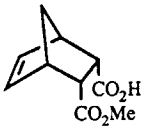
R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990,** *1*, 517



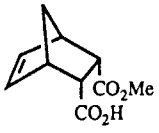
E.e.=88% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= –1.11 (c 4.2, $CHCl_3$)
Source of chirality : quinine
Absolute configuration : 1S,2R,3S,4R
(assigned by correlation to X-ray structure)

$C_{10}H_{12}O_4$

(–)-*endo*-bicyclo[2.2.1]hept-5-ene 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990,** *1*, 517



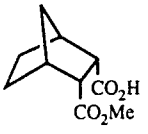
E.e.=93% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= +1.18 (c 4.2, $CHCl_3$)
Source of chirality : quinidine
Absolute configuration : 1R,2S,3R,4S
(assigned by correlation to X-ray structure)

$C_{10}H_{12}O_4$

(+)-*endo*-bicyclo[2.2.1]hept-5-ene 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990,** *1*, 517



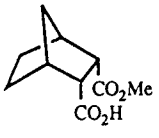
E.e.=35% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= –4.6 (c 3, $CHCl_3$)
Source of chirality : quinine
Absolute configuration : 1R,2R,3S,4S
(assigned by correlation to X-ray structure)

$C_{10}H_{14}O_4$

(–)-*endo*-bicyclo[2.2.1]heptane 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990,** *1*, 517



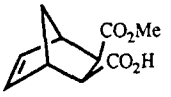
E.e.=44% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= +5.8 (c 3, $CHCl_3$)
Source of chirality : quinidine
Absolute configuration : 1S,2S,3R,4R
(assigned by correlation to X-ray structure)

$C_{10}H_{14}O_4$

(+)-*endo*-bicyclo[2.2.1]heptane 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990**, *1*, 517



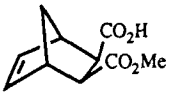
E.e.=58% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= –3.0 (c 3.8, $CHCl_3$)
Source of chirality : quinine
Absolute configuration : 1R,2R,3S,4S
(assigned by reduction to known lactone)

$C_{10}H_{12}O_4$

(–)-*exo*-bicyclo[2.2.1]hept-5-ene 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990**, *1*, 517



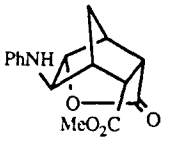
E.e.=67% [by nmr with (+)-α-phenylethylamine]
$[\alpha]_D^{25}$= +3.4 (c 3.8, $CHCl_3$)
Source of chirality : quinidine
Absolute configuration : 1S,2S,3R,4R
(assigned by reduction to known lactone)

$C_{10}H_{12}O_4$

(+)-*exo*-bicyclo[2.2.1]hept-5-ene 2,3-dicarboxylic acid monomethyl ester

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990**, *1*, 517



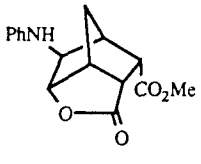
E.e.=65% [by nmr with $Eu(hfc)_3$]
$[\alpha]_D^{20}$= –56.0 (c 0.54, acetone)
Source of chirality : quinine
Absolute configuration : 1R,4S,5S,7R,8R,9R
(assigned by correlation to X-ray structure)

$C_{16}H_{17}NO_4$

(–)-9-methoxycarbonyl-8-phenylamino-2-oxatricyclo[3.3.0.$1^{4,7}$]nonan-3-one

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990**, *1*, 517



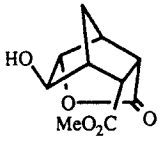
E.e.=71% [by nmr with $Eu(hfc)_3$]
$[\alpha]_D^{20}$= +61.1 (c 0.54, acetone)
Source of chirality : quinidine
Absolute configuration : 1S,4R,5R,7S,8S,9S
(assigned by correlation to X-ray structure)

$C_{16}H_{17}NO_4$

(+)-9-methoxycarbonyl-8-phenylamino-2-oxatricyclo[3.3.0.$1^{4,7}$]nonan-3-one

R. A. Aitken and J. Gopal

Tetrahedron: Asymmetry **1990**, *1*, 517



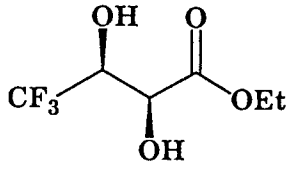
E.e.>99% [by nmr with $Eu(hfc)_3$]
$[\alpha]_D^{25}$= –36.55 (c 1.0, $CHCl_3$)
Source of chirality : quinine
Absolute configuration : 1R,4S,5S,7R,8R,9R
(assigned by X-ray structure of (+)-MTPA ester)

$C_{10}H_{12}O_5$

(–)-9-methoxycarbonyl-2-oxatricyclo[3.3.0.$1^{4,7}$]nonan-8-ol-3-one

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990**, *1*, 521



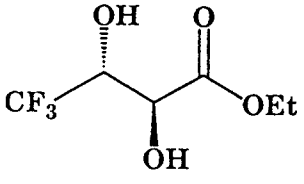
E.e. = 98% [by ^{1}H NMR analysis of MTPA ester after derived into 2,3-bis[(*t*-butyldimethylsilyl)oxy]-4,4,4-trifluorobutan-1-ol]
$[\alpha]_D^{22}$ +13.30 (*c* 1.36, MeOH)
Absolute configuration : 2*S*,3*S* [chemical correlation of optically active trifluorinated threonine into this compound]
Relative configuration : *syn* [estimated from its reaction mechanism]

$C_6H_9F_3O_4$

Ethyl 2,3-dihydroxy-4,4,4-trifluorobutyrate

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990**, *1*, 521



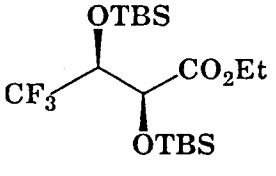
E.e. = >95% [by ^{1}H NMR analysis of MTPA ester after derived into 2,3-bis[(*t*-butyldimethylsilyl)oxy]-4,4,4-trifluorobutan-1-ol]
$[\alpha]_D^{19}$ +4.53 (*c* 1.09, MeOH)
Absolute configuration : 2*S*,3*R* [by chemical correlation to the known compound for 3-position]
Relative configuration : *anti* [estimated from its reaction mechanism]

$C_6H_9F_3O_4$

Ethyl 2,3-dihydroxy-4,4,4-trifluorobutyrate

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990**, *1*, 521



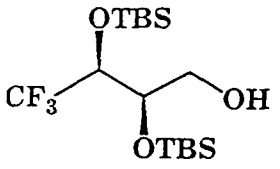
E.e. = 98% (by ^{1}H NMR analysis of MTPA ester after derived into 2,3-bis[(*t*-butyldimethylsilyl0oxy]-4,4,4-trifluorobutan-1-ol)
$[\alpha]_D^{18}$ +14.63 (*c* 1.57, MeOH)
Absolute configuration : 2*S*,3*S*
Relative configuration : *syn*

$C_{18}H_{37}F_3O_4Si_2$

Ethyl 2,3-bis[(*t*-butyldimethylsilyl)oxy]-4,4,4-trifluorobutyrate

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990,** *1*, 521



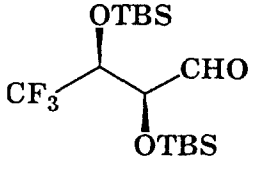
E.e. = 98% [by ^{1}H NMR after derivatization into its MTPA ester]
$[\alpha]_D^{16}$ -4.40 (*c* 1.26, MeOH)
Absolute configuration : 2*S*,3*S*
Relative configuration : *syn*

$C_{16}H_{35}F_3O_3Si_2$

2,3-Bis[(*t*-butyldimethylsilyl)oxy]-4,4,4-trifluorobutan-1-ol

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990,** *1*, 521



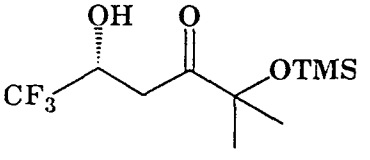
E.e. = 98% [estimated from the ee value of its starting material and the observation of no epimerization at α-position]
$[\alpha]_D^{16}$ +11.55 (*c* 1.46, MeOH)
Absolute configuration : 2*S*,3*S*
Relative configuration : *syn*

$C_{16}H_{33}F_3O_3Si_2$

2,3-Bis[(*t*-butyldimethylsilyl)oxy]-4,4,4-trifluorobutan-1-al

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990,** *1*, 521



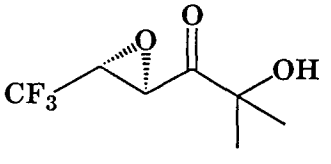
E.e. = >95% (by ^{1}H NMR for the corresponding MTPA ester)
$[\alpha]_D^{17}$ +5.11 (*c* 1.36, MeOH)
Source of chirality : Lipase-catalyzed asymmetric hydrolysis
Absolute configuration : *R*

$C_{10}H_{19}F_3O_3Si$

2-Hydroxy-5-methyl-1,1,1-trifluoro-5-[(trimethylsilyl)oxy]hexan-4-one

T. Yamazaki, N. Okamura, and T. Kitazume

Tetrahedron: Asymmetry **1990,** *1*, 521



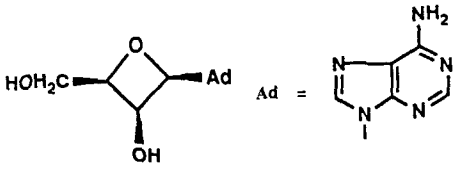
E.e. = >95% (estimated from the ee value for its starting material)
$[\alpha]_D^{15}$ -16.5 (*c* 1.57, MeOH)
Absolute configuration : 2*R*,3*R*
Relative configuration : *anti*

$C_7H_9F_3O_3$

2,3-Epoxy-5-hydroxy-5-methyl-1,1,1-trifluorohexan-4-one

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990,** *1*, 525



E.e. = 100%

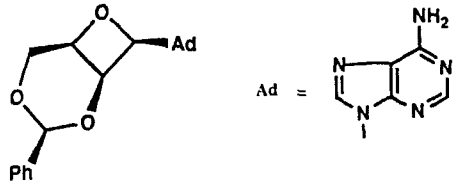
$[\alpha]_D^{20}$ = -12.8 (c, 0.12 in DMF)

Source of chirality: D-lyxonolactone as starting material

$C_9H_{11}N_5O_3$ norepioxetanocin
9-(β-D-threooxetanosyl)adenine

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990,** *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = +96.2 (c, 0.26 in methanol)

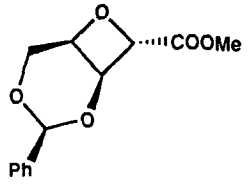
Source of chirality: D-lyxonolactone as starting material

$C_{16}H_{15}N_5O_3$

9-(2',4'-O-benzylidene-β-D-threooxetanosyl)adenine

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990,** *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = -28.2 (c, 1.0 in chloroform)

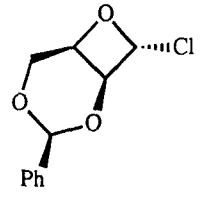
Source of chirality: D-lyxonolactone as starting material

$C_{13}H_{14}O_5$

methyl 2,4-anhydro-3,5-O-benzylidene-D-lyxonate

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990,** *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = +40.8 (c, 0.73 in chloroform)

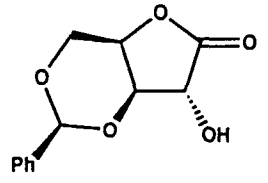
Source of chirality: D-lyxonolactone as starting material

$C_{11}H_{11}ClO_3$

2,4-O-benzylidene-α-D-threo-oxetanocyl chloride

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990**, *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = +63.3 (c, 1.0 in acetone)

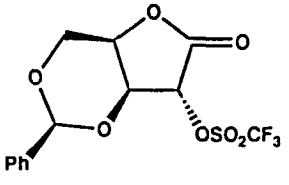
Source of chirality: D-lyxonolactone as starting material

$C_{12}H_{12}O_5$

3,5-O-benzylidene-D-xylonolactone

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990**, *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = +63.6 (c, 1.0 in acetone)

Source of chirality: D-lyxonolactone as starting material

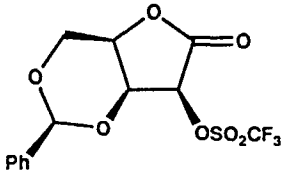
$C_{13}H_{11}F_3O_7S$

3,5-O-benzylidene-2-O-trifluoromethanesulphonyl-D-xylonolactone

---

Y.Wang, G.W.J.Fleet, R.Storer, P.L.Myers, C.J.Wallis, O.Doherty, D.J.Watkin, K.Vogt, D.R.Witty, F.X.Wilson, J.M.Peach

Tetrahedron: Asymmetry **1990**, *1*, 525



E.e. = 100%

$[\alpha]_D^{20}$ = +60.5 (c, 1.0 in acetone)

Source of chirality: D-lyxonolactone as starting material

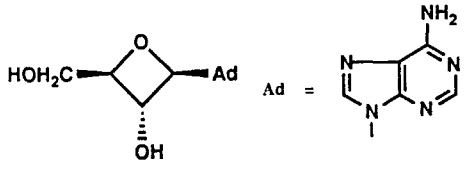
$C_{13}H_{11}F_3O_7S$

3,5-O-benzylidene-2-O-trifluoromethanesulphonyl-D-lyxonolactone

---

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990**, *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = -11.25 (c, 0.24 in water)

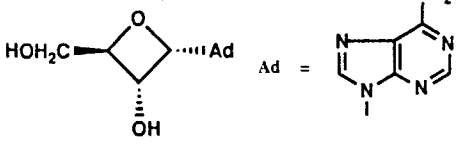
Source of chirality: diacetone glucose as starting material

$C_9H_{11}N_5O_3$ noroxetanocin

9-(β-D-erythroooxetanosyl)adenine

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990,** *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = -11.6 (c, 0.29 in water)

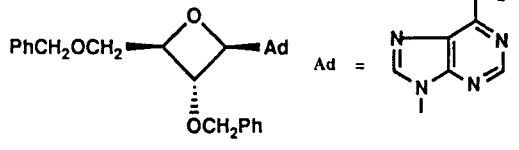
Source of chirality: diacetone glucose as starting material

$C_9H_{11}N_5O_3$

9-(α-D-erythroooxetanosyl)adenine

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990,** *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = +18.5 (c, 0.47 in chloroform)

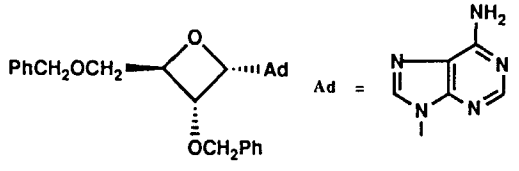
Source of chirality: diacetone glucose as starting material

$C_{23}H_{23}N_5O_3$

9-(2',4'-di-O-benzyl-β-D-erythroooxetanosyl)adenine

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990,** *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = +7.33 (c, 0.51 in chloroform)

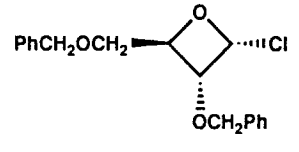
Source of chirality: diacetone glucose as starting material

$C_{23}H_{23}N_5O_3$

9-(2',4'-di-O-benzyl-α-D-erythroooxetanosyl)adenine

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990,** *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = +130.2 (c, 0.9 in chloroform)

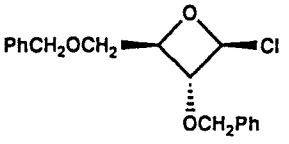
Source of chirality: diacetone glucose as starting material

$C_{18}H_{19}ClO_3$

2,4-di-O-benzyl-α-D-erythro-oxetanosyl chloride

F.X.Wilson, G.W.J.Fleet, K.Vogt, D.R.Witty, Y.Wang, R.Storer, P.L.Myers, C.J.Wallis

Tetrahedron: Asymmetry **1990**, *1*, 527



E.e. = 100%

$[\alpha]_D^{20}$ = -3.2 (c, 1.4 in chloroform)

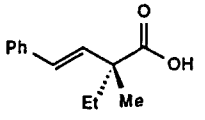
Source of chirality: diacetone glucose as starting material

$C_{18}H_{19}ClO_3$

2,4-di-O-benzyl-β-D-erythro-oxetanosyl chloride

N.W. Alcock, G.A. Pike, C.J. Richards, and S.E. Thomas*

Tetrahedron: Asymmetry **1990**, *1*, 531



$C_{13}H_{16}O_2$

Trans-2-methyl-2-ethyl-4-phenylbut-3-enoic acid

E.e. = 96% [by ^1H n.m.r. of amide formed with (*S*)-(-)-α-methylbenzylamine]

$[\alpha]_{546}^{25}$ = +8.8 (c = 1.7 g/100 ml, $CHCl_3$)

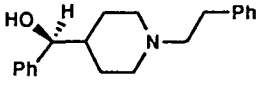
(*Nouv. J. Chim.*, 1977, **1**, 243)

Source of chirality: (*S*)-(-)-α-methylbenzylamine

Absolute configuration: *R*

T.R. Nieduzak and A.A. Carr

Tetrahedron: Asymmetry **1990**, *1*, 535



$C_{20}H_{25}NO$

E.e. ≥97% (^{19}F NMR of α-methoxy-α-trifluoromethylphenyl acetate ester)

$[\alpha]_D^{20}$ = -29.9 (c=1.0,$CHCl_3$)

Source of chirality: enzymatic resolution

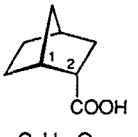
Absolute configuration: S (^1H NMR of O-methylmandelate ester)

m.p. = 123-125°C

S-(-)-α-Phenyl-1-(2-phenethyl)-4-piperidinemethanol

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



$C_8H_{12}O_2$

(1R,2S)-2-Bicyclo[2.2.1]heptane-carboxylic acid

ee = >99 % (by HPLC analysis of a precursor)

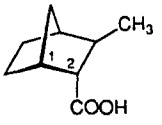
$[\alpha]_D^{22}$ -31.5 (c = 1.06, 95 % ethanol)

Source of chirality: diastereoselective Diels-Alder reaction

Absolute configuration: 1R, 2S

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



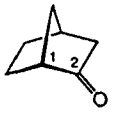
$C_9H_{14}O_2$

(1R,2R,3R)-3-Methyl-bicyclo[2.2.1]heptane-2-carboxylic acid

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{22}_D$ - 45.9 (c = 5.63, 95 % ethanol)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1R, 2R, 3R

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



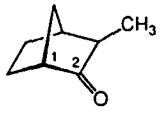
$C_7H_{10}O$

(1R)-2-Bicyclo[2.2.1]heptanone

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{25}_D$ -29.6 (c = 2.2, chloroform)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1R

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



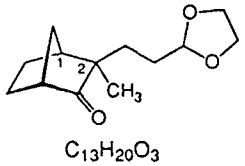
$C_8H_{12}O$

(1R,3R)-3-Methyl-bicyclo[2.2.1]heptan-2-one

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{19}_D$ - 51.5 (c = 1.35, chloroform)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1R, 3R

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



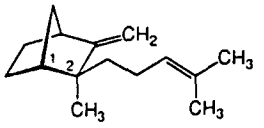
$C_{13}H_{20}O_3$

(1S,2R)-2-[(2-Methyl-3-oxo-bicyclo[2.2.1]hept-2-yl)-2-ethylen]-1,3-dioxolane

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{22}_D$ -83.0 (c = 3.84, chloroform)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1S, 2R

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



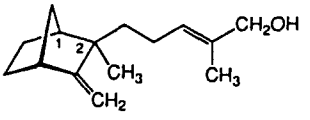
$C_{15}H_{24}$

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{20}_D$ +119.8 (c = 0.99, chloroform)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1R, 2S

(1R,2S)-2-Methyl-5-(2-methyl-3-methylidene-bicyclo[2.2.1]hept-2-yl)-2-pentene [ent-β-Santalene]

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



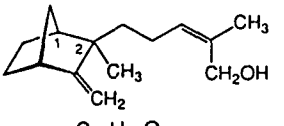
$C_{15}H_{24}O$

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{21}_D$ -113.7 (c = 0.33, chloroform)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1S, 2R

(1S,2R)-(E)-2-Methyl-5-(2-methyl-3-methylidene-bicyclo[2.2.1]hept-2-yl)-2-penten-1-ol [(E)-β-Santalol]

A. Krotz and G. Helmchen

Tetrahedron: Asymmetry **1990**, *1*, 537



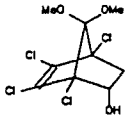
$C_{15}H_{24}O$

ee = >99 % (by HPLC analysis of a precursor)
$[\alpha]^{20}_D$ -109.4 (c = 0.7, methanol)
Source of chirality: diastereoselective Diels-Alder reaction
Absolute configuration: 1S, 2R

(1S,2R)-(Z)-2-Methyl-5-(2-methyl-3-methylidene-bicyclo[2.2.1]hept-2-yl)-2-penten-1-ol [(Z)-β-Santalol]

B.Berger, C.G.Rabiller, K.Königsberger, K.Faber, H.Griengl

Tetrahedron: Asymmetry **1990**, *1*, 541

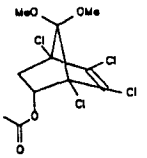


E.e.=98% (by (-)-menthyl chloroformate)
$[\alpha]_D^{20}$ -34.9 (c 2.54, MeOH)
Source of chirality: enzymatic resolution
Absolute configuration 1*R*,2*S*,4*S* by chemical correlation with lit.

$C_9H_{10}Cl_4O_3$ 7,7-Dimethoxy-1,4,5,6-tetrachlorobicyclo[2.2.1]hept-5-en-2-ol

B.Berger, C.G.Rabiller, K.Königsberger, K.Faber, H.Griengl

Tetrahedron: Asymmetry **1990**, *1*, 541



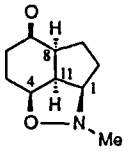
e.e.>99% (by (-)-menthyl chloroformate)
$[\alpha]_D^{20}$ +47.6 (c 2.85, MeOH)
Source of chirality: enzymatic resolution
Absolute configuration 1*S*,2*R*,4*R* by chemical correlation with lit.

$C_{11}H_{12}Cl_4O_4$ 7,7-Dimethoxy-1,4,5,6-tetrachlorobicyclo[2.2.1]hept-5-en-2-yl acetate

---

D. Stanssens, D. De Keukeleire and M. Vandewalle

Tetrahedron: Asymmetry **1990**, *1*, 547

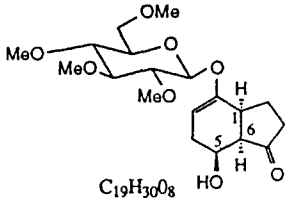


$C_{10}H_{15}NO_2$
N-methyl-2-aza-3-oxatricyclo[6.2.1.0^{4,11}]undecan-7-one

E.e. = 90 % [by nmr with $Eu(fod)_3$]
$[\alpha]_D^{20}$ = +50.2 (c = 1.4, $CDCl_3$)
CD : $\Delta\varepsilon$: = 0.7 (R-band at 292 nm)
Source of chirality : asymmetric synthesis
(diastereoselective alkylation)
Absolute configuration : 1R, 4S, 8S, 11S
(assigned by conversion to known compound and CD).

D. Stanssens, D. De Keukeleire and M. Vandewalle

Tetrahedron: Asymmetry **1990**, *1*, 547

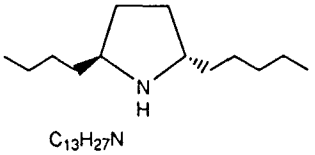


$C_{19}H_{30}O_8$
2-(Per-O-methyl-β-D-glucopyranosyloxy)-5-hydroxybicyclo[4.3.0]non-2-en-7-one

E.e. = 92 % [by nmr with $Eu(fod)_3$]
$[\alpha]_D^{20}$ = +60.5 (c = 0.4, $CDCl_3$)
Source of chirality : asymmetric synthesis
(diastereoselective alkylation)
Absolute configuration : 1S, 5S, 6R
(assigned by conversion to known compound).

H. Takahata, H. Takehara, N. Ohkubo, and T. Momose

Tetrahedron: Asymmetry **1990**, *1*, 561



$C_{13}H_{27}N$
(2*S*,5*S*)-2-Butyl-5-pentylpyrrolidine

E.e.= 98% [by nmr with MTPA ester]

$[\alpha]_D^{25}$ = +8.8 (c 1.05, MeOH)

Source of chirality: (*S*)-(+)-2-aminohexanoic acid

Absolute configuration: 2*S*,5*S*