



Tetrahedron Vol. 67, Issue 14, 2011

Contents

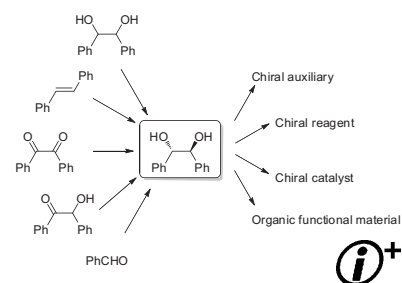
REPORT

Synthesis and application of chiral hydrobenzoin

Kazuya Okano

pp 2483–2512

Hydrobenzoin (1,2-diphenyl-1,2-ethanediol) and its derivatives have been used in various areas of chiral chemistry and have broadened their range of applications in synthetic chemistry. Hydrobenzoin has a long history from the beginning of chiral chemistry; and recent advance in preparation method of chiral hydrobenzoin dramatically improved its availability and expanded its application in organic synthesis. In the early days, chiral hydrobenzoins had been prepared by optical resolution. But along with the development of asymmetric oxidation and reduction technology, asymmetric synthesis from stilbenes or benzoin has been widely explored. Recently, direct synthesis by asymmetric pinacol coupling from benzaldehydes is under development. Chiral hydrobenzoins had been used mainly as chiral auxiliary or other stoichiometric use during several decades. However, catalytic application is increasing recently. This review summarizes the synthesis and application of chiral hydrobenzoin, and focus on the chemistry of hydrobenzoin and its derivatives and cover the historical background to its updated utilization.

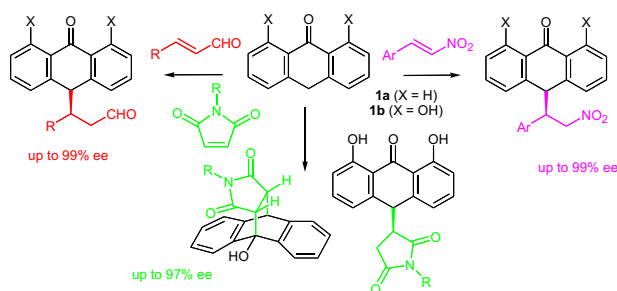


ARTICLES

Asymmetric organocatalytic anthrone additions to activated alkenes

Alex Zea, Andrea-Nekane R. Alba, Natalia Bravo, Albert Moyano*, Ramon Rios*

pp 2513–2529

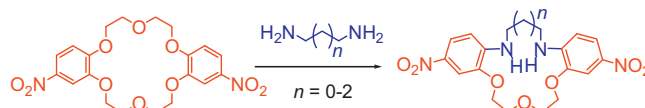


Asymmetric additions of anthrone and dithranol to α,β -unsaturated aldehydes, β -nitrostyrenes and maleimides are efficiently catalyzed by chiral amines (diphenylprolinol trimethylsilyl ether for enals and Takemoto's thiourea for nitrostyrenes and maleimides), affording the Michael or the Diels–Alder adducts (depending on the structures of the reactants) with good yields and enantioselectivities.

New approach to the synthesis of dibenzodiazacrown ethers by ring transformation of dibenzocrown ether

pp 2530–2535

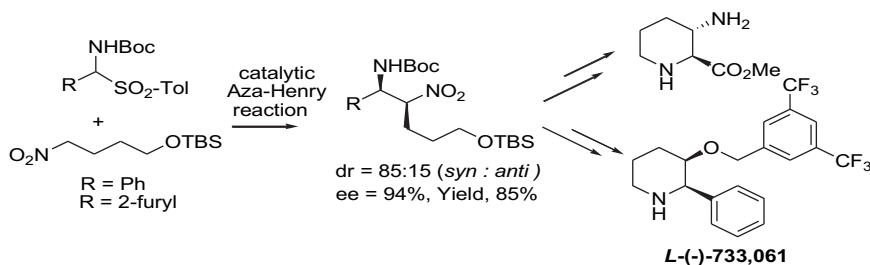
Svetlana N. Dmitrieva, Marina V. Churakova, Artem I. Vedernikov, Lyudmila G. Kuz'mina, Sergey P. Gromov*



A concise enantioselective synthesis of L-(-)-733,061 and (2S,3S)-methyl 3-aminopiperidine-2-carboxylate using catalytic enantioselective aza-Henry reaction as key step

pp 2536–2541

Gullapalli Kumaraswamy*, Arigala Pitchaiah



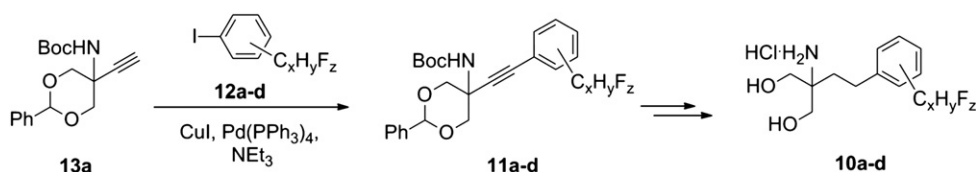
A key feature of this protocol is two stereo centers generated with high degree of diastereo- and enantioselectivity in single operation by means of a catalytic enantioselective aza-Henry reaction.



Synthesis of fluorinated analogues of the immunosuppressive drug FTY720

pp 2542–2547

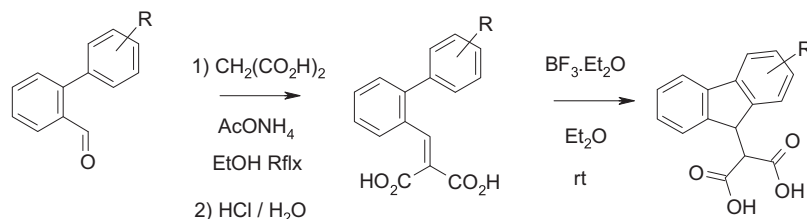
Rebecca Y.Y. Ko, John C.K. Chu, Pauline Chiu*



First and mild synthesis of fluorene-9-malonic acid and some substituted derivatives via the intramolecular hydroarylation of 2-phenylbenzylidenemalonic acids

pp 2548–2554

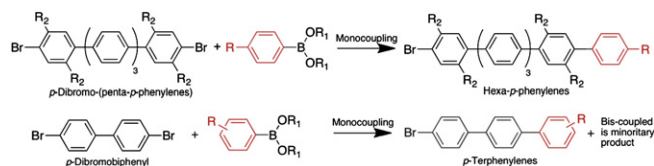
Elizabeth Chosson, Christophe Rochais, Remi Legay, Jana Sopkova de Oliveira Santos, Sylvain Rault, Patrick Dallemagne*



Suzuki–Miyaura monocouplings of *p*-dibromobiphenyl and substituted *p*-dibromo(penta-*p*-phenylenes)

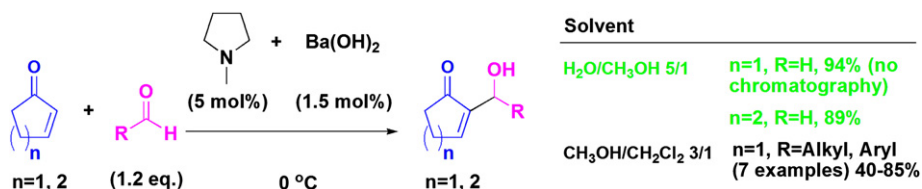
pp 2555–2561

Elena Guillén, Jesús Hierrezuelo, Rocio Martínez-Mallorquín, J. Manuel López-Romero*, Rodrigo Rico

**An efficient and simple Morita–Baylis–Hillman reaction based on the *N*-methylpyrrolidine–Ba(OH)₂ catalytic system**

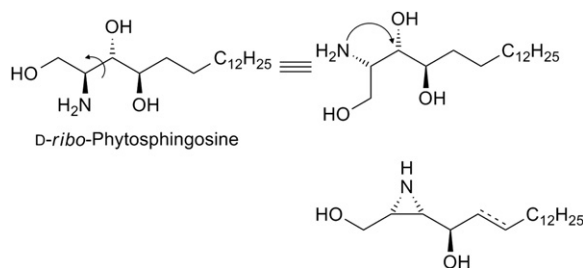
pp 2562–2569

Krassimira P. Guerra, Carlos A.M. Afonso*

**Synthesis and biological evaluation of aziridine-containing analogs of phytosphingosine**

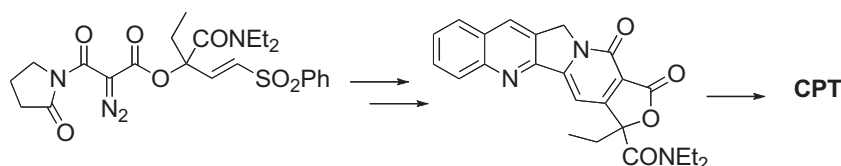
pp 2570–2578

Stéphanie Ballereau*, Nathalie Andrieu-Abadie, Nathalie Saffon, Yves Génisson*

**Intramolecular isomünchnone cycloaddition approach to the antitumor agent camptothecin**

pp 2579–2584

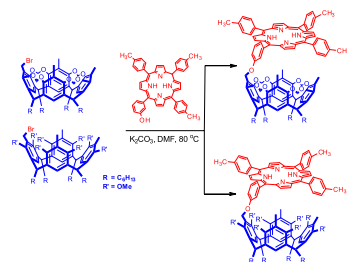
François Grillet, Cyrille Sabot, Regan Anderson*, Matej Babjak, Andrew E. Greene, Alice Kanazawa*



Synthesis of porphyrin conjugates based on conformationally rigid and flexible resorcin[4]arene frameworks

pp 2585–2590

Talal F. Al-Azemi*, Mickey Vinodh

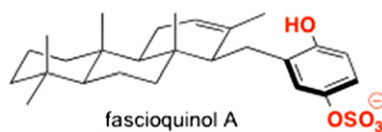


Fascioquinols A–F: bioactive meroterpenes from a deep-water southern

pp 2591–2595

Australian marine sponge, *Fasciospongia* sp.

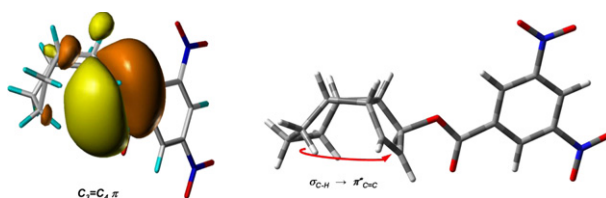
Hua Zhang, Zeinab G. Khalil, Robert J. Capon*



Synthesis and NMR spectra of the *syn* and *anti* isomers of substituted cyclobutanes—evidence for steric and spatial hyperconjugative interactions

pp 2596–2604

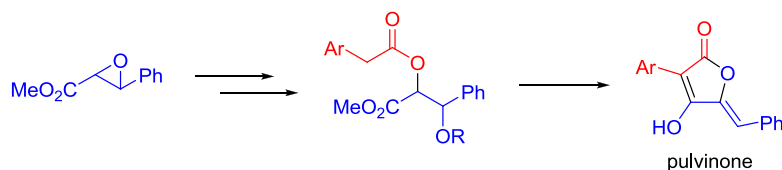
Erich Kleinpeter*, Anica Lämmermann, Heiner Kühn



Synthesis of pulvinones via tandem Dieckmann condensation—alkoxide β-elimination

pp 2605–2611

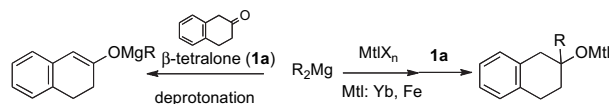
Brice Nadal, Julien Rouleau, H       Besnard, Pierre Thu    , Thierry Le Gall*



Transition-metal chloride mediated addition reaction of diorganomagnesium to easily enolizable ketones

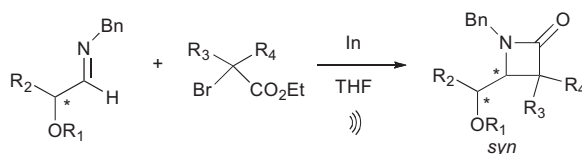
pp 2612–2616

Mutsumi Sada, Seijiro Matsubara*

**Highly diastereoselective indium-mediated synthesis of β -lactam carbohydrates from imines**

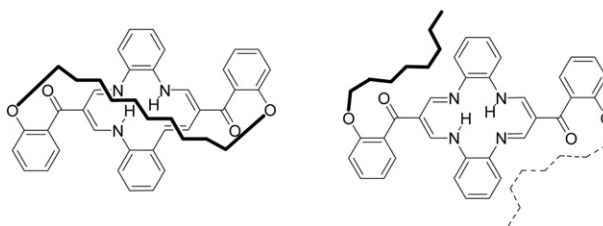
pp 2617–2622

Raquel G. Soengas*, Yuri Segade, Carlos Jiménez, Jaime Rodríguez

**Lacunar derivatives of dibenzotetraaza[14]annulene: synthesis and crystal structure of new receptors produced via bis-alkylation of the macrocyclic precursor**

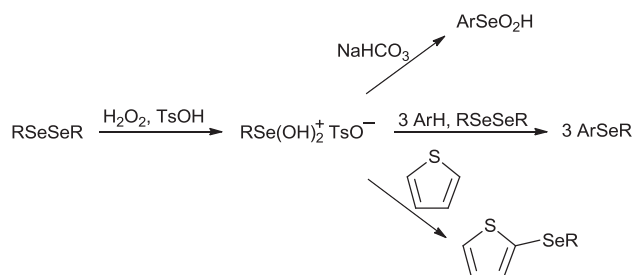
pp 2623–2632

Jarosław Grolik, Krzysztof Zwoliński, Lesław Sieroń, Julita Eilmes*

**Electrophilic organic selenium reagents—protonated seleninic acids as precursors for unsymmetrical aromatic selenides**

pp 2633–2643

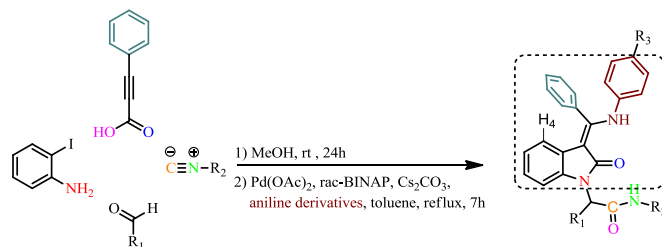
Nicolai Stühr-Hansen*, Theis Ivan Sølling, Lars Henriksen



Palladium catalyzed stereoselective synthesis of 3-(anilinoaryl)methylene)-2-oxindoles as Hesperadin analogues

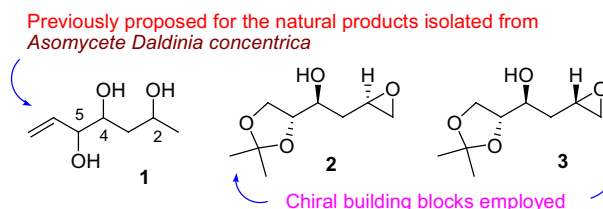
pp 2644–2650

Morteza Bararjanian, Saeedeh Hosseinzadeh, Saeed Balalaie*, Hamid Reza Bijanzadeh

**Synthesis of hept-6-en-2,4,5-triols and hept-6-en-2,3,5-triols**

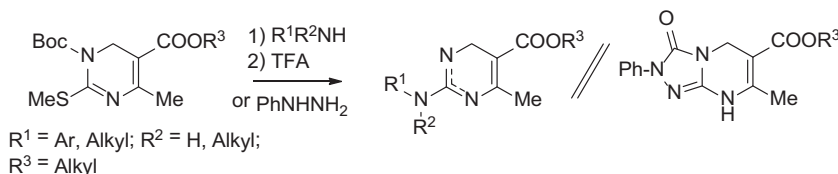
pp 2651–2660

Ping Jiang, Shao-Min Zhang, Lei He, Yikang Wu*, Yan Li*

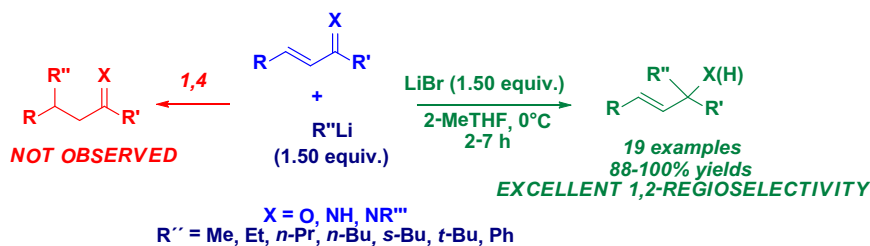
**Synthesis of 4-unsubstituted dihydropyrimidines. Nucleophilic substitution at position-2 of dihydropyrimidines**

pp 2661–2669

Hidetsura Cho*, Yoshio Nishimura, Yoshizumi Yasui, Satoshi Kobayashi, Shin-ichiro Yoshida, Eunsang Kwon, Masahiko Yamaguchi

**Highly regioselective control of 1,2-addition of organolithiums to α,β -unsaturated compounds promoted by lithium bromide in 2-methyltetrahydrofuran: a facile and eco-friendly access to allylic alcohols and amines**

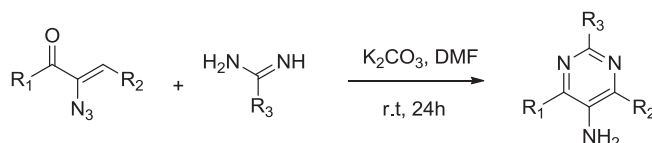
pp 2670–2675

Vittorio Pace, Laura Castoldi, Pilar Hoyos, José Vicente Sinisterra, Massimo Pregnotato, José M^a Sánchez-Montero*

Synthesis of polysubstituted 5-aminopyrimidines from α -azidovinyl ketones and amidines

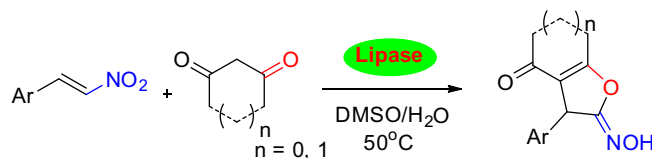
pp 2676–2680

Miao Hu, Jianwei Wu, Yaohong Zhang, Fangli Qiu, Yongping Yu*

**A novel enzymatic tandem process: utilization of biocatalytic promiscuity for high stereoselective synthesis of 5-hydroxyimino-4,5-dihydrofurans**

pp 2681–2688

Ming-Yu Wu, Kun Li*, Ting He, Xing-Wen Feng, Na Wang, Xiao-Yan Wang, Xiao-Qi Yu*

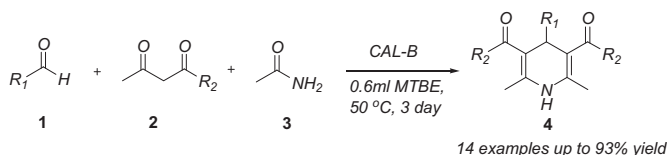


A tandem process for the preparation of 5-hydroxyimino-4,5-dihydrofurans derivatives via the reaction between β -nitrostyrene and 1,3-dicarbonyl compounds utilizing biocatalytic promiscuity was developed. A series of β -nitrostyrenes were employed to expand the scope of this new biocatalytic promiscuity with high stereoselectivity (*Z/E* up to 99:1) and moderate to good yields.

***Candida antarctica* lipase B-catalyzed the unprecedented three-component Hantzsch-type reaction of aldehyde with acetamide and 1,3-dicarbonyl compounds in non-aqueous solvent**

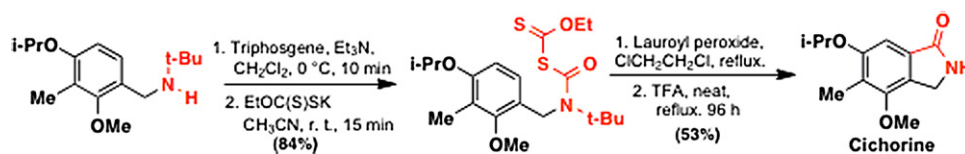
pp 2689–2692

Jun-Liang Wang, Bo-Kai Liu, Cui Yin, Qi Wu, Xian-Fu Lin*

**Convenient access to isoindolinones via carbamoyl radical cyclization. Synthesis of cichorine and 4-hydroxyisoindolin-1-one natural products**

pp 2693–2701

Germán López-Valdez, Simón Olguín-Urbe, Alejandra Millan-Ortíz, Rocio Gamez-Montaña, Luis D. Miranda*



*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.

Abstracted/indexed in: AGRICOLA, Beilstein, BIOSIS Previews, CAB Abstracts, Chemical Abstracts. Current Contents: Life Sciences, Current Contents: Physical, Chemical and Earth Sciences, Current Contents Search, Derwent Drug File, Ei compendex, EMBASE/Excerpta Medica, Medline, PASCAL, Research Alert, Science Citation Index, SciSearch. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®



ELSEVIER

ISSN 0040-4020