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REPORT

Recent synthetic developments in the nitro to carbonyl conversion (Nef reaction)

pp 1017–1047

Roberto Ballini and Marino Petrini\*



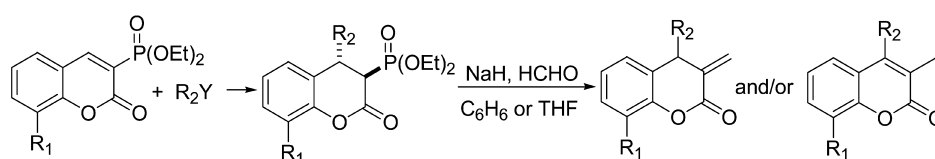
New synthetic approaches and applications of the Nef reaction, appeared in the literature since 1990, are reviewed.

ARTICLES

A novel route to substituted 3-methylidenechroman-2-ones and 3-methylchromen-2-ones

pp 1049–1055

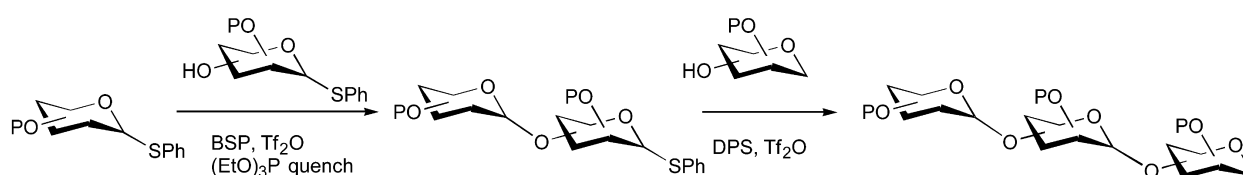
Tomasz Janecki\* and Tomasz Wąsek



Chemoselective glycosylations using sulfonium triflate activator systems

pp 1057–1064

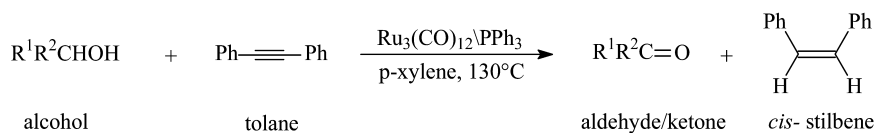
Jeroen D. C. Codée, Leendert J. van den Bos, Remy E. J. N. Litjens, Herman S. Overkleef, Constant A. A. van Boeckel, Jacques H. van Boom and Gijs A. van der Marel\*



**Triruthenium dodecacarbonyl/triphenylphosphine catalyzed dehydrogenation of primary and secondary alcohols**

pp 1065–1072

R. H. Meijer, G. B. W. L. Ligthart, J. Meuldijk, J. A. J. M. Vekemans, L. A. Hulshof,\* A. M. Mills, H. Kooijman and A. L. Spek

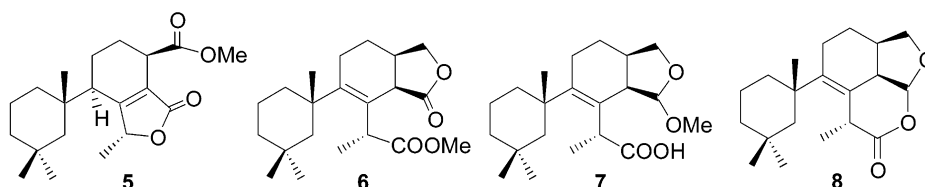


A new dehydrogenation procedure to synthesize aldehydes and ketones from alcohols using triruthenium dodecacarbonyl/ligand as catalyst is described.

**Conformational analysis and absolute stereochemistry of ‘spongian’-related metabolites**

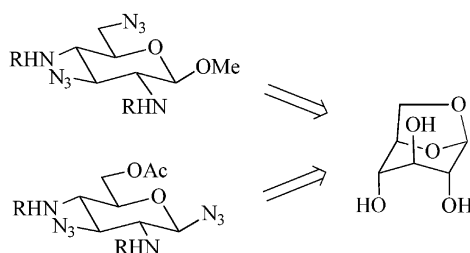
pp 1073–1078

Ana R. Díaz-Marrero, Enrique Dorta, Mercedes Cueto, Aurelio San-Martín and José Darias\*


**Synthesis of polynitrogenated analogues of glucopyranoses from levoglucosan**

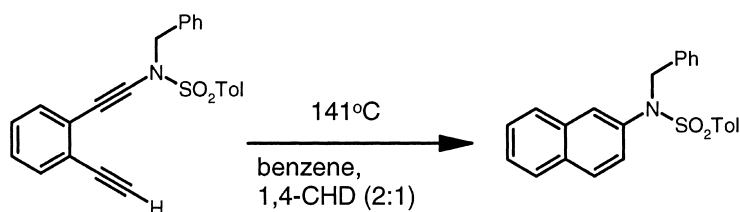
pp 1079–1085

Vincent Bailliez, Alain Olesker and Jeannine Cleophax\*


**Synthesis and thermal cyclization of an enediyne-sulfonamide**

pp 1087–1092

Michael Klein and Burkhard König\*



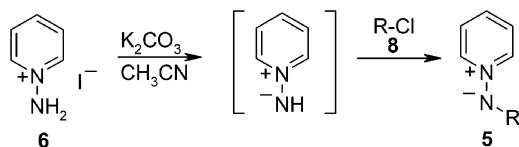
A sulfonamide alkyne substituent leads to an increase in thermal enediyne reactivity.



**An easy preparation of pyridinium *N*-heteroarylaminides**

pp 1093–1097

M. José Reyes, Carolina Burgos, M. Luisa Izquierdo and Julio Alvarez-Builla\*

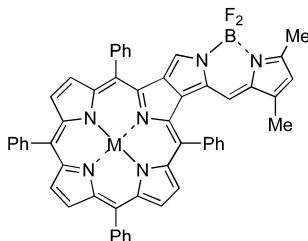


Differently substituted pyridinium *N*-heteroarylaminides **5** have been prepared in one step with good yield from *N*-aminopyridinium iodide **6** and the corresponding heteroaryl chloride **8**.

**Synthesis and characterization of  $\beta$ -fused porphyrin-BODIPY® dyads**

pp 1099–1106

Kenyu Tan, Laurent Jaquinod, Roberto Paolesse, Sara Nardis, Corrado Di Natale, Aldo Di Carlo, Luca Prodi, Marco Montalti, Nelsi Zaccheroni and Kevin M. Smith\*

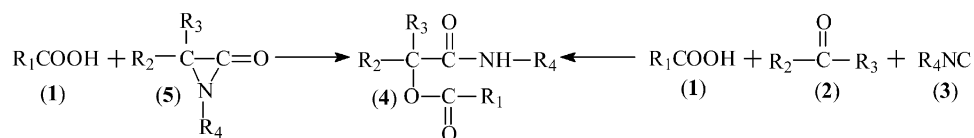


Pyrroloporphyrins react with 2-formylpyrroles to form dipyrromethenoporphyrins that give fused porphyrin-BODIPY® dyads with novel optical spectra upon reaction with  $BF_3$  etherate.

**A direct link between the Passerini reaction and  $\alpha$ -lactams**

pp 1107–1124

István Lengyel,\* Victor Cesare and Tony Taldone

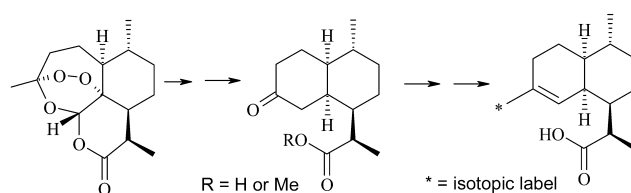


This paper demonstrates that  $\alpha$ -lactams (**5**) can function to replace two of the three reactants in the Passerini reaction, the oxo-compound (**2**) and the isonitrile (**3**), to yield, with carboxylic acids (**1**) of a positive  $pK_a$ ,  $\alpha$ -acyloxycarboxamides (**4**).

**Synthesis of labelled dihydroartemisinic acid**

pp 1125–1138

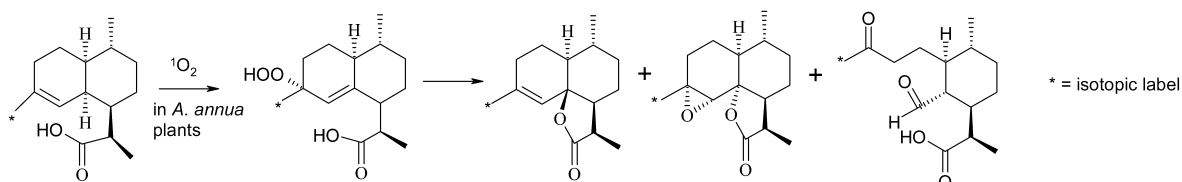
Geoffrey D. Brown\* and Lai-King Sy



**In vivo transformations of dihydroartemisinic acid in *Artemisia annua* plants**

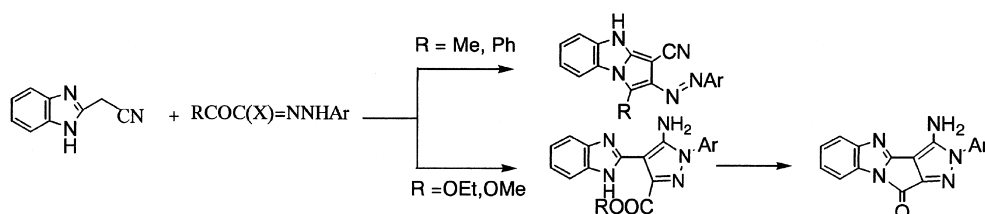
pp 1139–1159

Geoffrey D. Brown\* and Lai-King Sy

**A facile synthesis of pyrrolo[1,2-*a*]benzimidazoles and pyrazolo[3,4:4',3']pyrrolo[1,2-*a*]benzimidazole derivatives**

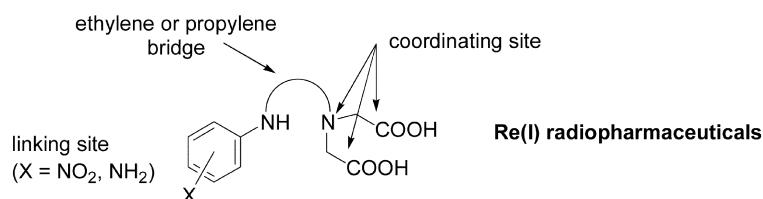
pp 1161–1166

Nehal M. Elwan

**Design and synthesis of new ethylenediamine or propylenediamine diacetic acid derivatives for Re(I) organometallic chemistry**

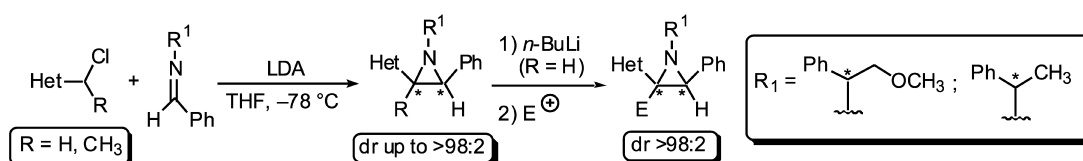
pp 1167–1174

Mustapha Allali, Eric Benoist,\* Nouzha Habbadi, Marie Gressier, Abdelaziz Souizi and Michèle Dartiguenave

**Stereoselective synthesis of heterosubstituted aziridines and their functionalization**

pp 1175–1182

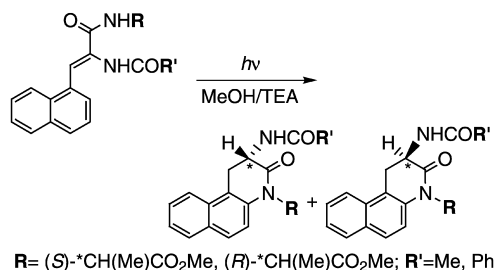
Luisella De Vitis, Saverio Florio,\* Catia Granito, Ludovico Ronzini, Luigino Troisi,\* Vito Capriati, Renzo Luisi and Tullio Pilati



### Asymmetric transformation of chiral auxiliary-substituted *N*-acyl- $\alpha$ -dehydro(1-naphthyl)alanines into 3,4-dihydrobenzo[*f*]quinolinone derivatives via photoinduced electron transfer

pp 1183–1189

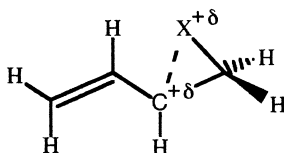
Kei Maekawa,\* Kanji Kubo, Tetsutaro Igarashi and Tadimitsu Sakurai\*



### Computational studies of vinyl-stabilized halonium ions

pp 1191–1196

Howard Haubenstock and Ronald R. Sauers\*

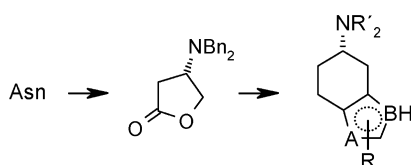


Conformational studies of 1-halo-2-butenylcations ( $X = \text{F}, \text{Cl}, \text{Br}$ ) have been carried out by means of density functional and ab initio calculations. The presence of an adjacent vinyl group reduces the importance of bridging by halogen atoms as evidenced by geometric and energetic analyses. In several cases, eclipsed conformers were found to be energy minima.

### Practical ex-chiral-pool methodology for the synthesis of dopaminergic tetrahydroindoles

pp 1197–1204

Markus Bergauer, Harald Hübner and Peter Gmeiner\*

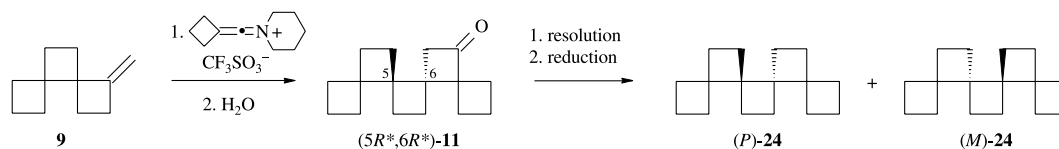


Chemo- and regioselective transformations of asparagine gave access to optically active 5- and 6-amino tetrahydroindolizines when the 3-aminobutyrolactone (*S*)-**2** was employed as a key intermediate. The target compounds were approached by a sequential and regiocontrolled bis-electrophilic attack in the positions 2 and 3 of the pyrrole ring system. Receptor binding experiments showed stereocontrolled receptor recognition leading to the D3 selective agonist (*S*)-**8** with D3 binding that is comparable to the natural neurotransmitter dopamine.

### A new approach to helical primary structures of four-membered rings: (*P*)- and (*M*)-tetraspiro[3.0.0.3.2.2]hexadecane

pp 1205–1213

Lutz Fitjer,\* Andreas Kanschik and Ralf Gerke

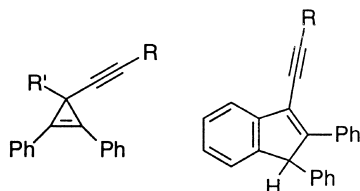


The helical hydrocarbons (*P*)- and (*M*)-**24** were synthesized via a regio- and stereoselective cycloaddition of a trimethyleneketiminium salt to the methylendispirodecane **9** and a subsequent resolution and reduction.

**An unusually robust triple bond: synthesis, structure and reactivity of 3-alkynylcyclopropenes**

pp 1215–1223

Robert D. Gilbertson, He-Ping Wu, Drew Gorman-Lewis, Timothy J. R. Weakley, Hans-Christoph Weiss, Roland Boese and Michael M. Haley\*

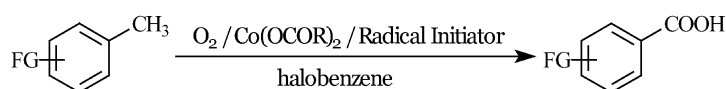


Several 3-alkynylcyclopropenes have been prepared by the reaction of acetylenic nucleophiles with cyclopropenylium salts. Single crystal X-ray structures of four of the cyclopropenes were obtained. The solution-phase thermochemistry of the 3-alkynyl-1,2,3-triphenylcyclopropenes was explored, affording 3-alkynyl-1H-indenes in moderate to good yields.

**Oxidation of toluenes to benzoic acids by oxygen in non-acidic solvents**

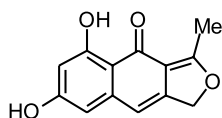
pp 1225–1228

Fan Yang, Jing Sun, Rui Zheng, Wenwei Qiu, Jie Tang\* and Mingyuan He


**Furanaphin: a novel naphtho[2,3-*c*]furan-4(1*H*)-one derivative from the aphid *Aphis spiraecola* Patch**

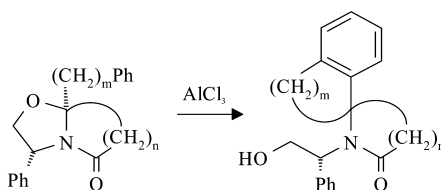
pp 1229–1234

Mitsuyo Horikawa, Tadashi Noguchi, Shigeru Takaoka, Masaki Kawase, Masao Sato and Tetsuto Tsunoda\*


**Asymmetric synthesis of spiro 2-pyrrolidin-5-ones, 2-piperidin-6-ones and 1-isoindolin-3-ones. Part 1: *N*-Acyliminium ion cyclisations with an internal arene nucleophile**

pp 1235–1246

Abood A. Bahajaj, Madeleine H. Moore and John M. Vernon\*

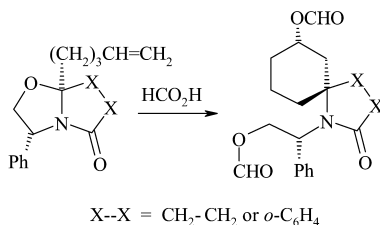


A series of chiral non-racemic 5,5- and 5,6-bicyclic lactams is prepared from (*R*)-phenylglycinol. These are isomerised on treatment with aluminium trichloride in 1,2-dichloroethane to give spiro lactams in high yield and >3:1 diastereoselectivity.

**Asymmetric synthesis of spiro 2-pyrrolidin-5-ones, 2-piperidin-6-ones and 1-isoindolin-3-ones. Part 2: *N*-Acyliminium ion cyclisations with an internal alkene nucleophile**

pp 1247–1253

Aboud A. Bahajaj, John M. Vernon\* and Giles D. Wilson



Chiral non-racemic bicyclic and tricyclic oxylactams obtained in two steps from *N*-(2-hydroxy-1(*R*)-phenylethyl)-succinimide and -phthalimide are cyclised diastereoselectively in formic acid to give spiro[cyclohexane-1,2'-pyrrolidin]-5'-ones and spiro[cyclohexane-1,1'-isoindolin]-3'-ones, respectively.

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\*Corresponding author

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