

Contents

REPORT

- Recent development of peptide coupling reagents in organic synthesis**  
So-Yeop Han\* and Young-Ah Kim

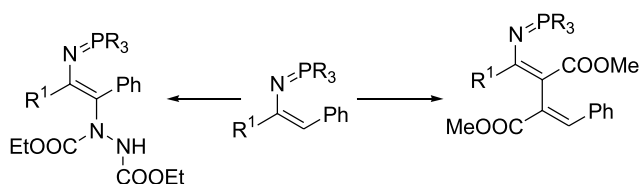
pp 2447–2467

This review evaluates the advantages, disadvantages, and effectiveness of newly developed peptide coupling reagents used in organic synthesis. Each reagent is classified into one of eight types including phosphonium, uronium, immonium, carbodiimide, imidazolium, organophosphorous, acid halogenating and other coupling reagents, according to the structural similarity.

ARTICLES

- Reactions of *N*-vinylic phosphazenes with azodicarboxylic and acetylenic esters**  
Francisco Palacios,\* Concepción Alonso, Gloria Rubiales and Jose María Ezpeleta

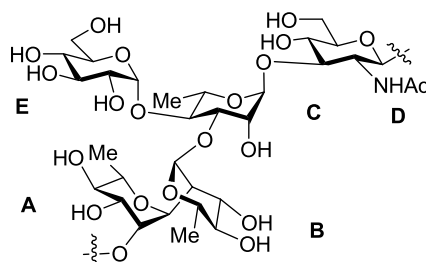
pp 2469–2474



- Total synthesis of a tetra- and two pentasaccharide fragments of the O-specific polysaccharide of *Shigella flexneri* serotype 2a**

pp 2475–2488

Laurence A. Mulard\* and Catherine Guerreiro



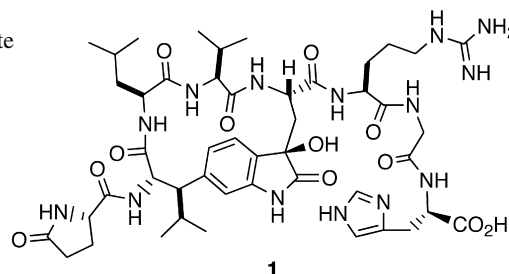
The synthesis of the methyl glycosides of fragments **B(E)CD**, **AB(E)CD**, and **ECDAB** is described.

**Celogentin K, a new cyclic peptide from the seeds of *Celosia argentea* and X-ray structure of moroidin**

pp 2489–2495

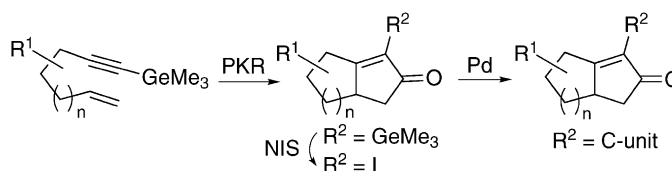
Hayato Suzuki, Hiroshi Morita, Motoo Shiro and Jun'ichi Kobayashi\*

A new cyclic peptide with a 3-hydroxyoxindole ring, celogentin K (**1**), has been isolated from the seeds of *Celosia argentea* and the structure including its absolute stereochemistry was assigned by using extensive NMR, MS/MS, and CD spectra. The stereostructure of a known related bicyclic peptide, moroidin (**2**), was confirmed by a single crystal X-ray diffraction analysis.


**New entry to the Pauson–Khand reaction: trimethylgermyl group at the triple bond terminus as a latent functional group**

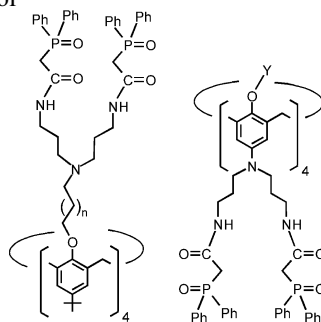
pp 2497–2507

Chisato Mukai,\* Takashi Kozaka, Yukihiko Suzuki and In Jong Kim


**Dendritic octa-CMPO derivatives of calix[4]arenes**

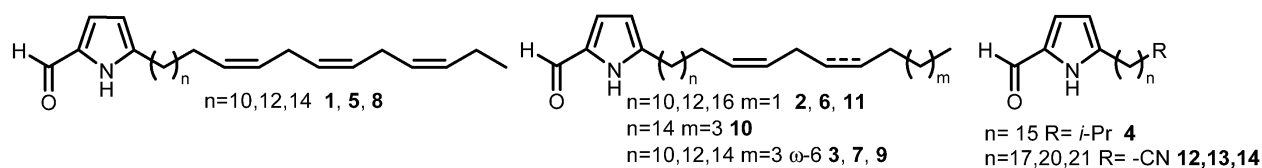
pp 2509–2515

Pingshan Wang, Mohamed Saadioui, Christian Schmidt, Volker Böhmer,\* Valéry Host, Jean François Desreux and Jean-François Dozol


**Structure and cytotoxicity of new metabolites from the sponge *Mycale cecilia***

pp 2517–2524

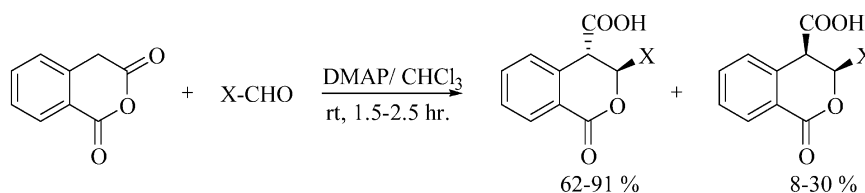
María J. Ortega, Eva Zubía,\* M. Carmen Sánchez, Javier Salvá and J. Luis Carballo



***cis/trans*-Isochromanones. DMAP induced cycloaddition of homophthalic anhydride and aldehydes**

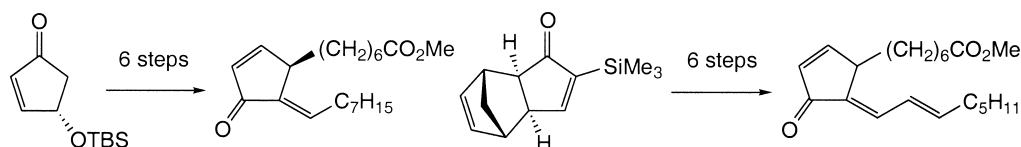
pp 2525–2530

Milen G. Bogdanov and Mariana D. Palamareva\*

**Synthesis of  $\Delta^{12,14}$ -15-deoxy-PG- $J_1$  methyl ester and *epi*- $\Delta^{12}$ -15-deoxy-PG- $J_1$** 

pp 2531–2538

Mazhar Iqbal, Yingfa Li and Paul Evans\*

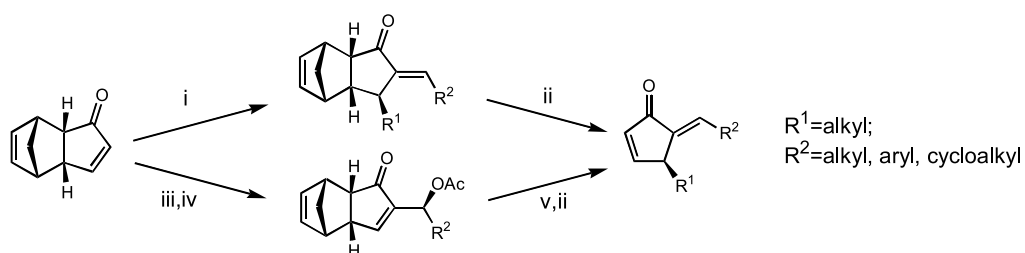


The syntheses of  $\Delta^{12,14}$ -15-deoxy-PG- $J_1$  methyl ester and *epi*- $\Delta^{12}$ -15-deoxy-PG- $J_1$ , using as key steps a one-pot conjugate addition–Peterson olefination and Noyori-type three-component coupling approach, respectively, are described.

**Preparation of optically pure cross-conjugated cyclopentadienones**

pp 2539–2550

Jonathan P. Eddolls,\* Mazhar Iqbal, Stanley M. Roberts and M. Gabriella Santoro

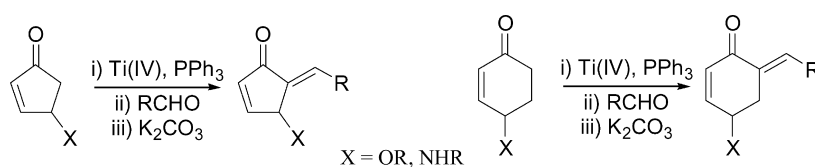


(i) Conjugate addition/aldehyde quench/dehydration; (ii) *retro* Diels-Alder; (iii) Baylis-Hillman; (iv) acetylation; (v) conjugate addition/elimination.

**Titanium mediated alkylidenation of substituted cycloalkenones: scope and limitations**

pp 2551–2557

Jérôme Dauvergne, Alan M. Happe\* and Stanley M. Roberts

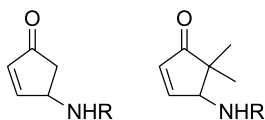


The conversion of substituted cyclopent-2-enones and cyclohex-2-enones into corresponding  $\alpha'$ -*exo*-alkylidene compounds using Ti(IV) catalysis, with  $PPh_3$  and an aldehyde, is described.

**Synthesis of 4-azacyclopent-2-enones and 5,5-dialkyl-4-azacyclopent-2-enones**

pp 2559–2567

Jérôme Dauvergne, Alan M. Happe,\* Vasudev Jadhav, David Justice, Marie-Christine Matos, Peter J. McCormack, Michael R. Pitts, Stanley M. Roberts, Sanjay K. Singh, Timothy J. Snape and John Whittall



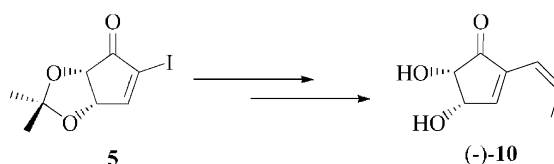
R = alkyl, aryl or protecting group

Three different methods are reported for the preparation of 4-azacyclopent-2-enones, two of which allow the preparation of the compounds in optically active form. In addition, a facile route to 4-aza-5,5-dimethylcyclopent-2-enones is disclosed.

**Synthesis and revision of the stereochemistry of a cyclopentenone natural product isolated from ascomycete strain A23-98**

pp 2569–2576

Jamie F. Bickley, Stanley M. Roberts, M. Gabriella Santoro and Timothy J. Snape\*

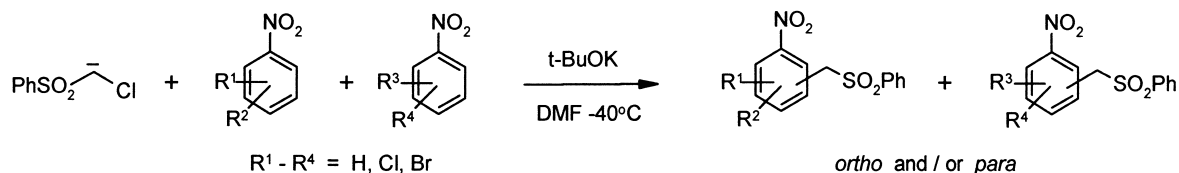


Stille-type reactions were employed to prepare and revise the stereochemistry of a natural product isolated from ascomycete strain A23-98.

**Effect of halogens on the activity of halonitrobenzenes in reactions with carbanions**

pp 2577–2581

Mieczysław Mąkosza,\* Olga Lobanova and Andrzej Kwast

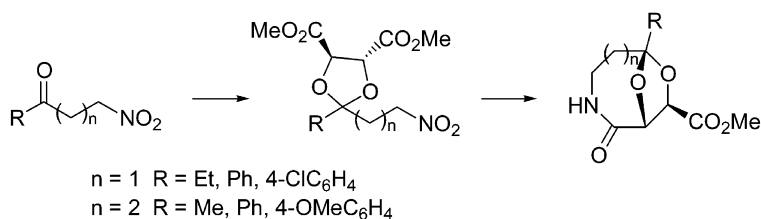


Relative reactivities of substituted nitrobenzenes were estimated in competitive Vicarious Nucleophilic Substitution reactions.

**Synthesis of new molecular scaffolds: 3-aza-7,9-dioxa-bicyclo[4.2.1]nonane (8-*exo* BTKa) and 3-aza-8,10-dioxa-bicyclo[5.2.1]decane (9-*exo* BTKa) carboxylic acids**

pp 2583–2591

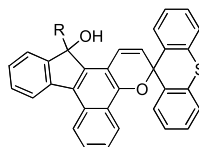
Dina Scarpi, Daniela Stranges, Luca Cecchi and Antonio Guarna\*



**The effect of a sulphur bridge on the photochromic properties of indeno-fused naphthopyrans**

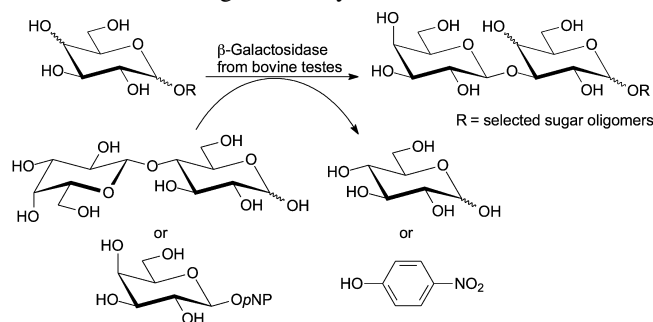
pp 2593–2599

Paulo J. Coelho, Maria A. Salvador, M. Manuel Oliveira and Luis M. Carvalho

**Synthesis of oligosaccharides as potential novel food components and upscaled enzymatic reaction employing the  $\beta$ -galactosidase from bovine testes**

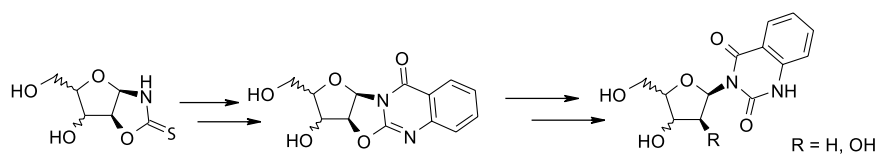
pp 2601–2608

Sven Schröder, Ulja Schmidt, Joachim Thiem,\* Jörg Kowalczyk, Markwart Kunz and Manfred Vogel

**Small libraries of fused quinazolinone-sugars. Access to quinazolinone nucleosides**

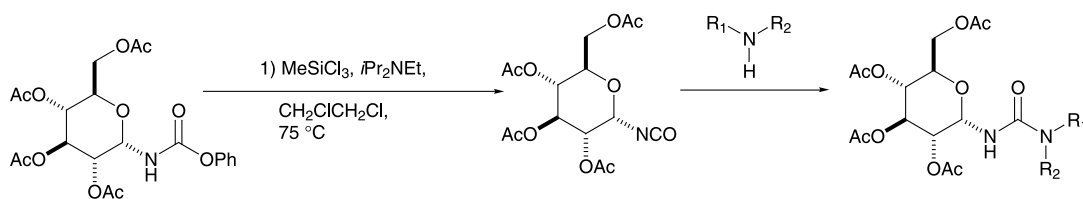
pp 2609–2619

Jolanta Girniene, Guillaume Apremont, Arnaud Tatibouët, Algirdas Sackus and Patrick Rollin

**Stereospecific synthesis of urea-tethered neoglycoconjugates starting from glucopyranosyl carbamates**

pp 2621–2627

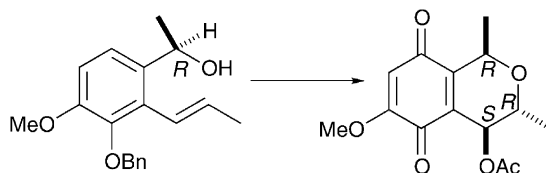
Yoshiyasu Ichikawa,\* Taihei Nishiyama and Minoru Isobe



**Mercury(II) mediated cyclisation of *R*-1-(1'-hydroxyethyl)-2-(1''-propenyl)-3-alkoxy-4-methoxybenzenes to chiral isochromanones**

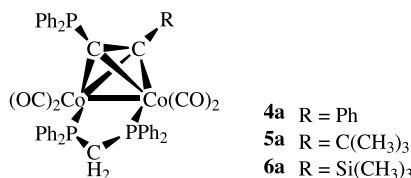
pp 2629–2637

Charles B. de Koning, Robin G. F. Giles, Ivan R. Green\* and Nazeem M. Jahed


**Palladium catalyzed Suzuki coupling reactions using cobalt-containing bulky phosphine ligands**

pp 2639–2645

Fung-E Hong,\* Yi-Jung Ho, Yu-Chang Chang and Yi-Chun Lai

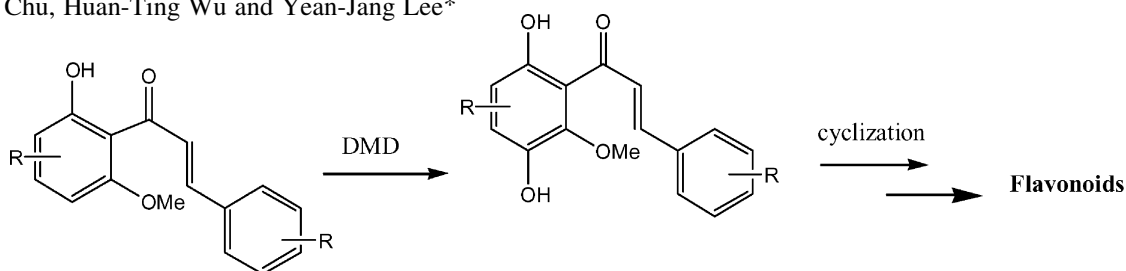


Three bulky mono-dentate alkyne-bridged dicobalt-phosphine complexes, **4a**, **5a** and **6a** were prepared and took part in the Suzuki type cross-coupling reactions as effective, authentic mono-dentate phosphine ligands.

**Regioselective hydroxylation of 2-hydroxychalcones by dimethyldioxirane towards polymethoxylated flavonoids**

pp 2647–2655

Han-Wei Chu, Huan-Ting Wu and Yean-Jang Lee\*

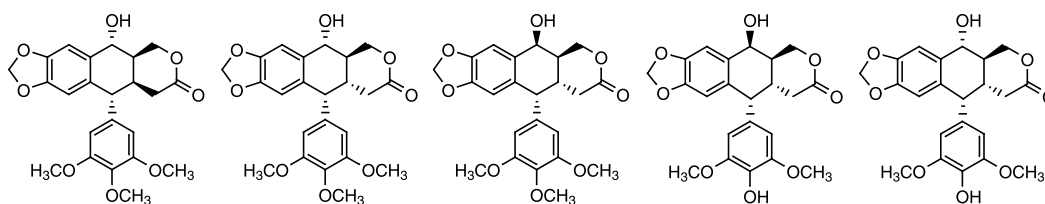


The novel regioselective hydroxylation of 2-hydroxychalcones with DMD is described. Based upon this methodology, the polymethoxylated flavonoids are synthesized.

**Synthesis of podophyllotoxin analogues:  $\delta$ -lactone-containing picropodophyllin, podophyllotoxin and 4'-demethyl-epipodophyllotoxin derivatives**

pp 2657–2671

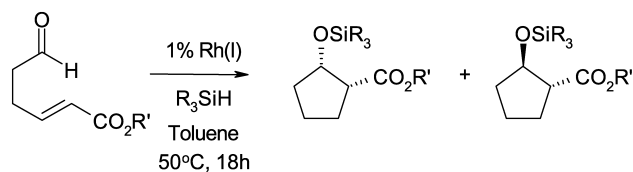
Philippe Meresse, Claude Monneret and Emmanuel Bertounesque\*



**Further observations on the rhodium (I)-catalysed tandem hydrosilylation-intramolecular aldol reaction**

pp 2673–2692

Marta Freiría, Andrew J. Whitehead, Derek A. Tocher and William B. Motherwell\*

**OTHER CONTENTS**Contributors to this issue  
Instructions to contributorsp I  
pp III–VI

\*Corresponding author

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