



Tetrahedron Vol. 65, No. 15, 2009

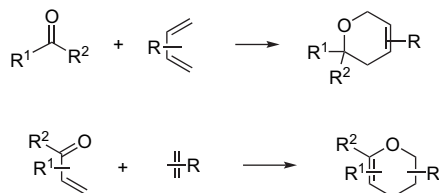
Contents

REPORT

Asymmetric hetero-Diels–Alder reactions of carbonyl compounds

pp 2839–2877

Hélène Pellissier*



This review is intended to update the most recent developments in asymmetric hetero-Diels–Alder (HDA) reactions of carbonyl compounds, covering the literature from 2000 to 2008. The reactions of unactivated aldehydes, activated aldehydes, activated ketones and the inverse HDA reactions of α,β -unsaturated ketones and α,β -unsaturated aldehydes are successively investigated. This review clearly demonstrates the power of asymmetric HDA reactions of carbonyl compounds for the construction of chiral six-membered oxygen-containing heterocycles, with extensive synthetic applications in natural or unnatural products with a wide range of biological activity.

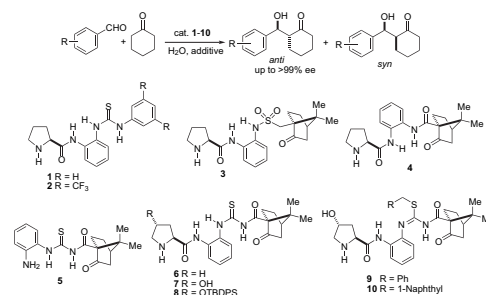
ARTICLES

Highly diastereo- and enantioselective direct aldol reactions promoted by water-compatible organocatalysts bearing a pyrrolidinyl-camphor structural scaffold

pp 2879–2888

Zheng-Hao Tzeng, Hung-Yao Chen, Raju Jannapu Reddy, Ching-Ting Huang, Kwunmin Chen*

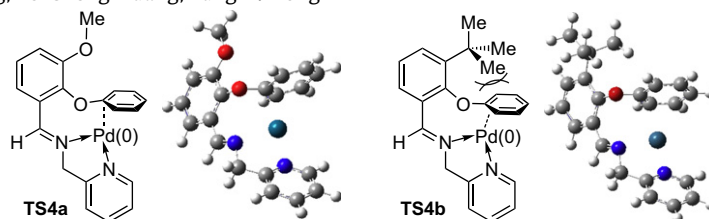
Efficient synthetic routes have been developed for the synthesis of a series of pyrrolidinyl-camphor containing organocatalysts (**1–10**). Structural modifications were made by varying the stereo- and electronic properties of the camphor scaffold and the aromatic substituents. These readily tunable and amphiphilic organocatalysts were evaluated for the direct asymmetric aldol reaction of various aromatic aldehydes and cyclohexanone either in organic solvents or in the presence of water. The aldol reaction proceeded smoothly with excellent chemical yields (up to 99%), enantioselectivities (up to 99% ee), and *anti*-diastereoselectivities (up to 99:1) with a catalytical amount of the bifunctional organocatalysts (20 mol%) under optimal reaction conditions. Mechanistic transition models are proposed and the stereochemical bias of the asymmetric aldol reaction is presented.



Convenient and efficient Suzuki–Miyaura cross-coupling reactions catalyzed by palladium complexes containing *N,N,O*-tridentate ligands

pp 2889–2897

Siddappa A. Patil, Chia-Ming Weng, Po-Cheng Huang, Fung-E. Hong*

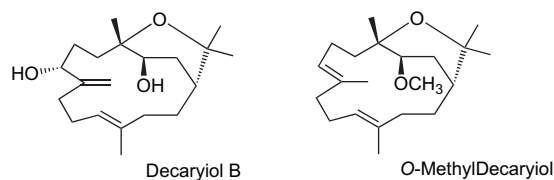


The experimental and DFT studies on the Suzuki reaction catalyzed by palladium complexes with *N,N,O*-tridentate ligands revealed that the catalytic performance may differ greatly upon a small variation in the structure of the ligand. Comparison of the optimized geometries of the presumed reaction intermediates, **TS4a** and **TS4b**, showed that a bulkier group, ^tBu, in **TS4b** exerts a greater steric effect on the nearby phenoxide moiety than a smaller –OMe group does in **TS4a**.


Oxygenated cembranoids of the decaryiol type from the Indonesian soft coral *Lobophytum* sp.

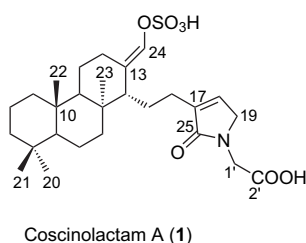
pp 2898–2904

Ernesto Fattorusso, Adriana Romano, Orazio Tagliatalata-Scafati*, Carlo Irace, Carmen Maffettone, Giorgio Bavestrello, Carlo Cerrano


Coscinolactams A and B: new nitrogen-containing sesterterpenoids from the marine sponge *Coscinoderma mathewsi* exerting anti-inflammatory properties

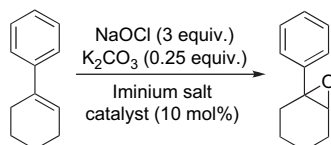
pp 2905–2909

Simona De Marino, Carmen Festa, Maria Valeria D'Auria, Marie-Lise Bourguet-Kondracki, Sylvain Petek, Cecile Debitus, Rosa María Andrés, María Carmen Terencio, Miguel Payá, Angela Zampella*


Organocatalysis of asymmetric epoxidation by iminium salts using sodium hypochlorite as the stoichiometric oxidant

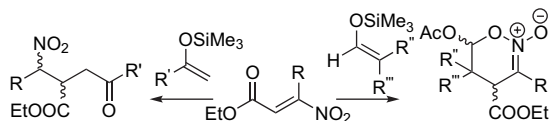
pp 2910–2915

Philip C. Bulman Page*, Phillip Parker, Benjamin R. Buckley, Gerasimos A. Rassias, Donald Bethell

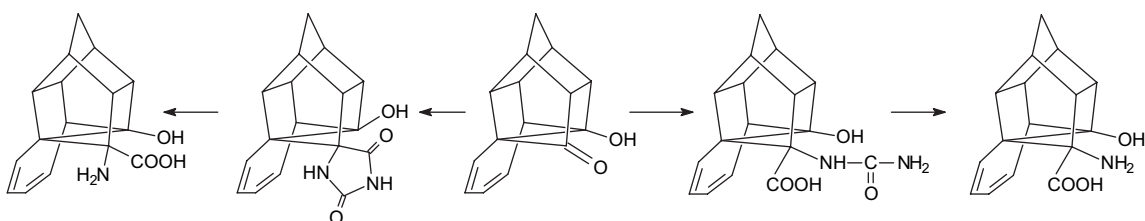


β -Nitroacrylates and silyl enol ethers as key starting materials for the synthesis of polyfunctionalized β -nitro esters and 1,2-oxazine-2-oxides pp 2916–2920

Roberto Ballini*, Giovanna Bosica, Serena Gabrielli, Alessandro Palmieri

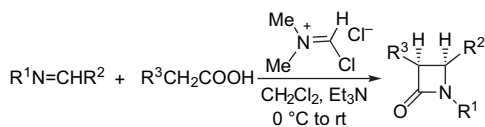
**Synthesis of *exo*-3-amino-10-hydroxy-hexacyclo[10.2.1.0^{2,11}.0^{4,10}.0^{4,14}.0^{9,13}]pentadecane-5,7-diene-*endo*-3-carboxylic acid and *endo*-3-amino-10-hydroxy-hexacyclo[10.2.1.0^{2,11}.0^{4,10}.0^{4,14}.0^{9,13}]pentadecane-5,7-diene-*exo*-3-carboxylic acid** pp 2921–2926

Frans J.C. Martins, Hermanus van der Hoven, Agatha M. Viljoen*

**The Vilsmeier reagent: a useful and versatile reagent for the synthesis of 2-azetidiones**

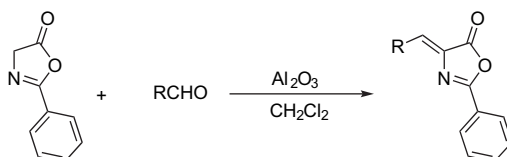
pp 2927–2934

Aliasghar Jarrahpour*, Maarooof Zarei

**A simple and efficient method for the synthesis of Erlenmeyer azlactones**

pp 2935–2938

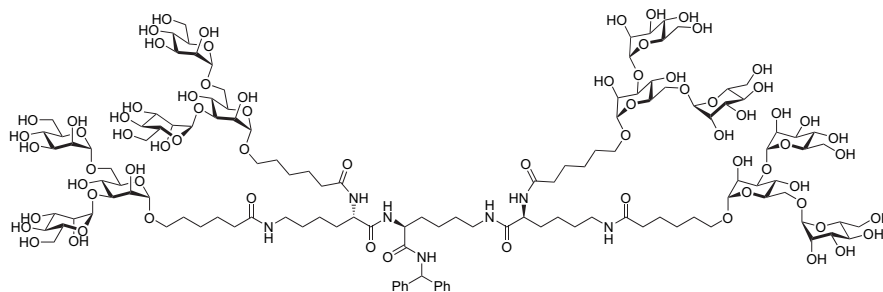
Philip A. Conway, Kevin Devine, Francesca Paradisi*



The synthesis and immune stimulating action of mannose-capped lysine-based dendrimers

pp 2939–2950

Ben W. Greatrex, Samuel J. Brodie, Richard H. Furneaux, Sarah M. Hook, Warren T. McBurney, Gavin F. Painter, Thomas Rades, Phillip M. Rendle*

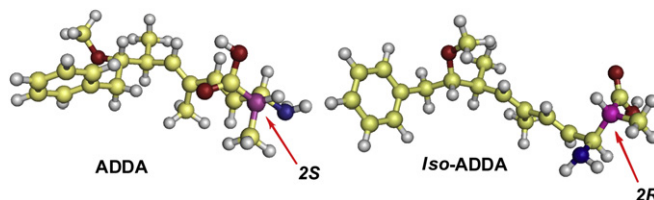


A wide range of mannose-capped dendrimers were prepared and tested for their relative ability to induce dendritic cell maturation.

Synthesis of the trichloroacetamide derivative of *enatio-iso-ADDA* methyl ester

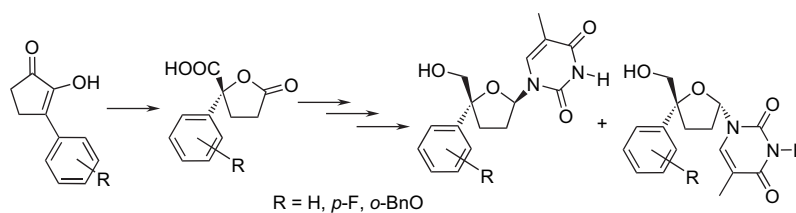
pp 2951–2958

Sebastien Meiries, Andrew Parkin, Rodolfo Marquez*

**Synthesis of 4'-aryl-2',3'-dideoxynucleoside analogues**

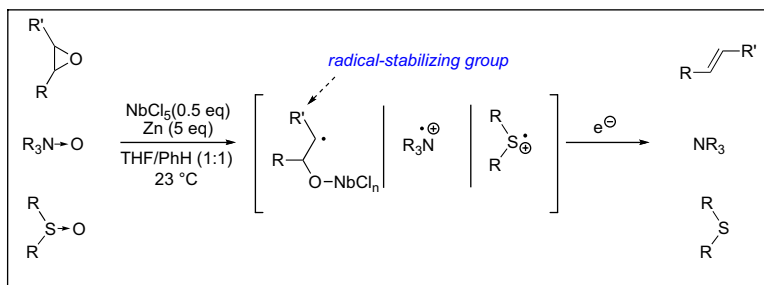
pp 2959–2965

Artur Jõgi, Anne Paju, Tõnis Pehk, Tiit Kailas, Aleksander-Mati Müürisepp, Margus Lopp*

**Lewis acid-promoted electron transfer deoxygenation of epoxides, sulfoxides, and amine *N*-oxides: the role of low-valent niobium complexes from NbCl₅ and Zn**

pp 2966–2974

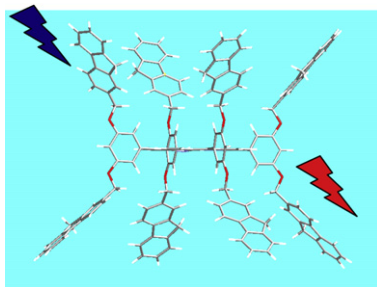
Kyungsoo Oh*, William Eric Knabe



Synthesis and photophysical properties of porphyrins with fluorenyl pendant arms

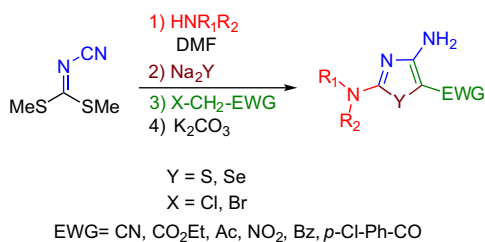
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Samuel Drouet, Christine O. Paul-Roth*, Gérard Simonneaux

**One-pot synthesis of new 2,4,5-trisubstituted 1,3-thiazoles and 1,3-selenazoles**

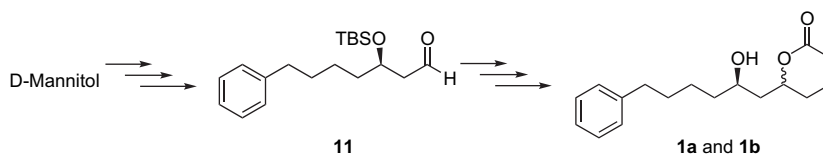
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David Thomae, Enrico Perspicace, Zhanjie Xu, Dorothee Henryon, Serge Schneider, Stéphanie Hesse, Gilbert Kirsch*, Pierre Seck

**Stereoselective synthesis of (6S) and (6R)-5,6-dihydro-6-[(2R)-2-hydroxy-6-phenylhexyl]-2H-pyran-2-one and their cytotoxic activity against cancer cell lines**

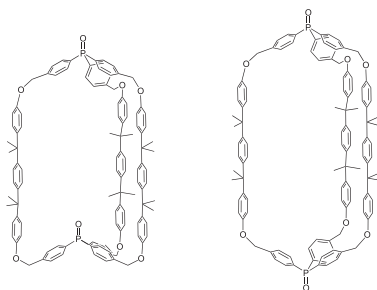
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Manchala Narasimhulu, Arepalli Sai Krishna, Janapala Venkateswara Rao, Yenamandra Venkateswarlu*

**New conformational flexible phosphane and phosphane oxide macrobicycles**

pp 2995–3002

Frank Däbritz, Gabriele Theumer, Margit Gruner, Ingmar Bauer*

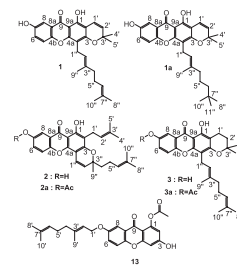


Anti-*Pseudomonas aeruginosa* xanthenes from the resin and green fruits of *Cratoxylum cochinchinense*

pp 3003–3013

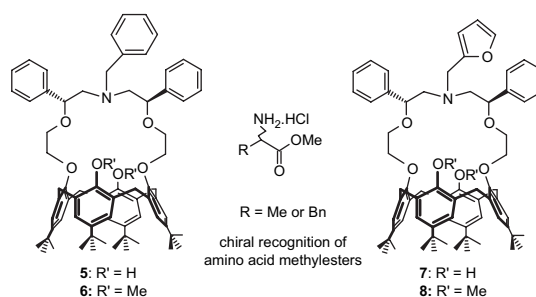
Nawong Boonnak, Chatchanok Karalai*, Suchada Chantrapromma, Chanita Ponglimanont, Hoong-Kun Fun, Akkharawit Kanjana-Opas, Kan Chantrapromma, Shigeru Kato

Cochinchinones I–L (**1–3** and **13**) along with 11 known xanthenes (**4–12**, **14**, and **15**) were isolated from the resin and green fruits of *Cratoxylum cochinchinense*. In addition, four new acetylated compounds (**16–19**) were derivatized from 7-geranyloxy-1,3-dihydroxyxanthone (**14**) and 3-geranyloxy-1,7-dihydroxyxanthone (**15**). All compounds were characterized on the basis of spectroscopic analyses. The structures of cochinchinone I (**1**), a monoacetate (**18**) and a dibrosylate (**20**), were also confirmed by X-ray diffraction analysis. The anti-bacterial and antifungal activities of selected compounds were evaluated as well.

**Chiral calix[4]azacrowns for enantiomeric recognition of amino acid derivatives**

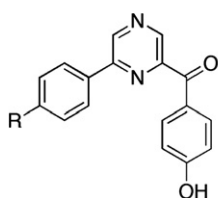
pp 3014–3018

Havva Nur Demirtas, Selahattin Bozkurt, Mustafa Durmaz, Mustafa Yilmaz, Abdulkadir Sirit*

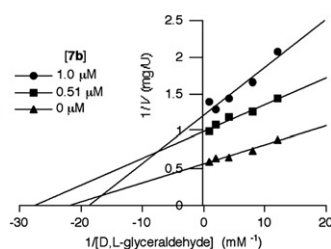
**Synthesis and in vitro evaluation of botryllazine B analogues as a new class of inhibitor against human aldose reductase**

pp 3019–3026


Ryota Saito*, Mai Tokita, Keisuke Uda, Chikako Ishikawa, Mitsutoshi Satoh



- 1**: R = OH (IC₅₀ = 1.55 μM)
7b: R = NH₂ (IC₅₀ = 0.91 μM)
7c: R = H (IC₅₀ = 3.03 μM)
7d: R = SH (IC₅₀ = 13.4 μM)



*Corresponding author

 Supplementary data available via ScienceDirect



Full text of this journal is available, on-line from **ScienceDirect**. Visit www.sciencedirect.com for more information.

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ISSN 0040-4020