 6.92 (d, 8.5, H-5‴), 7.06 (dd, 8.5, 1.8, H-6‴), 7.69 (d, 15.9, H-7‴), 6.43 (d, 15.9, H-8‴), 3.89 (s, MeO-3‴), 1.88, 2.03 (each s, Ac); ^{13}C-NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.7 (C-3), 103.4 (C-4), 37.4 (C-5), 84.6 (C-6), 59.1 (C-7), 63.1 (C-8), 43.3 (C-9), 64.9 (C-10), 100.1 (C-1′), 74.4 (C-2′), 78.4 (C-3′), 71.1 (C-4′), 78.1 (C-5′), 62.1 (C-6′), 98.9 (C-1″), 73.9 (C-2″), 70.1 (C-3″), 75.0 (C-4″), 68.7 (C-5″), 17.9 (C-6″), 127.4 (C-1‴), 111.8 (C-2‴), 149.8 (C-3‴), 150.2 (C-4‴), 116.6 (C-5‴), 124.3 (C-6‴), 147.5 (C-7‴), 115.1 (C-8‴), 168.8 (C-9‴), 56.5 (MeO-3‴), 20.2, 20.5, 171.3, 171.9 (2×Ac). *Gmelina arborea* (Verbenaceae).[56]

76. Gmelinoside F



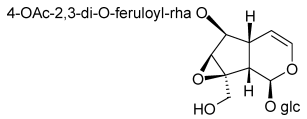
$C_{30}H_{38}O_{17}$: 670.2108; white amorphous powder; $[\alpha]_D^{25}$ −162.2° (c=0.74, MeOH); UV (MeOH): 233 (4.64), 258 (4.58), 272 (4.45), 302 sh (4.64), 327 (4.23); IR (KBr): 3370, 1725, 1658, 1630, 1530; ^{1}H-NMR (600 MHz, CD_3OD): 5.09 (d, 9.2, H-1), 6.40 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 4.5, H-4), 2.50 (m, H-5), 4.07 (dd, 8.0, 1.5, H-6), 3.70 (s, H-7), 2.71 (dd, 9.2, 8.0, H-9), 4.74 (d, 12.9, H-10), 5.83 (d, 12.9, H-10), 4.86 (d, 8.0, H-1′), 3.49 (dd, 9.5, 8.0, H-2′), 3.71 (t, 9.5, H-3′), 3.49 (t, 9.5, H-4′), 3.24 (m, H-5′), 4.18 (dd, 11.9, 6.7, H-6′), 4.39 (dd, 11.9, 2.0, H-6′), 5.14 (d, 1.8, H-1″), 3.78 (dd, 3.3, 1.8, H-2″), 3.69 (dd, 9.5, 3.5, H-3″), 3.40 (t, 9.3, H-4″), 3.87 (dd, 10.0, 6.2, H-5″), 1.21 (d, 6.3, H_3-6″), 7.93 (d, 8.8, H-2‴, 6‴), 6.98 (d, 8.8, H-3‴), 7.28 (d, 8.4, H-5‴), 2.10 (s, AcO-6′); ^{13}C-NMR (90 MHz, CD_3OD): 95.3 (C-1), 143.0 (C-3), 103.3 (C-4), 37.4 (C-5), 84.2 (C-6), 59.3 (C-7), 63.3 (C-8), 43.5 (C-9), 64.7 (C-10), 102.4 (C-1′), 73.5 (C-2′), 77.2 (C-3′), 71.6 (C-4′), 74.4 (C-5′), 63.7 (C-6′), 100.7 (C-1″), 70.5 (C-2″), 71.1 (C-3″), 71.9 (C-4″), 68.5 (C-5″), 18.6 (C-6″), 124.1 (C-1‴), 130.3 (C-2‴, 6‴), 116.1 (C-3‴, 5‴), 163.6 (C-4‴), 168.9 (C-7‴), 20.9, 171.4 (AcO-6′). *Gmelina arborea* (Verbenaceae).[56)]

77. Gmelinoside G



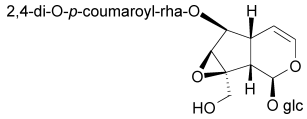
$C_{41}H_{48}O_{20}$: 860.2738; colorless amorphous powder; $[\alpha]_D^{25}$ −146.9° (c=1.01, MeOH); UV (MeOH): 225 (4.49), 328 (4.58); IR (KBr): 3450, 1718, 1650, 1638, 1545; ^{1}H-NMR (600 MHz, CD_3OD): 5.00 (d, 9.4, H-1), 6.41 (dd, 6.5, 1.8, H-3), 5.13 (dd, 6.5, 4.5, H-4), 2.59 (m, H-5), 4.08 (dd, 8.5, 1.8, H-6), 3.66 (s, H-7), 2.67 (dd, 9.4, 7.8, H-9), 3.84 (d, 13.2, H-10), 4.05 (d, 13.2, H-10), 4.87 (d, 8.1, H-1′), 3.37 (dd, 9.5, 8.1, H-2′), 3.26 (t, 9.5, H-3′), 3.43 (t, 10.1, H-4′), 3.40 (m, H-5′), 3.72 (dd, 11.6, 6.5, H-6′), 3.90 (dd, 11.6, 2.2, H-6′), 5.10 (d, 1.9, H-1″), 5.33 (dd, 3.5, 1.9, H-2″), 4.98 (dd, 9.5, 3.5, H-3″), 3.55 (t, 9.5, H-4″), 3.71 (dd, 10.0, 6.2, H-5″), 1.38 (d, 6.5, H_3-6″), 7.21 (d, 1.8, H-2‴), 6.79 (d, 8.5, H-5‴), 7.10 (dd, 8.5, 1.8, H-6‴), 7.57 (d, 16.0, H-7‴), 6.46 (d, 16.0, H-8‴), 7.18 (d, 2.0, H-2⁗), 6.88 (d, 8.0, H-5⁗), 6.92 (dd, 8.0, 2.0, H-6⁗), 7.38 (d, 16.5, H-7⁗), 6.32 (d, 16.5, H-8⁗), 3.78, 3.90 (each s, OMe); ^{13}C-NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.2 (C-3), 103.8 (C-4), 36.9 (C-5), 84.2 (C-6), 59.1 (C-7), 66.1 (C-8), 43.7 (C-9), 61.6 (C-10), 101.8 (C-1′), 73.9 (C-2′), 78.6 (C-3′), 71.5 (C-4′), 77.8 (C-5′), 62.7 (C-6′), 98.3 (C-1″), 71.6 (C-2″), 71.2 (C-3″), 72.1 (C-4″), 69.7 (C-5″), 17.8 (C-6″), 127.3 (C-1‴), 112.2 (C-2‴), 151.9 (C-3‴), 149.2 (C-4‴), 116.9 (C-5‴), 123.7 (C-6‴), 148.1 (C-7‴), 115.8 (C-8‴), 168.4 (C-9‴), 128.0 (C-1⁗), 112.0 (C-2⁗), 150.6 (C-3⁗), 148.9 (C-4⁗), 114.9 (C-5⁗), 123.4 (C-6⁗), 147.6 (C-7⁗), 115.5 (C-8⁗), 167.9 (C-9⁗), 56.4, 56.5 (2×OMe). *Gmelina arborea* (Verbenaceae).[56)]

78. Gmelinoside H



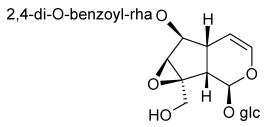
$C_{43}H_{50}O_{21}$: 902.2844; amorphous powder; $[\alpha]_D^{25}$ −166.2° (c=0.58, MeOH); UV (MeOH): 229 (4.24), 301 (4.06), 334 (4.43); IR (KBr): 3455, 1705, 1668, 1635, 1535; ^{1}H-NMR (600 MHz, CD_3OD): 5.16 (d, 9.5, H-1), 6.33 (dd, 6.0, 1.2, H-3), 5.18 (dd, 6.0, 4.0, H-4), 2.45 (m, H-5), 4.06 (dd, 8.8, 1.5, H-6), 3.75 (s, H-7), 2.60 (dd, 9.5, 7.9, H-9), 3.92 (d, 13.3, H-10), 4.29 (d, 13.3, H-10), 4.99 (d, 8.0, H-1′), 3.27 (dd, 9.2, 8.0, H-2′), 3.40 (t, 9.2, H-3′), 3.32 (t, 9.2, H-4′), 3.27 (m, H-5′), 3.69 (dd, 12.1, 6.5, H-6′), 3.93 (dd, 12.1, 2.1, H-6′), 5.07 (d, 1.8, H-1″), 5.42 (dd, 3.5, 1.7, H-2″), 5.53 (dd, 9.2, 3.5, H-3″), 4.98 (t, 9.9, H-4″), 4.00 (dq, 10.0, 6.5, H-5″), 1.18 (d, 6.2, H_3-6″), 7.37 (d, 2.1, H-2‴), 6.96 (d, 8.0, H-5‴), 7.21 (dd, 8.0, 2.1, H-6‴), 7.72 (d, 15.9, H-7‴), 6.42 (d, 15.9, H-8‴), 3.87, 3.93 (each s, OMe), 1.96 (s, OAc); ^{13}C-NMR (90 MHz, CD_3OD): 95.8 (C-1), 142.4 (C-3), 103.6 (C-4), 37.1 (C-5), 84.1 (C-6), 58.4 (C-7), 65.9 (C-8), 43.2 (C-9), 62.1 (C-10), 100.1 (C-1′), 74.1 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.9 (C-6′), 97.7 (C-1″), 71.8 (C-2″), 70.9 (C-3″), 72.9 (C-4″), 68.8 (C-5″), 18.4 (C-6″), 129.9 (C-1‴), 111.9 (C-2‴), 150.5 (C-3‴), 150.2 (C-4‴), 116.5 (C-5‴), 124.3 (C-6‴), 147.9 (C-7‴), 115.7 (C-8‴), 168.0 (C-9‴), 129.2 (C-1⁗), 111.1 (C-2⁗), 149.5 (C-3⁗), 150.0 (C-4⁗), 116.3 (C-5⁗), 124.0 (C-6⁗), 147.4 (C-7⁗), 115.2 (C-8⁗), 166.6 (C-9⁗), 56.1, 56.8 (2×OMe), 20.7, 171.2 (Ac). *Gmelina arborea* (Verbenaceae).[56)]

79. Gmelinoside I



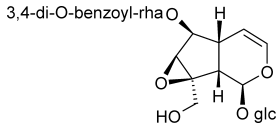
$C_{39}H_{44}O_{18}$: 800.2527; amorphous powder; $[\alpha]_D^{25}$ −106.2° (c=0.45, MeOH); UV (MeOH): 235 (4.13), 302 (4.13), 328 (4.49); IR (KBr): 3465, 1715, 1662, 1630, 1528; ^{1}H-NMR (600 MHz, CD_3OD): 5.14 (d, 9.5, H-1), 6.44 (dd, 6.3, 2.0, H-3), 5.21 (dd, 6.3, 4.5, H-4), 2.55 (m, H-5), 4.11 (dd, 8.0, 1.5, H-6), 3.78 (s, H-7), 2.64 (dd, 9.6, 8.0, H-9), 3.80 (d, 12.9, H-10), 4.14 (d, 12.9, H-10), 4.63 (d, 7.8, H-1′), 3.23 (dd, 8.8, 7.8, H-2′), 3.39 (t, 9.0, H-3′), 3.24 (t, 9.0, H-4′), 3.29 (m, H-5′), 3.67 (dd, 11.7, 5.4, H-6′), 3.86 (dd, 11.7, 3.0, H-6′), 5.09 (d, 1.8, H-1″), 5.23 (dd, 9.2, 3.5, H-2″), 4.08 (dd, 9.5, 3.5, H-3″), 4.84 (t, 9.5, H-4″), 3.94 (dd, 9.5, 6.6, H-5″), 1.23 (d, 6.1, H_3-6″), 7.49 (d, 8.6, H-2‴, 6‴), 6.76 (d, 8.6, H-3‴, 5‴), 7.68 (d, 16.5, H-7‴), 6.47 (d, 16.5, H-8‴), 7.33 (d, 8.6, H-2⁗, 6⁗), 6.65 (d, 8.6, H-3⁗, 5⁗), 7.56 (d, 16.5, H-7⁗), 6.39 (d, 16.5, H-8⁗); ^{13}C-NMR (90 MHz, CD_3OD): 95.3 (C-1), 142.1 (C-3), 103.1 (C-4), 37.7 (C-5), 84.7 (C-6), 59.4 (C-7), 66.1 (C-8), 43.6 (C-9), 61.1 (C-10), 102.2 (C-1′), 74.9 (C-2′), 77.5 (C-3′), 71.0 (C-4′), 78.6 (C-5′), 62.4 (C-6′), 98.2 (C-1″), 73.7 (C-2″), 69.8 (C-3″), 74.1 (C-4″), 68.6 (C-5″), 17.2 (C-6″), 127.6 (C-1‴), 131.7 (C-2‴, 6‴), 116.9 (C-3‴, 5‴), 161.6 (C-4‴), 147.4 (C-7‴), 114.7 (C-8‴), 168.4 (C-9‴), 126.9 (C-1⁗), 131.3 (C-2⁗, 6⁗), 115.4 (C-3⁗, 5⁗), 159.6 (C-4⁗), 147.1 (C-7⁗), 114.5 (C-8⁗), 167.8 (C-9⁗). *Gmelina arborea* (Verbenaceae).[56)]

80. Gmelinoside J



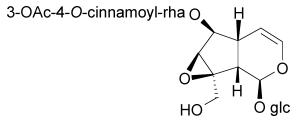
$C_{35}H_{40}O_{16}$: 716.2316; white amorphous powder; $[\alpha]_D^{25}$ −132.5° (c=0.38, MeOH); UV (MeOH): 236 (4.43), 276 (3.78); IR (KBr): 3535, 1698, 1658, 1613, 1545; ^{1}H-NMR (600 MHz, CD_3OD): 5.18 (d, 9.5, H-1), 6.32 (dd, 6.0, 1.9, H-3), 5.11 (dd, 6.0, 4.5, H-4), 2.50 (m, H-5), 4.09 (dd, 8.0, 1.5, H-6), 3.70 (s, H-7), 2.61 (dd, 9.6, 8.0, H-9), 3.82 (d, 13.5, H-10), 4.16 (d, 13.5, H-10), 4.78 (d, 8.0, H-1′), 3.26 (dd, 9.5, 7.8, H-2′), 3.41 (t, 9.5, H-3′), 3.28 (t, 9.5, H-4′), 3.31 (m, H-5′), 3.63 (dd, 11.9, 6.8, H-6′), 3.90 (dd, 11.9, 2.3, H-6′), 5.09 (d, 2.1, H-1″), 5.53 (dd, 3.8, 2.1, H-2″), 4.01 (dd, 9.8, 3.8, H-3″), 5.38 (t, 9.8, H-4″), 3.81 (dq, 9.7, 6.0, H-5″), 1.26 (d, 6.4, H_3-6″), 8.13 (dd, 8.0, 1.0, H-2‴, 6‴), 7.41 (t, 8.0, H-3‴, 5‴), 7.54 (tt, 8.0, H-4‴), 8.08 (dd, 8.0, 1.0, H-2⁗, 6⁗), 7.39 (t, 8.0, H-3⁗, 5⁗), 7.49 (tt, 8.0, H-4⁗); ^{13}C-NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.5 (C-3), 103.4 (C-4), 37.3 (C-5), 84.6 (C-6), 59.7 (C-7), 66.6 (C-8), 43.3 (C-9), 61.2 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 98.9 (C-1″), 73.9 (C-2″), 70.2 (C-3″), 74.6 (C-4″), 68.4 (C-5″), 18.1 (C-6″), 131.2 (C-1‴), 130.8 (C-2‴, 6‴), 129.6 (C-3‴, 5‴), 134.4 (C-4‴), 167.7 (C-7‴), 131.1 (C-1⁗), 130.6 (C-2⁗, 6⁗), 129.4 (C-3⁗, 5⁗), 134.4 (C-4⁗), 167.3 (C-7⁗). *Gmelina arborea* (Verbenaceae).[56)]

81. Gmelinoside K



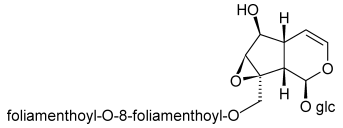
$C_{35}H_{40}O_{16}$: 716.2316; white amorphous powder; $[\alpha]_D^{25}$ −140.2° (c=0.62, MeOH); UV (MeOH): 236 (4.36), 276 (4.22); IR (KBr): 3500, 1705, 1664, 1625, 1585; ^{1}H-NMR (600 MHz, CD_3OD): 5.12 (d, 9.5, H-1), 6.46 (dd, 6.0, 1.8, H-3), 5.12 (dd, 6.2, 4.4, H-4), 2.67 (m, H-5), 4.01 (dd, 8.0, 1.6, H-6), 3.65 (s, H-7), 2.59 (dd, 9.5, 8.0, H-9), 3.98 (d, 12.8, H-10), 4.62 (d, 12.8, H-10), 4.98 (d, 8.0, H-1′), 3.43 (dd, 9.1, 8.0, H-2′), 3.49 (t, 9.1, H-3′), 3.38 (t, 9.1, H-4′), 3.12 (m, H-5′), 3.65 (dd, 11.7, 5.7, H-6′), 3.88 (dd, 11.7, 1.8, H-6′), 5.19 (d, 1.8, H-1″), 4.03 (dd, 3.5, 1.8, H-2″), 5.38 (dd, 9.5, 3.5, H-3″), 5.48 (t, 9.5, H-4″), 3.63 (dd, 10.2, 6.3, H-5″), 1.19 (d, 6.2, H_3-6″), 7.96 (dd, 8.5, 1.2, H-2‴, 6‴), 7.47 (t, H-3‴, 5‴), 7.62 (tt, 7.6, H-4‴), 7.85 (dd, 8.5, 1.2, H-2⁗, 6⁗), 7.45 (t, 7.8, H-3⁗, 5⁗), 7.59 (tt, 8.0, H-4⁗); ^{13}C-NMR (90 MHz, CD_3OD): 95.7 (C-1), 142.3 (C-3), 103.2 (C-4), 37.5 (C-5), 83.4 (C-6), 59.0 (C-7), 66.2 (C-8), 42.9 (C-9), 61.6 (C-10), 99.8 (C-1′), 73.3 (C-2′), 77.2 (C-3′), 71.3 (C-4′), 77.4 (C-5′), 61.3 (C-6′), 98.9 (C-1″), 70.1 (C-2″), 73.3 (C-3″), 72.4 (C-4″), 68.0 (C-5″), 17.3 (C-6″), 129.9 (C-1‴), 129.2 (C-2‴, 6‴), 128.8 (C-3‴, 5‴), 133.5 (C-4‴), 167.2 (C-7‴), 129.1 (C-1⁗), 129.2 (C-2⁗, 6⁗), 128.5 (C-3⁗, 5⁗), 133.4 (C-4⁗), 165.1 (C-7⁗). *Gmelina arborea* (Verbenaceae).[56]

82. Gmelinoside L



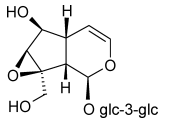
$C_{32}H_{40}O_{16}$: 680.2316; amorphous powder; $[\alpha]_D^{25}$ −125.6° (c=0.80, MeOH); UV (MeOH): 236 (4.68), 316 (4.63); IR (KBr): 3380, 1725, 1665, 1636, 1560; ^{1}H-NMR (600 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.39 (dd, 6.0, 1.7, H-3), 5.11 (dd, 6.0, 4.6, H-4), 2.47 (m, H-5), 4.06 (dd, 8.0, 1.7, H-6), 3.67 (s, H-7), 2.58 (dd, 9.6, 7.6, H-9), 3.82 (d, 13.0, H-10), 4.16 (d, 13.0, H-10), 4.78 (d, 7.9, H-1′), 3.29 (dd, 9.3, 7.9, H-2′), 3.43 (t, 9.3, H-3′), 3.34 (t, 9.1, H-4′), 3.25 (m, H-5′), 3.66 (dd, 11.9, 6.8, H-6′), 3.92 (dd, 11.9, 1.9, H-6′), 5.02 (d, 1.6, H-1″), 4.09 (dd, 3.0, 1.6, H-2″), 5.29 (dd, 10.0, 3.0, H-3″), 5.42 (t, 10.0, H-4″), 4.00 (dq, 10.0, 6.0, H-5″), 1.21 (d, 6.2, H_3-6″), 7.70 (d, 8.2, H-2‴, 6‴), 7.13 (t, 8.2, H-3‴, 5‴), 7.34 (m, H-4‴), 7.76 (d, 16.0, H-7⁗), 6.52 (d, 16.0, H-8⁗), 1.90 (s, AcO-3″); ^{13}C-NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.1 (C-3), 103.4 (C-4), 37.2 (C-5), 84.1 (C-6), 59.3 (C-7), 66.6 (C-8), 43.3 (C-9), 61.4 (C-10), 100.3 (C-1′), 74.8 (C-2′), 78.6 (C-3′), 71.8 (C-4′), 77.7 (C-5′), 61.9 (C-6′), 99.7 (C-1″), 70.1 (C-2″), 73.2 (C-3″), 72.5 (C-4″), 68.3 (C-5″), 17.8 (C-6″), 135.4 (C-1‴), 130.1 (C-2‴, 6‴), 129.4 (C-3‴, 5‴), 131.8 (C-4‴), 147.3 (C-7‴), 118.1 (C-8‴), 167.6 (C-9‴), 20.6, 171.3 (AcO-3″). *Gmelina arborea* (Verbenaceae).[56]

83. 10-Bisfoliamenthoylcatalpol



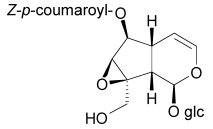
$C_{35}H_{50}O_{14}$: 694.320; $[\alpha]_D^{25}$ −32.0° (c=0.12, MeOH); ^{1}H-NMR (300 MHz, CD_3OD) 5.03 (d, 9.6, H-1), 6.32 (dd, 6.1, 1.8, H-3), 5.06 (m, H-4), 2.21 (m, H-5), 3.93 (d, 8.3, H-6), 3.44 (br s, H-7), 2.58 (dd, 9.6, 7.8, H-9), 4.19 and 4.96 (each d, 12.7, H_2-10), 4.75 (d, 7.5, H-1′), 3.10—3.35 (m, H-2′, 3′, 4′, 5′), 3.63 (dd, 5.8, 5.2, H-6′), 3.87 (m, H-6′), 6.75 (m, H-3″, 3‴), 2.35 (m, H_2-4″, 4‴), 2.17 (m, H_2-5″, 5‴), 5.39 (m, H-7″, 7‴), 4.64 (d, 7.0, H-8″), 4.07 (d, 6.7, H-8‴); ^{13}C-NMR (75 MHz, CD_3OD) 95.7 (C-1), 141.7 (C-3), 103.7 (C-4), 39.1 (C-5), 79.4 (C-6), 62.7 (C-7), 63.6 (C-8), 43.7 (C-9), 64.3 (C-10), 100.4 (C-1′), 74.8 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.3 (C-6′), 169.4, 169.6 (C-1″, 1‴), 128.9, 129.0 (C-2″, 2‴), 143.2, 143.6 (C-3″, 3‴), 28.0 (C-4″, 4‴), 39.0 (C-5″, 5‴), 142.4, 138.4 (C-6″, 6‴), 120.7, 125.7 (C-7″, 7‴), 63.0, 59.4 (C-8″, 8‴), 12.5, 12.6 (C-9″, 9‴), 16.2, 16.5 (C-10″, 10‴) *Penstemon newberryi* (Scrophulariaceae).[57]

84. 3′-*O*-β-D-Glucopyranosylcatalpol



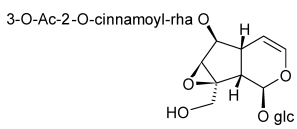
$C_{21}H_{32}O_{15}$: 524.1741; amorphous powder; $[\alpha]_D^{27}$ −74.9° (c=3.41, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.02 (d, 9.8, H-1), 6.34 (d, 5.4, H-3), 5.07 (dd, 5.4, 4.6, H-4), 2.27 (m, H-5), 3.92 (br d, 8.0, H-6), 3.45 (br s, H-7), 2.53 (dd, 9.8, 8.3, H-9), 3.80 (d, 13.1, H-10), 4.11 (d, 13.1, H-10), 4.77 (d, 7.8, H-1′), 4.59 (d, 7.8, H-1″); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 141.7 (C-3), 104.0 (C-4), 39.0 (C-5), 79.5 (C-6), 62.5 (C-7), 66.2 (C-8), 43.5 (C-9), 61.4 (C-10), 99.4 (C-1′), 74.2 (C-2′), 87.1 (C-3′), 70.1 (C-4′), 77.7 (C-5′)[a], 62.7 (C-6′)[b], 105.1 (C-1″), 75.5 (C-2″), 78.0 (C-3″)[a], 71.5 (C-4″), 78.1 (C-5″)[a], 62.6 (C-6″)[b]. *Asystasia intrusa* (Acanthaceae).[58]

85. 6-*O*-*cis*-*p*-Coumaroylcatalpol



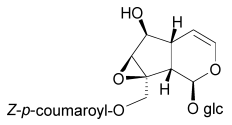
$C_{24}H_{28}O_{12}$: 508.1580; isolated as hexaacetate; amorphous powder; $[\alpha]_D^{26}$ −75.3° (c=0.09, MeOH); UV (MeOH): 283 (4.04); ^{1}H-NMR (270 MHz, $CDCl_3$): 4.81 (d, 9.6, H-1), 6.30 (dd, 6.0, 1.7, H-3), 4.87 (m, H-4, 6), 2.51 (m, H-5), 3.70 (br s, H-7), 2.63 (dd, 9.6, 7.7, H-9), 3.96 (d, 12.7, H-10), 4.82 (d, 12.7, H-10), 5.00 (m, H-1′, 2′), 5.22 (t, 9.5, H-3′), 5.13 (t, 9.5, H-4′), 3.68 (m, H-5′), 4.19 (dd, 12.3, 4.3, H-6′), 4.30 (dd, 12.3, 2.7, H-6′), 7.67 (d, 8.8, H-2″, 6″), 7.09 (d, 8.8, H-3″, 5″), 7.00 (d, 12.9, H-7″), 6.01 (d, 12.9, H-8″), 2.02×2, 2.04×2, 2.12, 2.31 (s, 6×Ac); ^{13}C-NMR (67.8 MHz, $CDCl_3$): 96.6 (C-1), 141.0 (C-3), 108.5 (C-4), 34.7 (C-5), 77.6 (C-6), 58.6 (C-7), 62.6 (C-8), 41.4 (C-9), 61.2 (C-10), 102.4 (C-1′), 70.6 (C-2′), 72.3 (C-3′), 68.2 (C-4′), 72.6 (C-5′), 61.2 (C-6′), 132.2 (C-1″), 141.0 (C-2″, 6″), 121.3 (C-3″, 5″), 151.3 (C-4″), 143.9 (C-7″), 118.8 (C-8″), 165.9 (C-9″), 20.6×2, 20.7×2, 21.2×2, 169.1, 169.2, 169.3, 170.3, 170.5, 170.7 (6×-Ac). *Catalpa fructus* (Bignoniaceae).[59]

86. Scorodioside (6-*O*-(3″-*O*-Acetyl-2″-*O*-*trans*-cinnamoyl)-α-L-rhamnopyranosyl catalpol)



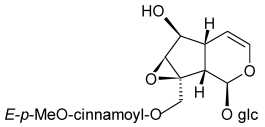
$C_{32}H_{40}O_{16}$: 680.2316; amorphous powder, UV (MeOH): 205 (4.02), 218 sh (4.17), 282 (4.46); ^{1}H-NMR (400 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.38 (dd, 6.0, 1.7, H-3), 5.09 (dd, 6.0, 4.7, H-4), 2.47 (m, H-5), 4.05 (dd, 8.5, 0.9, H-6), 3.65 (br s, H-7), 2.57 (dd, 9.6, 7.7, H-9), 3.80 (d, 13.2, H-10), 4.14 (d, 13.2, H-10), 4.76 (d, 7.9, H-1′), 3.24—3.39 (m, H-2′, 3′, 4′, 5′), 3.61 (dd, 12.0, 5.6, H-6′), 3.90 (dd, 12.0, 1.9, H-6′), 5.05 (d, 1.6, H-1″), 5.36 (dd, 3.4, 1.6, H-2″), 5.14 (dd, 9.9, 3.4, H-3″), 3.61 (dt, 9.9, 9.6, H-4″), 1.33 (d, 6.2, H_3-6″), 7.62 (m, H-2‴, 6‴), 7.41 (m, H-3‴, 4‴, 5‴), 7.73 (d, 16.0, H-7⁗), 6.59 (d, 16.0, H-8⁗), 2.01 (s, AcO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.2 (C-5), 84.4 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 97.8 (C-1″), 71.5 (C-2″)[a], 73.2 (C-3″), 71.5 (C-4″), 70.3 (C-5″), 18.0 (C-6″), 135.6 (C-1‴), 130.1 (C-2‴, 6‴), 129.4 (C-3‴, 5‴), 131.8 (C-4‴), 147.3 (C-7⁗), 118.2 (C-8⁗), 167.5 (C-9⁗), 20.9, 172.3 (Ac). *Scrophularia scorodonia* (Scrophulariaceae).[60]

87. 10-*O*-*cis*-*p*-Coumaroylcatalpol



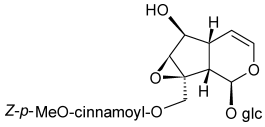
$C_{24}H_{30}O_{12}$: 510.1737; amorphous powder; $[\alpha]_D^{24}$ −70.6° (c=1.76, MeOH); UV (MeOH): 210 (3.96), 225 sh (3.88), 300 sh (4.01), 307 (4.11); IR (KBr): 3325, 2875, 1695, 1600, 1510, 1165, 1070, 1010, 920, 840; ^{1}H-NMR (400 MHz, CD_3OD): 5.04 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.06 (dd, 6.0, 5.0, H-4) 2.27 (ddt, 8.0, 5.0, 2.0, H-5), 3.92 (dd, 8.0, 1.0, H-6), 3.42 (d, 1.0, H-7), 2.57 (dd, 10.0, 8.0, H-9), 4.25 and 4.93 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 6.0, H-6′), 3.92 (dd, 12.0, 2.0, H-6′), 7.64 (d, 9.0, H-2″, 6″), 6.77 (d, 9.0, H-3″, 5″), 6.88 (d, 13.0, H-7″), 5.80 (d, 13.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.5 (C-8), 43.7 (C-9), 63.1 (C-10), 100.3 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 77.9 (C-5′), 63.1 (C-6′), 127.6 (C-1″), 133.8 (C-2″, 6″), 116.0 (C-3″, 5″), 160.1 (C-4″), 145.6 (C-7″), 116.3 (C-8″), 168.0 (C-9″). *Premna subscandens* (Verbenaceae).[61]

88. 10-*O*-*trans*-*p*-Methoxycinnamoylcatalpol



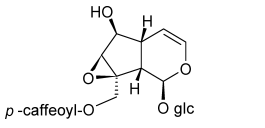
$C_{25}H_{30}O_{12}$: 522.1737; amorphous powder; $[\alpha]_D^{24}$ −62.2° (*c*=1.38, MeOH); UV (MeOH): 209 (4.01), 226 (4.04), 299 sh (4.22), 305 (4.25); IR (KBr): 3350, 2900, 1685, 1630, 1600, 1570, 1510, 1420, 1250, 1170, 1075, 1015, 925, 830; ^{1}H-NMR (400 MHz, CD_3OD): 5.07 (d, 10.0, H-1), 6.36 (dd, 6.0, 2.0, H-3), 5.08 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.96, (dd, 8.0, 1.0, H-6), 3.50 (d, 1.0, H-7), 2.67 (dd, 10.0, 8.0, H-9), 4.28 and 4.99 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.37 (t, 9.0, H-3′), 3.68 (dd, 12.0, 6.0, H-6′), 3.92 (dd, 12.0, 2.0, H-6′), 7.56 (d, 9.0, H- 2″, 6″), 6.95 (d, 9.0, H-3″, 5″), 7.66 (d, 16.0, H-7″), 6.40 (d, 16.0, H-8″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.6 (C-9), 63.0 (C-10), 100.3 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 77.8 (C-5′), 63.0 (C-6′), 128.3 (C-1″), 131.1 (C-2″, 6″), 115.4 (C-3″, 5″), 163.2 (C-4″), 146.6 (C-7″), 115.9 (C-8″), 168.9 (C-9″), 55.9 (MeO-4″). *Premna subscandens* (Verbenaceae).[61]

89. 10-*O*-*cis*-*p*-Methoxycinnamoylcatalpol



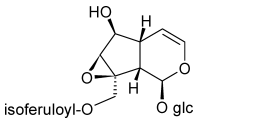
$C_{25}H_{30}O_{12}$: 522.1737; amorphous powder; $[\alpha]_D^{24}$ −76.1° (*c*=1.38, MeOH); UV (MeOH): 209 (4.06), 223 sh (3.97), 300 sh (4.10), 307 (4.13); IR (KBr): 3350, 2890, 1700, 1600, 1510, 1255, 1170, 1075—1015, 920, 840; ^{1}H-NMR (400 MHz, CD_3OD): 5.04 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.26 (ddt, 8.0, 5.0, 2.0, H-5), 3.92 (dd, 8.0, 1.0, H-6), 3.42 (d, 1.0, H-7), 2.56 (dd, 10.0, 8.0, H-9), 4.21 and 4.96 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 6.0, H-6′), 3.92 (dd, 12.0, 2.0, H-6′), 7.69 (d, 9.0, H- 2″, 6″), 6.92 (d, 9.0, H-3″, 5″), 6.93 (d, 13.0, H-7″), 5.86 (d, 13.0, H-8″), 3.81 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.5 (C-8), 43.6 (C-9), 63.1 (C-10), 100.3 (C-1′), 74.9 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 63.1 (C-6′), 128.7 (C-1″), 133.4 (C-2″, 6″), 114.6 (C-3″, 5″), 162.1 (C-4″), 145.0 (C-7″), 117.3 (C-8″), 167.9 (C-9″), 55.8 (MeO-4″). *Premna subscandens* (Verbenaceae).[61]

90. 10-*O*-*trans*-*p*-Caffeoylcatalpol



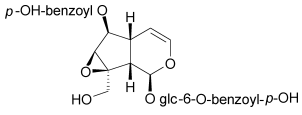
$C_{24}H_{28}O_{13}$: 524.1529; amorphous powder; $[\alpha]_D^{26}$ −52.0° (*c*=1.96, MeOH); UV (MeOH): 217 (4.03), 244 (3.89), 308 (4.03), 331 (4.13); IR (KBr): 3350, 1680, 1600, 1510, 1440, 1270, 1160, 1070—1010; ^{1}H-NMR (400 MHz, CD_3OD): 5.06 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.95 (br d, 8.0, H-6), 3.48 (br s, H-7), 2.65 (dd, 10.0, 8.0, H-9), 4.27 and 4.97 (each d, 13.0, H_2-10), 4.75 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.37 (t, 9.0, H-3′), 3.67 (dd, 12.0, 6.0, H-6′), 3.94 (dd, 12.0, 2.0, H-6′), 7.06 (d, 2.0, H-2″), 6.78 (d, 8.0, H-5″), 6.96 (dd, 8.0, 2.0, H-6″), 7.57 (d, 16.0, H-7″), 6.29 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.8 (C-4), 39.1 (C-5), 79.5 (C-6), 62.8 (C-7), 63.7 (C-8), 43.7 (C-9), 64.2 (C-10), 100.4 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 63.0 (C-6′), 127.8 (C-1″), 114.9 (C-2″), 149.6 (C-3″), 146.8 (C-4″), 116.5 (C-5″), 123.1 (C-6″), 147.4 (C-7″), 115.3 (C-8″), 169.1 (C-9″). *Premna subscandens* (Verbenaceae).[61]

91. 10-*O*-*trans*-Isoferuloylcatalpol



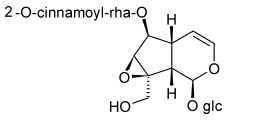
$C_{25}H_{30}O_{13}$: 538.1686; amorphous powder; $[\alpha]_D^{24}$ −61.2° (*c*=1.19, MeOH); UV (MeOH): 216 (4.13), 243 (4.01), 297 (4.12), 324 (4.18); IR (KBr): 3350, 2875, 1685, 1600, 1505, 1440, 1265, 1160, 1125, 1070—1010, 920, 805; ^{1}H-NMR (400 MHz, CD_3OD): 5.06 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.95 (dd, 8.0, 1.0, H-6), 3.48 (d, 1.0, H-7), 2.65 (dd, 10.0, 8.0, H-9), 4.27 and 4.98 (each d, H_2-10), 4.74 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 7.09 (d, 2.0, H-2″), 6.94 (d, 8.0, H-5″), 7.06 (dd, 8.0, 2.0, H-6″), 7.59 (d, 16.0, H-7″), 6.34 (d, 16.0, H-8″), 3.88 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.8 (C-4), 39.1 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.3 (C-10), 100.4 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 63.0 (C-6′), 128.9 (C-1″), 112.5 (C-2″), 151.6 (C-3″), 148.0 (C-4″), 114.9 (C-5″), 122.9 (C-6″), 146.9 (C-7″), 115.9 (C-8″), 168.9 (C-9″), 56.4 (MeO). *Premna subscandens* (Verbenaceae).[61]

92. 6′-*O*-*p*-Hydroxybenzoylcatalposide



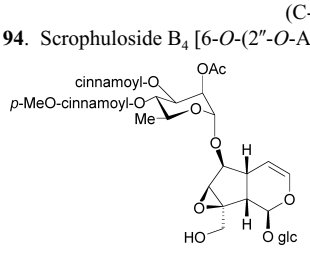
$C_{29}H_{30}O_{14}$: 602.1635; amorphous powder; $[\alpha]_D^{25}$ −123.5° (*c*=0.2, MeOH); UV (MeOH): 202 (4.43), 257 (4.40); ^{1}H-NMR (400 MHz, CD_3OD): 4.85 (m, H-1), 6.31 (dd, 5.8, 1.7, H-3), 4.95 (m, H-4), 2.62 (m, H-5), 4.84 (m, H-6), 3.62 (d, 1.2, H-7), 2.64 (m, H-9), 3.59 and 4.17 (each d, 13.2, H_2-10), 4.81 (d, 7.8, H-1′), 3.30 (m, H-2′), 3.44 (m, H-3′, 4′), 3.60 (m, H-5′), 4.53 (dd, 11.7, 6.1, H-6′), 4.64 (dd, 11.7, 2.4, H-6′), 7.92 (d, 9.0, H-2″, 6″), 6.84 (d, 9.0, H-3″, 5″), 7.91 (d, 8.8, H-2‴, 6‴), 6.84 (d, 8.8, H-3‴, 5‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.3 (C-3), 103.2 (C-4), 36.9 (C-5), 81.7 (C-6), 60.2 (C-7), 66.8 (C-8), 43.1 (C-9), 61.7 (C-10), 99.9 (C-1′), 74.9 (C-2′), 77.6 (C-3′), 71.9 (C-4′), 76.1 (C-5′), 64.2 (C-6′), 121.9 (C-1″), 132.9 (C-2″, 6″), 116.3 (C-3″, 5″), 163.9 (C-4″), 168.1 (C-7″), 122.9 (C-1‴), 133.1 (C-2‴, 6‴), 116.4 (C-3‴, 5‴), 163.7 (C-4‴), 167.8 (C-7‴). *Catalpa ovata* (Bignoniaceae).[62]

93. Verbaspinoside (6-*O*-[(2″-*O*-*trans*-Cinnamoyl)-α-L-rhamnopyranosyl]catalpol)



$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; $[\alpha]_D^{20}$ −110.9° (*c*=0.72, MeOH); UV (MeOH): 216 (4.10), 222 (4.05), 280 (4.16); ^{1}H-NMR (400 MHz, CD_3OD): 5.09 (d, 9.9, H-1), 6.38 (dd, 6.0, 1.7, H-3), 5.08 (dd, 6.0, 4.6, H-4), 2.44 (m, H-5), 4.04 (d, 8.3, H-6), 3.66 (s, H-7), 2.58 (dd, 9.9, 7.9, H-9), 4.16 and 3.81 (each d, 13.3, H_2-10), 4.78 (d, 7.9, H-1′), 3.27 (dd, 9.1, 7.9, H-2′), 3.41 (t, 9.1, H-3′), 3.25 (t, 9.1, H-4′), 3.32 (overlapped with solvent signal, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 5.05 (d, 1.7, H-1″), 5.18 (dd, 3.3, 1.7, H-2″), 3.95 (dd, 9.9, 3.3, H-3″), 3.50 (t, 9.9, H-4″), 3.77 (m, H-5″), 1.32 (d, 6.2, H_3-6″), 7.61—7.65 (overlapped, H-2‴, 6‴), 7.40—7.44 (overlapped, H-3‴, 4‴, 5‴), 7.75 (d, 16.2, H-7‴), 6.61 (d, 16.2, H-8‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.3 (C-3), 103.4 (C-4), 37.2 (C-5), 84.3 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.5 (C-10), 99.7 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 97.6 (C-1″), 74.4 (C-2″), 70.4 (C-3″), 74.2 (C-4″), 70.3 (C-5″), 18.0 (C-6″), 135.7 (C-1‴), 129.3 (C-2‴, 6‴), 130.0 (C-3‴, 5‴), 131.6 (C-4‴), 146.9 (C-7‴), 118.6 (C-8‴), 168.0 (C-9‴). *Verbascum spinosum* (Scrophulariaceae).[63]

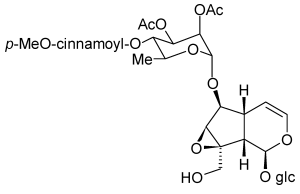
94. Scrophuloside B_4 [6-*O*-(2″-*O*-Acetyl-3″-*O*-cinnamoyl-4″-*O*-*p*-methoxycinnamoyl-α-L-rhamnopyranosyl)catalpol]



$C_{42}H_{48}O_{18}$: 840.2840; yellowish powder; $[\alpha]_D^{25}$ −31.8° (*c*=0.29, $CHCl_3$); ^{1}H-NMR (300 MHz, $CDCl_3$–CD_3OD): 4.92 (d, 9.6, H-1), 6.36 (d, 5.8, H-3), 5.13 (dd, 5.8, 4.7, H-4), 2.55 (m, H-5), 4.02 (dd, 8.7, 2.1, H-6), 3.65 (d, 2.1, H-7), 2.66 (dd, 9.6, 7.8, H-9), 3.98 (dd, 11.0, 2.0, H-10), 4.00 (dd, 11.0, 5.5, H-10), 4.82 (d, 7.8, H-1′), 3.36 (dd, 7.8, 7.2, H-2′), 3.51 (dd, 7.8, 7.2, H-3′), 3.49 (dd, 7.8, 7.2, H-4′), 3.38 (m, H-5′), 3.88 (dd, 11.4, 5.5, H-6′), 3.77 (dd, 11.4, 2.0 H-6′), 5.03 (d, 1.2, H-1″), 5.41 (dd, 3.0, 1.2, H-2″), 5.53 (dd, 9.6, 3.0, H-3″), 5.34 (t, 9.6, H-4″) 4.10 (m, H-5″), 1.28 (d, 6.6, H_3-6″), 2.20 (s, Ac), 7.47 (dd, 8.5, 2.5, H-2‴), 7.36 (dd, 8.5, 8.5, H-3‴, 5‴), 7.35 (dd, 8.5, 8.5, H-4‴), 7.49 (dd, 8.5, 2.5, H-6‴), 7.63 (d, 16.0, H-7‴), 6.33 (d, 16.0, H-8‴), 7.46 (d, 9.0, H-2‴′, 6‴′), 6.89 (d, 9.0, H-3‴′, 5‴′), 7.64 (d, 16.2, H-7‴′), 6.25 (d, 16.2, H-8‴′), 3.83 (s, MeO-4‴′); ^{13}C-NMR (75 MHz, $CDCl_3$–CD_3OD): 94.6 (C-1), 141.3 (C-3), 102.5 (C-4), 35.9 (C-5), 83.6 (C-6), 58.4 (C-7), 65.0 (C-8), 42.4 (C-9), 60.9 (C-10), 99.0 (C-1′), 73.2 (C-2′), 76.2 (C-3′), 69.6 (C-4′), 76.7 (C-5′), 61.4 (C-6′), 96.6 (C-1″), 70.4 (C-2″), 69.1 (C-3″), 71.7 (C-4″), 67.3 (C-5″), 17.5 (C-6″), 21.0, 170.5 (Ac), 134.1 (C-1‴), 128.9 (C-2‴), 129.0 (C-3‴), 130.6 (C-4‴), 128.9 (C-5‴), 128.3 (C-6‴), 146.2 (C-7‴),

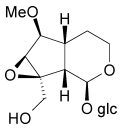
117.0 (C-8‴), 166.1 (C-9‴), 126.8 (C-1⁗), 130.2 (C-2⁗, 6⁗), 114.4 (C-3⁗, 5⁗), 161.7 (C-4⁗), 146.1 (C-7⁗), 114.3 (C-8⁗), 166.9 (C-9⁗), 55.5 (MeO-4⁗). *Scrophularia ningpoensis* (Scrophulariaceae).[64]

95. Scrovalentinoside



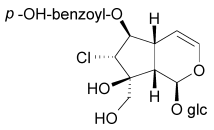
$C_{35}H_{44}O_{18}$: 752.2527; amorphous powder; $[\alpha]_D$ −136.0° (c=0.1, MeOH); UV (MeOH): 203, 228, 313; IR (KBr): 3400, 1715, 1640; ^{1}H-NMR (400 MHz, CD_3OD–C_6D_6, 9 : 1): 5.14 (d, 9.6, H-1), 6.33 (dd, 6.0, 1.7, H-3), 5.07 (dd, 6.0, 4.6, H-4), 2.55 (dddd, 8.1, 7.3, 4.6, 1.7, H-5), 4.03 (dd, 8.1, 0.8, H-6), 3.61 (s, H-7), 2.68 (dd, 9.6, 7.3, H-9), 4.24 and 3.90 (each d, 13.2, H_2-10), 4.89 (d, 7.9, H-1′), 3.43 (m, H-2′, 4′), 3.55 (t, 8.7, H-3′), 3.40 (m, H-5′), 3.75 (dd, 12.9, 1.7, H-6′), 3.99 (dd, 12.9, 5.8, H-6′), 5.10 (d, 1.7, H-1″), 5.45 (dd, 3.4, 1.7, H-2″), 5.57 (dd, 10.1, 3.4, H-3″), 5.38 (t, 10.1, H-4″), 4.17 (dq, 10.1, 6.3, H-5″), 1.27 (d, 6.3, H_3-6″), 7.40 (d, 8.8, H-2‴, 6‴), 6.84 (d, 8.8, H-3‴, 5‴), 7.75 (d, 16.0, H-7‴), 6.36 (d, 16.0, H-8‴), 1.84, 2.02 (each s, 2×Ac); ^{13}C-NMR (100 MHz, CD_3OD–C_6D_6, 9 : 1): 95.2 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 85.1 (C-6), 59.5 (C-7), 66.5 (C-8), 43.3 (C-9), 61.6 (C-10), 99.8 (C-1′), 74.8 (C-2′), 77.7 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 97.8 (C-1″), 71.4 (C-2″), 70.6 (C-3″), 72.1 (C-4″), 68.4 (C-5″), 18.0 (C-6″), 127.9 (C-1‴), 131.2 (C-2‴, 6‴), 115.5 (C-3‴, 5‴), 163.3 (C-4‴), 147.4 (C-7‴), 115.1 (C-8‴), 167.9 (C-9‴), 55.8 (OMe), 20.8×2, 171.6×2 (2×Ac). *Scrophularia auriculata* ssp. *pseudoauriculata* (Scrophulariaceae),[65] *S. nodosa*.[66]

96. 3,4-Dihydro-6-*O*-methylcatalpol



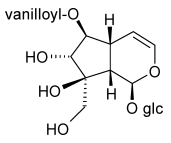
$C_{16}H_{26}O_{10}$: 378.1526; amorphous powder; $[\alpha]_D^{22}$ −77° (c=0.3, MeOH); UV (MeOH): 206; IR (film): 3374, 2925, 1598, 1374, 1077, 1036; ^{1}H-NMR (600 MHz, CD_3OD): 4.77 (d, 9.2, H-1), 3.53 (ddd, 15.0, 12.8, 2.5, H-3), 3.89 (overlapped, H-3), 1.56 (br d, 14.3, H-4), 1.77 (m, H-4), 2.10 (q, 7.7, H-5), 3.86 (overlapped, H-6), 3.68 (s, H-7), 2.26 (dd, 9.2, 7.7, H-9), 4.05 and 3.79 (each d, 13.1, H_2-10), 4.69 (d, 7.9, H-1′), 3.22 (overlapped, H-2′), 3.37 (overlapped, H-3′), 3.26 (overlapped, H-4′), 3.27 (overlapped, H-5′), 3.63 (dd, 11.7, 6.2, H-6′), 3.90 (dd, 11.7, 1.8, H-6′), 3.49 (s, MeO-6); ^{13}C-NMR (150 MHz, CD_3OD): 97.8 (C-1), 63.0 (C-3), 24.2 (C-4), 36.6 (C-5), 82.6 (C-6), 58.3 (C-7), 66.3 (C-8), 43.2 (C-9), 61.2 (C-10), 99.4 (C-1′), 74.9 (C-2′), 77.9 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 57.9 (MeO). *Scrophularia lepidota* (Scrophulariaceae).[44]

97. 6-*O*-*p*-Hydroxybenzoylasystasioside



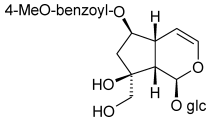
$C_{22}H_{27}ClO_{12}$: 518.1191; amorphous powder; $[\alpha]_D^{26}$ −71.4° (c=0.7, MeOH); UV (MeOH): 206 (4.31), 230 (4.12), 256 (4.20); ^{1}H-NMR (270 MHz, CD_3OD): 5.70 (d, 3.8, H-1), 6.30 (dd, 6.2, 2.0, H-3), 5.26 (dd, 6.2, 3.3, H-4), 2.89 (m, H-5), 5.08 (dd, 7.5, 5.1, H-6), 4.37 (d, 7.5, H-7), 2.64 (dd, 10.5, 3.8, H-9), 2.83 (d, 11.9, H_α-10), 4.01 (d, 11.9, H_β-10), 4.66 (d, 7.9, H-1′), 3.18 (dd, 8.7, 7.9, H-2′), 3.33 (m, H-3′, 4′, 5′), 3.67 (dd, 11.7, 5.3, H-6′) 3.89 (m, H-6′), 7.91 (d, 8.9, H-2″, 6″), 6.84 (d, 8.9, H-3″, 5″); ^{13}C-NMR (67.8 MHz, CD_3OD): 92.9 (C-1), 141.1 (C-3), 105.7 (C-4), 37.2 (C-5), 85.1 (C-6), 69.7 (C-7), 80.9 (C-8), 49.3 (C-9), 63.7 (C-10), 99.6 (C-1′), 74.8 (C-2′), 78.2 (C-3′), 71.7 (C-4′), 80.0 (C-5′), 62.9 (C-6′), 121.8 (C-1″), 133.1 (C-2″, 6″), 116.3 (C-3″, 5″), 163.9 (C-4″), 167.6 (C-7″). *Catalpa fructus* (Bignoniaceae).[59]

98. Urphoside A



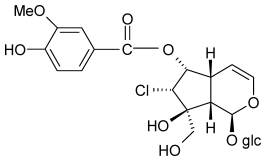
$C_{23}H_{30}O_{14}$: 530.1635; amorphous powder; $[\alpha]_D^{23}$ −22.0° (c=0.15, MeOH); UV (MeOH): 210 (2.30), 299 (2.50), 331 sh (2.30); ^{1}H-NMR (500 MHz, CD_3OD): 5.55 (d, 4.3, H-1), 6.27 (dd, 6.3, 2.1, H-3), 5.27 (dd, 6.3, 3.5, H-4), 2.81 (dddd, 10.1, 4.9, 3.5, 2.1, H-5), 4.85 (dd, 5.8, 4.9, H-6), 4.20 (d, 5.8, H-7), 2.52 (dd, 10.1, 4.3, H-9), 4.04 (d, 11.9, H-10), 4.85 (d, 11.9, H-10), 4.66 (d, 7.9, H-1′), 3.19 (t, 7.9, H-2′), 3.36 (t, 8.9, H-3′), 3.28 (m, H-4′, 5′), 3.66 (dd, 12.0, 5.2, H-6′), 3.87 (dd, 12.0, 2.4, H-6′), 7.58 (d, 1.8, H-2″), 6.85 (d, 8.2, H-5″), 7.60 (dd, 8.2, 1.8, H-6″), 3.90 (s, MeO-3″); ^{13}C-NMR (125 MHz, CD_3OD): 93.1 (C-1), 140.9 (C-3), 106.0 (C-4), 36.8 (C-5), 86.2 (C-6), 84.4 (C-7), 80.8 (C-8), 48.5 (C-9), 64.4 (C-10), 99.6 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.2 (C-5′), 62.9 (C-6′), 122.5 (C-1″), 113.8 (C-2″), 148.8 (C-3″), 153.1 (C-4″), 116.0 (C-5″), 125.3 (C-6″), 168.1 (C-7″), 56.5 (MeO-3″). *Veronica hederifolia* (Scrophulariaceae).[67]

99. 6-*O*-(4-Methoxybenzoyl)-5,7-bisdeoxycynanchoside



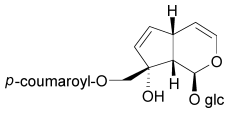
$C_{23}H_{30}O_{12}$: 498.1737; amorphous powder; $[\alpha]_D^{23}$ −99.0° (c=0.41, MeOH); UV (MeOH): 201 (4.33), 256 (4.18); ^{1}H-NMR (CD_3OD): 5.57 (d, 2.0, H-1), 6.28 (dd, 6.0, 2.0, H-3), 5.00 (dd, 6.0, 3.0, H-4), 3.09 (m, H-5), 5.08 (m, H-6), 1.94 (dd, 15.0, 2.5, H-7), 2.40 (dd, 15.0, 6.5, H-7), 2.65 (dd, 8.5, 4.5, H-9), 4.68 (d, 8.0, H-1′), 3.20 (t, 8.0, H-2′), 3.37 (t, 8.0, H-3′), 3.27 (t, 8.0, H-4′), 3.31 (overlapping, H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 8.01 (d, 9.0, H-2″, 6″), 6.98 (d, 9.0, H-3″, 5″), 3.86 (s, MeO-4″); ^{13}C-NMR (CD_3OD): 93.4 (C-1), 141.7 (C-3), 104.3 (C-4), 40.8 (C-5), 80.8 (C-6), 42.8 (C-7), 82.5 (C-8), 51.6 (C-9), 68.0 (C-10), 99.6 (C-1′), 74.8 (C-2′), 78.3 (C-3′)[a], 71.7 (C-4′), 78.0 (C-5′)[a], 62.7 (C-6′), 123.9 (C-1″), 132.7 (C-2″, 6″), 114.8 (C-3″, 5″), 165.2 (C-4″), 167.8 (C-7″), 56.0 (MeO-4″). *Tabebuia impetiginosa* (Bignoniaceae).[68]

100. Urphoside B



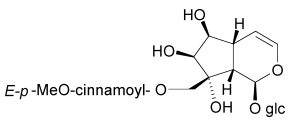
$C_{23}H_{29}O_{13}Cl$: 548.1296; amorphous powder; $[\alpha]_D^{23}$ −122° (c=0.05, MeOH); UV: 210, 299, 331 sh; ^{1}H-NMR (500 MHz, CD_3OD): 5.70 (d, 3.7, H-1), 6.31 (dd, 6.3, 2.1, H-3), 5.26 (dd, 6.3, 3.5, H-4), 2.90 (m, H-5), 5.10 (dd, 12.2, 7.3, H-6), 4.20 (d, 7.3, H-7), 2.63 (dd, 10.5, 3.7, H-9), 4.10, 4.83 (each d, H_2-10), 4.66 (d, 7.9, H-1′), 3.20 (t, 9.1, H-2′), 3.36 (t, 9.3, H-3′), 3.28 (overlapped, H- 4′, 5′), 3.67 (dd, 12.0, 6.0, H-6′), 3.83 (dd, 12.0, 2.1, H-6′), 7.57 (d, 1.8, H-2″), 6.89 (d, 8.5, H-5″), 7.60 (dd, 8.5, 1.8, H-6″), 3.91 (s, MeO-3″); ^{13}C-NMR (125 MHz, CD_3OD): 92.9 (C-1), 141.3 (C-3), 105.7 (C-4), 36.8 (C-5), 85.3 (C-6), 69.7 (C-7), 81.0 (C-8), 48.5 (C-9), 63.6 (C-10), 99.6 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.2 (C-5′), 62.9 (C-6′), 122.7 (C-1″), 113.7 (C-2″), 148.8 (C-3″), 153.3 (C-4″), 116.1 (C-5″), 125.4 (C-6″), 167.6 (C-7″), 56.5 (OMe). *Veronica pectinata* var. *glandulosa* (Scrophulariaceae).[69]

101. 10-*O*-*trans*-Coumaroyleranthemoside



$C_{24}H_{28}O_{11}$: 492.1631; amorphous powder; $[\alpha]_D^{27}$ −33.3° (c=1.35, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.37 (d, 3.4, H-1), 6.11 (dd, 6.2, 2.0, H-3), 4.90 (dd, 6.2, 3.4, H-4), 3.25 (m, H-5), 5.89 (dd, 5.6, 2.4, H-6), 5.56 (dd, 5.6, 1.9, H-7), 2.52 (dd, 8.3, 3.4, H-9), 4.09 (d, 11.2, H-10), 4.20 (d, 11.2, H-10), 4.61 (d, 7.8, H-1′), 3.17 (dd, 8.8, 7.8, H-2′), 3.30 (dd, 8.8, 8.5, H-3′), 3.23 (dd, 8.5, 8.1, H-4′), 3.24 (m, H-5′), 3.56 (dd, 12.0, 5.1, H-6′), 3.74 (dd, 12.0, 2.0, H-6′), 7.37 (d, 8.8, H-2″, 6″), 6.72 (d, 8.8, H-3″, 5″), 7.54 (d, 15.9, H-7″), 6.25 (d, 15.9, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 94.4 (C-1), 139.9 (C-3), 105.9 (C-4), 40.0 (C-5), 138.2 (C-6), 132.4 (C-7), 85.0 (C-8), 46.9 (C-9), 70.1 (C-10), 99.7 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.2 (C-5′), 62.5 (C-6′), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″), 147.0 (C-7″), 114.9 (C-8″), 169.1 (C-9″). *Barleria strigosa* (Acanthaceae).[70]

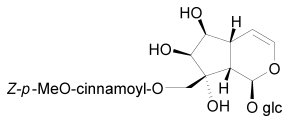
102. 4″-Methoxy-*E*-globularinin



$C_{25}H_{32}O_{13}$: 540.1842; amorphous powder; $[\alpha]_D^{24}$ −74.8° (c=1.04, MeOH); UV (MeOH): 217 (3.97), 226 (4.01), 302 sh (4.24), 308 (4.27); IR (KBr): 3325, 1680, 1625, 1600, 1505, 1420, 1250, 1170, 1070, 1015, 830; ^{1}H-NMR (400 MHz, CD_3OD): 5.29 (d, 6.0, H-1), 6.32 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 3.0, H-4), 2.70 (br tdd, 11.0, 8.0, 3.0, H-5), 3.95 (dd, 8.0, 4.0, H-6), 3.87 (d, 4.0, H-7), 2.39 (dd, 11.0, 6.0, H-9), 4.34 and 4.53 (each d, 11.0, H_2-10), 4.72 (d, 8.0, H-1′), 3.30 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 5.0, H-6′), 3.82 (dd, 12.0, 2.0, H-6′), 7.57 (d, 9.0, H-2″, 6″), 6.96 (d, 9.0, H-3″, 5″), 7.71 (d, 16.0, H-7″), 6.45 (d, 16.0, H-8″), 3.83 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD):

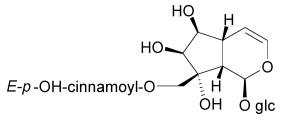
96.4 (C-1), 141.7 (C-3), 106.6 (C-4), 39.1 (C-5), 78.9 (C-6), 79.0 (C-7), 81.6 (C-8), 45.0 (C-9), 69.2 (C-10), 101.0 (C-1′), 74.9 (C-2′), 78.3 (C-3′), 71.2 (C-4′), 77.9 (C-5′), 62.5 (C-6′), 128.4 (C-1″), 131.1 (C-2″, 6″), 115.5 (C-3″, 5″), 163.2 (C-4″), 146.5 (C-7″), 116.2 (C-8″), 169.6 (C-9″), 55.9 (MeO-4″). *Premna subscandens* (Verbenaceae).[71]

103. 4″-Methoxy-*Z*-globularinin



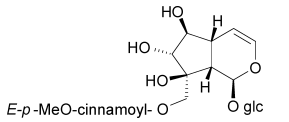
$C_{25}H_{32}O_{13}$: 540.1842; amorphous powder; $[\alpha]_D^{24}$ −51.5° (c=0.45, MeOH); UV (MeOH): 223 (3.95), 301 sh (4.14), 308 (4.16); ^{1}H-NMR (400 MHz, CD_3OD): 5.28 (d, 6.0, H-1), 6.31 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 3.0, H-4), 2.67 (br tdd, 11.0, 8.0, 3.0, H-5), 3.94 (dd, 8.0, 4.0, H-6), 3.83 (d, 4.0, H-7), 2.38 (dd, 11.0, 6.0, H-9), 4.30 and 4.44 (each d, 11.0, H_2-10), 4.70 (d, 8.0, H-1′), 3.27 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 5.0, H-6′), 3.83 (dd, 12.0, 2.0, H-6′), 7.75 (d, 9.0, H-2″, 6″), 6.90 (d, 9.0, H-3″, 5″), 6.92 (d, 13.0, H-7″), 5.94 (d, 13.0, H-8″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 96.4 (C-1), 141.7 (C-3), 106.5 (C-4), 39.0 (C-5), 79.0 (C-6), 79.2 (C-7), 81.4 (C-8), 45.2 (C-9), 69.2 (C-10), 100.8 (C-1′), 74.8 (C-2′), 78.3 (C-3′), 71.4 (C-4′), 78.0 (C-5′), 62.6 (C-6′), 128.8 (C-1″), 133.6 (C-2″, 6″), 114.5 (C-3″, 5″), 162.2 (C-4″), 144.9 (C-7″), 117.7 (C-8″), 168.5 (C-9″), 55.8 (MeO-4″). *Premna subscandens* (Verbenaceae).[71]

104. 4″-Hydroxy-*E*-globularinin



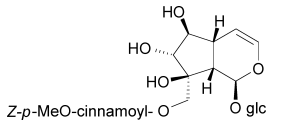
$C_{24}H_{30}O_{13}$: 526.1686; amorphous powder; $[\alpha]_D^{25}$ −76.2° (c=0.81, MeOH); UV (MeOH): 211 (4.00), 228 (3.99), 311 (4.25); ^{1}H-NMR (400 MHz, CD_3OD): 5.29 (d, 6.0, H-1), 6.32 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 3.0, H-4), 2.69 (tdd, 10.0, 8.0, 3.0, H-5), 3.95 (dd, 8.0, 4.0, H-6), 3.87 (d, 4.0, H-7), 2.39 (dd, 10.0, 6.0, H-9), 4.32 and 4.52 (each d, 12.0, H_2-10), 4.71 (d, 8.0, H-1′), 3.27 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 5.0, H-6′), 3.82 (dd, 12.0, 2.0, H-6′), 7.48 (d, 9.0, H-2″, 6″), 6.81 (d, 9.0, H-3″, 5″), 7.68 (d, 16.0, H-7″), 6.39 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 96.4 (C-1), 141.7 (C-3), 106.6 (C-4), 39.1 (C-5), 79.0 (C-6, 7), 81.7 (C-8), 45.0 (C-9), 69.1 (C-10), 101.1 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.2 (C-4′), 78.3 (C-5′), 62.5 (C-6′), 127.2 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.4 (C-4″), 146.9 (C-7″), 115.2 (C-8″), 169.9 (C-9″). *Premna subscandens* (Verbenaceae).[71]

105. 4″-Methoxy-*E*-globularimin



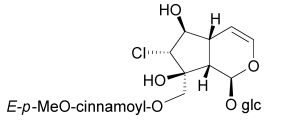
$C_{25}H_{32}O_{13}$: 540.1842; amorphous powder; $[\alpha]_D^{26}$ −90.4° (c=1.38, MeOH); UV (MeOH): 209 (4.00), 227 (4.03), 304 (4.26); IR (KBr): 3350, 2900, 1685, 1625, 1600, 1510, 1420, 1250, 1170, 1070—1010, 960, 830; ^{1}H-NMR (400 MHz, CD_3OD): 5.55 (d, 5.0, H-1), 6.23 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 4.0, H-4), 2.68 (dddd, 10.0, 6.0, 4.0, 2.0, H-5), 3.73 (t, 6.0, H-6), 3.87 (d, 6.0, H-7), 2.50 (dd, 10.0, 5.0, H-9), 4.34 and 4.53 (each d, H_2-10), 4.68 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.67 (dd, 12.0, 6.0, H-6′), 3.84 (dd, 12.0, 2.0, H-6′), 7.56 (d, 9.0, H-2″, 6″), 6.95 (d, 9.0, H-3″, 5″), 7.69 (d, 16.0, H-7″), 6.41 (d, 16.0, H-8″), 3.83 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.8 (C-1), 140.8 (C-3), 106.0 (C-4), 38.9 (C-5), 84.3 (C-6), 85.6 (C-7), 80.6 (C-8), 49.4 (C-9), 66.6 (C-10), 100.1 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.9 (C-6′), 128.5 (C-1″), 131.0 (C-2″, 6″), 115.5 (C-3″, 5″), 163.2 (C-4″), 146.2 (C-7″), 116.4 (C-8″), 169.4 (C-9″), 55.9 (MeO-4″). *Premna subscandens* (Verbenaceae).[71]

106. 4″-Methoxy-*Z*-globularimin



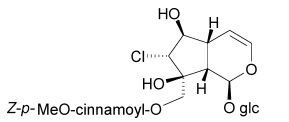
$C_{25}H_{32}O_{13}$: 540.1842; amorphous powder; $[\alpha]_D^{26}$ −96.0° (c=0.17, MeOH); UV (MeOH): 206 (4.27), 224 sh (4.11), 306 (4.15); ^{1}H-NMR (400 MHz, CD_3OD): 5.51 (d, 6.0, H-1), 6.22 (dd, 6.0, 2.0, H-3), 5.04 (dd, 6.0, 4.0, H-4), 2.66 (dddd, 10.0, 7.0, 4.0, 2.0, H-5), 3.68 (dd, 7.0, 6.0, H-6), 3.71 (d, 6.0, H-7), 2.46 (dd, 10.0, 6.0, H-9), 4.30 and 4.47 (each d, 12.0, H_2-10), 4.62 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.85 (dd, 12.0, 2.0, H-6′), 7.73 (d, 9.0, H-2″, 6″), 6.89 (d, 9.0, H-3″, 5″), 6.88 (d, 13.0, H-7″), 5.90 (d, 13.0, H-8″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.8 (C-1), 140.7 (C-3), 106.1 (C-4), 38.9 (C-5), 84.3 (C-6), 85.8 (C-7), 80.5 (C-8), 49.3 (C-9), 66.6 (C-10), 100.1 (C-1′), 74.9 (C-2′), 78.2 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.9 (C-6′), 128.8 (C-1″), 133.5 (C-2″, 6″), 114.5 (C-3″, 5″), 162.1 (C-4″), 144.6 (C-7″), 117.8 (C-8″), 168.2 (C-9″), 55.8 (MeO-4″). *Premna subscandens* (Verbenaceae).[71]

107. 10-*O*-*trans*-*p*-Methoxycinnamoylasystasioside E



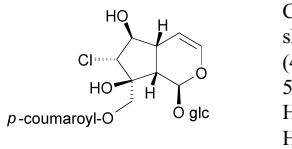
$C_{25}H_{30}O_{12}Cl$: 557.1425; colorless crystals; mp 125—127 °C (H_2O); $[\alpha]_D^{18}$ −119.4° (c=1.41, MeOH); UV (MeOH): 209 (4.02), 227 (4.03), 308 (4.33); IR (KBr): 3300, 1690, 1630, 1510, 1420, 1250, 1195, 1174, 1077, 1020, 960, 845; ^{1}H-NMR (400 MHz, CD_3OD): 5.62 (d, 4.0, H-1), 6.23 (dd, 6.0, 2.0, H-3), 5.11 (dd, 6.0, 3.0, H-4), 2.72 (dddd, 11.0, 6.0, 3.0 2.0, H-5), 3.93 (dd, 8.0, 6.0, H-6), 4.07 (d, 8.0, H-7), 2.64 (dd, 11.0, 4.0, H-9), 4.31 and 4.55 (each d, 12.0, H_2-10), 4.63 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.61 (dd, 12.0, 5.0, H-6′), 3.84 (dd, 12.0, 2.0, H-6′), 7.57 (d, 9.0, H- 2″, 6″), 6.96 (d, 9.0, H-3″, 5″), 7.68 (d, 16.0, H-7″), 6.38 (d, 16.0, H-8″), 3.83 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 93.0 (C-1), 140.9 (C-3), 105.8 (C-4), 38.1 (C-5), 83.5 (C-6), 73.5 (C-7), 79.5 (C-8), 49.1 (C-9), 66.2 (C-10), 99.9 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 78.0 (C-5′), 62.7 (C-6′), 128.4 (C-1″), 131.1 (C-2″, 6″), 115.5 (C-3″, 5″), 163.3 (C-4″), 146.5 (C-7″), 115.9 (C-8″), 168.9 (C-9″), 56.4 (MeO-4″). *Premna subscandens* (Verbenaceae).[61]

108. 10-*O*-*cis*-*p*-Methoxycinnamoylasystasioside E



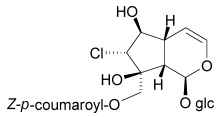
$C_{25}H_{30}O_{12}{}^{35}Cl$: 557.1425; amorphous powder; $[\alpha]_D^{18}$ −127.2° (c=1.84, MeOH); UV (MeOH): 209 (4.00), 223 sh (3.94), 306 (4.12); IR (KBr): 3325, 1700, 1600, 1510, 1250, 1165, 1070—1015, 960, 825; ^{1}H-NMR (400 MHz, CD_3OD): 5.59 (d, 3.0, H-1), 6.20 (dd, 6.0, 2.0, H-3), 5.08 (dd, 6.0, 3.0, H-4) 2.69 (dddd, 11.0, 6.0, 3.0 2.0, H-5), 3.90 (dd, 8.0, 6.0, H-6), 4.04 (d, 8.0, H-7), 2.61 (dd, 11.0, 3.0, H-9), 4.27 and 4.47 (each d, 12.0, H_2-10), 4.62 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.67 (dd, 12.0, 5.0, H-6′), 3.85 (dd, 12.0, 2.0, H-6′), 7.74 (d, 9.0, H- 2″, 6″), 6.89 (d, 9.0, H-3″, 5″), 6.90 (d, 13.0, H-7″), 5.85 (d, 13.0, H-8″), 3.82 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 92.9 (C-1), 140.7 (C-3), 105.9 (C-4), 37.9 (C-5), 83.4 (C-6), 73.5 (C-7), 79.4 (C-8), 49.0 (C-9), 65.7 (C-10), 99.8 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 128.7 (C-1″), 133.6 (C-2″, 6″), 114.5 (C-3″, 5″), 162.2 (C-4″), 145.1 (C-7″), 117.3 (C-8″), 167.6 (C-9″), 55.8 (MeO-4″). *Premna subscandens* (Verbenaceae).[61]

109. 10-*O*-*trans*-*p*-Coumaroylasystasioside E



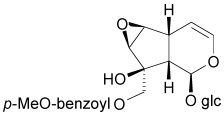
$C_{24}H_{28}O_{12}{}^{35}Cl$: 543.1269; amorphous powder; $[\alpha]_D^{18}$ −140.8° (c=1.14, MeOH); UV (MeOH): 209 (4.05), 228 (4.05), 302 sh (4.30), 309 (4.35); IR (KBr): 3350, 1685, 1625, 1600, 1510, 1440, 1330, 1260, 1170, 1070—1015, 870, 830; ^{1}H-NMR (400 MHz, CD_3OD): 5.61 (d, 4.0, H-1), 6.22 (dd, 6.0, 2.0, H-3), 5.11 (dd, 6.0, 3.0, H-4) 2.72 (dddd, 11.0, 6.0, 3.0 2.0, H-5), 3.94, (dd, 8.0, 6.0, H-6), 4.06 (d, 8.0, H-7), 2.64 (dd, 11.0, 4.0, H-9), 4.30 and 4.55 (each d, 12.0, H_2-10), 4.63 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.68 (dd, 12.0, 5.0, H-6′), 3.83 (dd, 12.0, 2.0, H-6′), 7.47 (d, 9.0, H-2″, 6″), 6.81 (d, 9.0, H-3″, 5″), 7.66 (d, 16.0, H-7″), 6.33 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 93.1 (C-1), 140.9 (C-3), 105.8 (C-4), 38.1 (C-5), 83.5 (C-6), 73.5 (C-7), 79.5 (C-8), 49.2 (C-9), 66.1 (C-10), 99.9 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 78.0 (C-5′), 62.7 (C-6′), 127.2 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.4 (C-4″), 146.9 (C-7″), 115.0 (C-8″), 168.9 (C-9″). *Premna subscandens* (Verbenaceae).[61]

110. 10-*O*-*cis*-*p*-Coumaroylasystasioside E



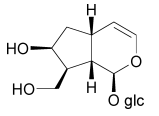
$C_{24}H_{28}O_{12}{}^{35}Cl$: 543.1269; amorphous powder; $[\alpha]_D^{18}$ −121.1° (c=1.38, MeOH); UV (MeOH): 228 (3.90), 301 sh (4.10), 310 (4.14); ^{1}H-NMR (400 MHz, CD_3OD): 5.58 (d, 3.0, H-1), 6.20 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 3.0, H-4) 2.67 (dddd, 11.0, 5.0, 3.0 2.0, H-5), 3.89, (dd, 8.0, 6.0, H-6), 4.03 (d, 8.0, H-7), 2.61 (dd, 11.0, 3.0, H-9), 4.26 and 4.46 (each d, 12.0, H_2-10), 4.62 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 5.0, H-6′), 3.85 (dd, 12.0, 2.0, H-6′), 7.68 (d, 9.0, H-2″, 6″), 6.75 (d, 9.0, H-3″, 5″), 6.86 (d, 13.0, H-7″), 5.80 (d, 13.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 93.0 (C-1), 140.7 (C-3), 105.9 (C-4), 37.9 (C-5), 83.4 (C-6), 73.6 (C-7), 79.4 (C-8), 49.0 (C-9), 65.7 (C-10), 99.8 (C-1′), 74.8 (C-2′), 78.2 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 127.6 (C-1″), 133.9 (C-2″, 6″), 115.9 (C-3″, 5″), 160.2 (C-4″), 145.6 (C-7″), 116.3 (C-8″), 167.7 (C-9″). *Premna subscandens* (Verbenaceae).[61]

111. 10-*O*-(4-Methoxybenzoyl)-impetiginoside A



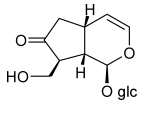
$C_{23}H_{28}O_{12}$: 496.1580; amorphous powder; $[\alpha]_D^{22}$ −131.0° (c=0.38, MeOH); UV (MeOH): 202 (4.33), 256 (4.14); ^{1}H-NMR (CD_3OD): 5.75 (br s, H-1), 6.26 (dd, 6.5, 2.5, H-3), 4.86 (ddd, 6.5, 2.0, 0.5, H-4), 3.12 (dt, 8.5, 2.0, H-5), 3.48 (d, 2.0, H-6), 3.58 (d, 2.0, H-7), 2.29 (br d, 8.5, H-9), 4.55 and 4.36 (each d, 10.0, H_2-10), 4.59 (d, 8.0, H-1′), 3.18 (t, 8.0, H-2′), 3.35 (t, 8.0, H-3′), 3.29 (overlapping, H-4′, 5′), 3.67 (dd, 11.5, 5.5, H-6′), 3.88 (dd, 11.5, 2.0, H-6′), 8.04 (d, 9.0, H-2″, 6″), 7.01 (d, 9.0, H-3″, 5″), 3.87 (s, MeO-4″); ^{13}C-NMR (CD_3OD): 92.4 (C-1), 142.0 (C-3), 101.5 (C-4), 33.1 (C-5), 58.9 (C-6), 60.8 (C-7), 79.4 (C-8), 46.9 (C-9), 68.3 (C-10), 99.5 (C-1′), 74.7 (C-2′), 78.2 (C-3′)[a], 71.7 (C-4′), 78.0 (C-5′)[a], 62.8 (C-6′), 123.5 (C-1″), 132.8 (C-2″, 6″), 114.9 (C-3″, 5″), 165.3 (C-4″), 167.8 (C-7″), 56.0 (MeO-4″). *Tabebuia impetiginosa* (Bignoniaceae).[68]

112. Thunaloside



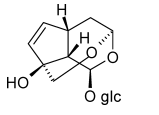
$C_{15}H_{24}O_9$: 348.1420; syrup; $[\alpha]_D^{20}$ −84.7° (c=0.4, EtOH); ^{1}H-NMR (250 MHz, D_2O): 5.25 (d, 3.9, H-1), 6.26 (dd, 6.0, 2.0, H-3), 4.99 (dd, 6.0, 3.1, H-4), 2.77 (m, H-5), 1.98 (ddd, 14.0, 8.0, 3.8, H-6), 1.79 (dt, 14.0, 6.0, 6.0, H-6), 4.42 (m, H-7), 2.10 (m, H-8, 9), 3.83 (dd, 11.0, 7.5, H_a-10), 3.77 (dd, 11.0, 5.5, H_b-10), 4.79 (d, 8.0, H-1′), 3.33 (dd, 9.3, 8.0, H-2′), 3.53 (t, 9.3, H-3′), 3.42 (t, 9.3, H-4′), 3.49 (ddd, 10.5, 6.0, 2.5, H-5′), 3.93 (dd, 12.5, 2.5, H-6′), 3.74 (dd, 12.5, 6.0, H-6′); ^{13}C-NMR (62.5 MHz, CD_3OD): 96.8 (C-1), 139.5 (C-3), 107.7 (C-4), 31.9 (C-5), 42.2 (C-6), 72.5 (C-7), 48.2 (C-8), 42.5 (C-9), 61.8 (C-10), 99.2 (C-1′), 73.9 (C-2′), 77.1 (C-3′), 70.6 (C-4′), 77.2 (C-5′), 61.5 (C-6′). *Thunbergia alata* (Acanthaceae).[14]

113. Proceroside (7-Oxocarpensioside)



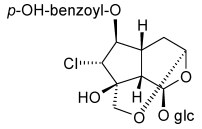
$C_{15}H_{22}O_9$: 346.1263; IR (neat) 1734; ^{1}H-NMR (300 MHz, D_2O): 5.50 (d, 1.5, H-1), 6.20 (dd, 6.4, 1.9, H-3), 4.80 (m, H-4, 1′), 3.03 (ddd, 8.1, 7.0, 1.9, H-5), 2.49 (dd, 18.7, 8.1, H-6), 2.25 (d, 18.9, H-6), 2.32 (ddd, 11.3, 4.1, 3.7, H-8), 2.63 (ddd, 11.0, 7.0, 1.5, H-9), 3.70 (dd, 11.8, 3.7, H-10), 3.85 (dd, 11.4, 4.1, H-10), 3.20—3.45 (m, H-2′, 3′, 4′, 5′), 3.64 (dd, 12.4, 6.0, H-6′), 3.81 (d, 12.2, H-6′); ^{13}C-NMR (75 MHz, D_2O): 93.6 (C-1), 139.2 (C-3), 106.2 (C-4), 25.7 (C-5), 44.6 (C-6), 223.1 (C-7), 50.7 (C-8), 39.7 (C-9), 58.9 (C-10), 98.4 (C-1′), 69.8, 72.9, 75.7, 76.4 (C-2′, 3′, 4′, 5′), 60.9 (C-6′). *Pedicularis procera* syn. *P. grayi* (Scrophulariaceae).[72]

114. Crescentoside C



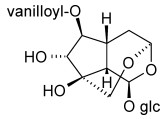
$C_{15}H_{22}O_9$: 346.1263; powder; $[\alpha]_D^{27}$ −33° (c=0.9, MeOH); ^{1}H-NMR (400 MHz, D_2O): 5.59 (br s, H-1), 5.23 (br s, H-3), 2.13 (dd, 14.8, 8.8, H_a-4),1.59 (br d, 14.8, H_b-4), 2.86 (ddd, 8.8, 6.8, 3.4, H-5), 6.05 (dd, 5.6, 3.4, H-6), 5.49 (d, 5.6, H-7), 2.40 (d, 6.8, H-9), 3.64 and 3.38 (each d, 12.0, H_2-10), 4.73 (d, 8.1, H-1′), 3.16 (dd, 9.0, 8.1, H-2′), 3.40 (t, 9.0, H-3′), 3.24 (t, 9.0, H-4′), 3.35 (ddd, 9.0, 5.6, 3.7, H-5′), 3.79 (dd, 12.4, 3.7, H-6′), 3.59 (dd, 12.4, 5.6, H-6′); ^{13}C-NMR (100 MHz, D_2O): 93.0 (C-1), 94.8 (C-3), 32.4 (C-4), 32.6 (C-5), 138.2 (C-6), 132.1 (C-7), 83.1 (C-8), 50.3 (C-9), 65.2 (C-10), 97.2 (C-1′), 72.3 (C-2′), 75.7 (C-3′), 69.2 (C-4′), 75.2 (C-5′), 60.3 (C-6′). *Crescentia cujete* (Bignoniaceae).[73]

115. 6-*O*-*p*-Hydroxybenzoylglutinoside



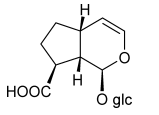
$C_{22}H_{27}ClO_{12}$: 518.1190; amorphous powder; $[\alpha]_D^{26}$ −30.7° (c=1.37, $CHCl_3$); UV (MeOH): 237 (4.09); ^{1}H-NMR (270 MHz, $CDCl_3$): 5.58 (d, 2.1, H-1), 5.39 (br d, 2.6, H-3), 2.06 (m, H_α-4), 2.32 (m, H_β-4), 2.40 (m, H-5), 5.18 (m, H-6), 5.50 (br d, 7.9, H-7), 3.60 (br d, 10.4, H-9), 4.30 (d, 12.5, H_α-10), 3.91 (dd, 12.5, 1.3, H_β-10), 4.96 (m, H-1′, 2′), 5.22 (t, 9.6, H-3′), 5.10 (t, 9.6, H-4′), 3.73 (ddd, 9.7, 4.3, 2.5, H-5′), 4.15 (dd, 12.4, 2.5, H-6′), 4.32 (dd, 12.4, 4.3, H-6′), 8.09 (d, 8.7, H-2″, 6″), 7.20 (d, 8.7, H-3″, 5″), 2.00, 2.02, 2.03, 2.10, 2.11, 2.33 (each s, 6×OAc); ^{13}C-NMR (67.8 MHz, $CDCl_3$): 94.4 (C-1), 91.8 (C-3), 32.8 (C-4), 33.4 (C-5), 86.1 (C-6), 62.9 (C-7), 85.8 (C-8), 41.9 (C-9), 61.1 (C-10), 95.1 (C-1′), 70.9 (C-2′), 72.8 (C-3′), 68.2 (C-4′), 72.1 (C-5′), 61.1 (C-6′), 126.9 (C-1″), 131.5 (C-2″, 6″), 121.7 (C-3″, 5″), 154.7 (C-4″), 165.5 (C-7″), 20.6×2, 20.7×2, 21.2, 22.2, 169.1, 169.4, 169.8, 170.2, 170.6, 170.7 (6×Ac). *Catalpa fructus* (Bignoniaceae).[59]

116. Pikuroside



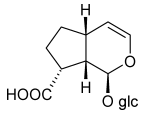
$C_{23}H_{30}O_{14}$: 530.1635; amorphous solid; mp 187—189 °C; $[\alpha]_D^{21}$ −31.5° (c=0.036, MeOH); UV (MeOH): 221.0, 263.0, 292.5; IR (KBr): 3333, 2942, 2360, 2338, 1688, 1598, 1515, 1454, 1428, 1285, 1221, 1150, 1073, 1006; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.52 (d, 2.1, H-1), 5.28 (br d, 2.7, H-3), 1.94 (dd, 13.5, 2.7, H-4), 2.35 (br dd, 13.5, 8.6, H-4), 2.12 (ddd, 9.9, 8.6, 2.6, H-5), 4.76 (dd, 7.3, 2.6, H-6), 4.19 (br d, 7.3, H-7), 2.45 (br dd, 9.9, 2.1, H-9), 3.42 (br d, 11.9, H-10), 3.87 (br d, 11.9, H-10), 4.53 (d, 8.0, H-1′), 2.94 (dd, 8.9, 8.0, H-2′), 3.20 (dd, 8.9, 8.9, H-3′), 3.06 (dd, 9.3, 8.9, H-4′), 3.16 (ddd, 9.3, 5.8, 1.8, H-5′), 3.70 (dd, 11.9, 1.8, H-6′), 3.46 (dd, 11.9, 5.8, H-6′), 7.49 (d, 2.0, H-2″), 6.91 (d, 8.3, H-5″), 7.53 (dd, 8.3, 2.0, H-6″), 3.83 (s, MeO-3″); ^{13}C-NMR (100 MHz, DMSO-d_6): 91.5 (C-1), 94.1 (C-3), 33.9 (C-4), 32.0 (C-5), 86.9 (C-6), 80.3 (C-7), 78.4 (C-8), 46.3 (C-9), 60.1 (C-10), 97.2 (C-1′), 73.4 (C-2′), 76.7 (C-3′), 70.4 (C-4′), 77.3 (C-5′), 61.3 (C-6′), 166.7 (C-7″), 121.2 (C-1″), 113.0 (C-2″), 147.8 (C-3″), 151.8 (C-4″), 115.5 (C-5″), 124.1 (C-6″), 56.1 (OMe). *Picrorhiza kurroa* (Scrophulariaceae).[74]

117. Grandifloric acid



$C_{15}H_{22}O_9$: 346.1263; $[\alpha]_D^{20}$ −84.0° (c=1.06, MeOH); ^{1}H-NMR (D_2O): 5.11 (d, 3.2, H-1), 6.05 (m, H-3), 4.70 (m, H-4), 2.57 (m, H-5), 1.84 (m, H-6), 1.53 (m, H-6), 1.84 (m, H_a-7), 1.33 (m, H_b-7), 2.25 (m, H-8), 2.43 (m, H-9), 4.61 (d, 7.8, H-1′), 3.16—3.36 (m, H-2′, 3′, 4′, 5′), 3.73 (dd, 13.8, 3.3, H-6′), 3.90 (dd, 13.8, 9.8, H-6′); *Thunbergia grandiflora*, *T. alata* (Acanthaceae).[13]

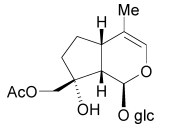
118. 8-*epi*-Grandifloric acid



$C_{15}H_{22}O_9$: 346.1263; amorphous powder; $[\alpha]_D^{19}$ +55.4° (c=0.98, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 3.7, H-1), 6.21 (dd, 6.1, 2.0, H-3), 4.72 (dd, 6.1, 2.0, H-4), 2.78 (m, H-5), 1.96 (m, H-6), 1.49 (m, H-6), 2.05 (m, H_a-7), 1.84 (m, H_b-7), 2.80 (m, H-8), 2.47 (m, H-9), 4.65 (d, 7.8, H-1′), 3.21 (dd, 8.0, 7.8, H-2′), 3.30—3.40 (m, H-3′, 5′), 3.39 (dd, 9.3, 8.8, H-4′), 3.87 (dd, 12.0, 2.0, H-6′), 3.68 (dd, 12.0, 4.9, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 95.5 (C-1), 140.7 (C-3), 107.6 (C-4), 34.6 (C-5), 33.0 (C-6), 29.0 (C-7), 45.8 (C-8), 46.4 (C-9), 179.5 (C-10), 99.7 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.6 (C-6′). *Thunbergia laurifolia* (Acanthaceae).[15]

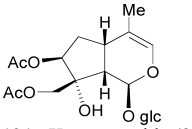
Group-3a (10-Carbon skeleton, sugar at C-1)

119. 10-*O*-Acetyl-8α-hydroxydecapetaloside (Compound-1)



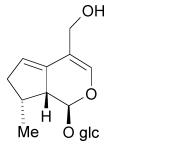
$C_{18}H_{28}O_{10}$: 404.1682; amorphous powder; ^{1}H-NMR (CD_3OD): 5.20 (d, 6.2, H-1), 6.08 (br s, H-3), 2.49 (m, H-5), 2.19 (dd, 9.5, 6.2, H-9), 4.01, 4.18 (each d, 11.2, H_2-10), 1.59 (s, H_3-11), 4.69 (d, 7.7, H-1′), 3.76 (dd, 12.1, 5.0, H-6′), 3.84 (dd, 12.1, 1.8, H-6′); ^{13}C-NMR (CD_3OD): 95.9 (C-1), 136.2 (C-3), 115.4 (C-4), 40.9 (C-5), 37.9 (C-6), 30.4 (C-7), 81.9 (C-8), 47.8 (C-9), 71.4 (C-10), 16.2 (C-11), 100.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′)[a], 71.4 (C-4′), 78.4 (C-5′)[a], 62.6 (C-6′), 20.9, 173.1 (Ac). *Viburnum suspensum* (Caprifoliaceae).[75)]

120. 7β-Acetoxy-10-*O*-acetyl-8α-hydroxydecapetaloside (Compound-2)



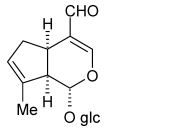
$C_{20}H_{30}O_{11}$: 446.1788; amorphous powder; ^{1}H-NMR (CD_3OD): 5.27 (d, 6.5, H-1), 6.07 (br s, H-3), 2.76 (br dd, 17.6, 8.8, H-5), 5.04 (br dd, 4.0, 2.6, H-7), 2.35 (dd, 10.1, 5.7, H-9), 4.24, 4.31 (each d, 11.7, H_2-10), 1.58 (s, H_3-11), 4.68 (d, 7.7, H-1′), 3.68 (dd, 11.7, 5.1, H-6′), 3.85 (dd, 11.7, 1.8, H-6′), 2.03, 2.05 (each s, 2×OAc); ^{13}C-NMR (CD_3OD): 95.5 (C-1), 135.8 (C-3), 115.8 (C-4), 37.1 (C-5), 36.3 (C-6), 80.4 (C-7), 83.0 (C-8), 47.0 (C-9), 67.8 (C-10), 16.2 (C-11), 100.5 (C-1′), 74.7 (C-2′), 77.9 (C-3′)[a], 71.3 (C-4′), 78.2 (C-5′)[a], 62.5 (C-6′), 20.8, 21.0, 171.6, 172.8 (2×Ac). *Viburnum suspensum* (Caprifoliaceae).[75)]

121. Kansuenoside (8-*epi*-5-Dehydro-6-dehydroxyverbenol)



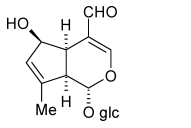
$C_{16}H_{24}O_8$: 344.1471; white amorphous powder; $[\alpha]_D^{24}$ −10.0° (c=1.44, MeOH); UV (MeOH): 249; IR (KBr): 3464, 3200, 1637, 1077, 1007; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.07 (br d, 10.0, H-1), 6.50 (s, H-3), 5.53 (br s, H-6), 1.92 (m, H-7), 2.48 (m, H-7), 2.42 (m, H-8), 2.58 (dd, 10.0, 6.5, H-9), 0.84 (d, 6.8, H_3-10), 4.02 (br s, H_2-11), 4.57 (d, 7.8, H-1′), 2.90—3.37 (H-2′—5′), 3.65 (d, 11.2, H_2-6′); ^{13}C-NMR (100 MHz, DMSO-d_6): 97.8 (C-1), 141.8 (C-3), 114.4 (C-4), 133.4 (C-5), 118.6 (C-6), 40.6 (C-7), 32.8 (C-8), 48.6 (C-9), 14.8 (C-10), 58.3 (C-11), 98.8 (C-1′), 73.2 (C-2′), 76.7 (C-3′), 70.1 (C-4′), 77.2 (C-5′), 61.3 (C-6′). *Pedicularis kansuensis* f. *albiflora* (Scrophulariaceae).[55,76)]

122. Nepetanudoside C



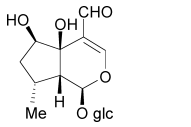
$C_{16}H_{22}O_8$: 342.1314; amorphous powder; $[\alpha]_D^{25}$ −15.6° (c=1.31, MeOH); UV (MeOH): 251 (4.01); IR (KBr): 3387, 1686, 1626; ^{1}H-NMR (400 MHz, CD_3OD): 5.40 (d, 4.6, H-1), 7.38 (s, H-3), 3.15 (m, H-5), 2.16 (m, H-6), 2.72 (m, H-6), 5.45 (m, H-7), 2.89 (m, H-9), 1.83 (br s, H_3-10), 9.19 (s, H-11), 4.61 (d, 7.6, H-1′), 3.68 (dd, 12.0, 3.8, H-6′), 3.85 (br d, 12.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 102.4 (C-1), 164.8 (C-3), 125.6 (C-4), 32.7 (C-5), 38.4 (C-6), 128.1 (C-7), 139.2 (C-8), 50.5 (C-9), 15.6 (C-10), 193.5 (C-11), 104.6 (C-1′), 75.2 (C-2′), 78.4 (C-3′)[a], 71.2 (C-4′), 78.1 (C-5′)[a], 62.5 (C-6′). *Nepeta nuda* ssp. *albiflora* (Labiatae).[84)]

123. Nepetacilicioside



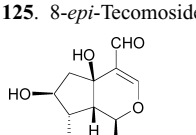
$C_{16}H_{22}O_9$: 358.1263; amorphous powder; $[\alpha]_D^{25}$ +72.4° (c=0.98, MeOH); UV (MeOH): 250 (4.04); IR (KBr): 3350, 1660, 1627; ^{1}H-NMR (400 MHz, CD_3OD): 5.49 (d, 3.4, H-1), 7.36 (s, H-3), 2.98 (dd, 7.3, 2.0, H-5), 4.45 (br s, H-6), 5.50 (br s, H-7), Ca. 3.31 (H-9), 1.87 (d, 1.0, H_3-10), 9.23 (s, H-11), 4.61 (d, 7.8, H-1′), 3.23 (dd, 7.8, 7.8, H-2′), 3.67 (dd, 11.7, 3.4, H-6′), 3.85 (br d, 11.7, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 101.7 (C-1), 165.0 (C-3), 123.1 (C-4), 41.9 (C-5), 80.6 (C-6), 130.6 (C-7), 144.0 (C-8), 49.8 (C-9), 15.5 (C-10), 193.7 (C-11), 104.7 (C-1′), 75.1 (C-2′), 78.4 (C-3′), 71.1 (C-4′), 77.8 (C-5′), 62.6 (C-6′). *Nepeta cilicia* (Labiatae).[77)]

124. 5β,6β-Dihydroxyboschnaloside



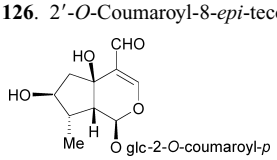
$C_{16}H_{25}O_{10}$: 378.1526; amorphous powder; $[\alpha]_D^{21}$ −140° (c=0.27, MeOH); UV (MeOH): 242 (4.10); IR (KBr): 3370, 2924, 1665, 1625, 1258, 1139, 1077; ^{1}H-NMR (500 MHz, CD_3OD): 5.92 (s, H-1), 7.46 (s, H-3), 4.29 (dd(t), 3.4, H-6), 1.35 (ddd, 12.8, 7.6, 4.6, H_α-7), 1.79 (ddd, 12.8, 6.8, 2.6, H_β-7), 2.62 (m, H-8), 2.60 (br s, H-9), 0.95 (d, 6.8, H_3-10), 9.24 (s, H-11), 4.59 (d, 7.7, H-1′), 3.17 (dd, 8.5, 7.7, H-2′), 3.34 (t, 8.5, H-3′), 3.24 (t, 9.4, H-4′), 3.32 (m, H-5′), 3.65 (dd, 11.9, 5.9, H-6′), 3.91 (dd, 11.9, 1.7, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 97.2 (C-1), 166.2 (C-3), 124.7 (C-4), 73.8 (C-5), 75.9 (C-6), 40.4 (C-7), 31.3 (C-8), 49.6 (C-9), 16.7 (C-10), 193.3 (C-11), 100.1 (C-1′), 74.2 (C-2′), 77.3 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.6 (C-6′). *Euphrasia pectinata* (Scrophulariaceae).[78)]

125. 8-*epi*-Tecomoside (7β-Hydroxyplantarenaloside)



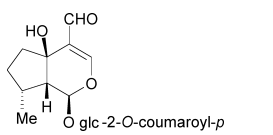
$C_{16}H_{24}O_{10}$: 376.1369; solid; $[\alpha]_D^{25}$ −122.0° (c=1.34, MeOH); ^{1}H-NMR (300 MHz, CD_3OD): 5.81 (d, 1.1, H-1), 7.35 (s, H-3), 1.97 (dd, 13.3, 7.3, H-6), 2.53 (dd, 13.3, 5.6, H-6), 3.45 (m, H-7), 2.22 (m, H-8), 2.71 (dd, 10.8, 1.1, H-9), 0.92 (d, 7.3, H_3-10), 9.20 (s, H-11), 4.56 (d, 7.9, H-1′), 3.11—3.36 (m, H-2′, 3′, 4′, 5′), 3.61 (dd, 12.0, 6.1, H-6′), 3.87 (dd, 12.0, 1.8, H-6′); ^{13}C-NMR (75.5 MHz, CD_3OD): 96.5 (C-1), 164.0 (C-3), 126.4 (C-4), 70.4 (C-5), 46.8 (C-6), 77.7 (C-7), 43.0 (C-8), 51.1 (C-9), 13.9 (C-10), 192.5 (C-11), 98.8 (C-1′), 74.2 (C-2′), 77.3 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′). *Penstemon parryi* (Scrophulariaceae).[79)]

126. 2′-*O*-Coumaroyl-8-*epi*-tecomoside



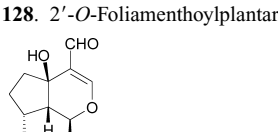
$C_{25}H_{30}O_{12}$: 522.1737; solid; ^{1}H-NMR (300 MHz, CD_3OD): 5.74 (d, 1.5, H-1), 7.11 (s, H-3), 1.82 (dd, 12.8, 8.6, H-6), 2.45 (dd, 12.8, 5.6, H-6), 3.55—3.60 (m, H-7), 2.10 (m, H-8), 2.66 (dd, 11.7, 1.3, H-9), 0.84 (d, 4.5, H_3-10), 8.75 (s, H-11), 4.74 (d, 8.0, H-1′), 4.65 (dd, 9.0, 8.0, H-2′), 3.21—3.34 (m, H-3′, 4′, 5′), 3.61 (dd, 12.0, 6.1, H-6′), 3.86 (dd, 12.0, 1.8, H-6′), 7.37 (d, 8.6, H-2″, 6″), 6.71 (d, 8.6, H-3″, 5″), 7.45 (d, 16.0, H-7″), 6.20 (d, 16.0, H-8″); ^{13}C-NMR (75.5 MHz, CD_3OD): 97.1 (C-1), 163.4 (C-3), 126.5 (C-4), 70.5 (C-5), 45.2 (C-6), 77.8 (C-7), 42.4 (C-8), 51.5 (C-9), 13.9 (C-10), 191.8 (C-11), 98.3 (C-1′), 75.1 (C-2′), 75.3 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 62.7 (C-6′), 126.5 (C-1″), 131.5 (C-2″, 6″), 117.1 (C-3″, 5″), 162.3 (C-4″), 148.4 (C-7″), 114.4 (C-8″), 169.5 (C-9″). *Penstemon parryi* (Scrophulariaceae).[79)]

127. 2′-*O*-Coumaroylplantarenaloside



$C_{25}H_{30}O_{11}$: 506.1788; solid; ^{1}H-NMR (300 MHz, CD_3OD): 5.79 (d, 0.5, H-1), 7.18 (s, H-3), 1.85 (m, H-6), 2.25 (m, H-6), 0.90 and 1.80 (each m, H_2-7), 1.80 (m, H-8), 2.41 (br s, H-9), 0.85 (d, 6.6, H_3-10), 8.80 (s, H-11), 4.77 (d, 8.1, H-1′), 4.70 (dd, 9.2, 8.1, H-2′), 3.24—3.38 (m, H-3′, 4′, 5′), 3.64 (m, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.43 (d, 8.5, H-2″, 6″), 6.77 (d, 8.5, H-3″, 5″), 7.51 (d, 16.0, H-7″), 6.27 (d, 16.0, H-8″); ^{13}C-NMR (75.5 MHz, CD_3OD): 97.4 (C-1), 163.3 (C-3), 126.1 (C-4), 73.7 (C-5), 37.2 (C-6), 32.9 (C-7), 34.2 (C-8), 52.6 (C-9), 16.6 (C-10), 192.0 (C-11), 98.3 (C-1′), 75.1 (C-2′), 75.3 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 127.0 (C-1″), 131.6 (C-2″, 6″), 116.9 (C-3″, 5″), 161.5 (C-4″), 148.3 (C-7″), 114.7 (C-8″), 169.5 (C-9″). *Penstemon parryi* (Scrophulariaceae).[79)]

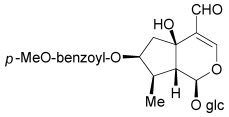
128. 2′-*O*-Foliamenthoylplantarenaloside



$C_{26}H_{38}O_{11}$: 526.2414; solid; $[\alpha]_D^{25}$ −70.1° (c=1.06, MeOH); ^{1}H-NMR (200 MHz, CD_3OD): 5.76 (s, H-1), 7.18 (s, H-3), 1.77 (m, H_2-6), 0.9 and 1.8 (each m, H_2-7), — (H-8), 2.35 (br s, H-9), 0.85 (d, 6.6, H_3-10), 9.00 (s, H-11), 4.72 (d, 8.0, H-1′), 4.64 (dd, 9.2, 8.0, H-2′), 3.20—3.70 (m, H-3′, 4′, 5′), 3.60 (m, H-6′), 3.86 (dd, 12.0, 2.0, H-6′), 6.72 (t, H-3″), 2.20 (m, H_2-4″), 2.13 (m, H_2-5″), 5.33 (H-7″), 4.03 (H_2-8″), 1.75 (s, H_3-9″), 1.60 (s, (H_3-10″); ^{13}C-NMR (50 MHz, CD_3OD): 97.1 (C-1), 163.4 (C-3), 126.1 (C-4), 73.7 (C-5), 37.3 (C-6), 33.0 (C-7), 34.3 (C-8), 52.5 (C-9), 16.6 (C-10), 191.7 (C-11), 98.0 (C-1′), 73.7 (C-2′), 75.3 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 169.3 (C-1″), 128.6 (C-2″), 144.1 (C-3″),

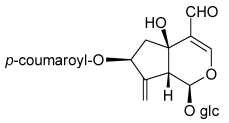
28.1 (C-4″), 39.1 (C-5″), 138.4 (C-6″), 125.7 (C-7″), 59.4 (C-8″), 12.5 (C-9″), 16.2 (C-10″). *Penstemon barrettiae* (Scrophulariaceae).[79]

129. 7-*O*-(*p*-Methoxybenzoyl)-tecomoside



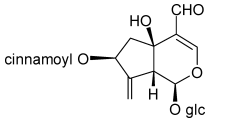
$C_{24}H_{30}O_{12}$: 510.1737; amorphous solid; $[\alpha]_D$ −62.5° (c=0.1, MeOH); UV (MeOH): 260 (4.2); IR (KBr): 3440, 1700, 1650, 1420; ^{1}H-NMR (CD_3OD): 5.81 (br s, H-1), 7.35 (s, H-3), 2.64, (dd, 15.8, 5.9, H-6), 2.25 (dd, 15.8, 2.2, H-6), 5.09 (m, H-7), 1.89 (m, H-8), 2.33 (d, 12.6, H-9), 1.00 (d, 6.7, H_3-10), 9.27 (s, H-11), 4.61 (d, 7.5, H-1′), 7.69 (d, Ar-H), 6.89 (d, Ar-H), 3.83 (s, MeO-4″); ^{13}C-NMR (CD_3OD): 96.3 (C-1), 162.7 (C-3), 126.6 (C-4), 71.5 (C-5), 46.9 (C-6), 76.8 (C-7), 39.8 (C-8), 55.2 (C-9), 13.0 (C-10), 192.6 (C-11), 100.2 (C-1′), 74.4 (C-2′), 78.6 (C-3′), 71.5 (C-4′), 77.5 (C-5′), 62.6 (C-6′), 128.3 (C-1″), 133.3 (C-2″, 6″), 116.2 (C-3″, 5″), 163.2 (C-4″), 168.6 (C-7″), 55.9 (MeO). *Tecoma capensis* (Bignoniaceae).[80]

130. 7β-Coumaroyloxyugandoside



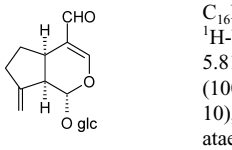
$C_{25}H_{28}O_{12}$: 520.1580; prism, mp 168—170 °C; UV (MeOH): 242, 314; IR (?): 1731, 1681, 1621; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.93 (d, 1.1, H-1), 7.54 (s, H-3), 1.87 (dd, 12.4, 9.6, H_α-6), 3.03 (d, 9.2, H_β-6), 5.16 (m, H-7), 2.95—2.99 (H-9), 5.32 (s, H_2-10), 9.26 (s, H-11), 4.43 (d, 8.0, H-1′), 2.95—2.99 (H-2′, 4′), 3.14—4.19 (H-3′, 5′), 3.66, 3.71 (br d, H_2-6′), 6.76 (d, 8.4, H-2″, 6′′), 7.54 (d, 8.8, H-3″, 5″), 10.66 (s, HO-4″), 7.53 (d, 16.0, H-7″), 6.37 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, DMSO-d_6): 95.0 (C-1), 163.3 (C-3), 122.2 (C-4), 68.0 (C-5), 40.7 (C-6), 72.7 (C-7), 145.6 (C-8), 51.6 (C-9), 113.5 (C-10), 190.7 (C-11), 98.7 (C-1′), 71.8 (C-2′), 77.4 (C-3′), 70.1 (C-4′), 75.6 (C-5′), 61.2 (C-6′), 125.0 (C-1″), 130.5 (C-2″, 6″), 114.9 (C-3″, 5″), 160.0 (C-4″), 145.2 (C-7″), 113.7 (C-8″), 166.5 (C-9″). *Clerodendrum serratum* (Verbenaceae).[83]

131. 7β-Cinnamoyloxyugandoside (Serratoside A)



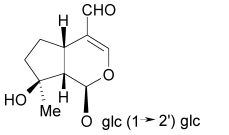
$C_{25}H_{28}O_{11}$: 504.1631; prisms, mp 132—134 °C; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.94 (d, 1.2, H-1), 7.55 (s, H-3), 1.89 (dd, 11.4, 9.3, H_α-6), 3.05 (d, 9.2, H_β-6), 5.21 (m, H-7), 2.96—3.01 (H-9), 5.34 (s, H_2-10), 9.27 (s, H-11), 4.43 (d, 8.0, H-1′), 2.96—3.01 (H-2′, 4′), 3.13—3.18 (H-3′, 5′), 3.63, 3.71 (br d, H_2-6′), 7.71 (d, 7.2, H-2″, 6′′), 7.40 (d, 8.8, H-3″, 5″), 7.41 (m, H-4″), 7.63 (d, 16.0, H-7″), 6.63 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, DMSO-d_6): 95.1 (C-1), 163.3 (C-3), 122.2 (C-4), 68.1 (C-5), 40.7 (C-6), 72.9 (C-7), 145.5 (C-8), 51.7 (C-9), 113.6 (C-10), 190.7 (C-11), 98.9 (C-1′), 72.2 (C-2′), 77.5 (C-3′), 70.1 (C-4′), 75.6 (C-5′), 61.2 (C-6′), 134.0 (C-1″), 128.5 (C-2″, 6″), 129.0 (C-3″, 5″), 130.7 (C-4″), 145.1 (C-7″), 117.7 (C-8″), 166.1 (C-9″). *Clerodendrum serratum* (Verbenaceae).[82,83]

132. Nepetanudoside D



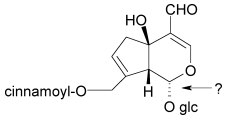
$C_{16}H_{22}O_8$: 342.1314; amorphous powder; $[\alpha]_D^{25}$ +22.6° (c=0.83, MeOH); UV (MeOH): 248 (4.01); IR (KBr): 3355, 1703, 1626; ^{1}H-NMR (400 MHz, CD_3OD): 5.48 (d, 5.0, H-1), 7.38 (s, H-3), 3.24 (m, H-5), 1.92 (m, H_2-6), 2.31 (m, H_2-7), 2.99 (m, H-9), 5.11, 5.81 (each d, 2.0, H_2-10), 9.19 (s, H-11), 4.61 (d, 8.0, H-1′), 3.70 (dd, 12.0, 4.0, H-6′), 3.86 (br d, 12.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 101.9 (C-1), 165.3 (C-3), 123.3 (C-4), 33.4 (C-5), 30.1 (C-6)[a], 31.9 (C-7)[a], 150.1 (C-8), 46.2 (C-9), 110.2 (C-10), 193.2 (C-11), 104.6 (C-1′), 75.2 (C-2′), 78.4 (C-3′)[b], 71.2 (C-4′), 78.0 (C-5′)[b], 62.5 (C-6′). *Nepeta nuda* ssp. *albiflora* (Labiatae).[84]

133. Plicatoside A



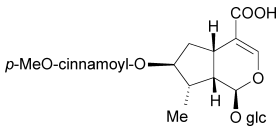
$C_{22}H_{34}O_{14}$: 522.1948; white amorphous powder; $[\alpha]_D^{23}$ −76.6° (c=0.64, MeOH); UV (MeOH): 249 (3.58); IR (KBr): 3360, 1666, 1631; ^{1}H-NMR (400 MHz, D_2O): 5.72 (d, 6.2, H-1), 7.46 (br s, H-3), 3.14 (m, H-5), 1.51 (m, H_α-6), 1.75 (m, H_β-6, H_α-7), 2.25 (m, H_β-7), 2.38 (dd, 9.5, 2.6, H-9), 1.30 (s, H_3-10), 9.12 (s, H-11), 4.72 (d, 7.8, H-1′), 3.20—4.00 (m, sugar H), 4.38 (d, 7.8, H-1″); ^{13}C-NMR (100 MHz, D_2O): 96.4 (C-1), 164.2 (C-3), 125.0 (C-4), 28.5 (C-5), 28.6 (C-6), 40.4 (C-7), 80.2 (C-8), 51.1 (C-9), 23.8 (C-10), 195.5 (C-11), 99.1 (C-1′), 79.1 (C-2′), 73.8 (C-3′), 70.2 (C-4′), 76.4 (C-5′), 61.5 (C-6′), 104.0 (C-1″), 73.4 (C-2″), 76.4 (C-3″), 70.4 (C-4″), 76.7 (C-5″), 61.5 (C-6″). *Pedicularis plicata* (Scrophulariaceae).[85]

134. Serratoside B



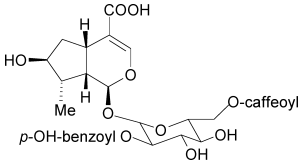
$C_{25}H_{28}O_{11}$: 504.1631; brown gum; ^{1}H-NMR (400 MHz, C_5D_5N): 5.83 (d, 7.5, H-1), 7.50 (s, H-3), 2.88 (br d, 17.3, H_α-6), 3.27 (br d, 17.3, H_β-6), 5.78 (br s, H-7), 3.47 (d, 7.5, H-9), 5.11 (d, 13.9, H-10), 5.22 (d, 13.9, H-10), 9.50 (s, H-11), 5.43 (d, 7.8, H-1′), 4.14 (t, 8.0, H-2′), 4.28 (m, H-3′, 4′), 4.03 (m, H-5′), 4.35 (dd, 11.8, 5.7, H-6′), 4.54 (dd, 11.8, 2.0, H-6′), 7.55 (d, 6.4, H-2″, 6″), 7.34 (d, 6.4, H-3″, 5″), 7.33 (s, H-4″), 7.86 (d, 16.0, H-7″), 6.67 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, C_5D_5N): 99.6 (C-1), 161.5 (C-3), 126.6 (C-4), 75.3 (C-5), 46.8 (C-6), 129.3 (C-7), 136.7 (C-8), 57.2 (C-9), 62.8 (C-10), 190.6 (C-11), 101.2 (C-1′), 74.8 (C-2′), 79.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 135.0 (C-1″), 128.7 (C-2″, 6″), 129.3 (C-3″, 5″), 130.7 (C-4″), 145.2 (C-7″), 118.8 (C-8″), 166.6 (C-9″). *Clerodendrum serratum* (Verbenaceae).[82]

135. Scrophuloside A_1



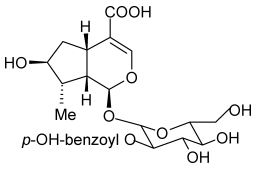
$C_{26}H_{32}O_{12}$: 536.1893; amorph. powder, $[\alpha]_D^{23}$ −67.8° (c=0.58, MeOH); UV (MeOH): 227 (4.35), 298 sh (4.31), 309 (4.34); ^{1}H-NMR (400 MHz, CD_3OD): 5.55 (d, 5.0, H-1), 7.43 (br s, H-3), 3.11 (m, H-5), 2.01 (m, H-6), 2.26 (m, H-6), 4.94 (m, H-7), 2.46 (m, H-8), 2.60 (m, H-9), 1.23 (d, 6.0, H_3-10), 4.70 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.37 (dd, 9.0, 9.0, H-3′), 3.25 (dd, 9.0, 8.5, H-4′), 3.31 (m, H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 6.37 (d, 16.6, H-8″), 7.62 (d, 16.0, H-7″), 7.55 (d, 9.0, H-2″, 6″), 6.96 (d, 9.0, H-3″, 5″), 3.83 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 95.9 (C-1), 152.7 (C-3), 114.0 (C-4), 31.8 (C-5), 39.1 (C-6), 82.7 (C-7), 43.1 (C-8), 43.3 (C-9), 14.3 (C-10), 170.6 (C-11), 99.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.4 (C-5′), 62.9 (C-6′), 168.8 (C-9″), 116.4 (C-8″), 146.1 (C-7″), 128.3 (C-1″), 131.0 (C-2″, 6″), 115.4 (C-3″, 5″), 163.2 (C-4″), 55.9 (MeO-4″). *Scrophularia nodosa* (Scrophulariaceae).[53]

136. 2′-*O*-*p*-Hydroxybenzoyl-6′-*O*-*trans*-caffeoyl-8-*epi*-loganic acid



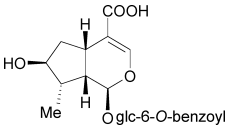
$C_{32}H_{34}O_{15}$: 658.1897; pale yellow amorphous powder; mp 158—160 °C; $[\alpha]_D^{25}$ −88.6° (c=0.5, MeOH); UV (MeOH): 249 (4.34), 330 (4.16); IR (KBr): 3400, 1698, 1604, 1517, 1449, 1272, 1168, 1116, 977, 852; ^{1}H-NMR (500 MHz, CD_3OD): 5.29 (d, 4.0, H-1), 7.09 (br s, H-3), 2.83 (m, H-5), 1.92 (m, H-6), 1.74 (m, H-6), 3.70 (m, H-7), 2.02 (m, dd, 14.0, 7.0, H-8), 2.45 (m, H-9), 0.96 (d, 7.5, H_3-10), 4.99 (d, 8.0, H-1′), 4.94 (dd, 9.5, 8.0, H-2′), 3.69 (m, H-3′), 3.52 (dd, 9.5, 9.0, H-4′), 3.67 (m, H-5′) 4.42 (dd, 12.0, 6.0, H-6′), 4.54 (dd, 12.0, 2.0, H-6′), 7.84 (d, 8.5, H-2″, 6″), 6.81 (d, 8.5, H-3″, 5″), 6.31 (d, 15.5, H-8‴), 7.59 (d, 15.5, H-7‴), 7.05 (br s, H-2‴), 6.77 (d, 8.5, H-5‴), 6.95 (dd, 8.5, 1.5, H-6‴); ^{13}C-NMR (75 MHz, CD_3OD): 96.1 (C-1), 151.0 (C-3), 113.8 (C-4), 31.6 (C-5), 40.8 (C-6), 79.3 (C-7), 44.7 (C-8), 42.7 (C-9), 14.3 (C-10), 97.9 (C-1′), 74.9 (C-2′), 75.8 (C-3′), 71.9 (C-4′), 76.0 (C-5′), 64.2 (C-6′), 122.2 (C-1″), 132.9 (C-2″, 6″), 116.2 (C-3″, 5″), 163.3 (C-4″), 167.4 (C-7″), 169.0 (C-9‴), 114.8 (C-8‴), 147.3 (C-7‴), 127.7 (C-1‴), 115.2 (C-2‴), 146.8 (C-3‴), 149.6 (C-4‴), 116.6 (C-5‴), 123.1 (C-6‴). *Vitex altissima* (Verbenaceae).[86]

137. 2′-*O*-*p*-Hydroxybenzoyl-8-*epi*-loganic acid



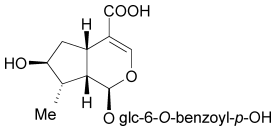
$C_{23}H_{28}O_{12}$: 496.2083; colorless amorphous powder; mp 219—220 °C; $[\alpha]_D^{25}$ −119.9° (c=0.75, MeOH); UV (MeOH): 255 (4.42); IR (KBr): 3405, 1703, 1648, 1609, 1516, 1275, 1171, 1074, 904, 856; ^{1}H-NMR (500 MHz, CD_3OD): 5.40 (br s, H-1), 7.03 (br s, H-3), 2.86 (br s, H-5), 1.82 (br s, H-6), 1.93 (br s, H-6), 3.72 (br s, H-7), 2.04 (d, 5.5, H-8), 1.00 (d, 7.0, H_3-10), 4.95 (d, 8.0, H-1′), 4.88 (dd, 9.0, 8.0, H-2′), 3.68 (m, H-3′), 3.39 (m, H-4′), 3.67 (m, H-5′) 3.65 (m, H-6′), 3.93 (d, 12.0, H-6′), 7.83 (br d, 7.5, H-2″, H-6″), 6.80 (br d, 7.5, H-3″, 5″); ^{13}C-NMR (75 MHz, CD_3OD): 96.1 (C-1), 31.3 (C-5), 40.9 (C-6), 79.4 (C-7), 44.8 (C-8), 42.8 (C-9), 14.4 (C-10), 98.0 (C-1′), 75.0 (C-2′), 76.3 (C-3′), 71.8 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 122.3 (C-1″), 132.9 (C-2″, 6″), 116.2 (C-3″, 5″), 163.3 (C-4″), 167.4 (C-7″). C-3, C-4 and C-11 signals were not observed. *Vitex altissima* (Verbenaceae).[86]

138. Aquaticoside A (6′-*O*-Benzoyl-8-*epi*-loganic acid)



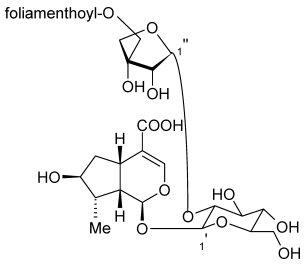
$C_{23}H_{28}O_{11}$: 480.1631; amorphous powder; $[\alpha]_D^{24}$ −77.4° (c=0.30, MeOH); UV (MeOH): 234, 299, 331; ^{1}H-NMR (500 MHz, CD_3OD): 5.27 (d, 5.5, H-1), 7.37 (s, H-3), 3.05 (dt, 8.2, 7.6, H-5), 1.72 (dt, 13.7, 7.0, H-6), 2.02 (m, H-6), 3.73 (m, H-7), 2.07 (m, H-8), 2.47 (dt, 8.2, 5.5, H-9), 1.02 (d, 7.3, H_3-10), 4.76 (d, 7.9, H-1′), 3.28 (dd, 9.5, 7.3, H-2′), 3.46 (overlapped, H-3′, 4′), 3.67 (m, H-5′), 4.56 (dd, 11.9, 6.4, H-6′), 4.71 (dd, 11.9, 2.4, H-6′), 8.08 (dd, 8.5, 1.2, H-2″, 6″), 7.52 (t, 7.8, H-3″, 5″), 7.64 (t, 8.2, H-4″); ^{13}C-NMR (125 MHz, CD_3OD): 96.0 (C-1), 151.6 (C-3), 115.0 (C-4), 32.2 (C-5), 41.5 (C-6), 79.0 (C-7), 45.4 (C-8), 43.2 (C-9), 14.3 (C-10), 172.0 (C-11), 99.8 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.9 (C-4′), 75.7 (C-5′), 64.9 (C-6′), 131.4 (C-1″), 130.6 (C-2″, 6″), 129.7 (C-3″, 5″), 134.4 (C-4″), 167.8 (C-7″). *Veronica anagallis-aquatica* (Scrophulariaceae).[94]

139. Aquaticoside B (6′-*O*-*p*-Hydroxybenzoyl-8-*epi*-loganic acid)



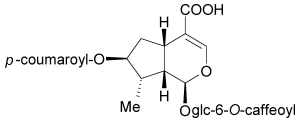
$C_{23}H_{28}O_{12}$: 496.1580; amorphous powder; $[\alpha]_D^{24}$ −58.1° (c=0.17, MeOH); UV (MeOH): 234, 299, 331; ^{1}H-NMR (500 MHz, CD_3OD): 5.28 (d, 5.5, H-1), 7.34 (s, H-3), 3.06 (dt, 8.2, 7.3, H-5), 1.78 (dt, 14.0, 7.0, H-6), 2.03 (m, H-6), 3.76 (m, H-7), 2.07 (m, H-8), 2.48 (dt, 8.2, 5.2, H-9), 1.03 (d, 7.3, H_3-10), 4.74 (d, 7.9, H-1′), 3.29 (dd, 9.1, 7.9, H-2′), 3.45 (overlapped, H-3′, 4′), 3.64 (t, 7.0, H-5′), 4.49 (dd, 11.9, 6.4, H-6′), 4.65 (dd, 11.9, 2.4, H-6′), 7.93 (d, 8.8, H-2″, 6″), 6.86 (d, 8.8, H-3″, 5″); ^{13}C-NMR (125 MHz, CD_3OD): 95.9 (C-1), 150.9 (C-3), 116.3 (C-4), 32.2 (C-5), 41.4 (C-6), 79.1 (C-7), 45.4 (C-8), 43.2 (C-9), 14.3 (C-10), 172.0 (C-11), 99.8 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 72.0 (C-4′), 75.7 (C-5′), 64.6 (C-6′), 131.2 (C-1″), 132.9 (C-2″, 6″), 116.3 (C-3″, 5″), 163.7 (C-4″), 168.0 (C-7″). *Veronica anagallis-aquatica* (Scrophulariaceae).[94]

140. Inerminoside B



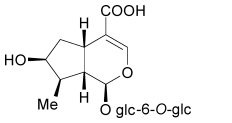
$C_{31}H_{46}O_{16}$: 674.2785; amorphous colorless powder; UV (?): 227.5; IR (?): 3350, 1700, 1670, 1630; ^{1}H-NMR (270 MHz, CD_3OD): 5.43 (overlapped, H-1), 7.38 (s, H-3), 3.02 (q-like, 7.4, H-5), 1.90 (m, H-6), 2.10 (m, H-6), 3.93 (overlapped, H-7), 2.14 (m, H-8), 2.43 (m, H-9), 1.13 (d, 7.2, H_3-10), 4.76 (d, 7.6, H-1′), 3.47 (dd, 9.0, 7.6, H-2′), 3.55 (t, 9.0, H-3′), 3.28—3.43 (overlapped, 4′, 5′), 3.66 (dd, 12.9, 2.0, H-6′), 3.90 (overlapped, H-6′), 5.42 (H-1″), 3.93 (s, H-2″), 3.80 (d, 9.8, H-4″), 4.24 (d, 9.8, H-4″), 4.26 (br s, H_2-5″), 6.85 (br t, 7.0, H-3‴), 2.39 (m, H-4‴), 2.24 (m, H-5‴), 5.44 (overlapped, H-7‴), 4.14 (d, 6.6, H-8‴), 1.87 (s, br s, H_3-9‴), 1.74 (s, H_3-10‴); ^{13}C-NMR (75 MHz, CD_3OD): 95.8 (C-1), 153.0 (C-3), 31.1 (C-5), 40.6 (C-6), 79.2 (C-7), 45.6 (C-8), 43.5 (C-9), 14.6 (C-10), 170.0 (C-11), 98.2 (C-1′), 77.8 (C-2′), 78.3 (C-3′), 71.9 (C-4′), 78.4 (C-5′), 63.0 (C-6′), 110.2 (C-1″), 78.9 (C-2″), 79.2 (C-3″), 75.4 (C-4″), 78.7 (C-5″), 169.5 (C-1‴), 128.8 (C-2‴), 144.0 (C-3‴), 28.1 (C-4‴), 36.9 (C-5‴), 138.5 (C-6‴), 125.7 (C-7‴), 59.4 (C-8‴), 12.5 (C-9‴), 16.2 (C-10‴). *Clerodendrum inerme* (Verbenaceae).[95]

141. Agnucastoside C (7-*O*-*trans*-*p*-Coumaroyl-6′-*O*-*trans*-caffeoyl-8-*epi*-loganic acid)



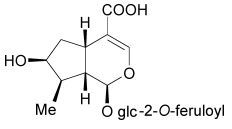
$C_{34}H_{36}O_{15}$: 684.2054; amorphous powder; $[\alpha]_D^{20}$ −28° (c=0.2, MeOH); UV (MeOH): 219 (4.51), 313 (4.54); IR (KBr): 3423, 2927, 1694, 1634, 1605, 1515, 1443, 1382, 1273, 1170, 1115, 1075, 1019, 981, 915, 857, 832; ^{1}H-NMR (300 MHz, CD_3OD): 5.33 (d, 5.5, H-1), 7.41 (s, H-3), 3.06 (q, 8.0, H-5), 1.92 and 2.17 (each m, H_2-6), 4.90 (m, H-7), 2.42 (m, H-8), 2.48 (m, H-9), 1.08 (d, 7.0, H_3-10), 4.73 (d, 8.0, H-1′), 3.30 (m, H-2′), 3.40 (t, 6.5, H-3′), 3.39 (t, 6.5, H-4′), 3.55 (m, H-5′), 4.40 (dd, 12.0, 6.0, H-6′), 4.53 (dd, 12.0, 2.0, H-6′), 7.04 (d, 2.0, H-2″), 6.72 (d, 8.0, H-5″), 6.91 (dd, 8.0, 2.0, H-6″), 7.57 (d, 16.0, H-7″), 6.29 (d, 16.0, H-8″), 7.43 (d, 8.5, H-2‴, 6‴), 6.78 (d, 8.5, H-3‴, 5‴), 7.56 (d, 16.0, H-7‴), 6.29 (d, 16.0, H-8‴); ^{13}C-NMR (75 MHz, CD_3OD): 96.0 (C-1), 152.4 (C-3), 115.9 (C-4), 32.6 (C-5), 39.5 (C-6), 82.3 (C-7), 43.1 (C-8)[a], 43.4 (C-9)[a], 14.4 (C-10), 170.6 (C-11), 99.9 (C-1′), 74.8 (C-2′), 77.8 (C-3′), 71.7 (C-4′), 75.7 (C-5′), 64.0 (C-6′), 127.7 (C-1″)[b], 114.8 (C-2″), 149.6 (C-3″), 147.3 (C-4″), 116.4 (C-5″), 123.2 (C-6″), 146.4 (C-7″)[c], 115.4 (C-8″), 169.0 (C-9″), 127.2 (C-1‴)[b], 131.2 (C-2‴, 6‴), 116.8 (C-3‴, 5‴), 161.2 (C-4‴), 146.4 (C-7‴)[c], 115.1 (C-8‴), 169.0 (C-9‴). *Vitex agnus-castus* (Verbenaceae).[92]

142. Loganic acid-6′-*O*-β-D-glucoside



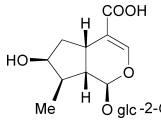
$C_{22}H_{34}O_{15}$: 538.1879; powder; mp 208—209 °C (dec); $[\alpha]_D^{25}$ −54.4° (c=0.5, H_2O); IR (nujol): 3350, 3170, 1640; ^{1}H-NMR (500 MHz, D_2O): 5.38 (d, 2.5, H-1), 7.00 (d, <1.0, H-3), 3.05 (ddd, 9.0, 9.0, 6.0, H-5), 2.12 (dd, 14.0, 2.5, H_α-6), 1.76 (dd, 14.0, 6.0, H_β-6), 4.17 (m, H-7), 1.91 (dq, 10.5, 7.0, H-8), 2.11 (m, H-9), 1.07 (d, 7.0, H_3-10), 4.80 (H-1′), 3.30 (dd, 9.0, 9.0, H-2′), 3.51 (t, 9.0, H-3′), 3.40 (t, 9.0, H-4′), 3.67 (m, H-5′), 3.92 (dd, 11.5, 1.5, H-6′), 3.72 (dd, 11.5, 5.5, H-6′), 4.52 (d, 8.0, H-1″), 3.33 (dd, 9.0, 8.0, H-2″), 3.48 (dd, 9.5, 9.0, H-3″), 3.40 (dd, 9.5, 9.0, H-4″), 3.45 (m, H-5″), 3.93 (dd, 12.0, 2.0, H-6″), 3.73 (dd, 12.0, 5.5, H-6″); ^{13}C-NMR (125 MHz, D_2O): 98.6 (C-1), 147.7 (C-3), 121.8 (C-4), 33.4 (C-5), 43.6 (C-6), 77.3 (C-7), 42.6 (C-8), 48.2 (C-9), 14.9 (C-10), 178.6 (C-11), 101.2 (C-1′), 75.2 (C-2′), 78.3 (C-3′), 72.3 (C-4′), 78.1 (C-5′), 71.6 (C-6′), 105.8 (C-1″), 75.9 (C-2″), 78.6 (C-3″), 72.5 (C-4″), 78.8 (C-5″), 63.6 (C-6″). *Dipsacus asperoides* (Dipsacaceae).[87]

143. Alboside I



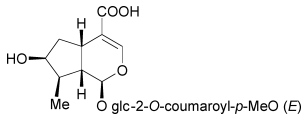
$C_{26}H_{32}O_{13}$: 552.1842; amorphous solid; $[\alpha]_D$ −46.7° (c=2.4, H_2O) UV (MeOH): 208, 235, 325; IR (KBr): 3453, 1690, 1668, 1650, 1630, 1520, 1077, 520; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.14 (d, 6.0, H-1), 7.35 (d, 1.5, H-3), 2.99 (dddd, 9.5, 8.5, 8.0, 1.7, H-5), 2.22 (ddd, 13.5, 8.0, 1.7, H-6), 1.74 (ddd, 13.5, 8.5, 4.2, H-6), 3.45 (ddd, 5.5, 4.5, 1.5, H-7), 2.08 (dqd, 9.2, 7.0, 4.5, H-8), 1.95 (ddd, 9.2, 9.0, 6.0, H-9), 1.00 (d, 7.0, H_3-10), 4.50 (d, 8.0, H-1′), 5.01 (t, 8.0, H-2′), 3.23—3.76 (m, H-3′, 4′, 5′, 6′), 7.12 (d, 1.5, H-2″), 6.95 (d, 8.0, H-5″), 6.29 (dd, 8.0, 1.5, H-6″), 7.55 (d, 16.0, H-7″), 6.34 (d, 16.0, H-8″), 3.81 (s, MeO-3″); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.9 (C-1), 150.2 (C-3), 112.4 (C-4), 31.6 (C-5), 39.1 (C-6), 77.0 (C-7), 39.3 (C-8), 45.5 (C-9), 13.7 (C-10), 168.6 (C-11), 96.0 (C-1′), 73.4 (C-2′), 76.5 (C-3′), 70.3 (C-4′), 77.4 (C-5′), 61.4 (C-6′), 127.1 (C-1″), 115.5 (C-2″), 148.1 (C-3″), 146.9 (C-4″), 121.3 (C-5″), 112.2 (C-6″), 144.8 (C-7″), 114.5 (C-8″), 166.3 (C-9″), 55.9 (MeO-3″). *Chioccoca alba* (Rubiaceae).[89]

144. Alboside II



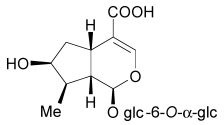
$C_{27}H_{34}O_{13}$: 566.1999; amorphous solid; $[\alpha]_D$ −30.7° (c=0.9, MeOH); UV (MeOH): 208, 238, 330; IR (KBr): 3465, 1690, 1670, 1653, 1630, 1515, 1455, 1262, 1169, 1068, 1020; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.15 (d, 5.4, H-1), 7.20 (d, 0.8, H-3), 2.98 (m, H-5), 1.60—1.78 (m, H-6), 2.08—2.15 (m, H-6), 3.68 (m, H-7), 1.60—2.00 (m, H-8), 2.06—2.49 (m, H-9), 1.00 (d, 6.5, H_3-10), 4.49 (d, 8.0, H-1′), 5.08 (t, 9.0, H-2′), 3.20—3.78 (m, H-3′, 4′, 5′, 6′), 6.96 (d, 1.5, H-2″), 7.35 (d, 8.0, H-5″), 7.12 (dd, 8.0, 1.5, H-6″), 7.65 (d, 16.0, H-7″), 6.58 (d, 16.0, H-8″), 3.79, 3.78 (each s, 2×MeO); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.8 (C-1), 150.5 (C-3), 111.9 (C-4), 31.5 (C-5), 39.2 (C-6), 76.4 (C-7), 39.5 (C-8), 45.3 (C-9), 13.6 (C-10), 168.2 (C-11), 95.9 (C-1′), 73.2 (C-2′), 76.8 (C-3′), 70.2 (C-4′), 77.3 (C-5′), 61.3 (C-6′), 126.7 (C-1″), 110.3 (C-2″), 151.0 (C-3″), 149.0 (C-4″), 111.5 (C-5″), 123.1 (C-6″), 144.8 (C-7″), 115.8 (C-8″), 166.3 (C-9″), 55.3, 55.6 (2×MeO). *Chioccoca alba* (Rubiaceae).[89]

145. Alboside III



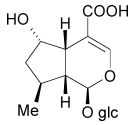
$C_{26}H_{32}O_{12}$: 536.1893; amorphous solid; $[\alpha]_D$ −30.7° (c=0.9, MeOH); UV (MeOH): 208, 235, 338; IR (KBr): 3465, 1690, 1673, 1630, 1515, 1455, 1262, 1169, 1068, 1020; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.37 (d, 5.6, H-1), 7.28 (d, 1.5, H-3), 2.89—2.99 (m, H-5), 1.56—1.78 (m, H-6), 2.16—2.26 (m, H-6), 3.50 (m, H-7), 1.60 (m, H-8), 2.90—2.93 (m, H-9), 1.01 (d, 7.0, H_3-10), 4.49 (d, 8.0, H-1′), 5.09 (t, 8.0, H-2′), 3.33—3.76 (m, H-3′, 4′, 5′, 6′), 7.46 (dd, 8.0, 2.0, H-2″, 6″), 6.81 (dd, 8.0, 2.0, H-3″, 5″), 7.50 (d, 16.0, H-7″), 6.50 (d, 16.0, H-8″), 3.78 (s, MeO); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.8 (C-1), 150.5 (C-3), 111.9 (C-4), 31.5 (C-5), 39.2 (C-6), 76.4 (C-7), 39.5 (C-8), 45.3 (C-9), 13.6 (C-10), 168.2 (C-11), 95.9 (C-1′), 73.2 (C-2′), 76.8 (C-3′), 70.2 (C-4′), 77.3 (C-5′), 61.3 (C-6′), 126.9 (C-1″), 130.2 (C-2″, 6″), 114.4 (C-3″, 5″), 161.2 (C-4″), 144.3 (C-7″), 115.6 (C-8″), 166.2 (C-9″), 55.7 (MeO). *Chioccoca alba* (Rubiaceae).[89]

146. 6′-*O*-α-D-Glucopyranosylloganic acid



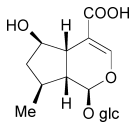
$C_{22}H_{34}O_{15}$: 538.1897; white powder; IR (KBr): 3415, 1686, 1638; ^{1}H-NMR (500 MHz, CD_3OD): 5.17 (d, 5.0, H-1), 7.38 (d, 1.0, H-3), 3.10 (qd, 8.0, 1.0, H-5), 1.65 (ddd, 14.0, 8.0, 5.0, H-6), 2.24 (ddd, 14.0, 8.0, 1.5, H-6), 4.17 (td, 5.0, 1.5, H-7), 1.88 (dqd, 8.0, 7.0, 5.0, H-8), 2.00 (td, 8.0, 5.0, H-9), 1.09 (d, 7.0, H_3-10), 4.68 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.34—3.40 (m, H-3′, 4′), 3.53 (ddd, 9.0, 5.5, 2.0, H-5′), 3.77 (dd, 11.0, 2.0, H-6′), 3.92 (dd, 11.0, 5.0, H-6′), 4.84 (d, 3.5, H-1″), 3.37 (dd, 9.5, 3.5, H-2″), 3.62 (dd, 9.5, 9.0, H-3″), 3.30 (t, 9.0, H-4″), 3.63 (ddd, 9.0, 5.0, 2.0, H-5″), 3.67 (dd, 11.0, 5.0, H-6″), 3.79 (dd, 11.0, 2.0, H-6″); ^{13}C-NMR (125 MHz, CD_3OD): 98.3 (C-1), 152.0 (C-3), 114.3 (C-4), 32.4 (C-5), 42.7 (C-6), 75.0 (C-7), 42.3 (C-8), 46.6 (C-9), 13.7 (C-10), 171.0 (C-11), 100.4 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′)[a], 76.7 (C-5′), 67.9 (C-6′), 100.1 (C-1″), 73.6 (C-2″)[b], 75.3 (C-3″), 71.7 (C-4″)[a], 73.7 (C-5″)[b], 62.6 (C-6″). *Alangium lamarckii* (Alangiaceae).[90]

147. 6α-Dihydrocornic acid



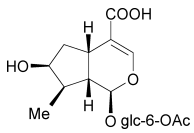
$C_{16}H_{24}O_{10}$: 376.1369; yellow amorphous powder; $[\alpha]_D^{28}$ −67.9° (c=1.34, MeOH); ^{1}H- NMR (500 MHz, CD_3OD): 5.21 (d, 9.0, H-1), 7.62 (s, H-3), 2.82 (dd, 9.0, 4.0, H-5), 4.47 (t, 4.0, H-6), 1.38 (ddd, 13.0, 10.0, 4.0, H_a-7), 1.92 (dd, 13.0, 8.0, H_b-7), 2.30 (m, H-8), 1.70 (dt, 8.0, 4.0, H-9), 1.12 (d, 8.0, H_3-10), 4.70 (d, 8.0, H-1′), 3.24 (dd, 9.0, 8.0, H-2′), 3.40 (t, 9.0, H-3′), 3.31 (m, H-4′), 3.29 (m, H-5′), 3.67 (dd, 12.0, 6.0, H-6′), 3.86 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 101.2 (C-1),155.9 (C-3), 107.4 (C-4), 43.5 (C-5), 75.1 (C-6), 43.2 (C-7), 35.2 (C-8), 47.0 (C-9), 21.9 (C-10), 171.1 (C-11), 100.4 (C-1′), 74.9 (C-2′), 78.1 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 63.0 (C-6′). *Cornus capitata* (Cornaceae).[91]

148. 6β-Dihydrocornic acid



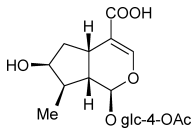
$C_{16}H_{24}O_{10}$: 376.1369; yellow amorphous powder; $[\alpha]_D^{28}$ −271.6° (c=0.18 MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.25 (d, 5.0, H-1), 7.41 (s, H-3), 2.79 (t, 6.0, H-5), 4.05 (m, H-6), 1.25 (m, H_a-7), 2.17 (m, H_b-7), 1.96 (q, 7.0, H-8), 2.03 (dt, 7.0, 5.0, H-9), 1.15 (d, 7.0, H_3-10), 4.65 (d, 8.0, H-1′), 3.20 (t, 8.0, H-2′), 3.37 (m, H-3′, 4′), 3.30 (m, H-5′), 3.67 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 97.5 (C-1), 153.6 (C-3), 110.8 (C-4), 43.7 (C-5), 78.8 (C-6), 42.7 (C-7), 34.3 (C-8), 47.9 (C-9), 21.1 (C-10), 171.0 (C-11), 100.2 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.7 (C-4′), 78.4 (C-5′), 62.8 (C-6′). *Cornus capitata* (Cornaceae).[91]

149. 6′-*O*-Acetylloganic acid



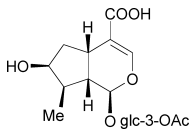
$C_{18}H_{26}O_{11}$: 418.1475; white amorphous solid; $[\alpha]_D^{20}$ −85.1° (c=0.07, MeOH); UV (MeOH): 235; IR (KBr): 3422, 1705, 1685, 1636, 1376, 1074; ^{1}H-NMR (400 MHz, D_2O): 5.33 (d, 3.6, H-1), 7.45 (s, H-3), 3.06 (dd, 8.0, 7.6, H-5), 2.19 and 1.76 (each m, H_2-6), 4.15 (m, H-7), 1.90 (m, H-8), 2.10 (m, H-9), 1.06 (d, 7.2, H_3-10), 4.81 (d, 8.0, H-1′), 3.29 (dd, 9.2, 8.0, H-2′), 3.51 (t, 9.2, H-3′), 3.47 (dd, 9.6, 9.2, H-4′), 3.68 (m, H-5′), 4.42 (dd, 12.4, 2.4, H-6′), 4.33 (dd, 12.4, 6.0, H-6′), 2.12 (s, Ac); ^{13}C-NMR (100 MHz, D_2O): 99.5 (C-1), 154.0 (C-3), 115.6 (C-4), 32.5 (C-5), 43.0 (C-6), 77.1 (C-7), 42.8 (C-8), 47.6 (C-9), 14.7 (C-10), 174.0 (C-11), 101.5 (C-1′), 75.3 (C-2′), 78.1 (C-3′), 72.1 (C-4′), 76.4 (C-5′), 65.7 (C-6′), 22.9, 176.8 (Ac). *Strychnos nux-vomica* (Loganiaceae).[93]

150. 4′-*O*-Acetylloganic acid



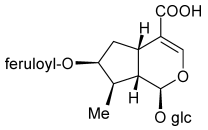
$C_{18}H_{26}O_{11}$: 418.1475; white amorphous solid; $[\alpha]_D^{20}$ −67.6° (c=0.07, MeOH); IR (KBr): 3423, 1707, 1685, 1637, 1376, 1079; ^{1}H-NMR (400 MHz, D_2O): 5.41 (d, 3.6, H-1), 7.40 (s, H-3), 3.04 (dd, 8.0, 7.6, H-5), 2.21 and 1.77 (each m, H_2-6), 4.15 (m, H-7), 1.92 (m, H-8), 2.12 (m, H-9), 1.07 (d, 7.2, H_3-10), 4.85 (d, 8.4, H-1′), 3.19 (dd, 9.2, 8.4, H-2′), 3.71 (m, H-3′), 4.81 (t, 9.2, H-4′), 3.69 (m, H-5′), 3.73 (dd, 12.4, 1.6, H-6′), 3.39 (dd, 12.4, 4.8, H-6′), 2.17 (s, Ac); ^{13}C-NMR (100 MHz, D_2O): 99.4 (C-1), 153.4 (C-3), 116.2 (C-4), 32.4 (C-5), 42.9 (C-6), 77.1 (C-7), 42.7 (C-8), 47.6 (C-9), 14.7 (C-10), 174.3 (C-11), 101.2 (C-1′), 75.2 (C-2′), 76.2 (C-3′), 73.5 (C-4′), 76.7 (C-5′), 62.8 (C-6′), 23.1, 176.4 (Ac). *Strychnos nux-vomica* (Loganiaceae).[93]

151. 3′-*O*-Acetylloganic acid



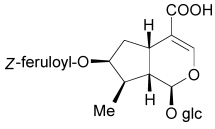
$C_{18}H_{26}O_{11}$: 418.1475; white amorphous solid; $[\alpha]_D^{20}$ −70.1° (c=0.06, MeOH); UV (MeOH): 235; IR (KBr): 3421, 1706, 1685, 1636, 1376, 1077; ^{1}H-NMR (400 MHz, D_2O): 5.42 (d, 3.6, H-1), 7.40 (s, H-3), 3.04 (dd, 8.4, 7.2, H-5), 2.20 and 1.77 (each m, H_2-6), 4.15 (m, H-7), 1.92 (m, H-8), 2.12 (m, H-9), 1.07 (d, 7.2, H_3-10), 4.90 (d, 8.4, H-1′), 3.29 (dd, 9.2, 8.4, H-2′), 4.99 (t, 9.2, H-3′), 3.60 (t, 9.2, H-4′), 3.59 (m, H-5′), 3.92 (dd, 12.4, 1.6, H-6′), 3.75 (dd, 12.4, 6.0, H-6′), 2.17 (s, Ac); ^{13}C-NMR (100 MHz, D_2O): 99.3.(C-1), 153.4 (C-3), 116.2 (C-4), 32.5 (C-5), 42.9 (C-6), 77.1 (C-7), 42.6 (C-8), 47.6 (C-9), 14.6 (C-10), 174.3 (C-11), 101.1 (C-1′), 73.7 (C-2′), 79.8 (C-3′), 70.5 (C-4′), 78.7 (C-5′), 63.1 (C-6′), 23.0, 175.9 (Ac). *Strychnos nux-vomica* (Loganiaceae).[93]

152. 7-*O*-*E*-Feruloylloganic acid



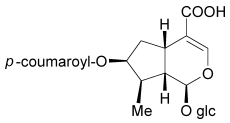
$C_{26}H_{32}O_{13}$: 552.1842; amorphous powder; $[\alpha]_D^{25}$ −30.5° (c=0.85, MeOH); UV (MeOH): 222 sh (4.14), 235 (4.17), 305 sh (4.07), 325 (4.13); IR (KBr): 3300, 1670, 1625, 1590, 1510, 1425, 1270, 1150, 1075; ^{1}H-NMR (400 MHz, CD_3OD): 5.29 (d, 5.0, H-1), 7.46 (d, 1.0, H-3), 3.15 (br q, 8.0, H-5), 1.81 (ddd, 14.0, 8.0, 5.0, H_β-6), 2.36 (ddd, 14.0, 8.0, 1.0, H_α-6), 5.28 (br t, 5.0, H-7), 2.21 (m, H-8), 2.10 (dt, 8.0, 5.0, H-9), 1.10 (d, 7.0, H_3-10), 4.69 (d, 8.0, H-1′), 3.22 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.68 (dd, 12.0, 6.0, H-6′), 3.92 (dd, 12.0, 2.0, H-6′), 7.21 (d, 2.0, H-2″), 6.81 (d, 8.0, H-5″), 7.08 (dd, 8.0, 2.0, H-6″), 7.61 (d, 16.0, H-7″), 6.38 (d, 16.0, H-8″), 3.89 (MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 97.7 (C-1), 152.7 (C-3), 113.3 (C-4), 32.9 (C-5), 40.5 (C-6), 78.5 (C-7), 41.2 (C-8), 47.2 (C-9), 13.9 (C-10), 170.8 (C-11), 100.3 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.8 (C-6′), 127.4 (C-1″), 111.8 (C-2″), 150.7 (C-3″), 149.4 (C-4″), 114.9 (C-5″), 124.2 (C-6″), 146.8 (C-7″), 116.5 (C-8″), 168.9 (C-9″), 56.5 (MeO). *Alangium platanifolium* var. *trilobum* (Alangiaceae).[96]

153. 7-*O*-*Z*-Feruloylloganic acid



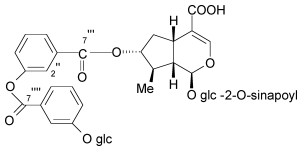
$C_{26}H_{32}O_{13}$: 552.1842; amorphous powder; $[\alpha]_D^{25}$ −49.4° (c=0.57, MeOH); UV (MeOH): 224 sh (4.21), 232 (4.23), 302 sh (3.94), 324 (4.05); ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 5.0, H-1), 7.43 (d, 1.0, H-3), 3.06 (br q, 8.0, H-5), 1.80 (ddd, 14.0, 8.0, 5.0, H_β-6), 2.23 (ddd, 13.0, 8.0,1.0, H_α-6), 5.21, (br t, 5.0, H-7), 2.15 (m, H-8), 1.98 (dt, 8.0, 5.0, H-9), 1.03 (d, 7.0, H_3-10), 4.66 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.67 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.68 (d, 2.0, H-2″), 6.77 (d, 8.0, H-5″), 7.08 (dd, 8.0, 2.0, H-6″), 6.88 (d, 13.0, H-7″), 5.80 (d, 13.0, H-8″), 3.87 (s, MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 97.6 (C-1), 152.7 (C-3), 113.4 (C-4), 32.7 (C-5), 40.5 (C-6), 78.4 (C-7), 41.0 (C-8), 47.1 (C-9), 13.8 (C-10), 170.7 (C-11), 100.2 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.8 (C-6′), 128.4 (C-1″), 114.9 (C-2″), 149.4 (C-3″), 148.4 (C-4″), 115.8 (C-5″), 126.3 (C-6″), 145.4 (C-7″), 117.2 (C-8″), 168.1 (C-9″), 56.5 (MeO). *Alangium platanifolium* var. *trilobum* (Alangiaceae).[96]

154. Linearoside (7-*O*-Coumaroylloganic acid)



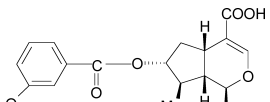
$C_{25}H_{30}O_{12}$: 522.1737; $[\alpha]_D$ −10.0° (c=0.96, MeOH); UV (MeOH): 229 (4.07), 313 (4.17); ^{1}H-NMR (200 MHz, CD_3OD): 5.26 (d, 4.9, H-1, 7), 7.44 (s, H-3), 1.74—1.88 (m, H_α-6), 2.02—2.13 (m, H_β-6), 2.17—2.24 (m, H-8), 2.30—2.40 (m, H-9), 1.09 (d, 6.6, H_3-10), 4.68 (d, 7.5, H-1′), 3.13—3.40 (m, H-2′, 3′, 4′, 5′), 3.62—3.70 (m, H-6′), 3.91 (d, 11.7, H-6′), 7.47 (d, 8.0, H-2″, 6″), 6.81 (d, 8.0, H-3″, 5″), 7.61 (d, 15.8, H-7″), 6.33 (d, 15.9, H-8″); ^{13}C-NMR (50 MHz, CD_3OD): 97.4 (C-1), 151.2 (C-3), 115.0 (C-4), 33.1 (C-5), 40.6 (C-6), 78.6 (C-7), 41.1 (C-8), 47.2 (C-9), 13.8 (C-10), 172.9 (C-11), 100.1 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 127.1 (C-1″), 131.2 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″), 146.5 (C-7″), 115.4 (C-8″), 168.9 (C-9″). *Gentiana linearis* (Gentianaceae).[97]

155. Senburiside III



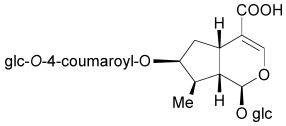
$C_{47}H_{52}O_{23}$: 984.2898; white amorphous powder (MeOH–H_2O); $[\alpha]_D^{25}$ −60.0° (c=1.03, MeOH); UV (MeOH): 234, 330; IR (KBr): 3420, 2925, 1715, 1635, 1516, 1456, 1262, 1074, 753; ^{1}H-NMR (400 MHz, CD_3OD): 5.68 (br s, H-1), 7.52 (s, H-3), 3.09 (m, H-5), 2.62 (m, H-6), 2.18 (m, H-6), 5.03 (m, H-7), 2.18 (m, H-8), 2.18 (m, H-9), 1.41 (d, 6.4, H_3-10), 5.07 (m, H-1′), 5.00 (m, H-2′), 3.83 (m, H-3′), 3.60 (m, H-4′, 5′), 4.10 (m, H-6′), 3.92 (m, H-6′), 7.96 (s, H-2‴), 7.66 (d, 7.6, H-4‴), 7.69 (dd, 7.6, 7.6, H-5‴), 8.03 (d, 7.6, H-6‴), 8.08 (s, H-2⁗), 7.62 (d, 7.6, H-4⁗), 7.63 (dd, 7.6, 7.6, H-5⁗), 8.06 (d, 7.6, H-6⁗), 7.06 (s, H-2″, 6″), 7.76 (d, 16.0, H-7″), 6.50 (d, 16.0, H-8″), 5.23 (d, 6.8, H-1⁗), 3.70 (m, H-2⁗, 3⁗), 3.67 (m, H-4⁗), 3.60 (m, H-5⁗), 4.10 (m, H-6⁗), 3.92 (m, H-6⁗), 4.05 (s, 2×OMe); ^{13}C-NMR (100 MHz, CD_3OD): 95.8 (C-1), 151.5 (C-3), 113.6 (C-4), 32.7 (C-5), 37.8 (C-6), 84.1 (C-7), 43.1 (C-8), 49.0 (C-9), 18.3 (C-10), 170.5 (C-11), 98.3 (C-1′), 75.0 (C-2′), 76.2 (C-3′), 71.9 (C-4′), 78.8 (C-5′), 62.9 (C-6′), 127.1 (C-1″), 107.2 (C-2″, 6″), 149.6 (C-3″, 5″), 139.6 (C-4″), 147.6 (C-7″), 116.0 (C-8″), 168.3 (C-9″), 57.1 (2×OMe), 132.0 (C-1‴), 124.1 (C-2‴), 152.7 (C-3‴), 127.9 (C-4‴), 131.0 (C-5‴), 127.9 (C-6‴), 167.1 (C-7‴), 133.4 (C-1⁗), 119.5 (C-2⁗), 159.5 (C-3⁗), 123.7 (C-4⁗), 131.3 (C-5⁗), 125.4 (C-6⁗), 102.6 (C-1⁗), 75.2 (C-2⁗), 78.2 (C-3⁗), 71.6 (C-4⁗), 78.5 (C-5⁗), 62.7 (C-6⁗). *Swertia franchetiana* (Gentianaceae).[98]

156. Senburiside IV



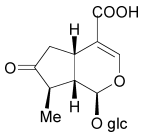
$C_{36}H_{42}O_{19}$: 778.2319; white amorphous powder (MeOH–H_2O); $[\alpha]_D^{25}$ −60.2° (c=1.14, MeOH); UV (MeOH): 234, 286; IR (KBr): 3419, 2927, 1715, 1645, 1540, 1488, 1263, 1074, 753; ^{1}H-NMR (400 MHz, CD_3OD): 5.69 (d, 3.6, H-1), 7.62 (s, H-3), 3.12 (m, H-5), 2.75 (m, H-6), 2.19 (m, H-6), 5.15 (m, H-7), 2.19 (m, H-8, 9), 1.43 (d, 6.8, H_3-10), 4.87 (d, 8.0, H-1′), 3.38 (t, 8.0, H-2′), 3.50 (m, H-3′, 4′, 5′, 6′), 4.11 (m, H-6′), 8.02 (s, H-2″), 7.73 (d, 8.0, H-4″), 7.76 (dd, 8.0, 7.6, H-5″), 8.11 (d, 7.6, H-6″), 8.10 (s, H-2‴), 7.65 (d, 8.0, H-4‴), 7.69 (dd, 8.0, 7.6, H-5‴), 8.05 (d, 7.6, H-6‴), 5.20 (d, 7.2, H-1⁗), 3.50 (H-2⁗, 3⁗, 4⁗, 5⁗, 6⁗), 4.11 (H-6⁗); ^{13}C-NMR (100 MHz, CD_3OD): 96.5 (C-1), 152.1 (C-3), 113.6 (C-4), 33.0 (C-5), 38.5 (C-6), 84.0 (C-7), 43.3 (C-8), 49.0 (C-9), 18.6 (C-10), 167.2 (C-11), 100.4 (C-1′), 75.0 (C-2′), 78.2 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 132.1 (C-1″), 124.2 (C-2″), 152.7 (C-3″), 128.0 (C-4″), 131.1 (C-5″), 128.4 (C-6″), 166.4 (C-7″), 135.5 (C-1‴), 119.6 (C-2‴), 159.6 (C-3‴), 123.8 (C-4‴), 131.3 (C-5‴), 125.4 (C-6‴), 166.4 (C-7‴), 102.7 (C-1⁗), 75.2 (C-2⁗), 78.2 (C-3⁗), 71.6 (C-4⁗), 78.6 (C-5⁗), 62.8 (C-6⁗). *Swertia franchetiana* (Gentianiaceae).[98]

157. 4″-*O*-Glucoside of linearoside (7-*O*-(4″-*O*-Glucosyl)-coumaroylloganic acid)



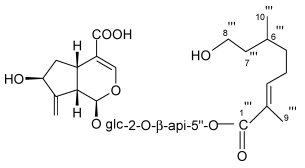
$C_{31}H_{40}O_{17}$: 684.2265; $[\alpha]_D$ −2.0° (c=0.90, MeOH); UV (MeOH): 211 (3.78), 226 (3.98), 296 (4.07); ^{1}H-NMR (200 MHz, CD_3OD): 5.25 (m, H-1, 7), 7.33 (s, H-3), 1.74—1.88 (m, H_α-6), 2.06—2.13 (m, H_β-6), 2.17—2.24 (m, H-8), 2.30—2.40 (m, H-9), 1.10 (d, 6.8, H_3-10), 4.68 (d, 7.6, H-1′), 3.13—3.50 (m, H-2′—5′, 2—5‴), 3.59 (m, H-6′, 6‴), 3.90 (d, 7.6, H-6′, 6‴), 7.58 (d, 9.0, H-2″, 6″), 7.12 (d, 8.8, H-3″, 5″), 7.64 (d, 15.8, H-7″), 6.42 (d, 15.8, H-8″) 4.97 (d, 7.6, H-1‴); ^{13}C-NMR (50 MHz, CD_3OD): 97.6 (C-1), 152.7 (C-3), 113.3 (C-4), 32.8 (C-5), 40.5 (C-6), 78.6 (C-7), 41.1 (C-8), 47.1 (C-9), 13.8 (C-10), 170.8 (C-11), 100.2 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′). 129.9 (C-1″), 130.9 (C-2″, 6″), 118.0 (C-3″, 5″), 160.9 (C-4″), 145.9 (C-7″), 117.2 (C-8″), 168.6 (C-9″), 101.9 (C-1‴), 74.8 (C-2‴), 78.0 (C-3‴), 71.3 (C-4‴), 78.3 (C-5‴), 62.5 (C-6‴). *Gentiana linearis* (Gentianaceae).[97]

158. 7-Ketologanic acid



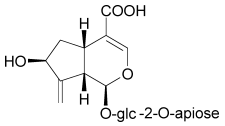
$C_{16}H_{22}O_{10}$: 374.1213; $[\alpha]_D^{21}$ −107.0° (c=1.2, MeOH); ^{1}H-NMR (250 MHz, D_2O): 5.42 (d, 2.5, H-1), 7.49 (d, 1.0, H-3), 3.20—3.50 (m, H-5, 2′, 3′, 4′, 5′), 2.69 (dd, 20.0, 8.0, H-6), 2.57 (br d, 20.0, H-6), 2.21 (br dq, 11.0, 7.0, H-8), 2.44 (ddd, 11.0, 7.5, 2.5, H-9), 1.09 (d, 7.0, H_3-10), 4.78 (d, 8.0, H-1′), 3.88 (dd, 12.0, 2.0, H-6′), 3.67 (dd, 12.0, 5,5, H-6′); ^{13}C-NMR (63 MHz, D_2O): 95.4 (C-1), 153.3 (C-3), 110.7 (C-4), 27.1 (C-5), 44.5 (C-6), 215.9 (C-7), 42.9 (C-8), 45.3 (C-9), 13.0 (C-10), 99.4 (C-1′), 73.4 (C-2′), 76.4 (C-3′), 70.4 (C-4′), 77.2 (C-5′), 61.5 (C-6′). *Picconia excelsa* (Oleaceae).[88]

159. Inerminoside C



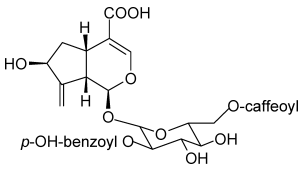
$C_{31}H_{46}O_{16}$: 674.2785; amorphous powder; UV (MeOH): 227.5; IR (?): 3430, 1700, 1637; ^{1}H-NMR (300 MHz, CD_3OD): 5.30 (d, 5.6, H-1), 7.32 (s, H-3), 3.17 (m, H-5), 2.06 (m, H-6), 1.98 (m, H-6), 4.42 (m, H-7), 2.88 (m, H-9), 5.46 and 5.39 (each br s, H_2-10), 4.78 (d, 7.6, H-1′), 3.47 (dd, 9.2, 7.6, H-2′), 3.55 (dd, 9.2, 9.0, H-3′), *ca.* 3.32 (H-4′), 3.35 (m, H-5′), *ca.* 3.66 (H-6′), 3.90 (br d, 11.7, H-6′), 5.47 (br s, H-1″), 3.94 (br s, H-2″), 3.81 and 4.24 (each d, 9.8, H_2-4″), 4.27 (br s, H_2-5″), 6.86 (dt, 7.5, 1.2, H-3‴), 2.27 (m, H_2-4‴), 1.34 and 1.50 (each m, H_2-5‴), 1.68 (m, H-6‴), 1.40 and 1.70 (each m, H_2-7‴), *ca.* 3.65 (H_2-8‴), 1.87 (s, H_3-9‴), 0.98 (d, 6.5, H_3-10‴); ^{13}C-NMR (75.5 MHz, CD_3OD): 96.1 (C-1), 151.6 (C-3), 33.2 (C-5), 41.3 (C-6), 74.0 (C-7), 153.8 (C-8), 45.1 (C-9), 113.6 (C-10), 173.3 (C-11), 98.3 (C-1′), 78.0 (C-2′), 78.3 (C-3′), 71.8 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 110.2 (C-1″), 78.9 (C-2″), 79.2 (C-3″), 75.4 (C-4″), 68.6 (C-5″), 169.5 (C-1‴), 128.4 (C-2‴), 144.7 (C-3‴), 27.3 (C-4‴), 36.9 (C-5‴), 30.6 (C-6‴), 40.6 (C-7‴), 61.0 (C-8‴), 12.5 (C-9‴), 19.8 (C-10‴). *Clerodendrum inerme* (Verbenaceae).[99]

160. 2′-*O*-Apiosylgardoside



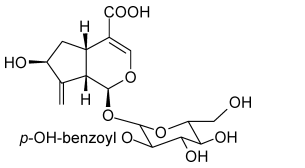
$C_{21}H_{30}O_{14}$: 506.1635; amorphous, ^{1}H-NMR (500 MHz, D_2O): 5.70 (d, 2.7, H-1), 7.20 (d, 1.5, H-3), 3.09 (dddd, 7.2, 6.8, 2.2, 1.5, H-5), 2.33 (ddd, 12.8, 6.9, 2.2, H-6), 1.86 (ddd, 12.8, 9.4, 6.8, H-6), 4.55 (ddddd, 9.6, 7.1, 2.5, 2.5, 2.3, H-7), 3.24 (dddd, 7.2, 2.7, 2.5, 2.5, H-9), 5.41 (dd, 2.5, 2.5, H_a-10), 5.40 (dd, 2.5, 2.5, H_b-10), 4.90 (d, 8.1, H-1′), 3.48 (dd, 9.6, 8.1, H-2′), 3.69 (t-like, *ca.* 9.5, H-3′), 3.50 (dd, 10.0, 9.1, H-4′), 3.55 (ddd, 10.0, 5.8, 2.1, H-5′), 4.00 (dd, 12.4, 2.1, H-6′), 3.80 (dd, 12.4, 5.8, H-6′), 5.39 (d, 2.4, H-1″), 4.04 (d, 2.4, H-2″), 3.97 (d, 10.0, H_a-4″), 3.87 (d, 10.2, H_b-4″), 3.66 (s, H_2-5″); ^{13}C-NMR (125 MHz, D_2O): 95.8 (C-1), 148.7 (C-3), 116.4 (C-4), 30.3 (C-5), 38.6 (C-6), 73.2 (C-7), 152.1 (C-8), 44.4 (C-9), 111.9 (C-10), 175.0 (C-11), 97.7 (C-1′), 78.1 (C-2′), 77.0 (C-3′), 70.3 (C-4′), 77.0 (C-5′), 61.5 (C-6′), 110.0 (C-1″), 78.4 (C-2″), 80.5 (C-3″), 74.5 (C-4″), 64.6 (C-5″). *Verbenoxylum reitzii* (Verbenaceae).[100]

161. 2′-*O*-*p*-Hydroxybenzoyl-6′-*O*-*trans*-caffeoylgardoside



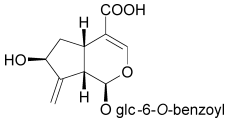
$C_{32}H_{32}O_{15}$: 656.1741; pale yellow amorphous powder; mp 191—192 °C; $[\alpha]_D^{25}$ −32.6° (c=0.5, MeOH); UV (MeOH): 250 (4.33), 330 (4.17); IR (KBr): 3406, 1698, 1633, 1604, 1516, 1449, 1272, 1168, 1113, 985, 852; ^{1}H-NMR (500 MHz, CD_3OD): 5.24 (d, 4.5, H-1), 7.09 (br s, H-3), 2.95 (m, H-5), 1.94 (m, H-6), 1.83 (m, H-6), 4.26 (br s, H-7), 2.86 (br s, H-9), 5.22 (br s, H-10), 5.25 (br s, H-10), 4.99 (d, 8.0, H-1′), 4.95 (dd, 9.0, 8.0, H-2′), 3.71 (dd, 9.0, 9.0, H-3′), 3.51 (dd, 9.5, 9.0, H-4′), 3.67 (m, H-5′) 4.42 (dd, 12.0, 6.0, H-6′), 4.53 (dd, 11.5, 2.0, H-6′), 7.85 (d, 8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″), 6.30 (d, 16.0, H-8‴), 7.58 (d, 16.0, H-7‴), 7.05 (d, 2.0, H-2‴), 6.78 (d, 8.5, H-5‴), 6.95 (dd, 8.5, 2.0, H-6‴); ^{13}C-NMR (75 MHz, CD_3OD): 96.8 (C-1), 151.5 (C-3), 113.0 (C-4), 31.7 (C-5), 40.4 (C-6), 73.8 (C-7), 152.7 (C-8), 44.8 (C-9), 112.7 (C-10), — (C-11), 98.4 (C-1′), 74.9 (C-2′), 75.8 (C-3′), 71.8 (C-4′), 75.9 (C-5′), 64.3 (C-6′), 122.2 (C-1″), 132.9 (C-2″, 6″), 116.2 (C-3″, 5″), 163.4 (C-4″), 167.4 (C-7″), 169.0 (C-9‴′), 114.8 (C-8‴), 147.3 (C-7‴), 127.6 (C-1‴), 115.2 (C-2‴), 146.8 (C-3‴), 149.7 (C-4‴), 116.5 (C-5‴), 123.1 (C-6‴). *Vitex altissima* (Verbenaceae).[86]

162. 2′-*O*-*p*-Hydroxybenzoylgardoside



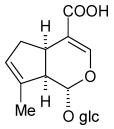
$C_{23}H_{26}O_{12}$: 494.1424; colorless amorphous powder; mp 215—216 °C; $[\alpha]_D^{25}$ −41.3° (c=0.5, MeOH); UV (MeOH): 255 (3.88); IR (KBr): 3368, 1703, 1636, 1603, 1512, 1271, 1170, 1079, 902, 852; ^{1}H-NMR (500 MHz, CD_3OD): 5.35 (d, 3.5, H-1), 7.03 (br s, H-3), 2.97 (br s, H-5), 1.85 (m, H-6), 2.03 (m, H-6), 4.30 (br s, H-7), 2.84 (br s, H-9), 5.29 (br s, H_2-10), 4.97 (d, 8.5, H-1′), 4.90 (dd, 9.5, 8.0, H-2′), 3.71 (m, H-3′), 3.41 (m, H-4′), 3.69 (m, H-5′) 3.66 (m, H-6′), 3.93 (d, 12.0, H-6′), 7.84 (br d, 7.5, H-2″, H-6″), 6.80 (br d, 7.5, H-3″, 5″); ^{13}C-NMR (75 MHz, CD_3OD): 96.5 (C-1), 30.7 (C-5), 40.5 (C-6), 73.9 (C-7), 153.2 (C-8), 45.2 (C-9), 112.5 (C-10), 98.3 (C-1′), 75.1 (C-2′), 76.3 (C-3′), 71.8 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 122.3 (C-1″), 132.9 (C-2″, 6″), 116.2 (C-3″, 5″), 163.4 (C-4″), 167.5 (C-7″), C-3, C-4 and C-11 signals not observed. *Vitex altissima* (Verbenaceae).[86]

163. Aquaticoside C (6′-*O*-Benzoylgardoside)



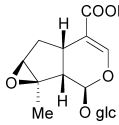
$C_{23}H_{26}O_{11}$: 478.147; amorphous powder; $[\alpha]_D^{24}$ +11.5° (c=0.16, MeOH); UV (MeOH): 236, 299, 331; ^{1}H-NMR (500 MHz, CD_3OD): 5.18 (d, 5.2, H-1), 7.36 (d, 1.2, H-3), 3.19 (dt, 7.6, 7.0, H-5), 1.83 (dt, 12.8, 6.4, H-6), 1.96 (m, H-6), 4.31 (t, 5.8, H-7), 2.92 (ddd, 7.3, 5.2, 1.8, H-9), 5.19 (br s, H-10), 5.25 (t, 1.8, H-10), 4.74 (d, 7.9, H-1′), 3.30 (dd, 9.1, 7.9, H-2′), 3.46 (overlapped, H-3′, 4′), 3.66 (m, H-5′), 4.54 (dd, 11.9, 6.4, H-6′), 4.69 (dd, 11.6, 2.4, H-6′), 8.07 (dd, 8.5, 1.2, H-2″, 6″), 7.52 (t, 7.9, H-3″, 5″), 7.65 (t, 7.6, H-4″); ^{13}C-NMR (125 MHz, CD_3OD): 96.8 (C-1), 151.6 (C-3), 114.0 (C-4), 32.5 (C-5), 41.1 (C-6), 73.9 (C-7), 152.9 (C-8), 44.8 (C-9), 113.1 (C-10), 173.0 (C-11), 100.2 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 72.0 (C-4′), 75.6 (C-5′), 65.0 (C-6′), 131.4 (C-1″), 130.6 (C-2″, 6″), 129.7 (C-3″, 5″), 134.4 (C-4″), 167.8 (C-7″). *Veronica anagallis-aquatica* (Scrophulariaceae).[94]

164. Nepetanudoside B



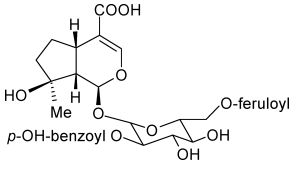
$C_{16}H_{22}O_9$: 358.1363; amorphous powder; −28.8° (c=0.75, MeOH); UV (MeOH): 236 (3.99); IR (KBr): 3327, 1684, 1634; ^{1}H-NMR (400 MHz, CD_3OD): 5.13 (d, 5.6, H-1), 7.43 (s, H-3), 3.13 (m, H-5), 2.10 (m, H-6), 2.72 (m, H-6, 9), 5.48 (m, H-7), 1.85 (br s, H_3-10), 4.58 (d, 7.6, H-1′), 3.69 (dd, 11.9, 4.7, H-6′), 3.84 (dd, 11.9, 1.8, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 101.9 (C-1), 153.4 (C-3), 113.1 (C-4), 35.7 (C-5), 39.6 (C-6), 127.9 (C-7), 140.2 (C-8), 50.5 (C-9), 16.2 (C-10), 171.3 (C-11), 104.5 (C-1′), 75.2 (C-2′), 78.4 (C-3′)[a], 71.4 (C-4′), 78.2 (C-5′)[a], 62.5 (C-6′). *Nepeta nuda* ssp. *albiflora* (Labiatae).[84]

165. 7,8-Epoxy-8-*epi*-loganic acid



$C_{16}H_{22}O_{10}$: 374.1213; white amorphous powder; $[\alpha]_D^{20}$ −40.0° (c=0.2, MeOH); UV (MeOH): 205 (4.07), 227 (4.16); IR (KBr) 3450, 1685, 1635; ^{1}H-NMR (300 MHz, CD_3OD): 5.12 (d, 9.5, H-1), 7.20 (br s, H-3), 2.80 (m, H-5), 1.41 (dd, 13.6, 10.4, H_α-6), 2.60 (dd, 13.6, 7.5, H_β-6), 3.28 (m, H-7), 2.19 (dd, 9.5, 7.4, H-9), 1.60 (s, H_3-10), 4.81 (d, 7.9, H-1′), 3.19—3.44 (m, H-2′—5′), 3.64 (dd, 11.9, 5.8, H-6′), 3.90 (dd, 11.9, 1.9, H-6′); ^{13}C-NMR (75 MHz, CD_3OD): 95.6 (C-1), 148.5 (C-3), 116.6 (C-4), 32.9 (C-5), 36.2 (C-6), 63.9 (C-7), 65.8 (C-8), 45.4 (C-9), 18.1 (C-10), 175.3 (C-11), 99.9 (C-1′), 75.1 (C-2′), 78.0 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.0 (C-6′). *Leonurus persicus* (Lamiaceae).[24]

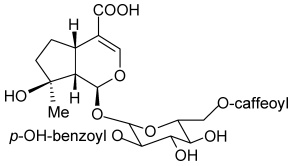
166. 6′-*O*-*trans*-Feruloylnegundoside



$C_{33}H_{36}O_{15}$: 672.2054; pale yellow amorphous powder; mp 155—156 °C; $[\alpha]_D^{25}$ −74.6° (c=0.25, MeOH); UV (MeOH): 247 (4.27), 327 (4.07); IR (KBr): 3415, 1698, 1633, 1601, 1515, 1452, 1271, 1168, 1123, 980, 850; ^{1}H-NMR (500 MHz, CD_3OD): 5.31 (d, 4.0, H-1), 7.11 (d, 1.0, H-3), 2.93 (m, H-5), 2.12 (m, H-6), 1.33 (m, H-6), 1.60 (m, H_2-7), 2.12 (dd, 9.0, 4.0, H-9), 1.23 (s, H_3-10), 5.01 (d, 8.0, H-1′), 4.94 (dd, 9.0, 8.0, H-2′), 3.73 (dd, 9.5, 9.0, H-3′), 3.55 (dd, 9.5, 9.0, H-4′), 3.69 (m, H-5′) 4.41 (dd, 12.0, 5.5, H-6′), 4.56 (dd, 12.0, 2.0, H-6′), 7.85 (d, 8.5, H-2″, 6″), 6.83 (d, 8.5, H-3″, 5″), 6.40 (d, 16.0, H-8‴), 7.64 (d, 16.0, H-7‴), 7.18 (d, 2.0, H-2‴), 6.78 (d, 8.5, H-5‴), 7.06 (dd, 8.5, 2.0, H-6‴), 3.88 (s, MeO-3‴); ^{13}C-NMR (75 MHz, CD_3OD): 95.4 (C-1), 150.6 (C-3), 113.6 (C-4), 31.8 (C-5), 30.3 (C-6), 40.7 (C-7), 80.2 (C-8), 52.2 (C-9), 24.6 (C-10), 170.0 (C-11), 97.9 (C-1′), 74.8 (C-2′), 75.8 (C-3′), 71.7

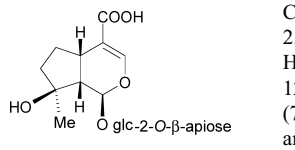
(C-4′), 75.8 (C-5′), 64.2 (C-6′), 122.2 (C-1″), 132.9 (C-2″, 6″), 116.1 (C-3″, 5″), 163.3 (C-4″), 167.3 (C=O, C-7″), 169.0 (C-9‴), 115.2 (C-8‴), 147.2 (C-7‴), 127.6 (C-1‴), 111.7 (C-2‴), 151.3 (C-3‴), 149.3 (C-4‴), 116.5 (C-5‴), 124.2 (C-6‴), 56.4 (MeO-3‴). *Vitex altissima* (Verbenaceae).[86]

167. 6′-*O*-*trans*-Caffeoylnegundoside



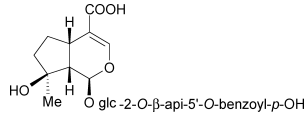
$C_{32}H_{34}O_{15}$: 658.1897; pale yellow amorphous powder; mp 168—169 °C; $[\alpha]_D^{25}$ −109.3° (*c*=0.5, MeOH); UV (MeOH): 249 (4.29), 331 (4.07); IR (KBr): 3398, 1695, 1633, 1604, 1517, 1448, 1272, 1168, 1117, 980, 852; ^{1}H-NMR (500 MHz, CD_3OD): 5.31 (d, 4.0, H-1), 7.11 (d, 0.5, H-3), 2.93 (m, H-5), 2.14 (m, H-6), 1.34 (m, H-6), 1.63 (m, H_2-7), 2.14 (dd, 9.0, 4.0, H-9), 1.23 (s, H_3-10), 5.01 (d, 8.0, H-1′), 4.95 (dd, 9.0, 8.0, H-2′), 3.73 (dd, 9.5, 9.0, H-3′), 3.54 (dd, 9.5, 9.0, H-4′), 3.68 (m, H-5′) 4.40 (dd, 12.5, 6.0, H-6′), 4.55 (dd, 12.0, 2.0, H-6′), 7.85 (d, 8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″), 6.30 (d, 16.0, H-8‴), 7.58 (d, 16.0, H-7‴), 7.05 (d, 2.0, H-2‴), 6.78 (d, 8.5, H-5‴), 6.95 (dd, 8.5, 2.0, H-6‴); ^{13}C-NMR (75 MHz, CD_3OD): 95.3 (C-1), 151.3 (C-3), 113.6 (C-4), 31.8 (C-5), 30.3 (C-6), 40.8 (C-7), 80.2 (C-8), 52.2 (C-9), 24.5 (C-10), 170.1 (C-11), 97.9 (C-1′), 74.8 (C-2′), 75.9 (C-3′), 71.7 (C-4′), 75.9 (C-5′), 64.1 (C-6′), 122.1 (C-1″), 132.9 (C-2″, 6″), 116.1 (C-3″, 5″), 163.4 (C-4″), 167.3 (C-7″), 169.0 (C-9‴), 114.7 (C-8‴), 147.3 (C-7‴), 127.6 (C-1‴), 115.1 (C-2‴), 146.8 (C-3‴), 149.6 (C-4‴), 116.5 (C-5‴), 123.1 (C-6‴). *Vitex altissima* (Verbenaceae).[86]

168. Inerminoside A1



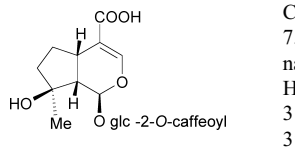
$C_{21}H_{32}O_{14}$: 508.1791; amorphous powder; UV (MeOH): 234; IR (?): 3400, 1651; ^{1}H-NMR (300 MHz, CD_3OD): 5.52 (d, 2.8, H-1), 7.30 (s, H-3), 3.16 (m, H-5), 1.56 (m, H-6), 1.73 (m, H-7), 2.27 (dd, 9.8, 2.8, H-9), 1.33 (s, H_3-10), 4.73 (d, 7.8, H-1′), 3.44 (dd, 9.2, 7.8, H-2′), 3.55 (t, 9.0, H-3′), 3.28 (t, 9.8, H-4′), 3.32 (m, H-5′), 3.68 (dd, 12.0, 5.8, H-6′), 3.93 (dd, 12.0, 2.0, H-6′), 5.43 (br s, H-1″), 3.93 (br s, H-2″), 3.75 and 4.01 (each d, 9.9, H_2-4″), 3.62 (br s, H_2-5″); ^{13}C-NMR (75.5 MHz, CD_3OD): 94.4 (C-1), 149.8 (C-3), 31.9 (C-5), 30.6 (C-6), 41.2 (C-7), 80.9 (C-8), 52.5 (C-9), 24.4 (C-10), C-4 and C-11, not observed, 98.2 (C-1′), 77.8 (C-2′), 78.2 (C-3′), 71.9 (C-4′), 78.5 (C-5′), 63.0 (C-6′), 110.5 (C-1″), 79.1 (C-2″), 80.3 (C-3″), 75.4 (C-4″), 66.1 (C-5″). *Clerodendrum inerme* (Verbenaceae).[99]

169. Inerminoside D



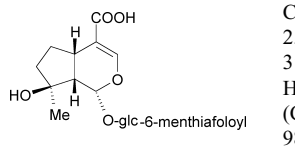
$C_{28}H_{36}O_{16}$: 628.2003; amorphous powder; UV (MeOH): 207, 211, 215, 243; IR (?): 3420, 1654, 1592, 1457; ^{1}H-NMR (300 MHz, CD_3OD): 5.42 (d, 3.7, H-1), 7.16 (s, H-3), 3.20 (m, H-5), 1.54 (m, H-6), 2.31 (m, H-6), 1.72 (ddt, 7.5, H_2-7), 2.23 (dd, 9.5, 3.7, H-9), 1.36 (s, H_3-10), 4.80 (d, 7.8, H-1′), 3.43 (dd, 9.0, 7.8, H-2′), 3.56 (dd, 9.0, 9.5, H-3′), 3.30 (dd, 9.5, 9.0, H-4′), 3.35 (m, H-5′), 3.68 (dd, 12.2, 5.8, H-6′), 3.92 (dd, 12.2, 2.0, H-6′), 5.40 (d, 1.3, H-1″), 4.09 (d, 1.3, H-2″), 3.86 and 4.20 (each d, 10.0, H_2-4″), 4.34 and 4.42 (each d, 11.7, H_2-5″), 7.87 (d, 8.7, H-2‴, 6‴), 6.71 (d, 8.7, H-3‴, 5‴); ^{13}C-NMR (75.5 MHz, CD_3OD): 94.5 (C-1), 147.5 (C-3), 32.9 (C-5), 30.7 (C-6), 41.1 (C-7), 80.7 (C-8), 52.9 (C-9), 24.8 (C-10), 175.7 (C-11), 98.4 (C-1′), 78.1 (C-2′), 78.6 (C-3′), 71.9 (C-4′), 78.5 (C-5′), 63.0 (C-6′), 110.4 (C-1″), 78.6 (C-2″), 79.3 (C-3″), 75.5 (C-4″), 67.7 (C-5″), 119.1 (C-1‴), 133.2 (C-2‴, 6‴), 118.1 (C-3‴, 5‴), 168.9 (C-7‴), C-4 and C-4‴ were not observed. *Clerodendrum inerme* (Verbenaceae).[99]

170. 2′-Caffeoylmussaenosidic acid



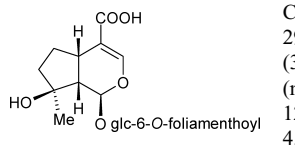
$C_{25}H_{30}O_{13}$: 538.1686; syrup; UV (MeOH): 329; IR (neat): 1698, 1628; ^{1}H-NMR (250 MHz, CD_3OD): 5.47 (d, 3.0, H-1), 7.27 (s, H-3), 3.0 (m, H-5), 1.30—1.70 (m, H_2-6, H-7), 2.20 (m, H-7, 9), 1.27 (s, H_3-10), 4.90 (overlapped by HDO signal, H-1′), 4.83 (t, 9.0, H-2′), 3.30—4.00 (m, H-3′, 4′, 5′, 6′), 7.03 (d, 2.0, H-2″), 6.77 (d, 8.5, H-5″), 6.93 (dd, 8.0, 2.0, H-6″), 7.51 (d, 16.0, H-7″), 6.20 (d, 16.0, H-8″); ^{13}C-NMR (62.5 MHz, CD_3OD): 95.1 (C-1), 151.2 (C-3), 114.2 (C-4), 31.5 (C-5), 30.3 (C-6), 41.3 (C-7), 80.0 (C-8), 52.6 (C-9), 24.4 (C-10), 170.4 (C-11), 97.8 (C-1′), 76.1 (C-2′), 74.8 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 62.8 (C-6′), 128.0 (C-1″), 115.4 (C-2″), 146.7 (C-3″), 148.5 (C-4″), 116.5 (C-5″), 123.0 (C-6″), 147.2 (C-7″), 115.1 (C-8″), 168.2 (C-9″). *Avicennia germinans* (Avicenniaceae/Verbenaceae).[101]

171. 6′-*O*-Menthiafoloylmussaenosidic acid



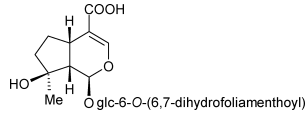
$C_{26}H_{38}O_{12}$: 542.2363; ^{1}H-NMR (250 MHz, D_2O): 5.15 (d, 2.3, H-1), 7.14 (s, H-3), 3.04 (m, H-5), 1.63 (H-6, H_a-7, H_2-5″), 2.10—2.20 (H_b-6, H-9, H_2-4″), 1.30 (H_b-7), 1.21 (s, H_3-10, 10″), 4.72 (d, 7.9, H-1′), 3.26 (dd, 8.8, 8.2, H-2′), 3.42 (m, H-3′, 4′), 3.61 (m, H-5′), 4.40 (dd, 12.0, 5.8, H-6′), 4.34 (dd, 12.0, 2.7, H-6′), 6.76 (tq, 7.5, 1.0, H-3″), 5.86 (dd, 17.5, 10.9, H-7″), 5.05 (dd, 11.0, 1.0, H-8″, *cis*), 5.11 (dd, 17.6, 1.0, H-8″, *trans*), 1.73 (s, H_3-9″); ^{13}C-NMR (62.9 MHz, D_2O): 95.1 (C-1), 148.8 (C-3), 116.5 (C-4), 32.5 (C-5), 30.0 (C-6), 39.8 (C-7), 81.1 (C-8), 51.5 (C-9), 24.4 (C-10), 170.9 (C-11), 98.8 (C-1′), 73.6 (C-2′), 76.4 (C-3′), 70.8 (C-4′), 74.8 (C-5′), 63.9 (C-6′), 170.9 (C-1″), 127.9 (C-2″), 145.6 (C-3″), 24.2 (C-4″), 40.7 (C-5″), 74.4 (C-6″), 144.6 (C-7″), 113.2 (C-8″), 12.5 (C-9″), 27.0 (C-10″). *Veronica bellidioides* (Scrophulariaceae).[102]

172. Agnucastoside A (6′-*O*-Foliamenthoylmussaenosidic acid)



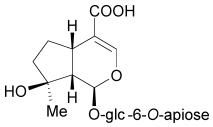
$C_{26}H_{38}O_{12}$: 542.2363; amorphous powder; $[\alpha]_D^{20}$ −52.0° (*c*=0.1, MeOH); UV (MeOH): 220 (4.25); IR (KBr): 3425, 2927, 1703, 1650, 1561, 1543, 1524, 1457, 1440 sh, 1419 sh, 1404, 1276, 1072, 1017, 913, 854, 841; ^{1}H-NMR (300 MHz, CD_3OD): 5.19 (d, 6.0, H-1), 7.30 (s, H-3), 3.20 (m, H-5), 1.40 and 2.30 (each m, H_2-6), 1.67 (m, H_2-7), 2.10 (m, H-9), 1.30 (s, H_3-10), 4.69 (d, 8.0, H-1′), 3.20 (t, 8.0, H-2′), 3.39 (m, H-3′), 3.35 (m, H-4′), 3.50 (m, H-5′), 4.27 (dd, 12.0, 5.0, H-6′), 4.49 (dd, 12.0, 2.0, H-6′), 6.78 (dt, 8.5, 1.5, H-3″), 2.34 (m, H_2-4″), 2.15 (m, H_2-5″), 5.38 (br t, 6.5, H-7″), 4.09 (d, 6.5, H_2-8″), 1.83 (s, H_3-9″), 1.68 (s, H_3-10″); ^{13}C-NMR (75 MHz, CD_3OD): 95.4 (C-1), 150.0 (C-3), 116.4 (C-4), 33.7 (C-5), 31.1 (C-6), 40.1 (C-7), 81.1 (C-8), 52.3 (C-9), 25.2 (C-10), 171.3 (C-11), 99.7 (C-1′), 74.8 (C-2′), 77.8 (C-3′), 71.7 (C-4′), 75.7 (C-5′), 64.3 (C-6′), 169.3 (C-1″), 128.8 (C-2″), 143.6 (C-3″), 28.0 (C-4″), 39.2 (C-5″), 138.3 (C-6″), 125.8 (C-7″), 59.4 (C-8″), 12.6 (C-9″), 16.2 (C-10″). *Vitex agnus-castus* (Verbenaceae).[92]

173. Agnucastoside B (6′-*O*-(6,7-Dihydrofoliamenthoyl)-mussaenosidic acid)



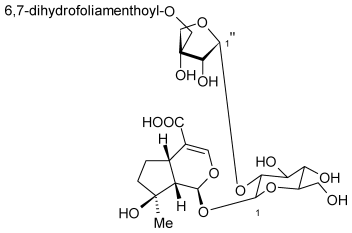
$C_{26}H_{40}O_{12}$: 544.2519; amorphous powder; $[\alpha]_D^{20}$ −64° (*c*=0.1, MeOH); UV (MeOH): 220 (4.27); IR (KBr): 3425, 2929, 1700, 1649, 1559, 1541, 1527, 1459, 1442 sh, 1424 sh, 1404, 1385 sh, 1277, 1207, 1159, 1154, 1070, 1022, 941, 912, 855, 745; ^{1}H-NMR (300 MHz, CD_3OD): 5.18 (d, 6.0, H-1), 7.38 (s, H-3), 3.20 (m, H-5), 1.38 and 2.30 (each m, H_2-6), 1.67 (br t, 7.5, H_2-7), 2.10 (dd, 8.5, 6.0, H-9), 1.31 (s, H_3-10), 4.70 (d, 8.0, H-1′), 3.21 (m, H-2′), 3.39 (t, 9.0, H-3′), 3.34 (dd, 10.0, 8.5, H-4′), 3.55 (m, H-5′), 4.28 (dd, 12.0, 6.0, H-6′), 4.49 (dd, 12.0, 2.0, H-6′), 6.78 (dt, 7.5, 1.5, H-3″), 2.22 (m, H_2-4″), 1.28 and 1.46 (each m, H_2-5″), 1.62 (m, H-6″), 1.36 and 1.60 (each m, H_2-7″), 3.60 (m, H_2-8″), 1.83 (d, 1.0, H_3-9″), 0.93 (d, 6.5, H_3-10″); ^{13}C-NMR (75 MHz, CD_3OD): 95.4 (C-1), 151.1 (C-3), 114.5 (C-4), 33.6 (C-5), 31.1 (C-6), 40.0 (C-7), 81.1 (C-8), 52.2 (C-9), 25.2 (C-10), 171.3 (C-11), 99.7 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.7 (C-4′), 75.7 (C-5′), 64.4 (C-6′), 169.4 (C-1″), 128.5 (C-2″), 144.4 (C-3″), 27.2 (C-4″), 37.0 (C-5″), 30.6 (C-6″), 40.6 (C-7″), 61.0 (C-8″), 12.5 (C-9″), 19.8 (C-10″). *Vitex agnus-castus* (Verbenaceae).[92]

174. 6-*O*-*β*-D-Apiofuranosylmussaenosidic acid



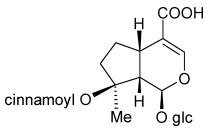
$C_{21}H_{32}O_{14}$: 508.1791; amorphous powder; $[\alpha]_D$ −97.1° (c=1.02, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.34 (d, 4.9, H-1), 7.40 (br s, H-3), 3.16 (m, H-5), 1.46 (m, H-6), 2.29 (m, H-6), 1.71 (br t, 7.6, H_2-7), 2.18 (dd, 8.8, 4.9, H-9), 1.34 (s, H_3-10), 4.66 (d, 7.8, H-1′), 3.19 (dd, 9.0, 7.8, H-2′), 3.36 (dd, 9.0, 8.8, H-3′), 3.26 (dd, 9.5, 8.8, H-4′), 3.45 (m, H-5′), 3.61 (dd, 11.2, 6.3, H-6′), 3.98 (dd, 11.2, 2.2, H-6′), 5.01 (d, 2.4, H-1″), 3.88 (d, 2.4, H-2″), 3.75 (d. 9.8, H-4″), 3.56 (s, H_2- 5″); ^{13}C-NMR (100 MHz, CD_3OD): 95.6 (C-1), 152.1 (C-3), 113.5 (C-4), 32.5 (C-5), 30.8 (C-6), 40.5 (C-7), 80.4 (C-8), 52.3 (C-9), 24.8 (C-10), 170.8 (C-11), 99.9 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 77.3 (C-5′), 68.7 (C-6′), 111.0 (C-1″), 78.0 (C-2″), 80.8 (C-3″), 75.0 (C-4″), 65.6 (C-5″). *Canthium berberidifolium* (Rubiaceae).[104]

175. Inerminoside A



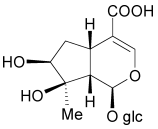
$C_{31}H_{46}O_{16}$: 674.2785; amorphous colorless powder; UV (?): 228; IR (?): 3350, 1700, 1670, 1630; ^{1}H-NMR (300 MHz, CD_3OD): 5.39 (d, 5.6, H-1), 7.37 (s, H-3), 3.16 (ddd-q-shaped, 8.5, H-5), 1.51 (m, H-6), 2.34 (m, H-6), 1.76 (m, H_2-7), 2.14 (dd, 8.5, 5.6, H-9), 1.39 (s, H_3-10), 4.77 (d, 7.7, H-1′), 3.46 (dd, 9.1, 7.7, H-2′), 3.55 (t, 8.8, H-3′), 3.27 (dd, t-shaped, 9.7, 8.3, H-4′), 3.35 (m, H-5′), 3.66 (overlapped, H-6′), 3.94 (br d, 12.9, H-6′), 5.41 (br s, H-1″), 3.92 (br s, H-2″), 3.79 (d, 9.6, H_a-4″), 4.23 (d, 9.6, H_b-4″), 4.27 (d, 11.3, H_a-5″), 4.22 (d, 11.3, H_b-5″), 6.86 (br t, 7.5, H-3‴), 2.27 (m, H-4‴), 1.36 (m, H_a-5‴), 1.48 (m, H_b-5‴), 1.67 (m, H-6‴), 1.50 (m, H-7‴), 1.62 (m, H-7‴), 3.66 (overlapped, H-8‴), 1.87 (s, H_3-9‴), 0.99 (d, 5.5, H_3-10‴); ^{13}C-NMR (75 MHz, CD_3OD): 94.5 (C-1), 152.2 (C-3), 113.4 (C-4), 32.6 (C-5), 30.8 (C-6), 40.1 (C-7), 80.9 (C-8), 52.2 (C-9), 25.1 (C-10), 170.0 (C-11), 98.4 (C-1′), 77.9 (C-2′), 78.3 (C-3′), 71.9 (C-4′), 78.3 (C-5′), 63.0 (C-6′), 110.2 (C-1″), 78.9 (C-2″), 79.2 (C-3″), 75.5 (C-4″), 68.7 (C-5″), 169.5 (C-1‴), 128.4 (C-2‴), 144.7 (C-3‴), 27.3 (C-4‴), 36.9 (C-5‴), 30.6 (C-6‴), 40.6 (C-7‴), 61.0 (C-8‴), 12.5 (C-9‴), 19.8 (C-10‴). *Clerodendrum inerme* (Verbenaceae).[95]

176. 8-*O*-Cinnamoylmussaenosidic acid



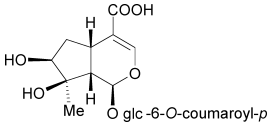
$C_{25}H_{30}O_{11}$: 506.1788; isolated as tetraacetate; amorphous, $[\alpha]_D^{25}$ −8.5° (c=0.5, $CHCl_3$); UV ($CHCl_3$): 282, 325; IR (KBr): 3160, 1705, 1675, 1510, 1210; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.20 (d, 2.5, H-1), 7.42 (s, H-3), 2.99 (m, H-5), 2.20 (m, H-6), 2.30 (m, H-6), 2.29 (m, H-7), 2.37 (dd, 9.0, 3.0, H-9), 1.46 (s, H_3-10), 4.90 (H-1′), 4.72 (br m, H-2′), 5.02 (H-3′) 5.14 (H-4′), 3.68 (H-5′), 4.16, 4.34 (H-6′), 6.86 (m, H-2″, 6″), 7.60 (m, H-3″, 5″), 7.30 (m, H-4″), 6.14 (d, 16.0, H-7″), 7.45 (d, 16.0, H-8″), 2.0—2.20 (4×Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 96.0 (C-1), 151.2 (C-3), 112.1 (C-4), 30.1 (C-5), 29.6 (C-6), 40.7 (C-7), 96.4 (C-8), 51.0 (C-9), 25.2 (C-10), 169.4 (C-11), 95.4 (C-1′), 70.3 (C-2′), 72.2 (C-3′), 68.3 (C-4′), 72.5 (C-5′), 61.7 (C-6′), 137.0 (C-1″), 129.7 (C-2″, 6″), 129.5 (C-3″, 5″), 131.8 (C-4″), 145.9 (C-7″), 114.2 (C-8″), 169.1 (C-9″), 20.2, 20.6, 20.7, 20.9, 169.3, 170.1, 170.6, 171.9 (4×Ac). *Avicennia officinalis* (Verbenaceae).[109]

177. Caryoptosidic acid



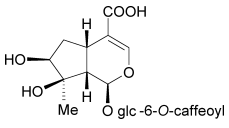
$C_{16}H_{24}O_{11}$: 392.1318; $[\alpha]_D^{25}$ −128.6° (c=1.0, MeOH); ^{1}H-NMR (600 MHz, CD_3OD): 5.51 (d, 4.0, H-1), 7.39 (br s, H-3), 3.20 (ddd, 10.5, 9.5, 5.0, H-5), 2.26 (ddd, 15.5, 9.5, 5.0, H-6), 1.75 (dt, 15.5, 5.0, H-6), 3.66 (dd, 5.0, 2.5, H-7), 2.59 (dd, 10.5, 4.0, H-9), 1.25 (s, H_3-10), 4.69 (d, 7.8, H-1′), 3.26 (dd, 9.5, 7.8, H-2′), 3.44 (t, 9.5, H-3′), 3.33 (t, 9.5, H-4′), 3.36 (m, H-5′), 3.72 (dd, 12.0, 2.5, H-6′), 3.92 (dd, 12.0, 4.5, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 94.4 (C-1), 152.0 (C-3), 112.4 (C-4), 27.2 (C-5), 38.5 (C-6), 78.8 (C-7), 78.9 (C-8), 48.9 (C-9), 21.9 (C-10), 171.5 (C-11), 99.5 (C-1′), 74.8 (C-2′), 78.7 (C-3′), 71.3 (C-4′), 77.9 (C-5′), 62.4 (C-6′). *Lippia graveolens* (Verbenaceae).[103]

178. Lippioside I (6′-*O*-*p*-*trans*-Coumaroylcaryoptosidic acid)



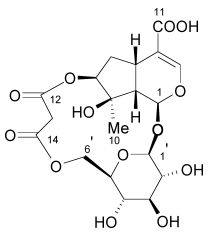
$C_{25}H_{30}O_{13}$: 538.1686; $[\alpha]_D^{25}$ −127.5° (c=1.0, MeOH); ^{1}H-NMR (600 MHz, CD_3OD): 5.49 (d, 4.5, H-1), 7.36 (br s, H-3), 3.19 (ddd, 10.5, 9.5, 5.0, H-5), 2.24 (ddd, 16.0, 9.5, 5.0, H-6), 1.74 (dt, 16.0, 5.0, H-6), 3.68 (dd, 5.0, 2.5, H-7), 2.61 (dd, 10.5, 4.5, H-9), 1.26 (s, H_3-10), 4.75 (d, 7.8, H-1′), 3.25 (dd, 9.5, 7.8, H-2′), 3.46 (t, 9.5, H-3′), 3.34 (t, 9.5, H-4′), 3.58 (m, H-5′), 4.44 (dd, 12.0, 2.5, H-6′), 4.55 (dd, 12.0, 4.5, H-6′), 7.55 (d, 8.0, H-2″, 6″), 6.88 (d, 8.0, H-3″, 5″), 7.73 (d, 16.0, H-7″), 6.44 (d, 16.0, H-8″); ^{13}C-NMR (150 MHz, CD_3OD): 94.5 (C-1), 152.5 (C-3), 112.8 (C-4), 27.1 (C-5), 38.4 (C-6), 78.8 (C-7), 79.0 (C-8), 48.9 (C-9), 21.9 (C-10), 171.2 (C-11), 99.5 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 75.6 (C-5′), 64.4 (C-6′), 127.9 (C-1″), 131.2 (C-2″, 6″), 116.6 (C-3″, 5″), 160.1 (C-4″), 146.8 (C-7″), 118.1 (C-8″), 168.7 (C-9″). *Lippia graveolens* (Verbenaceae).[103]

179. Lippioside II (6′-*O*-*trans*-Caffeoylcaryoptosidic acid)



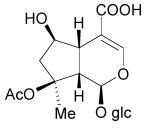
$C_{25}H_{30}O_{14}$: 554.1635; $[\alpha]_D^{25}$ −126.3° (c=1.0, MeOH); ^{1}H-NMR (600 MHz, CD_3OD): 5.49 (d, 4.5, H-1), 7.36 (br s, H-3), 3.18 (ddd, 10.5, 9.5, 5.0, H-5), 2.25 (ddd, 16.0, 9.5, 5.0, H-6), 1.74 (dt, 16.0, 5.0, H-6), 3.67 (dd, 5.0, 2.5, H-7), 2.61 (dd, 10.5, 4.5, H-9), 1.26 (s, H_3-10), 4.76 (d, 7.8, H-1′), 3.25 (dd, 9.5, 7.8, H-2′), 3.46 (t, 9.5, H-3′), 3.34 (t, 9.5, H-4′), 3.59 (m, H-5′), 4.44 (dd, 12.0, 2.5, H-6′), 4.55 (dd, 12.0, 4.5, H-6′), 7.04 (d, 1.5, H-2″), 6.77 (d, 8.0, H- 5″), 6.94 (dd, 8.0, 1.5, H-6″), 7.57 (d, 16.0, H-7″), 6.26 (d, 16.0, H-8″); ^{13}C-NMR (150 MHz, CD_3OD): 94.5 (C-1), 152.5 (C-3), 112.8 (C-4), 27.1 (C-5), 38.5 (C-6), 78.8 (C-7), 79.0 (C-8), 48.9 (C-9), 21.9 (C-10), 171.3 (C-11), 99.5 (C-1′), 74.6 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 75.6 (C-5′), 64.4 (C-6′), 127.9 (C-1″), 115.6 (C-2″), 146.1 (C-3″), 149.3 (C-4″), 115.2 (C-5″), 124.9 (C-6″), 146.1 (C-7″), 116.1 (C-8″), 167.2 (C-9″). *Lippia graveolens* (Verbenaceae).[103]

180. 7-*O*-(6′-*O*-Malonyl)-cachinesidic acid (Malonic ester of 8-hydroxy-8-*epi*-loganic acid)



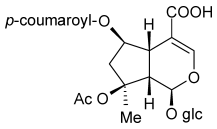
$C_{19}H_{24}O_{13}$: 460.1216; isolated as triacetate; mp 253—257 °C; $[\alpha]_D^{20}$ −54.0° (c=0.1, MeOH); IR (KBr): 3472, 3412, 1754, 1739, 1693, 1625, 1262, 1219; ^{1}H-NMR (400 MHz, acetone-d_6): 5.40 (d, 10.0, H-1), 7.53 (s, H-3), 3.40 (m, H-5), 1.45 (m, H-6), 3.04 (ddd, 16.0, 10.0, 7.5, H-6), 4.92 (d, 7.5, H-7), 2.00 (dd, 10.0, 7.0, H-9), 1.45 (s, H_3-10), 3.44—3.64 (d, 15.5, H_2-13), 5.20 (d, 8.0, H-1′), 5.08 (dd, 9.0, 8.0, H-2′), 5.44 (t, 9.0, H-3′), 5.00 (t, 9.0, H-4′), 4.07 (td, 9.0, 3.0, H-5′), 3.94 (dd, 11.5, 3.0, H-6′), 5.05 (m, H-6′), 2.09, 2.12, 2.13 (each s, 3×Ac); ^{13}C-NMR (100 MHz, acetone-d_6): 97.3 (C-1), 152.6 (C-3), 112.6 (C-4), 34.2 (C-5), 40.8 (C-6), 83.3 (C-7), 83.0 (C-8), 51.3 (C-9), 21.8 (C-10), 170.6 (C-11), 166.5 (C-12), 42.7 (C-13), 167.9 (C-14), 98.9 (C-1′), 72.3 (C-2′), 74.0 (C-3′), 71.4 (C-4′), 72.7 (C-5′), 63.5 (C-6′), 20.4, 20.5, 20.6, 171.1, 171.4, 171.5 (3×Ac). *Ajuga pseudoiva* (Labiatae).[106]

181. 8-*O*-Acetylshanzhiside



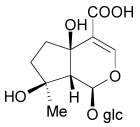
$C_{18}H_{26}O_{12}$: 434.1424; white amorphous powder; $[\alpha]_D^{20}$ −42.0° (c=0.1, MeOH); UV (MeOH): 205 (2.88); IR (KBr): 3450, 1739, 1695, 1400, 1250, 1100; ^{1}H-NMR (500 MHz, CD_3OD): 5.62 (d, 3.8, H-1), 7.10 (br s, H-3), 3.01 (dd, 9.3, 3.5, H-5), 4.13 (m, H-6), 2.24 (dd, 14.4, 6.2, H_a-7), 2.17 (dd, 14.4, 5.3, H_b-7), 2.85 (dd, 9.3, 3.8, H-9), 1.55 (s, H_3-10), 2.00 (s, Ac), 4.65 (d, 7.9, H-1′), 3.13 (dd, 9.0, 7.9, H-2′), 3.38 (t, 9.0, H-3′), 3.30 (m, H-4′), 3.32 (m, H-5′), 3.90 (dd, 12.0, 2.1, H-6′), 3.66 (dd, 12.0, 6.2, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 94.9 (C-1), 147.9 (C-3), 111.0 (C-4), 43.6 (C-5), 77.6 (C-6), 46.9 (C-7), 90.1 (C-8), 48.6 (C-9), 22.1 (C-10), 181.0 (C-11), 22.3, 172.9 (Ac), 100.6 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.7 (C-4′), 78.3 (C-5′), 62.9 (C-6′). *Phlomis tuberosa* (Lamiaceae).[107]

182. 8-*O*-Acetyl-6-*O*-*trans*-*p*-coumaroylshanzhiside



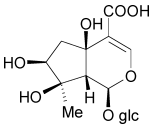
$C_{27}H_{32}O_{14}$: 580.1791; amorphous powder; $[\alpha]_D^{21}$ −75.6° (*c*=1.58, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.89 (d, 2.7, H-1), 7.49 (d, 1.5, H-3), 3.33 (H-5), 5.40 (m, H-6), 2.37 (br d, 15.4, H_a-7), 2.05 (dd, 15.4, 5.3, H_b-7), 3.01 (dd, 8.5, 2.7, H-9), 1.51 (s, H_3-10), 4.65 (d, 7.8, H-1′), 3.18 (dd, 9.0, 7.8, H-2′), 3.37 (dd, 9.0, 9.0, H-3′), 3.26 (dd, 9.0, 9.0, H-4′), 3.31 (m, H-5′), 3.88 (dd, 12.2, 2.2, H-6′), 3.66 (dd, 12.2, 6.1, H-6′), 7.40 (d, 8.6, H-2″, 6″), 6.77 (d, 8.6, H-3″, 5″), 7.56 (d, 15.9, H-7″), 6.28 (d, 15.9, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 154.6 (C-3), 108.4 (C-4), 39.8 (C-5), 78.8 (C-6), 45.2 (C-7), 89.6 (C-8), 50.3 (C-9), 21.9 (C-10), 169.7 (C-11), 22.2, 173.0 (Ac), 100.3 (C-1′), 74.6 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.2 (C-5′), 62.9 (C-6′), 127.0 (C-1″), 131.1 (C-2″, 6″), 115.4 (C-3″, 5″), 161.1 (C-4″), 146.5 (C-7″), 116.8 (C-8″), 168.5 (C-9″). *Barleria lupulina* (Acanthaceae).[108]

183. Ipolamiidic acid



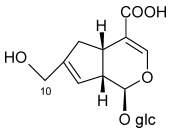
$C_{16}H_{24}O_{11}$: 392.1318; amorphous powder; $[\alpha]_D$ −69.9° (*c*=0.1, MeOH); UV (MeOH): 226; IR (KBr): 3421, 1652; ^{1}H-NMR (600 MHz, CD_3OD): 5.78 (br s, H-1), 7.25 (s, H-3), 2.28 (m, H-6), 2.04 (m, H-6), 1.97 (m, H-7), 1.61 (m, H-7), 2.44 (br s, H-9), 1.21 (s, H_3-10), 4.59 (d, 7.9, H-1′), 3.23 (dd, 9.0, 7.9, H-2′), 3.40 (t, 9.0, H-3′), 3.30 (t, 9.0, H-4′), 3.35 (m, H-5′), 3.93 (dd, 11.9, 1.9, H-6′), 3.68 (dd, 11.9, 6.2, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 92.5 (C-1), 148.4 (C-3), 117.2 (C-4), 71.5 (C-5), 39.0 (C-6), 40.1 (C-7), 78.2 (C-8), 60.4 (C-9), 23.0 (C-10), 171.6 (C-11), 98.4 (C-1′), 74.3 (C-2′), 77.3 (C-3′), 71.5 (C-4′), 78.1 (C-5′), 62.4 (C-6′). *Phlomis capitata* (Lamiaceae).[105]

184. Lamiidic acid



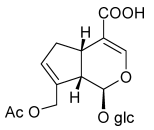
$C_{16}H_{24}O_{12}$: 408.1267; amorphous powder; $[\alpha]_D$ −83.9° (*c*=0.1, MeOH); UV (MeOH): 224; IR (KBr): 3421, 1650; ^{1}H-NMR (600 MHz, CD_3OD): 5.76 (br s, H-1), 7.13 (s, H-3), 2.29 (d, 3.9, H_2-6), 3.57 (t, 3.9, H-7), 2.71 (br s, H-9), 1.16 (s, H_3-10), 4.61 (d, 7.8, H-1′), 3.24 (dd, 9.0, 7.8, H-2′), 3.41 (t, 9.0, H-3′), 3.34 (t, 9.0, H-4′), 3.36 (m, H-5′), 3.92 (dd, 11.5, 1.8, H-6′), 3.68 (dd, 11.5, 5.9, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 93.9 (C-1), 146.8 (C-3), 119.8 (C-4), 70.7 (C-5), 48.0 (C-6), 78.1 (C-7), 79.7 (C-8), 56.7 (C-9), 21.6 (C-10), 174.3 (C-11), 99.4 (C-1′), 74.4 (C-2′), 77.4 (C-3′), 71.7 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Phlomis nissolii* (Lamiaceae).[105]

185. Premnosidic acid



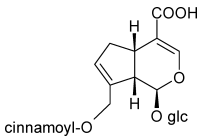
$C_{16}H_{22}O_{10}$: 374.1213; amorphous powder; mp 102—104 °C; $[\alpha]_D$ +6.8° (*c*=0.13, MeOH); IR (KBr): 3550, 1686; ^{1}H-NMR (600 MHz, CD_3OD): 5.20 (d, 8.0, H-1), 7.58 (s, H-3), 3.20 (d, 7.0, H-5), 2.85 (m, H-6), 2.18 (m, H-6), 5.85 (br s, H-8), 2.77 (m, H-9), 4.37 (m, H-10), 4.20 (d, 3.0, H-10), 4.78 (d, 8.0, H-1′), 3.23 (H-2′), 3.30 (H-3′, 4′), 3.42 (H-5′), 3.69, 3.70 (H_2-6′); ^{13}C-NMR (125 MHz, CD_3OD): 98.2 (C-1), 153.2 (C-3), 112.8 (C-4), 36.7 (C-5), 39.7 (C-6), 144.8 (C-7), 128.3 (C-8), 47.0 (C-9), 61.4 (C-10), 170.0 (C-11), 100.3 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.5 (C-4′), 77.8 (C-5′), 62.6 (C-6′). *Premna barbata* (Verbenaceae).[111]

186. 10-*O*-Acetylgeniposidic acid



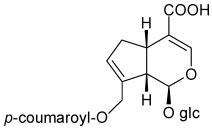
$C_{18}H_{24}O_{11}$: 416.1318; foam; $[\alpha]_D$ +7.0° (*c*=0.6, MeOH); ^{1}H-NMR (200 MHz, D_2O): 5.28 (d, 5.0, H-1), 7.12 (s, H-3), — (H-5), 2.70, 2.1 (m, H_2-6), 5.89 (m, H-7), 2.90 (m, H-9), 4.75 (m, partly obscured by solvent peak, H_2-10), 2.05 (s, AcO-10); ^{13}C-NMR (50 MHz, D_2O): 97.3 (C-1), 151.8 (C-3), 114.3 (C-4), 34.9 (C-5), 39.0 (C-6), 133.3 (C-7), 137.2 (C-8), 47.1 (C-9), 63.8 (C-10), C-11, peak not observed, 21.2, 175.0 (Ac), 99.5 (C-1′), 73.6 (C-2′), 76.5 (C-3′), 70.3 (C-4′), 77.0 (C-5′), 61.5 (C-6′). *Plantago alpina* (Plantaginaceae).[115]

187. 10-*O*-*E*-Cinnamoylgeniposidic acid



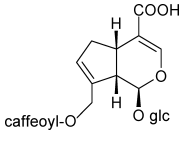
$C_{25}H_{28}O_{11}$: 504.1631; ^{1}H-NMR (500 MHz, CD_3OD): 5.19 (d, 7.9, H-1), 7.53 (br s, H-3), 3.20 (m, H-5), 2.15 and 2.88 (H_2-6), 5.90 (H-7), 2.79 (m, H-9), 4.88 and 4.94 (each d, 14.2, H_2-10), 4.73 (d, 7.8, H-1′), 3.24 (H-2′), 3.39 (H-3′), 3.30 (H-4′, 5′), 3.67 and 3.87 (H_2-6′), 7.61 (H-2″, 6″), 7.40 (H-3″, 4″, 5″), 7.72 (d, 16.0, H-7″), 6.57 (d, 16.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.3 (C-1), 153.2 (C-3), 112.8 (C-4), 36.7 (C-5), 40.0 (C-6), 131.5 (C-7), 139.6 (C-8), 47.3 (C-9), 63.9 (C-10), 170.9 (C-11), 100.5 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 135.7 (C-1″), 129.3 (C-2″, 6″), 130.0 (C-3″, 5″), 131.5 (C-4″), 146.5 (C-7″), 118.7 (C-8″), 168.4 (C-9″). *Avicennia marina* (Verbenaceae).[116]

188. 10-*O*-*E*-*p*-Coumaroylgeniposidic acid



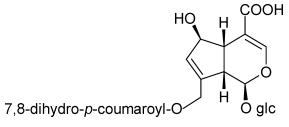
$C_{25}H_{28}O_{12}$: 520.1580; ^{1}H-NMR (500 MHz, CD_3OD): 5.19 (d, 7.8, H-1), 7.53 (br s, H-3), 3.20 (m, H-5), 2.15 and 2.87 (H_2-6), 5.89 (C-7), 2.79 (m, H-9), 4.87 and 4.94 (each d, 14.2, H_2-10), 4.74 (d, 7.8, H-1′), 3.26 (H-2′), 3.38 (H-3′), 3.32 (H-4′), 3.31 (H-5′), 3.67 and 3.88 (H_2-6′), 7.48 (d, 8.5, H-2″, 6″), 6.81 (d, 8.5, H-3″, 5″), 7.65 (d, 15.9, H-7″), 6.38 (d, 15.9, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.3 (C-1), 153.3 (C-3), 112.6 (C-4), 36.6 (C-5), 39.9 (C-6), 131.2 (C-7), 139.7 (C-8), 47.3 (C-9), 63.7 (C-10), 170.9 (C-11), 100.5 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.7 (C-6′), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″), 146.8 (C-7″), 114.9 (C-8″), 169.1 (C-9″). *Avicennia marina* (Verbenaceae).[116]

189. 10-*O*-*E*-Caffeoylgeniposidic acid



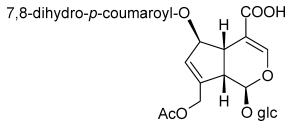
$C_{25}H_{28}O_{13}$: 536.1529; ^{1}H-NMR (500 MHz, CD_3OD): 5.19 (d, 7.7, H-1), 7.53 (br s, H-3), 3.21 (m, H-5), 2.16 and 2.88 (H_2-6), 5.88 (H-7), 2.78 (m, H-9), 4.86 and 4.93 (each d, 14.2, H_2-10), 4.74 (d, 7.7, H-1′), 3.24 (H-2′), 3.39 (H-3′), 3.32 (H-4′), 3.30 (H-5′), 3.66 and 3.88 (H_2-6′), 7.05 (d, 1.5, H-2″), 6.78 (d, 8.1, H-5″), 6.96 (dd, 8.1, 1.5, H-6″), 7.58 (d, 15.9, H-7″), 6.30 (d, 15.9, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.4 (C-1), 153.3 (C-3), 112.7 (C-4), 36.6 (C-5), 39.9 (C-6), 131.2 (C-7), 139.8 (C-8), 47.4 (C-9), 63.7 (C-10), 170.8 (C-11), 100.5 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 127.8 (C-1″), 115.2 (C-2″), 147.2 (C-3″), 149.6 (C-4″), 116.5 (C-5″), 123.0 (C-6″), 146.8 (C-7″), 114.9 (C-8″), 169.1 (C-9″). *Avicennia marina* (Verbenaceae).[116]

190. Humifusin A



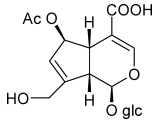
$C_{25}H_{30}O_{13}$: 538.1686; amorphous powder; $[\alpha]_D$ −16.0° (*c*=0.5, MeOH); UV (MeOH): 226, 280; IR (KBr): 3500—3200, 1730, 1700, 1640 1590, 1505, 1400, 950, 890, 830; ^{1}H-NMR (250 MHz, D_2O): 5.18 (d, 5.6, H-1), 7.39 (d, 1.0, H-3), 2.85 (m, H-5, 9, H_2-7″), 4.52 (br s, H-6), 5.67 (d, 1.2, H-7), 4.75 (H_2-10), 4.72 (d, 7.9, H-1′), 7.12 (d, 8.4, H-2″, 6″), 6.81 (d, 8.4, H-3″, 5″), 2.73 (t, 6.9, H_2-8″); ^{13}C-NMR (62.5 MHz, D_2O): 97.7 (C-1), 152.2 (C-3), 112.5 (C-4), 46.5 (C-5), 81.3 (C-6), 132.4 (C-7), 141.4 (C-8), 44.4 (C-9), 63.1 (C-10), 171.1 (C-11), 99.6 (C-1′), 73.5 (C-2′), 76.5 (C-3′), 70.3 (C-4′), 77.0 (C-5′), 61.5 (C-6′), 133.0 (C-1″), 130.5 (C-2″, 6″), 116.2 (C-3″, 5″), 154.7 (C-4″), 30.3 (C-7″), 36.4 (C-8″), 176.2 (C-9″). *Galium humifusum* (Rubiaceae).[117]

191. Humifusin B



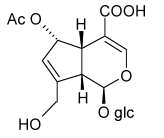
$C_{27}H_{32}O_{14}$: 580.1791; $[\alpha]_D$ −40.0° (*c*=0.4, MeOH); UV (MeOH): 226, 280; IR (KBr): 3500—3200, 1729, 1700, 1650, 1620, 1600, 1510, 1255, 905, 825; ^{1}H-NMR (250 MHz, D_2O): 4.98 (d, 6.9, H-1), 7.35 (d, 1.0, H-3), 2.90 (dt, 6.6, 1.0, H-5), 5.35 (bdd, 6.6, 1.0, H-6), 5.21 (br s, H-7), 2.50 (m, H-9, H_2-8″), 4.60 (H_2-10), 1.91 (s, AcO-10), 4.82 (d, 8.0, H-1′), 6.92 (d, 8.4, H-2″, 6″), 6.61 (d, 8.4, H-3″, 5″), 2.65 (t, 6.5, H_2-7″); ^{13}C-NMR (62.5 MHz, D_2O): 98.1 (C-1), 154.4 (C-3), 108.9 (C-4), 41.6 (C-5), 83.0 (C-6), 128.9 (C-7), 143.5 (C-8), 45.6 (C-9), 62.9 (C-10), 171.3 (C-11), 99.6 (C-1′), 73.5 (C-2′), 76.9 (C-3′)[a], 70.2 (C-4′), 76.4 (C-5′)[a], 61.5 (C-6′), 132.7 (C-1″), 130.3 (C-2″, 6″), 116.0 (C-3″, 5″), 154.8 (C-4″), 30.2 (C-7″), 36.1 (C-8″), 175.9 (C-9″), 21.4, 174.4 (Ac). *Galium humifusum* (Rubiaceae).[117]

192. 6-*O*-Acetylscandoside



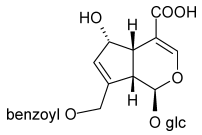
$C_{18}H_{24}O_{12}$: 432.1267; amorphous powder; $[\alpha]_D^{19}$ −82.7° (*c*=1.2, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.23 (d, 6.1, H-1), 7.46 (s, H-3), 3.26 (m, H-5), 5.56 (m, H-6), 5.75 (br s, H-7), 3.00 (dd, 7.3, 6.4, H-9), 4.32 and 4.15 (d, 15.4, H_2-10), 4.64 (d, 7.8, H-1′), 3.17 (dd, 8.8, 7.8, H-2′), 3.34 (dd, 9.0, 8.8, H-3′), 3.23 (m, H-4′, 5′), 3.83 (dd, 12.2, 2.0, H-6′), 3.60 (dd, 12.2, 5.4, H-6′), 1.98 (s, AcO-6); ^{13}C-NMR (100 MHz, CD_3OD): 97.7 (C-1), 154.0 (C-3), 110.1 (C-4), 42.1 (C-5), 83.6 (C-6), 127.0 (C-7), 150.3 (C-8), 46.8 (C-9), 60.9 (C-10), 170.1 (C-11), 100.2 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.3 (C-6′), 21.2, 172.8 (OAc). *Morinda coreia* (Rubiaceae).[113] It was reported earlier from *Galium verum* (Rubiaceae) but detailed spectral data was not reported.[202]

193. 6-*O*-*epi*-Acetylscandoside



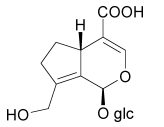
$C_{18}H_{24}O_{12}$: 432.1267; white amorphous powder; $[\alpha]_D^{19}$ −94.6° (*c*=0.19, MeOH); UV (MeOH): 229 (3.91); IR (dry film): 3388, 1712, 1633; ^{1}H-NMR (300 MHz, CD_3OD): 5.28 (d, 6.0, H-1), 7.43 (d, 1.0, H-3), 3.14 (m, H-5), 5.58 (dd, 3.0, 2.0, H-6), 5.79 (t, 2.0, H-7), 3.05 (br t, 6.0, H-9), 2.02 (s, AcO-6), 4.67 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.16 (m, H-4′, 5′), 3.65 (dd, 12.0, 5.5, H-6′), 3.87 (dd, 12.0, 1.5, H-6′); ^{13}C-NMR (75 MHz, CD_3OD): 97.4 (C-1), 153.0 (C-3), 111.2 (C-4), 42.1 (C-5), 83.8 (C-6), 127.0 (C-7), 150.5 (C-8), 47.0 (C-9), 60.9 (C-10), 171.2 (C-11), 100.2 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.7 (C-6′), 21.2, 172.7 (OAc). *Saprosma scortechinii* (Rubiaceae).[112]

194. 10-*O*-Benzoyldeacetylasperulosidic acid



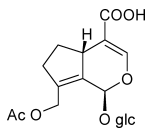
$C_{23}H_{26}O_{12}$: 494.1424; yellow amorphous powder; $[\alpha]_D^{26}$ −8.7° (*c*=0.14, MeOH); UV (MeOH): 230 (4.59); IR (dry film): 3465, 1719, 1630; ^{1}H-NMR (500 MHz, CD_3OD): 5.11 (d, 9.0, H-1), 7.63 (d, 1.0, H-3), 3.08 (ddd, 8.0, 6.0, 1.0, H-5), — (H-6), 6.10 (d, 1.5, H-7), 2.71 (dd, 9.0, 8.0, H-9), 5.24 (dd, 15.0, 1.5, H-10), 5.04 (d, 15.0, H-10), 4.75 (d, 8.0, H-1′), 3.27 (dd, 9.5, 8.0, H-2′), 3.39 (dd, 9.0, 8.5, H-3′), 3.30 (m, H-4′, 5′), 3.63 (dd, 12.0, 6.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′), 8.06 (m, H-2″, 6″), 7.49 (m, H-3″, 5″), 7.61 (s, H-4″); ^{13}C-NMR (125 MHz, CD_3OD): 101.2 (C-1), 154.8 (C-3), 109.0 (C-4), 42.7 (C-5), 75.5 (C-6), 132.0 (C-7), 146.0 (C-8), 46.6 (C-9), 64.3 (C-10), 170.0 (C-11), 100.7 (C-1′), 75.0 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 63.0 (C-6′), 131.3 (C-1″), 130.6 (C-2″, 6″), 129.6 (C-3″, 5″), 167.7 (C-7″). *Saprosma scortechinii* (Rubiaceae).[118]

195. Deacetylalpinoside (Arborescosidic acid)



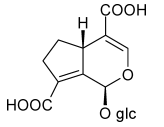
$C_{16}H_{22}O_{10}$: 374.1213; $[\alpha]_D^{20}$ −52° (*c*=0.56, MeOH); UV (MeOH): 232; IR (KBr): 3370, 1690, 1632; ^{1}H-NMR (300 MHz, CD_3OD): 6.27 (s, H-1), 7.21 (d, 1.8, H-3), 3.58 (m, H-5), 1.46 (m, H-6), 2.57 (m, H-6), 2.47 (m, H_2-7), 4.68 (d, 8.0, H-1′), 3.16 (dd, 8.6, 7.9, H-2′), 3.37 (t, 8.6, H-3′), 3.30 (overlapped, H-4′, 5′), 3.68 (dd, 11.9, 5.1, H-6′), 3.88 (dd, 11.9, 1.7, H-6′); ^{13}C-NMR (75 MHz, CD_3OD): 92.0 (C-1), 149.3 (C-3), 117.5 (C-4), 39.7 (C-5), 32.2 (C-6), 34.8 (C-7), 132.4 (C-8), 141.7 (C-9), 59.1 (C-10), 173.7 (C-11), 100.1 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.2 (C-5′), 62.7 (C-6′). *Globularia trichosantha* (Globulariaceae),[110] *Plantago atrata*, *P. maritima*, *P. stauntonii*, *P. subulata* (Plantaginaceae).[39] *Erinus alpines* (Plantaginaceae).[114]

196. Alpinoside



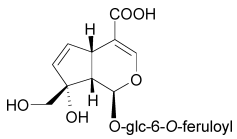
$C_{18}H_{24}O_{11}$: 416.1318; foam; $[\alpha]_D^{20}$ −54.0° (*c*=0.6, MeOH); ^{1}H-NMR (200 MHz, D_2O): 6.20 (s, H-1), 7.05 (s, H-3), 1.45 (m, H-6), 2.50 (m, H-6, H_2-7), 4.75 (m, partly obscured by solvent peak, H_2-10), 2.08 (s, AcO-10); 4.83 (d, 8.0, H-1′), ^{13}C-NMR (50 MHz, D_2O): 91.5 (C-1), 146.8 (C-3), 119.3 (C-4), 39.2 (C-5), 31.4 (C-6), 34.6 (C-7), 137.5 (C-8), 133.6 (C-9), 61.5 (C-10), C-11, not observed, 21.1, 174.7 (AcO-10), 99.8 (C-1′), 73.5 (C-2′), 76.4 (C-3′), 70.3 (C-4′), 77.1 (C-5′), 61.5 (C-6′). *Plantago alpina* (Plantaginaceae),[115] *Globularia trichosantha* (Globulariaceae),[110] *Veronica cymbalaria* (Scrophulariaceae).[156]

197. Erinoside



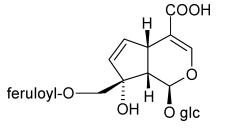
$C_{16}H_{20}O_{11}$: 388.1005; amorphous solid; ^{1}H-NMR (500 MHz, D_2O): 6.65 (s, H-1), 7.34 (br s, H-3), 3.62 (m, H-5), 1.49 (m, H_{ax}-6), 2.52 (H_{eq}-6), 2.68 (m, H-7), 2.72 (m, H-7), 4.80 (d, 8.1, H-1′), 3.24 (dd, 9.5, 8.0, H-2′), 3.48 (t, 9.5, H-3′), 3.37 (t, 9.5, H-4′), 3.47 (m, H-5′), 3.70 (dd, 12.4, 5.8, H-6′), 3.88 (dd, 12.4, 1.2, H-6′); ^{13}C-NMR (125 MHz, D_2O): 92.1 (C-1), 150.4 (C-3), 115.4 (C-4), 38.8 (C-5), 31.2 (C-6), 34.5 (C-7), 139.9 (C-8)[a], 138.1 (C-9)[a], C-10 not observed, 99.1 (C-1′), 73.5 (C-2′), 76.2 (C-3′), 70.4 (C-4′), 77.0 (C-5′), 61.5 (C-6′). *Erinus alpinus* (Plantaginaceae).[114]

198. 6′-*O*-*E*-Feruloylmonotropein



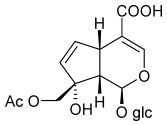
$C_{26}H_{30}O_{14}$: 566.1635; crystalline solid; mp 143—144 °C, $[\alpha]_D^{20}$ −30.2° (*c*=0.24, MeOH); UV (MeOH): 218 (4.03), 235 (4.06), 327 (3.97); IR (KBr): 3426, 2930, 1693, 1633, 1515, 1163, 1075; ^{1}H-NMR (400 MHz, CD_3OD): 5.57 (d, 2.2, H-1), 7.36 (s, H-3), 3.53—3.58 (m, H-5, 5′, H_2-10), 6.20 (dd, 5.1, 2.2, H-6), 5.60 (d, 5.1, H-7), 2.69 (d, 6.6, H-9), 4.69 (d, 7.7, H-1′), 3.23 (t, 8.0, H-2′), 3.38—3.44 (m, H-3′, 4′), 4.33 (dd, 11.7, 5.6, H-6′), 4.50 (d, 11.7, H-6′), 7.20 (d, 1.7, H-2″), 6.80 (d, 8.3, H-5″), 7.08 (dd, 8.3, 1.7, H-6″), 7.64 (d, 15.9, H-7″), 6.41 (d, 15.9, H-8″), 3.88 (s, MeO-3″); ^{13}C-NMR (90 MHz, CD_3OD): 95.9 (C-1), 152.5 (C-3), 112.5 (C-4), 40.0 (C-5), 138.9 (C-6), 134.5 (C-7), 86.8 (C-8), 46.3 (C-9), 69.1 (C-10), 169.9 (C-11), 100.9 (C-1′), 75.4 (C-2′), 78.6 (C-3′), 72.2 (C-4′), 76.6 (C-5′), 65.4 (C-6′), 128.5 (C-1″), 112.5 (C-2″), 150.2 (C-3″), 151.4 (C-4″), 117.3 (C-5″), 125.1 (C-6″), 148.0 (C-7″), 116.0 (C-8″), 169.9 (C-9″), 57.3 (MeO-3″). *Paederia scandens* (Rubiaceae).[119]

199. 10-*O*-*E*-Feruloylmonotropein



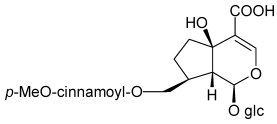
$C_{26}H_{30}O_{14}$: 566.1635; crystalline solid; mp 147—148 °C, $[\alpha]_D^{20}$ −26.0° (*c*=0.23, MeOH); UV (MeOH): 219 (4.12), 234 (4.17), 327 (4.14); IR (KBr): 3423, 2936, 1694, 1633, 1515, 1159, 1073; ^{1}H-NMR (400 MHz, CD_3OD): 5.69 (m, H-1, 7), 7.39 (s, H-3), 3.58—3.65 (m, H-5, 6′), 6.28 (dd, 5.5, 2.4, H-6), 2.71 (dd, 8.6, 2.2, H-9), 4.20 (d, 11.1, H-10), 4.34 (d, 11.1, H-10), 4.68 (d, 7.9, H-1′), 3.21 (t, 8.3, H-2′), 3.31—3.37 (m, H-3′, 4′, 5′), 3.84 (d, 12.4, H-6′), 7.21 (d, 1.8, H-2″), 6.81 (d, 8.2, H-5″), 7.09 (dd, 8.2, 1.8, H-6″), 7.64 (d, 15.8, H-7″), 6.40 (d, 15.8, H-8″), 3.89 (s, MeO-3″); ^{13}C-NMR (90 MHz, CD_3OD): 95.6 (C-1), 152.9 (C-3), 112.6 (C-4), 40.1 (C-5), 139.4 (C-6), 133.8 (C-7), 85.2 (C-8), 47.3 (C-9), 70.0 (C-10), 169.8 (C-11), 100.7 (C-1′), 75.4 (C-2′), 78.8 (C-3′), 72.2 (C-4′), 79.1 (C-5′), 63.3 (C-6′), 128.5 (C-1″), 112.6 (C-2″), 150.2 (C-3″), 151.5 (C-4″), 117.3 (C-5″), 125.1 (C-6″), 148.1 (C-7″), 115.9 (C-8″), 169.8 (C-9″), 57.3 (MeO-3″). *Paederia scandens* (Rubiaceae).[119]

200. 10-*O*-Acetylmonotropein



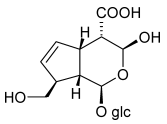
$C_{18}H_{24}O_{12}$: 432.1267; amorphous powder; $[\alpha]_D^{19}$ −95.3° (c=1.2, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.64 (d, 2.2, H-1), 7.36 (d, 1.2, H-3), 3.28 (m, H-5), 6.22 (dd, 5.7, 2.2, H-6), 5.60 (dd, 5.7, 2.0, H-7), 2.61 (dd, 8.8, 2.2, H-9), 4.16 and 4.06 (each d, 11.2, H_2-10), 4.62 (d, 7.8, H-1′), 3.16 (dd, 8.8, 7.8, H-2′), 3.31 (dd, 9.3, 8.8, H-3′), 3.23 (m, H-4′, 5′), 3.83 (br d, 11.5, H-6′), 3.64 (dd, 11.5, 4.9, H-6′), 2.05 (s, AcO); ^{13}C-NMR (100 MHz, CD_3OD): 94.7 (C-1), 152.4 (C-3), 111.0 (C-4), 39.0 (C-5), 138.2 (C-6), 132.7 (C-7), 84.1 (C-8), 46.5 (C-9), 70.6 (C-10), 170.1 (C-11), 99.8 (C-1′), 74.6 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.5 (C-6′), 20.8, 172.8 (OAc). *Morinda coreia* (Rubiaceae).[113]

201. Officinosidic acid (5-Hydroxy-10-*O*-(*p*-methoxycinnamoyl)-adoxosidic acid)



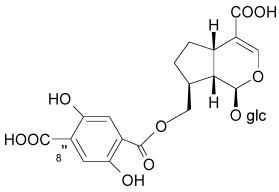
$C_{26}H_{32}O_{13}$: 552.1842; isolated as its pentaacetate; amorphous powder; $[\alpha]_D^{25}$ −53.1° (c=0.5, $CHCl_3$); IR (?): 3035, 1700, 1680, 1520, 1240; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.48 (d, 2.5, H-1), 7.49 (br s, H-3), 2.01 (m, H-6), 2.90 (m, H-6), 1.30 (m, H-7), 1.80 (m, H-7), 2.30 (m, H-8), 1.96 (br, H-9), 4.05 (dd, 10.0, 6.0, H-10), 4.58 (dd, 10.0, 6.0, H-10), 3.80—5.28 (H-1′-6′), 7.57 (d, 8.5, H-2″, 6″), 6.94 (d, 8.5, H-3″, 5″), 3.84 (s, MeO-4″), 6.30 (d, 16.0, H-7″), 7.50 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, $CDCl_3$): 96.2 (C-1), 152.9 (C-3), 113.3 (C-4), 72.8 (C-5), 38.4 (C-6), 29.6 (C-7), 43.1 (C-8), 53.7 (C-9), 61.7 (C-10), 171.9 (C-11), 96.9 (C-1′), 70.7 (C-2′), 72.1 (C-3′), 68.2 (C-4′), 72.5 (C-5′), 61.6 (C-6′), 129.9 (C-1″), 132.4 (C-2″, 6″), 114.3 (C-3″, 5″), 165.4 (C-4″), 146.8 (C-7″), 117.6 (C-8″), 169.4 (C-9″), 55.2 (MeO-4″), 20.4×2, 20.5×2, 21.3, 169.4, 170.2×2, 170.7, 171.8 (5×Ac). *Avicennia officinalis* (Verbenaceae).[109]

202. Formosinoside



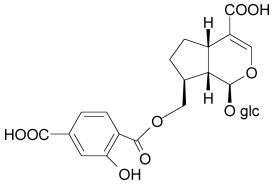
$C_{16}H_{24}O_{11}$: 392.1318; isolated as hexaacetate; amorphous powder; mp 144—146 °C; $[\alpha]_D$ +36.1° (c=3.17, $CHCl_3$); IR (KBr): 3780, 1710, 1695, 1630, 1270, 1055; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.00 (d, 5.8, H-1), 5.92 (d, 7.6, H-3), 2.98 (dd, 7.6, 2.0, H-4) 3.53 (ddd, 9.0, 2.2, 2.0, H-5), 5.80 (dd, 6.0, 2.0, H-6), 5.55 (dd, 6.0, 1.5, H-7), 3.08 (dd, 9.0, 1.5, H-8), 3.00 (dd, 9.0, 5.8, H-9), 4.22 (dd, 11.0, 8.0, H_a-10), 4.90 (dd, 11.0, 3.0, H_b-10), 5.93 (d, 8.0, H-1′), 4.68 (m, H-2′), 4.42 (m, H-3′), 4.92 (m, H-4′), 4.78 (m, H-5′), 4.44 (dd, 11.9, 6.5, H_2-6′), 1.98×2, 2.01, 2.02, 2.05, 2.09 (6×Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.1 (C-1), 91.5 (C-3), 46.6 (C-4), 42.4 (C-5), 136.6 (C-6), 134.6 (C-7), 39.4 (C-8), 42.3 (C-9), 67.2 (C-10), 180.3 (C-11), 99.3 (C-1′), 73.7 (C-2′), 76.1 (C-3′), 69.1 (C-4′), 74.1 (C-5′), 65.0 (C-6′), 20.6—21.9, 168.1—170.5 (6×Ac). *Tocoyena formosa* (Rubiaceae).[120]

203. Blumeoside A



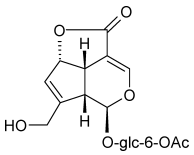
$C_{24}H_{28}O_{15}$: 556.1428; yellow amorphous powder; mp 147—149 °C; $[\alpha]_D^{20}$ −55.0° (c=2.3, MeOH); UV (MeOH): 220 (4.42), 362 (3.64); IR (KBr): 3600—3100, 3000—2900, 1660, 1610, 1490, 1440; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.13 (d, 6.8, H-1), 7.38 (d, 1.0, H-3), 2.67 (br dd, 14.7, 6.8, H-5), 2.11 (m, H-6), 1.40 (m, H-6), 1.81 (m, H_a-7), 1.40 (m, H_b-7), 2.32 (m, H-8), 1.97 (dd, 13.7, 6.8, H-9), 4.27 (m, H_2-10), 4.51 (d, 7.8, H-1′), 2.96 (t, 8.5, H-2′), 3.15 (t, 8.8, H-3′), 3.03 (t, 9.3, H-4′), 3.13 (m, H-5′), 3.41 (dd, 11.8, 6.5, H-6′), 3.64 (dd, 11.8, 2.0, H-6′), 7.30 (s, H-3″), 7.23 (s, H-6″); ^{13}C-NMR (125 MHz, DMSO-d_6): 96.4 (C-1), 151.1 (C-3), 110.6 (C-4), 34.8 (C-5), 31.8 (C-6), 27.1 (C-7), 39.0 (C-8), 42.4 (C-9), 68.0 (C-10), 170.1 (C-11), 99.0 (C-1′), 73.0 (C-2′), 76.7 (C-3′)[a], 70.0 (C-4′), 77.1 (C-5′)[a], 61.1 (C-6′), 119.3 (C-1″), 150.6 (C-2″), 117.6 (C-3″)[b], 120.1 (C-4″), 152.0 (C-5″), 117.1 (C-6″)[b], 167.1 (C-7″), 167.8 (C-8″). *Fagraea blumei* (Loganiaceae).[121]

204. Blumeoside C



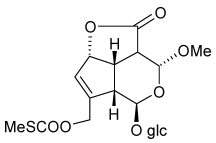
$C_{24}H_{28}O_{14}$: 540.1478; cream colored amorphous powder; mp 171—173 °C; $[\alpha]_D^{20}$ −40.0° (c=2.0, MeOH); UV (MeOH): 215 (4.21), 240 (3.98), 323 (3.36); ^{1}H-NMR (200 MHz, DMSO-d_6): 5.13 (d, 7.1, H-1), 7.42 (s, H-3), 2.77 (m, H-5), 2.16 (m, H-6), 1.40 (m, H-6), 1.84 (m, H_a-7), 1.40 (m, H_b-7), 2.33 (m, H-8), 1.97 (m, H-9), 4.24 (br d, 5.6, H_2-10), 4.53 (d, 7.8, H-1′), 2.95—3.80 (partly obsc. by H_2O signal, H-2′, 3′, 4′, 5′), H_2-6′ signals are obsc. by H_2O signal, 7.33 (unresolved, H-3″, 5″), 7.82 (d, 8.3, H-6″); ^{13}C-NMR (50 MHz, DMSO-d_6): 96.4 (C-1), 151.3 (C-3), 110.6 (C-4), 34.9 (C-5), 32.0 (C-6), 27.3 (C-7), 39.0 (C-8), 42.5 (C-9), 67.6 (C-10), 170.5 (C-11), 99.0 (C-1′), 73.1 (C-2′), 76.7 (C-3′)[a], 69.9 (C-4′), 77.2 (C-5′)[a], 61.1 (C-6′), 113.6 (C-1″), 162.0 (C-2″), 117.1 (C-3″), 133.6 (C-4″), 117.7 (C-5″), 130.4 (C-6″), 168.0 (C-7″), 165.5 (C-8″). *Fagraea blumei* (Loganiaceae).[121]

205. 6′-Acetyldeacetylasperuloside



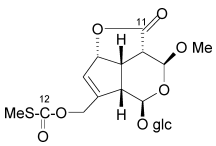
$C_{18}H_{22}O_{11}$: 414.1162; white powder; $[\alpha]_D^{25}$ −156.6° (c=0.06, MeOH); UV (MeOH): 233; IR (KBr): 3446, 1742, 1658, 1246, 1018; ^{1}H-NMR (500 MHz, D_2O): 5.73 (d, 2.0, H-1), 7.25 (d, 2.0, H-3), 3.54 (m, H-5), 5.54 (m, H-6), 5.56 (m, H-7), 3.21 (m, H-9), 4.08 (br, H_2-10), 4.73 (d, 9.1, H-1′), 3.15 (t, 8.5, H-2′), 3.36—3.56 (m, H-3′, 4′, 5′), 4.17 (dd, 12.3, 5.0, H-6′), 4.29 (dd, 12.3, 2.1, H-6′), 1.99 (AcO-6′); ^{13}C-NMR (125 MHz, D_2O): 95.7 (C-1), 152.6 (C-3), 107.4 (C-4), 38.6 (C-5), 89.4 (C-6), 127.6 (C-7), 149.9 (C-8), 45.9 (C-9), 61.3 (C-10), 176.5 (C-11), 101.3 (C-1′), 75.2 (C-2′), 78.0 (C-3′), 72.1 (C-4′), 76.5 (C-5′), 65.8 (C-6′), 22.9, 176.8 (AcO-6′). *Hedyotis chrysotricha* (Rubiaceae).[122]

206. 3,4-Dihydro-3α-methoxypaederoside



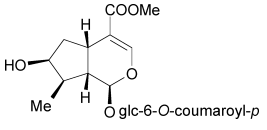
$C_{19}H_{26}O_{12}S$: 478.1144; yellow amorphous powder; $[\alpha]_D^{26}$ −63.3° (c=0.12, MeOH); UV (MeOH): 202 (3.95); IR (dry film): 3416, 1769, 1712, 1652; ^{1}H-NMR (500 MHz, CD_3OD): 5.09 (d, 6.0, H-1), 5.01 (d, 3.5, H-3), 3.25 (m, H-4), 3.40 (m, H-5), 5.37 (br d, 6.5, H-6), 5.98 (s, H-7), 3.00 (dd, 8.5, 6.0, H-9), 4.90 (d, 15.0, H-10), 5.08 (d, 15.0, H-10), 4.68 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.30 (m, H-4′, 5′), 3.66 (dd, 12.0, 5.5, H-6′), 3.87 (d, 12.0, H-6′), 2.35 (s, SMe), 3.52 (s, MeO-3); ^{13}C-NMR (125 MHz, CD_3OD): 96.7 (C-1), 98.6 (C-3), 44.4 (C-4), 37.7 (C-5), 87.7 (C-6), 126.8 (C-7), 151.6 (C-8), 46.3 (C-9), 65.2 (C-10), 177.0 (C-11), 173.0 (COO-10), 99.6 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.2 (C-5′), 62.8 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118]

207. 3,4-Dihydro-3β-methoxypaederoside



$C_{19}H_{26}O_{12}S$: 478.1144; brown powder; $[\alpha]_D^{20}$ −8.6° (c=1.16, MeOH); IR (KBr): 3334, 2935, 1768, 1714, 1148, 1073, 944; ^{1}H-NMR (600 MHz, CD_3OD): 5.10 (d, 6.0, H-1), 5.01 (d, 3.6, H-3), 3.25 (dd, 10.4, 3.6, H-4), 3.40 (ddd, 10.4, 9.1, 6.6, H-5), 5.37 (br d, 6.6, H-6), 5.98 (br s, H-7), 3.02 (ddd, 9.1, 6.0, 0.8, H-9), 4.89 and 5.08 (each d, 15.7, H_2-10), 3.51 (s, MeO-3), 2.35 (s, SMe), 4.69 (d, 8.0, H-1′), 3.21 (dd, 9.3, 8.0, H-2′), 3.38 (dd, 9.3, 9.1, H-3′), 3.27 (dd, 9.1, 9.1, H-4′), 3.31 (m, H-5′), 3.68 (ddd, 11.8, 4.1, 1.6, H-6′), 3.88 (dd, 11.8, 1.4, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 96.7 (C-1), 98.5 (C-3), 44.4 (C-4), 37.6 (C-5), 87.7 (C-6), 126.8 (C-7), 151.6 (C-8), 46.3 (C-9), 65.2 (C-10), 177.0 (C-11), 173.0 (C-12), 56.5 (OMe), 13.6 (SMe), 99.6 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.2 (C-5′), 62.8 (C-6′). *Paederia scandens* (Rubiaceae).[123]

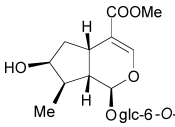
208. 6′-*O*-*trans*-*p*-Coumaroylloganin



$C_{26}H_{32}O_{12}$: 536.1893; powder; $[\alpha]_D^{25}$ −32.0° (c=1.0, MeOH); UV (MeOH): 231 (4.29), 300 sh (4.25), 314 (4.31); IR (KBr): 3464, 1698, 1638, 1608, 1518, 832; ^{1}H-NMR (500 MHz, CD_3OD): 5.05 (d, 5.0, H-1), 7.39 (d, 1.5, H-3), 3.08 (br q, 8.0, H-5), 1.45 (ddd, 14.0, 9.0, 5.0, H-6), 2.17 (ddd, 14.0, 7.5, 1.5, H-6), 3.98 (br t, 5.0, H-7), 1.83 (m, H-8), 1.93 (td, 9.0, 5.5, H-9), 1.03 (d, 7.0, H_3-10), 3.66 (s, MeO-11), 4.66 (d, 8.0, H-1′), 3.23 (br t, 8.5, H-2′), 3.40 (t, 9.0, H-3′), 3.36 (t, 9.0, H-4′), 3.56 (ddd, 9.0, 6.5, 2.5, H-5′), 4.42 (dd, 12.0, 6.5, H-6′), 4.47 (dd, 12.0, 2.5, H-6′), 7.44 (d,

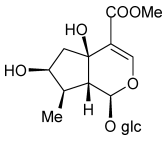
8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″), 7.62 (d, 16.0, H-7″), 6.34 (d, 16.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.5 (C-1), 152.4 (C-3), 113.8 (C-4), 32.7 (C-5), 43.0 (C-6), 75.0 (C-7)[a], 42.5 (C-8), 46.4 (C-9), 13.8 (C-10), 169.5 (C-11), 51.7 (OMe), 100.5 (C-1′), 74.7 (C-2′)[a], 78.0 (C-3′), 71.9 (C-4′), 75.7 (C-5′), 64.4 (C-6′), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.5 (C-4″), 146.9 (C-7″), 115.0 (C-8″), 169.0 (C-9″). *Jasmium hemsleyi* (Oleaceae).[124)]

209. 6′-*O*-*cis*-*p*-Coumaroylloganin



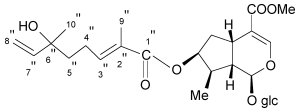
$C_{26}H_{32}O_{12}$: 536.1893; powder; $[\alpha]_D^{25}$ −58.0° (*c*=1.0, MeOH); UV (MeOH): 229 (4.33), 298 sh (4.15), 311 (4.20); IR (KBr): 3456, 1698, 1634, 1610, 1518; ^{1}H-NMR (500 MHz, CD_3OD): 5.01 (d, 5.0, H-1), 7.39 (d, 1.5, H-3), 3.08 (br q, 8.0, H-5), 1.46 (ddd, 14.0, 9.0, 5.0, H-6), 2.19 (ddd, 14.0, 8.0, 1.5, H-6), 3.93 (td, 5.0, 1.5, H-7), 1.81 (m, H-8), 1.94 (td, 9.0, 5.0, H-9), 1.02 (d, 7.0, H_3-10), 3.68 (MeO-11), 4.62 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.34 (m, H-4′), 3.51 (ddd, 9.5, 6.5, 2.0, H-5′), 4.33 (dd, 12.0, 6.5, H-6′), 4.46 (dd, 12.0, 2.0, H-6′), 7.65 (d, 8.5, H-2″, 6″), 6.75 (d, 8.5, H-3″, 5″), 6.87 (d, 13.0, H-7″), 5.77 (d, 13.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.5 (C-1), 152.4 (C-3), 113.8 (C-4), 32.6 (C-5), 43.0 (C-6), 75.0 (C-7)[a], 42.5 (C-8), 46.5 (C-9), 13.7 (C-10), 169.5 (C-11), 51.7 (OMe), 100.4 (C-1′), 74.7 (C-2′)[a], 77.9 (C-3′), 71.8 (C-4′), 75.6 (C-5′), 64.3 (C-6′), 127.6 (C-1″), 133.9 (C-2″, 6″), 116.2 (C-3″, 5″), 160.3 (C-4″), 145.5 (C-7″), 115.0 (C-8″), 168.0 (C-9″). *Jasminum hemsleyi* (Oleaceae).[124)]

210. 5-Hydroxyloganin



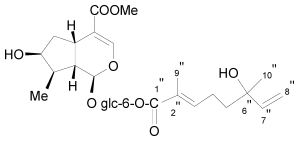
$C_{17}H_{26}O_{11}$: 406.1475; $[\alpha]_D^{21}$ −88.0° (*c*=0.6, MeOH); UV (MeOH): 232; ^{1}H-NMR (250 MHz, CD_3OD): 5.63 (d, 2.0, H-1), 7.40 (s, H-3), 2.47 (dd, 15.0, 5.6, H-6), 2.16 (dd, 15.0, 2.7, H-6), 3.92 (ddd, 5.6, 5.1, 2.7, H-7), 1.67 (ddq, 12.0, 7.0, 5.1, H-8), 2.33 (dd, 12.0, 2.0, H-9), 1.10 (d, 7.0, H_3-10), 3.72 (s, MeO-11), 4.57 (d, 8.0, H-1′), 3.18 (dd, 9.0, 8.0, H-2′), *ca.* 3.30 (m, H-3′, 4′, 5′), 3.67 (dd, 12.0, 5.2, H-6′), 3.89 (dd, 12.0, 1.8, H-6′); ^{13}C-NMR (63 MHz, CD_3OD): 96.0 (C-1), 152.4 (C-3), 115.4 (C-4), 72.9 (C-5), 49.0 (C-6), 74.4 (C-7), 41.4 (C-8), 55.0 (C-9), 13.1 (C-10), 168.2 (C-11), 99.9 (C-1′), 73.5 (C-2′), 77.6 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 51.6 (OMe). *Eucnide bartonioides* (Loasaceae).[125)]

211. Jashemsloside A



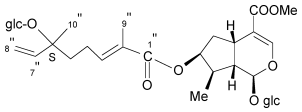
$C_{27}H_{40}O_{12}$: 556.2519; powder; $[\alpha]_D^{28}$ −36.1° (*c*=1.05, MeOH); UV (MeOH): 225 (4.32); IR (KBr): 3432, 1708, 1640; ^{1}H-NMR (500 MHz, CD_3OD): 5.30 (d, 5.0, H-1), 7.43 (d, 1.5, H-3), 3.11 (br q, 8.0, H-5), 1.76 (ddd, 14.5, 8.0, 5.0, H-6), 2.28 (ddd, 14.5, 8.0, 1.5, H-6), 5.18 (td, 5.0, 1.5, H-7), 2.15 (m, H-8), 2.08 (td, 8.5, 5.0, H-9), 1.06 (d, 6.5, H_3-10), 3.69 (s, MeO-11), 4.66 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.37 (t, 9.0, H-3′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 6.77 (tq, 8.0, 1.5, H-3″), 2.23 (m, H_2-4″), 1.62 (m, H_2-5″), 5.92 (dd, 17.0, 11.0, H-7″), 5.06 (dd, 11.0, 1.5, H-8″), 5.23 (dd, 17.0, 1.5, H-8″), 1.83 (d, 1.5, H_3-9″), 1.27 (s, H_3-10″); ^{13}C-NMR (125 MHz, CD_3OD): 97.4 (C-1), 152.5 (C-3), 113.2 (C-4), 32.5 (C-5), 40.4 (C-6), 78.7 (C-7), 40.1 (C-8), 47.2 (C-9), 13.7 (C-10), 169.3 (C-11), 51.7 (MeO-11), 100.1 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.7 (C-6′), 169.2 (C-1″), 128.8 (C-2″), 144.0 (C-3″), 24.5 (C-4″), 41.7 (C-5″), 73.6 (C-6″), 145.9 (C-7″), 112.4 (C-8″), 12.5 (C-9″), 27.8 (C-10″). *Jasminum hemsleyi* (Oleaceae).[124)]

212. Jashemsloside B



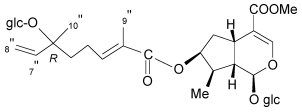
$C_{27}H_{40}O_{12}$: 556.2519; powder; $[\alpha]_D^{24}$ −36.9° (*c*=1.09, MeOH); UV (MeOH): 225 (4.26); IR (KBr): 3448, 1710, 1638; ^{1}H-NMR (500 MHz, CD_3OD): 5.05 (d, 5.5, H-1), 7.42 (d, 1.0, H-3), 3.11 (br q, 8.0, H-5), 2.25 (ddd, 14.0, 7.5, 1.5, H-6), 1.50 (ddd, 14.0, 8.5, 4.5, H-6), 4.01 (br t, 4.5, H-7), 1.83 (m, H-8), 1.95 (td, 9.0, 5.5, H-9), 1.05 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.64 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.34 (t, 9.0, H-4′), 3.52 (ddd, 9.0, 6.5, 2.5, H-5′), 4.28 (dd, 12.0, 6.5, H-6′), 4.48 (dd, 12.0, 2.5, H-6′), 6.78 (tq, 7.0, 1.5, H-3″), 2.22 (m, H_2-4″), 1.59 (m, H_2-5″), 5.90 (dd, 17.5, 11.0, H-7″), 5.22 (dd, 17.5, 1.5, H-8″), 5.05 (dd, 11.0, 1.5, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 98.4 (C-1), 152.4 (C-3), 113.8 (C-4), 32.6 (C-5), 43.1 (C-6), 74.9 (C-7)[a], 42.4 (C-8), 46.4 (C-9), 13.7 (C-10), 169.4 (C-11), 51.7 (MeO-11), 100.3 (C-1′), 74.7 (C-2′)[a], 77.9 (C-3′), 71.8 (C-4′), 75.7 (C-5′), 64.5 (C-6′), 169.3 (C-1″), 128.5 (C-2″), 144.2 (C-3″), 24.5 (C-4″), 41.8 (C-5″), 73.6 (C-6″), 145.9 (C-7″), 112.5 (C-8″), 12.5 (C-9″), 27.9 (C-10″). *Jasminum hemsleyi* (Oleaceae).[124)]

213. Jashemsloside C



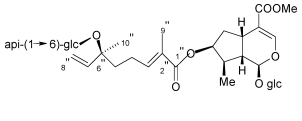
$C_{33}H_{50}O_{17}$: 718.3047; powder; $[\alpha]_D^{26}$ −35.4° (*c*=0.93, MeOH); UV (MeOH): 225 (4.32); IR (KBr): 3464, 1710, 1642; ^{1}H-NMR (500 MHz, CD_3OD): 5.31 (d, 4.5, H-1), 7.43 (br s, H-3), 3.11 (br q, 8.0, H-5), 1.76 (ddd, 15.0, 8.0, 5.0, H-6), 2.28 (ddd, 15.0, 8.0, 1.0, H-6), 5.18 (td, 5.0, 1.0, H-7), 2.14 (m, H-8), 2.10 (td, 8.0, 4.5, H-9), 1.06 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.66 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 6.78 (tq, 7.5, 1.5, H-3″), 2.32 (m, H_2-4″), 1.71 (m, H_2-5″), 5.95 (dd, 18.0, 11.0, H-7″), 5.22 (dd, 11.0, 1.0, H-8″), 5.28 (dd, 18.0, 1.0, H-8″), 1.83 (br s, H_3-9″), 1.41 (s, H_3-10″), 4.37 (d, 8.0, H-1‴), 3.17 (dd, 9.0, 8.0, H-2‴), 3.63 (dd, 12.0, 5.5, H-6‴), 3.81 (dd, 12.0, 2.0, H-6‴); ^{13}C-NMR (125 MHz, CD_3OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)[a], 41.1 (C-8), 47.3 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (MeO-11), 100.3 (C-1′), 74.8 (C-2′), 78.1 (C-3′)[a], 71.7 (C-4′)[b], 78.3 (C-5′)[a], 62.9 (C-6′), 169.4 (C-1″), 128.9 (C-2″), 144.4 (C-3″)[c], 24.5 (C-4″), 41.2 (C-5″), 81.1 (C-6″), 144.3 (C-7″)[c], 116.1 (C-8″), 12.5 (C-9″), 23.6 (C-10″), 99.6 (C-1‴), 75.3 (C-2‴), 78.5 (C-3‴)[a], 71.8 (C-4‴)[b], 77.7 (C-5‴)[a], 62.9 (C-6‴). *Jasminum hemsleyi* (Oleaceae).[124)]

214. Jashemsloside D



$C_{33}H_{50}O_{17}$: 718.3047; powder; $[\alpha]_D^{26}$ −30.9° (*c*=1.20, MeOH); UV (MeOH): 225 (4.31); IR (KBr): 3424, 1710, 1642; ^{1}H-NMR (500 MHz, CD_3OD): 5.31 (d, 5.0, H-1), 7.43 (d, 1.0, H-3), 3.11 (br q, 8.0, H-5), 1.71—1.79 (m, H-6, H_2-5″), 2.28 (ddd, 15.0, 8.0, 1.5, H-6), 5.18 (m, H-7), 2.14 (m, H-8), 2.10 (td, 8.5, 5.0, H-9), 1.06 (d, 6.5, H_3-10), 3.69 (MeO-11), 4.66 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 6.79 (tq, 7.5, 1.5, H-3″), 2.35 (m, H_2-4″), 6.10 (dd, 17.5, 11.0, H-7″), 5.18 (dd, 11.0, 1.0, H-8″), 5.24 (dd, 17.5, 1.0, H-8″), 4.34 (d, 8.0, H-1‴), 3.17 (dd, 9.0, 8.0, H-2‴), 3.65 (dd, 12.0, 5.5, H-6‴), 3.79 (dd, 12.0, 2.0, H-6‴); ^{13}C-NMR (125 MHz, CD_3OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)[a], 41.1 (C-8), 47.2 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (MeO-11), 100.3 (C-1′), 74.8 (C-2′), 78.0 (C-3′)[a], 71.6 (C-4′)[b], 78.3 (C-5′)[a], 62.8 (C-6′), 169.4 (C-1″), 128.9 (C-2″), 144.4 (C-3″), 24.4 (C-4″), 39.5 (C-5″), 81.4 (C-6″), 144.4 (C-7″), 115.3 (C-8″), 12.6 (C-9″), 24.0 (C-10″), 99.4 (C-1‴), 75.2 (C-2‴), 78.5 (C-3‴)[a], 71.7 (C-4‴)[b], 77.7 (C-5‴), 62.9 (C-6‴). *Jasminum hemsleyi* (Oleaceae).[124)]

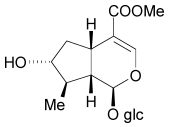
215. Jashemsloside E (6″S-7-*O*-{6-*O*-[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranosyl]menthiafolioyl}-loganin



$C_{38}H_{58}O_{21}$: 850.3470; amorphous powder; $[\alpha]_D$ −42.2° (*c*=1.01, MeOH); UV (MeOH): 224 (4.29); IR (KBr): 3439, 1716, 1705, 1699, 1647, 1636; ^{1}H-NMR (500 MHz, CD_3OD): 5.31 (d, 4.5, H-1), 7.43 (d, 1.5, H-3), 3.11 (br q, 8.0, H-5), 1.79 (ddd, 14.5, 8.0, 5.0, H-6), 2.28 (ddd, 14.5, 8.0, 1.5, H-6), 5.18 (td, 5.0, 1.5, H-7), 2.24 (m, H-8), 2.10 (td, 9.0, 4.5, H-9), 1.07 (d, 6.5, H_3-10), 3.69 (s, MeO-11), 4.67 (d, 8.0, H-1′), 3.21

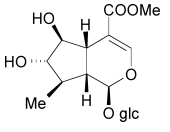
(dd, 9.5, 8.0, H-2′), 3.38 (t, 9.5, H-3′), 3.26 (t, 9.5, H-4′), 3.33 (m, H-5′), 3.67 (dd, 11.5, 5.5, H-6′), 3.90 (dd, 11.5, 1.5, H-6′), 6.78 (tq, 7.5, 1.0, H-3″), 2.32 (m, H_2-4″), 1.72 (m, H_2-5″), 5.94 (dd, 17.5, 11.0, H-7″), 5.23 (dd, 11.0, 1.0, H-8″), 1.83 (d, 1.0, H_3-9″), 1.40 (s, H_3-10″), 4.36 (d, 8.0, H-1‴), 3.17 (dd, 9.5, 8.0, H-2‴), 3.32 (t, 9.5, H-3‴), 3.25 (t, 9.5, H-4‴), 3.31 (m, H-5‴), 3.54 (dd, 11.5, 6.5, H-6‴), 3.94 (dd, 11.5, 2.0, H-6‴), 4.97 (d, 2.5, H-1⁗), 3.87 (d, 2.5, H-2⁗), 3.76 (d, 9.5, H-4⁗), 3.96 (d, 9.5, H-4⁗), 3.58 (s, H_2-5⁗); ^{13}C-NMR (125 MHz, CD_3OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)[a], 41.1 (C-8), 47.3 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.8 (C-2′), 78.1 (C-3′)[a], 71.7 (C-4′)[b], 78.3 (C-5′)[a], 62.8 (C-6′), 169.4 (C-1″), 128.9 (C-2″), 144.4 (C-3″), 24.5 (C-4″), 41.2 (C-5″), 81.1 (C-6″), 144.2 (C-7″), 116.1 (C-8″), 12.6 (C-9″), 23.7 (C-10″), 99.6 (C-1‴), 75.3 (C-2‴), 78.5 (C-3‴), 71.9 (C-4‴)[b], 76.6 (C-5‴), 62.9 (C-6‴), 111.1 (C-1⁗), 78.2 (C-2⁗)[a], 80.6 (C-3⁗), 75.1 (C-4⁗), 65.8 (C-5⁗). *Jasminum hemsleyi* (Oleaceae).[126]

216. 7-*epi*-Loganin



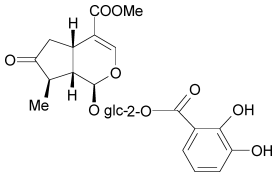
$C_{17}H_{26}O_{10}$: 390.1526; white amorphous powder; $[\alpha]_D^{28}$ −18.0° (c=0.63, MeOH); UV (MeOH): 235 (3.97); IR (KBr): 3400, 2957, 1695, 1636, 1439, 1097, 1080; ^{1}H-NMR (500 MHz, CD_3OD): 5.33 (d, 5.0, H-1), 7.41 (d, 1.5, H-3), 2.86 (br q, 8.0, H-5), 1.35 (dt, 13.0, 8.0, H-6), 2.51 (dt, 13.0, 8.0, H-6), 3.67 (t, 8.0, H-7), 1.74 (dq, 8.0, 7.0, H-8), 1.80 (td, 8.0, 5.0, H-9), 1.13 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.65 (d, 7.5, H-1′), 3.18 (t, 9.0, 7.5, H-2′), 3.37 (t, 9.0, H-3′), 3.26 (dd, 9.0, 8.0, H-4′), 3.27—3.33 (m, H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 97.7 (C-1), 152.5 (C-3), 113.3 (C-4), 31.4 (C-5), 42.0 (C-6), 79.7 (C-7), 44.0 (C-8), 47.1 (C-9), 17.7 (C-10), 169.5 (C-11), 51.7 (OMe), 100.4 (C-1′), 74.8 (C-2′), 78.4 (C-3′, 5′), 71.7 (C-4′), 62.8 (C-6′). *Rauwolfia serpentina* (Apocynaceae).[128]

217. 6β-Hydroxy-7-*epi*-loganin



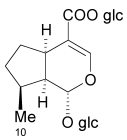
$C_{17}H_{26}O_{11}$: 406.1475; ^{1}H-NMR (250 MHz, CD_3OD): 5.40 (d, 4.0, H-1), 7.44 (d, 1.2, H-3), 2.75 (br ddd, 9.0, 5.0, 1.0, H-5), 3.70 (H-6, H-6′), 3.46 (dd, 8.5, 6.0, H-7), 1.70 (m, H-8), 2.42 (dt, 9.0, 4.0, H-9), 1.16 (d, 6.5, H_3-10), 3.73 (s, MeO-11), 4.63 (d, 7.5, H-1′), 3.16 (dd, 8.0, 7.5, H-2′), 3.25—3.40 (obsc. by solvent signal, H-3′, 4′, 5′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (62.5 MHz, CD_3OD): 96.4 (C-1), 153.0 (C-3), 111.2 (C-4), 39.4 (C-5), 84.3 (C-6), 85.8 (C-7), 42.6 (C-8), 44.4 (C-9), 17.2 (C-10), 170.0 (C-11), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.7 (C-6′). *Picconia excelsa* (Oleaceae).[88]

218. 2′-(2,3-Dihydroxybenzoyloxy)-7-ketologanin



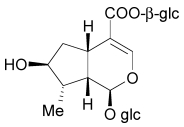
$C_{24}H_{28}O_{13}$: 524.1529; crystals (Me_2CO); mp 202—203 °C; ^{1}H-NMR (400 MHz, CD_3OD): 5.63 (d, 2.4, H-1), 7.01 (s, H-3), 3.03 (bt, 8.6, H-5), 2.40 (overlapped peaks, H_α-6), 2.56 (dd, 19.2, 8.0, H_β-6), 1.94 (m, H-8), 2.33 (overlapped peaks, H-9), 1.11 (d, 7.2, H_3-10), 3.30 (s, MeO-11), 5.03 (d, 8.4, H-1′), 5.01 (dd, 8.4, H-2′), 3.73 (overlapped peaks, H-3′), 3.43 (dd, 8.4, H-4′), 3.49 (overlapped peaks, H-5′), 3.97 (dd, 11.6, 2.0, H-6′), 3.74 (overlapped peaks, H-6′), 7.03 (dd, 8.0, 1.2, H-4″), 6.75 (dd, 8.0, 8.0, H-5″), 7.36 (dd, 8.0, 1.2, H-6″); ^{13}C-NMR (100 MHz, CD_3OD): 95.2 (C-1), 152.1 (C-3), 111.3 (C-4), 27.6 (C-5), 42.9 (C-6), 220.2 (C-7), 44.2 (C-8), 46.4 (C-9), 13.1 (C-10), 167.9 (C-11), 51.7 (MeO-11), 98.1 (C-1′), 75.4 (C-2′), 75.5 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 62.6 (C-6′), 113.6 (C-1″), 151.5 (C-2″), 147.0 (C-3″), 121.8 (C-4″), 120.0 (C-5″), 121.3 (C-6″), 170.6 (C-7″). *Gentiana kurroo* (Gentianaceae).[131]

219. 1,5,9-*epi*-Deoxyloganic acid glucosyl ester



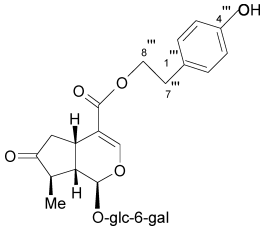
$C_{22}H_{34}O_{14}$: 522.1948; amorphous powder; $[\alpha]_D^{27}$ +37.2° (c=0.98, MeOH); UV (MeOH): 240 (4.01); IR (KBr): 3349, 1704, 1637; ^{1}H-NMR (400 MHz, CD_3OD): 5.34 (d, 4.0, H-1), 7.55 (s, H-3), 2.96 (m, H-5), 1.65 (m, H-6), 2.01 (m, H-6), 1.30 (m, H_a-7), 1.78 (m, H_b-7), 2.30 (m, H-8), 2.44 (dt, 8.8, 4.0, H-9), 1.07 (d, 7.6, H_3-10), 4.58 (d, 8.0, H-1′), 3.22 (dd, 8.4, 8.0, H-2′), 5.53 (d, 7.6, H-1″); ^{13}C-NMR (100 MHz, CD_3OD): 100.9 (C-1), 154.9 (C-3), 112.7 (C-4), 33.9 (C-5), 32.2 (C-6), 33.7 (C-7), 37.1 (C-8), 44.3 (C-9), 16.7 (C-10), 167.6 (C-11), 103.9 (C-1′), 75.2 (C-2′), 78.3 (C-3′)[a], 71.1 (C-4′)[b], 78.0 (C-5′)[a], 62.6 (C-6′)[c], 95.4 (C-1″), 73.9 (C-2″), 78.7 (C-3″)[a], 71.2 (C-4″)[b], 78.2 (C-5″)[a], 62.4 (C-6″)[c]. *Nepeta cadmea* (Labiatae).[127]

220. Gmephiloside (1-*O*-(8-*epi*-Loganoyl)-β-D-glucopyranose)



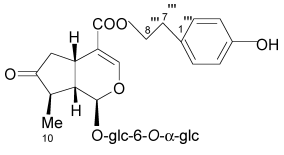
$C_{22}H_{34}O_{15}$: 538.1897; white amorphous powder; ^{1}H-NMR (500 MHz, CD_3OD): 5.54 (d, 4.0, H-1), 7.54 (d, 1.0, H-3), 3.06 (m, H-5), 1.88 (dt, 14.0, 5.0, H_α-6), 2.08 (ddd, 14.0, 9.0, 5.0, H_β-6), 3.81 (m, H-7), 2.13 (m, H-8), 2.62 (dt, 9.0, 4.0, H-9), 1.04 (d, 8.0, H_3-10), 4.64 (d, 8.0, H-1′), 3.18 (dd, 9.0, 8.0, H-2′), 3.42 (t, 9.0, H-3′), 3.24 (dd, 10.0, 9.0, H-4′), 3.30 (m, overlapped with solvent signal, H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 5.51 (d, 8.0, H-1″), 3.32—3.38 (m, H-2″, 3″, 4″, 5″), 3.68 (dd, 12.0, 6.0, H-6″), 3.83 (dd, 12.0, 2.0, H-6″); ^{13}C-NMR (125 MHz, CD_3OD): 96.3 (C-1), 154.0 (C-3), 113.5 (C-4), 30.9 (C-5), 40.9 (C-6), 79.3 (C-7), 45.1 (C-8), 43.0 (C-9), 14.4 (C-10), 167.3 (C-11), 99.7 (C-1′), 74.3 (C-2′), 78.0 (C-3′)[a], 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 95.4 (C-1″), 74.0 (C-2″), 78.0 (C-3″)[a], 71.0 (C-4″), 78.8 (C-5″), 62.3 (C-6″). *Gmelina philippensis* (Verbenaceae).[52]

221. 6′-*O*-α-D-Galactopyranosylsyringopicroside



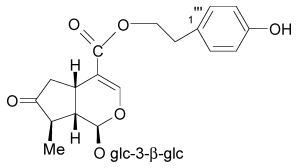
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder; $[\alpha]_D^{25}$ −21.1° (c=0.389, MeOH); UV (MeOH): 225 (4.13), 276 (3.21); ^{1}H-NMR (400 MHz, CD_3OD): 5.53 (d, 3.9, H-1), 7.44 (d, 1.2, H-3), 3.30 (m, H-5), 2.40 (dd, 19.3, 2.7, H-6α), 2.57 (dd, 19.3, 8.3, H-6β), 2.14 (br q, 7.3, H-8), 2.30 (ddd, 9.0, 7.3, 3.9, H-9), 1.14 (d, 7.3, H_3-10), 4.69 (d, 8.1, H-1′), 3.21 (dd, 8.8, 8.1, H-2′), 3.36 (m, H-3′, 4′), 3.54 (m, H-5′), 3.69—3.91 (m, H-6′, H-3″, 4″, 5″, H_2-6″), 3.79 (dd, 12.0, 2.0, H-6′), 4.87 (d, 3.7, H-1″), 3.73 (dd, 10.4, 3.7, H-2″), 7.04 (d, 8.5, H-2‴, 6‴), 6.71 (d, 8.5, H-3‴, 5‴), 2.84 (t, 6.8, H_2-7‴), 4.27 (m, H_2-8‴); ^{13}C-NMR (100 MHz, CD_3OD): 96.1 (C-1), 153.3 (C-3), 111.3 (C-4), 28.6 (C-5), 43.6 (C-6), 220.6 (C-7), 44.8 (C-8), 46.5 (C-9), 14.0 (C-10), 168.4 (C-11), 100.8 (C-1′), 74.8 (C-2′), 78.1 (C-3′), 71.8 (C-4′), 76.8 (C-5′), 68.3 (C-6′), 100.5 (C-1″), 70.4 (C-2″), 71.7 (C-3″), 71.1 (C-4″), 72.6 (C-5″), 62.8 (C-6″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.4 (C-3‴, 5‴), 157.2 (C-4‴), 35.4 (C-7‴), 66.4 (C-8‴). *Syringa reticulata* (Oleaceae).[129]

222. 6′-*O*-α-D-Glucopyranosylsyringopicroside



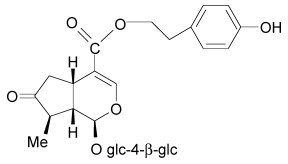
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder, $[\alpha]_D^{26}$ −28.6° (c=0.2, MeOH); UV (MeOH): 225 (4.10), 276 (3.30); ^{1}H-NMR (600 MHz, CD_3OD): 5.55 (d, 3.7, H-1), 7.44 (d, 1.5, H-3), 3.29 (m, H-5), 2.43 (dd, 19.4, 1.5, H-6α), 2.56 (dd, 19.4, 8.4, H-6β), 2.12 (dq, 9.5, 7.3, H-8), 2.31 (ddd, 9.5, 7.3, 3.7, H-9), 1.15 (d, 7.3, H_3-10), 4.70 (d, 8.1, H-1′), 3.29 (dd, 8.8, 8.1, H-2′), 3.27—3.38 (m, H-3′, 4′, 2″, 4″), 3.53 (ddd, 9.5, 5.5, 2.0, H-5′), 3.80 (dd, 11.4, 2.0, H-6′), 3.90 (dd, 11.4, 5.5, H-6′), 4.83 (d, 3.7, H-1″), 3.65 (t, 9.5, H-3″), 3.63 (m, H-5″), 3.64 (dd, 10.0, 5.5, H-6″), 3.79 (dd, 10.0, 2.0, H-6″), 7.04 (d, 8.8, H-2‴, 6‴), 6.71 (d, 8.8, H-3‴, 5‴), 2.84 (t, 7.0, H_2-7‴), 4.25, 2.26 (each t, 7.0, H_2-8‴); ^{13}C-NMR (150 MHz, CD_3OD): 96.0 (C-1), 153.3 (C-3), 111.3 (C-4), 28.5 (C-5), 43.7 (C-6), 220.9 (C-7), 44.8 (C-8), 46.6 (C-9), 14.0 (C-10), 168.4 (C-11), 100.7 (C-1′), 74.6 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 76.8 (C-5′), 68.0 (C-6′), 100.2 (C-1″), 73.7 (C-2″), 75.3 (C-3″), 71.8 (C-4″), 73.8 (C-5″), 62.7 (C-6″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.3 (C-3‴, 5‴), 157.1 (C-4‴), 35.4 (C-7‴), 66.4 (C-8‴). *Syringa reticulata* (Oleaceae).[130]

223. 3′-*O*-*β*-D-Glucopyranosylsyringopicroside



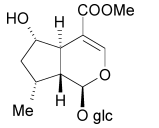
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder; $[\alpha]_D^{26}$ −88.9° (*c*=0.3, MeOH); UV (MeOH): 224 (4.11), 276 (3.38); ^{1}H-NMR (600 MHz, CD_3OD): 5.61 (d, 3.3, H-1), 7.43 (d, 1.5, H-3), 3.21—3.41 (m, H-5, 2′, 4′, 5′, 2″, 3″, 4″, 5″), 2.43 (br d, 19.1, H-6a), 2.56 (dd, 19.1, 8.3, H-6b), 2.11 (br q, 7.0, H-8), 2.32 (ddd, 9.9, 7.7, 3.3, H-9), 1.14 (d, 7.0, H_3-10), 4.72 (d, 8.1, H-1′), 3.58 (dd, 8.8, 8.4, H-3′), 3.67 (dd, 11.7, 5.5, H-6′), 3.91 (dd, 11.7, 2.0, H-6′), 4.57 (d, 8.1, H-1″), 3.63 (dd, 12.1, 6.2, H-6″), 3.88 (dd, 12.1, 2.2, H-6″), 7.04 (d, 8.4, H-2‴, 6‴), 6.71 (d, 8.4, H-3‴, 5‴), 2.84 (t, 7.0, H_2-7‴), 4.25, 4.26 (each t, 7.0, H_2-8‴); ^{13}C-NMR (150 MHz, CD_3OD): 95.6 (C-1), 153.2 (C-3), 111.3 (C-4), 28.3 (C-5), 43.5 (C-6), 220.7 (C-7), 44.7 (C-8), 46.6 (C-9), 13.7 (C-10), 168.4 (C-11), 100.0 (C-1′), 75.6 (C-2′), 87.5 (C-3′), 70.1 (C-4′), 78.2 (C-5′), 62.7 (C-6′), 105.2 (C-1″), 74.1 (C-2″), 77.9 (C-3″), 71.6 (C-4″), 78.2 (C-5″), 62.7 (C-6″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.4 (C-3‴, 5‴), 157.1 (C-4‴), 35.4 (C-7‴), 66.4 (C-8‴). *Syringa reticulata* (Oleaceae).[130]

224. 4′-*O*-*β*-D-Glucopyranosylsyringopicroside



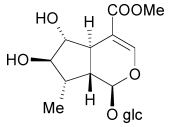
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder; $[\alpha]_D^{26}$ −77.2° (*c*=0.8, MeOH); UV (MeOH): 225 (4.10), 276 (3.28); ^{1}H-NMR (400 MHz, CD_3OD): 5.58 (d, 3.2, H-1), 7.43 (d, 1.5, H-3), 3.22—3.38 (m, H-5, 2′, 2″, 3″, 4″, 5″), 2.43 (dd, 19.3, 1.7, H-6*α*), 2.56 (dd, 19.3, 8.3, H-6*β*), 2.10 (dq, 10.1, 7.1, H-8), 2.32 (ddd, 10.1, 7.3, 3.2, H-9), 1.14 (d, 7.1, H_3-10), 4.70 (d, 8.1, H-1′), 3.53 (m, H-3′), 3.55 (m, H-4′), 3.46 (ddd, 9.3, 4.4, 2.3, H-5′), 3.84 (dd, 12.0, 4.4, H-6′), 3.94 (dd, 12.0, 2.3, H-6′), 4.40 (d, 7.8, H-1″), 3.65 (dd, 11.8, 5.5, H-6″), 3.88 (dd, 11.8, 2.0, H-6″), 7.04 (d, 8.5, H-2‴, 6‴), 6.71 (d, 8.5, H-3‴, 5‴), 2.84 (t, 6.8, H_2-7‴), 4.25, 4.26 (each t, 6.8, H_2-8‴); ^{13}C-NMR (100 MHz, CD_3OD): 95.5 (C-1), 153.2 (C-3), 111.3 (C-4), 28.3 (C-5), 43.5 (C-6), 220.7 (C-7), 44.7 (C-8), 46.6 (C-9), 13.7 (C-10), 168.4 (C-11), 100.1 (C-1′), 75.0 (C-2′), 76.4 (C-3′), 80.6 (C-4′), 77.0 (C-5′), 61.8 (C-6′), 104.7 (C-1″), 74.4 (C-2″), 77.9 (C-3″), 71.4 (C-4″), 78.2 (C-5″), 62.5 (C-6″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.4 (C-3‴, 5‴), 157.1 (C-4‴), 35.4 (C-7‴), 66.4 (C-8‴). *Syringa reticulata* (Oleaceae).[130]

225. (5*α*-H)-6*α*-8-*epi*-Dihydrocornin



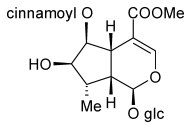
$C_{17}H_{26}O_{10}$: 390.1526; $[\alpha]_D^{22}$ −73.0° (*c*=2.0, MeOH); ^{1}H-NMR (D_2O): 5.69 (d, 9.7, H-1), 7.51 (d, 2.4, H-3), 2.64 (ddd, 13.0, 8.9, 2.3, H-5), 4.04 (ddd, 8.9, 6.5, 5.2, H-6), 2.54 (ddd, 13.9, 8.9, 5.3, H_a-7), 1.24 (ddd, 13.9, 6.5, 2.7, H_b-7), 2.25 (m, H-8), 1.91 (ddd, 13.1, 9.7, 7.1, H-9), 1.01 (d, 7.1, H_3-10), 3.69 (s, MeO-11), 4.82 (d, 8.1, H-1′), 3.28 (dd, 9.2, 8.0, H-2′), 3.46 (dd, 9.2, 8.7, H-3′), 3.39 (dd, 9.8, 8.7, H-4′), 3.43 (m, H-5′), 3.85 (dd, 12.5, 1.8, H-6′), 3.68 (dd, 12.5, 5.1, H-6′); ^{13}C-NMR (D_2O): 102.7 (C-1), 157.0 (C-3), 109.4 (C-4), 41.4 (C-5), 75.4 (C-6), 41.4 (C-7), 30.0 (C-8), 45.2 (C-9), 17.1 (C-10), 171.6 (C-11), 52.9 (MeO-11), 100.7 (C-1′), 73.6 (C-2′), 76.8 (C-3′), 70.4 (C-4′), 77.3 (C-5′), 61.5 (C-6′). *Penstemon mucronatus* (Scrophulariaceae).[132]

226. (5*α*-H)-6*α*-Hydroxy-8-*epi*-loganin



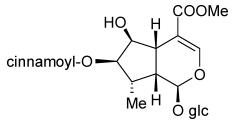
$C_{17}H_{26}O_{11}$: 406.1475; $[\alpha]_D^{22}$ −57.0° (*c*=0.27, MeOH); ^{1}H-NMR (D_2O): 5.68 (d, 9.3, H-1), 5.71 (d, 2.1, H-3), 2.73 (ddd, 12.9, 9.6, 1.8, H-5), 3.85 (m, H-6), 3.73 (dd, 4.7, 1.6, H-7), 2.04 (m, H-8), 2.18 (m, H-9), 1.06 (d, 7.6, H_3-10), 3.69 (s, MeO-11), 4.81 (d, 8.0, H-1′), 3.29 (dd, 9.2, 8.0, H-2′), 3.43 (dd, 9.2, 8.7, H-3′), 3.38 (dd, 9.8, 8.7, H-4′), 3.43 (m, H-5′), 3.83 and 3.69 (each m, H_2-6′); ^{13}C-NMR (D_2O): 101.8 (C-1), 157.1 (C-3), 108.9 (C-4), 40.2 (C-5), 82.9 (C-6), 87.4 (C-7), 39.8 (C-8), 42.8 (C-9), 14.2 (C-10), 171.4 (C-11), 52.9 (MeO-11), 100.7 (C-1′), 73.6 (C-2′), 76.7 (C-3′), 70.4 (C-4′), 77.3 (C-5′), 61.5 (C-6′). *Penstemon mucronatus* (Scrophulariaceae).[132]

227. Caudatoside A



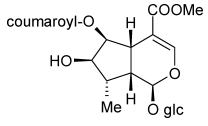
$C_{26}H_{32}O_{12}$: 536.1893; tan solid; mp 105—108 °C; $[\alpha]_D^{28}$ −75.2° (*c*=0.0108, 4 : 1, CH_3CN–MeOH); UV (MeOH): 278 (4.27); IR (film, NaCl): 3385, 2949, 1704, 1637, 1450, 1440, 1364, 1310, 1287, 1184, 1075; ^{1}H-NMR (300 MHz, CD_3COCD_3): 5.58 (d, 3.3, H-1), 7.4—7.45 (H-3), 3.01 (ddd, 8.9, 2.4, obsc, H-5), 5.40 (dd, 4.6, 2.4, H-6), 3.81 (dd, 8.6, 4.6, H-7), 2.35 (ddq, 8.9, 8.6, 7.2, H-8), 2.82 (ddd, 8.9, 8.9, 3.3, H-9), 1.13 (d, 7.2, H_3-10), 3.64 (s, MeO-11), 4.67 (d, 7.8, H-1′), 3.21 (dd, 9.0, 7.8, H-2′), 3.31—3.46 (H-3′, 4′, 5′), 3.62—3.68 (obsc, H-6′), 3.88 (dd, 11.7, 2.4, H-6′), 6.59 (d, 16.2, H-8″), 7.72 (d, 16.2, H-7″), 7.67—7.71 (H-2″, 6″), 7.42—7.45 (H-3″, 4″, 5″); ^{13}C-NMR (75 MHz, acetone-d_6): 95.0 (C-1), 152.9 (C-3), 109.7 (C-4), 36.8 (C-5), 78.8 (C-6), 78.1 (C-7), 39.8 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.2 (C-1′), 74.3 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 77.6 (C-5′), 62.8 (C-6′), 166.0 (C-9″), 119.4 (C-8″), 144.7 (C-7″), 135.3 (C-1″), 128.7 (C-2″, 6″), 129.6 (C-3″, 5″), 130.8 (C-4″). *Citharexylum caudatum* (Verbenaceae).[133]

228. Caudatoside B



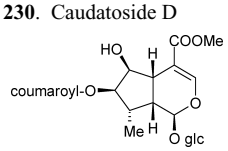
$C_{26}H_{32}O_{12}$: 536.1893; tan solid; mp 112—115 °C; $[\alpha]_D^{28}$ −80.4° (*c*=0.0108, 4 : 1, CH_3CN–MeOH); UV (MeOH): 278 (4.21); IR (film, NaCl): 3388, 2936, 1702, 1638, 1440, 1286, 1182, 1075; ^{1}H-NMR (300 MHz, acetone-d_6): 5.61 (d, 2.1, H-1), 7.4—7.45 (H-3), 2.96 (ddd, 9.0, 1.5, obsc, H-5), 4.34 (dd, 4.0, 1.5, H-6), 4.72 (dd, 9.2, 4.0, H-7), 2.67 (ddq, 9.2, 9.0, 7.2, H-8), 2.88 (ddd, 9.0, 9.0, 2.1, H-9), 1.11 (d, 7.2, H_3-10), 3.69 (s, MeO-11), 4.66 (d, 7.8, H-1′), 3.22 (dd, 9.0, 7.8, H-2′), 3.31—3.46 (H-3′, 4′, 5′), 3.62—3.67 (obscured by carbomethoxy peak, H-6′), 3.88 (dd, 12.3, 2.4, H-6′), 6.56 (d, 15.9, H-8″), 7.68 (d, 15.9, H-7″), 7.66—7.69 (H-2″, 6″), 7.42—7.45 (H-3″, 4″, 5″); ^{13}C-NMR (75 MHz, acetone-d_6): 95.0 (C-1), 152.9 (C-3), 110.2 (C-4), 39.0 (C-5), 74.6 (C-6), 81.6 (C-7), 36.2 (C-8), 39.2 (C-9), 13.9 (C-10), 167.5 (C-11), 51.4 (OMe), 99.3 (C-1′), 74.2 (C-2′), 77.6 (C-3′), 71.3 (C-4′), 77.7 (C-5′), 62.7 (C-6′), 166.6 (C-9″), 118.9 (C-8″), 145.0 (C-7″), 135.1 (C-1″), 128.8 (C-2″, 6″), 129.6 (C-3″, 5″), 130.9 (C-4″). *Citharexylum caudatum* (Verbenaceae).[133]

229. Caudatoside C



$C_{26}H_{32}O_{13}$: 552.1842; light tan solid; mp 111—114 °C; $[\alpha]_D^{28}$ −88.7° (*c*=0.0096, 4 : 1, CH_3CN–MeOH); UV (MeOH): 233 (4.08), 313 (4.22); IR (film, NaCl): 3377, 2951, 1697, 1635, 1605, 1515, 1440, 1366, 1290, 1170, 1075; ^{1}H-NMR (300 MHz, acetone-d_6): 5.58 (d, 3.0, H-1), 7.42 (d, 1.2, H-3), 2.99 (ddd, 9.3, 2.4, 1.2, H-5), 5.38 (dd, 4.3, 2.4, H-6), 3.79 (dd, 8.6, 4.3, H-7), 2.34 (ddq, 9.3, 8.6, 7.5, H-8), 2.81 (ddd, 9.3, 9.3, 3.0, H-9), 1.12 (d, 7.5, H_3-10), 3.63 (s, MeO-11), 4.66 (d, 7.8, H-1′), 3.20 (dd, 9.3, 7.8, H-2′), 3.29—3.45 (H-3′, 4′, 5′), 3.61—3.67 (obscured by carbomethoxy peak, H-6′), 3.88 (dd, 12.0, 2.4, H-6′), 6.37 (d, 15.9, H-8″), 7.64 (d, 15.9, H-7″), 7.55 (d, 8.4, H-2″, 6″), 6.89 (d, 8.4, H-3″, 5″); ^{13}C-NMR (75 MHz, acetone-d_6): 95.0 (C-1), 152.8 (C-3), 109.8 (C-4), 36.8 (C-5), 78.5 (C-6), 78.2 (C-7), 39.8 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.2 (C-1′), 74.3 (C-2′), 77.6 (C-3′), 71.4 (C-4′), 77.8 (C-5′), 62.8 (C-6′), 166.4 (C-9″), 116.0 (C-8″), 144.8 (C-7″), 126.9 (C-1″), 130.6 (C-2″, 6″), 116.5 (C-3″, 5″), 160.2 (C-4″). *Citharexylum caudatum* (Verbenaceae).[133]

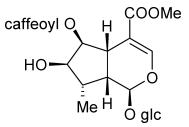
230. Caudatoside D



$C_{26}H_{32}O_{13}$: 552.1842; light tan solid; mp 124—127 °C; $[\alpha]_D^{28}$ −74.1° (*c*=0.0096, 4 : 1, CH_3CN–MeOH); UV (MeOH): 232 (4.05), 314 (4.22); IR (film, NaCl): 3377, 2951, 1696, 1635, 1605, 1515, 1440, 1367, 1289, 1170, 1075; ^{1}H-NMR (300 MHz, acetone-d_6): 5.60 (d, 2.4, H-1), 7.44 (d, 0.6, H-3), 2.94 (ddd, 8.7, 1.6, 0.6, H-5), 4.32 (dd, 3.9, 1.6, H-6), 4.70 (dd, 9.3, 3.9, H-7), 2.65 (ddq, 9.3, 8.7, 7.2, H-8), 2.85 (ddd, 8.7, 8.7, 2.4, H-9), 1.10 (d, 7.2, H_3-10), 3.68 (s, MeO-11), 4.65 (d, 8.1, H-1′), 3.20 (dd, 9.0, 8.1, H-2′), 3.30—3.44 (H-3′, 4′, 5′), 3.61—3.67 (obscured by carbomethoxy peak, H-6′), 3.87 (dd, 12.3, 2.4, H-6′), 6.36 (d, 15.9, H-8″), 7.60 (d, 15.9, H-7″), 7.54 (d, 8.4, H-2″, 6″), 6.89 (d, 8.4, H-3″, 5″); ^{13}C-

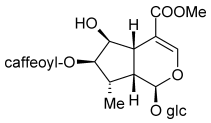
NMR (75 MHz, acetone-d_6): 95.0 (C-1), 152.8 (C-3), 110.3 (C-4), 39.0 (C-5), 74.7 (C-6), 81.4 (C-7), 36.3 (C-8), 39.3 (C-9), 13.0 (C-10), 167.4 (C-11), 51.4 (OMe), 99.3 (C-1′), 74.3 (C-2′), 77.7 (C-3′), 71.4 (C-4′), 77.8 (C-5′), 62.8 (C-6′), 167.0 (C-9″), 115.5 (C-8″), 145.0 (C-7″), 126.8 (C-1″), 130.7 (C-2″, 6″), 116.5 (C-3″, 5″), 160.3 (C-4″). *Citharexylum caudatum* (Verbenaceae).[133]

231. Caudatoside E



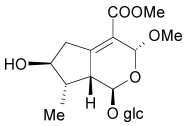
$C_{26}H_{32}O_{14}$: 568.1791; light tan solid, mp 72—75 °C; $[\alpha]_D^{28}$ −41.6° (c=0.0084, CH_3CN–MeOH, 4 : 1); UV (MeCN–MeOH, 4 : 1): 221 (4.16), 235 (4.15), 297 (4.00), 325 (4.06); IR (film, NaCl): 3381, 2938, 1689, 1636, 1601, 1525, 1442, 1376, 1288, 1185, 1076, 988; ^{1}H-NMR (300 MHz, acetone-d_6): 5.57 (d, 3.0, H-1), 7.41 (d, 1.5, H-3), 3.00 (ddd, 9.3, 2.4, 1.5, H-5), 5.37 (dd, 4.2, 2.4, H-6), 3.77 (dd, 8.7, 4.2, H-7), 2.32 (ddq, 9.3, 8.7, 7.5, H-8), 2.81 (ddd, 9.3, 9.3, 3.0, H-9), 1.12 (d, 7.5, H_3-10), 3.64 (s, MeO-11), 4.65 (d, 7.5, H-1′), 3.22 (dd, 8.7, 7.5, H-2′), 3.34—3.43 (H-3′, 4′, 5′), 3.65—3.70 (obscured by carbomethoxy peak, H-6′), 3.86 (dd, 12.3, 2.4, H-6′), 6.31 (d, 15.9, H-8″), 7.57 (d, 15.9, H-7″), 7.18 (d, 2.1, H-2″), 6.87 (d, 7.8, H-5″), 7.01 (dd, 7.8, 2.1, H-6″); ^{13}C-NMR (75 MHz, acetone-d_6): 94.9 (C-1), 152.9 (C-3), 109.7 (C-4), 36.7 (C-5), 78.5 (C-6), 78.2 (C-7), 39.7 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.1 (C-1′), 74.2 (C-2′), 77.5 (C-3′), 71.3 (C-4′), 77.8 (C-5′), 62.7 (C-6′), 166.6 (C-9″), 115.7 (C-8″), 145.4 (C-7″), 127.3 (C-1″), 115.0 (C-2″), 146.2 (C-3″), 148.7 (C-4″), 116.3 (C-5″), 122.2 (C-6″). *Citharexylum caudatum* (Verbenaceae).[133]

232. Caudatoside F



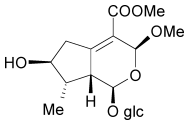
$C_{26}H_{32}O_{14}$: 568.1791; light tan solid, mp 76—79 °C; $[\alpha]_D^{28}$ −57.3° (c=0.0084, CH_3CN–MeOH, 4 : 1); UV (MeCN–MeOH, 4 : 1): 222 (4.19), 235 (4.19), 298 (4.04), 324 (4.12); IR (film, NaCl): 3388, 2939, 1686, 1636, 1602, 1524, 1442, 1374, 1287, 1184, 1077, 989; ^{1}H-NMR (300 MHz, acetone-d_6): 5.59 (d, 2.1, H-1), 7.44 (d, 0.9, H-3), 2.94 (ddd, 9.0, 1.8, 0.9, H-5), 4.32 (dd, 3.6, 1.8, H-6), 4.69 (dd, 9.0, 3.6, H-7), 2.64 (ddq, 9.0, 9.0, 7.2, H-8), 2.85 (ddd, 9.0, 9.0, 2.1, H-9), 1.09 (d, 7.2, H_3-10), 3.68 (s, MeO-11), 4.65 (d, 8.1, H-1′), 3.22 (dd, 8.7, 8.1, H-2′), 3.35—3.47 (H-3′, 4′, 5′), 3.64—3.70 (obscured by carbomethoxy peak, H-6′), 3.86 (dd, 12.3, 2.4, H-6′), 6.28 (d, 16.2, H-8″), 7.53 (d, 16.2, H-7″), 7.17 (d, 2.1, H-2″), 6.86 (d, 8.4, H-5″), 7.01 (dd, 8.4, 2.1, H-6″); ^{13}C-NMR (75 MHz, acetone-d_6): 95.0 (C-1), 152.8 (C-3), 110.3 (C-4), 39.0 (C-5), 74.7 (C-6), 81.3 (C-7), 36.2 (C-8), 39.3 (C-9), 13.9 (C-10), 167.4 (C-11), 51.4 (OMe), 99.3 (C-1′), 74.2 (C-2′), 77.6 (C-3′), 71.3 (C-4′), 77.8 (C-5′), 62.6 (C-6′), 167.0 (C-9″), 115.3 (C-8″), 145.6 (C-7″), 127.2 (C-1″), 115.1 (C-2″), 146.2 (C-3″), 148.8 (C-4″), 116.3 (C-5″), 122.2 (C-6″). *Citharexylum caudatum* (Verbenaceae).[133]

233. 3-*epi*-Phlomurin



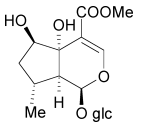
$C_{18}H_{28}O_{11}$: 420.1631; $[\alpha]_D^{21}$ −22.2° (c=0.7, MeOH); ^{1}H-NMR (400 MHz, C_5D_5N): 5.80 (d, 9.0, H-1), 5.60 (s, H-3), 3.40 (dd, 20.2, 8.2, H_α-6), 3.60 (br d, 20.2, H_β-6), 4.40 (m, H-7), 2.65 (m, H-8), 3.30 (dd, 9.0, 5.3, H-9), 0.8 (d, 7.3, H_3-10), 5.40 (d, 8.1, H-1′), 3.61 (s, OMe); ^{13}C-NMR (100 MHz, C_5D_5N): 92.3 (C-1), 98.2 (C-3), 123.2 (C-4), 160.4 (C-5), 41.4 (C-6), 76.2 (C-7), 42.7 (C-8), 48.3 (C-9), 12.7 (C-10), 165.6 (C-11), 51.4, 56.1 (2×OMe), 100.6 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.7 (C-4′), 78.9 (C-5′), 62.7 (C-6′). *Phlomis aurea* (Labiatae/Lamiaceae).[134]

234. Phlomurin



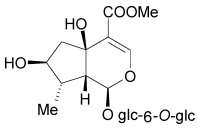
$C_{18}H_{28}O_{11}$: 420.1631; $[\alpha]_D^{21}$ +12.4° (c=0.5, MeOH) ^{1}H-NMR (400 MHz, C_5D_5N): 5.80 (d, 7.3, H-1), 5.90 (s, H-3), 3.65 (dd, 20.2, 8.0, H_α-6), 3.20 (br d, 20.0, H_β-6), 4.60 (m, H-7), 2.80 (m, H-8), 3.30 (dd, 9.0, 5.3, H-9), 0.9 (d, 7.3, H_3-10), 3.72 (s, MeO-11), 3.61 (s, MeO-3), 5.50 (d, 7.8, H-1′); ^{13}C-NMR (100 MHz, C_5D_5N): 96.1 (C-1), 97.5 (C-3), 125.4 (C-4), 160.7 (C-5), 40.7 (C-6), 76.8 (C-7), 42.9 (C-8), 47.3 (C-9), 13.4 (C-10), 165.1 (C-11), 51.2, 55.8 (2×OMe), 100.2 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.8 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Phlomis aurea* (Lamiaceae).[134]

235. 5,9-*epi*-Penstemoside



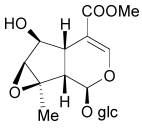
$C_{17}H_{26}O_{11}$: 406.1474; pale yellow amorphous solid; $[\alpha]_D^{20}$ −90.9° (c=0.00044, MeOH); UV (MeOH): 234 (4.02); IR (KBr): 3550, 3440, 1728, 1692, 1630, 1120, 992; ^{1}H-NMR (500 MHz, D_2O): 5.81 (s, H-1), 7.55 (s, H-3), 4.28 (t, 4.5, H-6), 1.47 (ddd, 11.5, 6.5, 5.0, H-7), 1.80 (ddd, 11.5, 7.0, 4.5, H-7), 2.60 (H-8), 2.57 (H-9), 0.94 (d, 7.0, H_3-10), 3.73 (s, MeO-11), 4.57 (d, 8.0, H-1′), 3.18 (dd, 9.0, 8.0, H-2′), 3.37 (t, 9.0, H-3′), 3.25 (t, 9.0, H-4′), 3.30 (overlapped with solvent peak, H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, D_2O): 95.9 (C-1), 155.3 (C-3), 113.6 (C-4), 73.6 (C-5), 76.8 (C-6), 40.6 (C-7), 31.5 (C-8), 50.7 (C-9), 16.6 (C-10), 168.3 (C-11), 51.7 (OMe), 99.8 (C-1′), 74.4 (C-2′), 77.5 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Eremostachys glabra* (Lamiaceae).[135]

236. Phlomiside



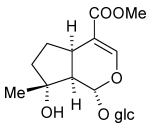
$C_{23}H_{36}O_{16}$: 568.2003; white amorphous powder; $[\alpha]_D$ −36.0° (c=0.15, MeOH); IR (KBr): 3450, 1760, 1070; ^{1}H-NMR (400 MHz, CD_3OD): 5.73 (br d, H-1), 7.46 (s, H-3), 2.02 (m, H_2-6), 2.53 (m, H-9), 0.94 (d, 7.0, H_3-10), 3.73 (s, MeO), 4.47 (d, 7.5, H-1′), 4.58 (d, 7.5, H-1″), 3.10—4.15 (sugar protons); ^{13}C-NMR (100 MHz, CD_3OD): 95.6 (C-1), 153.5 (C-3), 115.9 (C-4), 29.5 (C-5?), 39.6 (C-6), 78.3 (C-7), 43.5 (C-8), 41.7 (C-9), 13.8 (C-10), 168.1 (C-11), 51.7 (MeO-11), 99.6 (C-1′), 73.2 (C-2′), 77.0 (C-3′), 70.4 (C-4′), 76.2 (C-5′), 62.7 (C-6′), 102.6 (C-1″), 73.6 (C-2″), 76.8 (C-3″), 70.6 (C-4″), 76.6 (C-5″), 69.4 (C-6″). *Phlomis aurea* (Lamiaceae).[136]

237. Phlorigidoside C (5-Deoxysesamoside)



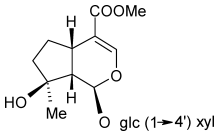
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{28}$ −66.0° (c=0.87, MeOH); UV (MeOH): 239 (3.99); IR (dry film): 3387, 1682, 1636, 1075, ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 9.8, H-1), 7.54 (s, H-3), 2.66 (br t, 7.6, H-5), 3.99 (br d, 7.6, H-6), 3.34 (br s, H-7), 2.40 (dd, 9.8, 7.6, H-9), 1.53 (s, H_3-10), 3.74 (s, MeO-11), 4.79 (d, 7-8, H-1′), 3.61 (dd, 12.0, 7.1, H-6′), 3.92 (br d, 12.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 96.5 (C-1), 154.2 (C-3), 108.6 (C-4), 38.5 (C-5), 77.9 (C-6), 64.8 (C-7), 63.1 (C-8), 45.2 (C-9), 18.0 (C-10), 170.9 (C-11), 52.3 (OMe), 99.9 (C-1′), 74.9 (C-2′), 77.9 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.1 (C-6′). *Phlomis rigida* (Labiatae),[137] *P. tuberosa*.[138]

238. Nepetanudoside



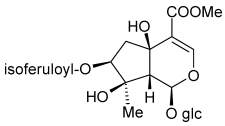
$C_{17}H_{26}O_{10}$: 390.1525; mp 248—250 °C (dec); $[\alpha]_D^{28.5}$ +83.7° (c=0.37, H_2O); UV (?): 239 (3.93); IR (KBr): 3400 br, 1690, 1630, 1440, 1310, 1285, 1190, 1070, 1030, 900, 845; ^{1}H-NMR (400 MHz, C_5D_5N): 5.96 (d, 3.9, H-1), 7.70 (s, H-3), 3.53 (m, H-5), 1.66 (m, H-6), 2.52 (m, H-6), 1.87 (m, H-7), 2.01 (m, H-7), 2.95 (dd, 9.5, 3.9, H-9), 1.70 (s, H_3-10), 3.59 (s, MeO-11), 5.27 (d, 7.8, H-1′), 4.08 (m, H-2′), 4.25 (H-3′, 4′), 3.98 (m, H-5′), 4.36 (dd, 11.7, 4.9, H-6′), 4.51 (dd, 11.7, 2.2, H-6′); ^{13}C-NMR (100 MHz, C_5D_5N): 99.5 (C-1), 151.7 (C-3), 112.4 (C-4), 31.3 (C-5), 30.4 (C-6), 41.1 (C-7), 78.9 (C-8), 52.3 (C-9), 25.1 (C-10), 167.5 (C-11), 50.9 (OMe), 104.1 (C-1′), 75.4 (C-2′), 78.6 (C-3′), 71.2 (C-4′), 79.0 (C-5′), 62.5 (C-6′). *Nepeta nuda* ssp. *albiflora* (Labiatae).[139]

239. Plicatoside B



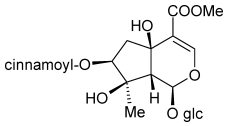
$C_{22}H_{34}O_{14}$: 522.1948; yellowish gum; $[\alpha]_D^{23}$ −16.9° (c=0.53, MeOH); UV (MeOH): 236 (3.98); IR (KBr): 3317, 1692, 1637; ^{1}H-NMR (400 MHz, D_2O): 5.51 (d, 3.2, H-1), 7.46 (s, H-3), 3.12 (m, H-5), 1.42 (m, H-6α), 1.73 (m, H-6β, H-7α), 2.26 (m, H-7β), 2.35 (dd, 9.6, 2.7, H-9), 1.32 (s, H_3-10), 4.71 (d, 8.0, H-1′), 3.20—3.40 (m, sugar H), 4.81 (d, 8.1, H-1″); ^{13}C-NMR (100 MHz, D_2O): 95.2 (C-1), 151.6 (C-3), 113.0 (C-4), 30.4 (C-5), 29.7 (C-6), 40.3 (C-7), 80.2 (C-8), 51.2 (C-9), 23.8 (C-10), 170.1 (C-11), 99.0 (C-1′), 73.4 (C-2′), 73.4 (C-3′), 77.0 (C-4′), 76.5 (C-5′), 61.5 (C-6′), 99.1 (C-1″), 74.0 (C-2″), 76.6 (C-3″), 76.0 (C-4″), 63.3 (C-5″). *Pedicularis plicata* (Scrophulariaceae).[85]

240. Duranterectoside A



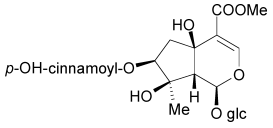
$C_{27}H_{34}O_{15}$: 598.1897; amorphous powder; $[\alpha]_D$ −41.0° (c=1.17, MeOH); UV (MeOH): 222 (4.15), 233 (4.13), 298 (4.06), 328 (4.09); IR (KBr): 3400, 1700, 1630, 1580, 1510, 1440, 1270, 1160, 1130, 1070, 860, 810; ^{1}H-NMR (400 MHz, CD_3OD): 5.84 (d, 0.7, H-1), 7.45 (s, H-3), 2.39 (dd, 16.1, 1.7, H-6), 2.48 (dd, 16.1, 5.0, H-6), 4.83 (dd, 5.0, 1.7, H-7), 2.93 (s, H-9), 1.17 (s, H_3-10), 3.73 (s, MeO-11), 4.62 (d, 7.9, H-1′), 7.10 (d, 1.9, H-2″), 6.95 (d, 8.3, H-5″), 7.07 (dd, 8.3, 1.9, H-6″), 7.67 (d, 15.9, H-7″), 6.41 (d, 15.9, H-8″), 3.89 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.3 (C-3), 115.7 (C-4), 69.1 (C-5), 45.7 (C-6), 80.6 (C-7), 78.8 (C-8), 58.5 (C-9), 21.4 (C-10), 167.9 (C-11), 51.8 (MeO-11), 99.7 (C-1′), 74.5 (C-2′), 78.4 (C-3′)[a], 71.8 (C-4′), 77.5 (C-5′)[a], 62.9 (C-6′), 129.1 (C-1″), 112.6 (C-2″), 151.5 (C-3″), 148.1 (C-4″), 114.8 (C-5″), 122.9 (C-6″), 146.7 (C-7″), 166.6 (C-8″), 168.6 (C-9″), 56.4 (MeO-4″). *Duranta erecta* (Verbenaceae).[140]

241. Duranterectoside B



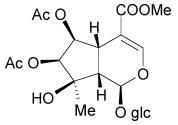
$C_{26}H_{32}O_{13}$: 552.1842; amorphous powder; $[\alpha]_D^{20.5}$ −87.1° (c=0.81, MeOH); UV (MeOH): 218 (3.90), 223 (3.91), 275 (3.73); IR (KBr): 3370, 1700, 1630, 1575, 1495, 1290, 1160, 1070, 870, 780, 700; ^{1}H-NMR (400 MHz, CD_3OD): 5.82 (d, 0.7, H-1), 7.44 (s, H-3), 2.35 (dd, 16.2, 1.6, H-6), 2.46 (dd, 16.2, 5.1, H-6), 4.78 (dd, 5.1, 1.6, H-7), 2.85 (s, H-9), 1.15 (s, H_3-10), 3.73 (s, MeO-11), 4.61 (d, 8.0, H-1′), 3.67 (dd, 11.9, 5.9, H-6′), 3.89 (dd, 11.9, 2.0, H-6′), 7.32—7.37 and 7.65 (m, H-2″, 3″, 4″, 5″, 6″), 7.03 (d, 12.7, H-7″), 6.09 (d, 12.7, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 94.0 (C-1), 152.3 (C-3), 115.6 (C-4), 69.0 (C-5), 45.4 (C-6), 80.5 (C-7), 78.7 (C-8), 58.2 (C-9), 21.3 (C-10), 167.9 (C-11), 51.7 (MeO-11), 99.6 (C-1′), 74.5 (C-2′), 78.4 (C-3′)[a], 71.7 (C-4′), 77.5 (C-5′)[a], 62.9 (C-6′), 136.3 (C-1″), 129.1 (C-2″, 6″), 131.1 (C-3″, 5″), 130.2 (C-4″), 145.0 (C-7″), 120.7 (C-8″), 167.1 (C-9″). *Duranta erecta* (Verbenaceae).[140]

242. Duranterectoside C



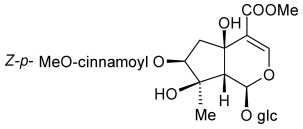
$C_{26}H_{32}O_{14}$: 568.1791; amorphous powder; $[\alpha]_D^{20.5}$ −68.0° (c=0.91, MeOH); UV (MeOH): 229 (4.22), 314 (4.17); IR (KBr): 3370, 1700, 1630, 1605, 1515, 1290, 1160, 1070, 870; ^{1}H-NMR (400 MHz, CD_3OD): 5.82 (d, 0.7, H-1), 7.44 (s, H-3), 2.37 (dd, 16.1, 1.7, H-6), 2.41 (dd, 16.1, 5.1, H-6), 4.79 (dd, 5.1, 1.7, H-7), 2.88 (s, H-9), 1.16 (s, H_3-10), 3.74 (s, MeO-11), 4.62 (d, 7.9, H-1′), 3.67 (dd, 11.9, 5.5, H-6′), 3.89 (dd, 11.9, 2.0, H-6′), 7.70 (d, 8.7, H-2″, 6″), 6.76 (d, 8.7, H-3″, 5″), 6.88 (d, 12.8, H-7″), 5.90 (d, 12.8, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.3 (C-3), 115.7 (C-4), 69.0 (C-5), 45.5 (C-6), 80.3 (C-7), 78.7 (C-8), 58.3 (C-9), 21.4 (C-10), 167.6 (C-11), 51.8 (MeO-11), 99.7 (C-1′), 74.5 (C-2′), 78.4 (C-3′)[a], 71.7 (C-4′), 77.5 (C-5′)[a], 62.9 (C-6′), 127.7 (C-1″), 133.9 (C-2″, 6″), 115.9 (C-3″, 5″), 160.1 (C-4″), 145.5 (C-7″), 116.9 (C-8″), 168.0 (C-9″). *Duranta erecta* (Verbenaceae).[140]

243. Duranterectoside D



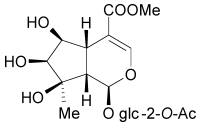
$C_{21}H_{30}O_{14}$: 506.1635; amorphous powder; $[\alpha]_D^{20.5}$ −87.1° (c=0.81, MeOH); UV (MeOH): 233 (4.09); IR (KBr): 3400, 1730, 1700, 1635, 1250, 1070; ^{1}H-NMR (400 MHz, CD_3OD): 5.62 (d, 2.3, H-1), 7.44 (d, 0.9, H-3), 5.14 (dd, 5.0, 5.0, H-6), 4.93 (d, 5.0, H-7), 2.83 (dd, 11.0, 2.3, H-9), 1.28 (s, H_3-10), 3.73 (s, MeO-11), 2.04, 2.11 (each s, 2×OAc), 4.64 (d, 7.9, H-1′); ^{13}C-NMR (100 MHz, CD_3OD): 94.4 (C-1), 153.1 (C-3), 111.0 (C-4), 34.9 (C-5), 78.0 (C-6)[a], 79.7 (C-7)[a], 76.8 (C-8), 48.5 (C-9), 22.3 (C-10), 168.6 (C-11), 51.9 (MeO-11), 99.3 (C-1′), 74.7 (C-2′), 78.4 (C-3′)[a], 71.7 (C-4′), 77.7 (C-5′)[a], 62.9 (C-6′), 20.7, 20.8, 171.6, 172.0 (2×Ac). *Duranta erecta* (Verbenaceae).[140]

244. Boucheoside



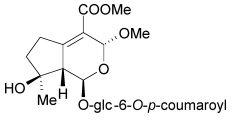
$C_{27}H_{34}O_{14}$: 582.1948; amorphous powder; IR (NaCl): 3360, 1717, 1649, 1619, 1527, 1299, 1174, 1080, 872; ^{1}H-NMR (400 MHz, CD_3OD): 5.82 (d, 0.6, H-1), 7.44 (s, H-3), 2.36 (dd, 16.1, 1.6, H-6), 2.47 (dd, 16.1, 4.9, H-6), 4.79 (dd, 9.0, 1.6, H-7), 2.88 (s, H-9), 1.15 (s, H_3-10), 3.72 (s, MeO-11), 4.58 (d, 7.8, H-1′), 3.19 (dd, 9.1, 7.8, H-2′), 3.37 (dd, 9.1, 8.2, H-3′), 3.26 (t, 9.1, H-4′), 3.30 (m, H-5′), 3.65 (dd, 11.9, 4.5, H-6′), 3.88 (dd, 11.9, 2.0, H-6′), 7.77 (d, 9.0, H-2″, 6″), 6.89 (d, 9.0, H-3″, 5″), 6.92 (d, 13.0, H-7″), 5.94 (d, 13.0, H-8″), 3.81 (s, MeO-4″); ^{13}C-NMR (100 MHz, CD_3OD): 94.0 (C-1), 152.2 (C-3), 115.7 (C-4), 69.0 (C-5), 45.5 (C-6), 80.3 (C-7), 78.7 (C-8), 58.2 (C-9), 21.3 (C-10), 167.9 (C-11), 51.7 (2×MeO), 99.6 (C-1′), 74.5 (C-2′), 97.5 (C-3′), 70.4 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 128.7 (C-1″), 133.6 (C-2″, 6″), 114.4 (C-3″, 5″), 162.1 (C-4″), 145.0 (C-7″), 117.8 (C-8″), 166.5 (C-9″). *Bouchea fluminensis* (Verbenaceae).[141]

245. Phlorigidoside A (2′-*O*-Acetyllamiridoside)



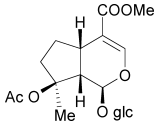
$C_{19}H_{28}O_{13}$: 464.1529; amorphous powder; $[\alpha]_D^{28}$ −81.0° (c=0.57, MeOH); UV (MeOH): 235 (3.90); IR (dry film): 3419, 1733, 1698, 1645, 1078; ^{1}H-NMR (400 MHz, CD_3OD): 5.61 (s, H-1), 7.39 (s, H-3), 2.80 (s, H-5, 9), 3.97 (br d, 4.4, H-6), 3.49 (d, 4.4, H-7), 1.19 (s, H_3-10), 3.74 (s, MeO-11), 4.76 (d, 7.8, H-1′), 4.65 (dd, 9.7, 7.8, H-2′), 3.68 (dd, 12.2, 5.6, H-6′), 3.90 (br d, 12.2, H-6′), 1.93 (s, OAc); ^{13}C-NMR (100 MHz, CD_3OD): 94.9 (C-1), 152.5 (C-3), 112.2 (C-4), 37.3 (C-5), 77.7 (C-6), 74.7 (C-7), 79.0 (C-8), 51.9 (C-9), 22.0 (C-10), 169.0 (C-11), 97.3 (C-1′), 75.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 62.6 (C-6′), *Phlomis rigida* (Labiatae).[137]

246. Brunneogaleatoside



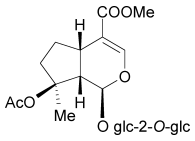
$C_{27}H_{34}O_{13}$: 566.1999; amorphous powder; $[\alpha]_D^{20}$ −75.9° (c=0.1, MeOH); UV (MeOH): 226, 304; IR (KBr): 3416, 1706, 1632, 1605, 1516; ^{1}H-NMR (600 MHz, CD_3OD): 5.35 (d, 8.7, H-1), 5.30 (s, H-3), 2.72 (m, H_2-6), 1.83 (m, H-7), 1.76 (m, H-7), 2.70 (d, 8.7, H-9), 1.22 (s, H_3-10), 3.51 (s, MeO-3), 3.73 (s, MeO-11), 4.77 (d, 7.5, H-1′), 3.39 (dd, 8.6, 7.5, H-2′), 3.45 (t, 8.6, H-3′), 3.37 (t, 8.6, H-4′), 3.60 (m, H-5′), 4.53 (dd, 11.8, 2.3, H-6′), 4.31 (dd, 11.8, 7.7, H-6′), 7.41 (d, 8.6, H-2″, 6″), 6.76 (d, 8.6, H-3″, 5″), 7.59 (d, 16.0, H-7″), 6.28 (d, 16.0, H-8″); ^{13}C-NMR (150 MHz, CD_3OD): 92.5 (C-1), 98.8 (C-3), 123.4 (C-4), 160.4 (C-5), 29.9 (C-6), 40.2 (C-7), 79.3 (C-8), 56.2 (C-9), 21.9 (C-10), 166.7 (C-11), 56.6 (MeO-3), 52.0 (MeO-11), 100.0 (C-1′), 74.5 (C-2′), 78.1 (C-3′), 72.5 (C-4′), 76.0 (C-5′), 65.1 (C-6′), 127.3 (C-1″), 131.4 (C-2″, 6″), 117.0 (C-3″, 5″), 161.4 (C-4″), 147.0 (C-7″), 115.1 (C-8″), 169.1 (C-9″). *Phlomis brunneogaleata* (Lamiaceae).[142]

247. 8-*O*-Acetylmussaenoside



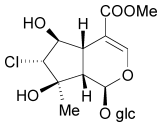
$C_{19}H_{28}O_{11}$: 432.1631; amorphous powder; $[\alpha]_D^{21}$ −53.2° (c=1.84, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.71 (d, 3.4, H-1), 7.43 (d, 1.0, H-3), 3.12 (m, H-5), 1.75 (m, H_2-6), 2.05 (m, H_2-7), 2.68 (dd, 8.5, 3.4, H-9), 1.54 (s, H_3-10), 3.69 (s, MeO-11), 4.59 (d, 7.8, H-1′), 3.14 (dd, 9.0, 7.8, H-2′), 3.32 (dd, 9.0, 8.8, H-3′), 3.22 (dd, 9.5, 8.8, H-4′), 3.26 (m, H-5′), 3.85 (dd, 12.2, 2.2, H-6′), 3.61 (dd, 12.2, 6.4, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 95.5 (C-1), 153.0 (C-3), 112.2 (C-4), 32.9 (C-5), 29.7 (C-6), 39.6 (C-7), 91.0 (C-8), 51.0 (C-9), 21.2 (C-10), 169.0 (C-11), 51.7 (OMe), 100.2 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.9 (C-6′). *Barleria lupulina* (Acanthaceae).[108]

248. Lupulinoside



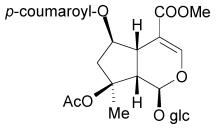
$C_{25}H_{38}O_{16}$: 594.2159; colorless amorphous solid; $[\alpha]_D^{29}$ −41.6° (c=0.125, MeOH); IR (KBr): 3405, 2923, 1706, 1636, 1438, 1382, 1284, 1075, 1027; ^{1}H-NMR (500 MHz, D_2O+CD_3OD, 50 : 1): 5.73 (d, 1.1, H-1), 7.38 (d, 0.8, H-3), 2.96 (m, H-5, 2′, 4′), 1.93, 1.65 (each m, H_2-6, 7), 2.66 (dd, 9.2, 1.5, H-9), 1.38 (s, H_3-10), 3.65 (s, MeO-11), 4.78 (d, 8.0, H-1′), 3.49 (dd, 8.0, 7.7, H-2′), 3.58 (dd, 9.2, 7.7, H-3′), 3.29 (dd, 9.9, 9.2, H-4′), 3.39 (ddd, 9.9, 5.9, 2.1, H-5′), 3.82 (dd, 12.5, 2.1, H-6′), 3.63 (dd, 12.5, 5.9, H-6′), 4.59 (d, 7.8, H-1″), 3.33 (t, 9.2, H-3″), 3.20 (m, H-5″), 3.76 (dd, 12.2, 2.1, H-6″), 3.48 (dd, 12.2, 7.7, H-6″); ^{13}C-NMR (125 MHz, D_2O+CD_3OD, 50 : 1): 95.5 (C-1), 153.2 (C-3), 112.1 (C-4), 31.6 (C-5), 28.7 (C-6), 39.6 (C-7), 90.6 (C-8), 50.3 (C-9), 20.8 (C-10), 170.2 (C-11), 52.7 (MeO-11), 22.5, 175.2 (Ac), 97.5 (C-1′), 77.8 (C-2′), 77.2 (C-3′, 5′, 5″), 70.3 (C-4′), 61.6 (C-6′), 102.4 (C-1″), 74.6 (C-2″), 76.5 (C-3″), 71.2 (C-4″), 62.4 (C-6″). *Barleria lupulina* (Acanthaceae).[143]

249. Chlorotuberoside



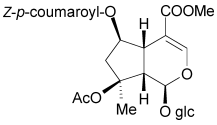
$C_{17}H_{25}ClO_{11}$: 440.1085; amorphous powder; $[\alpha]_D^{25}$ −107.9° (c=0.1, MeOH); UV (MeOH): 234; IR (KBr): 3447, 1684, 1651, 1304, 1082; ^{1}H-NMR (500 MHz, CD_3OD): 5.66 (br s, H-1), 7.41 (d, 1.0, H-3), 2.83 (ddd, 11.5, 4.3, 1.0, H-5), 3.67 (overlapped, H-6), 4.01 (d, 8.9, H-7), 2.66 (d, 11.5, H-9), 1.19 (s, H_3-10), 3.74 (s, MeO-11), 4.61 (d, 7.9, H-1′), 3.14 (dd, 8.9, 7.9, H-2′), 3.35 (t, 8.9, H-3′), 3.28 (t, 8.9, H-4′), 3.30 (m, H-5′), 3.88 (dd, 12.0, 2.0, H-6′), 3.66 (dd, 12.0, 5.9, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 93.0 (C-1), 152.0 (C-3), 111.3 (C-4), 35.8 (C-5), 82.1 (C-6), 74.1 (C-7), 77.3 (C-8), 47.5 (C-9), 18.6 (C-10), 169.1 (C-11), 51.6 (OMe), 99.3 (C-1′), 74.1 (C-2′), 77.5 (C-3′), 71.7 (C-4′), 77.9 (C-5′), 62.3 (C-6′). *Phlomis tuberosa* (Lamiaceae).[144]

250. 6-*O*-*trans*-*p*-Coumaroyl-8-*O*-acetylshanzhiside methyl ester



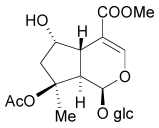
$C_{28}H_{34}O_{14}$: 594.1948; white amorphous powder; $[\alpha]_D$ −52.0° (c=0.152, MeOH); UV (MeOH): 229 (4.17), 313 (4.23); IR (KBr): 3430 (br), 2952, 2918, 1714, 1634, 1606, 1516, 1442, 1373, 1279, 1169, 1082, 1056, 862, 835; ^{1}H-NMR (400 MHz, CD_3OD): 5.91 (d, 3.3, H-1), 7.53 (d, 1.4, H-3), 3.34 (ddd, 8.6, 2.0, 1.4, H-5), 5.39 (br dd, 5.4, 2.0, H-6), 2.42 (br d, 15.2, H-7), 2.13 (dd, 15.2, 5.4, H-7), 3.05 (dd, 8.6, 3.3, H-9), 1.58 (s, H_3-10), 3.70 (s, MeO-11), 1.98 (s, AcO-8), 4.68 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.38 (dd, 9.0, 8.8, H-3′), 3.27 (dd, 9.5, 8.8, H-4′), 3.35 (ddd, 9.5, 6.2, 2.0, H-5′), 3.92 (dd, 11.9, 2.0, H-6′), 3.67 (dd, 11.9, 6.2, H-6′), 7.47 (d, 8.6, H-2″, 6″), 6.81 (d, 8.6, H-3″, 5″), 7.62 (d, 16.0, H-7″), 6.34 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.5 (C-1), 154.5 (C-3), 108.6 (C-4), 40.0 (C-5), 78.9 (C-6), 45.2 (C-7), 89.6 (C-8), 50.4 (C-9), 21.8 (C-10), 168.4 (C-11, 9″), 100.4 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.4 (C-5′), 63.0 (C-6′), 127.1 (C-1″), 131.2 (C-2″, 6″), 116.9 (C-3″, 5″), 161.4 (C-4″), 146.6 (C-7″), 115.4 (C-8″), 51.9 (OMe), 22.2, 172.9 (Ac). *Barleria prionitis* (Acanthaceae),[145] *B. lupulina*.[146]

251. 6-*O*-*cis*-*p*-Coumaroyl-8-*O*-acetylshanzhiside methyl ester



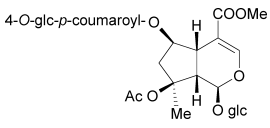
$C_{28}H_{34}O_{14}$: 594.1948; amorphous solid; $[\alpha]_D$ −19.5° (c=0.04, MeOH); UV (MeOH): 228 (4.08), 309 (3.93); IR (KBr): 3422 (br), 2924, 1715, 1634, 1605, 1514, 1440, 1372, 1161, 1084, 1010, 654; ^{1}H-NMR (400 MHz, CD_3OD): 5.87 (d, 3.3, H-1), 7.52 (d, 1.6, H-3), 3.26 (ddd, 8.0, 2.0, 1.6, H-5), 5.37 (dd, 5.3, 2.0, H-6), 2.40 (br d, 15.0, H-7), 2.10 (dd, 15.0, 5.3, H-7), 2.92 (dd, 8.0, 3.3, H-9), 1.55 (s, H_3-10), 1.89 (s, AcO-8), 3.70 (s, MeO-11), 4.66 (d, 7.8, H-1′), 3.21 (dd, 9.0, 7.8, H-2′), 3.37 (dd, 9.0, 8.8, H-3′), 3.28 (dd, 9.5, 8.8, H-4′), 3.34 (ddd, 9.5, 6.2, 2.0, H-5′), 3.91 (dd, 12.1, 2.0, H-6′), 3.67 (dd, 12.1, 6.2, H-6′), 7.63 (d, 8.4, H-2″, 6″), 6.76 (d, 8.4, H-3″, 5″), 6.90 (d, 12.7, H-7″), 5.78 (d, 12.7, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.6 (C-3), 108.6 (C-4), 39.9 (C-5), 78.7 (C-6), 45.1 (C-7), 89.6 (C-8), 50.3 (C-9), 21.9 (C-10), 168.5 (C-11), 100.4 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.9 (C-6′), 127.6 (C-1″), 133.6 (C-2″, 6″), 115.9 (C-3″, 5″), 160.1 (C-4″), 144.9 (C-7″), 116.9 (C-8″), 167.6 (C-9″), 51.9 (OMe), 22.1, 172.9 (Ac). *Barleria prionitis* (Acanthaceae),[145] *B. lupulina*.[146]

252. 6,9-*epi*-8-*O*-Acetylshanzhiside methyl ester



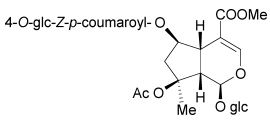
$C_{19}H_{28}O_{12}$: 448.1560; pale yellow amorphous solid; $[\alpha]_D^{20}$ −84.8° (c=0.00236, MeOH); UV (MeOH): 236 (4.05); IR (KBr): 3555, 3420, 1739, 1732, 1692, 1638, 1089, 980; ^{1}H-NMR (500 MHz, D_2O): 5.91 (d, 2.5, H-1), 7.44 (d, 1.5, H-3), 3.06 (dd, 9.0, 1.5, H-5), 4.33 (m, H-6), 2.04 (br dd, 13.5, 6.0, H-7), 2.20 (br d, 13.5, H-7), 2.99 (dd, 9.0, 2.5, H-9), 1.51 (s, H_3-10), 3.72 (s, MeO-11), 2.01 (s, AcO-8), 4.63 (d, 8.0, H-1′), 3.17 (dd, 9.0, 8.0, H-2′), 3.36 (t, 9.0, H-3′), 3.26 (t, 9.0, H-4′), 3.30 (overlapped with solvent peak, H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, D_2O): 95.9 (C-1), 153.8 (C-3), 109.9 (C-4), 42.5 (C-5), 76.1 (C-6), 47.8 (C-7), 89.9 (C-8), 50.1 (C-9), 22.4 (C-10), 169.2 (C-11), 51.9 (OMe), 22.4, 173.0 (OAc), 100.5 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.8 (C-4′), 78.3 (C-5′), 63.2 (C-6′). *Eremostachys glabra* (Lamiaceae).[135]

253. Saletpangponoside A [6-*O*-(4″-*O*-β-Glucopyranosyl)-*trans*-*p*-coumaroyl-8-*O*-acetylshanzhiside methyl ester]



$C_{34}H_{44}O_{19}$: 756.2476; amorphous powder; $[\alpha]_D^{21}$ −90.3° (c=1.79, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.85 (d, 3.2, H-1), 7.48 (d, 1.5, H-3), 3.30 (H-5), 5.34 (m, H-6), 2.38 (br d, 15.4, H_a-7), 2.09 (dd, 15.4, 5.3, H_b-7), 3.00 (dd, 8.6, 3.2, H-9), 1.53 (s, H_3-10), 3.65 (s, MeO-11), 4.63 (d, 8.1, H-1′), 3.16 (dd, 9.0, 8.1, H-2′), 3.34 (H-3′), 3.23 (dd, 9.5, 9.5, H-4′), 3.31 (m, H-5′), 3.88 (dd, 11.9, 2.2, H-6′), 3.66 (dd, 11.9, 6.1, H-6′), 7.53 (d, 8.8, H-2″, 6″), 7.08 (d, 8.8, H-3″, 5″), 7.61 (d, 15.9, H-7″), 6.37 (d, 15.9, H-8″), 4.93 (d, 7.6, H-1‴), 3.42 (H-2‴), 3.34 (H-3‴), 3.40 (H-4‴), 3.26 (H-5‴), 3.81 (dd, 12.0, 2.0, H-6‴), 3.64 (dd, 12.0, 6.4, H-6‴), 1.92 (s, OAc); ^{13}C-NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.5 (C-3), 108.5 (C-4), 39.9 (C-5), 78.9 (C-6), 45.1 (C-7), 89.6 (C-8), 50.3 (C-9), 21.8 (C-10), 168.4 (C-11), 51.9 (OMe), 100.3 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.9 (C-6′), 129.8 (C-1″), 130.8 (C-2″, 6″), 118.0 (C-3″, 5″), 160.9 (C-4″), 145.9 (C-7″), 117.2 (C-8″), 168.1 (C-9″), 101.8 (C-1‴), 74.8 (C-2‴), 77.9 (C-3‴), 71.2 (C-4‴), 78.1 (C-5‴), 62.4 (C-6‴), 22.3, 172.9 (OAc). *Barleria lupulina* (Acanthaceae).[108]

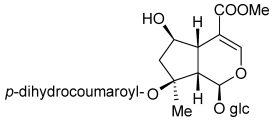
254. Saletpangponoside B



$C_{34}H_{44}O_{19}$: 756.2476; amorphous powder; $[\alpha]_D^{21}$ −104.8° (c=2.43, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.85 (d, 3.2, H-1), 7.50 (d, 1.5, H-3), 3.25 (H-5), 5.34 (m, H-6), 2.38 (br d, 15.6, H_a-7), 2.09 (dd, 15.6, 5.4, H_b-7), 2.90 (dd, 8.6, 3.2, H-9), 1.53 (s, H_3-10), 3.68 (s, MeO-11), 4.66 (d, 7.8, H-1′), 3.22 (dd, 9.0, 7.8, H-2′), 3.34 (H-3′), 3.26 (H-4′), 3.31 (m, H-5′), 3.90 (dd, 12.0, 2.0, H-6′), 3.71 (dd, 12.0, 5.6, H-6′), 7.65 (d, 8.8, H-2″, 6″), 7.07 (d, 8.8, H-3″, 5″), 6.94 (d, 12.9, H-7″), 5.86 (d, 12.9, H-8″), 4.96 (d, 7.6, H-1‴), 3.48 (H-2‴), 3.34 (H-3‴), 3.45 (H-4‴), 3.28 (H-5‴), 3.87 (dd, 12.0, 1.7, H-6‴), 3.71 (dd, 12.0, 5.6, H-6‴), 1.89 (s, AcO); ^{13}C-NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.5 (C-3), 108.4 (C-4), 39.8 (C-5), 78.8 (C-6), 45.0 (C-7), 89.6 (C-8), 50.3 (C-9), 21.8 (C-10), 168.4 (C-11), 51.9 (OMe), 100.3 (C-1′), 74.5 (C-2′), 77.8 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.9 (C-6′), 130.3 (C-1″), 132.9 (C-2″, 6″), 117.1 (C-

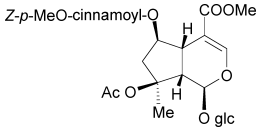
3″, 5″), 159.7 (C-4″), 144.0 (C-7″), 118.8 (C-8″), 167.4 (C-9″), 101.9 (C-1‴), 74.8 (C-2‴), 77.8 (C-3‴), 71.2 (C-4‴), 78.1 (C-5‴), 62.4 (C-6‴), 22.2, 172.9 (OAc). *Barleria lupulina* (Acanthaceae).[108]

255. Saletpangponoside C



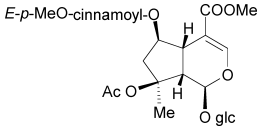
$C_{26}H_{34}O_{13}$: 554.1999; amorphous powder; $[\alpha]_D^{21}$ −58.9° (c=2.86, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.82 (d, 2.4, H-1), 7.38 (d, 1.5, H-3), 2.94 (H-5), 4.25 (m, H-6), 2.11 (br d, 14.9, H_a-7), 1.97 (dd, 14.9, 5.4, H_b-7), 2.94 (H-9), 1.38 (s, H_3-10), 3.66 (s, MeO-11), 4.59 (d, 7.8, H-1′), 3.14 (dd, 9.0, 7.8, H-2′), 3.32 (dd, 9.0, 8.8, H-3′), 3.22 (dd, 9.5, 8.8, H-4′), 3.26 (m, H-5′), 3.85 (dd, 12.2, 2.2, H-6′), 3.61 (dd, 12.2, 6.4, H-6′), 6.98 (d, 8.5, H-2″, 6″), 6.64 (d, 8.5, H-3″, 5″), 2.76 (m, H-7″), 2.49 (m, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 153.6 (C-3), 109.8 (C-4), 42.2 (C-5), 76.0 (C-6), 47.7 (C-7), 89.7 (C-8), 49.9 (C-9), 22.2 (C-10), 169.0 (C-11), 51.8 (OMe), 100.4 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.2 (C-5′), 63.0 (C-6′), 132.6 (C-1″), 130.3 (C-2″, 6″), 116.2 (C-3″, 5″), 156.7 (C-4″), 31.2 (C-7″), 38.2 (C-8″), 175.0 (C-9″). *Barleria lupulina* (Acanthaceae).[108]

256. 6-*O*-*p*-Methoxy-*cis*-cinnamoyl-8-*O*-acetylshanzhiside methyl ester



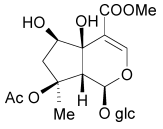
$C_{29}H_{36}O_{14}$: 608.2104; colorless powder; $[\alpha]_D^{24}$ −129.7° (c=0.35, MeOH); UV (?): 227 (4.36), 297 sh (4.25), 307 (4.27); IR (?): 3400, 1700, 1640, 1600, 1270, 1180, 1080, 1020; ^{1}H-NMR (400 MHz, $CDCl_3$–DMSO-d_6): 5.95 (d, 1.5, H-1), 7.48 (s, H-3), 3.25 (d, 9.0, H-5), 5.41 (d, 4.5, H-6), 2.01 (dd, 15.0, 4.5, H_a-7), 2.38 (d, 15.0, H_b-7), 3.00 (dd, 1.0, 1.5, H-9), 1.57 (s, H_3-10), 3.70 (s, MeO-11), 4.66 (d, 7.5, H-1′), 7.73 (d, 9.0, H-2″, 6″), 6.88 (d, 9.0, H-3″, 5″), 6.84 (d, 12.0, H-7″), 5.79 (d, 12.0, H-8″), 3.84 (s, MeO-4″), 1.90 (s, Ac); ^{13}C-NMR (100 MHz, $CDCl_3$–DMSO-d_6): 92.4 (C-1), 151.5 (C-3), 105.3 (C-4), 37.1 (C-5), 75.2 (C-6), 42.5 (C-7), 86.4 (C-8), 47.2 (C-9), 20.2 (C-10), 49.8 (MeO-11), 97.4 (C-1′), 71.6 (C-2′), 75.6 (C-3′), 68.7 (C-4′), 77.2 (C-5′), 60.2 (C-6′), 125.2 (C-1″), 128.4 (C-2″, 6″), 113.0 (C-3″, 5″), 159.8 (C-4″), 142.0 (C-7″), 114.0 (C-8″), 164.6, 165.0, 169.2 (C-11, C-9″, C=O), 53.9 (MeO-4″), 19.8 (Ac). *Barleria lupulina* (Acanthaceae).[146]

257. 6-*O*-*p*-Methoxy-*trans*-cinnamoyl-8-*O*-acetylshanzhiside methyl ester



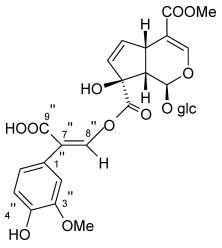
$C_{29}H_{36}O_{14}$: 608.2104; colorless powder; $[\alpha]_D^{25}$ −103.0° (c=0.26, MeOH); UV (?): 227 (4.36), 297 sh (4.35), 310 (4.38); IR (?): 3400 (br), 1715, 1645, 1602, 1260, 1190, 1030; ^{1}H-NMR (400 MHz, $CDCl_3$–DMSO-d_6): 6.03 (d, 1.5, H-1), 7.50 (s, H-3), 3.31 (d, 9.0, H-5), 5.46 (d, 4.5, H-6), 2.04 (dd, 15.0, 4.5, H_a-7), 2.41 (d, 15.0, H_b-7), 3.09 (dd, 9.0, 1.5, H-9), 1.53 (s, H_3-10), 3.71 (s, MeO-11), 1.96 (s, AcO-8), 4.69 (d, 7.5, H-1′), 7.49 (d, 9.0, H-2″, 6″), 6.97 (d, 9.0, H-3″, 5″), 7.61 (d, 15.0, H-7″), 6.29 (d, 15.0, H-8″), 3.86 (s, MeO-4″); ^{13}C-NMR (100 MHz, $CDCl_3$–DMSO-d_6): 93.4 (C-1), 152.5 (C-3), 106.1 (C-4), 37.8 (C-5), 76.3 (C-6), 43.5 (C-7), 87.2 (C-8), 48.1 (C-9), 21.4 (C-10), 98.5 (C-1′), 72.5 (C-2′), 76.1 (C-3′), 69.8 (C-4′), 76.3 (C-5′), 61.3 (C-6′), 126.5 (C-1″), 131.6 (C-2″, 6″), 113.8 (C-3″, 5″), 159.7 (C-4″), 142.6 (C-7″), 116.3 (C-8″), 164.8, 165.9, 170.2 (C-9″, C-11, C=O), 50.6, 54.7 (2×OMe), 20.8 (Ac). *Barleria lupulina* (Acanthaceae).[146]

258. Phlorigidoside B (8-*O*-Acetyl-6β-hydroxyipolamiide)



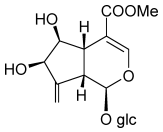
$C_{19}H_{28}O_{13}$: 464.1529; amorphous powder; $[\alpha]_D$ −88.0° (c=0.63, MeOH; UV (MeOH): 231 (3.86); IR (dry film): 3386, 1708, 1628, 1294, 1078; ^{1}H-NMR (400 MHz, CD_3OD): 6.15 (s, H-1), 7.58 (s, H-3), 4.34 (t, 4.9, H-6), 2.12 (d, 4.9, H_2-7), 2.90 (s, H-9), 1.40 (s, H_3-10), 3.72 (s, MeO-11), 2.02 (s, AcO-8), 4.59 (d, 8.0, H-1′), 3.19 (dd, 8.8, 7.8, H-2′), 3.69 (dd, 12.1, 5.9, H-6′), 3.90 (dd, 12.2, 2.0, H-6′); ^{13}C-NMR(100 MHz, CD_3OD): 95.3 (C-1), 155.5 (C-3), 112.3 (C-4), 72.7 (C-5), 74.9 (C-6), 45.8 (C-7), 86.0 (C-8), 57.6 (C-9), 22.0 (C-10), 167.8 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.3 (C-2′), 77.5 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Phlomis rigida* (Labiatae).[137]

259. Citrifolinin A



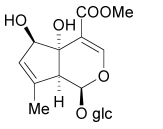
$C_{27}H_{30}O_{16}$: 610.1533; yellow powder; $[\alpha]_D^{20}$ −23.4° (c=0.26, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.51 (d, 4.5, H-1), 7.55 (s, H-3), 3.99 (dd, 9.0, 2.6, H-5), 6.78 (dd, 6.2, 2.6, H-6), 5.70 (dd, 6.2, 1.7, H-7), 3.10 (dd, 9.0, 4.5, H-9), 3.78 (s, MeO-11), 4.68 (d, 7.6, H-1′), 3.20 (m, H-2′), 3.38 (m, H-3′), 3.10 (m, H-4′), 3.40 (m, H-5′), 3.40 (m, H-6′), 3.82 (dd, H-6′), 7.55 (d, 1.3, H-2″), 6.96 (d, 8.0, H-5″), 7.52 (dd, 8.0, 1.3, H-6″), 7.89 (s, H-8″), 3.92 (s, MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 92.6 (C-1), 151.2 (C-3), 109.9 (C-4), 39.2 (C-5), 141.8 (C-6), 128.3 (C-7), 96.7 (C-8), 50.2 (C-9), 169.0 (C-10), 167.0 (C-11), 51.0 (MeO-11), 98.9 (C-1′), 73.8 (C-2′), 77.8 (C-3′), 70.7 (C-4′), 76.8 (C-5′), 61.9 (C-6′), 130.5 (C-1″), 111.6 (C-2″), 153.8 (C-3″), 146.1 (C-4″), 115.2 (C-5″), 125.9 (C-6″), 128.9 (C-7″), 158.1 (C-8″), 187.0 (C-9″), 55.4 (MeO-3″). *Morinda citrifolia* (Rubiaceae).[147]

260. Zaluzioside (6β-Hydroxygardoside methyl ester)



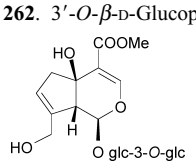
$C_{17}H_{24}O_{11}$: 404.1318; crystals; mp 200—201 °C; $[\alpha]_D^{20}$ −35.0° (c=0.5, MeOH); ^{1}H-NMR (500 MHz, D_2O): 5.75 (d, 2.4, H-1), 7.51 (br s, H-3), 3.07 (br d, 8.5, H-5), 4.21 (br d, 4.2, H-6), 4.46 (m, H-7), 3.42 (obscured by sugar H, H-9), 5.41, 5.45 (each t, 2.5, H_2-10); ^{13}C-NMR (125 MHz, D_2O): 97.5 (C-1), 154.2 (C-3), 109.4 (C-4), 36.5 (C-5), 75.6 (C-6)[a], 74.3 (C-7)[a], 148.8 (C-8), 42.5 (C-9), 113.1 (C-10), 169.8 (C-11), 52.7 (OMe), 99.2 (C-1′), 73.3 (C-2′), 76.3 (C-3′), 70.4 (C-4′), 77.1 (C-5′), 61.5 (C-6′). *Zaluzianskya capensis* (Scrophulariaceae).[148]

261. 5,9-*epi*-7,8-Didehydropenstemoside



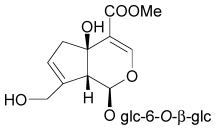
$C_{17}H_{24}O_{11}$: 404.1318; pale yellow amorphous solid; $[\alpha]_D^{20}$ −92.6° (c=0.00054, MeOH); UV (MeOH): 237 (4.10); IR (KBr): 3460, 3300, 1710, 1695, 1102, 988; ^{1}H-NMR (500 MHz, D_2O): 5.83 (d, 3.0, H-1), 7.51 (s, H-3), 4.51 (m, H-6), 5.53 (m, H-7), 3.11 (m, H-9), 1.81 (d, 1.0, H_3-10), 3.72 (s, MeO-11), 4.57 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.37 (t, 9.0, H-3′), 3.28 (t, 10.0, H-4′), 3.30 (overlapped with solvent peak, H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.5, H-6′); ^{13}C-NMR (125 MHz, D_2O): 95.1 (C-1), 155.3 (C-3), 112.9 (C-4), 73.8 (C-5), 79.0 (C-6), 129.1 (C-7), 143.6 (C-8), 57.0 (C-9), 15.9 (C-10), 168.4 (C-11), 51.8 (OMe), 100.1 (C-1′), 74.5 (C-2′), 77.6 (C-3′), 71.8 (C-4′), 78.7 (C-5′), 63.0 (C-6′). *Eremostachys glabra* (Lamiaceae).[135]

262. 3′-*O*-β-D-Glucopyranosyltheviridoside



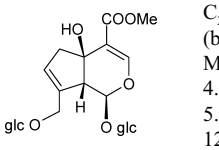
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{27}$ −19.1° (c=1.40, MeOH); ^{1}H-NMR (400 MHz, C_5D_5N): 5.79 (d, 7.0, H-1), 7.66 (s, H-3), 2.94 (br d, 17.0, H-6), 3.21 (br d, 17.0, H-6), 5.99 (br s, H-7), 3.47 (d, 7.0, H-9), 4.74 (br d, 14.0, H-10), 4.50 (br d, 14.0, H-10), 3.62 (s, MeO-11), 5.33 (d, 8.0, H-1′), 4.05 (t, 8.0, H-2′), 4.24 (t, 8.0, H-3′), 4.05 (t, 8.0, H-4′), 3.89 (m, H-5′), 4.19 (dd, 12.0, 5.0, H-6′), 4.38 (dd, 12.0, 2.0, H-6′), 5.30 (d, 8.0, H-1″), 4.05 (t, 8.0, H-2″), 4.22 (t, 8.0, H-3″), 4.17 (t, 8.0, H-4″), 3.99 (m, H- 5″), 4.29 (dd, 12.0, 5.0, H-6″), 4.51 (dd, 12.0, 2.0, H-6″); ^{13}C-NMR (100 MHz, C_5D_5N): 98.9 (C-1), 152.4 (C-3), 115.3 (C-4), 76.4 (C-5), 47.5 (C-6), 125.2 (C-7), 143.2 (C-8), 57.1 (C-9), 60.8 (C-10), 167.1 (C-11), 50.9 (OMe), 100.4 (C-1′), 73.5 (C-2′), 88.1 (C-3′), 69.6 (C-4′), 78.4 (C-5′), 62.1 (C-6′), 105.8 (C-1″), 75.6 (C-2″), 78.2 (C-3″), 71.6 (C-4″), 78.6 (C-5″), 62.5 (C-6″). *Thevetia peruviana* (Apocynaceae).[153]

263. 6′-*O*-*β*-D-Glucopyranosyltheviridoside



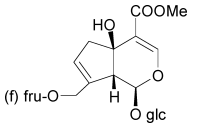
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{32}$ −28.3° (*c*=0.30, MeOH); ^{1}H-NMR (500 MHz, C_5D_5N): 5.90 (d, 7.0, H-1), 7.61 (s, H-3), 3.20, 3.22 (each br d, 17.0, H_2-6), 6.18 (br s, H-7), 3.46 (d, 7.0, H-9), 4.61, 4.87 (each d, 15.0, H_2-10), 3.58 (s, MeO-11), 5.27 (d, 8.0, H-1′), 3.92 (t, 9.0, H-4′), 4.21 (dd, 11.0, 4.0, H-6′), 4.77 (dd, 11.0, 1.0, H-6′), 5.09 (d, 7.0, H-1″), 4.34 (dd, 12.0, 5.0, H-6″), 4.49 (dd, 12.0, 2.0, H-6″); ^{13}C-NMR (125 MHz, C_5D_5N): 99.7 (C-1), 152.3 (C-3), 115.1 (C-4), 76.5 (C-5), 47.7 (C-6), 125.9 (C-7), 143.2 (C-8), 57.1 (C-9), 60.9 (C-10), 167.1 (C-11), 50.8 (OMe), 101.0 (C-1′), 74.5 (C-2′), 78.2 (C-3′, 3″, 5″), 71.6 (C-4′), 77.9 (C-5′), 69.8 (C-6′), 105.2 (C-1″), 75.3 (C-2″), 71.7 (C-4″), 62.7 (C-6″). *Thevetia peruviana* (Apocynaceae).[154]

264. 10-*O*-*β*-D-Glucopyranosyltheviridoside



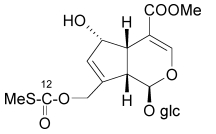
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{26}$ −8.2° (*c*=0.22, MeOH); ^{1}H-NMR (400 MHz, C_5D_5N): 5.84 (d, 7.0, H-1), 7.62 (s, H-3), 2.90 (br d, 17.0, H-6), 3.16 (br d, 17.0, H-6), 5.92 (br s, H-7), 3.55 (d, 7.0, H-9), 4.94 (br d, 13.0, H-10), 4.56 (br d, 13.0, H-10), 3.59 (s, MeO-11), 5.35 (d, 8.0, H-1′), 4.06 (t, 8.0, H-2′), 4.21 (t, 8.0, H-3′), 4.24 (t, 8.0, H-4′), 3.98 (m, H-5′), 4.30 (dd, 12.0, 5.0, H-6′), 4.49 (dd, 12.0, 1.0, H-6′), 4.88 (d, H-1″), 4.03 (t, 8.0, H-2″), 4.19 (t, 8.0, H-3″), 4.17 (t, 8.0, H-4″), 3.85 (m, H- 5″), 4.30 (dd, 12.0, 5.0, H-6″), 4.49 (dd, 12.0, 1.0, H-6″); ^{13}C-NMR (100 MHz, C_5D_5N): 98.4 (C-1), 152.5 (C-3), 115.0 (C-4), 76.0 (C-5), 47.3 (C-6), 127.3 (C-7), 139.0 (C-8), 56.8 (C-9), 68.2 (C-10), 167.0 (C-11), 50.8 (MeO-11), 100.7 (C-1′), 74.8 (C-2′), 78.3 (C-3′), 71.6 (C-4′)[a], 78.3 (C-5′), 62.7 (C-6′), 104.7 (C-1″), 75.2 (C-2″), 78.4 (C-3″), 71.5 (C-4″)[a], 78.8 (C-5″), 62.7 (C-6″). *Thevetia peruviana* (Apocynaceae).[153]

265. 10-*O*-*β*-D-Fructofuranosyltheviridoside



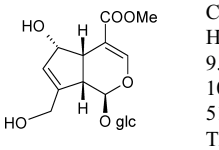
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{25}$ −17.1° (*c*=0.48, MeOH); ^{1}H-NMR (500 MHz, C_5D_5N): 6.12 (d, 6.0, H-1), 7.66 (s, H-3), 2.95, 3.10 (each br d, 17.0, H_2-6), 5.86 (br s, H-7), 3.50 (d, 6.0, H-9), 4.64, 5.02 (each br d, 12.0, H_2-10), 3.57 (s, MeO-11), 5.33 (d, 8.0, H-1′), 4.08 (t, 8.0, H-2′), 4.34 (dd, 12.0, 6.0, H-6′), 4.54 (dd, 12.0, 2.0, H-6′), 4.20 (br s, H-1″), 5.14 (d, 8.0, H-3″), 4.94 (t, 8.0, H-4″), 4.50 (m, H-5″), 4.26 (dd, 12.0, 6.0, H-6″), 4.33 (dd, 12.0, 3.0, H-6″); ^{13}C-NMR (125 MHz, C_5D_5N): 97.8 (C-1), 152.5 (C-3), 114.8 (C-4), 75.7 (C-5), 47.3 (C-6), 126.0 (C-7), 139.4 (C-8), 57.3 (C-9), 60.7 (C-10), 167.0 (C-11), 50.8 (OMe), 100.9 (C-1′), 74.6 (C-2′), 78.3 (C-3′), 71.3 (C-4′), 78.8 (C-5′), 62.5 (C-6′), 63.1 (C-1″), 105.5 (C-2″), 79.4 (C-3″), 77.1 (C-4″), 83.8 (C-5″), 64.0 (C-6″). *Thevetia peruviana* (Apocynaceae).[154]

266. Paederosidic acid methyl ester



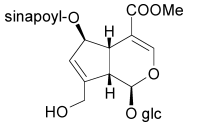
$C_{19}H_{26}O_{12}S$: 478.1144; white powder; $[\alpha]_D^{20}$ +12.4° (*c*=0.90, MeOH); UV (MeOH): 234 (4.16); IR (KBr): 3374, 2929, 1700, 1633, 1440, 1308, 1159, 1077, 898; ^{1}H-NMR (600 MHz, CD_3OD): 5.06 (d, 8.5, H-1), 7.65 (d, 1.1, H-3), 3.03 (ddd, 7.4, 6.0, 1.1, H-5), 4.80 (ddd, 6.0, 2.5, 0.8, H-6), 6.02 (d, 1.7, H-7), 2.62 (dd, 8.5, 7.4, H-9), 4.95 (br d, 14.6, H_a-10), 5.10 (dd, 14.6, 1.3, H_b-10), 3.74 (s, MeO-11), 2.34 (s, SMe-12), 4.72 (d, 8.0, H-1′), 3.24 (dd, 9.1, 8.0, H-2′), 3.38 (dd, 9.1, 8.8, H-3′), 3.26 (dd, 9.3, 8.8, H-4′), 3.27 (m, H-5′), 3.63 (dd, 11.8, 1.9, H-6′), 3.85 (dd, 11.8, 6.0, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 101.3 (C-1), 155.4 (C-3), 108.1 (C-4), 42.4 (C-5), 75.3 (C-6), 132.4 (C-7), 145.5 (C-8), 46.2 (C-9), 66.2 (C-10), 172.9 (C-11), 169.3 (C-12), 51.9 (OMe), 13.5 (SMe), 100.7 (C-1′), 74.9 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 63.0 (C-6′). *Paederia scandens* (Rubiaceae).[123]

267. 6*α*-Hydroxygeniposide



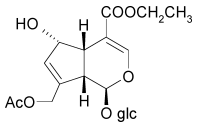
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; UV (H_2O): 238 (3.18); ^{1}H-NMR (500 MHz, CD_3OD): 5.08 (d, 9.0, H-1), 7.65 (d, 1.2, H-3), 3.30 (m, H-5), 3.66 (d, H-6), 6.05 (m, H-7), 2.60 (br t, 9.0, H-9), 4.22, 4.42 (each d, 15.0, H_2-10), 3.77 (s, MeO-11), 4.70 (d, 9.6, H-1′), 3.24—3.39 (H-2′, 3′, 4′, 5′), 3.61 (dd, 12.0, 5.6, H-6′), 3.90 (dd, 12.0, 1.9, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 101.6 (C-1), 155.4 (C-3), 108.3 (C-4), 42.7 (C-5), 75.4 (C-6), 129.8 (C-7), 151.5 (C-8), 45.9 (C-9), 61.7 (C-10), 169.5 (C-11), 51.6 (MeO), 100.5 (C-1′), 75.0 (C-2′), 77.9 (C-3′), 71.9 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Plantago lagopus* (Plantaginaceae).[149] This compound was reported earlier by acidic hydrolysis of gardenoside and asperuloside.[150,151]

268. 6-*O*-Sinapoyl scandoside methyl ester



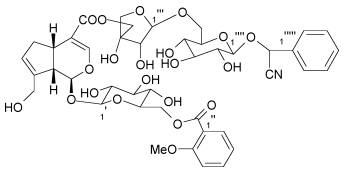
$C_{28}H_{34}O_{15}$: 610.1897; amorphous powder; $[\alpha]_D^{22}$ −71.2° (*c*=0.66, MeOH); UV (MeOH): 230 (4.22), 322 (3.88); ^{1}H-NMR (400 MHz, CD_3OD): 5.31 (d, 7.0, H-1), 7.51 (d, 1.0, H-3), 5.86 (t, 2.0, H-6), 5.68 (dt, 5.0, 2.0, H-7), 3.08 (t, 7.0, H-9), 4.22 and 4.39 (each d, 6.0, H_2-10), 3.66 (MeO-11), 4.70 (d, 8.0, H-1′), 6.92 (s, H-2″, 6″), 7.63 (d, 16.0, H-7″), 6.40 (d, 16.0, H-8″), 3.88 (s, MeO-3″, 5″), H-5 and other sugar protons were buried in envelopes of strong signals; ^{13}C-NMR (100 MHz, CD_3OD): 98.1 (C-1), 154.1 (C-3), 110.1 (C-4), 42.4 (C-5), 83.8 (C-6), 127.3 (C-7), 150.5 (C-8), 47.0 (C-9), 61.0 (C-10), 168.8 (C-11), 52.0 (MeO-11), 100.4 (C-1′), 74.9 (C-2′), 78.5 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 126.8 (C-1″), 107.1 (C-2″, 6″), 149.6 (C-3″, 5″), 138.2 (C-4″), 147.1 (C-7″), 116.3 (C-8″), 169.1 (C-9″), 57.0 (MeO-3″, 5″). *Paederia scandens* var. *maeirei* (Rubiaceae).[152]

269. Asperulosidic acid ethyl ester



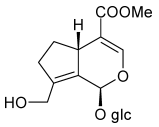
$C_{20}H_{28}O_{12}$: 460.1580; white powder; $[\alpha]_D^{25}$ −25.0° (*c*=0.06, MeOH); UV (MeOH): 234; IR (KBr): 3427, 1727, 1709, 1633, 1267, 1078; ^{1}H-NMR (500 MHz, D_2O): 5.03 (d, 9.0, H-1), 7.75 (d, 1.0, H-3), 3.18 (br t, 6.1, H-5), 4.88 (m, H-6), 6.13 (br, H-7), 2.78 (t, 8.2, H-9), 4.96 (d, 14.7, H-10), 4.90 (d, 14.7, H-10), 2.18 (s, AcO-10), 4.25 (q, 7.2, H_2C-11), 1.32 (t, 7.2, Me), 4.87 (d, 9.0, H-1′), 3.36—3.53 (m, H-2′, 3′, 4′, 5′), 3.71 (dd, 12.4, 6.0, H-6′), 3.90 (dd, 12.4, 1.7, H-6′); ^{13}C-NMR (125 MHz, D_2O): 103.9 (C-1), 157.8 (C-3), 110.0 (C-4), 43.2 (C-5), 76.7 (C-6), 134.2 (C-7), 146.9 (C-8), 47.6 (C-9), 66.0 (C-10), 172.4 (C-11), 177.0, 23.3 (AcO-10), 64.4 (H_2C-11), 16.4 (Me), 102.0 (C-1′), 75.9 (C-2′), 79.2 (C-3′), 72.6 (C-4′), 78.4 (C-5′), 63.9 (C-6′). *Hedyotis chrysotricha* (Rubiaceae).[122]

270. Cyanogenic glycoside of geniposidic acid



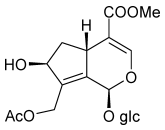
$C_{43}H_{51}NO_{21}$: 917.2953; amorphous pale yellow powder; $[\alpha]_D^{20}$ −39.2° (*c*=1.0, MeOH); UV (?): 238 (0.9), 298 (0.2); ^{1}H-NMR (600 MHz, CD_3OD): 4.95 (d, 8.4, H-1), 7.46 (s, H-3), 3.16 (ddd, 8.1, 8.1, 7.8, H-5), 2.76 (dd, 15.8, H-6), 1.79 (dd, H-6), 5.66 (dd, H-7), 2.69 (dd, 7.8, H-9), 4.20 (d's, 12.8, H_2-10), 4.78 (d, 7.8, H-1′), 3.31 (dd, 9.1, H-2′), 3.50 (dd, 9.1, H-3′), 3.45 (dd, 9.2, H-4′), 3.64 (ddd, 6.3, H-5′), 4.57 (dd, 2.9, H-6′), 4.54 (dd, 11.8, H-6′), 5.12 (d, 1.7, H-1‴), 4.07 (d, H-2‴), 4.11 (d, 9.9, H-4‴), 3.89 (d, H-4‴), 4.29 (d, 11.4, H-5‴), 4.24 (H-5‴), 7.15 (d, 8.4, H-3″), 7.58 (t, 7.4, H-4″), 7.02 (t, 7.4, H-5″), 7.79 (dd, 7.7, 1.8, H-6″), 3.91 (s, MeO-2″), 4.39 (d, 7.4, H-1⁗), 3.32—3.40 (m, H-2⁗, 3⁗, 4⁗, 5⁗), 4.11 (d, 10.9, H-6⁗), 3.70 (d, 10.9, H-6⁗), 7.63 (m, H-2⁗′, 6⁗′), 7.44—7.50 (m, H-3⁗′, 4⁗′, 5⁗′), 5.84 (s, H-7⁗′); ^{13}C-NMR (150 MHz, CD_3OD): 99.2 (C-1), 153.9 (C-3), 112.2 (C-4), 36.9 (C-5), 39.7 (C-6), 128.8 (C-7), 144.8 (C-8), 46.3 (C-9), 61.5 (C-10), 168.6 (C-11), 100.6 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.9 (C-4′), 75.7 (C-5′), 64.7 (C-6′), 110.6 (C-1‴), 78.5 (C-2‴), 78.9 (C-3‴), 75.0 (C-4‴), 66.6 (C-5‴), 120.7 (C-1″), 160.7 (C-2″, 113.6 (C-3″), 135.3 (C-4″), 121.3 (C-5″), 133.7 (C-6″), 167.7 (C-7″), 56.5 (MeO-2″), 102.6 (C-1⁗), 74.7 (C-2⁗), 77.8 (C-3⁗), 71.4 (C-4⁗), 77.0 (C-5⁗), 68.1 (C-6⁗), 134.9 (C-1⁗′), 128.9 (C-2⁗′, 6⁗′), 130.1 (C-3⁗′, 5⁗′), 130.9 (C-4⁗′), 68.9 (C-7⁗′), 119.3 (CN). *Canthium schimperianum* (Rubiaceae).[155]

271. Arborescoside



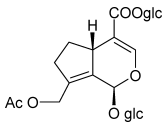
$C_{17}H_{24}O_{10}$: 388.1369; ^{1}H-NMR (500 MHz, D_2O): 6.37 (s, H-1), 7.47 (d, 1.5, H-3), 3.61 (m, H-5), 1.51 (m, H-6), 2.57 (H-6, H_2-7), 4.34 (dd, 13.5, 1.5, H-10), 4.28 (dd, 13.7, 2.0, H-10), 4.89 (d, 8.0, H-1′), 3.29 (dd, 9.5, 8.0, H-2′), 3.54 (t, 9.5, H-3′), 3.45 (t, 9.5, H-4′), 3.53 (m, H-5′), 3.97 (dd, 12.5, 2.0, H-6′), 3.77 (dd, 12.5, 5.5, H-6′), 3.78 (s, MeO-11); ^{13}C-NMR (125 MHz, D_2O): 92.3 (C-1), 151.9 (C-3), 114.1 (C-4), 38.0 (C-5), 31.5 (C-6), 34.4 (C-7), 143.8 (C-8), 129.9 (C-9), 58.2 (C-10), 170.6 (C-11), 52.6 (OMe), 99.2 (C-1′), 73.5 (C-2′), 76.5 (C-3′), 70.4 (C-4′), 77.1 (C-5′), 61.5 (C-6′). *Plantago arborescens*, *P. ovata*, *P. webbii* (Plantaginaceae).[39]

272. 10-Acetoxymajoroside



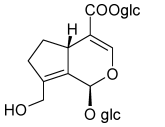
$C_{19}H_{26}O_{12}$: 446.1424; $[\alpha]_D$ −59.0° (c=0.3, MeOH); UV (MeOH): 238; ^{1}H-NMR (250 MHz, D_2O): 6.34 (s, H-1), 7.38 (d, 2.0, H-3), 2.91 (m, H-5), 2.45 (m, H-6), 1.90 (m, H-6), 3.55 (H-7), 4.80 (H_2-10), 2.12 (s, Ac); ^{13}C-NMR (62.9 MHz, D_2O): 93.7 (C-1), 153.9 (C-3), 115.2 (C-4), 38.2 (C-5), 41.9 (C-6), 78.4 (C-7), 140.1 (C-8), 139.3 (C-9), 61.3 (C-10), 172.2 (C-11), 54.7 (MeO-11), 101.2 (C-1′), 75.5 (C-2′), 79.1 (C-3′), 72.3 (C-4′), 79.2 (C-5′), 63.5 (C-6′), 23.1, 176.8 (Ac). *Plantago cornuti* and *P. major* (Plantaginaceae).[156]

273. Hookerioside



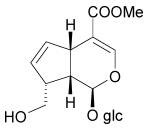
$C_{24}H_{34}O_{16}$: 578.1846; foam; $[\alpha]_D^{20}$ −35.0° (c=0.6, MeOH); ^{1}H-NMR (500 MHz, D_2O): 6.40 (s, H-1), 7.66 (d, 1.8, H-3), 2.53 (m, H-6), 1.56 (m, H-6), 2.61 (m, H_2-7), 4.77 and 4.87 (br ds, 13.0, H_2-10), 2.14 (AcO-10), 4.89 (d, 8.0, H-1′), 5.65 (d, 8.0, H-1″); ^{13}C-NMR (125 MHz, D_2O): 92.5 (C-1), 154.0 (C-3), 113.1 (C-4), 38.1 (C-5), 31.4 (C-6), 34.9 (C-7), 139.0 (C-8), 131.9 (C-9), 61.4 (C-10), 168.0 (C-11), 99.2 (C-1′), 73.6 (C-2′), 76.5 (C-3′), 70.4 (C-4′), 77.2 (C-5′), 61.5 (C-6′), 94.7 (C-1″), 72.9 (C-2″), 76.5 (C-3″), 70.1 (C-4″), 77.7 (C-5″), 61.6 (C-6″), 21.2, 175.0 (Ac). *Plantago hookeriana* (Plantaginaceae),[157] *P. altissima*.[115]

274. Desacetylhookerioside



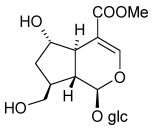
$C_{22}H_{32}O_{15}$: 536.1741; foam; $[\alpha]_D^{20}$ −38.0° (c=0.6, MeOH); ^{1}H-NMR (200 MHz, D_2O): 6.32 (s, H-1), 7.63 (d, 1.0, H-3), 1.50 (m, H-6), 2.50 (m, H-6, H_2-7), 4.19, 4.29 (each d, 12.0, H_2-10), 4.83 (d, 8.0, H-1′), 5.61 (d, 8.0, H-1″); ^{13}C-NMR (50 MHz, D_2O): 92.5 (C-1), 154.0 (C-3), 113.1 (C-4), 37.9 (C-5), 31.5 (C-6), 35.9 (C-7), 143.9 (C-8), 129.5 (C-9), 58.2 (C-10), 168.0 (C-11), 99.2 (C-1′), 73.5 (C-2′), 76.4 (C-3′), 70.3 (C-4′), 77.1 (C-5′), 61.5 (C-6′), 94.6, (C-1″), 72.8 (C-2″), 76.4 (C-3″), 70.0 (C-4″), 77.6 (C-5″), 61.6, (C-6″). *Plantago altissima* (Plantaginaceae).[115]

275. 8-*epi*-Apodantheroside



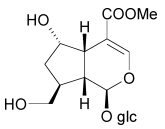
$C_{17}H_{24}O_{10}$: 388.1369; amorphous powder; $[\alpha]_D^{25}$ −128.6° (c=0.0715, MeOH); UV (MeOH): 235 (3.92); ^{1}H-NMR (400 MHz, CD_3OD): 5.66 (d, 4.1, H-1), 7.40 (d, 1.5, H-3), 3.53 (m, H-5, H_a-10), 6.01 (ddd, 5.8, 2.4, 2.2, H-6), 5.78 (dt, 5.8, 2.2, H-7), 3.07 (m, H-8), 2.72 (ddd, 8.3, 8.3, 4.1, H-9), 3.71 (m, H_b-10), 3.71 (s, MeO-11), 4.67 (d, 7.8, H-1′), 3.65 (dd, 12.2, 5.8, H-6′), 3.88 (dd, 12.2, 2.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 95.4 (C-1), 152.5 (C-3), 112.2 (C-4), 40.2 (C-5), 132.9 (C-6), 135.1 (C-7), 51.0 (C-8), 43.3 (C-9), 63.8 (C-10), 169.1 (C-11), 51.7 (OMe), 99.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.8 (C-6′). *Gardenia jasminoides* (Rubiaceae).[160]

276. 10-Hydroxy-(5α-H)-6-*epi*-dihydrocornin



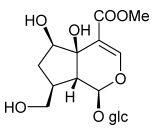
$C_{17}H_{26}O_{11}$: 406.1475; $[\alpha]_D^{22}$ −56.0° (c=1.9, MeOH); ^{1}H-NMR (D_2O): 5.70 (d, 9.2, H-1), 7.53 (d, 2.2, H-3), 2.53 (ddd, 12.5, 9.2, 2.1, H-5), 4.10 (ddd, 9.1, 9.0, 6.8, H-6), 1.86 (ddd, 13.9, 10.4, 6.7, H_a-7), 2.07 (ddd, 13.8, 9.0, 6.9, H_b-7), 2.28 (m, H-8), 1.73 (m, H-9), 3.77 (dd, 11.3, 3.8, H_a-10), 3.51 (m, H_b-10), 3.70 (s, MeO-11), 4.81 (d, 8.1, H-1′), 3.31 (dd, 9.2, 8.0, H-2′), 3.44 (dd, 9.2, 8.7, H-3′), 3.38 (dd, 9.8, 8.7, H-4′), 3.43 (m, H-5′), 3.87 (dd, 12.3, 1.7, H-6′), 3.69 (dd, 12.3, 5.5, H-6′); ^{13}C-NMR (D_2O): 103.4 (C-1), 157.2 (C-3), 108.8 (C-4), 45.5 (C-5), 73.6 (C-6), 36.1 (C-7), 40.1 (C-8), 44.0 (C-9), 64.6 (C-10), 171.1 (C-11), 52.8 (MeO-11), 99.9 (C-1′), 73.5 (C-2′), 76.6 (C-3′), 70.3 (C-4′), 77.2 (C-5′), 61.5 (C-6′). *Penstemon secundiflorus* (Scrophulariaceae).[158]

277. 6α-Hydroxyadoxoside



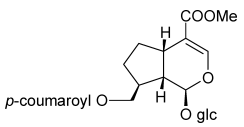
$C_{17}H_{26}O_{11}$: 406.1475; colorless gum; $[\alpha]_D^{23}$ −50.7° (c=0.28, MeOH); UV (MeOH): 231 (3.55); IR (dry film): 3355, 1692, 1635, 1294, 1077, 807; ^{1}H-NMR (360 MHz, CD_3OD): 5.15 (d, 6.0, H-1), 7.46 (d, 1.2, H-3), 2.04—2.09 (m, H-5, 9), 4.29 (br s, H-6), 1.54 (m, H-7), 2.26 (m, H-7), 2.13 (m, H-8), 3.79 (br d, 5.4, H_2-10), 3.69 (s, MeO-11), 4.65 (d, 7.9, H-1′), 3.19 (dd, 9.0, 7.9, H-2′), 3.27—3.31 (overlapped with solvent signal, H-3′, 4′), 3.35 (m, H-5′), 3.66 (dd, 12.2, 5.6, H-6′), 3.87 (dd, 12.2, 1.5, H-6′); ^{13}C-NMR (90 MHz, CD_3OD): 99.1 (C-1), 153.1 (C-3), 113.0 (C-4), 35.5 (C-5), 73.2 (C-6), 43.1 (C-7), 42.4 (C-8), 49.9 (C-9), 62.3 (C-10), 169.5 (C-11), 51.7 (OMe), 100.6 (C-1′), 74.7 (C-2′), 78.3 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.7 (C-6′). *Morinda citrifolia* (Rubiaceae).[161]

278. 5,6β-Dihydroxyadoxoside



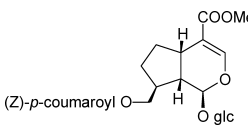
$C_{17}H_{26}O_{12}$: 422.1424; crystals; mp 137—138 °C (EtOH); $[\alpha]_D^{21}$ −110.0° (c=0.4, MeOH); ^{1}H-NMR (500 MHz, D_2O): 5.77 (d, 2.0, H-1), 7.66 (s, H-3), 4.32 (dd, 5.1, 3.1, H-6), 2.00 (m, H_a-7), 1.40 (br ddd, 14.2, 4.5, 3.1, H_b-7), 1.93 (m, H-8), 2.37 (dd, 8.7, 2.0, H-9), 3.61—3.68 (m, H_2-10), 3.74 (s, MeO-11), 4.75 (obsc by HOD signal, H-1′), 3.29 (dd, 9.0, 8.1, H-2′), 3.49 (t, 9.1, H-3′), 3.40 (br t, 9.5, H-4′), 3.49 (m, H-5′), 3.91 (dd, 12.3, 2.0, H-6′), 3.72 (dd, 12.3, 5.6, H-6′); ^{13}C-NMR (125 MHz, D_2O): 97.0 (C-1), 156.1 (C-3), 110.6 (C-4), 74.4 (C-5), 76.2 (C-6), 33.4 (C-7), 39.0 (C-8), 49.4 (C-9), 65.9 (C-10), 169.2 (C-11), 52.7 (MeO-11), 99.9 (C-1′), 73.3 (C-2′), 76.3 (C-3′), 70.4 (C-4′), 77.2 (C-5′), 61.5 (C-6′). *Penstemon secundiflorus* ssp. *Lavendulus*, *P. grandiflorus* (Scrophulariaceae).[159]

279. Luzonoside C



$C_{26}H_{32}O_{12}$: 536.1852; yellow paste; $[\alpha]_D^{21}$ −9.6° (c=0.31, MeOH); UV (EtOH): 204 (4.35), 313 (4.36); IR (film): 3392, 1684, 1604, 1512; ^{1}H-NMR (600 MHz, CD_3OD): 5.20 (d, 4.9, H-1), 7.47 (s, H-3), 2.89 (ddd, 8.2, 8.2, 13.0, H-5), 2.20 (m, H-6), 1.45 (m, H-6), 1.45 (m, H-7), 1.90 (m, H-7), 2.41 (m, H-8), 2.03 (ddd, 6.9, 6.9, 13.0, H-9), 4.15 (dd, 6.5, 11.0, H-10), 4.21 (dd, 6.5, 11.0, H-10), 3.70 (s, MeO-11), 4.66 (d, 8.0, H-1′), 3.20 (dd, 8.0, 9.3, H-2′), 3.35 (t, 9.3, H-3′), 3.30 (m, H-4′), 3.28 (m, H-5′), 3.65 (dd, 1.8, 11.0, H-6′), 3.85 (dd, 1.8, 11.0, H-6′), 6.34 (d, 15.9, H-8″), 7.61 (d, 15.9, H-7″), 7.48 (d, 8.5, H-2″, H-6″), 6.80 (d, 8.5, H-3″, H-5″); ^{13}C-NMR (150 MHz, CD_3OD): 98.5 (C-1), 153.5 (C-3), 111.9 (C-4), 36.6 (C-5), 33.5 (C-6), 28.8 (C-7), 41.2 (C-8), 44.4 (C-9), 68.4 (C-10), 169.5 (C-11), 51.7 (OMe), 100.7 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.7 (C-6′), 169.5 (C-9″), 115.1 (C-8″), 146.7 (C-7″), 127.1 (C-1″), 131.3 (C-2″, C-6″), 116.9 (C-3″, C-5″), 161.4 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

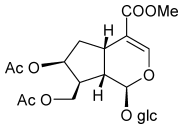
280. Luzonoside D



$C_{26}H_{32}O_{12}$: 536.1852; yellow paste; $[\alpha]_D^{21}$ +32.6° (c=0.27, MeOH); UV (EtOH): 203 (4.45), 312 (8.88); IR (film): 3395, 1692, 1624, 1512; ^{1}H-NMR (600 MHz, CD_3OD): 5.13 (d, 4.7, H-1), 7.46 (s, H-3), 2.73 (ddd, 7.4, 7.4, 12.8, H-5), 2.17 (m, H-6), 1.37 (m, H-6), 1.13 (m, H-7), 1.80 (m, H-7), 2.32 (m, H-8), 1.92 (ddd, 6.9, 6.9, 12.8, H-9), 4.10 (dd, 5.8, 11.0, H-10), 4.14 (dd, 6.0, 11.0, H-10), 3.70 (s, MeO-11), 4.65 (d, 8.0, H-1′), 3.22 (dd, 8.0, 9.3, H-2′), 3.35 (t, 9.3, H-3′), 3.30 (m, H-4′), 3.27 (m, H-5′), 3.88 (dd, 1.8, 11.8, H-6′), 3.86 (dd, 1.8, 11.8, H-6′), 5.80 (d, 12.6, H-8″), 6.89 (d, 12.6, H-7″), 7.55 (d, 8.5, H-2″, H-6″), 6.80 (d, 8.5, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 98.4 (C-1),

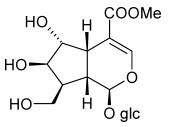
153.5 (C-3), 111.8 (C-4), 36.8 (C-5), 33.5 (C-6), 28.6 (C-7), 41.0 (C-8), 44.3 (C-9), 68.3 (C-10), 169.6 (C-11), 51.7 (OMe), 100.5 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′), 169.6 (C-9″), 117.0 (C-8″), 144.9 (C-7″), 127.8 (C-1″), 133.3 (C-2″, C-6″), 115.9 (C-3″, C-5″), 161.4 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

281. 7-*O*-Acetyl-10-*O*-acetoxyloganin



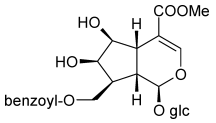
$C_{21}H_{30}O_{13}$: 490.1686; $[\alpha]_D^{20}$ −29.1° ($CHCl_3$); UV (?): 230; ^{1}H-NMR (250 MHz, CD_3OD): 5.19 (d, 6.7, H-1), 7.50 (d, 2.7, H-3), 3.11 (m, H-5), 2.32 (ddd, 13.9, 7.0, 1.7, H-6), 1.72 (m, H-6), 5.31 (dd, 3.8, 1.7, H-7), — (H-8), 2.13 (m, H-9), 4.16 (dd, 10.0, 5.9, H-10), 4.26 (dd, 10.0, 8.9, H-10), 3.70 (s, MeO-11), 4.67 (d, 7.8, H-1′), 3.65 (dd, 11.9, 5.8, H-6′), 3.90 (dd, 11.9, 1.9, H-6′), 2.01, 2.03 (each s, 2×OAc); ^{13}C-NMR (62.9 MHz, D_2O): 97.8 (C-1), 152.9 (C-3), 112.0 (C-4), 32.2 (C-5), 39.1 (C-6), 76.1 (C-7), 42.0 (C-8), 44.0 (C-9), 63.8 (C-10), 170.4 (C-11), 99.7 (C-1′), 73.5 (C-2′), 76.5 (C-3′), 70.3 (C-4′), 77.0 (C-5′), 61.5 (C-6′), 21.1, 21.3, 174.5, 174.8 (2×Ac), 52.6 (MeO-11). *Galium lovcense* (Rubiaceae).[162]

282. Yopaaoside C



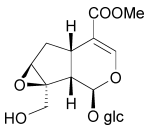
$C_{17}H_{26}O_{12}$: 422.1424; amorphous powder; $[\alpha]_D^{19}$ −128.5° (c=0.6, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.03 (d, 8.8, H-1), 7.58 (d, 1.7, H-3), 3.08 (ddd, 9.3, 3.4, 1.7, H-5), 4.22 (br d, 3.4, H-6), 4.05 (br d, 4.9, H-7), 2.32 (m, H-8), 1.80 (m, H-9), 3.79 and 3.75 (H_2-10), 3.67 (s, MeO-11), 4.63 (d, 7.8, H-1′), 3.18 (dd, 8.6, 7.8, H-2′), 3.34 (dd, 9.0, 8.6, H-3′), 3.23 (m, H-4′, 5′), 3.80 (dd, 12.2, 2.2, H-6′), 3.64 (dd, 12.2, 5.1, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 102.4 (C-1), 155.7 (C-3), 107.4 (C-4), 40.6 (C-5), 79.3 (C-6), 77.5 (C-7), 48.0 (C-8), 40.5 (C-9), 62.0 (C-10), 169.4 (C-11), 51.7 (MeO-11), 101.1 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.3 (C-4′), 78.2 (C-5′), 62.5 (C-6′). *Morinda coreia* (Rubiaceae).[113]

283. Arborside D



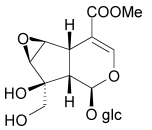
$C_{24}H_{30}O_{13}$: 526.1686; characterized as hexaacetate, $C_{36}H_{42}O_{19}$; mp 144 °C; $[\alpha]_D^{28}$ −53.6° (c=1.0, MeOH); UV (MeOH): 228 (4.39), 272 (3.37); IR (KBr): 2960, 1740, 1630, 1360, 1330, 1210, 1030; ^{1}H-NMR (400 MHz, ?): 5.36 (br s, H-1), 7.23 (s, H-3), 2.97 (dd, 13.0, 3.0, H-5), 5.38 (br s, H-6), 5.32 (m, H-7), 2.53 (t, 8.0, H-8), 2.71 (t, 2.8, H-9), 4.32 (d, 9.0, H_2-10), 3.62 (s, MeO-11), 4.74 (d, 8.0, H-1′), 4.87 (t, 9.0, H-2′), 5.12 (t, 12.0, H-3′), 4.99 (t, 12.0, H-4′), 3.60 (m, H-5′), 4.18 (dd, 13.0, 4.2, H_2-6′), 7.96 (d, 8.0, H-2″, 6″), 7.38—7.43 (m, H-3″, 5″), 7.56 (s, H-4″); ^{13}C-NMR (100 MHz, ?): 94.5 (C-1), 151.6 (C-3), 108.7 (C-4), 39.4 (C-5), 76.4 (C-6), 76.6 (C-7), 35.3 (C-8), 41.9 (C-9), 63.9 (C-10), 166.4 (C-11), 51.0 (OMe), 96.0 (C-1′), 70.6 (C-2′), 72.1 (C-3′), 68.1 (C-4′), 72.4 (C-5′), 61.6 (C-6′), 166.0 (C-7″), 133.3 (C-1″), 129.5 (C-2″, 6″), 128.4 (C-3″, 5″), 130.0 (C-4″), 20.0—21.0, 169.0—171.0 (6×Ac). *Nyetanthes arbor-tristis* (Nyctanthaceae).[163]

284. 7β,8β-Epoxy-8α-dihydrogeniposide



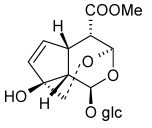
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{25}$ −43.4° (c=0.554, MeOH); UV (MeOH): 235 (4.02); ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 9.5, H-1), 7.48 (d, 0.7, H-3), 2.74 (ddd, 10.2, 7.8, 7.3, H-5), 2.55 (dd, 13.9, 7.8, H_β-6), 1.46 (ddd, 13.9, 10.2, 1.0, H_α-6), 3.48 (br s, H-7), 2.43 (dd, 9.5, 7.3, H-9), 4.22 and 3.79 (each d, 12.9, H_2-10), 3.70 (s, MeO-11), 4.80 (d, 7.8, H-1′), 3.63 (dd, 12.0, 6.3, H-6′), 3.91 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 95.9 (C-1), 153.1 (C-3), 110.5 (C-4), 31.7 (C-5), 35.1 (C-6), 60.7 (C-7), 68.5 (C-8), 42.3 (C-9), 61.7 (C-10), 169.0 (C-11), 51.9 (OMe), 100.1 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.8 (C-4′), 78.8 (C-5′), 63.0 (C-6′). *Gardenia jasminoides* (Rubiaceae).[160]

285. 6β,7β-Epoxy-8-*epi*-splendoside



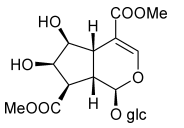
$C_{17}H_{24}O_{12}$: 420.1267; colorless gum; $[\alpha]_D^{23}$ −108.4° (c=0.17, MeOH); UV (MeOH): 232 (4.00), 280 (3.05); IR (dry film): 3397, 1700, 1639, 1440, 1293, 1178; ^{1}H-NMR (400 MHz, CD_3OD): 5.76 (s, H-1), 7.48 (d, 1.5, H-3), 3.23—3.33 (overlapped with solvent signal, H-5, 3′, 4′, 5′), 3.80 (d, 2.5, H-6), 3.50 (d, 2.6, H-7), 2.32 (d, 8.8, H-9), 3.68 and 3.47 (each d, 11.7, H_2-10), 3.73 (s, MeO-11), 4.56 (d, 8.0, H-1′), 3.13 (dd, 8.9, 8.1, H-2′), 3.65 (dd, 11.9, 5.8, H-6′), 3.87 (dd, 11.9, 1.8, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 93.8 (C-1), 154.2 (C-3), 107.7 (C-4), 33.3 (C-5), 57.9 (C-6), 60.8 (C-7), 80.7 (C-8), 46.4 (C-9), 65.2 (C-10), 168.5 (C-11), 51.9 (OMe), 99.9 (C-1′), 74.6 (C-2′), 78.4 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′). *Morinda citrifolia* (Rubiaceae).[161]

286. Macrophylloside



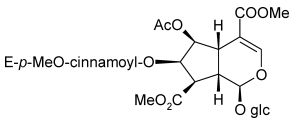
$C_{17}H_{24}O_{11}$: 404.1318; colourless crystals; mp (?); $[\alpha]_D^{22}$ +10.5° (c=0.5, MeOH); UV (MeOH): 221.0, 263.0, 292.5; IR (dry film): 3424, 1730, 1649; ^{1}H-NMR (500 MHz, CD_3OD): 5.69 (d, 2.0, H-1), 5.54 (d, 1.0, H-3), 3.59 (dd, 8.0, 1.0, H-4), 3.35 (ddd, 8.0, 8.0, 3.0, H-5), 6.10 (dd, 5.5, 3.0, H-6), 5.63 (d, 5.5, H-7), 2.52 (dd, 8.0, 2.0, H-9), 3.75 (d, 11.5, H-10), 3.78 (d, 11.5, H-10), 3.70 (s, MeO-11), 4.72 (d, 8.0, H-1′), 3.18 (dd, 9.0, 8.0, H-2′), 3.28—3.40 (m, H-3′, 4′, 5′), 3.67 (dd, 12.0, 5.5, H-6′), 3.88 (dd, 12.0, 1.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 94.0 (C-1), 95.7 (C-3), 49.6 (C-4), 38.0 (C-5), 135.2 (C-6), 137.4 (C-7), 84.5 (C-8), 53.2 (C-9), 67.1 (C-10), 172.4 (C-11), 52.0 (OMe), 99.1 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.2 (C-5′), 62.7 (C-6′). *Rothmania macrophylla* (Rubiaceae).[165]

287. Myxopyroside



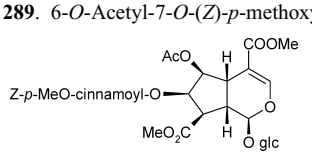
$C_{18}H_{26}O_{13}$: 450.1373. colorless syrup; $[\alpha]_D^{21}$ −50.0° (c=0.4, MeOH); ^{1}H-NMR (500 MHz, D_2O): 5.37 (d, 5.2, H-1), 7.58 (br d, 1.0, H-3), 3.09 (br dd, 8.5, 6.5, H-5), 3.98 (dd, 6.5, 4.0, H-6), 4.41 (dd, 6.5, 4.0, H-7), 3.14 (dd, 8.5, 5.5, H-8), 3.02 (dd, 8.5, 5.2, H-9), 3.81 (s, 2×OMe), 4.80 (d, 8.0, H-1′), 3.32 (dd, 9.5, 8.2, H-2′), 3.54 (t, 9.5, H-3′), 3.42 (t, 9.5, H-4′), 3.51 (m, H-5′), 3.77 (dd, 12.5, 2.0, H-6′), 3.95 (dd, 12.5, 6.0, H-6′); ^{13}C-NMR (125 MHz, D_2O): 97.5 (C-1), 123.6 (C-3), 110.1 (C-4), 38.0 (C-5), 78.9 (C-6), 73.3 (C-7), 49.4 (C-8), 38.9 (C-9), 174.3 (C-10), 170.7 (C-11), 52.8 (MeO-11), 53.4 (MeO-10), 99.6 (C-1′), 73.2 (C-2′), 76.4 (C-3′), 70.4 (C-4′), 77.1 (C-5′), 61.5 (C-6′). *Myxopyrun smilacifolium* (Oleaceae).[166]

288. 6-*O*-Acetyl-7-*O*-(*E*)-*p*-methoxycinnamoyl-myxopyroside



$C_{30}H_{36}O_{16}$: 652.2003; colorless syrup (isolated as a mixture with *Z*-isomer in ratio 3 : 2); ^{1}H-NMR (500 MHz, CD_3OD): 5.39 (d, 6.0, H-1), 7.53 (d, 1.0, H-3), 3.30 (obsc, H-5), 5.23 (dd, 7.0, 4.5, H-6), 5.70 (dd, 7.0, 4.5, H-7), 3.30 (obsc, H-8), 3.09 (ddd, 9.0, 8.0, 6.0, H-9), 3.66 (MeO-10), 3.70 (MeO-11), 4.64 (d, 8.0, H-1′), 3.20—3.40 (obsc, H-2′—5′), 3.67 (obsc, H-6′), 3.92 (dd, 12.0, 2.5, H-6′), 6.35 (d, 16.0, H-8″), 7.63 (d, 16.0, H-7″), 7.58 (d-like, 9.0, H-2″, 6″), 6.97 (d-like, 9.0, H-3″, 5″), 3.84 (s, MeO-4″), 1.98 (AcO-); ^{13}C-NMR (125 MHz, CD_3OD): 97.2 (C-1), 154.1 (C-3), 109.5 (C-4), 37.4 (C-5), 78.7 (C-6), 73.7 (C-7), 48.1 (C-8), 39.8 (C-9), 171.8 (C-10)[a], 168.7 (C-11), 51.9 (MeO-11), 52.8 (MeO-10), 171.7, 20.7 (AcO-6)[a], 100.5 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 168.7 (C-9″), 115.2 (C-8″), 147.1 (C-7″), 128.1 (C-1″), 131.2 (C-2″, 6″), 115.5 (C-3″, 5″), 163.4 (C-4″), 55.9 (MeO-4″). *Myxopyrum smilacifolium* (Oleaceae).[166]

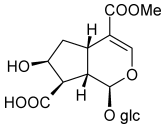
289. 6-*O*-Acetyl-7-*O*-(*Z*)-*p*-methoxycinnamoyl-myxopyroside



$C_{30}H_{36}O_{16}$: 652.2003; colorless syrup (isolated as a mixture with *E* isomer in ratio 2 : 3); ^{1}H-NMR (500 MHz, CD_3OD): 5.35 (d, 6.0, H-1), 7.51 (d, 1.0, H-3), 3.20 (obsc, H-5), 5.19 (dd, 7.0, 4.5, H-6), 5.66 (dd, 7.0, 4.5, H-7), 3.30 (obsc, H-8), 2.95 (ddd, 9.0, 8.0, 6.0, H-9), 3.64 (s, MeO-10), 3.70 (s, MeO-11), 1.95 (s, AcO-6), 4.62 (d, 8.0, H-1′), 3.20—3.40 (obsc, H-2′—5′), 3.67 (obsc, H-6′), 3.91 (dd, 12.0, 2.5, H-6′), 5.78 (d, 13.0, H-8″), 6.99 (d, 13.0, H-7″), 7.72 (d-like, 9.0, H-2″, 6″), 6.92 (d-like, 9.0, H-3″, 5″), 3.82 (s, MeO-4″); ^{13}C-NMR (125 MHz, CD_3OD): 97.1 (C-1), 154.0 (C-3), 109.6 (C-4), 37.4 (C-5), 78.6 (C-6), 73.5

(C-7), 48.1 (C-8), 39.8 (C-9), 171.8 (C-10)[a], 168.7 (C-11), 20.8, 171.8 (Ac)[a], 100.5 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 167.5 (C-9″), 116.5 (C-8″), 146.2 (C-7″), 128.6 (C-1″), 133.5 (C-2″, 6″), 114.5 (C-3″, 5″), 162.3 (C-4″), 55.8 (MeO-4″). *Myxopyrum smilacifolium* (Oleaceae).[166]

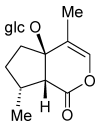
290. 7β-Hydroxy-11-methylforsythide



$C_{17}H_{24}O_{12}$: 420.1267; $[\alpha]_D^{20}$ −45.6° (MeOH); ^{1}H-NMR (250 MHz, D_2O): 5.31 (d, 3.7, H-1), 7.47 (br s, H-3), 3.09 (q, 7.5, H-5), 1.64, (m, H_α-6), 2.18 (dd, 14.5, 7.8, H_β-6), 4.36, (dt, 4.5, 1.7, H-7), 2.62 (dd, 10.0, 4.6, H-8), 2.68 (dd, 10.0, 3.7, H-9), 3.67 (s, MeO-11), 4.70 (d, 7.8, H-1′), 3.61 (dd, 12.4, 5.5, H-6′), 3.84 (dd, 12.4, 1.7, H-6′); ^{13}C-NMR (62.9 MHz, D_2O): 97.8 (C-1), 152.1 (C-3), 113.4 (C-4), 30.8 (C-5), 41.4 (C-6), 73.6 (C-7), 55.0 (C-8), 42.2 (C-9), 180.0 (C-10), 170.9 (C-11), 99.6 (C-1′), 73.5 (C-2′), 76.4 (C-3′), 70.4 (C-4′), 77.1 (C-5′), 61.5 (C-6′), 52.7 (MeO). *Galium lovcense* (Rubiaceae).[162]

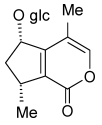
Group 3b (10-Carbon skeleton, sugar unit at other carbon instead of C-1)

291. Nepetaracemoside A



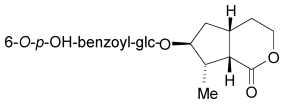
$C_{16}H_{24}O_8$: 344. 1471; amorphous powder; $[\alpha]_D^{23}$ +27.8° (c=0.81, MeOH); IR (dry film): 3392, 1739, 1673, 1110, 1077; ^{1}H-NMR (400 MHz, CD_3OD): 6.66 (q, 1.5, H-3), 1.99 (m, H-6, 7), 2.24 (m, H-6), 1.15 (m, H-7), 2.76 (m, H-8), 3.39 (d, 11.4, H-9), 0.91 (d, 7.3, H_3-10), 1.67 (d, 1.5, H_3-11), 4.19 (d, 7.7, H-1′), 3.65 (dd, 12.1, 3.7, H-6′), 3.77 (dd, 12.1, 2.6, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 172.6 (C-1), 141.5 (C-3), 113.5 (C-4), 85.2 (C-5), 37.9 (C-6), 31.6 (C-7), 38.5 (C-8), 55.2 (C-9), 17.9 (C-10), 11.4 (C-11), 99.9 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 70.8 (C-4′), 77.9 (C-5′), 61.9 (C-6′). *Nepeta racemosa* (Labiatae).[167]

292. Nepetaracemoside B



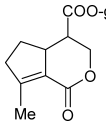
$C_{16}H_{22}O_8$: 342.1314; amorphous powder; $[\alpha]_D^{23}$ −43.6° (c=0.59, MeOH); UV (MeOH): 299 (3.75); IR (film): 3386, 1703, 1638, 1075; ^{1}H-NMR (400 MHz, CD_3OD): 7.38 (br s, H-3), 5.05 (dd, 7.8, 3.6, H-6), 1.95 (ddd, 14.4, 3.6, 3.6, H-7α), 2.65 (ddd, 14.4, 7.8, 7.8, H-7β), 3.02 (m, H-8), 1.29 (d, 6.8, H_3-10), 2.12 (br s, H_3-11), 4.49 (d, 7.8, H-1′), 3.70 (dd, 11.7, 4.4, H-6′), 3.88 (br d, 11.7, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 163.9 (C-1), 148.9 (C-3), 158.0 (C-4), 116.9 (C-5), 84.9 (C-6), 41.5 (C-7), 37.9 (C-8), 133.1 (C-9), 20.4 (C-10), 12.8 (C-11), 106.0 (C-1′), 75.3 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.2 (C-5′), 62.8 (C-6′). *Nepeta racemosa* (Labiatae).[167]

293. Ovatolactone-7-*O*-(6′-*O*-*p*-hydroxybenzoyl)-β-D-glucopyranoside



$C_{22}H_{28}O_{10}$: 452.1682; amorphous powder; $[\alpha]_D^{25}$ −17.9° (c=0.6, MeOH); UV (MeOH): 206 (4.02), 256 (4.13); ^{1}H-NMR (400 MHz, CD_3OD): 4.18 (ddd, 11.2, 10.0, 2.4, H_β-3), 4.29 (ddd, 11.2, 4.9, 3.4, H_α-3), 1.36 (dddd, 13.4, 10.0, 10.0, 3.4, H_α-4), 1.87 (dddd, 13.4, 5.8, 4.9, 2.4, H_β-4), 2.56 (m, H-5), 1.69 (ddd, 14.1, 8.3, 4.4, H_α-6), 2.21 (ddd, 14.1, 8.5, 1.5, H_β-6), 3.92 (br dd, 4.4, 2.2, H-7), 2.63 (m, H-8), 3.32 (m, H-9), 0.88 (d, 7.3, H_3-10), 4.35 (d, 7.8, H-1′), 3.16 (dd, 8.7, 7.8, H-2′), 3.36 (m, H-3′, 4′), 3.60 (m, H-5′), 4.45 (dd, 11.7, 6.8, H-6′), 4.56 (dd, 11.7, 2.3, H-6′), 7.90 (d, 8.8, H-2″, 6″), 6.83 (d, 8.8, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 176.6 (C-1), 69.8 (C-3), 31.0 (C-4), 34.3 (C-5), 38.1 (C-6), 87.0 (C-7), 43.9 (C-8), 46.5 (C-9), 15.7 (C-10), 103.3 (C-1′), 75.5 (C-2′), 78.0 (C-3′), 72.1 (C-4′), 75.1 (C-5′), 65.0 (C-6′), 122.3 (C-1″), 132.9 (C-2″, 6″), 116.2 (C-3″, 5″), 163.7 (C-4″), 168.0 (C-7″). *Catalpa ovata* (Bignoniaceae).[62]

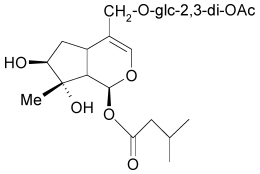
294. Iridolinaroside A



$C_{16}H_{22}O_9$: 358.1263; amorphous powder; $[\alpha]_D^{15}$ −65.3° (c=1.13, MeOH); UV (MeOH): 240 (3.90); IR (KBr): 3350, 2900, 1740, 1695, 1635, 1400, 1255, 1155, 1070; ^{1}H-NMR (400 MHz, CD_3OD): 4.45 (dd, 11.8, 3.5, H_a-3), 4.53 (dd, 11.8, 2.8, H_b-3), 3.13 (m, H-4), 2.41 (m, H-5), 2.42 (br dd, 18.0, 9.9, H_a-6), 2.55 (m, H_b-6), 1.87 (ddd, 19.8, 12.6, 9.9, H_a-7), 2.18 (m, H_b-7), 2.15 (t, 0.9, H_3-10), 5.47 (d, 8.1, H-1′), 3.66 (dd, 12.0, 5.1, H_a-6′), 3.83 (dd, 12.0, 1.8, H_b-6′); ^{13}C-NMR (100 MHz, CD_3OD): 166.3 (C-1), 70.5 (C-3), 43.6 (C-4), 46.0 (C-5), 28.0 (C-6), 39.3 (C-7), 162.3 (C-8), 123.9 (C-9), 16.6 (C-10), 171.4 (C-11), 95.7 (C-1′), 73.9 (C-2′), 78.9 (C-3′), 71.1 (C-4′), 78.2 (C-5′), 62.4 (C-6′). *Linaria japonica* (Scrophulariaceae).[189]

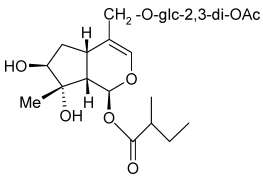
Group-3c (10-Carbon skeleton, valeriana type)

295. 2″,3″-Diacetylvalerosidate



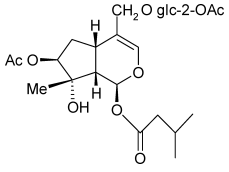
$C_{25}H_{38}O_{13}$: 546.2312; amorphous powder; $[\alpha]_D^{20}$ −24.9° (c=1.0, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.17 (d, 5.2, H-1), 6.39 (br s, H-3), 2.88 (q-shaped m, H-5), 1.89—2.05 (m, H_2-6), 3.75, (br s, H-7), 2.38 (dd, 6.0, 5.2, H-9), 1.37 (s, H_3-10), 4.09 and 4.20 (each 1H d, 11.6, H_2-11), 2.25 (d, 7.8, H_2-2′), 2.12 (m, H-3′), 0.95 (d, 6.6, H_3-4′, 5′), 4.62 (d, 7.8, H-1″), 4.78 (dd, 9.0, 7.8, H-2″), 5.05 (t, 9.0, H-3″), 3.58 (t, 9.0, H-4″), 3.42 (m, H-5″), 3.70 (dd, 12.0, 5.6, H_a-6″), 3.88 (dd, 12.0, 1.2, H_b-6″) 2.02, 2.05 (each s, 2×OAc); ^{13}C-NMR (125 MHz, CD_3OD): 91.6 (C-1), 139.6 (C-3), 116.2 (C-4), 31.8 (C-5), 38.0 (C-6), 80.8 (C-7), 80.9 (C-8), 47.9 (C-9), 22.8 (C-10), 69.9 (C-11), 173.0 (C-1′), 44.1 (C-2′), 26.6 (C-3′), 22.6 (C-4′, 5′), 100.4 (C-1″), 73.2 (C-2″), 76.8 (C-3″), 69.3 (C-4″), 77.3 (C-5″), 62.1 (C-6″), 20.8×2, 171.4, 172.1, (2×Ac). *Viburnum ayavacense* (Caprifoliaceae).[168]

296. 2″,3″-Diacetylisovalerosidate



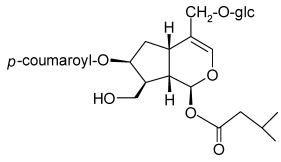
$C_{25}H_{38}O_{13}$: 546.2312; amorphous powder; $[\alpha]_D^{20}$ −19.4° (c=0.6, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): (for all values, except those of the 2-methyl butyroyl moiety, see 2″,3″-diacetylvalerosidate), 2.37 (m, H-2′), 1.48 and 1.63 (each 1H m, H_2-3′), 0.89 (t, 7.2, H_3-4′), 1.12 (d, 6.6, H_3-5′); ^{13}C-NMR (125 MHz, CD_3OD): (for all values, except those of the 2-methyl butyroyl moiety, see 2″,3″-diacetylvalerosidate) 176.6 (C-1′), 41.9 (C-2′), 27.5 (C-3′), 11.7 (C-4′), 16.5 (C-5′). *Viburnum ayavacense* (Caprifoliaceae).[168]

297. Viburtinoside I



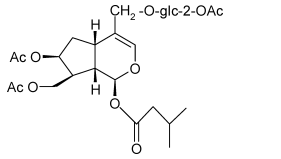
$C_{25}H_{38}O_{13}$: 546.2312; amorphous powder; $[\alpha]_D^{20}$ −37.4° (c=1.0, MeOH); IR (KBr): 3400, 1750, 1670, 1460, 1370, 1250, 1100; ^{1}H-NMR (500 MHz, CD_3OD): 6.12 (d, 3.8, H-1), 6.22 (br s, H-3), 2.79 (m, H-5), 1.84 (m, H_2-6), 4.79 (dd, 4.3, 2.6, H-7), 2.20 (dd, 10.0, 3.8, H-9), 1.27 (s, H_3-10), 3.98 (d, 12.0, H-11), 4.14 (d, 12.0, H-11), 2.16 (d, 7.8, H_2-2′), 2.04 (m, H-3′), 0.90 (d, 6.6, H_3-4′, 5′), 4.40 (d, 8.0, H-1″), 4.68 (dd, 9.0, 8.0, H-2″), 3.46 (t, 9.0, H-3″), 3.36 (t, 9.0, H-4″), 3.22 (partially masked by solvent signal, H-5″), 3.67 (dd, 12.0, 5.3, H_a-6″), 3.81 (dd, 12.0, 2.0, H_b-6″), 1.99, 2.02 (each s, 2×Ac); ^{13}C-NMR (125 MHz, CD_3OD): 90.4 (C-1), 139.3 (C-3), 114.5 (C-4), 31.3 (C-5), 35.2 (C-6), 82.9 (C-7), 80.4 (C-8), 48.0 (C-9), 22.8 (C-10), 69.2 (C-11), 73.0 (C-1′), 44.0 (C-2′), 26.5 (C-3′), 22.5 (C-4′, 5′), 100.0 (C-1″), 74.3 (C-2″), 75.3 (C-3″), 70.9 (C-4″), 76.8 (C-5″), 62.0 (C-6″). *Viburnum tinus* (Caprifoliaceae).[169]

298. 7-*O*-*p*-Coumaroylpatrinoside



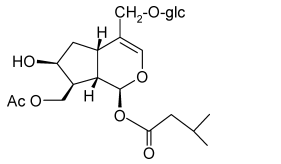
$C_{30}H_{40}O_{13}$: 608.2468; powder; $[\alpha]_D^{20}$ −36.9° (c=0.5, MeOH); UV (MeOH): 226 (2.9), 298 sh (3.8), 310 (4.1); ^{1}H-NMR (500 MHz, CD_3OD): 6.06 (d, 4.5, H-1), 6.41 (br s, H-3), 3.07 (m, H-5), 2.05—2.20 (m, H_2-6, H-3′), 5.39 (m, H-7), 2.26 (m, H-8), 2.28 (dd, 8.2, 4.5, H-9), 3.67 (m, H_a-10, H_a-6″), 3.70 (dd, 11.3, 7.9, H_b-10), 4.09 and 4.28 (each d, 11.6, H_2-11), 2.24 (d, 7.8, H_2-2′), 0.95 (d, 6.6, H_3-4′, 5′), 4.30 (d, 7.8, H-1″), 3.20 (dd, 9.0, 7.8, H-2″), 3.40 (t, 9.0, H-3″), 3.34 (t, 9.0, H-4″), 3.27 (m, H-5″), 3.86 (dd, 12.0, 2.0, H_b-6″), 7.47 (d, 8.5, H-2‴, 6‴), 6.81 (d, 8.5, H-3‴, 5‴), 7.61 (d, 16.3, H-7‴), 6.33 (d, 16.3, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 92.7 (C-1), 140.3 (C-3), 115.6 (C-4), 33.7 (C-5), 37.9 (C-6), 76.0 (C-7), 47.5 (C-8), 43.5 (C-9), 61.5 (C-10), 69.4 (C-11), 173.0 (C-1′), 43.5 (C-2′), 26.0 (C-3′), 22.5 (C-4′, 5′), 103.1 (C-1″), 74.9 (C-2″), 77.7 (C-3″), 71.5 (C-4″), 77.9 (C-5″), 62.6 (C-6″), 127.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.6 (C-3‴, 5‴), 161.1 (C-4‴), 146.4 (C-7‴), 115.1 (C-8‴), 168.7 (C-9‴). *Viburnum rhytidophyllum* (Caprifoliaceae).[170]

299. 7,10,2″-Tri-*O*-acetylpatrinoside



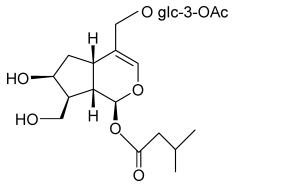
$C_{27}H_{40}O_{14}$: 588.2417; powder; $[\alpha]_D^{20}$ −19.5° (c=0.5, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.96 (d, 5.2, H-1), 6.37 (br s, H-3), 2.90 (m, H-5), 1.96 (ddd, 13.0, 7.3, 5.1, H_a-6), 2.07 (ddd, 13.0, 7.3, 3.4, H_b-6) 5.26, (m, H-7), 2.25 (m, H-8), 2.34 (dt, 5.2, 1.3, H-9), 4.22 (br s, H_2-10), 4.08 and 4.24 (each d, 11.6, H_2-11), 2.25 (d, 7.8, H_2-2′), 2.16 (m, H-3′), 0.96 (d, 6.6, H_3-4′, 5′), 4.46 (d, 7.8, H-1″), 4.70 (dd, 9.0, 7.8, H-2″), 3.51 (t, 9.0, H-3″), 3.32 (t, 9.0, H-4″), 3.31 (m, H-5″), 3.68 (dd, 12.0, 5.3, H_a-6″), 3.84 (dd, 12.0, 2.0, H_b-6″), 2.02, 2.04, 2.09 (each s, 3×Ac); ^{13}C-NMR (125 MHz, CD_3OD): 92.7 (C-1), 140.6 (C-3), 116.2 (C-4), 34.1 (C-5), 38.1 (C-6), 75.7 (C-7), 43.4 (C-8), 44.0 (C-9), 63.8 (C-10), 69.2 (C-11), 173.0 (C-1′), 43.5 (C-2′), 26.0 (C-3′), 22.5 (C-4′, 5′), 100.7 (C-1″), 75.3 (C-2″), 76.1 (C-3″), 71.7 (C-4″), 78.1 (C-5″), 62.6 (C-6″), 20.7, 20.9, 21.1, 171.6, 172.0, 172.5 (3×Ac). *Viburnum rhytidophyllum* (Caprifoliaceae).[170]

300. 10-*O*-Acetylpatrinoside



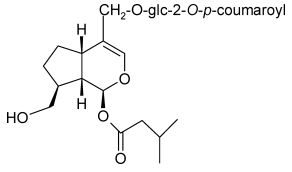
$C_{23}H_{36}O_{12}$: 504.2206; powder; $[\alpha]_D^{20}$ −51.6° (c=0.8, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.89 (d, 5.2, H-1), 6.38 (br s, H-3), 3.03 (m, H-5), 1.83 (ddd, 13.0, 8.1, 4.7, H_a-6), 1.98—1.05 (m, H_b-6, H-3′), 4.21—4.30 (m, H-7, H_2-10, H_b-11, H-1″), 2.15 (m, H-8, 9), 4.09 (d, 11.3, H_a-11), 2.21 (d, 7.8, H_2-2′), 0.97 (d, 6.6, H_3-4′, 5′), 3.20 (dd, 9.0, 7.7, H-2″), 3.24—3.33 (m, H-3″, 4″, 5″), 3.66 (dd, 11.6, 5.3, H-6″), 3.86 (dd, 11.6, 2.0, H-6″), 2.04 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 93.4 (C-1), 140.1(C-3), 116.4 (C-4), 34.1 (C-5), 40.8 (C-6), 72.4 (C-7), 46.4 (C-8), 43.3 (C-9), 64.8 (C-10), 69.6 (C-11), 173.0 (C-1′), 43.5 (C-2′), 26.0 (C-3′), 22.5 (C-4′, 5′), 103.3 (C-1″), 75.1 (C-2″), 77.9 (C-3″), 71.7 (C-4″), 78.1 (C-5″), 62.2 (C-6″), 20.8, 172.9 (Ac). *Viburnum rhytidophyllum* (Caprifoliaceae).[170]

301. 3″-*O*-Acetylpatrinoside



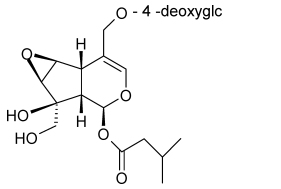
$C_{23}H_{36}O_{12}$: 504.2206; amorphous powder; $[\alpha]_D^{20}$ −35.9° (c=0.3, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 5.81 (d, 5.2, H-1), 6.28 (br s, H-3), 2.91 (m, H-5), 1.73 (ddd, 13.0, 7.3, 5.1, H_a-6), 1.97 (m, H_b-6, 3′), 4.22 (m, H-7), 1.86 (m, H-8), 2.08 (dt, 5.2, 1.3, H-9), 3.63 (dd, 11.0, 6.5, H_a-10), 3.72 (dd, 11.0, 7.5, H_b-10), 4.00, 4.16 (each d, 11.6, H_2-11), 2.15 (d, 7.8, H-2′), 0.97 (d, 6.6, H_3-4′, 5′), 4.28 (d, 7.8, H-1″), 3.22—3.28 (m, H-2″, 5″), 4.84 (t, 9.0, H-3″), 3.36 (t, 9.0, H-4″), 3.58 (dd, 12.0, 5.3, H_a-6″), 3.79 (dd, 12.0, 2.0, H_b-6″), 2.01 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 93.6 (C-1), 140.6 (C-3), 116.4 (C-4), 34.1 (C-5), 40.9 (C-6), 73.4 (C-7), 48.7 (C-8), 42.7 (C-9), 62.2 (C-10), 69.8 (C-11), 173.3 (C-1′), 44.1 (C-2′), 26.8 (C-3′), 22.6 (C-4′, 5′), 103.2 (C-1″), 73.4 (C-2″), 79.1 (C-3″), 69.4 (C-4″), 77.7 (C-5″), 62.4 (C-6″), 21.1, 172.6 (Ac). *Viburnum lantana* var. *discolor* (Caprifoliaceae).[172]

302. 2″-*trans*-*p*-Coumaroyldihydropenstemide



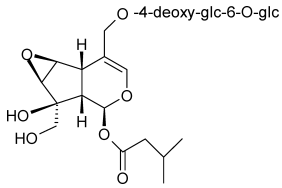
$C_{30}H_{40}O_{12}$: 592.2519; amorphous powder; $[\alpha]_D^{20}$ −59.7° (c=0.3, MeOH); UV (EtOH): 226 (3.0), 299 sh (3.9), 311 (4.1); ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (d, 4.4, H-1), 6.30 (br s, H-3), 2.62 (q-shaped m, H-5), 1.57 (br dq, 12.4, 6.2, H_a-6), 1.65—1.75 (2m, H_b-6, H_b-7), 1.26 (br dq, 12.7, 6.8, H_a-7), 1.90 (m, H-8, 9), 3.40 (m, H_2-10, H-4″), 4.04 and 4.22 (each d, 11.6, H_2-11), 2.19 (d, 2.7, H_2-2′), 2.03 (m, H-3′), 0.93 (d, 6.6, H_3-4′, 5′), 4.55 (d, 7.8, H-1″), 4.81 (dd, 8.6, 7.8, H-2″), 3.62 (dd, 9.4, 8.6, H-3″), 3.34 (ddd, 9.4, 5.5, 2.2, H-5″), 3.70 (dd, 12.0, 5.5, H_a-6″), 3.91 (dd, 12.0, 2.2, H_b-6″), 7.46 (d, 8.4, H-2‴, 6‴), 6.81 (d, 8.4, H-3‴, 5‴), 7.64 (d, 15.8, H-7‴), 6.35 (d, 15.8, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 93.1 (C-1), 140.7 (C-3), 115.4 (C-4), 36.8 (C-5), 30.9 (C-6), 28.3 (C-7), 43.8 (C-8), 45.0 (C-9), 66.5 (C-10), 69.0 (C-11), 173.6 (C-1′), 44.3 (C-2′), 26.9 (C-3′), 22.8 (C-4′, 5′), 101.7 (C-1″), 75.4 (C-2″), 76.2 (C-3″), 71.9 (C-4″), 78.1 (C-5″), 62.8 (C-6″), 127.3 (C-1‴), 131.3 (C-2‴, 6‴), 117.0 (C-3‴, 5‴), 161.4 (C-4‴), 146.9 (C-7‴), 114.9 (C-8‴), 168.4 (C-9‴). *Viburnum prunifolium* (Caprifoliaceae).[171]

303. 4″-Deoxykanokoside A



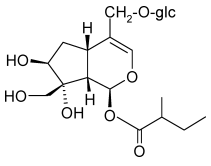
$C_{21}H_{32}O_{11}$: 460.1944; amorphous; $[\alpha]_D^{20}$ −122° (c=0.1, MeOH); IR (KBr): 3409, 2958, 2929, 2873, 1734, 1675, 1631; ^{1}H-NMR (500 MHz, CD_3OD): 6.39 (br s, H-1), 6.40 (br s, H-3), 3.07 (dd, 8.5, 1.5, H-5), 4.03 (d, 2.5, H-6), 3.35 (d, 2.5, H-7), 2.01 (d, 8.5, H-9), 3.68 (d, 4.0, H_2-10), 4.22 and 4.33 (each d, 11.5, H_2-11), 2.16 (d, 1.5, H-2′), 2.18 (d, 2.0, H-2′), 2.03 (m, H-3′), 0.93 (d, 7.0, H_3-4′, 5′), 4.32 (d, 8.0, H-1″), 3.10 (dd, 9.0, 8.0, H-2″), 3.60 (m, H-3″), 1.35 (dt, 12.5, 11.0, H_a-4″), 1.91 (ddd, 12.5, 5.5, 2.0, H_b-4″), 3.53 (m, H-5″), 3.56 (br s, H_2-6″); ^{13}C-NMR (125 MHz, CD_3OD): 90.5 (C-1), 142.5 (C-3), 109.3 (C-4), 35.4 (C-5), 59.7 (C-6), 60.1 (C-7), 80.1 (C-8), 43.4 (C-9), 67.0 (C-10), 69.5 (C-11), 173.0 (C-1′), 44.1 (C-2′), 26.8 (C-3′), 22.6 (C-4′, 5′), 102.5 (C-1″), 76.9 (C-2″), 72.3 (C-3″), 36.5 (C-4″), 73.9 (C-5″), 65.6 (C-6″). *Centranthus longiflorus* (Valerianaceae).[173]

304. 4″-Deoxykanokoside C



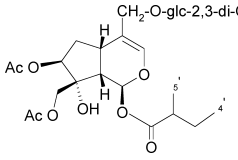
$C_{27}H_{42}O_{16}$: 622.2472; amorphous; $[\alpha]_D^{20}$ −107.0° (c=0.1, MeOH); IR (KBr): 3409, 2958, 2929, 2873, 1734, 1675, 1631; ^{1}H-NMR (500 MHz, CD_3OD): 6.39 (br s, H-1), 6.43 (d, 2.0, H-3), 3.07 (dd, 8.5, 1.5, H-5), 4.05 (d, 2.5, H-6), 3.35 (d, 2.5, H-7), 2.01 (d, 7.5, H-9), 3.68 (d, 4.0, H_2-10), 4.22 and 4.33 (each d, 11.5, H_2-11), 2.16 (d, 1.0, H-2′), 2.18 (d, 1.5, H-2′), 2.03 (m, H-3′), 0.94 (d, 7.5, H_3-4′, 5′), 4.34 (d, 8.0, H-1″), 3.11 (dd, 9.0, 7.5, H-2″), 3.59 (m, H-3″), 1.38 (dt, 12.5, 11.5, H-4″), 1.94 (ddd, 12.5, 5.5, 1.5, H-4″), 3.75 (m, H-5″), 3.68 (m, H_a-6″), 3.82 (m, H_b-6″), 4.37 (d, 8.0, H-1‴), 3.19 (dd, 9.0, 7.5, H-2‴), 3.34 (m, H-3‴), 3.27 (m, H-4‴, 5‴), 3.66 (dd, 12.0, 5.5, H_a-6‴), 3.86 (dd, 12.0, 1.5, H_b-6‴); ^{13}C-NMR (125 MHz, CD_3OD): 90.6 (C-1), 142.7 (C-3), 109.2 (C-4), 35.5 (C-5), 59.7 (C-6), 60.2 (C-7), 80.1 (C-8), 43.4 (C-9), 67.0 (C-10), 69.6 (C-11), 173.0 (C-1′), 44.1 (C-2′), 26.8 (C-3′), 22.6 (C-4′, 5′), 102.5 (C-1″), 76.9 (C-2″), 72.3 (C-3″), 36.7 (C-4″), 72.8 (C-5″), 72.6 (C-6″), 104.9 (C-1‴), 75.1 (C-2‴), 78.1 (C-3‴), 71.6 (C-4‴), 78.0 (C-5‴), 62.8 (C-6‴). *Centranthus longiflorus* (Valerianaceae).[173]

305. Isosuspensolide F



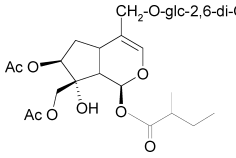
$C_{21}H_{34}O_{12}$: 478.2050; amorphous powder; $[\alpha]_D^{20}$ −19.6° (c=1.0, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.13 (d, 4.5, H-1), 6.36 (br s, H-3), 3.04 (q-shaped m, H-5), 2.00 (m, H_2-6), 2.34 (dd, 9.6, 4.5, H-9), 3.69 (m, H_2-10), 4.11 (d, 11.3, H_a-11), 4.27—4.32 (m, H_b-11, 1″), 2.38 (m, H-2′), 1.48 and 1.62 (each m, H_2-3′), 0.89 (t, 7.2, H_3-4′), 1.12 (d, 6.6, H_3-5′), 3.21 (dd, 9.0, 7.8, H-2″), 3.24—3.37 (m, H-3″, 4″, 5″), 3.66 (dd, 11.6, 5.3, H_a-6″), 3.86 (dd, 11.6, 2.0, H_b-6″); ^{13}C-NMR (125 MHz, CD_3OD): 91.9 (C-1), 140.1 (C-3), 116.6 (C-4), 33.1 (C-5), 38.2 (C-6), 79.5 (C-7), 83.9 (C-8), 44.9 (C-9), 66.4 (C-10), 69.8 (C-11), 176.6 (C-1′), 42.2 (C-2′), 27.7 (C-3′), 11.7 (C-4′), 16.6 (C-5′), 103.4 (C-1″), 75.1 (C-2″), 77.9 (C-3″), 71.7 (C-4″), 78.1 (C-5″), 62.8 (C-6″). *Viburnum ayavacense* (Caprifoliaceae).[168]

306. 7,10,2″,3″-Tetra-*O*-acetylisosuspensolide F



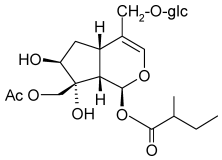
$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20}$ −38.9° (c=5.0, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): (for all values, except those of the 2-methyl butyroyl moiety, see 7,10,2″,3″-tetraacetyl suspensolide F) 2.40 (m, H-2′), 1.50 and 1.67 (each 1H m, H_2-3′), 0.92 (t, H_3-4′), 1.14 (d, 6.6, H_3-5′); ^{13}C-NMR (125 MHz, CD_3OD): (for all values, except those of the 2-methyl butyroyl, see 7,10,2″,3″-tetraacetylisosuspensolide F) 176.1 (C-1′), 41.9 (C-2′), 27.4 (C-3′), 11.6 (C-4′), 16.6 (C-5′). *Viburnum ayavacense* (Caprifoliaceae).[168]

307. 7,10,2″,6″-Tetra-*O*-acetylisosuspensolide F



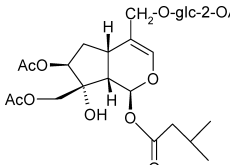
$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20}$ −24.1° (c=2.2, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.12 (d, 5.2, H-1), 6.43 (br s, H-3), 2.90 (q-shaped m, H-5), 1.96—2.12 (m, H_2-6), 5.02 (m, H-7), 2.38 (m, H-9, H-2′), 4.18 (br s, H_2-10), 4.08 (d, 11.6, H_a-11), 4.26 (m, H_b-11, H_a-6″), 1.50 and 1.67 (each 1H m, H-3′), 0.90 (t, 7.2, H_3-4′), 1.12 (d, 6.6, H_3-5′) 4.49 (d, 7.8, H-1″), 4.72 (dd, 9.0, 7.8, H-2″), 3.53 (t, 9.0, H-3″), 3.38 (t, 9.0, H-4″), 3.48 (m, H-5″), 4.41 (dd, 12.0, 1.2, H_b-6″), 2.00, 2.04, and 2.05, (each s, 3×OAc); ^{13}C-NMR (125 MHz, CD_3OD): 91.1 (C-1), 140.7 (C-3), 114.9 (C-4), 33.8 (C-5), 36.2 (C-6), 80.6 (C-7), 81.9 (C-8), 45.5 (C-9), 67.7 (C-10), 69.3 (C-11), 176.3 (C-1′), 41.9 (C-2′), 27.4 (C-3′), 11.7 (C-4′), 16.6 (C-5′), 100.1 (C-1″), 74.8 (C-2″), 75.6 (C-3″), 71.2 (C-4″), 75.0 (C-5″), 64.3 (C-6″), 20.7, 20.8, 21.0, 21.1, 171.4×2, 172.3, 172.4 (4×Ac). *Viburnum ayavacense* (Caprifoliaceae).[168]

308. Isosuspensolide E



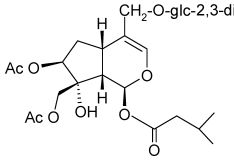
$C_{23}H_{36}O_{13}$: 520.2155; amorphous powder; $[\alpha]_D^{20}$ −26.6° (c=1.0, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.18 (d, 4.5, H-1), 6.40 (br s, H-3), 3.08 (q-shaped m, H-5), 2.04 (m, H_2-6), 3.98 (br s, H-7), 2.34 (dd, 9.6, 4.5, H-9), 4.21—4.31 (m, H_2-10, H_b-11, H-1″), 4.11 (d, 11.3, H_a-11), 2.38 (m, H-2′), 1.49 and 1.64 (each m, H_2-3′), 0.89 (t, 7.2, H_3-4′), 1.11 (d, 6.6, H_3-5′), 3.21 (dd, 9.0, 7.8, H-2″), 3.24—3.37 (m, H-3″, 4″, 5″), 3.67 (dd, 11.6, 5.3, H_a-6″), 3.86 (dd, 11.6, 2.0, H_b-6″), 2.07 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.0 (C-3), 116.4 (C-4), 32.9 (C-5), 36.1 (C-6), 78.5 (C-7), 82.8 (C-8), 45.4 (C-9), 68.7 (C-10), 69.5 (C-11), 176.5 (C-1′), 42.0 (C-2′), 27.6 (C-3′), 11.7 (C-4′), 16.6 (C-5′), 103.2 (C-1″), 74.9 (C-2″), 77.6 (C-3″), 71.4 (C-4″), 77.8 (C-5″), 62.6 (C-6″), 20.8, 173.1, (Ac). *Viburnum ayavacense* (Caprifoliaceae).[168]

309. 7,10,2″-Tri-*O*-acetylsuspensolide F



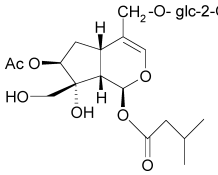
$C_{27}H_{40}O_{15}$: 604.2367; amorphous powder; $[\alpha]_D^{20}$ −35.3° (c=1.3, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.14 (d, 5.3, H-1), 6.38 (br s, H-3), 2.90 (q-shaped m, H-5), 1.98 (m, H-6), 2.10 (m, H-6, 3′), 5.02 (t, 2.9, H-7), 2.39 (dd, 9.9, 5.3, H-9), 4.27, 4.20 (each d, 11.5, H_2-10), 4.25, 4.11 (each d, 11.5, H_2-11), 2.22 (d, 6.9, H_2-2′), 0.95 (d, 6.6, H_3-4′, 5′), 4.50 (d, 8.0, H-1″), 4.71 (dd, 9.4, 8.0, H-2″), 3.51 (t, 9.4, H-3″), 3.34 and 3.27 (partially masked by the solvent signal, H-4″, 5″), 3.88 (dd, 12.0, 1.7, H-6″), 3.68 (dd, 12.0, 5.6, H-6″), 2.03, 2.05 and 2.09 (each s, 3×Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.3 (C-1), 140.9 (C-3), 115.4 (C-4), 33.9 (C-5), 36.5 (C-6), 80.8 (C-7), 82.2 (C-8), 45.8 (C-9), 67.9 (C-10), 69.3 (C-11), 172.9 (C-1′), 42.2 (C-2′), 26.8 (C-3′), 22.6 and 22.7 (C-4′, 5′), 100.4 (C-1″), 75.3 (C-2″), 76.1 (C-3″), 71.7 (C-4″), 78.0 (C-5″), 62.6 (C-6″), 20.7, 21.0, 21.1, 171.6, 171.7 and 172.6 (3×Ac). *Viburnum sargenti* (Caprifoliaceae).[174]

310. 7,10,2″,3″-Tetra-*O*-acetylsuspensolide F



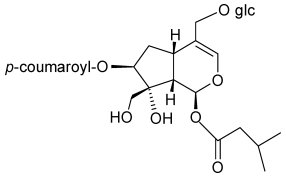
$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20}$ −47.3° (c=5.0, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 6.13 (d, 5.2, H-1), 6.40 (br s, H-3), 2.92 (q shaped m, H-5), 1.96—2.12 (m, H_2-6), 5.02 (m, H-7), 2.38 (dd, 6.0, 5.2, H-9), 4.22 (br s, H_2-10), 4.14, 4.28 (each d, 11.6, H_2-11), 2.25 (d, 7.8, H_2-2′), 2.15 (m, H-3′), 0.96 (d, 6.6, H_3-4′, 5′), 4.64 (d, 7.8, H-1″), 4.79 (dd, 9.0, 7.8, H-2″), 5.07 (t, 9.0, H-3″), 3.57 (t, 9.0, H-4″), 3.43 (ddd, 9.0, 5.6, 2.2, H-5″), 3.71 (dd, 12.0, 5.6, H_a-6″), 3.88 (dd, 12.0, 2.2, H_b-6″), 2.00, 2.02, 2.03, 2.06 (each s, 4×OAc); ^{13}C-NMR (125 MHz, CD_3OD): 91.1 (C-1), 140.8 (C-3), 115.0 (C-4), 33.8 (C-5), 36.3 (C-6), 80.5 (C-7), 82.0 (C-8), 45.5 (C-9), 67.6 (C-10), 69.3 (C-11), 172.6 (C-1′), 44.0 (C-2′), 27.5 (C-3′), 22.5 (C-4′, 5′), 99.7 (C-1″), 73.1 (C-2″), 76.8 (C-3″), 69.3 (C-4″), 77.3 (C-5″), 62.1 (C-6″), 20.6, 20.7×2, 20.9, 171.0, 171.4, 171.9, 172.3 (4×Ac). *Viburnum ayavacense* (Caprifoliaceae).[168]

311. Viburtinoside V



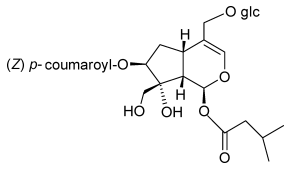
$C_{25}H_{38}O_{14}$: 562.2261; amorphous powder; $[\alpha]_D^{20}$ −45.7° (c=0.7, MeOH); IR (KBr): 3400, 1730, 1650, 1100; ^{1}H-NMR (500 MHz, CD_3OD): 6.13 (d, 4.9, H-1), 6.35 (br s, H-3), 2.86 (br q, H-5), 1.98 (m, H_2-6), 4.94 (dt, 3.3, H-7), 2.33 (dd, 9.7, 4.9, H-9), 3.69 (br s, H_2-10), 4.12 and 4.25 (each d, 11.6, H_2-11), 2.22 (d, 6.9, H_2-2′), 2.10 (m, H-3′), 0.95 (d, 6.6, H_3-4′, 5′), 4.50 (d, 8.0, H-1″), 4.71 (dd, 9.3, 8.0, H-2″), 3.51 (t, 9.3, H-3″), 3.34 (partially masked by solvent peak, H-4″), 3.27 (partially masked by solvent peak, H-5″), 3.67 (dd, 12.0, 5.1, H-6″), 3.86 (dd, 12.0, 1.9, H-6″), 2.05, 2.08 (each s, 2×Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.6 (C-3), 115.3 (C-4), 33.1 (C-5), 36.0 (C-6), 81.4 (C-7), 79.3 (C-8), 45.3 (C-9), 65.6 (C-10), 69.4 (C-11), 173.0 (C-1′), 44.0 (C-2′), 26.5 (C-3′), 22.5 (C-4′, 5′), 100.5 (C-1″), 75.2 (C-2″), 76.1 (C-3″), 68.8 (C-4″), 77.9 (C-5″), 62.6 (C-6″), — (Ac). *Viburnum tinus* (Caprifoliaceae).[169]

312. Luzonoside A



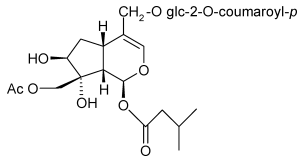
$C_{30}H_{40}O_{14}$: 624.2412; yellow paste; $[\alpha]_D^{21}$ −18.6° (c=0.60, MeOH); UV (EtOH): 226 (4.04), 315 (4.25); IR (film): 3364, 1720, 1684, 1589, 1515; ^{1}H-NMR (600 MHz, CD_3OD): δ 6.21 (d, 4.4, H-1), 6.41 (s, H-3), 3.09 (ddd, 7.4, 7.4, 9.9, H-5), 2.24 (ddd, 4.4, 7.4, 11.8, H-6), 2.17 (ddd, 4.4, 7.4, 11.8, H-6), 5.10 (dd, 4.4, 4.4, H-7), 2.45 (dd, 4.4, 9.9, H-9), 3.67 (d, 11.5, H-10), 3.73 (d, 11.5, H-10), 4.13 (d, 11.5, H-11), 4.29 (d, 11.5, H-11), 2.22 (d, 6.6, H_2-2′), 2.09 (tq, 6.6, 6.6, H-3′), 0.97 (d, 6.6, H-4′, H-5′), 4.30 (d, 8.0, H-1″), 3.19 (dd, 8.0, 9.3, H-2″), 3.34 (t, 9.3, H-3″), 3.26 (m, H-4″, H-5″), 3.75 (dd, 1.4, 11.5, H-6″), 3.86 (dd, 1.4, 11.5, H-6″), 6.34 (d, 15.9, H-8‴), 7.61 (d, 15.9, H-7‴), 7.47 (d, 8.8, H-2‴, H-6‴), 6.80 (d, 8.8, H-3‴, H-5‴); ^{13}C-NMR (150 MHz, CD_3OD): δ 91.5 (C-1), 140.7 (C-3), 115.9 (C-4), 33.0 (C-5), 35.9 (C-6), 81.6 (C-7), 83.4 (C-8), 45.3 (C-9), 66.0 (C-10), 69.8 (C-11), 173.1 (C-1′), 44.2 (C-2′), 26.8 (C-3′), 22.7 (C-4′, C-5′), 103.4 (C-1″), 75.2 (C-2″), 78.1 (C-3″), 71.7 (C-4″), 78.0 (C-5″), 62.8 (C-6″), 167.7 (C-9‴), 115.2 (C-8‴), 146.9 (C-7‴), 127.8 (C-1‴), 131.3 (C-2‴, C-6‴), 116.8 (C-3‴, C-5‴), 161.4 (C-4‴). *Viburnum luzonicum* (Caprifoliaceae).[164]

313. Luzonoside B



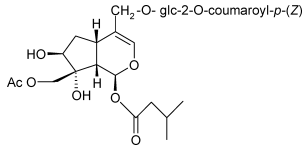
$C_{30}H_{40}O_{14}$: 624.2412; yellow paste; $[\alpha]_D^{21}$ −41.1° (c=0.45, MeOH); UV (EtOH): 225 (4.12), 315 (4.33); IR (film): 3370, 1732, 1687, 1589, 1515; ^{1}H-NMR (600 MHz, CD_3OD): δ 6.17 (d, 4.4, H-1), 6.34 (s, H-3), 2.92 (ddd, 8.0, 8.0, 9.9, H-5), 2.10 (ddd, 4.1, 8.0, 11.3, H-6), 2.17 (ddd, 4.1, 8.0, 11.3, H-6), 5.04 (dd, 4.1, 4.1, H-7), 2.27 (dd, 4.4, 9.9, H-9), 3.56 (d, 11.3, H-10), 3.59 (d, 11.3, H-10), 4.11 (d, 11.7, H-11), 4.28 (d, 11.7, H-11), 2.22 (d, 7.1, H_2-2′), 2.08 (tq, 5.2, 7.1, H-3′), 0.96 (d, 5.2, H-4′, H-5′), 4.31 (d, 7.7, H-1″), 3.20 (dd, 7.7, 9.1, H-2″), 3.34 (t, 9.1, H-3″), 3.27 (m, H-4″, H-5″), 3.65 (dd, 1.6, 11.8, H-6″), 3.87 (dd, 1.6, 11.8, H-6″), 5.79 (d, 12.6, H-8‴), 6.91 (d, 12.6, H-7‴), 7.54 (d, 8.5, H-2‴, H-6‴), 6.76 (d, 8.5, H-3‴, H-5‴); ^{13}C-NMR (150 MHz, CD_3OD): 91.4 (C-1), 140.5 (C-3), 115.9 (C-4), 33.0 (C-5), 36.0 (C-6), 81.3 (C-7), 83.4 (C-8), 45.3 (C-9), 65.8 (C-10), 69.8 (C-11), 173.1(C-1′), 44.2 (C-2′), 26.8 (C-3′), 22.7 (C-4′, C-5′), 103.4 (C-1″), 75.1 (C-2″), 78.1 (C-3″), 71.8 (C-4″), 78.0 (C-5″), 62.8 (C-6″), 168.7 (C-9‴), 116.9 (C-8‴), 145.4 (C-7‴), 128.0 (C-1‴), 133.4 (C-2‴, C-6‴), 115.9 (C-3‴, C-5‴), 161.4 (C-4‴). *Viburnum luzonicum* (Caprifoliaceae).[164)]

314. Viburtinoside II



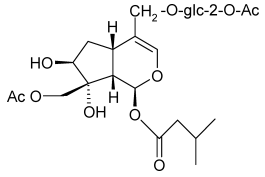
$C_{32}H_{42}O_{15}$: 666.2523; amorphous powder; $[\alpha]_D^{20}$ −39.7° (c=2.7, MeOH); UV (?): 226 (3.80), 299 (3.90), 311 (4.10); IR (KBr): 3400, 1740, 1700, 1630, 1600, 1510, 1240, 830; ^{1}H-NMR (500 MHz, CD_3OD): 6.18 (d, 4.0, H-1), 6.30 (br s, H-3), 2.90 (br q, H-5), 1.89 (m, H_2-6), 3.92 (br s, H-7), 2.26 (dd, 9.6, 4.5, H-9), 4.18 (br s, H_2-10), 4.05—4.25 (m, H_2-11), 2.15 (d, 8.0, H_2-2′), 2.04 (m, H-3′), 0.93 (d, 6.6, H_3-4′, 5′), 4.55 (d, 8.2, H-1″), 4.81 (dd, 9.0, 8.0, H-2″), 3.58 (t, 9.0, H-3″), 3.39 (t, 9.0, H-4″), 3.27 (partially masked by solvent signal, H-5″), 3.70 (dd, 12.0, 5.4, H-6″), 3.88 (dd, 12.0, 1.8, H-6″), 7.47 (d, 8.0, H-2‴, 6‴), 6.80 (d, 8.0, H-3‴, 5‴), 7.64 (d, 16.3, H-7‴), 6.40 (d, 16.3, H-8‴), 2.01 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.5 (C-1), 140.1 (C-3), 115.5 (C-4), 32.4 (C-5), 38.4 (C-6), 78.9 (C-7), 82.5 (C-8), 45.5 (C-9), 68.9 (C-10), 69.7 (C-11), 173.0 (C-1′), 44.0 (C-2′), 26.5 (C-3′), 22.5 (C-4′, 5′), 101.1 (C-1″), 75.2 (C-2″), 76.0 (C-3″), 71.7 (C-4″), 77.9 (C-5″), 62.6 (C-6″), 127.2 (C-1‴), 131.2 (C-2‴, 6‴), 116.8 (C-3‴, 5‴), 161.1 (C-4‴), 146.8 (C-7‴), 115.8 (C-8‴), 167.6 (C-9‴), — (Ac). *Viburnum tinus* (Caprifoliaceae).[169)]

315. Viburtinoside III



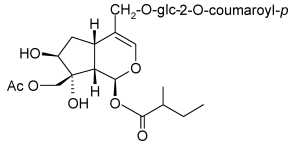
$C_{32}H_{42}O_{15}$: 666.2523; amorphous powder; $[\alpha]_D^{20}$ −40.1° (c=2.3, MeOH); UV (?): 226 (3.80), 299 (3.90), 312 (4.10); IR (KBr): 3400, 1740, 1705, 1625, 1600, 1515, 1240, 835; ^{1}H-NMR (500 MHz, CD_3OD): 6.13 (d, 4.0, H-1), 6.32 (br s, H-3), 2.84 (br q, H-5), 1.85 (m, H_2-6), 3.88 (br s, H-7), 2.33 (dd, 9.6, 4.0, H-9), 4.17 (br s, H_2-10), 4.05—4.25 (m, H_2-11), 2.15 (d, 8.0, H_2-2′), 2.05 (m, H-3′), 0.92 (d, 6.6, H_3-4′, 5′), 4.50 (d, 8.0, H-1″), 4.81 (dd, 9.0, 8.0, H-2″), 3.57 (t, 9.0, H-3″), 3.42 (t, 9.0, H-4″), 3.32 (partially masked by solvent signal, H-5″), 3.68 (dd, 12.0, 5.1, H_a-6″), 3.88 (dd, 12.0, 1.8, H_b-6″), 7.68 (d, 8.0, H-2‴, 6‴), 6.74 (d, 8.0, H-3‴, 5‴), 6.87 (d, 12.0, H-7‴), 5.84 (d, 12.0, H-8‴), 2.03 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.6 (C-3), 116.0 (C-4), 32.2 (C-5), 37.2 (C-6), 79.1 (C-7), 81.8 (C-8), 45.2 (C-9), 69.0 (C-10), 69.8 (C-11), 173.0 (C-1′), 44.0 (C-2′), 26.5 (C-3′), 22.5 (C-4′, 5′), 101.3 (C-1″), 74.6 (C-2″), 76.1 (C-3″), 71.9 (C-4″), 78.1 (C-5″), 62.7 (C-6″), 127.4 (C-1‴), 133.9 (C-2‴, 6‴), 115.9 (C-3‴, 5‴), 160.2 (C-4‴), 145.5 (C-7‴), 115.3 (C-8‴), 168.2 (C-9‴), — (Ac). *Viburnum tinus* (Caprifoliaceae).[169)]

316. Viburtinoside IV



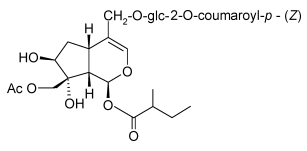
$C_{25}H_{38}O_{14}$: 562.2261; amorphous powder; $[\alpha]_D^{20}$ −68.9° (c=2.0, MeOH); IR (KBr): 3400, 1730, 1660, 1100; ^{1}H-NMR (500 MHz, CD_3OD): 6.17 (d, 4.5, H-1), 6.32 (br s, H-3), 2.93 (br q, H-5), 1.93 (m, H_2-6), 3.94 (br t, 3.4, H-7), 2.32 (dd, 10.0, 4.5, H-9), 4.22 (br s, H_2-10), 4.07 and 4.23 (each d, 11.2, H_2-11), 2.20 (d, 7.2, H_2-2′), 2.06 (m, H-3′), 0.94 (d, 6.6, H_3-4′, 5′), 4.49 (d, 8.0, H-1″), 4.70 (dd, 9.3, 8.0, H-2″), 3.53 (t, 9.3, H-3″), 3.36 (t, 9.3, H-4″), 3.29 (partially masked by solvent signal, H-5″), 3.69 (dd, 12.0, 5.4, H-6″), 3.88 (dd, 12.0, 2.4, H-6″), 2.05, 2.08 (each s, 2×Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.6 (C-1), 140.1 (C-3), 116.0 (C-4), 33.0 (C-5), 38.4 (C-6), 79.2 (C-7), 82.7 (C-8), 45.4 (C-9), 68.8 (C-10), 69.6 (C-11), 173.0 (C-1′), 44.0 (C-2′), 26.5 (C-3′), 22.5 (C-4′, 5′), 100.7 (C-1″), 75.2 (C-2″), 76.0 (C-3″), 71.5 (C-4″), 77.8 (C-5″), 62.5 (C-6″), — (Ac). *Viburnum tinus* (Caprifoliaceae).[169)]

317. Isovibursinoside II



$C_{32}H_{42}O_{15}$: 666.2523; amorphous powder; $[\alpha]_D^{20}$ −23.8° (c=0.4, MeOH); UV (MeOH): 226 (3.0), 299 sh (3.9), 314 (4.1); ^{1}H-NMR (500 MHz, CD_3OD): 6.12 (d, 4.5, H-1), 6.30 (br s, H-3), 2.90 (q-shaped m, H-5), 1.89—2.10 (m, H_2-6), 3.90 (br s, H-7), 2.27 (dd 7.5, 4.5, H-9), 4.18 (br s, H_2-10), 4.14 and 4.28 (each 1H d, 11.6, H_2-11), 2.34 (m, H-2′), 1.46 and 1.67 (each 1H m, H_2-3′), 0.88 (t, 7.2, H_3-4′), 1.09 (d, 6.6, H_3-5′) 4.55 (d, 7.8, H-1″), 4.81 (dd, 9.0, 7.8, H-2″), 3.58 (t, 9.0, H-3″), 3.39 (t, 9.0, H-4″), 3.32 (m, H-5″), 3.70 (dd, 12.0, 5.4, H_a-6″), 3.88 (dd, 12.0, 1.8, H_b-6″), 2.02 (s, OAc), 7.47 (d, 8.0, H-2‴, 6‴), 6.80 (d, 8.0, H-3‴, 5‴), 7.64 (d, 16.3, H-7‴), 6.40 (d, 16.3, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 91.6 (C-1), 140.0 (C-3), 116.0 (C-4), 32.5 (C-5), 38.4 (C-6), 78.9 (C-7), 82.7 (C-8), 45.5 (C-9), 68.9 (C-10), 69.7 (C-11), 176.6 (C-1′), 42.1 (C-2′), 27.7 (C-3′), 11.7 (C-4′), 16.6 (C-5′), 101.1 (C-1″), 75.2 (C-2″), 76.2 (C-3″), 71.7 (C-4″), 78.0 (C-5″), 62.7 (C-6″), 127.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.8 (C-3‴, 5‴), 160.9 (C-4‴), 146.7 (C-7‴), 115.3 (C-8‴), 168.2 (C-9‴), 20.8, 173.0 (Ac). *Viburnum ayavacense* (Caprifoliaceae).[168)]

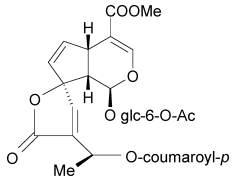
318. Isoviburtinoside III



$C_{32}H_{42}O_{15}$: 666.2523; amorphous powder; $[\alpha]_D^{20}$ −25.4° (c=0.4, MeOH); UV (MeOH): 226 (3.0), 299 sh (3.9), 312 (4.1); ^{1}H-NMR (500 MHz, CD_3OD): 6.13 (d, 4.5, H-1), 6.32 (br s, H-3), 2.84 (q-shaped m, H-5), 1.89—2.10 (m, H_2-6), 3.90 (br s, H-7), 2.33 (m, H-9, H-2′), 4.18 (br s, H_2-10), 4.07 and 4.22 (each d, H_2-11), 1.46 and 1.60 (each m, H_2-3′), 0.88 (t, 7.2, H_3-4′), 1.09 (d, 6.6, H_3-5′) 4.50 (d, 7.8, H-1″), 4.81 (dd, 9.0, 7.8, H-2″), 3.58 (t, 9.0, H-3″), 3.39 (t, 9.0, H-4″), 3.32 (m, partially masked by solvent signal, H-5″), 3.70 (dd, 12.0, 5.4, H_a-6″), 3.88 (dd, 12.0, 1.8, H_b-6″), 7.68 (d, 8.0, H-2‴, 6‴), 6.74 (d, 8.0, H-3‴, 5‴), 6.87 (d, 12.0, H-7‴), 5.84 (d, 12.0, H-8‴), 2.08 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 91.5 (C-1), 140.0 (C-3), 115.8 (C-4), 32.5 (C-5), 38.4 (C-6), 78.9 (C-7), 82.7 (C-8), 45.5 (C-9), 68.9 (C-10), 69.7 (C-11), 176.6 (C-1′), 42.1 (C-2′), 27.7 (C-3′), 11.7 (C-4′), 16.6 (C-5′), 101.2 (C-1″), 75.2 (C-2″), 76.2 (C-3″), 71.7 (C-4″), 78.0 (C-5″), 62.7 (C-6″), 127.4 (C-1‴), 133.9 (C-2‴, 6‴), 115.5 (C-3‴, 5‴), 160.9 (C-4‴), 145.6 (C-7‴), 115.9 (C-8‴), 168.2 (C-9‴), 20.8, 173.0 (Ac). *Viburnum ayavacense* (Caprifoliaceae).[168)]

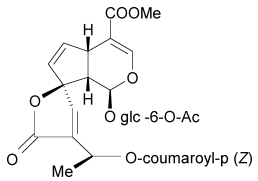
Group-3d (10-Carbon skeleton, plumeria type)

319. 6′-*O*-Acetylplumieride-*p*-*E*-coumarate



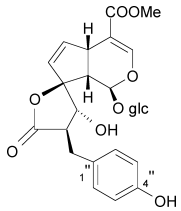
$C_{32}H_{34}O_{15}$: 658.1897; prismatic rods; mp 202—203 °C; $[\alpha]_D^{24}$ −56.0° (c=0.0132, MeOH); UV (MeOH): 193 (3.61), 207 (3.88), 284.8 (3.69); IR ($CHCl_3$): 3500 br, 1750—1670, 1640—1560; ^{1}H-NMR (300 MHz, CD_3OD): 5.07 (d, 5.7, H-1), 7.52 (s, H-3), 3.94 (ddd, 7.4, 2.4, 2.3, H-5), 6.47 (dd, 5.6, 2.4, H-6), 5.54 (dd, 5.6, 2.3, H-7), 2.88 (dd, 7.4, 5.7, H-9), 7.49 (d, 1.2, H-10), 5.70 (dq, 6.6, 1.2, H-13), 1.56 (d, 6.6, H_3-14), 3.75 (s, MeO-15), 4.70 (d, 7.9, H-1′), 3.23 (dd, 9.1, 7.9, H-2′), 3.42 (dd, 9.1, 8.0, H-3′), 3.38 (dd, 9.1, 8.0, H-4′), 3.50 (ddd, 9.1, 5.3, 2.8, H-5′), 4.35 (dd, 11.9, 2.8, H-6′), 4.31 (dd, 11.9, 5.3, H-6′), 7.47 (d, 8.7, H-2″, 6″), 6.81 (d, 8.7, H-3″, 5″), 7.66 (d, 15.9, H-7″), 6.35 (d, 15.9, H-8″), 2.00 (AcO-6′); ^{13}C-NMR (75.5 MHz, CD_3OD): 94.5 (C-1), 152.9 (C-3), 110.8 (C-4), 40.9 (C-5), 142.6 (C-6), 129.3 (C-7), 98.0 (C-8), 51.0 (C-9), 152.1 (C-10), 134.7 (C-11), 171.8 (C-12), 66.0 (C-13), 19.6 (C-14), 168.1 (C-15), 52.0 (OMe), 100.4 (C-1′), 74.6 (C-2′), 77.7 (C-3′), 71.7 (C-4′), 75.9 (C-5′), 64.6 (C-6′), 20.8, 172.6 (Ac), 128.9 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.4 (C-4″), 147.3 (C-7″), 114.8 (C-8″), 168.4 (C-9″). *Plumeria obtusa* (Apocynaceae).[175]

320. 6′-*O*-Acetylplumieride-*p*-*Z*-coumarate



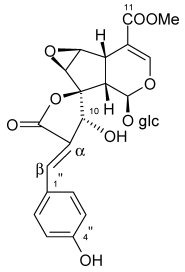
$C_{32}H_{34}O_{15}$: 658.1897; rods; mp 196—197 °C; UV (MeOH): 193 (3.59), 207 (3.87), 311 (3.67); IR ($CHCl_3$): 3450 br, 1750—1670, 1640—1560; ^{1}H-NMR (300 MHz, CD_3OD): 5.07 (d, 6.0, H-1), 7.52 (s, H-3), 3.94 (ddd, 7.4, 2.3, 2.2, H-5), 6.47 (dd, 5.9, 2.3, H-6), 5.50 (dd, 5.9, 2.2, H-7), 2.88 (dd, 7.4, 5.7, H-9), 7.48 (d, 0.7, H-10), 5.64 (dd, 6.5, 0.7, H-13), 1.53 (d, 6.5, H_3-14), 3.78 (MeO-15), 4.66 (d, H-1′), 3.20—3.50 (m, H-2′, 3′, 4′), 4.32 (dd, 11.9, 2.8, H-6′), 4.35 (dd, 11.9, 5.3, H-6′), 7.51 (d, 8.4, H-2″, 6″), 6.73 (d, 8.4, H-3″, 5″), 6.91 (d, 12.7, H-7″), 5.79 (d, 12.7, H-8″), 2.00 (s, AcO-6′); *Plumeria obtusa* (Apocynaceae).[175]

321. Dunnisinoside



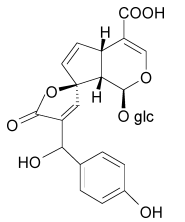
$C_{26}H_{30}O_{13}$: 550.1686; colorless prism; mp 221—223 °C; $[\alpha]_D^{25}$ +28.4° (c=0.25, MeOH); UV (MeOH): 206 (4.82), 228 (4.19), 279 (3.17); IR (KBr): 3406, 1774, 1712, 1637, 1614, 1516, 1433, 1286, 1209, 1114, 1076, 1027, 977, 927, 837; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.13 (d, 6.5, H-1), 7.43 (d, 1.2, H-3), 3.66 (m, H-5), 6.23 (dd, 5.6, 2.4, H-6), 6.07 (dd, 5.6, 2.4, H-7), 2.47 (t, 8.4, H-9), 4.58 (d, 8.0, H-10, 1′), 3.12 (m, H-11), 2.83 (dd, 12.0, 4.0, H_a-13), 2.75 (dd, 12.0, 6.0, H_b-13), 3.00 (t, 8.0, H-2′), 3.16—3.25 (m, H-3′, 4′, 5′), 3.72 (dd, 11.6, 2.0, H-6′), 3.47 (dd, 11.6, 6.4, H-6′), 7.01 (d, 8.4, H-2″, 6″), 6.65 (d, 8.4, H-3″, 5″), 9.25 (br s, HO-4″), 3.65 (s, MeO-15); ^{13}C-NMR (100 MHz, DMSO-d_6): 93.3 (C-1), 151.7 (C-3), 107.9 (C-4), 39.0 (C-5), 139.6 (C-6), 129.2 (C-7), 96.7 (C-8), 47.0 (C-9), 69.5 (C-10), 47.6 (C-11), 173.9 (C-12), 30.6 (C-13), 166.4 (C-15), 99.1 (C-1′), 72.9 (C-2′), 76.3 (C-3′), 70.0 (C-4′), 76.9 (C-5′), 60.8 (C-6′), 127.5 (C-1″), 131.0 (C-2″, 6″), 115.0 (C-3″, 5″), 155.9 (C-4″), 51.3 (OMe). *Dunnia sinensis* (Rubiaceae).[176]

322. Citrifolinoside A



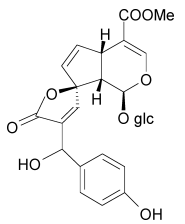
$C_{26}H_{28}O_{14}$: 564.1478; amorphous solid; $[\alpha]_D^{24}$ +65.2° (c=0.25, MeOH); UV (MeOH): 201 (3.75), 233 (4.03), 327 (4.14); IR (KBr): 3410, 1750, 1710, 1640, 1600, 1515, 1435, 1276, 1100—1000, 817; ^{1}H-NMR (600 MHz, CD_3OD): 5.35 (br s, H-1), 7.43 (d, 2.0, H-3), 3.39 (dd, 8.8, 2.0, H-5), 4.04 (d, 2.5, H-6), 3.83 (d, 2.5, H-7), 2.44 (d, 8.8, H-9), 5.12 (s, H-10), 3.73 (s, MeO-11), 4.41 (d, 8.0, H-1′), 3.09 (m, H-2′), 3.26 (m, H-3′, 4′), 3.21 (m, H-5′), 3.62 (m, H-6′), 3.80 (m, H-6′), 7.58 (s, H-β), 7.62 (d, 8.4, H-2″, 6″), 6.84 (d, 8.4, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 92.6 (C-1), 153.3 (C-3), 108.1 (C-4), 33.3 (C-5), 58.2 (C-6, 7), 92.8 (C-8), 45.2 (C-9), 69.1 (C-10), 168.1 (C-11), 51.9 (MeO-11), 99.3 (C-1′), 74.4 (C-2′), 78.1 (C-3′), 71.2 (C-4′), 77.6 (C-5′), 62.3 (C-6′), 172.9 (C=O), 124.0 (C-α), 144.0 (C-β), 126.3 (C-1″), 134.8 (C-2″, 6″), 117.0 (C-3″, 5″), 162.2 (C-4″). *Morinda citrifolia* (Rubiaceae).[177]

323. Gaertneric acid



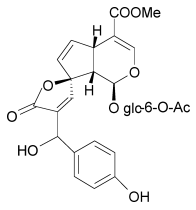
$C_{25}H_{26}O_{13}$: 534.1373; yellowish powder; $[\alpha]_D^{25}$ +48.8° (c=0.21, MeOH); UV (MeOH): 234, 288; ^{1}H-NMR (400 MHz, CD_3OD): 5.04 (d, 4.9, H-1), 7.49 (d, 1.0, H-3), 3.90 (m, H-5), 6.56 (dd, 5.6, 2.4, H-6), 5.47 (dd, 5.6, 2.1, H-7), 2.83 (dd, 7.5, 4.9, H-9), 7.25 (br s, H-10), 5.35 (br s, H-13), 4.67 (d, 7.9, H-1′), 3.20—3.40 (m, H-2′, 3′, 4′, 5′), 3.77 (dd, 12.1, 2.0 H-6′), 3.69 (dd, 12.1, 4.3, H-6′), 6.78 (d, 8.5, H-2″, 6″), 7.28 (d, 8.5, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 94.0 (C-1), 148.1 (C-3), 116.3 (C-4), 51.3 (C-5), 143.4 (C-6), 128.7 (C-7), 98.7 (C-8), 41.8 (C-9), 151.1 (C-10), 137.4 (C-11), 172.8 (C-12), 69.9 (C-13), 180.6 (C-15), 100.5 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.0 (C-4′), 78.3 (C-5′), 62.3 (C-6′), 133.4 (C-1″), 116.3 (C-2″, 6″), 129.7 (C-3″, 5″), 158.6 (C-4″). *Morinda morindoides* syn. *Gaertner morindoides* (Rubiaceae).[178]

324. Gaertneroside



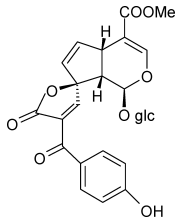
$C_{26}H_{28}O_{13}$: 548.1529; white powder; $[\alpha]_D^{25}$ +24.8° (c=0.75, MeOH); UV (MeOH): 238, 298, 316; ^{1}H-NMR (400 MHz, CD_3OD): 5.14 (d, 4.9, H-1), 7.51 (d, 1.6, H-3), 3.90 (m, H-5), 6.46 (dd, 5.6, 2.5, H-6), 5.56 (dd, 5.6, 2.2, H-7), 2.90 (dd, 7.6, 4.9, H-9), 7.45 (d, 1.3, H-10), 5.36 (d, 1.3, H-13), 3.75 (s, MeO-15), 4.67 (d, 7.9, H-1′), 3.21 (m, H-2′), 3.38 (m, H-3′, 4′), 3.25 (m, H-5′), 3.79 (dd, 12.2, 2.2, H-6′), 3.68 (dd, 12.2, 4.9, H-6′), 6.78 (d, 8.6, H-2″, 6″), 7.28 (d, 8.6, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 94.5 (C-1), 152.6 (C-3), 110.9 (C-4), 40.4 (C-5), 141.6 (C-6), 130.0 (C-7), 98.1 (C-8), 50.8 (C-9), 150.2 (C-10), 137.9 (C-11), 172.4 (C-12), 69.9 (C-13), 168.5 (C-15), 52.0 (OMe), 100.6 (C-1′), 74.5 (C-2′), 77.9 (C-3′), 70.9 (C-4′), 78.4 (C-5′), 62.2 (C-6′), 133.3 (C-1″), 116.3 (C-2″, 6″), 129.7 (C-3″, 5″), 158.6 (C-4″). *Morinda morindoides* syn. *Gaertnera morindoides* (Rubiaceae).[178]

325. Acetylgaertneroside



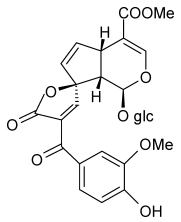
$C_{28}H_{30}O_{14}$: 590.1635; $[\alpha]_D^{25}$ +23.4° (c=0.28, MeOH); UV (MeOH): 234, 292, 314; ^{1}H-NMR (400 MHz, CD_3OD): 4.99 (d, 4.3, H-1), 7.52 (d, 1.5, H-3), 3.88 (m, H-5), 6.48 (dd, 5.6, 2.5, H-6), 5.59 (dd, 5.6, 2.0, H-7), 2.93 (dd, 7.6, 4.3, H-9), 7.35 (d, 1.3, H-10), 5.36 (d, 1.1, H-13), 3.76 (s, MeO-15), 4.63 (d, 8.0, H-1′), 3.18 (dd, 9.1, 8.0, H-2′), 3.39 (m, H-3′) 3.30 (m, H-4′), 3.47 (m, H-5′), 4.24 (m, H_2-6′), 1.87 (s, AcO-6′), 6.80 (d, 8.6, H-2″, 6″), 7.28 (d, 8.6, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 94.4 (C-1), 152.5 (C-3), 111.1 (C-4), 39.9 (C-5), 141.4 (C-6), 130.1 (C-7), 98.0 (C-8), 51.0 (C-9), 150.1 (C-10), 138.3 (C-11), 172.5 (C-12), 69.8 (C-13), 168.4 (C-15), 52.0 (OMe), 100.6 (C-1′), 74.3 (C-2′), 77.7 (C-3′), 71.5 (C-4′), 75.7 (C-5′), 64.7 (C-6′), 20.7, 173.0 (AcO-6′), 133.4 (C-1″), 116.4 (C-2″, 6″), 129.6 (C-3″, 5″), 158.6 (C-4″). *Morinda morindoides* (Rubiaceae).[178]

326. Dehydrogaertneroside



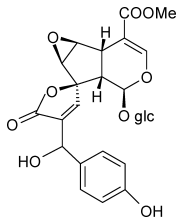
$C_{26}H_{26}O_{13}$: 546.1373; yellowish powder; $[\alpha]_D^{25}$ −19.5° (c=0.31, MeOH); UV (MeOH): 232, 291; ^{1}H-NMR (400 MHz, CD_3OD): 5.40 (d, 5.5, H-1), 7.50 (br s, H-3), 3.98 (m, H-5), 6.54 (dd, 5.6, 2.5, H-6), 5.69 (dd, 5.6, 2.1, H-7), 3.05 (m, H-9), 7.85 (br s, H-10), 3.74 (s, MeO-15), 4.68 (d, 7.9, H-1′), 3.15 (m, H-2′), 3.32 (m, H-3′) 3.30 (m, H-4′), 3.25 (m, H-5′), 3.79 (dd, 12.2, 2.2, H-6′), 3.68 (dd, 12.2, 4.9, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 94.3 (C-1), 152.7 (C-3), 110.9 (C-4), 40.9 (C-5), 142.7 (C-6), 129.0 (C-7), 97.8 (C-8), 51.5 (C-9), 159.3 (C-10), 131.7 (C-11), 170.0 (C-12), 188.3 (C-13), 168.4 (C-15), 52.0 (OMe), 100.2 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.7 (C-4′), 78.7 (C-5′), 62.9 (C-6′), — (C-1″), 116.4 (C-2″, 6″), 133.6 (C-3″, 5″), 165.5 (C-4″). *Morinda morindoides* (Rubiaceae).[178]

327. Methoxygaertneroside



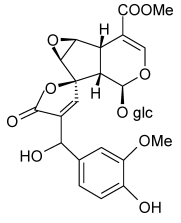
$C_{27}H_{30}O_{14}$: 578.1635; white powder; $[\alpha]_D^{25}$ +27.0° (c=0.58, MeOH); UV (MeOH): 222, 280; ^{1}H-NMR (400 MHz, CD_3OD): 5.13 (d, 3.7, H-1), 7.50 (d, 1.5, H-3), 3.88 (m, H-5), 6.47 (dd, 5.6, 2.6, H-6), 5.56 (dd, 5.6, 1.9, H-7), 2.97 (dd, 7.9, 3.7, H-9), 7.33 (br s, H-10), 5.37 (d, 2.1, H-13), 3.75 (s, MeO-15), 4.58 (d, 7.9, H-1′), 3.15 (m, H-2′), 3.35 (m, H-3′, 4′), 3.25 (m, H-5′), 3.65—3.70 (m, H_2-6′), 7.01 (d, 1.9, H-2″), 6.79 (d, 8.1, H-5″), 6.90 (dd, 8.1, 1.9, H-6″), 3.89 (s, MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 93.8 (C-1), 152.1 (C-3), 111.4 (C-4), 39.7 (C-5), 140.9 (C-6), 130.2 (C-7), 97.9 (C-8), 50.8 (C-9), 149.8 (C-10), 138.2 (C-11), 172.4 (C-12), 70.0 (C-13), 168.4 (C-15), 51.9 (MeO-15), 100.1 (C-1′), 74.4 (C-2′), 77.9 (C-3′), 70.8 (C-4′), 78.3 (C-5′), 62.1 (C-6′), 133.9 (C-1″), 111.7 (C-2″), 149.1 (C-3″), 147.6 (C-4″), 116.1 (C-5″), 121.2 (C-6″), 56.5 (MeO-3″). *Morinda morindoides* (Rubiaceae).[178]

328. Epoxygaertneroside



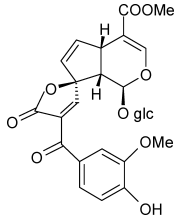
$C_{26}H_{28}O_{14}$: 564.1478; white powder; $[\alpha]_D^{25}$ +1.0° (c=0.1, MeOH); UV (MeOH): 224, 286; ^{1}H-NMR (400 MHz, CD_3OD): 5.05 (br s, H-1), 7.60 (br s, H-3), 3.45 (br d, 8.3, H-5), 3.42 (br d, 2.5, H-6), 4.05 (br d, 2.5, H-7), 2.74 (br d, 8.3, H-9), 7.15 (d, 1.4, H-10), 5.37 (d, 1.4, H-13), 3.78 (s, MeO-15), 4.51 (d, 7.9, H-1′), 3.11 (dd, 8.0, 7.9, H-2′), 3.30 (m, H-3′), 3.35 (m, H-4′), 3.21 (m, H-6′), 3.70 (m, H_2-6′), 6.76 (d, 8.5, H-2″, 6″), 7.23 (d, 8.5, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 92.5 (C-1), 153.9 (C-3), 108.0 (C-4), 32.9 (C-5), 58.9 (C-6), 57.9 (C-7), 92.7 (C-8), 43.9 (C-9), 146.9 (C-10), 140.7 (C-11), 171.6 (C-12), 70.0 (C-13), 168.0 (C-15), 52.0 (MeO-15), 99.6 (C-1′), 74.3 (C-2′), 77.8 (C-3′), 70.8 (C-4′), 78.1 (C-5′), 61.8 (C-6′), 133.0 (C-1″), 116.2 (C-2″, 6″), 129.6 (C-3″, 5″), 158.6 (C-4″); *Morinda morindoides* (Rubiaceae).[178]

329. Epoxymethoxygaertneroside



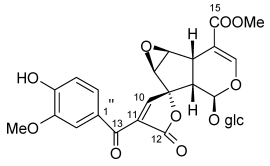
$C_{27}H_{30}O_{15}$: 594.1584; ^{1}H-NMR (400 MHz, CD_3OD): 5.04 (br s, H-1), 7.61 (br s, H-3), 3.45 (br d, 8.3, H-5), 3.42 (d, 2.5, H-6), 4.05 (d, 2.5, H-7), 2.74 (br d, 8.3, H-9), 7.19 (d, 1.3, H-10), 5.37 (d, 1.4, H-13), 3.78 (s, MeO-15), 4.45 (d, 7.9, H-1′), 3.11 (dd, 7.9, 8.0, H-2′), 3.30 (m, H-3′), 3.35 (m, H-4′), 3.21 (m, H-5′), 3.70 (m, H_2-6′), 6.97 (d, 1.9, H-2″), 6.76 (d, 8.1, H-5″), 6.88 (dd, 8.1, 1.9, H-6″); ^{13}C-NMR (100 MHz, CD_3OD): 92.3 (C-1), 153.2 (C-3), 108.1 (C-4), 32.9 (C-5), 58.9 (C-6), 57.9 (C-7), 92.7 (C-8), 43.9 (C-9), 146.7 (C-10), 140.8 (C-11), 171.6 (C-12), 70.2 (C-13), 167.9 (C-15), 52.0 (MeO-15), 99.5 (C-1′), 74.3 (C-2′), 77.8 (C-3′), 70.7 (C-4′), 78.1 (C-5′), 61.7 (C-6′), 133.6 (C-1″), 111.3 (C-2″), 149.1 (C-3″), 147.7 (C-4″), 45.8 (C-5″), 121.4 (C-6″), 56.4 (MeO-3″). *Morinda morindoides* (Rubiaceae).[178]

330. Dehydromethoxygaertneroside



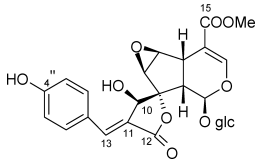
$C_{27}H_{28}O_{14}$: 576.1478; yellowish powder; $[\alpha]_D^{25}$ −15.0° (c=0.2, MeOH); UV (MeOH): 284; ^{1}H-NMR (400 MHz, CD_3OD): 5.48 (d, 4.9, H-1), 7.50 (br s, H-3), 3.98 (m, H-5), 6.54 (dd, 5.6, 2.5, H-6), 5.67 (dd, 5.6, 2.1, H-7), 3.05 (m, H-9), 7.85 (br s, H-10), 3.74 (s, MeO-15), 4.65 (d, 7.9, H-1′), 3.15 (m, H-2′), 3.32 (m, H-3′), 3.30 (m, H-4′), 3.25 (m, H-5′), 3.79 (dd, 12.2, 2.2, H-6′), 3.68 (dd, 12.2, 4.9, H-6′), 7.50 (m, H-2″, 6″), 6.88 (d, 8.4, H-5″), 3.92 (s, MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.5 (C-3), 111.1 (C-4), 40.6 (C-5), 142.4 (C-6), 129.1 (C-7), 97.8 (C-8), 51.4 (C-9), 159.0 (C-10), 131.6 (C-11), 170.0 (C-12), 188.1 (C-13), 168.3 (C-15), 52.0 (MeO-15), 100.0 (C-1′), 74.6 (C-2′), 77.8 (C-3′), 71.7 (C-4′), 78.7 (C-5′), 62.9 (C-6′), 128.7 (C-1″), 112.6 (C-2″), 149.8 (C-3″), 155.5 (C-4″), 116.9 (C-5″), 127.3 (C-6″), 56.5 (MeO-3″). *Morinda morindoides* (Rubiaceae).[178]

331. Yopaaoside A



$C_{27}H_{28}O_{15}$: 592.1428; yellow amorphous powder; $[\alpha]_D^{19}$ −19.3° (c=2.1, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.60 (br s, H-1), 7.51 (d, 1.5, H-3), 3.46 (br d, 8.3, H-5), 4.02 (d, 2.5, H-6), 3.50 (d, 2.5, H-7), 2.85 (dd, 8.3, 1.2, H-9), 7.56 (s, H-10), 3.70 (s, MeO-15), 4.51 (d, 7.8, H-1′), 3.11 (dd, 8.8, 7.8, H-2′), 3.30 (dd, 9.5, 8.8, H-3′), 3.19 (dd, 9.5, 8.6, H-4′), 3.26 (m, H-5′), 3.83 (dd, 12.0, 2.0, H_a-6′), 3.57 (dd, 12.0, 6.1, H_b-6′), 7.42 (d, 2.0, H-2″), 6.84 (d, 8.3, H-5″), 7.45 (dd, 8.3, 2.0, H-6″), 3.88 (s, MeO-3″); ^{13}C-NMR (100 MHz, CD_3OD): 92.7 (C-1), 153.6 (C-3), 108.5 (C-4), 33.1 (C-5), 58.0 (C-6), 59.2 (C-7), 92.7 (C-8), 44.2 (C-9), 156.2 (C-10), 133.9 (C-11), 169.3 (C-12), 187.7 (C-13), 167.8 (C-15), 52.1 (MeO-15), 99.6 (C-1′), 74.4 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 129.1 (C-1″), 113.0 (C-2″), 149.2 (C-3″), 154.8 (C-4″), 116.2 (C-5″), 126.8 (C-6″), 56.5 (MeO-3″). *Morinda coreia* (Rubiaceae).[113]

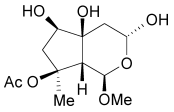
332. Yopaaoside B



$C_{26}H_{28}O_{14}$: 564.1478; yellow amorphous powder; $[\alpha]_D^{19}$ −66.1° (c=1.6, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): 5.35 (br s, H-1), 7.43 (d, 1.7, H-3), 3.37 (dd, 8.5, 1.7, H-5), 4.04 (d, 2.4, H-6), 3.83 (d, 2.4, H-7), 2.45 (d, 8.5, H-9), 5.13 (d, 1.0, H-10), 7.57 (d, 1.0, H-13), 3.71 (s, MeO-15), 4.42 (d, 7.8, H-1′), 3.05 (dd, 9.3, 7.8, H-2′), 3.23 (H-3′, 4′), 3.16 (m, H-5′), 3.74 (dd, 12.2, 2.2, H_a-6′), 3.58 (dd, 12.2, 5.4, H_b-6′), 7.61 (d, 8.8, H-2″, 6″), 6.84 (d, 8.8, H-3″, 5″); ^{13}C-NMR (100 MHz, CD_3OD): 92.8 (C-1), 153.3 (C-3), 108.0 (C-4), 33.2 (C-5), 58.1 (C-6), 58.2 (C-7), 92.6 (C-8), 45.1 (C-9), 69.1 (C-10), 123.9 (C-11), 172.7 (C-12), 144.0 (C-13), 168.0 (C-15), 52.0 (MeO-15), 99.3 (C-1′), 74.3 (C-2′), 77.6 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.3 (C-6′), 126.2 (C-1″), 134.8 (C-2″, 6″), 117.0 (C-3″, 5″), 162.1 (C-4″). *Morinda coreia* (Rubiaceae).[113]

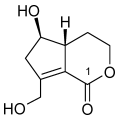
Group-4 (iridoid aglycones)

333. Clandonensine



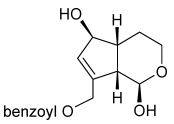
$C_{12}H_{20}O_7$: 276.1209; white amorphous powder; UV 203; ^{1}H-NMR (D_2O): 5.38 (s, H-1), 5.30 (dd, 9.9, 2.3, H-3), 1.40 (dd, 14.0, 10.0, H_α-4), 1.85 (d, 13.9, H_β-4), 3.69 (d, 4.5, H-6), 2.17 (dd, 16.2, 4.5, H_a-7), 2.26 (d, 16.2, H_b-7), 2.35 (s, H-9), 1.49 (s, H_3-10), 2.01 (s, AcO), 3.41 (s, OMe); ^{13}C-NMR (D_2O): 103.0 (C-1), 89.2 (C-3), 40.4 (C-4), 82.4 (C-5), 77.1 (C-6), 47.5 (C-7), 89.9 (C-8), 55.8 (C-9), 24.2 (C-10), 24.4, 176.3 (Ac), 57.5 (OMe). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).[30)]

334. Viteoid II



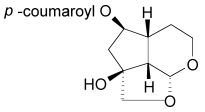
$C_9H_{12}O_4$: 184.0735; may be artifact; colorless oil; $[\alpha]_D^{28}$ −68.1° (c=0.4, MeOH); ^{1}H-NMR (500 MHz, CD_3OD): 4.43 (ddd, 11.6, 4.9, 2.4, H_α-3), 4.31 (ddd, 11.6, 11.6, 3.1, H_β-3), 1.65 (dddd, 13.4, 11.6, 11.6, 4.9, H_α-4), 2.23 (dddd, 13.4, 4.8, 3.1, 2.4, H_β-4), 2.86 (m, H-5), 4.09 (ddd, 7.6, 7.3, 7.3, H-6), 2.95 (m, H-7), 2.49 (m, H-7), 4.54 (ddd, 16.5, 2.4, 1.2, H-10), 4.64 (ddd, 16.5, 2.4, 1.2, H-10); ^{13}C-NMR (125 MHz, CD_3OD): 165.9 (C-1), 70.9 (C-3), 29.1 (C-4), 51.1 (C-5), 79.2 (C-6), 42.2 (C-7), 161.7 (C-8), 123.6 (C-9), 60.4 (C-10). *Vitex rotundifolia* (Verbenaceae).[179)]

335. 10-*O*-Benzoylglobularigenin



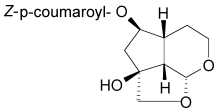
$C_{16}H_{18}O_5$: 290.1154; amorphous powder; $[\alpha]_D^{20}$ −41.0° (c=0.1, MeOH); UV (MeOH): 207 sh, 229, 275; IR (KBr): 3346, 1722, 1457; ^{1}H-NMR (300 MHz, CD_3OD): 4.43 (d, 7.9, H-1), 3.63 (m, H_α-3), 3.93 (m, H_β-3), 1.83 (m, H_α-4), 1.76 (m, H_β-4), 2.37 (m, H-5), 4.69 (br d, 7.9, H-6), 5.86 (br s, H-7), 2.58 (t, 7.5, H-9), 5.01 and 4.91 (each d, 14.8, H_2-10), 8.06 (dd, 7.4, 1.3, H-2′, 6′), 7.50 (t, 7.4, H-3′, 5′), 7.63 (m, H-4′); ^{13}C-NMR (75.5 MHz, CD_3OD): 100.0 (C-1), 63.0 (C-3), 25.0 (C-4), 48.3 (C-5), 78.2 (C-6), 132.5 (C-7), 144.0 (C-8), 50.9 (C-9), 64.2 (C-10), 131.3 (C-1′), 130.6 (C-2′, 6′), 129.7 (C-3′, 5′), 134.4 (C-4′), 167.2 (C-7′). *Globularia dumulosa* (Globulariaceae).[37)]

336. 6-*O*-*trans*-*p*-Coumaroyl-7-deoxyrehmaglutin A



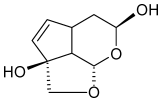
$C_{18}H_{20}O_6$: 332.1260; amorphous powder; $[\alpha]_D^{26}$ −17.7° (c=0.2, MeOH); UV (MeOH): 210 (3.93), 227 (3.94), 313 (4.25); ^{1}H-NMR (400 MHz, CD_3OD): 5.28 (d, 5.4, H-1), 3.95 (m, H-3α), 3.54 (ddd, 11.7, 5.1, 2.0, H-3β), 1.54 (br dd, 14.1, 2.5, H-4α), 1.81 (m, H-4β), 2.53 (m, H-5), 5.23 (ddd, 10.3, 10.3, 6.1, H-6), 2.46 (dd, 12.0, 6.1, H-7α), 2.01 (ddd, 12.0, 10.3, 2.0, H-7β), 2.30 (dd, 10.2, 5.4, H-9), 3.95 (d, 9.8, H-10α), 3.63 (dd, 9.8, 2.0, H-10β), 7.46 (d, 8.5, H-2′, 6′), 6.80 (d, 8.5, H-3′, 5′), 7.62 (d, 16.1, H-7′), 6.32 (d, 16.1, H-8′); ^{13}C-NMR (100 MHz, CD_3OD): 100.6 (C-1), 57.1 (C-3), 22.9 (C-4), 39.4 (C-5), 74.5 (C-6), 46.3 (C-7), 84.4 (C-8), 47.7 (C-9), 78.5 (C-10), 127.1 (C-1′), 131.3 (C-2′, 6′), 116.9 (C-3′, 5′), 161.6 (C-4′), 146.9 (C-7′), 114.9 (C-8′), 169.2 (C-9′). *Catalpa ovata* (Bignoniaceae).[180)]

337. 6-*O*-*cis*-*p*-Coumaroyl-7-deoxyrehmaglutin A



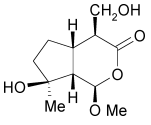
$C_{18}H_{20}O_6$: 332.1260; amorphous powder; $[\alpha]_D^{26}$ −15.4° (c=0.2, MeOH); UV (MeOH): 209 (3.95), 225 (3.95), 310 (4.06); ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 5.6, H-1), 3.94 (m, H-3α), 3.54 (ddd, 11.7, 5.4, 1.7, H-3β), 1.48 (br dd, 14.4, 1.7, H-4α), 1.76 (m, H-4β), 2.43 (m, H-5), 5.15 (ddd, 10.5, 10.5, 6.1, H-6), 2.43 (m, H-7α), 1.94 (ddd, 12.0, 10.5, 2.0, H-7β), 2.25 (dd, 10.2, 5.6, H-9), 3.94 (d, 9.8, H-10α), 3.63 (dd, 9.8, 2.0, H-10β), 7.59 (d, 8.6, H-2′, 6′), 6.75 (d, 8.6, H-3′, 5′), 6.88 (d, 12.7, H-7′), 5.77 (d, 12.7, H-8′); ^{13}C-NMR (100 MHz, CD_3OD): 101.6 (C-1), 57.0 (C-3), 22.8 (C-4), 39.2 (C-5), 74.3 (C-6), 46.2 (C-7), 84.3 (C-8), 47.5 (C-9), 78.5 (C-10), 127.7 (C-1′), 133.6 (C-2′, 6′), 115.9 (C-3′, 5′), 160.3 (C-4′), 145.2 (C-7′), 116.7 (C-8′), 168.3 (C-9′). *Catalpa ovata* (Bignoniaceae).[180)]

338. Artselaenin C



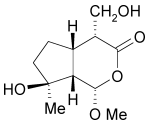
$C_9H_{12}O_4$: 184.0735; amorphous powder; $[\alpha]_D^{25}$ +128.2° (c=0.12, $CHCl_3$); UV ($CHCl_3$): 241; IR (KBr): 1725, 1598, 1493, 1373, 1082, 1031; ^{1}H-NMR (400 MHz, DMSO-d_6): 5.40 (d, 6.6, H-1), 4.82 (dd, 9.2, 2.6, H-3), 1.73 (ddd, 13.5, 2.8, 2.6, H_α-4), 1.53 (ddd, 13.5, 9.2, 6.8, H_β-4), 3.21 (m, H-5), 5.60 (dd, 6.4, 2.6, H-6), 5.73 (dd, 6.4, 2.0, H-7), 2.21 (dd, 8.4, 6.6, H-9), 3.67, 3.44 (each d, 9.0, H_2-10); ^{13}C-NMR (100 MHz, DMSO-d_6): 87.6 (C-1), 101.1 (C-3), 32.0 (C-4), 46.1 (C-5), 137.6 (C-6), 135.0 (C-7), 91.9 (C-8), 39.7 (C-9), 72.4 (C-10). *Pedicularis artselaeri* (Scrophulariaceae).[38)]

339. 1β-Methoxylmussaenin A



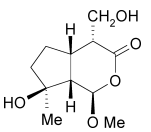
$C_{11}H_{18}O_5$: 230.1154; white amorphous powder; $[\alpha]_D^{25}$ +33.5° (c=0.35, $CHCl_3$); IR (KBr): 3368, 1735; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.07 (d, 8.8, H-1), 2.00 (ddd, 11.4, 8.5, 5.7, H-4), 3.10 (m, H-5), 1.75 (m, H_α-6), 1.97 (m, H_β-6), 1.70 (m, H_α-7), 1.97 (m, H_β-7), 2.69 (dd, 10.8, 8.8, H-9), 1.23 (s, H_3-10), 3.24 (dd, 11.4, 8.5, H_a-11), 3.85 (dd, 11.4, 5.7, H_b-11), 3.70 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 92.7 (C-1), 173.0 (C-3), 49.3 (C-4), 38.3 (C-5), 23.2 (C-6), 37.9 (C-7), 80.1 (C-8), 48.2 (C-9), 24.1 (C-10), 63.7 (C-11), 51.7 (OMe). *Cymbaria mongolica* (Scrophulariaceae).[181)]

340. 1α-Methoxy-4-*epi*-mussaenin A



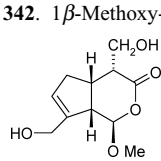
$C_{11}H_{18}O_5$: 230.1154; colorless gum; $[\alpha]_D^{25}$ +23.7° (c=0.25, $CHCl_3$); IR (KBr): 3399, 1733; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.16 (d, 3.0, H-1), 2.10 (ddd, 7.5, 5.7, 3.0, H-4), 3.09 (m, H-5), 1.60 (m, H_α-6), 2.14 (m, H_β-6), 1.79 (m, H_α-7), 1.83 (m, H_β-7), 2.63 (dd, 10.1, 3.0, H-9), 1.28 (s, H_3-10), 3.48 (dd, 12.0, 7.5, H_a-11), 4.06 (dd, 12.0, 5.7, H_b-11) 3.75 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 91.7 (C-1), 172.9 (C-3), 46.5 (C-4), 34.8 (C-5), 27.1 (C-6), 38.9 (C-7), 80.1 (C-8), 46.8 (C-9), 25.0 (C-10), 61.4 (C-11), 51.9 (OMe-1). *Cymbaria mongolica* (Scrophulariaceae).[181)]

341. 1β-Methoxy-4-*epi*-mussaenin A



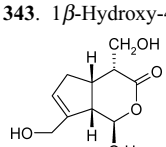
$C_{11}H_{18}O_5$: 230.1154; colorless gum; $[\alpha]_D^{25}$ +23.9° (c=0.45, $CHCl_3$); IR (KBr): 3399, 1733; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.00 (d, 7.2, H-1), 2.06 (ddd, 7.2, 5.8, 2.2, H-4), 2.61 (m, H-5), 1.61 (m, H_α-6), 1.98 (m, H_β-6), 1.75 (m, H_α-7), 1.80 (m, H_β-7), 2.39 (dd, 8.0, 7.2, H-9), 1.35 (s, H_3-10), 3.73 (dd, 12.1, 7.2, H_a-11), 3.95 (dd, 12.1, 5.8, H_b-11), 3.72 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 94.6 (C-1), 173.6 (C-3), 47.7 (C-4), 38.3 (C-5), 27.3 (C-6), 40.2 (C-7), 79.7 (C-8), 49.9 (C-9), 25.5 (C-10), 61.0 (C-11), 51.0 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).[181)]

342. 1β-Methoxy-4-*epi*-gardendiol



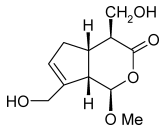
$C_{11}H_{16}O_5$: 228.0998; colorless gum; $[\alpha]_D^{25}$ +27.8° (c=0.20, $CHCl_3$); IR (KBr): 3390, 1732; ^{1}H-NMR (400 MHz, $CDCl_3$): 4.81 (d, 8.3, H-1), 2.33 (ddd, 5.8, 5.2, 4.0, H-4), 2.59 (m, H-5), 2.01 (m, H_α-6), 2.70 (m, H_β-6), 5.70 (s, H-7), 2.36 (t, 8.3, H-9), 4.20 (s, H_2-10), 3.49 (dd, 12.0, 5.2, H_a-11), 3.95 (dd, 12.0, 5.8, H_b-11), 3.71 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 95.2 (C-1), 173.9 (C-3), 43.6 (C-4), 39.6 (C-5), 35.9 (C-6), 128.4 (C-7), 143.1 (C-8), 50.9 (C-9), 60.1 (C-10), 63.6 (C-11), 51.9 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).[181)]

343. 1β-Hydroxy-4-*epi*-gardendiol



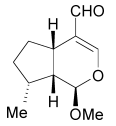
$C_{10}H_{14}O_5$: 214.0841; colorless gum; $[\alpha]_D^{25}$ +32.0° (c=0.30, $CHCl_3$); IR (KBr): 3390, 1733; ^{1}H-NMR (400 MHz, $CDCl_3$): 4.19 (d, 8.7, H-1), 2.37 (ddd, 5.9, 5.6, 5.2, H-4), 2.80 (m, H-5), 2.18 (m, H_α-6), 2.22 (m, H_β-6), 5.73 (s, H-7), 2.38 (dd, 8.7, 8.3, H-9), 4.25 (s, H_2-10), 3.46 (dd, 12.0, 5.9, H_a-11), 4.00 (dd, 12.0, 5.2, H_b-11); ^{13}C-NMR (100 MHz, $CDCl_3$): 92.9 (C-1), 173.7 (C-3), 39.5 (C-4), 38.3 (C-5), 29.7 (C-6), 127.2 (C-7), 143.2 (C-8), 50.9 (C-9), 60.3 (C-10), 63.7 (C-11). *Cymbaria mongolica* (Scrophulariaceae).[181)]

344. 1β-Methoxygardendiol



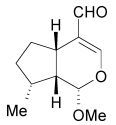
$C_{11}H_{16}O_5$: 228.0998; colorless gum; $[\alpha]_D^{25}$ −8.5° (c=0.10, $CHCl_3$); IR (KBr): 3393, 1730, 1060; ^{1}H-NMR (400 MHz, $CDCl_3$): 4.46 (d, 8.3, H-1), 2.99 (ddd, 11.6, 4.8, 4.7, H-4), 2.91 (m, H-5), 2.19 (m, H_α-6), 2.27 (m, H_β-6), 5.81 (s, H-7), 2.41 (dd, 8.4, 8.3, H-9), 4.23 (s, H_2-10), 3.71 (dd, 12.0, 4.7, H_a-11), 4.10 (dd, 12.0, 4.8, H_b-11), 3.68 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.7 (C-1), 172.4 (C-3), 40.9 (C-4), 40.5 (C-5), 30.9 (C-6), 128.7 (C-7), 144.8 (C-8), 50.7 (C-9), 61.4 (C-10), 62.3 (C-11), 51.6 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).[181]

345. Artselaenin A



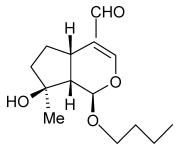
$C_{11}H_{16}O_3$: 196.1099; amorphous powder; $[\alpha]_D^{25}$ +40.0° (c=0.10, $CHCl_3$); UV ($CHCl_3$): 243; IR (KBr): 2928, 2854, 1728, 1633, 1460, 1286, 1181, 1129; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.10 (d, 3.6, H-1), 7.14 (s, H-3), 2.74 (m, H-5), 2.17—2.35 (m, H_2-6, 7), 1.96 (m, H-8), 2.08 (dd, 7.3, 3.6, H-9), 1.08 (d, 6.8, H_3-10), 9.30 (s, H-11), 3.44 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 102.5 (C-1), 161.2 (C-3), 125.0 (C-4), 36.1 (C-5), 30.4 (C-6), 42.2 (C-7), 32.0 (C-8), 42.9 (C-9), 16.3 (C-10), 190.5 (C-11), 56.4 (OMe). *Pedicularis artselaeri* (Scrophulariaceae).[38]

346. Artselaenin B



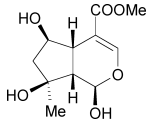
$C_{11}H_{16}O_3$: 196.1099; amorphous powder; $[\alpha]_D^{25}$ +65.0° (c=0.10, $CHCl_3$); UV ($CHCl_3$): 242; IR (KBr): 2923, 2825, 1722, 1631, 1460, 1285, 1168, 1075; ^{1}H-NMR (400 MHz, $CDCl_3$): 4.82 (d, 6.1, H-1), 7.18 (s, H-3), 2.92 (m, H-5), 2.11—2.29 (m, H_2-6, 7), 1.92 (m, H-8), 1.47 (m, H-9), 1.04 (d, 6.8, H_3-10). 9.24 (s, H-11), 3.54 (s, MeO-1); ^{13}C-NMR (100 MHz, $CDCl_3$): 102.5 (C-1), 160.2 (C-3), 125.3 (C-4), 36.4 (C-5), 30.9 (C-6), 32.4 (C-7), 32.2 (C-8), 42.9 (C-9), 14.9 (C-10), 191.0 (C-11), 56.3 (MeO). *Pedicularis artselaeri* (Scrophulariaceae).[38]

347. Kansuenin



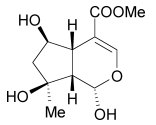
$C_{14}H_{22}O_4$: 254.1518; colorless needles; $[\alpha]_D^{23}$ −62° (c=0.23, MeOH); ^{1}H-NMR (400 MHz, $CDCl_3$): 4.95 (d, 4.4, H-1), 7.15 (s, H-3), 3.55 (m, H-5), 1.72 (m, H-6), 2.34 (m, H-6), 1.58 (m, H-7), 2.21 (m, H-7), 3.20 (m, H-9), 1.34 (s, H_3-10), 9.25 (s, H-11), 3.87 (m, H_2-1′), 1.45 (m, H_2-2′), 1.38 (m, H_2-3′), 0.93 (t, 7.2, H_3-4′); ^{13}C-NMR (100 MHz, $CDCl_3$): 100.2 (C-1), 160.7 (C-3), 124.1 (C-4), 29.7 (C-5), 28.8 (C-6), 40.5 (C-7), 79.9 (C-8), 51.3 (C-9), 24.8 (C-10), 190.4 (C-11), 69.3 (C-1′), 31.5 (C-2′), 19.2 (C-3′), 13.8 (C-4′). *Pedicularis kansuensis* f. *albiflora* (Scrophulariaceae).[55,76]

348. Shanzhigenin methyl ester



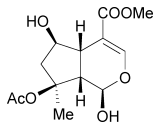
$C_{11}H_{16}O_6$: 244.0947; isolated as a mixture with C-1-epimer; colorless needles; mp 153—155 °C (C_6H_6–Me_2CO); $[\alpha]_D^{20}$ +4.1° (c=0.67, MeOH); UV (MeOH): 249 (4.01); IR (KBr): 3435, 3352, 1674, 1636; ^{1}H-NMR (400 MHz, CD_3OD): 5.42 (d, 2.5, H-1), 7.42 (s, H-3), 3.07 (m, H-5), 4.22 (m, H-6), 1.67 (br d, 14.0, H-7), 2.29 (dd, 14.0, 9.0, H-7), 2.14 (dd, 5.8, 2.5, H-9), 1.31 (s, H_3-10), 3.72 (s, MeO); ^{13}C-NMR (100 MHz, CD_3OD): 92.4 (C-1), 153.0 (C-3), 110.0 (C-4), 43.3 (C-5), 80.3 (C-6), 49.2 (C-7), 81.0 (C-8), 51.9 (C-9), 25.0 (C-10), 170.2 (C-11), 53.2 (OMe). *Phlomis umbrosa* (Lamiaceae).[182]

349. 1-*epi*-Shanzhigenin methyl ester



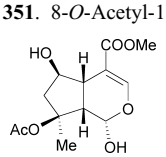
$C_{11}H_{16}O_6$: 244.0947; isolated as a mixture with shanzhigenin methyl ester; mp, $[\alpha]_D$, UV and IR same as that of shanzhigenin methyl ester; ^{1}H-NMR (400 MHz, CD_3OD): 5.18 (d, 6.1, H-1), 7.42 (s, H-3), 3.03 (m, H-5), 3.99 (ddd, 9.2, 6.0, 3.1, H-6), 1.79 (dd, 13.2, 5.0, H_α-7), 2.00 (dd, 13.2, 6.9, H_β-7), 2.37 (dd, 9.1, 6.1, H-9), 1.36 (s, H_3-10), 3.74 (s, MeO); ^{13}C-NMR (100 MHz, CD_3OD): 94.2 (C-1), 153.8 (C-3), 110.0 (C-4), 42.6 (C-5), 78.2 (C-6), 48.7 (C-7), 79.5 (C-8), 51.9 (C-9), 24.0 (C-10), 170.2 (C-11), 53.0 (OMe). *Phlomis umbrosa* (Lamiaceae).[182]

350. 8-*O*-Acetylshanzhigenin methyl ester



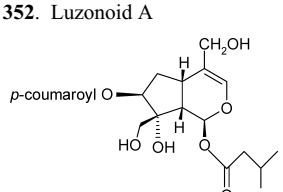
$C_{13}H_{18}O_7$: 286.1052; isolated as a mixture with C-1-epimer; colorless needles; mp 69—71 °C (C_6H_6–Me_2CO); $[\alpha]_D$ +3.6° (c=0.25, Me_2CO); UV ($CHCl_3$): 258 (3.76); IR (KBr): 3479, 3333, 1732, 1682, 1638; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.51 (d, 3.0, H-1), 7.38 (s, H-3), 2.90 (dd, 8.2, 6.0, H-5), 4.27 (ddd, 6.6, 6.3, 6.2, H-6), 2.20 (dd, 15.2, 3.2, H_α-7), 2.32 (dd, 15.2, 9.1, H_β-7), 2.86 (dd, 8.2, 3.1, H-9), 1.64 (s, H_3-10), 3.73 (s, MeO), 1.99 (s, Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 90.4 (C-1), 151.3 (C-3), 108.7 (C-4), 42.2 (C-5), 77.8 (C-6), 46.8 (C-7), 90.7 (C-8), 48.0 (C-9), 19.3 (C-10), 169.7 (C-11), 51.6 (MeO), 171.1, 22.5 (Ac). *Phlomis umbrosa* (Lamiaceae).[182]

351. 8-*O*-Acetyl-1-*epi*-shanzhigenin methyl ester



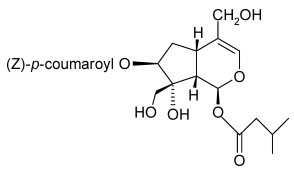
$C_{13}H_{18}O_7$: 286.1052; isolated as a mixture with 8-acetylshanzhigenin methyl ester; mp, $[\alpha]_D$, UV and IR same as 8-acetylshanzhigenin methyl ester; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.12 (d, 6.0, H-1), 7.43 (s, H-3), 2.95 (dd, 9.0, 6.4, H-5), 3.98 (ddd, 8.4, 6.1, 3.2, H-6), 2.17 (dd, 13.3, 6.1, H_α-7), 2.34 (dd, 13.3, 6.6, H_β-7), 2.77 (dd, 9.0, 6.0, H-9), 1.55 (s, H_3-10), 3.73 (s, MeO), 2.01 (s, Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 93.3 (C-1), 152.8 (C-3), 108.3 (C-4), 41.7 (C-5), 76.3 (C-6), 46.2 (C-7), 87.2 (C-8), 49.4 (C-9), 21.5 (C-10), 169.2 (C-11), 51.6 (MeO), 171.1, 22.2 (Ac). *Phlomis umbrosa* (Lamiaceae).[182]

352. Luzonoid A



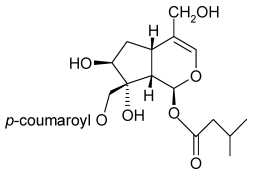
$C_{24}H_{30}O_9$: 462.1889; yellow oil; $[\alpha]_D^{21}$ +41.0° (c=0.64, MeOH); UV (EtOH): 229 (4.04), 300 (4.26), 316 (4.35); IR (film): 3429, 1734, 1694, 1587, 1516; ^{1}H-NMR (CD_3OD): 6.18 (d, 4.9, H-1), 6.34 (s, H-3), 3.02 (ddd, 8.2, 8.2, 9.8, H-5), 2.12 (ddd, 4.1, 8.2, 11.0, H-6), 2.15 (ddd, 4.1, 8.2, 11.0, H-6), 5.09 (dd, 4.1, 4.1, H-7), 2.43 (dd, 4.9, 9.8, H-9), 3.68 (d, 11.3, H-10), 3.76 (d, 11.3, H-10), 3.94 (d, 12.4, H-11), 4.09 (d, 12.4, H-11), 2.22 (d, 7.1, H_2-2′), 2.09 (tq, 6.9, 7.1, H-3′), 0.97 (d, 6.9, H_3-4′, 5′), 6.34 (d, 15.8, H-8″), 7.61 (d, 15.8, H-7″), 7.46 (d, 8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.6 (C-1), 138.9 (C-3), 119.0 (C-4), 32.5 (C-5), 36.0 (C-6), 81.3 (C-7), 83.5 (C-8), 45.3 (C-9), 65.8 (C-10), 62.1 (C-11), 173.1 (C-1′), 44.2 (C-2′), 26.7 (C-3′), 22.7 (C-4′, 5′), 168.6 (C-9″), 115.1 (C-8″), 146.8 (C-7″), 127.1 (C-1″), 131.2 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

353. Luzonoid B



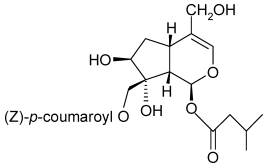
$C_{24}H_{30}O_9$: 462.1889; yellow oil; $[\alpha]_D^{21}$ −53.7° (c=2.11, MeOH); UV (EtOH): 230 (3.99), 300 (4.15), 314 (4.22); IR (film): 3443, 1736, 1697, 1590, 1514; ^{1}H-NMR (600 MHz, CD_3OD): 6.14 (d, 4.7, H-1), 6.31 (s, H-3), 2.92 (ddd, 8.2, 8.2, 9.9, H-5), 2.09 (ddd, 4.0, 8.2, 11.3, H-6), 2.11 (ddd, 4.0, 8.2, 11.3, H-6), 5.02 (dd, 4.0, 4.0, H-7), 2.26 (dd, 4.7, 9.9, H-9), 2.22 (d, 7.1, H_2-2′), 2.09 (tq, 7.1, 6.6, H-3′), 0.96 (d, 6.6, H_3-4′, 5′), 5.78 (d, 12.6, H-8″), 6.90 (d, 12.6, H-7″), 7.58 (d, 8.7, H-2″, 6″), 6.75 (d, 8.7, H-3″, 5″); ^{13}C-NMR (125 MHz, CD_3OD): 91.5 (C-1), 138.7 (C-3), 119.1 (C-4), 32.4 (C-5), 35.9 (C-6), 81.1 (C-7), 83.5 (C-8), 45.3 (C-9), 65.7 (C-10), 62.2 (C-11), 173.1 (C-1′), 44.2 (C-2′), 26.7 (C-3′), 22.7 (C-4′, 5′), 167.5 (C-9″), 117.1 (C-8″), 145.5 (C-7″), 127.8 (C-1″), 133.4 (C-2″, 6″), 115.9 (C-3″, 5″), 160.0 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

354. Luzonoid C



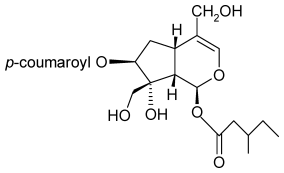
$C_{24}H_{30}O_9$: 462.1889; yellow oil; $[\alpha]_D^{21}$ −54.1° (c=0.35, MeOH); UV (EtOH): 228 (3.81), 300 (4.03), 314 (4.10); IR (film): 3379, 1739, 1691, 1587, 1515; ^{1}H-NMR (600 MHz, CD_3OD): 6.31 (d, 4.4, H-1), 6.30 (s, H-3), 3.05 (ddd, 10.2, 8.4, 8.4, H-5), 2.01 (ddd, 10.3, 8.4, 4.0, H-6), 2.03 (ddd, 10.3, 8.4, 4.0, H-6), 4.02 (dd, 4.0, 4.0, H-7), 2.44 (dd, 10.2, 4.4, H-9), 4.38 (s, H_2-10), 3.93 (d, 12.6, H-11), 4.08 (d, 12.6, H-11), 2.21 (m, H_2-2′), 2.07 (tq, 7.4, 6.9, H-3′), 0.93 (d, 6.9, H_3-4′, 5′), 6.38 (d, 16.1, H-8″), 7.68 (d, 16.1, H-7″), 7.48 (d, 8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.4 (C-3), 119.7 (C-4), 32.1 (C-5), 38.4 (C-6), 79.1 (C-7), 83.0 (C-8), 45.8 (C-9), 69.1 (C-10), 62.3 (C-11), 173.2 (C-1′), 44.3 (C-2′), 26.9 (C-3′), 22.7 (C-4′, 5′), 169.5 (C-9″), 115.1 (C-8″), 146.8 (C-7″), 127.2 (C-1″), 131.2 (C-2″, 6″), 116.8 (C-3″, 5″), 161.4 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

355. Luzonoid D



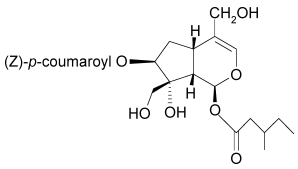
$C_{24}H_{30}O_9$: 462.1889; yellow oil; $[\alpha]_D^{21}$ −43.3° (c=1.03, MeOH); UV (EtOH): 225 (4.04), 300 (4.03), 313 (4.09); IR (film): 3409, 1733, 1696, 1586, 1513; ^{1}H-NMR (600 MHz, CD_3OD): 6.20 (d, 4.4, H-1), 6.29 (s, H-3), 3.02 (ddd, 10.2, 8.4, 8.4, H-5), 1.98 (ddd, 11.5, 8.4, 3.8, H-6), 2.02 (ddd, 11.5, 8.4, 3.8, H-6), 3.97 (dd, 3.8, 3.8, H-7), 2.38 (dd, 10.2, 4.4, H-9), 4.31 (d, 11.5, H-10), 4.35 (d, 11.5, H-10), 3.92 (d, 12.5, H-11), 4.06 (d, 12.5, H-11), 2.20 (m, H_2-2′), 2.07 (tq, 7.7, 6.9, H-3′), 0.94 (d, 6.9, H_3-4′, 5′), 5.86 (d, 12.8, H-8″), 6.87 (d, 12.8, H-7″), 7.67 (d, 8.8, H-2″, 6″), 6.74 (d, 8.8, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.4 (C-3), 119.8 (C-4), 32.3 (C-5), 38.4 (C-6), 78.9 (C-7), 83.0 (C-8), 45.7 (C-9), 68.5 (C-10), 62.3 (C-11), 173.1 (C-1′), 44.3 (C-2′), 26.8 (C-3′), 22.7 (C-4′, 5′), 168.4 (C-9″), 116.5 (C-8″), 145.4 (C-7″), 127.6 (C-1″), 133.8 (C-2″, 6″), 115.8 (C-3″, 5″), 160.2 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

356. Luzonoid E



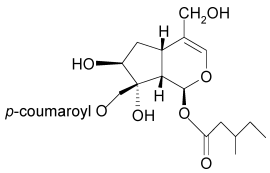
$C_{25}H_{32}O_9$: 476.2046; yellow oil; $[\alpha]_D^{21}$ +54.1° (c=0.21, MeOH); UV (EtOH): 229 (4.03), 300 (4.23), 315 (4.31); IR (film): 3422, 1732, 1687, 1587, 1515; ^{1}H-NMR (600 MHz, CD_3OD): 6.17 (d, 4.9, H-1), 6.34 (s, H-3), 3.02 (ddd, 9.9, 8.1, 8.1, H-5), 2.12 (ddd, 11.5, 8.1, 4.1, H-6), 2.15 (ddd, 11.5, 8.1, 4.1, H-6), 5.08 (dd, 4.1, 4.1, H-7), 2.43 (dd, 9.9, 4.9, H-9), 3.68 (d, 11.5, H-10), 3.75 (d, 11.5, H-10), 3.94 (d, 12.5, H-11), 4.09 (d, 12.5, H-11), 2.14 (dd, 14.8, 8.2, H-2′), 1.87 (m, H-3′), 1.25 (ddq, 14.8, 7.4, 7.4, H-4′), 1.40 (ddq, 14.8, 7.6, 7.4, H-4′), 0.91 (dd, 7.4, 7.4, H-5′), 0.95 (d, 6.6, H_3-6′), 6.34 (d, 15.8, H-8″) 7.61 (d, 15.8, H-7″), 7.47 (d, 8.7, H-2″, 6″), 6.80 (d, 8.7, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.6 (C-1), 139.0 (C-3), 119.1 (C-4), 32.6 (C-5), 36.0 (C-6), 81.3 (C-7), 83.6 (C-8), 45.4 (C-9), 65.9 (C-10), 62.1 (C-11), 173.3 (C-1′), 42.3 (C-2′), 33.1 (C-3′), 30.3 (C-4′), 11.6 (C-5′), 19.6 (C-6′), 168.6 (C-9″), 115.2 (C-8″), 146.8 (C-7″), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.8 (C-3″, 5″), 161.4 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

357. Luzonoid F



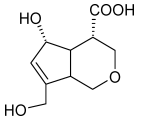
$C_{25}H_{32}O_9$: 476.2046; colourless oil; $[\alpha]_D^{21}$ −32.1° (c=2.10, MeOH); UV (EtOH): 225 (4.26), 300 (4.26), 315 (4.33); IR (film): 3428, 1734, 1688, 1590, 1514; ^{1}H-NMR (600 MHz, CD_3OD): 6.14 (d, 4.7, H-1), 6.31 (s, H-3), 2.92 (ddd, 9.9, 8.5, 8.5, H-5) 2.09 (ddd, 11.0, 8.5, 4.0, H-6), 2.11 (ddd, 11.0, 8.5, 4.0, H-6), 5.02 (dd, 4.0, 4.0, H-7), 2.26 (dd, 10.0, 4.7, H-9), 3.57 (d, 11.5, H-10), 3.61 (d, 11.5, H-10), 3.93 (d, 12.4, H-11), 4.08 (d, 12.4, H-11), 2.14 (dd, 15.1, 8.1, H-2′), 2.35 (dd, 15.1, 6.0, H-2′), 1.86 (m, H-3′), 1.24 (ddq, 14.8, 7.4, 7.4, H-4′), 1.39 (ddq, 14.8, 7.6, 7.4, H-4′), 0.91 (dd, 7.4, 7.4, H_3-5′), 0.94 (d, 6.6, H_3-6′), 5.78 (d, 12.6, H-8″), 6.91 (d, 12.6, H-7″), 7.58 (d, 8.7, H-2″, 6″), 6.75 (d, 8.7, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.5 (C-1), 138.7 (C-3), 119.2 (C-4), 32.4 (C-5), 35.9 (C-6), 81.2 (C-7), 83.5 (C-8), 45.4 (C-9), 65.7 (C-10), 62.2 (C-11), 173.3 (C-1′), 42.2 (C-2′), 33.1 (C-3′), 30.3 (C-4′), 11.6 (C-5′), 19.6 (C-6′), 127.8 (C-1″), 133.4 (C-2″, 6″), 115.9 (C-3″, 5″), 160.0 (C-4″), 167.5 (C-9″), 117.1 (C-8″), 145.5 (C-7″). *Viburnum luzonicum* (Caprifoliaceae).[164]

358. Luzonoid G



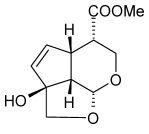
$C_{25}H_{32}O_9$: 476.2046; colourless oil; $[\alpha]_D^{21}$ −36.1° (c=0.80, MeOH); UV (EtOH): 226 (3.87), 300 (4.04), 314 (4.11); IR (film): 3380, 1738, 1689, 1588, 1515; ^{1}H-NMR (600 MHz, CD_3OD): 6.31 (d, 4.4, H-1), 6.30 (s, H-3), 3.04 (ddd, 9.9, 8.8, 8.8, H-5) 2.01 (ddd, 11.9, 8.8, 4.0, H-6), 2.03 (ddd, 11.9, 8.8 4.0, H-6), 4.02 (dd, 4.0, 4.0, H-7), 2.44 (dd, 9.9, 4.1, H-9), 4.36 (d, 11.5, H-10), 4.38 (d, 11.5, H-10), 3.93 (d, 12.5, H-11), 4.08 (d, 12.5, H-11), 2.13 (dd, 14.9, 8.2, H-2′), 1.87 (m, H-3′), 1.20 (ddq, 14.1, 7.4, 6.0, H-4′), 1.35 (ddq, 14.1, 7.4, 6.0, H-4′), 0.86 (dd, 7.4, 7.4, H_3- 5′), 0.91 (d, 6.9, H_3-6′), 6.39 (d, 15.8, H-8″), 7.68 (d, 15.8, H-7″), 7.48 (d, 8.5, H-2″, 6″), 6.80 (d, 8.5, H-3″, 5″); ^{13}C-NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.5 (C-3), 119.7 (C-4), 32.1 (C-5), 38.4 (C-6), 79.1 (C-7), 83.0 (C-8), 45.8 (C-9), 69.2 (C-10), 62.3 (C-11), 173.4 (C-1′), 42.4 (C-2′), 33.2 (C-3′), 30.3 (C-4′), 11.6 (C-5′), 19.5 (C-6′), 169.5 (C-9″), 115.1 (C-8″), 146.8 (C-7″), 127.2 (C-1″), 131.2 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″). *Viburnum luzonicum* (Caprifoliaceae).[164]

359. Macedonine



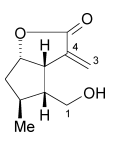
$C_{10}H_{14}O_5$: 214.0841; amorphous powder; ^{1}H-NMR (250 MHz, D_2O): 3.88 (dd, 11.3, 4.2, H_a-1), 3.98 (dd, 11.3, 4.2, H_b-1), 3.77 (m, H_2-3), 3.16 (m, 7.8, H-4), 3.29 (td, 7.4, 4.3, H-5), 5.53 (dd, 7.4, 1.7, H-6), 5.94 (d, 1.7, H-7), 3.00 (q, 4.1, H-9), 4.27 (ABq, 15.4, H_2-10), ^{13}C-NMR (62.5 MHz, D_2O): 61.5 (C-1), 61.9 (C-3), 45.1 (C-4), 48.3 (C-5), 91.5 (C-6), 126.4 (C-7), 155.3 (C-8), 50.7 (C-9), 64.5 (C-10), 185.0 (C-11). *Galium macedonicum* (Rubiaceae).[183]

360. Dunnisinin



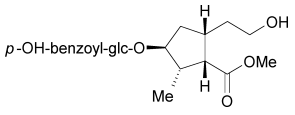
$C_{11}H_{14}O_5$: 226.0841; colorless needles; mp 178—179 °C; $[\alpha]_D^{25}$ +213.5° (c=0.20, MeOH); IR (KBr): 3446, 1734, 1607, 1416, 1284, 1200, 1105; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.38 (d, 7.2, H-1), 3.77 (ddd, 11.6, 4.0, 1.2, H_β-3), 3.69 (t, 11.6, H_α-3), 2.90 (ddd, 11.6, 6.0, 4.0, H-4), 3.65 (m, H-5), 5.80 (dd, 5.6, 2.4, H-6), 5.70 (dd, 5.6, 1.6, H-7), 2.44 (dd, 8.0, 7.2, H-9), 3.55 (d, 9.2, H_β-10), 3.88 (d, 9.2, H_α-10), 3.70 (s, OMe); ^{13}C-NMR (100 MHz, $CDCl_3$): 99.8 (C-1), 56.3 (C-3), 40.8 (C-4), 42.0 (C-5), 136.4 (C-6), 135.7 (C-7), 92.5 (C-8), 45.7 (C-9), 70.6 (C-10), 172.2 (C-11), 51.8 (OMe). *Dunnia sinensis* (Rubiaceae).[176]

361. GSIR-1



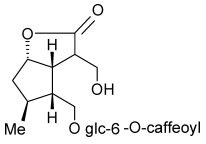
$C_{10}H_{16}O_3$: 184.1099; amorphous; UV (MeOH): 215.5; IR ($CHCl_3$): 1750; ^{1}H-NMR (500 MHz, $CDCl_3$): 3.58 (dd, 10.6, 10.0, H-1), 3.82 (dd, 10.6, 4.2, H-1), 6.43 and 5.93 (each br d, 2.2, H_2-3), 3.70 (m, H-5), 4.96 (dd, 5.8, 5.5, H-6), 2.24 (dd, 14.0, 5.8, H-7), 1.47 (ddd, 14.0, 12.5, 5.5, H-7), 1.65 (m, H-8), 1.87 (m, H-9), 1.03 (d, 6.4, H_3-10); ^{13}C-NMR (125 MHz, $CDCl_3$): 60.8 (C-1), 125.7 (C-3), 135.0 (C-4), 45.4 (C-5), 81.9 (C-6), 41.9 (C-7), 32.7 (C-8), 52.6 (C-9), 17.4 (C-10), 171.2 (C-11). *Gelsemium sempervirens* (Loganiaceae).[184]

362. Ovatic acid methyl ester-7-*O*-(6′-*O*-*p*-hydroxybenzoyl)-*β*-D-glucopyranoside



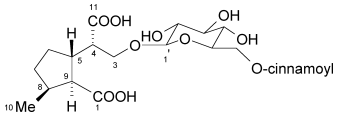
$C_{23}H_{32}O_{11}$: 484.1944; may be artifact formed from its acid during extraction and isolation process; amorphous powder; $[\alpha]_D^{25}$ 0.0° (c=0.3, MeOH); UV (MeOH): 256 (3.86), 309 (3.12); ^{1}H-NMR (400 MHz, CD_3OD): 3.43 (m, H_2-3), 1.31 (H_a-4), 1.46 (m, H_b-4), 2.36 (br dd, 10.0, 6.8, H-5), 1.88 (ddd, 13.7, 10.0, 9.0, H_α-6), 1.97 (ddd, 13.7, 10.0, 3.4, H_β-6), 4.06 (m, H-7), 2.22 (br q, 6.8, H-8), 2.85 (br t, 6.8, H-9), 1.05 (d, 6.8, H_3-10), 4.32 (d, 7.8, H-1′), 3.19 (dd, 8.8, 7.8, H-2′), 3.35 (m, H-3′, 4′), 3.59 (m, H-5′), 4.38 (dd, 11.7, 7.4, H_a-6′), 4.60 (dd, 11.7, 2.4, H_b-6′), 7.91 (d, 9.0, H-2″, 6″), 6.83 (d, 9.0, H-3″, 5″), 3.60 (s, OMe); ^{13}C-NMR (100 MHz, CD_3OD): 175.6 (C-1), 61.5 (C-3), 39.5 (C-4), 38.4 (C-5), 36.0 (C-6), 39.0 (C-7), 45.7 (C-8), 54.3 (C-9), 14.5 (C-10), 105.5 (C-1′), 75.4 (C-2′), 78.1 (C-3′), 72.3 (C-4′), 75.4 (C-5′), 65.1 (C-6′), 122.4 (C-1″), 133.0 (C-2″, 6″), 116.3 (C-3″, 5″), 163.6 (C-4″), 168.0 (C-7″), 51.4 (OMe). *Catalpa ovata* (Bignoniaceae).[62]

363. Gelsemiol-6′-*trans*-caffeoyl-1-glucoside



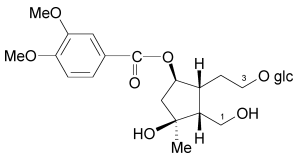
$C_{25}H_{32}O_{12}$: 524.1893; colorless needles (MeOH); mp 122—124 °C; $[\alpha]_D^{27}$ +3.4° (c=0.23, MeOH); UV (MeOH): 217 (4.44), 244 (3.5), 329 (4.8); IR (neat): 3600—3300, 1745, 1700, 1635, 1600, 1520, 1450; ^{1}H-NMR (500 MHz, CD_3OD): 3.52 (dd, 10.0, 4.0, H-1), 4.05 (dd, 10.0, 4.0, H-1), 3.81 and 3.86 (each dd, 10.5, 4.0, H_2-3), 2.87 (dt, 8.0, 4.0, H-4), 3.14 (m, H-5), 4.91 (dd, 7.0, 6.0, H-6), 2.04 (dd, 14.0, 6.0, H_α-7), 1.44 (ddd, 14.0, 12.0, 6.0, H_β-7), 1.76 (m, H-8), 1.91 (m, H-9), 0.96 (d, 6.5, H_3-10), 4.27 (d, 8.0, H-1′), 3.19 (t, 8.0, H-2′), 3.51 (dd, 9.5, 8.0, H-3′), 3.34 (t, 9.5, H-4′), 3.52 (ddd, 9.5, 6.0, 2.5, H-5′), 4.38 (dd, 12.0, 6.0, H_a-6′), 4.47 (dd, 12.0, 2.5, H_b-6′), 7.04 (d, H-2″), 6.77 (d, 8.0, H-5″), 6.94 (dd, 8.0, 2.0, H-6″), 7.57 (d, 16.0, H-7″), 6.28 (d, 16.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 69.4 (C-1), 63.1 (C-3), 45.6 (C-4), 45.5 (C-5), 85.4 (C-6), 42.7 (C-7), 34.1 (C-8), 50.3 (C-9), 17.6 (C-10), 181.7 (C-11), 104.6 (C-1′), 75.0 (C-2′), 78.0 (C-3′), 71.8 (C-4′), 75.5 (C-5′), 64.6 (C-6′), 127.7 (C-1″), 115.2 (C-2″), 146.9 (C-3″), 149.7 (C-4″), 116.5 (C-5″), 123.1 (C-6″), 147.3 (C-7″), 114.9 (C-8″), 169.1 (C-9″). *Verbena littoralis* (Verbenaceae).[185]

364. Syringafghanoside



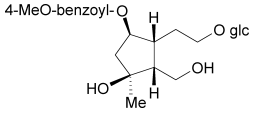
$C_{25}H_{32}O_{11}$: 508.1944; colorless amorphous powder; $[\alpha]_D^{28}$ −21.0° (c=1.01, MeOH); UV (MeOH): 216 (4.10), 222sh (4.03), 276 (4.17); IR (KBr): 3393, 1712, 1637, 1570, 1082; ^{1}H-NMR (500 MHz, CD_3OD): 3.70 (dd, 10.0, 7.0, H-3), 4.12 (dd, 10.0, 4.0, H-3), 2.84 (m, H-4), 2.51 (m, H-5, 9), 1.53 (m, H-6), 1.85 (m, H-6), 1.14 (m, H-7), 1.93 (m, H-7), 2.25 (m, H-8), 1.02 (d, 7.0, H_3-10), 4.25 (d, 8.0, H-1′), 3.35 (t, 8.0, H-3′), 4.36 (dd, 12.0, 6.0, H-6′), 4.50 (dd, 12.0, 2.0, H-6′), 7.55—7.62 (m, H-2″, 6″), 7.35—7.44 (m, H-3″, 4″, 5″), 7.72 (d, 16.0, H-7″), 6.57 (d, 16.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 179.2 (C-1), 71.3 (C-3), 49.2 (C-4), 41.9 (C-5), 30.8 (C-6), 34.5 (C-7), 40.1 (C-8), 55.3 (C-9), 22.0 (C-10), 178.1 (C-11), 105.0 (C-1′), 74.9 (C-2′), 71.9 (C-3′), 77.8 (C-4′), 75.4 (C-5′), 64.9 (C-6′), 135.8 (C-1″), 129.3 (C-2″, 6″), 130.0 (C-3″, 5″), 131.6 (C-4″), 146.5 (C-7″), 118.8 (C-8″), 168.5 (C-9″). *Syringia afghanica* (Oleaceae).[186]

365. 6-*O*-(3,4-Dimethoxybenzoyl)crescentin IV 3-*O*-*β*-D-glucopyranoside



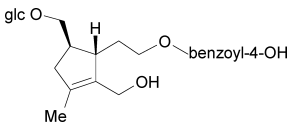
$C_{24}H_{36}O_{12}$: 516.2206; amorphous powder; $[\alpha]_D^{23}$ −44.7° (c=1.42, MeOH); UV (MeOH): 203 (4.29), 218 (4.27), 260 (4.00), 290 (3.71); ^{1}H-NMR (CD_3OD): 3.73 (overlapping, H_2-1), 3.66 (m, H-3), 3.97 (dt, 10.0, 6.5, H-3), 1.84 (m, H-4), 1.96 (m, H-4), 3.00 (quint, 7.5, H-5), 5.21 (ddd, 8.5, 7.5, 3.5, H-6), 1.75 (ddd, 14.5, 3.5, 1.5, H-7), 2.46 (dd, 14.5, 8.5, H-7), 2.10 (m, H-9), 1.36 (s, H_3-10), 4.23 (d, 8.0, H-1′), 3.16 (t, 8.0, H-2′), 3.32 (t, 8.0, H-3′), 3.24 (t, 8.0, H-4′), 3.16 (m, H-5′), 3.59 (dd, 12.0, 5.5, H-6′), 3.78 (dd, 12.0, 2.0 H-6′), 7.58 (d, 2.0, H-2″), 7.02 (d, 8.5, H-5″), 7.72 (dd, 8.5, 2.0, H-6″), 3.88 (s, MeO-3″), 3.89 (s, MeO-4″); ^{13}C-NMR (CD_3OD): 59.2 (C-1), 69.8 (C-3), 30.1 (C-4), 44.0 (C-5), 82.1 (C-6), 48.7 (C-7), 80.5 (C-8), 55.0 (C-9), 25.2 (C-10), 104.4 (C-1′), 75.1 (C-2′), 78.0 (C-3′)[a], 71.6 (C-4′), 77.8 (C-5′)[a], 62.7 (C-6′), 124.3 (C-1″), 113.7 (C-2″), 150.2 (C-3″), 154.8 (C-4″), 112.0 (C-5″), 125.1 (C-6″), 168.2 (C-7″), 56.5, 56.6 (2×MeO). *Tabebuia impetiginosa* (Bignoniaceae).[68]

366. 6-*O*-(4-Methoxybenzoyl)crescentin IV (3-*O*-*β*-D-glucopyranoside)



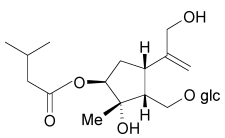
$C_{23}H_{34}O_{11}$: 486.2101; amorphous powder; $[\alpha]_D^{22}$ −51.6° (c=1.83, MeOH); UV (MeOH): 204 (4.45), 256 (4.43); ^{1}H-NMR (CD_3OD): 8.01 (d, 9.0, H-2″, 6″), 6.98 (d, 9.0, H-3″, 5″), 3.86 (s, MeO-4″), other signals were in good agreement with that of 6-*O*-(3,4-dimethoxybenzoyl)crescentin; ^{13}C-NMR (CD_3OD): 124.1 (C-1″), 132.7 (C-2″, 6″), 114.7 (C-3″, 5″), 165.1 (C-4″), 168.2 (C-7″), other signals were in very similar with that of 6-*O*-(3,4-dimethoxybenzoyl)crescentin. *Tabebuia impetiginosa* (Bignoniaceae).[68]

367. 3-*O*-(4-Hydroxybenzoyl)-10-deoxyeucommiol-6-*O*-*β*-D-glucopyranoside



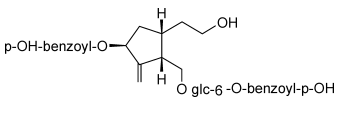
$C_{22}H_{30}O_{10}$: 454.1839; amorphous powder; $[\alpha]_D^{24}$ −40.0° (c=0.47, MeOH); UV (MeOH): 202 (4.39), 256 (4.19); ^{1}H-NMR (CD_3OD): 4.40 (br d, 12.5, H-1), 4.50 (br d, 12.5, H-1), 4.80 (ddd, 11.0, 8.5, 5.5, H-3), 4.60 (ddd, 11.0, 8.5, 7.0, H-3), 1.95 (m, H-4), 2.44 (m, H-4), 3.58 (br s, H-5), 4.71 (quint, 3.5, H-6), 2.62 (br d, 17.0, H-7), 2.73 (dd, 17.0, 6.5, H-7), 1.57 (br s, H_3-10), 4.93 (d, 8.0, H-1′), 3.97 (overlapping, H-2′, 5′), 4.24 (t, 8.0, H-3′), 4.20 (t, 8.0, H-4′), 4.35 (dd, 12.0, 5.5, H-6′), 4.55 (dd, 12.0, 2.0, H-6′), 8.20 (d, 8.5, H-2″, 6″), 7.15 (d, 8.5, H-3″, 5″); ^{13}C-NMR (C_5D_5N): 56.8 (C-1), 63.7 (C-3), 31.3 (C-4), 51.3 (C-5), 82.3 (C-6), 44.4 (C-7), 132.3 (C-8)[a], 136.8 (C-9)[a], 13.9 (C-10), 103.8 (C-1′), 75.1 (C-2′), 78.5 (C-3′)[b], 71.8 (C-4′), 78.4 (C-5′)[b], 63.1 (C-6′), 122.0 (C-1″), 132.4 (C-2″, 6″), 116.1 (C-3″, 5″), 163.4 (C-4″), 166.8 (C-7″). *Tabebuia impetiginosa* (Bignoniaceae).[68]

368. Patrinioside



$C_{21}H_{36}O_{10}$: 448.2308; amorphous powder; $[\alpha]_D^{26}$ −4.8° (c=0.5, MeOH); IR (nujol): 3275, 2930, 1710; ^{1}H-NMR (500 MHz, CD_3OD): 3.50 (dd, 10.0, 8.7, H-1), 4.02 (dd, 10.0, 4.1, H-1), 3.99 (br d, 14.7, H-3), 4.10 (br d, 14.7, H-3), 2.97 (br q, 9.0, H-5), 1.73 (ddd, 12.4, 9.0, 6.4, H-6), 2.11 (ddd, 12.4, 8.7, 3.7, H-6), 4.49 (dd, 6.4, 3.7, H-7), 2.57 (dt, 8.7, 4.1, H-9), 1.60 (s, H_3-10), 4.98 (br s, H-11), 5.27 (br d, 1.5, H-11), 4.12 (d, 7.5, H-1′), 3.12 (dd, 8.5, 7.5, H-2′), 3.33 (br t, 8.5, H-3′), 3.28 (m, H-5′), 3.65 (dd, 11.9, 5.5, H-6′), 3.85 (dd, 11.9, 2.3, H-6′), 2.15 (dd, 14.5, 7.0, H-2″), 2.18 (q, 14.5, H-2″), 2.07 (br ddq, 14.5, 7.0, 6.4, H-3″), 0.96 (d, 6.4, H_3-4″, 5″); ^{13}C-NMR (125 MHz, CD_3OD): 69.7 (C-1), 66.7 (C-3), 150.7 (C-4), 40.2 (C-5), 37.1 (C-6), 77.8 (C-7), 93.0 (C-8), 51.3 (C-9), 19.1 (C-10), 110.1 (C-11), 104.6 (C-1′), 75.2 (C-2′), 78.1 (C-3′), 76.6 (C-5′), 62.7 (C-6′), 174.3 (C-1″), 45.3 (C-2″), 26.9 (C-3″), 22.8 (C-4″, 5″), C-4′ signal of sugar unit not reported. *Patrinia scabra* (Valerianaceae).[187]

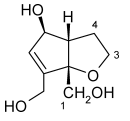
369. 7-*O*-*p*-Hydroxybenzoylovatol-1-*O*-(6′-*O*-*p*-hydroxybenzoyl)-*β*-D-glucopyranoside



$C_{29}H_{34}O_{12}$: 574.2050; amorphous powder; $[\alpha]_D^{25}$ +22.2° (c=0.3, MeOH); UV (MeOH): 204 (4.44), 256 (4.44), 309 (2.57); CD (c=1.10×10^{-4} M, MeOH), $\Delta\varepsilon$: +1.81 (252.5), +2.86 (214.5); ^{1}H-NMR (400 MHz, CD_3OD): 3.59 (m, H_a-1, H_2-3, H-5′), 3.91 (dd, 9.8, 5.1, H_b-1), 1.45 (m, H_a-4), 1.80 (m, H_b-4), 2.50 (br dt, 7.3, 6.8, H-5), 1.83 (m, H_β-6), 2.02 (ddd, 13.9, 8.5, 6.8, H_α-6), 5.68 (m, H-7), 3.00 (m, H-9), 5.19 and 5.30 (each s, H_2-10), 4.30 (d, 7.8, H-1′), 3.22 (dd, 9.3, 7.8, H-2′), 3.31 (m, H-3′, 4′), 4.43 (dd, 11.7, 6.6, H_a-6′),

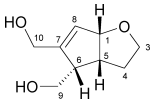
4.61 (dd, 11.7, 2.2, H_b-6′), 7.83, 7.90 (each 2H, d, 8.8, H-2″, 6″, 2‴, 6‴), 6.80, 6.81 (each 2H, d, 8.8, H-3″, 5″, 3‴, 5‴); ^{13}C-NMR (100 MHz, CD_3OD): 71.4 (C-1), 61.8 (C-3), 33.3 (C-4), 37.3 (C-5), 38.2 (C-6), 77.2 (C-7), 153.4 (C-8), 47.1 (C-9), 113.9 (C-10), 104.8 (C-1′), 75.2 (C-2′), 78.1 (C-3′), 72.1 (C-4′), 75.5 (C-5′), 64.9 (C-6′), 122.3, 122.7 (C-1″, 1‴), 132.8, 132.9 (C-2″, 6″, 2‴, 6‴), 116.2, 116.3 (C-3″, 5″, 3‴, 5‴), 163.6, 163.7 (C-4″, 4‴), 168.1 (C-7″, 7‴). *Catalpa ovata* (Bignoniaceae).[62]

370. Des-*p*-hydroxybenzoylkisasagenol B



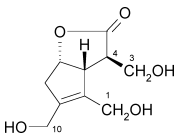
$C_9H_{14}O_4$: 186.0892; brown oil; $[\alpha]_D^{26}$ −26.2° (*c*=0.4, MeOH); UV (MeOH): 203 (3.20); ^{1}H-NMR (270 MHz, CD_3OD): 3.63, 3.69 (each d, 11.4, H_2-1), 3.51 (ddd, 9.8, 8.5, 5.8, H_α-3), 3.89 (ddd, 8.5, 7.4, 3.0, H_β-3), 1.73 (dddd, 12.0, 9.8, 3.0, 2.9, H_α-4), 2.08 (dddd, 12.0, 9.3, 7.4, 5.8, H_β-4), 2.46 (ddd, 9.3, 2.9, 1.7, H-5), 4.40 (dd, 2.2, 1.7, H-6), 5.83 (d, 2.2, H-7), 4.14, 4.15 (each t, 1.7, H_2-10); ^{13}C-NMR (67.8 MHz, CD_3OD): 66.2 (C-1), 68.1 (C-3), 33.2 (C-4), 55.1 (C-5), 81.2 (C-6), 131.8 (C-7), 148.8 (C-8), 98.3 (C-9), 59.2 (C-10). *Catalpa fructus* (Bignoniaceae).[59]

371. (−) Ningpogenin (revision of 1-dehydroxy-3,4-dihydroaucubingenin)



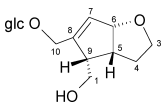
$C_9H_{14}O_3$: 170.0943; possibly isomer of (+) ningpogenin; colorless oil; $[\alpha]_D^{22}$ −6.0° (*c*=0.1, MeOH); UV (MeOH): 208, 224; IR (film): 3376, 2922, 1715, 1580, 1046; ^{1}H-NMR (600 MHz, CD_3OD): 5.01 (dd, 7.5, 1.5, H-1), 3.64 (ddd, 12.5, 9.0, 6.0, H-3), 3.72 (ddd, 12.5, 7.0, 6.0, H-3), 1.83 (dddd, 12.5, 9.0, 7.0, 6.0, H-4), 1.92 (td, 12.5, 6.0, H-4), 3.07 (dddd, 8.0, 7.5, 7.0, 6.0, H-5), 2.94 (qq-like, 11.0, 8.0, 6.0, 1.5, H-6), 5.60 (quint, 1.5, H-8), 3.77 (dd, 11.0, 6.0, H-9), 3.66 (q-like, 11.0, H-9), 4.14 (ABq, 14.5, 1.5, H-10), 4.11 (ABq, 14.5, 1.5, H-10); ^{13}C-NMR (150 MHz, CD_3OD): 88.3 (C-1), 68.4 (C-3), 28.9 (C-4), 44.3 (C-5), 49.8 (C-6), 150.2 (C-7), 127.0 (C-8), 62.3 (C-9), 61.0 (C-10). *Scrophularia lepidota* (Scrophulariaceae).[44]

372. Iridolactone



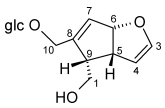
$C_{10}H_{14}O_5$: 214.0841; viscous syrup; $[\alpha]_D^{28}$ −30.6° (*c*=0.72, MeOH); IR (film): 3332, 1747, 1362, 1192, 1061, 1192, 1061, 991; ^{1}H-NMR (400 MHz, CD_3OD): 4.19 (br s, H_2-1), 3.86 (dd, 10.6, 3.7, H-3), 3.93 (dd, 10.6, 4.1, H-3), 2.83 (ddd, 6.4, 4.1, 3.7, H-4), 3.67 (m, H-5), 5.11 (td, 6.6, 1.1, H-6), 2.71 (d, 18.1, H-7), 2.91 (ddd, 18.1, 6.6, 1.1, H-7), 4.15 (br d, 13.2, H-10), 4.29 (br d, 13.2, H-10). *Lasianthus wallichii* (Rubiaceae).[188]

373. Crescentoside A



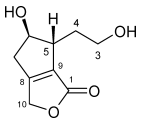
$C_{15}H_{24}O_8$: 332.1471; powder; $[\alpha]_D^{25}$ −21.0° (*c*=0.7, MeOH), ^{1}H-NMR (400 MHz, D_2O): 3.66 (dd, 12.0, 1.8, H_a-1), 3.49 (dd, 12.0, 9.0, H_b-1), 3.60 (ddd, 12.8, 6.6, 4.4, H_a-3), 3.55 (m, H_b-3, H_b-6′), 1.74 (m, H_a-4), 1.72 (m, H_b-4), 3.08 (dddd, 7.8, 7.6, 7.2, 6.8, H-5), 4.96 (br d, 7.6, H-6), 5.50 (br s, H-7), 2.96 (ddd, 9.0, 7.8, 5.6, H-9), 4.01 and 3.96 (each d, 14.9, H_2-10), 4.28 (d, 7.8, H-1′), 3.14 (dd, 8.8, 7.8, H-2′), 3.39 (dd, 8.8, 8.8, H-3′), 3.24 (dd, 8.8, H-4′), 3.35 (ddd, 8.8, 5.7, 1.8, H-5′), 3.75 (dd, 12.0, 1.8, H_a-6′); ^{13}C-NMR (100 MHz, D_2O): 66.9 (C-1), 58.8 (C-3), 27.1 (C-4), 42.0 (C-5), 86.5 (C-6), 124.8 (C-7), 146.9 (C-8), 46.0 (C-9), 68.7 (C-10), 100.1 (C-1′), 72.6 (C-2′), 75.5 (C-3′), 69.2 (C-4′), 75.3 (C-5′), 60.3 (C-6′). *Crescentia cujete* (Bignoniaceae).[73]

374. Crescentoside B



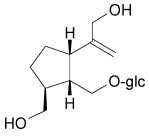
$C_{15}H_{22}O_8$: 330.1314; powder; $[\alpha]_D^{25}$ −43° (*c*=0.5, MeOH); ^{1}H-NMR (400 MHz, D_2O): 3.66 (dd, 12.0, 5.6, H_a-1), 3.49 (dd, 12.0, 9.0, H_b-1), 6.21 (d, 6.6, H-3), 4.79 (dd, 6.6, 4.6, H-4), 2.70 (ddd, 7.8, 7.6, 4.6, H-5), 4.96 (br d, 7.6, H-6), 5.81 (br s, H-7), 3.04 (ddd, 9.0, 7.8, 5.6, H-9), 3.98 and 3.95 (each d, 14.0, H_2-10), 4.35 (d, 8.0, H-1′), 3.15 (dd, 9.0, 8.0, H-2′), 3.40 (dd, 9.0, 9.0, H-3′), 3.26 (dd, 9.0, 9.0, H-4′), 3.35 (ddd, 9.0, 4.9, 1.8, H-5′), 3.76 (dd, 12.0, 1.8, H_a-6′), 3.56 (dd, 12.0, 4.9, H_b-6′); ^{13}C-NMR (100 MHz, D_2O): 67.1 (C-1), 141.8 (C-3), 105.3 (C-4), 39.8 (C-5), 87.1 (C-6), 124.7 (C-7), 147.0 (C-8), 46.1 (C-9), 68.7 (C-10), 99.9 (C-1′), 72.6 (C-2′), 75.5 (C-3′), 69.1 (C-4′), 75.3 (C-5′), 60.2 (C-6′). *Crescentia cujete* (Bignoniaceae).[73]

375. Viteoid I



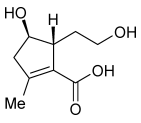
$C_9H_{12}O_4$: 184.0735; colorless oil; $[\alpha]_D^{27}$ −30.4° (*c*=1.3, MeOH); IR (KBr): 3371, 1740; ^{1}H-NMR (500 MHz, CD_3OD): 3.73 (m, H_2-3), 1.82 (dddd, 14.0, 6.7, 6.7, 6.7, H-4), 1.75 (dddd, 14.0, 6.7, 6.7, 6.7, H-4), 2.76 (br s, H-5), 4.55 (ddd, 6.7, 3.7, 3.7, H-6), 3.05 (m, H-7), 2.52 (m, H-7), 4.88 (d like, 1.2, H_2-10); ^{13}C-NMR (100 MHz, CD_3OD): 172.7 (C-1), 61.4 (C-3), 35.7 (C-4), 47.5 (C-5), 84.1 (C-6), 38.7 (C-7), 174.3 (C-8), 137.2 (C-9), 71.2 (C-10). *Vitex rotundifolia* (Verbenaceae).[179]

376. Lantanoside



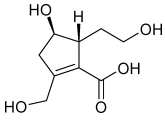
$C_{16}H_{28}O_8$: 348.1784; amorphous powder; $[\alpha]_D^{20}$ −28.0° (*c*=0.41, MeOH); UV (MeOH): 205; IR (KBr): 3392, 2929, 1608, 1163, 1083, 1044; ^{1}H-NMR (500 MHz, CD_3OD): 3.69 and 3.37 (each m, H_2-1), 5.17 and 4.93 (each d, 1.0, H_2-3), 2.54 (m, H-5), 1.80 and 1.72 (each m, H_2-6), 1.94 and 1.30 (each m, H_2-7), 2.03 (m, H-8), 2.24 (m, H-9), 3.54 (m, H_2-10), 4.16 and 4.03 (each brd, 14.6, H_2-11), 4.18 (d, 7.8, H-1′), 3.18 (dd, 9.1, 7.8, H-2′), 3.38 (dd ‘t’, 9.0, H-3′), 3.30 (dd ‘t’, 9.0, H-4′), 3.27 (m, H-5′), 3.70 (dd, 12.0, 4.8, H_a-6′), 3.89 (dd, 12.0, 2.2, H_b-6′); ^{13}C-NMR (125 MHz, CD_3OD): 71.9 (C-1), 108.1 (C-3), 150.4 (C-4), 45.2 (C-5), 29.7 (C-6), 28.7 (C-7), 46.4 (C-8), 43.9 (C-9), 67.2 (C-10), 66.2 (C-11), 104.2 (C-1′), 75.2 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 77.9 (C-5′), 62.7 (C-6′). *Viburnum lantana* (Caprifoliaceae).[190]

377. Crescentin I



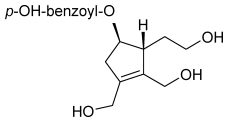
$C_9H_{14}O_4$: 186.0892; powder; $[\alpha]_D^{25}$ −43.0° (*c*=1.0, MeOH); ^{1}H-NMR (400 MHz, D_2O): 3.45 (t, 6.8, H_2-3), 1.52 (dt, 13.9, 6.8, H-4), 1.39 (dt, 13.9, 6.8, H-4), 2.64 (m, H-5), 3.91 (dd, 4.6, 2.6, H-6), 2.67 (dd, 18.1, 4.6, H-7), 2.04 (d, 18.1, H-7), 1.69 (s, H_3-10); ^{13}C-NMR (100 MHz, D_2O): 175.4 (C-1), 59.6 (C-3), 33.2 (C-4), 52.2 (C-5), 74.5 (C-6), 45.4 (C-7), 141.3 (C-8), 133.7 (C-9), 14.5 (C-10); *Crescentia cujete* (Bignoniaceae).[73]

378. Crescentin II



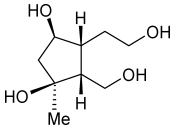
$C_9H_{14}O_5$: 202.0841; powder; $[\alpha]_D^{25}$ −21.0° (*c*=1.0, MeOH); ^{1}H-NMR (400 MHz, D_2O): 3.42 (t, 6.7, H-3), 1.62 (dt, 12.8, 6.7, H-4), 1.44 (dt, 12.8, 6.7, H-4), 2.59 (m, H-5), 3.93 (dd, 4.5, 2.6, H-6), 2.64 (dd, 17.0, 4.6, H-7), 2.05 (d, 17.0, H-7), 4.21 (br d, 14.5, H-10), 4.07 (br d, 14.5, H-10); ^{13}C-NMR (100 MHz, D_2O): 175.0 (C-1), 59.5 (C-3), 33.5 (C-4), 52.2 (C-5), 74.1 (C-6), 45.3 (C-7), 145.8 (C-8), 133.5 (C-9), 60.9 (C-10); *Crescentia cujete* (Bignoniaceae).[73]

379. Crescentin III



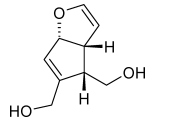
$C_{16}H_{20}O_6$: 308.1260; powder; $[\alpha]_D^{25}$ −55.0° (*c*=0.6, MeOH); ^{1}H-NMR (400 MHz, C_5D_5N): 4.59 (br s, H_2-1), 4.14 (ddd, 12.7, 7.1, 6.3, H-3), 4.11 (ddd, 12.7, 7.1, 6.3, H-3), 2.49 (dddd, 12.4, 7.3, 7.1, 6.3, H-4), 2.45 (dddd, 12.4, 7.8, 7.1, 6.3, H-4), 3.68 (ddd, 7.8, 7.3, 6.6, H-5), 5.92 (ddd, 6.6, 6.3, 1.9, H-6), 3.16 (dd, 15.1, 6.3, H-7), 3.01 (dd, 15.1, 1.9, H-7), 4.77 (d, 12.4, H-10), 4.57 (d, 12.4, H-10), 8.20 (d, 8.8, H-2′, 6′), 7.09 (d, 8.8, H-3′, 5′); ^{13}C-NMR (100 MHz, C_5D_5N): 56.9 (C-1), 61.1 (C-3), 31.3 (C-4), 47.1 (C-5), 75.8 (C-6), 41.0 (C-7), 136.9 (C-8), 139.2 (C-9), 58.4 (C-10), 122.1 (C-1′), 132.3 (C-2′, 6′), 116.1 (C-3′, 5′), 163.5 (C-4′), 166.5 (C-7′). *Crescentia cujete* (Bignoniaceae).[73]

380. Crescentin IV



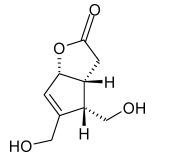
$C_9H_{18}O_4$: 190.1205; oil; $[\alpha]_D^{25}$ −39.0° (c=1.0, MeOH); ^{1}H-NMR (400 MHz, D_2O): 3.52 (t, H_2-1, 3), 1.62 (dt, 13.7, 6.7, H-4), 1.44 (ddd, 13.7, 6.6, 2.7, H-4), 2.23 (dddd, 9.1, 6.7, 3.8, 2.7, H-5), 3.96 (ddd, 8.1, 5.1, 3.8, H-6), 2.17 (dd, 14.2, 8.1, H-7), 1.66 (dd, 14.2, 5.1, H-7), 2.15 (ddd, 11.4, 9.1, 3.6, H-9), 1.20 (s, H_3-10); ^{13}C-NMR (100 MHz, D_2O): 57.8 (C-1), 60.5 (C-3), 30.4 (C-4), 44.2 (C-5), 75.8 (C-6), 47.9 (C-7), 78.8 (C-8), 52.4 (C-9), 23.5 (C-10); *Crescentia cujete* (Bignoniaceae).[73)]

381. Crescentin IV



$C_9H_{12}O_3$: 168.0786; powder; $[\alpha]_D^{25}$ −53.0° (c=0.5, MeOH); ^{1}H-NMR (400 MHz, D_2O): 3.66 (dd, 12.1, 5.6, H-1), 3.49 (dd, 12.1, 9.0, H-1), 6.21 (d, 6.6, H-3), 4.79 (dd, 6.6, 4.6, H-4), 3.08 (dddd, 7.8, 7.6, 7.2, 6.8, H-5), 4.96 (br d, 7.6, H-6), 5.81 (br s, H-7), 2.96 (ddd, 9.0, 7.8, 5.6, H-9), 3.98 (d, 14.0, H-10), 3.95 (d, 14.0, H-10); ^{13}C-NMR (100 MHz, D_2O): 67.3 (C-1), 142.0 (C-3), 105.6 (C-4), 39.8 (C-5), 86.9 (C-6), 124.7 (C-7), 147.8 (C-8), 47.0 (C-9), 60.3 (C-10). *Crescentia cujete* (Bignoniaceae).[73)]

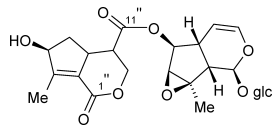
382. Pedicularis-lactone



$C_9H_{12}O_4$: 184.0735; white amorphous powder; $[\alpha]_D^{15}$ +45.5° (c=0.154, MeOH); IR (MeOH): 3322, 2947, 1734, 1669, 1450, 1115, 1028, 660; ^{1}H-NMR (400 MHz, DMSO-d_6): 3.52 (dd, 11.0, 4.1, H-1), 3.42 (dd, 11.0, 6.4, H-1), 2.55 (dddd, 12.5, 5.7, 12.5, 8.7, H_2-4), 3.15 (dddd, 7.3, 7.5, 8.7, 5.7, H-5), 5.31 (br d, 7.3, H-6), 5.69 (br s, H-7), 2.81 (m, H-9), 4.05 (dd, 15.5, 1.5, H-10), 3.95 (dd, 15.5, 1.5, H-10); ^{13}C-NMR (100 MHz, DMSO-d_6): 59.3 (C-1), 177.5 (C-3), 29.8 (C-4), 38.6 (C-5), 87.3 (C-6), 122.3 (C-7), 154.0 (C-8), 48.4 (C-9), 58.9 (C-10). *Pedicularis chinensis* (Scrophulariaceae).[41)]

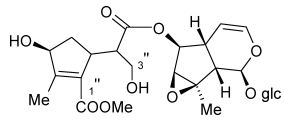
Group-6a (bis-iridoid)

383. Iridolinarin A



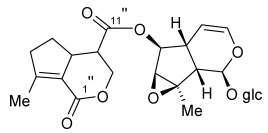
$C_{25}H_{32}O_{13}$: 540.1842; colorless amorphous powder; $[\alpha]_D^{22}$ −170.5° (c=0.78, MeOH); UV (MeOH): 204 (4.04), 233 (3.96); IR (KBr): 3400, 2850, 1715, 1645, 1405, 1265, 1150, 1055, 1010, 920, 855, 825, 755; ^{1}H-NMR (400 MHz, CD_3OD): 5.09 (d, 9.0, H-1), 6.34 (dd, 7.0, 1.3, H-3), 4.83 (dd, 7.0, 3.9, H-4), 2.07 (m, H-5), 4.87 (dd, 6.6, 1.1, H-6), 3.45 (d, 1.1, H-7), 2.36 (m, H-9), 1.52 (s, H_3-10), 4.76 (d, 7.9, H-1′), 3.23 (dd, 9.5, 7.9, H-2′), 3.38 (d, 9.5, H-3′), 3.21 (dd, 9.5, 8.8, H-4′), 3.30 (ddd, 8.8, 7.0, 2.0, H-5′), 3.60 (dd, 11.9, 7.0, H-6′), 3.91 (dd, 11.9, 2.0, H-6′), 4.51 (dd, 11.9, 3.5, H-3″), 4.57 (dd, 11.9, 2.0, H-3″), 3.14 (ddd, 5.5, 3.5, 2.0, H-4″), 3.60 (m, H-5″), 2.06 (m, H-6″), 2.37 (m, H-6″), 4.52 (m, H-7″), 2.18 (dd, 2.6, 0.6, H_3-10″); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.6 (C-3), 102.4 (C-4), 36.9 (C-5), 82.8 (C-6), 62.7 (C-7), 64.3 (C-8), 45.8 (C-9), 18.1 (C-10), 99.7 (C-1′), 75.0 (C-2′), 78.0 (C-3′), 71.9 (C-4′), 78.6 (C-5′), 63.2 (C-6′), 165.9 (C-1″), 71.3 (C-3″), 44.0 (C-4″), 43.9 (C-5″), 37.0 (C-6″), 79.8 (C-7″), 158.9 (C-8″), 126.8 (C-9″), 14.4 (C-10″), 172.4 (C-11″). *Linaria japonica* (Scrophulariaceae).[191)]

384. Iridolinarin B



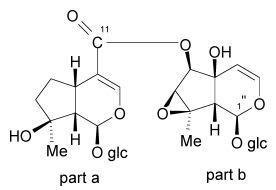
$C_{26}H_{36}O_{14}$: 572.2104; colorless amorphous powder; $[\alpha]_D^{22}$ −110.8° (c=0.69, MeOH); UV (MeOH): 204 (3.99), 227 (3.93); IR (KBr): 3450, 2900, 1710, 1650, 1435, 1225, 1080—1000, 925, 860, 830, 730; ^{1}H-NMR (400 MHz, CD_3OD): 5.12 (d, 9.3, H-1), 6.34 (dd, 6.0, 1.9, H-3), 4.92 (dd, 6.0, 4.4, H-4), 2.47 (ddt, 7.7, 4.4, 1.9, H-5), 4.94 (dd, 7.7, 1.3, H-6), 3.48 (br s, H-7), 2.41 (dd, 9.3, 7.7, H-9), 1.54 (s, H_3-10), 4.78 (d, 7.9, H-1′), 3.24 (dd, 9.0, 7.9, H-2′), 3.39 (t, 9.0, H-3′), 3.22 (dd, 9.7, 9.0, H-4′), 3.62 (dd, 11.9, 6.8, H-6′), 3.92 (dd, 11.9, 2.0, H-6′), 3.49 (dd, 10.9, 4.6, H-3″), 3.78 (dd, 10.9, 8.8, H-3″), 3.03 (dt, 8.8, 4.6, H-4″), 3.49 (m, H-5″), 1.78 (dd, 13.7, 9.3, 6.6, H-6″), 2.28 (ddd, 13.7, 7.5, 2.8, H-6″), 4.65 (br t, 6.8, H-7″), 2.08 (br s, H_3-10″), 3.76 (s, MeO-1″); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.3 (C-3), 103.0 (C-4), 37.5 (C-5), 82.2 (C-6), 62.7 (C-7), 64.1 (C-8), 46.0 (C-9), 18.2 (C-10), 99.7 (C-1′), 75.0 (C-2′), 78.6 (C-3′), 71.9 (C-4′), 78.0 (C-5′), 63.2 (C-6′), 167.6 (C-1″), 60.9 (C-3″), 51.9 (C-4″), 44.8 (C-5″), 37.0 (C-6″), 80.1 (C-7″), 158.8 (C-8″), 130.5 (C-9″), 13.6 (C-10″), 175.2 (C-11″), 51.8 (MeO-1″). *Linaria japonica* (Scrophulariaceae).[191)]

385. Iridolinarin C



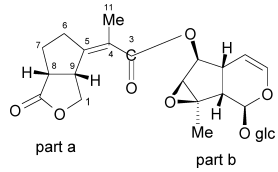
$C_{25}H_{32}O_{12}$: 524.1893; colorless amorphous powder; $[\alpha]_D^{18}$ −162.1° (c=0.85, MeOH); UV (MeOH): 240 (3.86); IR (KBr): 3400, 2875, 1700, 1630, 1150, 1090—1000, 925, 830, 760; ^{1}H-NMR (400 MHz, CD_3OD): 5.10 (d, 9.2, H-1), 6.34 (dd, 6.2, 1.5, H-3), 4.84 (dd, 6.2, 4.2, H-4), 2.40 (m, H-5), 4.89 (dd, 7.9, 1.3, H-6), 3.45 (d, 1.1, H-7), 2.40 (m, H-9), 1.52 (s, H_3-10), 4.76 (d, 7.9, H-1′), 3.23 (dd, 9.2, 7.9, H-2′), 3.38 (t, 9.2, H-3′), 3.21 (dd, 9.2, 8.8, H-4′), 3.30 (ddd, 8.8, 6.8, 2.0, H-5′), 3.60 (dd, 11.9, 6.8, H-6′), 3.92 (dd, 11.9, 2.0, H-6′), 4.46 (dd, 11.9, 3.5, H-3″), 4.53 (dd, 11.9, 2.6, H-3″), 3.12 (ddd, 5.9, 3.5, 2.6, H-4″), 3.42 (m, H-5″), 1.75 (ddd, 19.8, 12.6, 9.9, H-6″), 2.21 (dddd, 19.8, 11.0, 7.9, 1.6, H-6″), 2.40 (m, H-7″), 2.58 (br qin, 8.0, H-7″), 2.17 (t, 1.1, H-10″); ^{13}C-NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.6 (C-3), 102.5 (C-4), 36.8 (C-5), 82.6 (C-6), 62.7 (C-7), 64.2 (C-8), 45.8 (C-9), 18.1 (C-10), 99.7 (C-1′), 75.0 (C-2′), 78.6 (C-3′), 71.9 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 166.2 (C-1″), 70.8 (C-3″), 44.0 (C-4″), 46.0 (C-5″), 28.2 (C-6″), 39.2 (C-7″), 162.0 (C-8″), 124.0 (C-9″), 16.7 (C-10″), 172.7 (C-11″). *Linaria japonica* (Scrophulariaceae).[191)]

386. Kickxin



$C_{31}H_{44}O_{19}$: 720.2476; amorphous powder; $[\alpha]_D^{20}$ −74.2° (c=0.57, MeOH); ^{1}H-NMR (250 MHz, CD_3OD) part a: 5.48 (d, 3.5, H-1), 7.57 (s, H-3), 3.15 (m, H-5), 2.30 (m, H-6), 1.65 (m, H-6), 1.68 (m, H-7), 1.28 (m, H-7), 2.26 (dd, 9.3, 3.9, H-9), 1.33 (s, H_3-10), 4.70 (d, 7.8, H-1′); part b: 5.50 (d, 6.9, H-1), 6.41 (d, 6.3, H-3), 4.93 (d, 6.3, H-4), 5.03 (d, 1.7, H-6), 3.53 (d, 1.7, H-7), 2.46 (d, 6.9, H-9), 1.51 (s, H_3-10), 4.68 (d, 7.8, H-1′); ^{13}C-NMR (62.5 MHz, CD_3OD) part a: 94.4 (C-1), 151.8 (C-3), 112.0 (C-4), 30.8 (C-5), 29.6 (C-6), 39.7 (C-7), 79.4 (C-8), 52.4 (C-9), 23.5 (C-10), 166.9 (C-11), 98.8 (C-1′), 73.6 (C-2′), 76.9 (C-3′), 70.7 (C-4′), 77.4 (C-5′), 61.8 (C-6′); part b: 93.9 (C-1), 142.1 (C-3), 106.1 (C-4), 73.6 (C-5), 78.2 (C-6), 63.3 (C-7), 63.3 (C-8), 51.2 (C-9), 16.4 (C-10), 98.6 (C-1′), 73.6 (C-2′), 76.6 (C-3′), 70.6 (C-4′), 77.2 (C-5′), 61.8 (C-6′). *Kickxia elatine*, *K. spuria*, *K. commutata* (Scrophulariaceae).[22)]

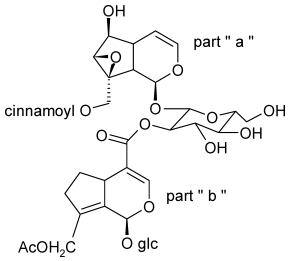
387. Arcusangeloside



$C_{25}H_{32}O_{11}$: 508.1944; amorphous powder; $[\alpha]_D^{20}$ −153.0° (c=0.2, MeOH); UV (MeOH): 248 (2.32); IR (KBr): 3500, 3000, 1730, 1600, 1400, 1360, 1250; ^{1}H-NMR (500 MHz, D_2O) part a: 4.57 (dd, 12.2, 2.0, H_a-1), 4.48 (dd, 12.2, 3.7, H_b-1), 2.56 (dddd, 17.0, 9.5, 8.0, 2.0, H_a-6), 2.40 (partially overlapped with H-5 of part b, H_b-6), 2.17 (m, H_a-7), 1.57 (m, H_b-7), 3.43 (partially overlapped with H-5′ of part b, H-8), 3.15 (ddd, 5.3, 3.7, 2.0, H-9), 2.10 (br t, 2.0, H_3-11); part b: 5.08 (d, 10.0, H-1), 6.39 (dd, 6.2, 1.6, H-3), 4.89 (dd, 6.2, 4.3, H-4), 2.38 (partially overlapped with H_b-6 of part a, H-5), 4.96 (dd, 8.5, 1.5, H-6), 3.60 (br d, 1.5, H-7), 2.46 (dd, 10.0, 7.5, H-9), 1.50 (s, H_3-10), 4.82 (d, 9.2, H-1′), 3.32 (t, 9.2, H-2′), 3.45 (t, 9.2, H-3′), 3.37 (t, 9.2, H-4′), 3.40 (m, H-5′), 3.85 (dd, 13.2, 2.0, H_a-6), 3.67 (dd, 13.2, 4.3, (H_b-6′); ^{13}C-NMR (125 MHz, D_2O) part a: 72.7 (C-1), 167.0 (C-3), 169.4 (C-4), 124.5 (C-5), 40.9 (C-6), 29.3 (C-7), 48.9 (C-8), 45.1 (C-9), 175.7 (C-10), 18.9 (C-11); part b: 97.3 (C-1), 143.7 (C-3), 104.7 (C-4), 38.3 (C-5),

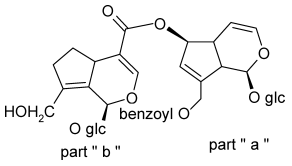
83.6 (C-6), 65.3 (C-7), 67.3 (C-8), 48.9 (C-9), 19.4 (C-10), 101.1 (C-1′), 75.5 (C-2′), 78.5 (C-3′), 72.2 (C-4′), 78.9 (C-5′), 63.4 (C-6′). *Linaria arcusangeli*, *L. flava* (Scrophulariaceae).[18]

388. Globuloside A



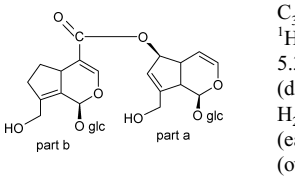
$C_{42}H_{50}O_{21}$: 890.2844; $[\alpha]_D^{20}$ −72.5° (c=0.1, MeOH); UV (MeOH): 208 (sh), 216, 222 (sh), 238, 278; IR (KBr): 3400, 1708, 1627, 1508; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.7, H-1), 6.35 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.7, H-4), 2.28 (m, H-5), 3.90 (br s, H-6), 3.49 (br s, H-7), 2.57 (dd, 9.7, 7.6, H-9), 4.21 (d, 12.5, H-10), 4.97 (d, 12.5, H-10), 4.99 (d, 8.1, H-1′), 4.77 (dd, 9.5, 8.1, H-2′), 3.53 (t, 9.5, H-3′), 3.36 (overlapped with solvent peak, H-4′), 3.37 (overlapped with solvent peak, H-5′), 3.69 (dd, 12.0, 5.5, H-6′), 3.94 (br d, 12.0, H-6′), 7.70 (d, 16.0, H-8″), 6.58 (d, 16.0, H-7″), 7.65 (m, H-2″, 6″), 7.40 (m, H-3″, 4″, 5″); part b: 6.26 (s, H-1), 7.30 (d, 1.8, H-3), 3.57 (m, H-5), 1.49 (m, H-6), 2.51 (m, H-6), 2.42 (m, H_2-7), 4.68 (d, 12.9, H-10), 4.80 (d, 12.9, H-10), 2.07 (s, AcO-10), 4.67 (d, 7.9, H-1′), 3.16 (dd, 9.0, 7.9, H-2′), 3.36 (overlapped with solvent peak, H-3′), 3.29 (t, 9.5, H-4′), 3.37 (overlapped with solvent peak, H-5′), 3.69 (dd, 12.0, 5.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (75 MHz, CD_3OD) part a: 95.4 (C-1), 141.8 (C-3), 103.8 (C-4), 38.9 (C-5), 79.4 (C-6), 62.8 (C-7), 63.5 (C-8), 43.5 (C-9), 64.8 (C-10), 97.9 (C-1′), 74.6 (C-2′), 76.4 (C-3′), 71.7 (C-4′), 78.7 (C-5′), 62.9 (C-6′), 168.6 (C-9″), 119.0 (C-8″), 146.4 (C-7″), 136.0 (C-1″), 129.5 (C-2″, 6″), 129.9 (C-3″, 5″), 131.4 (C-4″); part b: 91.9 (C-1), 152.2 (C-3), 113.9 (C-4), 39.0 (C-5), 32.1 (C-6), 35.0 (C-7), 134.1 (C-8), 137.6 (C-9), 60.9 (C-10), 167.4 (C-11$_b$), 172.2, 20.7 (OAc), 99.9 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′). *Globularia trichosantha* (Globulariaceae).[110]

389. Globuloside B



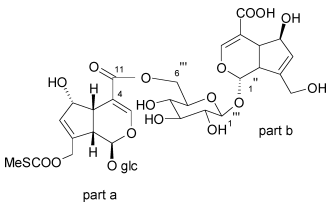
$C_{38}H_{46}O_{19}$: 806.2632; $[\alpha]_D^{20}$ −81.5° (c=0.1, MeOH); UV (MeOH): 207, 230, 281; IR (KBr): 3392, 1704, 1625, 1541, 1508; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.18 (d, 6.4, H-1), 6.35 (dd, 6.2, 2.0, H-3), 5.08 (dd, 6.2, 3.6, H-4), 2.98 (m, H-5), 5.32 (br s, H-6), 5.91 (t-like, 1.7, H-7), 3.15 (overlapped, H-9), 5.03 (br d, 13.5, H-10), 5.15 (br d, 13.5, H-10), 4.70 (d, 7.9, H-1′), 3.24 (dd, 8.0, 7.9, H-2′), 3.38 (overlapped, H-3′), 3.29 (overlapped, H-4′), 3.30 (overlapped, H-5′), 3.68, 3.86 (overlapped, H-6′), 8.06 (m, H-2″, 6″), 7.50 (t-like, 8.0, H-3″, 5″), 7.62 (m, H-4″); part b: 6.37 (s, H-1), 7.39 (d, 1.8, H-3), 3.60 (m, H-5), 1.45 (m, H-6), 2.55 (m, H-6), 2.50 (m, H_2-7), 4.19 (dd, 12.5, 1.0, H-10), 4.27 (br d, 12.5, H-10), 4.68 (d, 7.9, H-1′), 3.15 (dd, 9.0, 7.9, H-2′), 3.38 (overlapped, H-3′), 3.29 (overlapped, H-4′), 3.30 (overlapped, H-5′), 3.68, 3.86 (overlapped, H-6′); ^{13}C-NMR (75 MHz, CD_3OD) part a: 96.9 (C-1), 142.1 (C-3), 104.8 (C-4), 42.6 (C-5), 84.6 (C-6), 128.6 (C-7), 146.0 (C-8), 49.0 (C-9), 63.7 (C-10), 100.0 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 167.6 (C-7″), 131.0 (C-1″), 130.7 (C-2″, 6″), 129.7 (C-3″, 5″), 134.5 (C-4″); part b: 92.3 (C-1), 152.4 (C-3), 114.2 (C-4), 39.0 (C-5), 32.4 (C-6), 34.8 (C-7), 134.5 (C-8), 142.7 (C-9), 59.1 (C-10), 168.5 (C-11), 100.1 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′). *Globularia trichosantha* (Globulariaceae).[110]

390. Globuloside C



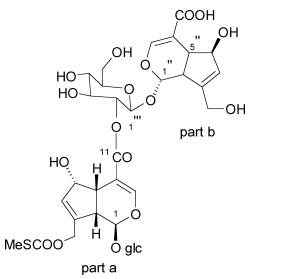
$C_{31}H_{42}O_{18}$: 702.2370; amorphous powder; $[\alpha]_D^{20}$ −80° (c=0.1, MeOH); UV (MeOH): 224; IR (KBr): 3397, 1737, 1625; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.14 (d, 6.5, H-1), 6.29 (dd, 6.2, 1.9, H-3), 5.03 (dd, 6.2, 3.6, H-4), 2.91 (m, H-5), 5.38 (dd, 3.7, 1.8, H-6), 5.81 (d, 1.8, H-7), 3.04 (t, 6.5, H-9), 4.37, 4.20 (each, d, 13.2, H_2-10), 4.66 (d, 7.9, H-1′), 3.22 (dd, 9.1, 7.9, H-2′), 3.38 (overlapped, H-3′), 3.29 (overlapped, H-4′), 3.30 (overlapped, H-5′), 3.88, 3.67 (each overlapped, H_2-6′); part b: 6.37 (s, H-1), 7.38 (d, 1.8, H-3), 3.60 (m, H-5), 2.56 (m, H-6), 1.45 (m, H-6), 2.50 (m, H_2-7), 4.27, 4.20 (each d, 13.9, H_2-10), 4.68 (d, 7.9, H-1′), 3.15 (dd, 9.1, 7.9, H-2′), 3.38 (overlapped, H-3′), 3.29 (overlapped, H-4′), 3.30 (overlapped, H-5′), 3.88, 3.67 (each overlapped, H_2-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 96.5 (C-1), 141.8 (C-3), 105.0 (C-4), 42.4 (C-5), 84.7 (C-6), 126.0 (C-7), 151.6 (C-8), 48.3 (C-9), 61.1 (C-10), 99.8 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.6 (C-6′); part b: 92.4 (C-1), 152.3 (C-3), 114.4 (C-4), 39.1 (C-5), 32.4 (C-6), 34.8 (C-7), 131.5 (C-8), 142.7 (C-9), 59.1 (C-10), 168.5 (C-11), 100.2 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.5 (C-6′). *Globularia cordifolia* (Globulariaceae).[49]

391. Saprosmoside A



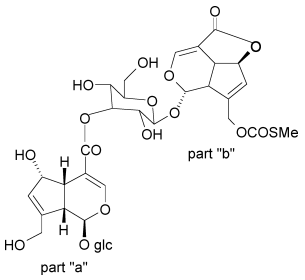
$C_{34}H_{44}O_{22}S$: 836.2044; yellow amorphous powder; $[\alpha]_D^{27}$ −16.4° (c=0.18, MeOH); UV (MeOH): 233 (4.2); IR (dry film): 3338, 1710, 1699, 1631; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.05 (d, 8.5, H-1), 7.67 (d, 1.5, H-3), 3.06 (ddd, 7.5, 6.0, 1.5, H-5), 4.82 (overlapping, H-6), 6.06 (d, 2.0, H-7), 2.64 (dd, 8.5, 7.5, H-9), 4.96 (d, 14.0, H-10), 5.10 (ddd, 14.0, 1.0, H-10), 2.35 (s, SMe), 4.76 (d, 8.0, H-1′), 3.23 (overlapping, H-2′), 3.38 (overlapping, H-3′), 3.25 (overlapping H-4′), 3.28 (m, H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.86 (dd, 12.0, 2.0, H-6′); part b: 4.99 (d, 9.0, H-1), 7.57 (d, 1.0, H-3), 3.00 (ddd, 7.5, 6.0, 1.0, H-5), 4.82 (overlapping, H-6), 5.98 (d, 2.0, H-7), 2.57 (dd, 9.0, 7.5, H-9), 4.23 (d, 15.0, H-10), 4.42 (dd, 15.0, 1.5, H-10), 4.73 (d, 8.0, H-1′), 3.23 (overlapping, H-2′), 3.42 (overlapping, H-3′), 3.40 (overlapping, H-4′), 3.52 (m, H-5′), 4.29 (dd, 12.0, 2.0, H-6′), 4.46 (dd, 12.0, 5.0, H-6‴); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.4 (C-1), 155.8 (C-3), 107.9 (C-4), 42.3 (C-5), 75.5 (C-6), 132.7 (C-7), 145.3 (C-8), 46.2 (C-9), 66.3 (C-10), 168.7 (C-11), 13.6 (SMe), 100.7 (C-1′), 75.0 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 63.0 (C-6′); part b: 101.6 (C-1), 154.1 (C-3), 110.1 (C-4), 43.1 (C-5), 75.5 (C-6), 130.4 (C-7), 151.1 (C-8′), 46.0 (C-9′), 61.6 (C-10), 172.4 (C-11), 100.6 (C-1′), 75.0 (C-2′), 77.6 (C-3′), 71.5 (C-4′), 75.6 (C-5′), 64.0 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118]

392. Saprosmoside B



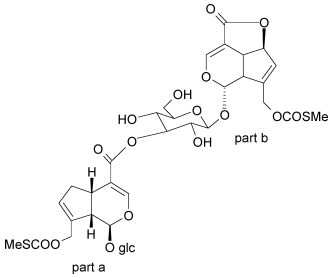
$C_{34}H_{44}O_{22}S$: 836.2044; yellow amorphous powder; $[\alpha]_D^{27}$ −14.0° (c=0.21, MeOH); UV (MeOH): 232 (4.28); IR (dry film): 3326, 1715, 1698, 1642; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.07 (d, 9.0, H-1), 7.75 (d, 1.5, H-3), 3.08 (ddd, 8.0, 4.5, 1.5, H-5), 4.86 (overlapping, H-6), 6.04 (s, H-7), 2.63 (dd, 9.0, 8.0, H-9), 4.94 (d, 16.0, H-10), 5.12 (d, 16.0, H-10), 2.34 (s, SMe), 4.73 (d, 9.0, H-1′), 3.12 (dd, 9.0, 8.0, H-2′), 3.39 (dd, 3.5, 8.0, H-3′), 3.28 (overlapping, H-4′, 5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.84 (dd, 12.5, 1.5, H-6′); part b: 4.80 (d, 8.0, H-1), 7.50 (d, 1.5, H-3), 3.00 (ddd, 7.5, 6.0, 1.5, H-5), 4.84 (overlapping, H-6), 5.99 (d, 2.0, H-7), 2.43 (dd, 8.0, 7.5, H-9), 4.22 (d, 16.0, H-10), 4.45 (d, 16.0, H-10), 4.95 (d, 8.0, H-1′), 4.84 (overlapping, H-2′), 3.63 (dd, 9.5, 8.5, H-3′), 3.39 (overlapping, H-4′), 3.36 (m, H-5′), 3.68 (dd, 12.5, 6.0, H-6′), 3.88 (dd, 12.5, 2.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.4 (C-1), 156.2 (C-3), 107.8 (C-4), 42.5 (C-5), 75.2 (C-6), 132.1 (C-7), 145.8 (C-8), 46.2 (C-9), 66.2 (C-10), 168.0 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.7 (C-1′), 74.9 (C-2′), 77.8 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′); part b: 101.9 (C-1), 153.4 (C-3), 111.1 (C-4), 43.1 (C-5), 75.7 (C-6), 129.7 (C-7), 151.2 (C-8′), 46.3 (C-9′), 61.7 (C-10), 172.8 (C-11), 99.0 (C-1′), 74.8 (C-2′), 76.1 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.6 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118]

393. Saprosmoside C



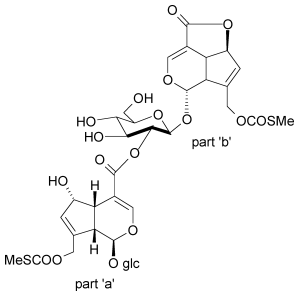
$C_{34}H_{42}O_{21}S$: 818.1938; yellow amorphous powder; $[\alpha]_D^{27}$ −92.3° (c=0.15, MeOH); UV (MeOH): 234 (4.05); IR (dry film): 3343, 1740, 1702, 1655, 1630; ^{1}H-NMR (500 MHz, CD_3OD): 5.06 (d, 9.0, H-1), 7.74 (d, 1.5, H-3), 3.08 (ddd, 8.0, 6.0, 1.5, H-5), 4.85 (overlapping, H-6), 6.02 (d, 2.5, H-7), 2.60 (dd, 9.0, 8.0, H-9), 4.21 (d, 16.0, H-10), 4.46 (d, 16.0, H-10), 4.72 (d, 8.0, H-1′), 3.24 (dd, 9.0, 8.0, H-2′), 3.25 (overlapping, H-3′), 3.26 (overlapping, H-4′), 3.38 (m, overlapping, H-5′), 3.73 (dd, 12.0, 5.5, H-6′), 3.92 (dd, 12.0, 2.0, H-6′); part b: 5.95 (H-1), 7.30 (d, 2.0, H-3), 3.67 (m, H-5), 5.56 (br d, 6.0, H-6), 5.74 (br s, H-7), 3.35 (overlapping, H-9), 4.85 (overlapping, H-10), 4.91 (dd, 14.5, 1.5, H-10), 2.35 (s, SMe), 4.81 (d, 8.0, H-1′), 3.40 (dd, 9.5, 8.0, H-2′), 5.06 (t, 9.5, H-3′), 3.57 (dd, 10.0, 9.5, H-4′), 3.47 (m, H-5′), 3.62 (dd, 12.0, 6.0, H-6′), 3.84 (dd, 12.0, 1.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 101.6 (C-1), 156.1 (C-3), 108.1 (C-4), 42.7 (C-5), 75.8 (C-6), 129.6 (C-7), 151.6 (C-8), 46.0 (C-9), 61.7 (C-10), 168.6 (C-11), 100.0 (C-1′), 74.9 (C-2′), 77.5 (C-3′), 71.6 (C-4′), 77.8 (C-5′), 62.4 (C-6′); part b: 93.3 (C-1), 150.2 (C-3), 106.1 (C-4), 37.4 (C-5), 86.1 (C-6), 129.5 (C-7), 143.7 (C-8′), 45.2 (C-9′), 64.3 (C-10), 172.4 (C-11), 172.6 (COO-10′), 13.6 (SMe), 100.5 (C-1′), 73.0 (C-2′), 78.7 (C-3′), 69.9 (C-4′), 78.0 (C-5′), 62.8 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118)]

394. Saprosmoside D



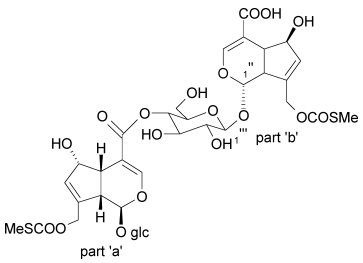
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow amorphous powder; $[\alpha]_D^{27}$ −88.9° (c=0.19, MeOH); UV (MeOH): 233 (4.31); IR (dry film): 3276, 1747, 1714, 1655, 1632; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.0, H-1), 7.74 (d, 1.5, H-3), 3.10 (ddd, 8.0, 6.2, 1.5, H-5), 4.85 (overlapping, H-6), 6.03 (d, 1.8, H-7), 2.66 (dd, 9.0, 8.0, H-9), 4.84 (d, 16.0, H-10), 4.90 (d, 16.0, H-10), 2.34 (s, SMe), 4.74 (d, 8.0, H-1′), 3.25 (dd, 9.0, 8.0, H-2′), 3.38 (t, 9.0, H-3′), 3.28 (overlapping, H-4′, 5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.86 (dd, 12.0, 2.0, H-6′); part b: 5.94 (d, 1.1, H-1), 7.30 (d, 2.0, H-3), 3.65 (m, H-5), 5.56 (br d, 5.5, H-6), 5.74 (br s, H-7), 3.35 (overlapping, H-9), 4.95 (d, 16.0, H-10), 5.11 (d, 16.0, H-10), 2.35 (s, SMe), 4.81 (overlapping, H-1′), 3.42 (dd, 9.5, 8.0, H-2′), 5.05 (dd, 9.5, 9.0, H-3′), 3.57 (dd, 10.0, 9.0, H-4′), 3.49 (m, H-5′), 3.75 (dd, 12.0, 6.0, H-6′), 3.94 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.3 (C-1), 156.1 (C-3), 107.9 (C-4), 42.4 (C-5), 75.7 (C-6), 132.1 (C-7), 145.6 (C-8), 46.4 (C-9), 66.2 (C-10), 168.5 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.6 (C-1′), 74.9 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 63.0 (C-6′); part b: 93.3 (C-1), 150.2 (C-3), 106.0 (C-4), 37.4 (C-5), 86.1 (C-6), 129.6 (C-7), 143.6 (C-8), 45.2 (C-9), 64.3 (C-10), 172.4 (C-11), 172.6 (COO-10′), 13.6 (SMe), 100.0 (C-1′), 72.9 (C-2′), 78.8 (C-3′), 69.9 (C-4′), 77.9 (C-5′), 62.4 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118)]

395. Saprosmoside E



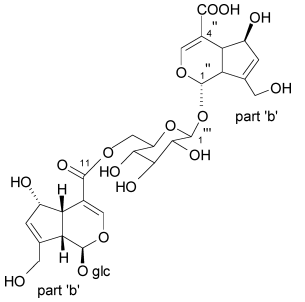
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow amorphous powder; $[\alpha]_D^{27}$ −103.4° (c=0.15, MeOH); UV (MeOH): 235 (4.24); IR (dry film): 3359, 1747, 1708, 1657, 1635; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.05 (d, 8.5, H-1), 7.70 (d, 1.5, H-3), 2.90 (ddd, 8.5, 5.5, 1.5, H-5), 4.80 (m, H-6), 6.00 (d, 1.8, H-7), 2.72 (t, 8.5, H-9), 5.16 (dd, 15.0, 2.0, H-10), 4.92 (d, 15.0, H-10), 2.34 (s, SMe), 4.72 (d, 7.5, H-1′), 3.28 (overlapping, H-2′, 4′, 5′), 3.39 (overlapping, H-3′), 3.65 (dd, 12.0, 6.0, H-6′), 3.84 (dd, 12.0, 2.0, H-6′); part b: 5.78 (d, 1.6, H-1), 7.16 (d, 2.1, H-3), 3.45 (ddd, 6.5, 6.5, 2.0, H-5), 5.52 (br d, 6.5, H-6), 5.71 (br s, H-7), 3.25 (m, H-9), 4.88 (dd, 14.0, 1.0, H-10), 4.79 (d, 14.0, H-10), 2.35 (s, SMe), 4.93 (d, 8.5, H-1′), 3.78 (dd, 9.5, 8.5, H-2′), 3.68 (dd, 9.5, 8.5, H-3′), 3.38 (dd, 10.0, 8.5, H-4′), 3.44 (m, H-5′), 3.72 (dd, 12.0, 6.0, H-6′), 3.94 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 75.2 (C-6), 131.7 (C-7), 145.9 (C-8), 46.0 (C-9), 66.3 (C-10), 167.5 (C-11), 172.9 (COO-10), 13.6 (SMe), 100.9 (C-1′), 74.9 (C-2′), 77.7 (C-3′), 71.5 (C-4′), 78.6 (C-5′), 63.0 (C-6′); part b: 94.0 (C-1), 150.1 (C-3), 106.2 (C-4), 37.6 (C-5), 86.0 (C-6), 129.8 (C-7), 143.3 (C-8′), 45.0 (C-9′), 64.3 (C-10), 172.1 (C-11), 172.6 (COO-10′), 13.6 (SMe), 98.5 (C-1′), 74.4 (C-2′), 75.5 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.6 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118)]

396. Saprosmoside F



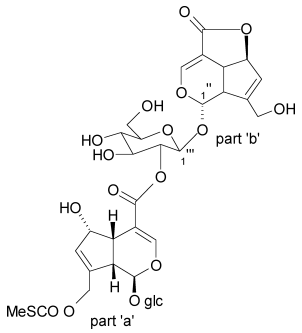
$C_{36}H_{46}O_{23}S_2$: 910.1859; yellow amorphous powder; $[\alpha]_D^{27}$ −10.0° (c=0.17, MeOH); UV (MeOH): 232 (4.37); IR (dry film): 3309, 1712, 1632; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.0, H-1), 7.72 (d, 2.0, H-3), 3.09 (ddd, 8.0, 6.0, 2.0, H-5), 4.86 (overlapping, H-6), 6.02 (d, 2.0, H-7), 2.63 (dd, 9.0, 8.0, H-9), 4.74 (d, 15.0, H-10), 5.10 (d, 15.0, H-10), 2.34 (SMe), 4.72 (d, 8.0, H-1′), 3.25 (dd, 9.5, 8.0, H-2′), 3.38 (dd, 9.5, 8.0, H-3′), 3.27 (overlapping, H-4′, 5′), 3.63 (dd, 12.0, 6.0, H-6′), 3.86 (dd, 12.0, 2.0, H-6′); part b: 5.05 (d, 9.0, H-1), 7.64 (d, 1.0, H-3), 3.03 (ddd, 8.0, 6.0, 1.0, H-5), 4.82 (overlapping, H-6), 6.04 (d, 2.0, H-7), 2.68 (dd, 9.0, 8.0, H-9), 4.94 (d, 15.0, H-10), 5.10 (d, 15.0, H-10), 2.36 (s, SMe), 4.80 (d, 8.0, H-1′), 3.38 (dd, 9.5, 8.0, H-2′), 3.65 (dd, 9.5, 9.0, H-3′), 4.84 (overlapping, H-4′), 3.52 (m, H-5′), 3.56 (dd, 12.0, 6.0, H-6′), 3.63 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.3 (C-1), 156.2 (C-3), 108.0 (C-4), 42.1 (C-5), 75.7 (C-6), 132.3 (C-7), 145.2 (C-8), 46.5 (C-9), 66.2 (C-10), 168.1 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.7 (C-1′), 74.9 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.6 (C-5′), 63.0 (C-6′); part b: 101.3 (C-1), 155.1 (C-3), 108.5 (C-4), 42.6 (C-5), 75.3 (C-6), 132.7 (C-7), 145.3 (C-8), 46.2 (C-9), 66.2 (C-10), 171.0 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.6 (C-1′), 74.9 (C-2′), 75.7 (C-3′), 72.3 (C-4′), 76.6 (C-5′), 62.6 (C-6′). *Saprosma scortechinii* (Rubiaceae).[118)]

397. Saprosmoside G



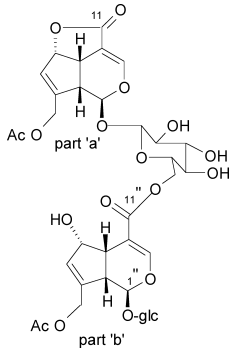
$C_{32}H_{42}O_{21}$: 762.2218; white amorphous powder; $[\alpha]_D^{19}$ −1.2° (c=0.25, MeOH); UV (MeOH): 235 (4.31); IR (dry film): 3466, 1696, 1635; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.04 (d, 8.5, H-1), 7.66 (d, 1.0, H-3), 3.03 (ddd, 6.5, 6.5, 1.5, H-5), 4.80 (overlapped, H-6), 6.04 (d, 2.0, H-7), 2.58 (overlapped, H-9), 4.21 (overlapped, H-10), 4.44 (dd, 12.5, 1.5, H-10), 4.72 (d, 7.5, H-1′), 3.24 (dd, 9.0, 7.5, H-2′), 3.40 (overlapped, H-3′), 3.28 (overlapped, H-4′, 5′), 3.63 (dd, 12.0, 5.5, H-6′), 3.84 (dd, 12.0, 1.5, H-6′); part b: 5.02 (d, 9.0, H-1), 7.65 (d, 1.5, H-3), 2.98 (ddd, 6.0, 6.0, 1.5, H-5), 4.80 (overlapped, H-6), 6.00 (d, 2.0, H-7), 2.58 (m, H-9), 4.21 (overlapped, H-10), 4.41 (dd, 12.5, 1.5, H-10), 4.77 (d, 7.5, H-1′), 3.24 (dd, 9.0, 7.5, H-2′), 3.40 (overlapped, H-3′), 3.38 (overlapped, H-4′), 3.53 (overlapped, H-5′), 4.24 (dd, 12.0, 5.5, H-6′), 4.47 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.7 (C-1), 155.8 (C-3), 108.1 (C-4), 42.7 (C-5), 75.6 (C-6), 130.2 (C-7), 151.2 (C-8), 45.8 (C-9), 61.7 (C-10), 168.9 (C-11), 100.5 (C-1′), 75.0 (C-2′), 77.8 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 101.6 (C-1), 155.4 (C-3), 108.4 (C-4), 42.7 (C-5), 75.2 (C-6), 130.6 (C-7), 151.0 (C-8′), 45.8 (C-9′), 61.7 (C-10), 170.8 (C-11), 100.5 (C-1′), 75.0 (C-2′), 77.6 (C-3′), 71.6 (C-4′), 75.7 (C-5′), 64.1 (C-6′). *Saprosma scortechinii* (Rubiaceae).[112)]

398. Saprosmoside H



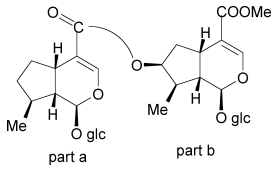
$C_{34}H_{42}O_{21}S$: 818.1938; yellow amorphous powder; $[\alpha]_D^{19}$ −46.4° (c=0.11, MeOH); UV (MeOH): 233 (4.03); IR (dry film): 3390, 1704, 1656; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.06 (d, 9.0, H-1), 7.70 (d, 1.5, H-3), 2.90 (ddd, 8.0, 6.0, 1.5, H-5), 4.80 (overlapped, H-6), 6.01 (d, 2.0, H-7), 2.71 (dd, 9.0, 8.0, H-9), 4.91 (d, 15.0, H-10), 5.14 (dd, 15.0, 2.0, H-10), 2.35 (s, SMe), 4.72 (d, 7.5, H-1′), 3.25 (dd, 9.0, 7.5, H-2′), 3.28 (overlapped, H-3′, 4′), 3.38 (overlapped, H-5′), 3.64 (dd, 11.0, 5.5, H-6′), 3.85 (dd, 11.0, 1.5, H-6′); part b: 5.86 (d, 2.0, H-1), 7.15 (d, 2.0, H-3), 3.45 (m, H-5), 5.51 (m, H-6), 5.60 (dd, 2.0, 1.0, H-7), 3.20 (overlapped, H-9), 4.16 (s, H_2-10), 4.92 (d, 8.0, H-1′), 4.79 (dd, 9.0, 8.0, H-2′), 3.67 (dd, 10.0, 9.0, H-3′), 3.38 (overlapped, H-4′), 3.40 (overlapped, H-5′), 3.70 (dd, 12.0, 6.0, H-6′), 3.94 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 75.1 (C-6), 132.9 (C-7), 146.1 (C-8), 46.0 (C-9), 66.2 (C-10), 167.5 (C-11), 172.9 (COO-10), 13.6 (SMe), 101.0 (C-1′), 74.8 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 77.7 (C-5′), 62.9 (C-6′); part b: 94.1 (C-1), 150.0 (C-3), 106.6 (C-4), 37.6 (C-5), 86.4 (C-6), 128.6 (C-7), 149.5 (C-8′), 44.7 (C-9′), 60.1 (C-10), 172.0 (C-11), 98.4 (C-1′), 74.3 (C-2′), 75.5 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.6 (C-6′). *Saprosma scortechinii* (Rubiaceae).[112]

399. Iridoid dimer of asperuloside and asperulosidic acid



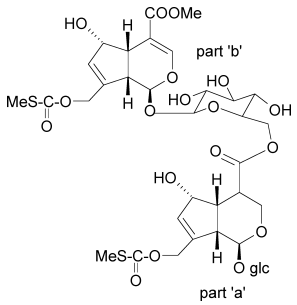
$C_{36}H_{44}O_{22}$: 828.2323; amorphous powder; $[\alpha]_D^{27}$ −58.4° (c=0.66, MeOH); UV (MeOH): 228 (4.15); IR (film): 3382, 1732, 1658, 1633, 1257, 1053, 1026; ^{1}H-NMR (400 MHz, CD_3OD) part a: 5.83 (d, 0.6, H-1), 7.30 (d, 2.2, H-3), 3.67 (ddd, 6.5, 6.5, 2.2, H-5), 5.56 (dt, 6.5, 1.7, H-6), 5.73 (m, H-7), 3.23 (H-9), 4.63 (dd, 14.1, 1.2, H-10), 4.72 (dd, 14.1, 1.2, H-10), 4.73 (d, 7.9, H-1_a′, 1_b′), 3.60—3.66 (m, H-5_a′, 5_b′), 4.22 (dd, 11.9, 6.2, H-6′), 4.63 (dd, 11.9, 2.2, H-6′); part b: 5.07 (dd, 9.0, 0.6, H-1), 7.70 (dd, 1.7, 0.6, H-3), 3.05 (ddd, 8.2, 6.0, 1.7, H-5), 4.84 (dd, 6.0, 2.6, H-6), 6.02 (br d, 1.8, H-7), 2.66 (ddd, 8.2, 8.2, 0.6, H-9), 4.80 (dd, 15.0, 1.8, H-10), 4.94 (dd, 15.0, 1.8, H-10), 3.61 (dd, 11.7, 4.0, H-6′), 3.85 (dd, 11.9, 1.8, H-6′), 2.05, 2.08 (each s, 2×OAc); ^{13}C-NMR (100 MHz, CD_3OD) part a: 93.4 (C-1), 150.2 (C-3), 106.4 (C-4), 37.5 (C-5), 86.3 (C-6), 129.3 (C-7), 144.2 (C-8), 45.4 (C-9), 61.9 (C-10), 172.1 (C-11), 20.8, 172.5 (AcO-10, 10″), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 76.0 (C-5′), 64.4 (C-6′); part b: 101.5 (C-1), 155.8 (C-3), 108.2 (C-4), 42.6 (C-5), 75.6 (C-6), 132.0 (C-7), 146.1 (C-8′), 46.4 (C-9′), 63.7 (C-10), 168.7 (C-11), 100.7 (C-1′), 75.0 (C-2′), 78.6 (C-3′), 71.8 (C-4′), 77.9 (C-5′), 63.1 (C-6′). *Lasianthus wallichii* (Rubiaceae).[188]

400. Picconioside 1



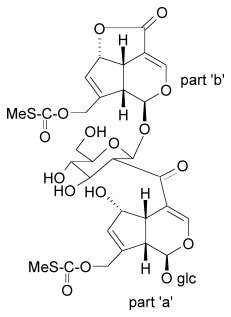
$C_{33}H_{48}O_{18}$: 732.2840; hygroscopic foam; $[\alpha]_D^{21}$ −74.3° (c=0.8, MeOH); ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.29 (d, 4.5, H-1), 7.43 (br s, H-3), 3.11 (br q, 8.0, H-5), 2.30 (ddd, 14.5, 8.0, 1.0, H_a-6), *ca.* 1.75 (mp, H_b-6), 5.19 (br t, 4.5, H-7), 2.15 (m, H-8), 2.07 (dt, 9.0, 5.0, H-9), 1.09 (d, 6.5, H_3-10), 4.66 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.18—3.40 (m, partly obsc by solvent signal, H-3′, 4′, 5′), 3.90 (dd, 12.0, 2.0, H_a-6′), 3.68 (dd, 12.0, 6.0, H_b-6′), 3.69 (MeO-11); part b: 5.23 (d, 5.5, H-1), 7.43 (s, H-3), 2.90 (br q, 7.5, H-5), 2.21 (m, H_a-6), 1.41 (m, H_b-6), 1.89 (m, H_a-7), 1.21 (br dq, 12.0, 8.0, H_b-7), 1.98 (br hept, H-8), *ca.* 1.75 (m, H-9), 0.96 (d, 6.9, H_3-10), 4.68 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.67 (dd, 12.0, 6.0, H-6′), other sugar protons appeared in the same region as that of sugar protons of part a; ^{13}C-NMR (125 MHz, CD_3OD) part a: 97.5 (C-1), 152.6 (C-3), 113.2 (C-4), 32.6 (C-5), 40.5 (C-6), 78.1 (C-7), 40.9 (C-8), 47.1 (C-9), 13.8 (C-10), 169.3 (C-11), 51.8 (OMe), 100.1 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.7 (C-6′); part b: 97.9 (C-1), 152.6 (C-3), 113.2 (C-4), 35.1 (C-5), 33.5 (C-6), 34.2 (C-7), 36.6 (C-8), 49.1 (C-9), 20.7 (C-10), 168.8 (C-11), sugar carbons appeared in the same region as that of sugar carbons of part a. *Picconia excelsa* (Oleaceae).[88]

401. Dimer of paederosidic acid and paederosidic acid methyl ester



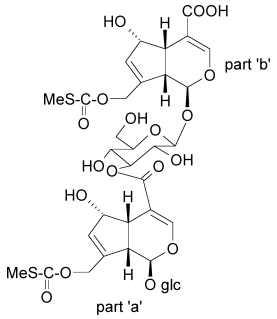
$C_{37}H_{48}O_{23}S_2$: 924.2027; yellow powder; $[\alpha]_D^{20}$ −5.7° (c=1.00, MeOH); UV (MeOH): 236 (3.92); IR (Neat): 3394, 2920, 1702, 1633, 1440, 1379, 1294, 1161, 1102, 950; ^{1}H-NMR (600 MHz, CD_3OD) part a: 5.06 (d, 9.1, H-1), 7.69 (d, 1.4, H-3), 3.07 (ddd, 7.4, 6.0, 1.4, H-5), 4.81 (dd, 6.0, 1.9, H-6), 6.06 (d, 1.9, H-7), 2.64 (dd, 9.1, 7.4, H-9), 4.99 (br d, 14.8, H_a-10), 5.09 (dd, 14.8, 1.4, H_b-10), 2.35 (s, SMe), 4.73 (d, 8.0, H-1′), 3.26 (dd, 9.3, 8.0, H-2′), 3.84 (dd, 9.3, 8.8, H-3′), 2.26 (t, 9.3, H-4′), 3.28 (m, H-5′), 3.64 (dd, 12.1, 6.0, H_a-6′), 3.86 (dd, 12.1, 1.9, H_b-6′); part b: 5.00 (d, 8.5, H-1), 7.65 (d, 1.1, H-3), 3.02 (ddd, 7.4, 6.0, 1.1, H-5), 4.79 (dd, 6.0, 1.7, H-6), 6.02 (d, 1.7, H-7), 2.62 (dd, 8.5, 7.4, H-9), 4.96 (dd, 14.6, 1.7, H_a-10), 5.03 (br d, 14.6, H_b-10), 3.74 (s, MeO-11), 2.34 (s, SMe-12), 4.72 (d, 8.0, H-1′), 3.27 (dd, 9.6, 8.0, H-2′), 3.40 (dd, 9.6, 8.8, H-3′), 3.93 (dd, 9.3, 8.8, H-4′), 3.51 (m, H-5′), 4.30 (dd, 11.8, 4.8, H_a-6′), 4.46 (dd, 11.8, 1.9, H_b-6′); ^{13}C-NMR (150 MHz, CD_3OD) part a: 101.5 (C-1), 155.8 (C-3), 108.0 (C-4), 42.4 (C-5), 75.5 (C-6), 133.2 (C-7), 145.3 (C-8), 42.4 (C-9), 66.3 (C-10), 168.6 (C-11), 172.7 (C-12), 13.6 (SMe), 100.7 (C-1′), 74.9 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 63.0 (C-6′); part b: 102.1 (C-1), 155.4 (C-3), 107.9 (C-4), 42.3 (C-5), 75.1 (C-6), 132.7 (C-7), 145.3 (C-8), 42.3 (C-9), 66.3 (C-10), 169.3 (C-11), 172.9 (C-12), 51.9 (OMe), 13.7 (SMe), 101.4 (C-1′), 74.9 (C-2′), 77.6 (C-3′), 71.3 (C-4′), 75.7 (C-5′), 63.8 (C-6′). *Paederia scandens* (Rubiaceae).[123]

402. Dimer of paederosidic acid and paederoside



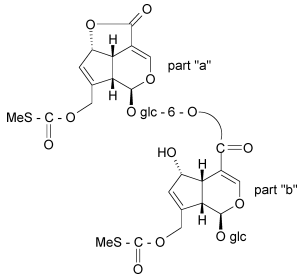
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow powder; $[\alpha]_D^{20}$ −108.9° (c=0.54, MeOH); UV (MeOH): 239 (4.05); IR (Neat): 3418, 2925, 1746, 1706, 1657, 1272, 1166, 1084, 901; ^{1}H-NMR (600 MHz, CD_3OD) part a: 5.06 (d, 8.2, H-1), 7.71 (d, 1.1, H-3), 2.89 (ddd, 8.2, 6.1, 1.1, H-5), 4.79 (d, 6.1, H-6), 6.00 (d, 2.2, H-7), 2.72 (dd, 8.2, 8.2, H-9), 4.91 (br d, 14.8, H_a-10), 5.14 (dd, 14.8, 1.4, H_b-10), 2.34 (s, SMe), 4.71 (d, 8.0, H-1′), 3.27 (dd, 9.1, 8.0, H-2′), 3.39 (t, 9.1, H-3′), 3.29 (t, 8.8, H-4′), 3.32 (m, H-5′), 3.64 (dd, 12.0, 6.0, H_a-6′), 3.85 (br d, 12.0, H_b-6′); part b: 5.85 (d, 1.4, H-1), 7.16 (d, 1.9, H-3), 3.47 (ddd, 8.8, 6.6, 1.9, H-5), 5.52 (br d, 6.6, H-6), 5.71 (br s, H-7), 3.28 (dd, 8.8, 1.4, H-9), 4.80 (br d, 14.0, H_a-10), 4.89 (dd, 14.0, 1.4, H_b-10), 2.35 (s, SMe), 4.93 (d, 8.0, H-1′), 4.79 (dd, 9.6, 8.0, H-2′), 3.68 (dd, 9.6, 8.8, H-3′), 3.38 (t, 8.8, H-4′), 4.43 (m, H-5′), 3.68 (dd, 11.8, 1.4, H_a-6′), 3.94 (dd, 11.8, 1.9, H_b-6′); ^{13}C-NMR (150 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 72.5 (C-6), 131.7 (C-7), 146.0 (C-8), 46.0 (C-9), 66.3 (C-10), 167.5 (C-11), 172.9 (C-12), 13.6 (SMe), 100.9 (C-1′), 74.9 (C-2′), 77.8 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 63.0 (C-6′); part b: 94.0 (C-1), 150.1 (C-3), 106.2 (C-4), 37.6 (C-5), 86.0 (C-6), 129.8 (C-7), 143.6 (C-8), 45.0 (C-9), 64.3 (C-10), 172.6 (C-11), 172.1 (C-12), 13.6 (SMe), 98.6 (C-1′), 74.4 (C-2′), 75.5 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.6 (C-6′). *Paederia scandens* (Rubiaceae).[123]

403. Dimer of paederosidic acid



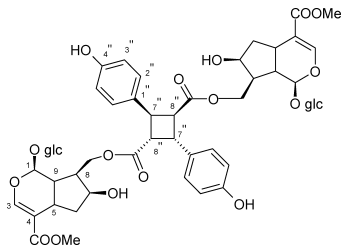
$C_{36}H_{46}O_{23}S_2$: 910.1870; isolated in pure state as nonaacetate; oil; $[\alpha]_D^{20}$ +17.9° (c=0.35, $CHCl_3$); UV (MeOH): 234 (4.36); IR (KBr): 2940, 1725, 1634, 1435, 1372, 1231, 1149, 1070, 956; ^{1}H-NMR (600 MHz, $CDCl_3$) part a: 4.82 (d, 8.0, H-1), 7.53 (d, 1.4, H-3), 3.18 (ddd, 8.0, 6.1, 1.4, H-5), 5.64 (dd, 6.1, 2.2, H-6), 6.12 (d, 2.2, H-7), 2.57 (t, 8.0, H-9), 4.92 (dd, 15.4, 2.2, H_a-10), 5.10 (br d, 15.4, H_b-10), 2.36 (s, SMe), 4.94 (d, 8.0, H-1′), 5.06 (dd, 9.6, 8.0, H-2′), 5.25 (t, 9.6, H-3′), 5.14 (dd, 9.6, 9.3, H-4′), 3.73 (m, H-5′), 4.16 (dd, 12.4, 2.2, H_a-6′), 4.21 (dd, 12.4, 4.4, H_b-6′); part b: 4.83 (d, 8.2, H-1), 7.65 (d, 1.1, H-3), 3.25 (ddd, 8.2, 6.1, 1.1, H-5), 5.75 (br d, 6.1, H-6), 6.13 (d, 1.9, H-7), 2.64 (t, 8.2, H-9), 4.92 (dd, 15.4, 2.2, H_a-10), 5.10 (br d, 15.4, H_b-10), 2.35 (s, SMe), 4.98 (d, 8.0, H-1′), 5.06 (dd, 9.6, 8.0, H-2′), 5.29 (dd, 9.6, 9.3, H-3′), 5.18 (t, 9.6, H-4′), 3.77 (m, H-5′), 4.16 (dd, 12.4, 2.5, H-6′), 4.23 (dd, 12.4, 4.4, H-6′), 1.95, 1.96, 2.01, 2.02, 2.03, 2.04, 2.07×2, 2.08 (each s, 9×Ac); ^{13}C-NMR (150 MHz, $CDCl_3$) part a: 100.3 (C-1), 154.6 (C-3), 105.2 (C-4), 38.9 (C-5), 76.8 (C-6), 128.6 (C-7), 146.6 (C-8), 44.7 (C-9), 64.4 (C-10), 165.3 (C-11), 171.1 (C-12), 13.5 (SMe), 97.8 (C-1′), 70.8 (C-2′), 72.6 (C-3′), 68.0 (C-4′), 72.0 (C-5′), 61.5 (C-6′); part b: 100.4 (C-1), 154.6 (C-3), 105.2 (C-4), 38.6 (C-5), 76.8 (C-6), 128.6 (C-7), 146.6 (C-8), 45.1 (C-9), 64.4 (C-10), 170.5 (C-11), 171.1 (C-12), 13.5 (SMe), 97.7 (C-1′), 71.1 (C-2′), 72.4 (C-3′), 68.2 (C-4′), 72.1 (C-5′), 61.5 (C-6′), 20.6×4, 20.7×3, 21.1×2, 169.3, 169.4×2, 169.5, 169.8, 170.2×2, 170.5×2 (9×Ac). *Paederia scandens* (Rubiaceae).[123]

404. Paederoscandoside



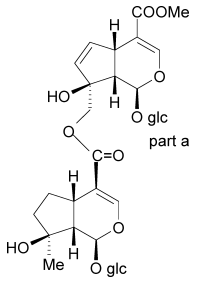
$C_{36}H_{44}O_{22}S_2$: 892.1765; amorphous powder; $[\alpha]_D^{22}$ −53.9° (c=1.65, MeOH); UV (MeOH): 234 (4.13); IR (KBr): 3422, 2931, 1744, 1709, 1658, 1633, 1156, 1073; ^{1}H-NMR (400 MHz, CD_3OD): part "a": 5.82 (d, 1.0, H-1), 7.30 (d, 2.0, H-3), 3.68 (td, 7.0, 2.0, H-5), 5.57 (d, 6.0, H-6), 5.76 (s, H-7), 4.80 and 4.84 (each d, 14.0, H_2-10), 3.24 (dd, 9.0, 8.0, H-2′), 3.39 (t, 9.0, H-3′), 3.62 (ddd, 10.0, 7.0, 2.0, H-5′), 4.19 (dd, 12.0, 7.0, H-6′), 4.65 (dd, 12.0, 2.0, H-6′), 2.33 (s, SMe), H-1′ was not assigned, H-9 and H-4′ were in the solvent signal; part "b": 5.07 (d, 9.0, H-1), 7.70 (d, 1.0, H-3), 3.07 (ddd, 8.0, 6.0, 2.0, H-5), 4.86 (dd, 6.0, 2.0, H-6), 6.03 (d, 1.0, H-7), 2.66 (br t, 9.0, H-9), 4.96 (br d, 15.0, H-10), 5.08 (d, 15.0, H-10), 4.73 (d, 8.0, H-1′), 3.25 (dd, 9.0, 8.0, H-2′), 3.42 (t, 9.0, H-3′), 3.35 (t, 9.0, H-4′), 3.64 (dd, 12.0, 6.0, H-6′), 3.87 (dd, 12.0, 2.0, C-6′), 2.33 (s, SMe), H-5′ was in the solvent signal; ^{13}C-NMR (100 MHz, CD_3OD): part "a": 93.2 (C-1), 150.2 (C-3), 106.3 (C-4), 37.5 (C-5), 86.3 (C-6), 130.0 (C-7), 143.6 (C-8), 45.3 (C-9), 64.5 (C-10), 172.4 (C-11), 13.6, 172.7 (COSMe), 100.0 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 75.9 (C-5′), 64.5 (C-6′); part "b": 101.5 (C-1), 155.8 (C-3), 108.1 (C-4), 42.7 (C-5), 75.6 (C-6), 132.5 (C-7), 145.6 (C-8), 46.4 (C-9), 66.3 (C-10), 168.6 (C-11), 13.8, 172.9 (COSMe), 100.8 (C-1′), 75.0 (C-2′), 77.8 (C-3′), 71.8 (C-4′), 78.6 (C-5′), 63.1 (C-6′). *Paederia scandens* var. *maeirei* (Rubiaceae).[152]

405. Coelobillardin



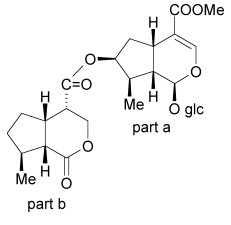
$C_{52}H_{64}O_{26}$: 1104.3685; white amorphous powder; $[\alpha]_D$ −55.7° (c=1.0, MeOH); UV (MeOH): 235 (4.46), 280 (3.27); IR (KBr): 3400, 2920, 1690, 1625, 1510, 1440; ^{1}H-NMR (400 MHz, CD_3OD): 5.21 (d, 5.5, H-1), 7.43 (s, H-3), 3.05 (m, H-5), 1.62 (m, H_α-6), 2.22 (overlapped, H_β-6), 4.13 (overlapped, H-7), 2.00 (m, H-8), 2.22 (overlapped, H-9), 4.35 (overlapped, H_α-10), 4.14 (overlapped, H_β-10), 3.72 (s, MeO), 4.69 (d, 7.7, H-1′), 3.20—3.45 (overlapped, H-2′, 3′, 4′, 5′), 3.95 (dd, 11.3, 2.3, H_α-6′), 3.70 (dd, 11.3, 4.4, H_β-6′), 7.21 (d, 8.5, H-2″, 6″), 6.77 (d, 8.5, H-3″, 5″), 4.35 (overlapped, H-8″, 8″ or H-1′, 3′ of cyclobutane), 3.95 (overlapped, H-7″, 7″; or H-2, 4 of cyclobutane); dodecaacetate: ^{1}H-NMR (400 MHz, $CDCl_3$): 5.28 (d, 3.1, H-1), 7.30 (s, H-3), 2.94 (td, 9.0, 7.1, H-5), 1.81 (m, H_α-6), 2.10 (m, H_β-6), 5.27 (dd, 5.2, 3.1, H-7), 2.07 (m, H-8), 2.20 (td, 9.0, 3.1, H-9), 4.32 (m, H_2-10), 3.70 (s, MeO-11), 4.82 (d, 8.0, H-1′), 4.97 (dd, 9.1, 8.0, H-2′), 5.21 (t, 9.1, H-3′), 5.10 (t, 9.1, H-4′), 3.69 (ddd, 9.1, 4.4, 2.4, H-5′), 4.22 (dd, 11.6, 2.4, H_α-6′), 4.06 (dd, 11.6, 4.4, H_β-6′), 7.32 (d, 8.5, H-2″, 6″), 7.06 (d, 8.5, H-3″, 5″), 4.43 (dd, 11.0, 6.5, H-8″, 8″), 3.92 (dd, 11.0, 6.5, H-7″, 7″), 1.95—2.30 (12×Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 94.4 (C-1), 149.6 (C-3), 113.2 (C-4), 29.8 (C-5), 38.6 (C-6), 74.6 (C-7), 42.6 (C-8), 42.8 (C-9), 62.6 (C-10), 167.1 (C-11), 51.6 (OMe), 96.1 (C-1′), 70.9 (C-2′), 72.8 (C-3′), 68.3 (C-4′), 72.5 (C-5′), 61.8 (C-6′), 136.2 (C-1″), 129.0 (C-2″, 6″), 122.1 (C-3″, 5″), 150.3 (C-4″), 41.1 (C-7″, 7″), 47.0 (C-8″, 8″), 171.8 (C-9″, 9″), 20.6—21.4, 169.4—171.4 (12×Ac). *Coelospermum billardieri* (Rubiaceae).[192]

406. Randinoside



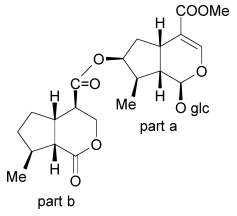
$C_{33}H_{46}O_{20}$: 762.2582; amorphous powder; $[\alpha]_D^{20}$ −6.5° (c=1.7, MeOH); UV (MeOH): 239; IR (KBr): 3500, 3399, 1708; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.78 (d, 2.5, H-1), 7.37 (d, 1.4, H-3), 3.69 (m, H-5), 6.14 (dd, 5.7, 2.7, H-6), 5.72 (dd, 5.7, 1.7, H-7), 2.60 (dd, 8.5, 2.5, H-9), 3.62 and 3.51 (each d, 11.3, H_2-10), 3.69 (s, MeO-11), 4.65 (d, 7.9, H-1′), 3.18 (dd, 9.0, 7.9, H-2′), 3.28 (m, H-3′), 3.24 (t, 8.8, H-4′), 3.35 (dd, 9.0, 2.1, H-5′), 3.88 (dd, 10.0, 5.2, H_a-6′), 3.65 (dd, 10.0, 5.2, H_b-6′); part b: 5.43 (d, 4.0, H-1), 7.33 (br s, H-3), 3.17 (m, H-5), 2.27 and 1.47 (each m, H_2-6), 1.70 (t, 7.2, H_2-7), 2.21 (dd, 9.1, 4.0, H-9), 1.31 (s, H_3-10), 4.64 (d, 7.9, H-1′), 3.17 (dd, 9.0, 7.9, H-2′), 3.29 (m, H-3′), 3.25 (t, 8.8, H-4′), 3.33 (dd, 9.0, 2.1, H-5′), 3.86 (dd, 10.0, 5.1, H_a-6′), 3.63 (dd, 10.0, 5.1, H_b-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 94.3 (C-1), 151.9 (C-3), 111.5 (C-4), 38.8 (C-5), 135.6 (C-6), 135.8 (C-7), 86.2 (C-8), 52.3 (C-9), 67.1 (C-10), 168.9 (C-11), 51.7 (MeO-11), 99.8 (C-1′), 74.7 (C-2′), 78.3 (C-3′), 71.7 (C-4′), 78.0 (C-5′), 62.9 (C-6′); part b: 95.9 (C-1), 150.0 (C-3), 108.9 (C-4), 32.2 (C-5), 30.7 (C-6), 40.8 (C-7), 80.5 (C-8), 52.4 (C-9), 24.6 (C-10), 169.9 (C-11), 99.8 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.7 (C-6′). *Randia spinosa* (Rubiaceae).[193]

407. Asperuloide A



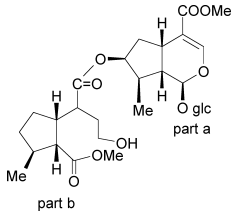
$C_{27}H_{38}O_{13}$: 570.2312; colorless needles; $[\alpha]_D^{22}$ −19.5° (c=1.52, $CHCl_3$); UV (MeOH): 235 (3.93); IR (KBr): 3422, 2957, 1718, 1646; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.24 (d, 5.4, H-1), 7.43 (d, 1.3, H-3), 3.08 (dd, 7.9, 7.7, H-5), 1.71 (ddd, 14.0, 8.5, 4.8, H_a-6), 2.29 (ddd, 14.5, 7.5, 1.2, H_b-6), 5.16 (t, 4.7, H-7), 2.15 (td, 13.6, 6.9, H-8), 2.03 (td, 8.7, 5.5, H-9), 1.08 (d, 6.9, H_3-10), 3.69 (s, MeO-11), 4.66 (d, 7.9, H-1′), 3.20 (dd, 9.1, 7.9, H-2′), 3.37 (dd, 9.0, 8.7, H-3′), 3.26 (dd, 9.6, 8.6, H-4′), 3.31 (m, H-5′), 3.64 (dd, 11.9, 6.1, H_a-6′), 3.90 (dd, 11.9, 2.1, H_b-6′); part b: 4.42 (m, H_α-3), 3.23 (m, H_β-3), 2.96 (m, H-4), 1.52 (m, H-5), 1.93 (m, H_a-6), 1.28 (dd, 12.1, 6.4, H_b-6), 1.98 (m, H_2-7), 2.09 (m, H_b-8), 2.52 (t, 10.6, H-9), 1.18 (d, 6.4, H_3-10); ^{13}C-NMR (125 MHz, CD_3OD) part a: 97.7 (C-1), 152.7 (C-3), 112.8 (C-4), 32.9 (C-5), 40.4 (C-6), 79.4 (C-7), 40.8 (C-8), 46.9 (C-9), 13.8 (C-10), 169.2 (C-11), 51.7 (MeO), 100.2 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 176.0 (C-1), 66.0 (C-3), 43.2 (C-4), 38.5 (C-5), 28.9 (C-6), 36.1 (C-7), 42.8 (C-8), 51.3 (C-9), 19.1 (C-10), 171.6 (C-11). *Asperula maximowiczii* (Rubiaceae).[194]

408. Asperuloide B



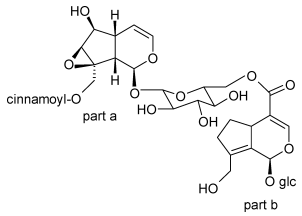
$C_{27}H_{38}O_{13}$: 570.2312; amorphous powder; $[\alpha]_D^{18}$ −40.6° (c=0.38, MeOH); UV (MeOH): 236 (4.02); IR (KBr): 3414, 2956, 1726, 1634, 1440, 1288, 1076; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.25 (d, 5.1, H-1), 7.41 (d, 1.3, H-3), 3.10 (dd, 7.9, 7.5, H-5), 1.73 (ddd, 14.4, 8.1, 5.2, H_a-6), 2.27 (ddd, 14.4, 11.8, 7.5, H_b-6), 5.16 (dd, 4.8, 3.9, H-7), 2.14 (m, H-8), 2.04 (td, 8.8, 5.1, H-9), 1.06 (d, 6.9, H_3-10), 3.65 (s, MeO-11), 4.65 (d, 7.9, H-1′), 3.19 (dd, 9.1, 7.9, H-2′), 3.36 (dd, 9.0, 8.7, H-3′), 3.28 (dd, 9.6, 8.6, H-4′), 3.30 (m, H-5′), 3.65 (dd, 11.9, 6.1, H_a-6′), 3.89 (dd, 11.9, 2.1, H_b-6′); part b: 4.38 (dd, 11.3, 7.6, H_a-3), 4.49 (dd, 11.3, 3.2, H_b-3), 2.65 (td, 7.4, 3.2, H-4), 2.84 (m, H-5), 1.44 (dd, 9.7, 6.4, H_a-6), 2.10 (m, H_b-6), 1.23 (dd, 12.0, 6.5, H_a-7), 2.03 (dd, 6.1, 1.6, H_b-7), 2.20 (m, H-8), 2.54 (dd, 11.1, 9.2, H-9), 1.18 (d, 6.6, H_3-10); ^{13}C-NMR (125 MHz, CD_3OD) part a: 97.5 (C-1), 152.5 (C-3), 113.0 (C-4), 32.7 (C-5), 40.4 (C-6), 79.7 (C-7), 40.8 (C-8), 46.9 (C-9), 13.7 (C-10), 169.2 (C-11), 51.7 (MeO), 100.2 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′); part b: 176.3 (C-1), 68.2 (C-3), 46.7 (C-4), 40.2 (C-5), 33.3 (C-6), 35.5 (C-7), 40.7 (C-8), 50.0 (C-9), 20.0 (C-10), 172.7 (C-11). *Asperula maximowiczii* (Rubiaceae).[194]

409. Asperuloide C



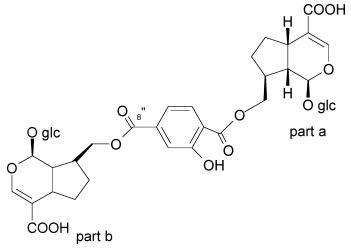
$C_{28}H_{42}O_{14}$: 602.2574; amorphous powder; $[\alpha]_D^{19}$ −53.2° (c=0.063, MeOH); UV (MeOH): 235 (3.88); IR (KBr): 3422, 2956, 1718, 1634, 1440, 1288, 1076; ^{1}H-NMR (500 MHz, CD_3OD) part a: 5.33 (d, 3.8, H-1), 7.40 (d, 1.2, H-3), 3.10 (m, H-5), 1.76 (ddd, 14.7, 7.2, 5.3, H_a-6), 2.33 (ddd, 14.8, 8.1, 1.6, H_b-6), 5.12 (br t, 3.8, H-7), 2.10 (m, H-8, 9), 1.11 (d, 6.5, H_3-10), 3.69 (s, MeO-11), 4.66 (d, 7.9, H-1′), 3.18 (dd, 8.0, 7.9, H-2′), 3.37 (dd, 8.9, 8.7, H-3′), 3.27 (dd, 9.6, 8.5, H-4′), 3.31 (m, H-5′), 3.66 (dd, 11.9, 5.8, H-6′), 3.90 (dd, 11.9, 2.1, H-6′); part b: 3.72 (dd, 13.9, 7.2, H_a-3), 3.83 (dd, 10.8, 3.7, H_b-3), 2.60 (dd, 11.0, 2.9, H-4), 2.50 (m, H-5), 1.57 (dd, 11.1, 8.2, H_a-6), 1.90 (dd, 11.1, 6.7, H_b-6), 1.22 (ddd, 7.3, 6.3, 2.1, H_a-7), 2.04 (dd, 7.9, 1.7, H_b-7), 2.25 (ddd, 14.4, 7.3, 4.1, H-8), 2.55 (m, H-9), 1.06 (d, 6.9, H_3-10), 3.66 (s, MeO-1); ^{13}C-NMR (125 MHz, CD_3OD) part a: 97.1 (C-1), 152.2 (C-3), 113.5 (C-4), 32.9 (C-5), 40.4 (C-6), 79.1 (C-7), 40.8 (C-8), 47.2 (C-9), 13.5 (C-10), 169.2 (C-11), 51.6 (MeO-11), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.7 (C-6′); part b: 177.4 (C-1), 63.7 (C-3), 51.7 (C-4), 42.1 (C-5), 32.1 (C-6), 34.4 (C-7), 40.0 (C-8), 52.0 (C-9), 21.9 (C-10), 175.4 (C-11), 51.4 (MeO-1). *Asperula maximowiczii* (Rubiaceae).[194]

410. Wulfenoside [(10-*O*-(Cinnamoyl)-6′-(desacetyl-alpinosidyl)catalpol)]



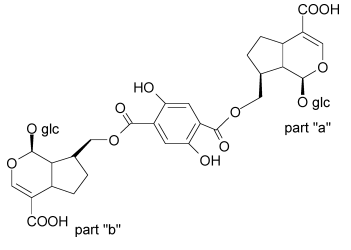
$C_{40}H_{48}O_{20}$: 848.2738; amorphous powder; $[\alpha]_D^{20}$ −53.1° (c=0.058, MeOH); IR (film): 3383 (br), 2923, 1703, 1629, 1289, 1082, 879, 770, 687; ^{1}H-NMR (500 MHz, CD_3OD) part a: 4.95 (d, 10.0, H-1), 6.37 (dd, 6.0, 1.5, H-3), 5.09 (dd, 6.0, 5.0, H-4), 2.29 (m, H-5), 3.91 (d, 8.0, H-6), 3.57 (m, H-7), 2.65 (dd, 9.5, 7.5, H-9), 5.04 and 4.18 (each d, 12.5, H_2-10), 4.76 (d, 8.0, H-1′), 3.47 (dd, 9.5, 8.0, H-2′), 3.37 (m, overlapped, H-3′), 3.42 (m, H-4′), 3.30 (m, overlapped, H-5′), 4.75 (dd, 12.0, 5.0, H_a-6′), 4.20 (d, 12.0, H_b-6′), 7.65 (m, H-2″, 6″), 7.41 (m, H-3″, 4″, 5″), 7.73 (d, 16.0, H-7″), 6.56 (d, 16.0, H-8″); part b: 6.35 (s, H-1), 7.48 (d, 2.0, H-3), 3.59 (m, H-5), 2.57 and 1.48 (each m, H_2-6), 2.47 (m, H_2-7), 4.23 and 4.17 (each m, H_2-10), 4.68 (d, 8.0, H-1′), 3.18 (m, H-2′), 3.37 (m, H-3′), 3.29 (m, H-4′), 3.30 (m, overlapped, H-5′), 3.86 (dd, 11.5, 2.0, H_a-6′), 3.65 (dd, 11.5, 5.0, H_b-6′); ^{13}C-NMR (125 MHz, CD_3OD) part a: 95.4 (C-1), 141.8 C-3), 103.7 (C-4), 38.6 (C-5), 79.3 (C-6), 62.1 (C-7), 63.1 (C-8), 43.1 (C-9), 62.5 (C-10), 100.3 (C-1′), 75.5 (C-2′), 77.8 (C-3′), 70.9 (C-4′), 77.9 (C-5′), 62.4 (C-6′), 136.1 (C-1″), 129.1 (C-2″, 6″), 129.8 (C-3″, 5″), 131.3 (C-4″), 146.6 (C-7″), 118.5 (C-8″), 168.5 (C-9″); part b: 92.0 (C-1), 152.3 (C-3), 114.2 (C-4), 38.6 (C-5), 31.9 (C-6), 34.4 (C-7), 142.5 (C-8), 143.2 (C-9), 58.9 (C-10), 169.0 (C-11), 99.9 (C-1′), 74.3 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.3 (C-6′). *Wulfenia carinthiaca* (Scrophulariaceae).[195]

411. Blumeoside B



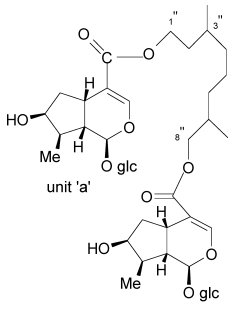
$C_{40}H_{50}O_{23}$: 898.2742; cream colored amorphous powder; mp 162—163 °C; $[\alpha]_D^{20}$ −56.0° (c=2.0, MeOH); UV (MeOH): 212 (4.53), 238 (4.36), 327 (3.66); ^{1}H-NMR (500 MHz, CD_3OD) aglycone parts: 5.16 (d, 7.3, H_a-1), 5.17 (d, 7.4, H_b-1), 7.50 (br s, H-3), 2.89 (m, H-5), 2.28 (m, H-6), 1.46 (m, H-6), 1.97 (m, H-7), 1.46 (m, H-7), 2.54 (m, H-8), 2.10 (m, H-9), 4.45 (dd, 11.0, 6.3, H_a-10), 4.34 (dd, 11.0, 6.8, H_a-10), 4.38 (dd, 11.0, 6.3, H_b-10), 4.28 (dd, 11.0, 6.8, H_b-10); glucose units: 4.66 (d, 7.8, H_a-1′), 4.67 (d, 7.8, H_b-1′), 3.06 (m, H-2′), 3.35 (m, H-3′), 3.23 (m, H-4′), 3.31 (m, H-5′), 3.65 (m, H-6′), 3.86 (m, H-6′); acyl unit: 7.58 (unresolved, H-3″), 7.59 (unresolved, H-5″), 8.02 (d, 8.8, H-6″); ^{13}C-NMR (125 MHz, CD_3OD) aglycon units: 98.9, 98.7 (C-1), 153.4 (C-3), 112.1 (C-4), 37.0 (C-5), 33.8 (C-6), 28.8 (C-7), 41.0, 41.1 (C-8), 44.3 (C-9), 69.5, 69.8 (C-10), 171.0 (C-11); glucose units: 100.8, 101.0 (C-1′), 74.5, 74.6 (C-2′), 77.9 (C-3′), 71.3, 71.5 (C-4′), 78.4 (C-5′), 62.8, 62.7 (C-6′); acyl unit: 119.5 (C-1″), 162.3 (C-2″), 121.0 (C-3″), 137.8 (C-4″), 117.6 (C-5″), 131.7 (C-6″), 170.6 (C-7″), 167.0 (C-8″). *Fagraea blumei* (Loganiaceae).[121]

412. Blumeoside D



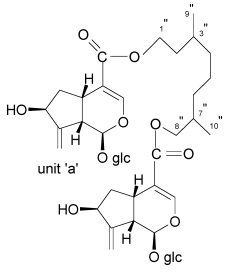
$C_{40}H_{50}O_{24}$: 914.2691; yellow amorphous powder; mp 156—158 °C; $[\alpha]_D^{20}$ −36.0° (c=4.0, MeOH); UV (MeOH): 222 (4.25), 251 (3.68), 371 (3.43); ^{1}H-NMR (200 MHz, CD_3OD) aglycone units: 5.18 (d, 7.4, H-1), 7.48 (s, H-3), 2.88 (m, H-5), 2.28 (m, H_a-6), 1.45 (m, H_b-6), 1.98 (m, H_a-7), 1.45 (m, H_b-7), 2.54 (m, H-8), 2.10 (m, H-9), 4.37 (m, H_2-10); glucose units: 4.68 (d, 7.8, H-1′), 3.12 (m, H-2′), 3.15—3.40 (overlapped, H-3′, 4′, 5′), 3.65 (dd, 11.6, 5.4, H_a-6′), 3.87 (d, 11.6, H_b-6′); acyl unit: 7.50 (s, H-3″, 6″); ^{13}C-NMR (50 MHz, CD_3OD) aglycon units: 98.8 (C-1), 153.2 (C-3), 112.3 (C-4), 37.0 (C-5), 33.8 (C-6), 28.8 (C-7), 40.9 (C-8), 44.4 (C-9), 69.9 (C-10), 171.2 (C-11); glucose units: 100.9 (C-1′), 74.5 (C-2′), 78.0 (C-3′)[a], 71.4 (C-4′), 78.4 (C-5′)[a], 62.8 (C-6′); acyl unit: 120.1 (C-1″, 4″), 153.8 (C-2″, 5″), 118.8 (C-3″, 6″), 170.0 (C-7″, 8″). *Fagraea blumei* (Loganiaceae).[121]

413. Premnaodoroside D



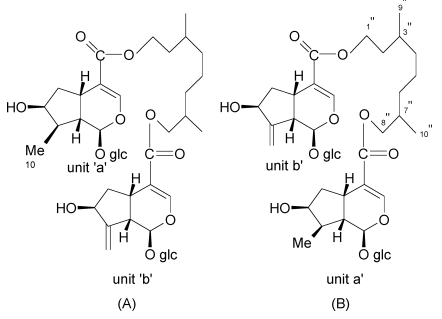
$C_{42}H_{66}O_{20}$: 890.4147; amorphous powder; $[\alpha]_D^{25}$ −89.4° (c=1.04, MeOH); UV (MeOH): 238 (4.28); IR (KBr): 3350, 2900, 1680, 1630, 1455, 1375, 1280, 1185, 1150, 1070, 900, 765; ^{1}H-NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.51 (d, 4.0, H-1_a, 1_b), 7.38 and 7.40 (each s, H-3_a, 3_b), 3.05 (m, H-5_a, 5_b), 1.83 (m, H-6_a, 6_b), 2.08 (ddd, 18.0, 9.0, 5.0, H-6_a, 6_b), 3.83 (td, 10.0, 5.0, H-7_a, 7_b), 2.12 (br sep, H-8_a, 8_b), 2.59 (dt, 8.0, 4.0, H-9_a, 9_b), 1.04 and 1.05 (each d, 7.0, H_3-10_a, 10_b), 4.66 (d, 8.0, H-1′$_a$, 1′$_b$), 3.18 (dd, 9.0, 8.0, H-2′$_a$, 2′$_b$), 3.24 (t, 9.0, H-3′$_a$, 3′$_b$), 3.37 (t, 9.0, H-4′$_a$, 4′$_b$), H-5′$_a$, 5′$_b$–not assigned, 3.65 (dd, 12.0, 6.0, H-6′$_a$, 6′$_b$), 3.90 (dd, 12.0, 2.0, H-6′$_a$, 6′$_b$); monoterpene unit: 4.16 (t, 7.0, H_2-1″), 3.93 (dd, 11.0, 7.0, H-8″), 3.99 (dd, 11.0, 6.0, H-8″), 0.93 and 0.97 (each d, 6.0, H_3-9″, 10″); ^{13}C-NMR (100 MHz, CD_3OD): iridoid glucoside units: 96.2, 96.3 (C-1_a,1_b), 152.3, 152.4 (C-3_a, 3_b), 114.2, 114.3 (C-4_a, 4_b), 31.0, 31.1 (C-5_a, 5_b), 41.3, 41.4 (C-6_a, 6_b), 79.2, 79.3 (C-7_a, 7_b), 45.2, 45.3 (C-8_a, 8_b), 43.0 (C-9_a, 9_b), 14.4 (C-10_a, 10_b), 169.0, 161.1 (C-11_a, 11_b), 99.8 (C-1′$_a$, 1′$_b$), 74.7 (C-2′$_a$, 2′$_b$), 78.4 (C-3′$_a$, 3′$_b$), 71.8 (C-4′$_a$, 4′$_b$), 78.0 (C-5′$_a$, 5′$_b$), 63.0 (C-6′$_a$, 6′$_b$); monoterpene unit: 63.8 (C-1″), 38.8 (C-2″), 31.1 (C-3″), 38.1 (C-4″), 25.2 (C-5″), 34.8 (C-6″), 33.9 (C-7″), 70.0 (C-8″), 18.9 (C-9″), 17.5 (C-10″). *Premna subscandens* (Verbenaceae).[196]

414. Premnaodoroside E



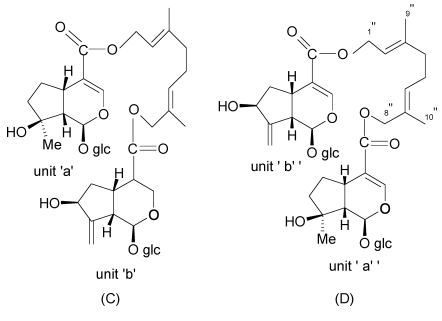
$C_{42}H_{62}O_{20}$: 886.3834; amorphous powder; $[\alpha]_D^{25}$ −28.9° (c=0.28, MeOH); UV (MeOH): 206 (4.07), 236 (4.31); ^{1}H-NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.42 (d, 5.0, H-1_a, 1_b), 7.43, 7.45 (each d, 1.0, H-3_a, 3_b), 2.90 (m, H-5_a, 5_b), 2.00 (m, H_2-6_a, 6_b), 4.37 (br s, H-7_a, 7_b), 3.16 (br m, H-9_a, 9_b), 5.36 (br s, H_2-10_a, 10_b), 4.67, 4.68 (each d, 8.0, H-1′$_a$, 1′$_b$), 3.20 (dd, 9.0, 8.0, H-2′$_a$, 2′$_b$), 3.25 (t, 9.0, H-3′$_a$, 3′$_b$), 3.37 (t, 9.0, H-4′$_a$, 4′$_b$), H-5′$_a$, 5′$_b$-not assigned, 3.64 (dd, 12.0, 6.0, H-6′$_a$, 6′$_b$), 3.89 (dd, 12.0, 2.0, H-6$_a$′, 6$_b$′); monoterpene part: 4.17 (t, 6.0, H_2-1″), 3.94, 4.10 (each dd, 11.0, 6.0, H_2-8″), 0.93, 0.97 (each d, 6.0, H_3-9″, 10″); ^{13}C-NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.7 (C-1_a, 1_b), 153.5 (C-3_a, 3_b), 111.9 (C-4_a, 4_b), 31.9, 32.0 (C-5_a, 5_b), 40.7, 40.8 (C-6_a, 6_b), 73.9 (C-7_a, 7_b), 152.8 (C-8_a, 8_b), 45.0 (C-9_a, 9_b), 113.2, 113.3 (C-10_a, 10_b), 168.9 (C-11_a, 11_b), 99.9 (C-1′$_a$, 1′$_b$), 74.8 (C-2′$_a$, 2′$_b$), 78.5 (C-3′$_a$, 3′$_b$), 71.7 (C-4′$_a$, 4′$_b$), 78.0 (C-5′$_a$, 5′$_b$), 62.9 (C-6′$_a$, 6′$_b$); monoterpene unit: 63.7 (C-1″), 36.8 (C-2″), 31.1 (C-3″), 38.1 (C-4″), 25.2 (C-5″), 34.8 (C-6″), 34.0 (C-7″), 70.1 (C-8″), 20.0 (C-9″), 17.5 (C-10″). *Premna subscandens* (Verbenaceae).[196]

415. Premnaodoroside F [isomeric mixture of A and B in ratio (1 : 1)]



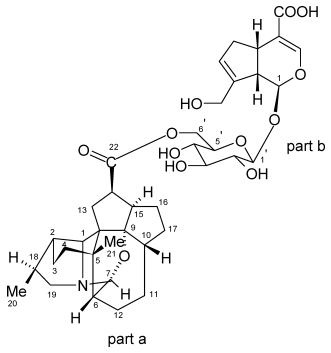
$C_{42}H_{64}O_{20}$: 888.3990; amorphous powder; $[\alpha]_D^{25}$ −69.1° (c=1.88, MeOH); UV (MeOH): 236 (4.33); IR (KBr): 3350, 2900, 1680, 1630, 1450, 1375, 1280, 1150, 1070, 900, 850, 765; ^{1}H-NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.51 (d, 4.0, H-1_a, $1_{a'}$), 7.38 (s, H-3_a), 7.40 (d, 1.0, H-$3_{a'}$), 3.05 (m, H-5_a, $5_{a'}$), 1.83 (m, H-6_a, $6_{a'}$), 2.08 (ddd, 12.0, 9.0, 5.0, H-6_a, $6_{a'}$), 3.83 (td, 10.0, 5.0, H-7_a, $7_{a'}$), 2.12 (br sep., 6.0, H-8_a, $8_{a'}$), 2.59 (dt, 8.0, 4.0, H-9_a, $9_{a'}$), 1.05, 1.04 (each d, 7.0, H_3-10_a, $10_{a'}$), 4.66 (d, 8.0, H-1′$_a$, 1′$_{a'}$), 3.64 (dd, 12.0, 6.0, H-6′), 3.89, 3.90 (each dd, 12.0, 2.0, H-6′), 5.43 (d, 5.0, H-1_b, $1_{b'}$), 7.43, 7.45 (each d, 1.0, H-3_b, $3_{b'}$), 3.00 (m, H-5_b, $5_{b'}$), 2.00 (m, H_2-6_b, $6_{b'}$), 4.67, 4.68 (each d, 8.0, H-1′$_b$, 1′$_{b'}$), 3.37, 3.38 (each t, 9.0, H-4′), H-6′ appeared at the same values of sugar unit in a, a′; monoterpene unit: 4.15 (t, 6.0, H_2-1_a), 3.92, 3.99 (each dd, 11.0, 6.0, H_2-8_a), 0.94, 0.97 (each d, 7.0, H_3-9″$_a$, 10″$_a$), 4.17 (t, 6.0, H_2-$1_{b'}$), 3.94, 4.10 (each dd, 11.0, 6.0, H_2-$8_{b'}$), 0.94, 0.97 (each d, 7.0, H_3-9″$_{b'}$, 10″$_{b'}$); ^{13}C-NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.2, 95.3 (C-1_a, $1_{a'}$), 152.3, 152.4 (C-3_a, $3_{a'}$), 114.2 (C-4_a, $4_{a'}$), 31.0, 31.1 (C-5_a, $5_{a'}$), 41.3, 41.4 (C-6_a, $6_{a'}$), 79.2 (C-7_a, $7_{a'}$), 45.2, 45.3 (C-8_a, $8_{a'}$), 43.0 (C-9_a, $9_{a'}$), 14.4 (C-10_a, $10_{a'}$), 169.0, 169.1 (C-11_a, $11_{a'}$), 99.7 (C-1′$_a$, 1′$_{a'}$), 99.9 (C-1′$_b$, 1′$_{b'}$), 74.7 (C-2′$_a$, 2′$_{a'}$, 2′$_b$, 2′$_{b'}$), 78.4 (C-3′$_a$, 3′$_{a'}$, 3′$_b$, 3′$_{b'}$), 71.7 (C-4′$_a$, 4′$_{a'}$, 4′$_b$, 4′$_{b'}$), 78.0 (C-5′$_a$, 5′$_{a'}$, 5′$_b$, 5′$_{b'}$), 62.9 (C-6′$_a$, 6′$_{a'}$), 63.0 (C-6′$_b$, 6′$_{b'}$); monoterpene unit: 6.35 (C-1″$_a$, 1″$_{b'}$), 36.8 (C-2″$_a$, 2″$_{b'}$), 31.0 (C-3″$_a$, 3″$_{b'}$), 38.1 (C-4″$_a$, 4″$_{b'}$), 25.2 (C-5″$_a$, 5″$_{b'}$), 34.7 (C-6″$_a$, 6″$_{b'}$) 33.9 (C-7″$_a$, 7″$_{b'}$), 70.0 (C-8″$_a$, 8″$_{b'}$), 19.9 (C-9″$_a$), 20.0 (C-9″$_{b'}$), 17.5 (C-10″$_a$, 10″$_{b'}$). *Premna subscandens* (Verbenaceae).[196]

416. Premnaodoroside G (isomeric mixture of C and D)



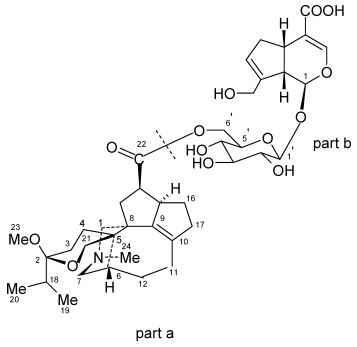
$C_{42}H_{60}O_{20}$: 884.3677; amorphous powder; $[\alpha]_D^{25}$ −46.6° (c=0.34, MeOH); UV (MeOH): 207 (4.03), 236 (4.19); ^{1}H-NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.43 (d, 5.0, H-1_a, $1_{a'}$), 7.39 (s, H-3_a, $3_{a'}$), 1.32 (s, H_3-10_a, $10_{a'}$), 4.68 (d, 8.0, H-1′$_a$, 1′$_{a'}$), 3.65 (dd, 12.0, 6.0, H-6′$_a$, 6′$_{a'}$), 3.89 (dd, 12.0, 2.0, H-6′$_a$, 6′$_{a'}$) 5.44 (d, 5.0, H-1_b,$1_{b'}$), 7.45 (d, 1.0, H-3_b, $3_{b'}$), 3.00 (m, H-5_b, $5_{b'}$), 1.99 (m, H_2-6_b, $6_{b'}$), 4.37 (v br s, H-7_b, $7_{b'}$), 5.36 (br s, H_2-10_b, $10_{b'}$), sugar H s appeared at the same values; monoterpene unit: 1.67, 1.73 (each s, H_3-9″, 10″); ^{13}C-NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.5 (C-1_a, $1_{a'}$), 152.0 (C-3_a, $3_{a'}$), 113.7 (C-4_a, $4_{a'}$), 32.1 (C-5_a, $5_{a'}$), 31.0, 30.0 (C-6_a, $6_{a'}$), 40.6 (C-7_a, $7_{a'}$), 80.6 (C-8_a, $8_{a'}$), 52.4 (C-9_a, $9_{a'}$), 24.7 (C-10_a, $10_{a'}$), 168.6 (C-11_a, $11_{a'}$), 99.9 (C-1′$_a$, 1′$_{a'}$), 74.8 (C-2′$_a$, 2′$_{a'}$), 78.4 (C-3′$_a$, 3′$_{a'}$), 71.7 (C-4′$_a$, 4′$_{a'}$), 78.1 (C-5′$_a$, 5′$_{a'}$), 62.9 (C-6′$_a$, 6′$_{a'}$), 96.7 (C-1_b, $1_{b'}$), 153.6 (C-3_b, $3_{b'}$), 111.9 (C-4_b, $4_{b'}$), 32.0 (C-5_b, $5_{b'}$), 40.0 (C-6_b, $6_{b'}$), 73.9 (C-7_b, $7_{b'}$), 152.8 (C-8_b, $8_{b'}$), 45.0 (C-9_b, $9_{b'}$), 113.2 (C-10_b, $10_{b'}$), 169.0 (C-11_b, $11_{b'}$), 99.9 (C-1′$_b$, 1′$_{b'}$), 74.8 (C-2′$_b$, 2′$_{b'}$), 78.5 (C-3′$_b$, 3′$_{b'}$), 71.9 (C-4′$_b$, 4′$_{b'}$), 78.1 (C-5′$_b$, 5′$_{b'}$), 63.0 (C-6′$_b$, 6′$_{b'}$); monoterpene: 61.8 (C-1″), 120.5 (C-2″), 142.7 (C-3″), 39.9 (C-4″), 25.9 (C-5″), 129.5 (C-6″), 132.1 (C-7″), 70.7 (C-8″), 18.5 (C-9″), 14.2 (C-10″). *Premna subscandens* (Verbenaceae).[196]

417. Daphcalycinosidine A



$C_{38}H_{52}NO_{12}$ $(M+H)^+$: 714.3489; colorless solid; mp 134—136 °C (MeOH); $[\alpha]_D^{22}$ −16.0° (c=0.6, MeOH); ^{1}H-NMR (400 MHz, CD_3OD) part a: 3.81 (d, 7.4, H-1), 2.34 (m, H-2), 1.71 and 1.63 (each m, H_2-3), 1.56 (m, H_2-4), 2.69 (br dd, 7.5, 7.5, H-6), 4.72 (br s, H-7), 2.32 (pent, 8.5, H-10), 1.77 and 1.61 (each, m, H_2-11), 2.5 (ddd, 13.1, 9.3, 9.3, H_a-12), 1.71 (m, H_b-12), 2.17 (dd, 13.2, 12.5, H_a-13), 1.85 (dd, 13.2, 7.0, H_b-13), 3.37 (ddd, 12.5, 11.0, 7.0, H-14), 2.83 (ddd, 11.0, 9.5, 9.5, H-15), 1.90 (m, H_a-16), 0.97 (dddd, 12.8, 12.8, 7.9, 6.9, H_b-16), 1.78 (m, H_a-17), 1.30 (m, H_b-17), 2.52 (m, H-18), 3.16 (dd, 9.4, 7.9, H_a-19), 2.85 (dd, 9.4, 9.4, H_b-19), 1.11 (d, 6.9, H_3-20), 1.22 (s, H_3-21); part b: 4.94 (d, 7.9, H-1), 7.25 (d, 1.3, H-3), 3.24 (ddd, 8.0, 8.0, 8.0, H-5), 2.88 (ddd, 15.5, 8.0, 8.0, H_a-6), 2.03 (ddd, 15.5, 8.0, 8.0, H_b-6), 5.77 (s, H-7), 2.69 (dd, 7.5, 7.5, H-9), 4.25 (dd, 12.3, 1.1, H_a-10), 4.20 (dd, 12.3, 1.7, H_b-10), 4.70 (d, 7.9, H-1′), 3.24 (dd, 9.1, 7.9, H-2′), 3.42 (dd, 9.1, 8.5, H-3′), 3.33 (dd, 9.5, 8.5, H-4′), 3.46 (ddd, 9.7, 6.0, 2.0, H-5′), 4.45 (dd, 11.9, 2.0, H_a-6′), 4.16 (dd, 11.9, 6.0, H_b-6′); ^{13}C-NMR (100 MHz, CD_3OD); part a: 62.3 (C-1), 38.6 (C-2), 19.2 (C-3), 44.6 (C-4), 35.0 (C-5), 47.0 (C-6), 87.6 (C-7), 48.2 (C-8), 97.0 (C-9), 47.8 (C-10), 26.0 (C-11), 25.2 (C-12), 30.3 (C-13), 45.4 (C-14), 50.0 (C-15), 29.4 (C-16), 37.2 (C-17), 38.1 (C-18), 54.7 (C-19), 13.0 (C-20), 26.8 (C-21), 175.9 (C-22); part b: 98.1 (C-1), 148.8 (C-3), 118.9 (C-4), 38.0 (C-5), 40.3 (C-6), 128.7 (C-7), 145.2 (C-8), 47.0 (C-9), 61.7 (C-10), 176.1 (C-11), 100.2 (C-1′), 74.9 (C-2′), 77.6 (C-3′), 71.6 (C-4′), 75.6 (C-5′), 64.6 (C-6′). *Daphniphyllum calycinum* (Daphniphyllaceae).[197,198]

418. Daphcalycinosidine B



$C_{40}H_{58}NO_{13}$ $(M+H)^+$: 760.3908; colorless crystals; mp 201—202 °C (MeOH); $[\alpha]_D^{22}$ +6.0° (c=0.3, MeOH); ^{1}H-NMR (400 MHz, CD_3OD) part a: 3.12 (d, 13.0, H_a-1), 3.02 (d, 13.0, H_b-1), 1.75 (ddd, 14.0, 4.5, 4.5, H_a-3), 1.43 (ddd, 14.0, 4.5, 4.5, H_b-3), 1.98 (ddd, 13.7, 4.5, 4.0, H_a-4), 1.73 (m, H_b-4), 2.55 (m, H-6), 3.48 (dd, 13.5, 3.5, H_a-7), 3.39 (dd, 13.5, 5.5, H_b-7), 1.78 (m, H_a-11), 2.33 (m, H_b-11), 2.48 (m, H_a-12), 2.35 (m, H_b-12), 2.76 (dd, 15.5, 3.1, H_a-13), 1.75 (dd, 15.5, 9.0, H_b-13), 2.99 (ddd, 10.0, 9.0, 3.0, H-14), 3.62 (m, H-15), 1.90 (ddd, 10.8, 6.6, 2.4, H_a-16), 1.40 (ddd, 10.8, 8.4, 2.2, H_b-16), 2.65 (m, H_a-17), 2.38 (m, H_b-17), 2.08 (hept, 7.0, H-18), 0.94 (d, 7.0, H_3-19), 0.86 (d, 7.0, H_3-20), 4.09 (d, 12.5, H_a-21), 3.77 (dd, 12.5, 2.7, H_b-21), 3.20 (s, H_3-23), 2.84 (s, H_3-24); part b: 5.00 (d, 8.0, H-1), 7.43 (br d, 1.2, H-3), 3.20 (ddd, 8.0, 8.0, 8.0, H-5), 2.86 and 2.06 (each ddd, 15.0, 8.0, 8.4, H_2-6), 2.06 (ddd, 15.0, 8.0, 8.0, H_b-6), 5.80 (s, H-7), 2.70 (m, H-9), 4.26 (dd, 13.7, 1.0, H_a-10), 4.24 (dd, 13.7, 1.8, H_b-10), 4.71 (d, 7.9, H-1′), 2.23 (dd, 9.2, 7.9, H-2′), 3.40 (dd, 9.2, 9.0, H-3′), 3.30 (dd, 9.0, 9.0, H-4′), 3.48 (dd, 9.0, 6.4, 2.0, H-5′), 4.48 (dd, 12.0, 2.0, H_a-6′), 4.14 (dd, 12.0, 6.4, H_b-6′); ^{13}C-NMR (100 MHz, CD_3OD) part a: 57.5 (C-1), 102.3 (C-2), 23.0 (C-3), 23.3 (C-4), 37.2 (C-5), 33.6 (C-6), 55.3 (C-7), 46.8 (C-8), 143.3 (C-9), 138.3 (C-10), 26.4 (C-11), 26.6 (C-12), 39.8 (C-13), 43.2 (C-14), 55.7 (C-15), 29.4 (C-16), 43.9 (C-17), 32.5 (C-18), 17.6 (C-19), 16.7 (C-20), 63.3 (C-21), 175.7 (C-22), 47.0 (C-23), 45.4 (C-24); part b: 98.2 (C-1), 151.8 (C-3), 114.5 (C-4), 37.3 (C-5), 40.1 (C-6), 128.9 (C-7), 145.0 (C-8), 46.9 (C-9), 61.6 (C-10), 172.0 (C-11), 100.0 (C-1′), 74.8 (C-2′), 77.6 (C-3′), 71.6 (C-4′), 75.8 (C-5′), 64.5 (C-6′). *Daphniphyllum calycinum* (Daphniphyllaceae).[197,198]

Table 2. Alphabetical Index of the Iridoids Cited in Table 1

Nepetanudoside **238**
Nepetanudoside B **164**
Nepetanudoside C **122**
Nepetanudoside D **132**
Nepetaracemoside A **291**
Nepetaracemoside B **292**
(−) Ningpogenin (revision of 1-dehydroxy-3,4-dihydroaucubingenin) **371**
Officinosidic acid (5-Hydroxy-10-*O*-(*p*-methoxycinnamoyl)-adoxosidic acid) **201**
Ovatic acid methyl ester-7-*O*-(6′-*O*-*p*-Hydroxybenzoyl)-β-D-glucopyranoside **362**
Ovatolactone-7-*O*-(6′-*O*-*p*-hydroxybenzoyl)-β-D-glucopyranoside **293**
7-Oxocarpensioside **113**
Paederoscandoside **404**
Paederosidic acid methyl ester **266**
Patrinioside **368**
Pedicularis-lactone **382**
Phlomiside **236**
Phlomoidoside (6-*O*-(4″-*O*-*p*-Coumaroyl-β-D-xylopyranosyl)-aucubin) **40**
Phlomurin **234**
Phlorigidoside A (2′-*O*-Acetyllamiridoside) **245**
Phlorigidoside B (8-*O*-Acetyl-6b-hydroxyipolamiide) **258**
Phlorigidoside C (5-Deoxysesamoside) **237**
Picconioside 1 **400**
Picroside IV **52**
Picroside V (6-*m*-Methoxybenzoylcatalpol) **70**
Pikuroside **116**
Plicatoside A **133**
Plicatoside B **239**
Premnaodoroside D **413**
Premnaodoroside E **414**
Premnaodoroside F [isomeric mixture of A and B in ratio (1 : 1)] **415**
Premnaodoroside G (isomeric mixture of (C) and (D)) **416**
Premnosidic acid **185**
Proceroside (7-Oxocarpensioside) **113**
Randinoside **406**
Saletpangponoside A [6-*O*-(4″-*O*-β-Glucopyranosyl)-*trans*-*p*-coumaroyl-8-*O*-acetylshanzhiside methyl ester] **253**
Saletpangponoside B **254**
Saletpangponoside C **255**
Sammangaoside C (Melittoside 3″-*O*-β-glucopyranoside) **42**
Saprosmoside A **391**
Saprosmoside B **392**
Saprosmoside C **393**
Saprosmoside D **394**
Saprosmoside E **395**
Saprosmoside F **396**
Saprosmoside G **397**
Saprosmoside H **398**
Scorodioside (6-*O*-(3″-*O*-Acetyl-2″-*O*-*trans*-cinnamoyl)-α-L-rhamnopyranosyl catalpol) **86**
Scrolepidoside **43**
Scrophuloside A_1 **135**
Scrophuloside A_2 **61**
Scrophuloside A_3 **62**
Scrophuloside A_4 **63**
Scrophuloside A_5 **64**
Scrophuloside A_6 **65**
Scrophuloside A_7 **66**
Scrophuloside A_8 **67**
Scrophuloside B_4 [6-*O*-(2″-*O*-Acetyl-3″-*O*-cinnamoyl-4″-*O*-*p*-methoxy cinnamoyl-α-L-rhamnopyranosyl)catalpol] **94**
Scrovalentinoside **95**
Senburiside III **155**
Senburiside IV **156**
Serratoside A **131**
Serratoside B **134**
Shanzhigenin methyl ester **348**
6-*O*-Sinapoyl scandoside methyl ester **268**
Sintenoside **47**
Stegioside I **31**
Stegioside II **15**
Stegioside III **16**
Syringafghanoside **364**
7,10,2″,6″-Tetra-*O*-acetylisosuspensolide F **307**
7,10,2″,3″-Tetra-*O*-acetylisosuspensolide F **306**
7,10,2″,3″-Tetra-*O*-acetylsuspensolide F **310**
Thunaloside **112**
7,10,2″-Tri-*O*-acetylpatrinoside **299**
7,10, 2″-Tri-*O*-acetylsuspensolide F **309**
6-*O*-α-L-(2″-*O*-,3″-*O*-,4″-*O*-Tribenzoyl)-rhamnopyranosylcatalpol **56**
6-*O*-(3″,4″,5″-Trimethoxybenzoyl)ajugol **12**
Unbuloside (6-*O*-[(2″-*O*-*trans*-Feruloyl)-α-L-rhamnopyranosyl]-aucubin) **32**
Urphoside A **98**
Urphoside B **100**
Verbaspinoside (6-*O*-[(2″-*O*-*trans*-Cinnamoyl)-α-L-rhamnopyranosyl]-catalpol) **93**
Viburtinoside I **297**
Viburtinoside II **314**
Viburtinoside III **315**
Viburtinoside IV **316**
Viburtinoside V **311**
Viteoid I **375**
Viteoid II **334**
Wulfenoside [(10-*O*-(Cinnamoylalpinosidyl)-6′-(desacetyl-alpinosidyl)-catalpol)] **410**
Yopaaoside A **331**
Yopaaoside B **332**
Yopaaoside C **282**
Zaluzioside (6β-Hydroxygardoside methyl ester) **260**

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