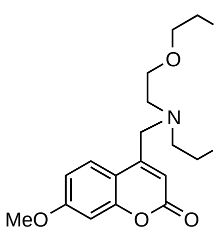
Coumaryl crown ether based chemosensors: selective detection of saxitoxin in the presence of sodium and potassium ions

Tetrahedron Letters 43 (2002) 4413

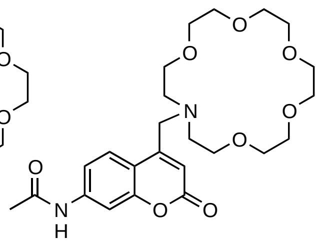
Péter Kele, Jhony Orbulescu, Tiffany L. Calhoun,
Robert E. Gawley* and Roger M. Leblanc*

Department of Chemistry and NIEHS Marine and Freshwater
Biomedical Sciences Center, University of Miami,
1301 Memorial Drive, Coral Gables, FL 33124, USA

Compounds **1** and **2** are able to detect saxitoxin in water in the presence of sodium and potassium ions.



1



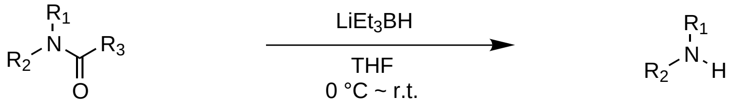
2

Utilization of lithium triethylborohydride as a selective *N*-acyl deprotecting agent

Tetrahedron Letters 43 (2002) 4417

Hideyuki Tanaka and Kunio Ogasawara*

Pharmaceutical Institute, Tohoku University, Aobayama, Sendai 980-8578, Japan



R_1, R_2 = alkyl, aryl; R_3 = Me, Ph, OBn, OMe

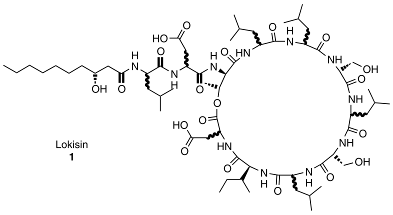
Cyclic lipoundecapeptide lokisin from *Pseudomonas* sp. strain DSS41

Tetrahedron Letters 43 (2002) 4421

Dan Sørensen,[a] Tommy H. Nielsen,[b] Jan Sørensen[b] and Carsten Christophersen[a,]*

[a]*Marine Chemistry Section, Department of Chemistry, University of Copenhagen, Universitetsparken 5, DK-2100 Copenhagen, Denmark*
[b]*Section of Genetics and Microbiology, Department of Ecology, The Royal Veterinary and Agricultural University, Thorvaldsensvej 40, DK-1871 Frederiksberg, Denmark*

A new structural variation in the cyclic lipoundecapeptide class.



Lokisin
1

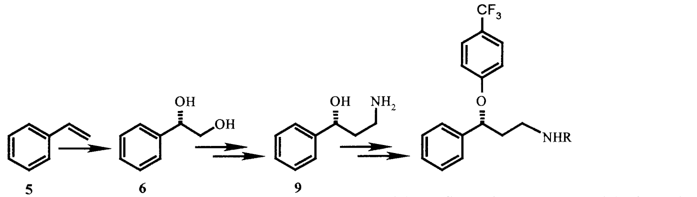
An asymmetric dihydroxylation route to enantiomerically pure norfluoxetine and fluoxetine

Tetrahedron Letters 43 (2002) 4425

Rajesh Kumar Pandey, Rodney A. Fernandes and Pradeep Kumar*

Division of Organic Chemistry: Technology, National Chemical Laboratory, Pune 411008, India

The enantioselective synthesis of the title compounds from styrene employing a Sharpless dihydroxylation procedure is reported.



1 R = H (*R*)-Norfluoxetine, **2** R = CH_3 (*R*)-Fluoxetine

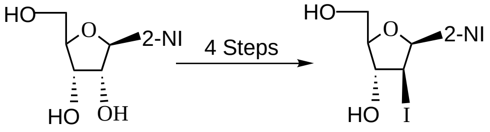
Synthesis of β-azomycin nucleosides: 1-(β-D-2-iodo-2-deoxyarabinofuranosyl)-2-nitroimidazole (β-2-IAZA), a novel marker of tissue hypoxia

Tetrahedron Letters 43 (2002) 4427

Piyush Kumar,[a] Leonard I. Wiebe,[a,]* Davood Beiki,[a] Kazue Ohkura[b] and Koh-Ichi Seki[b]

[a]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Alberta, Canada T6G 2N8*
[b]*Health Sciences University of Hokkaido, Ishikari-Tobetsu, Hokkaido 061-0293, Japan*

The synthesis of 1-(β-D-2-iodo-2-deoxyarabinofuranosyl)-2-nitroimidazole (β-2-IAZA) is described. This synthesis requires C-2 nucleophilic substitution of a ribose precursor for inversion of configuration to afford the corresponding arabinose product.



1 **5**

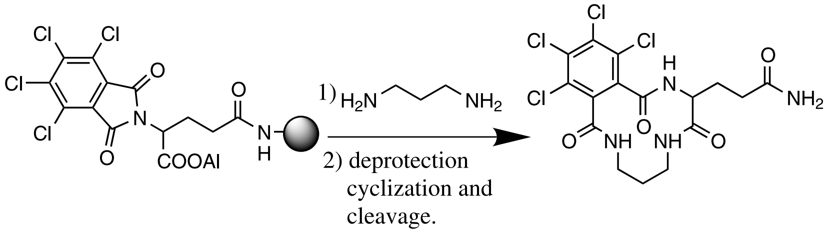
Solid-phase synthesis of new peptide–arene hybrids from *N*-TCP amino acids

Tetrahedron Letters 43 (2002) 4431

Marta Planas, Esther Cros, Ricard-Aleix Rodríguez, Rafael Ferre and Eduard Bardají*

Department of Chemistry, University of Girona, 17071 Girona, Spain

New linear and macrocyclic arene–peptide hybrids may be synthesized from *N*-tetrachlorophthaloyl protected amino acids.



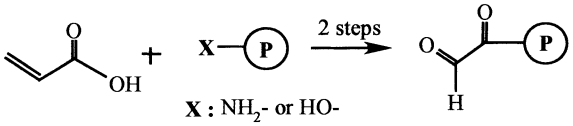
An efficient approach to prepare glyoxylyl functionality on solid-support

Tetrahedron Letters 43 (2002) 4435

Qingchai Xu and Kit S. Lam*

UC Davis Cancer Center, Division of Hematology & Oncology, Department of Internal Medicine, University of California Davis, 4501 X Street, Sacramento, CA 95817, USA

Coupling of acrylic acid onto a solid support, followed by a periodate oxidation readily yields glyoxylyl functionality on solid support.

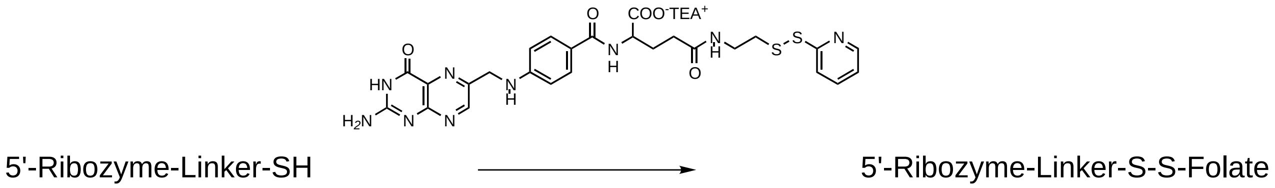


An efficient synthesis of the ribozyme–folate conjugate

Tetrahedron Letters 43 (2002) 4439

Jasenka Matulic-Adamic, Mark Sanseverino and Leonid Beigelman*

Department of Chemistry and Biochemistry, Ribozyme Pharmaceuticals, Inc., 2950 Wilderness Place, Boulder, CO 80301, USA



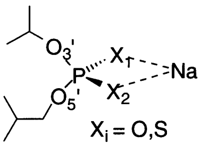
Tetrahedron Letters 43 (2002) 4443

An ab initio study of phosphorothioate and phosphorodithioate interactions with sodium cation

David E. Volk, Trevor D. Power, David G. Gorenstein and Bruce A. Luxon*

Sealy Center for Structural Biology and Department of Human Biological Chemistry and Genetics,
The University of Texas Medical Branch, Galveston, TX 77555-1157, USA

Sulfur substitutions for non-bridging phosphate oxygen atoms reduce the interaction energy of sodium cation binding.



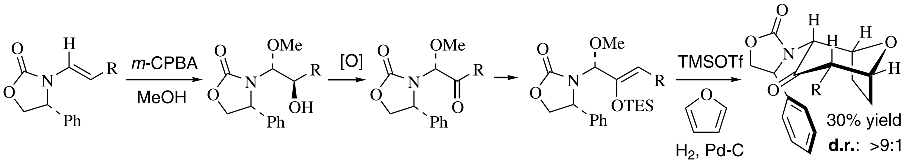
Tetrahedron Letters 43 (2002) 4449

Chiral enamide. Part 1: Epoxidations of chiral enamides. A viable approach to chiral nitrogen stabilized oxyallyl cations in [4+3] cycloadditions

Hui Xiong, Richard P. Hsung,* Lichun Shen and Juliet M. Hahn

Department of Chemistry, University of Minnesota, 207 Pleasant Street S.E., Minneapolis, MN 55455-0431, USA

The first study of stereoselective epoxidations of chiral enamides is described here. Its potential as a viable approach to nitrogen stabilized oxoallyl cations in stereoselective [4+3] cycloadditions is illustrated.



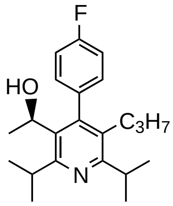
Tetrahedron Letters 43 (2002) 4455

4-Phenylpyridine glucagon receptor antagonists: synthetic approaches to the sterically hindered chiral hydroxy group

Gaetan H. Ladouceur,* James H. Cook, Elizabeth M. Doherty, Dierk Giebel and William R. Schoen

Department of Chemistry Research, Bayer Research Center, 400 Morgan Lane, West Haven, CT 06516, USA

Systematic evaluation of the structure–activity relationships of a new class of 4-aryl-pyridine glucagon antagonists led to the discovery of potent analogues bearing a key secondary hydroxy moiety as seen in compound **1a**. Due to the importance of this new class of compounds, it became necessary to establish an efficient synthesis of the pure enantiomer. A resolution and two chiral syntheses of alcohol **1a** were discovered and herein presented.



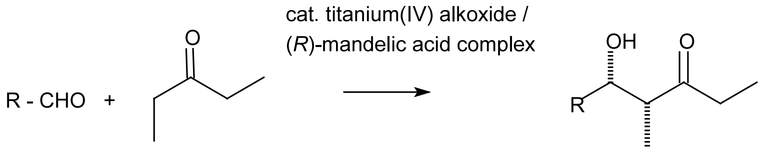
1a

Tetrahedron Letters 43 (2002) 4459

Insight into the mechanism of direct catalytic aldol addition mediated by ambifunctional titanium complexes

R. Mahrwald* and B. Ziemer

Institut für Organische und Bioorganische Chemie der Humboldt Universität, Brook-Taylor Str 2, D-12 489 Berlin, Germany

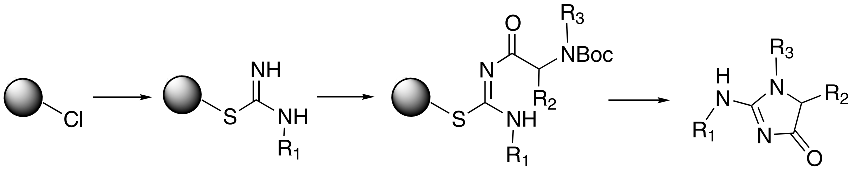


Rapid assembly of 2-aminoimidazolones on solid support

Tetrahedron Letters 43 (2002) 4463

Kexin Yang,* Boliang Lou and Hossain Saneii

Chemistry Department, Advanced SynTech, LLC, 9800 Bluegrass parkway, Louisville, KY 40299, USA

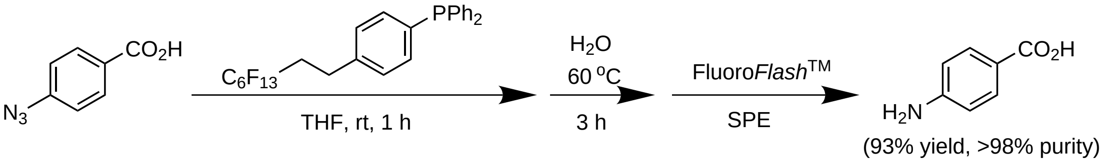


A general Staudinger protocol for solution-phase parallel synthesis

Tetrahedron Letters 43 (2002) 4467

Craig W. Lindsley,* Zhijian Zhao, Randall C. Newton,
William H. Leister and Kimberly A. Strauss

Department of Medicinal Chemistry, Technology Enabled Synthesis Group, Merck Research Laboratories, PO Box 4, West Point, PA 19486, USA

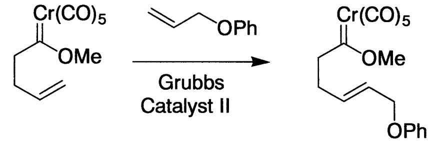


Cross metathesis reactions using γ,δ-unsaturated chromium carbene complexes

Tetrahedron Letters 43 (2002) 4471

Lei Zhang and James W. Herndon*

Department of Chemistry and Biochemistry, New Mexico State University, MSC 3C, Las Cruces, NM 88003, USA



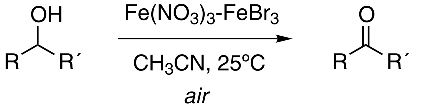
Catalytic aerobic oxidation of alcohols by $Fe(NO_3)_3$–$FeBr_3$

Tetrahedron Letters 43 (2002) 4475

Sandra E. Martín* and Darío F. Suárez

INFIQC, Dpto. de Química Orgánica, Fac. de Ciencias Químicas, Universidad Nacional de Córdoba, Cdad Universitaria, 5000 Córdoba, Argentina

Selective aerobic oxidation of secondary and benzylic alcohols was efficiently accomplished by using the binary catalyst system $Fe(NO_3)_3$–$FeBr_3$ under *air* at room temperature.



Highly enantioselective Baeyer–Villiger oxidation using Zr(salen) complex as catalyst

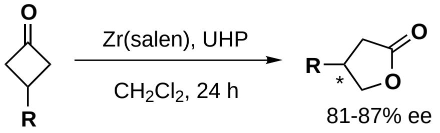
Tetrahedron Letters 43 (2002) 4481

Akira Watanabe,[a] Tatsuya Uchida,[a] Katsuji Ito[b] and Tsutomu Katsuki[a,]*

[a]*Department of Chemistry, Faculty of Science, Graduate School, Kyushu University 33, CREST JST (Japan Science and Technology), Hakozaki, Higashi-ku, Fukuoka 812-8581, Japan*

[b]*Department of Chemistry, Fukuoka University of Education, CREST JST, Akama, Munakata, Fukuoka 811-4192, Japan*

Zr(salen) complex bearing a binaphthyl unit was found to catalyze asymmetric Baeyer–Villiger oxidation of pro-chiral and racemic ketones with high enantioselectivity when urea·hydrogen peroxide (UHP) was used as the terminal oxidant.

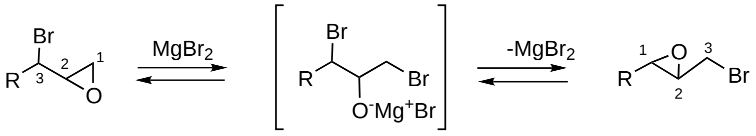


Stereospecific isomerization of 3-substituted-3-bromo-1,2-epoxypropanes using magnesium bromide

Tetrahedron Letters 43 (2002) 4487

Michinori Karikomi,* Takeshi Takayama and Kazuo Haga

Department of Applied Chemistry, Faculty of Engineering, Utsunomiya University, Yoto 7-1-2, Utsunomiya 321-8585, Japan



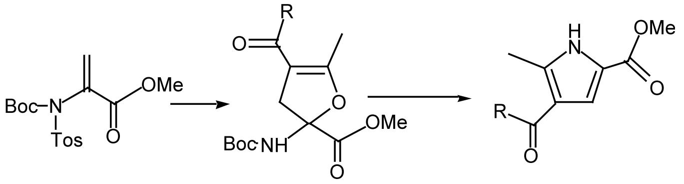
Synthesis of 2,3,5-substituted pyrrole derivatives

Tetrahedron Letters 43 (2002) 4491

Paula M. T. Ferreira,* Hernâni L. S. Maia and Luís S. Monteiro

Department of Chemistry, University of Minho, Gualtar, P-4700-320 Braga, Portugal

Substituted pyrrole derivatives are prepared by treatment of 2,3-dihydrofuran derivatives with trifluoroacetic acid. These in turn are obtained by Michael addition of carbon nucleophiles of the β-dicarbonyl type to *N*-(4-toluenesulfonyl)-*N*-(*tert*-butyloxycarbonyl)-dehydroalanine methyl ester.



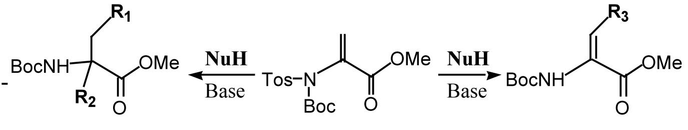
Synthesis of non-proteinogenic amino acids from *N*-(4-toluenesulfonyl)dehydroamino acid derivatives

Tetrahedron Letters 43 (2002) 4495

Paula M. T. Ferreira, Hernâni L. S. Maia and Luís S. Monteiro*

Department of Chemistry, University of Minho, Gualtar, P-4700-320 Braga, Portugal

By treating *N*-(4-toluenesulfonyl)-*N*-(*tert*-butyloxycarbonyl)-dehydroamino acid derivatives with different reactants under different conditions, a variety of new amino acids are obtained, viz. (i) α-alcoxy-α-amino acids, (ii) α,α-diamino acids and (iii) novel β-substituted dehydroamino acids.



R_1: 4-CH$_3$-C$_6$H$_4$SO$_2$, MeO

R_2: PhCH$_2$NH, HC≡CCH$_2$NH, MeO

R_3: PhCH$_2$NH, HC≡CCH$_2$NH, CH$_3$OCOCH$_2$S, 4-Br-C$_6$H$_4$S

Tetrahedron Letters 43 (2002) 4499

Baylis–Hillman reactions of *N*-arylidenediphenylphosphinamides with methyl vinyl ketone, methyl acrylate, and acrylonitrile

Min Shi* and Gui-Ling Zhao

State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Lu, Shanghai 200032, China

Baylis–Hillman reactions of *N*-arylidenediphenylphosphinamides **1** with MVK and methyl acrylate at room temperature (20°C) have been carefully examined. PPh_3 is the best Lewis base in the reaction of **1** with MVK, Ph_2PMe is the best Lewis base in the reactions of **1** with methyl acrylate, and DABCO is the best Lewis base for the reaction of **1** with acrylonitrile.

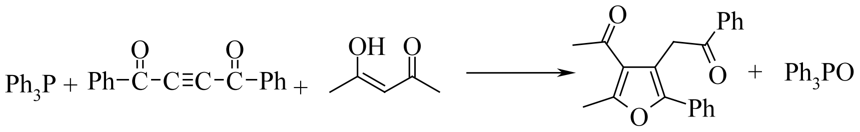
Tetrahedron Letters 43 (2002) 4503

A novel approach to the synthesis of highly functionalized furans

Issa Yavari,* Mohammad Anary-Abbasinejad and Abdolali Alizadeh

Department of Chemistry, Tarbiat Modarres University, PO Box 14115-175, Tehran, Iran

The reaction of dibenzoylacetylene and enol systems in the presence of triphenylphosphine leads to tetrasubstituted furans.

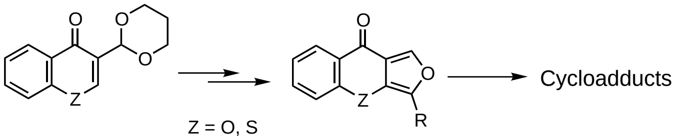


Tetrahedron Letters 43 (2002) 4507

Synthesis and cycloadditions of 9*H*-furo[3,4-*b*][1]benzo(thio)pyran-9-ones: furan ring formation by a novel hydrolytically induced cycloreversion

G. Elena Daia,[a] Christopher D. Gabbutt,[a,]* John D. Hepworth,[b] B. Mark Heron,[c] David E. Hibbs[d] and Michael B. Hursthouse[e]

[a]*Department of Chemistry, University of Hull, Hull HU6 7RX, UK*
[b]*James Robinson Ltd, PO Box B3, Hillhouse Lane, Huddersfield HD1 6BU, UK*
[c]*Department of Colour Chemistry, University of Leeds, Leeds LS2 9JT, UK*
[d]*School of Chemistry, University of Sydney, Sydney, NSW 2006, Australia*
[e]*Department of Chemistry, University of Southampton, Highfield, Southampton SO17 1BJ, UK*

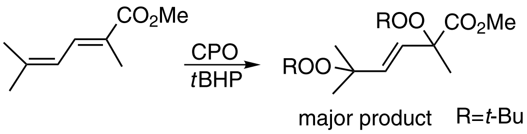


Tetrahedron Letters 43 (2002) 4511

Mixed peroxides from the chloroperoxidase-catalyzed oxidation of conjugated dienoic esters with a trisubstituted terminal double bond

Despina J. Bougioukou and Ioulia Smonou*

Department of Chemistry, University of Crete, Iraklio 71409, Crete, Greece

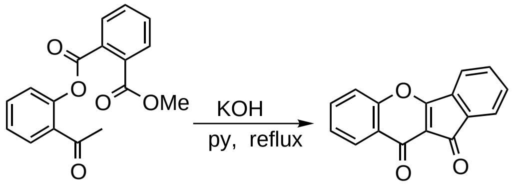


The application of the Baker–Venkataraman rearrangement to the synthesis of benz[*b*]indeno[2,1-*e*]pyran-10,11-dione

Tetrahedron Letters 43 (2002) 4515

Nopporn Thasana[a,b] and Somsak Ruchirawat[a,b,c,*]

[a]*Chulabhorn Research Institute, Vipavadee Rangsit Highway, Bangkok 10210, Thailand*
[b]*Department of Chemistry, Mahidol University, Rama 6 Road, Bangkok 10400, Thailand*
[c]*Programme on Research and Development of Synthetic Drugs, Institute of Science and Technology for Research and Development, Mahidol University, Salaya Campus, Thailand*



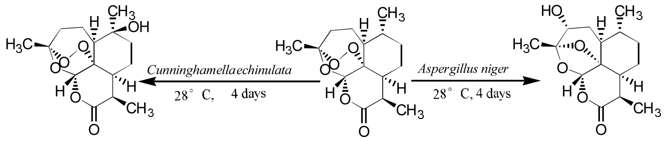
Microbial transformations of artemisinin by *Cunninghamella echinulata* and *Aspergillus niger*

Tetrahedron Letters 43 (2002) 4519

Jixun Zhan,[a,b] Hongzhu Guo,[a] Jungui Dai,[a] Yuanxing Zhang[b] and Dean Guo[a,*]

[a]*The State Key Laboratory of Natural and Biomimetic Drugs, School of Pharmaceutical Sciences, Peking University, Beijing 100083, PR China*
[b]*State Key Laboratory of Bioreactor Engineering, East China University of Science and Technology, Shanghai 200237, PR China*

Antimalarial artemisinin **1** was transformed to 10β-hydroxyartemisinin **2** and 3α-hydroxydeoxyartemisinin **3** by *Cunninghamella echinulata* and *Aspergillus niger*, respectively.



2 **1** **3**

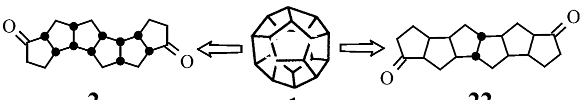
Synthesis of two new hexaquinanes: advanced C_{20} precursors to dodecahedrane

Tetrahedron Letters 43 (2002) 4523

Sambasivarao Kotha,[a,*] Rallapalli Sivakumar,[a] Lakshminarasimhan Damodharan[b] and Vasantha Pattabhi[b]

[a]*Department of Chemistry, Indian Institute of Technology, Powai, Mumbai 400076, India*
[b]*Department of Crystallography and Biophysics, University of Madras, Chennai 600 025, India*

A simple synthesis of hexaquinane diones **2** and **22** involving bench-top chemicals is reported. These two hexaquinanes are advanced C_{20} precursors to dodecahedrane **1** either by C–C bond formation reactions or by the isomerisation approach.



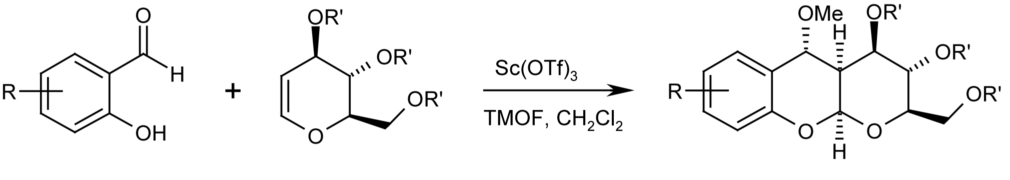
2 **1** **22**

Sc(OTf)$_3$-catalyzed synthesis of pyrano[3,2-*b*]-1-benzopyrans from D-glycals

Tetrahedron Letters 43 (2002) 4527

J. S. Yadav,[a,*] B. V. S. Reddy,[a] L. Chandraiah,[a] B. Jagannadh,[a] S. Kiran Kumar[b] and Ajit C. Kunwar[b]

[a]*Natural Products Laboratory, Division of Organic Chemistry, Indian Institute of Chemical Technology, Hyderabad 500 007, India*
[b]*Center for Nuclear Magnetic Resonance, Indian Institute of Chemical Technology, Hyderabad 500 007, India*

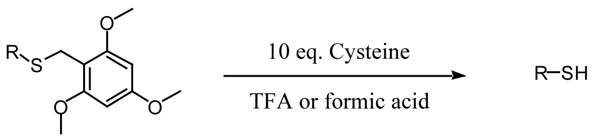


Tetrahedron Letters 43 (2002) 4531

L-Cysteine as a water-soluble cation scavenger in the removal of the 2,4,6-trimethoxybenzyl group from thiols

Chia-En Lin,* Stewart K. Richardson and David S. Garvey

NitroMed, Inc., 12 Oak Park Drive, Bedford, MA 01730, USA



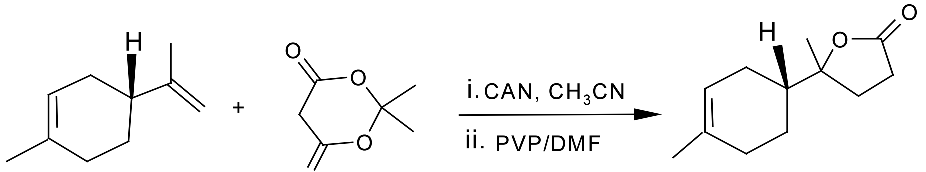
Tetrahedron Letters 43 (2002) 4535

A novel short synthesis of norbisabolide

S. B. Solabannavar, V. B. Helavi, Uday V. Desai and R. B. Mane*

Department of Chemistry, Shivaji University, Kolhapur 416004, India

A novel two-step synthesis of norbisabolide is reported involving free radical addition of Meldrum's acid to (*R*)-(+)-limonene using cerium(IV) ammonium nitrate followed by decarboxylation with poly-4-vinylpyridine.



1 **2** **4** (73%)

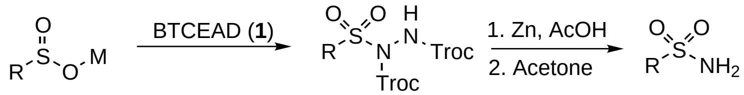
Tetrahedron Letters 43 (2002) 4537

A mild, efficient method for the synthesis of aromatic and aliphatic sulfonamides

Wing Yan Chan and Carl Berthelette*

Department of Medicinal Chemistry, Merck Frosst Centre for Therapeutic Research, PO Box 1005, Pointe-Claire–Dorval, Québec, Canada H9R 4P8

A two-step sequence was developed for the synthesis of sulfonamides using sulfinic acid salts and bis(2,2,2-trichloroethyl)azodicarboxylate as an electrophilic nitrogen source.



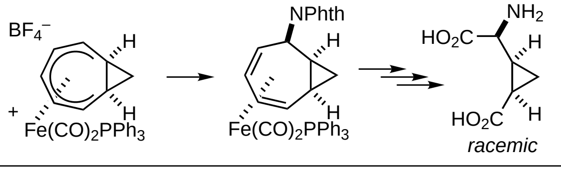
Tetrahedron Letters 43 (2002) 4541

Synthesis of cyclopropanes via organoiron methodology: stereoselective preparation of *cis*-2-(2′-carboxycyclopropyl)glycine

Nathaniel J. Wallock and William A. Donaldson*

Department of Chemistry, Marquette University, PO Box 1881, Milwaukee, WI 53201-1881, USA

A stereoselective route to *cis*-2-(2′-carboxycyclopropyl)glycine has been developed. *exo*-Nucleophilic addition to the (bicyclo[5.1.0]octadienyl)iron(1+) cation establishes the relative stereochemistry at the cyclopropane ring and the α-stereocenter.



Catechin and epicatechin deprotonation followed by ^{13}C NMR

Tetrahedron Letters 43 (2002) 4545

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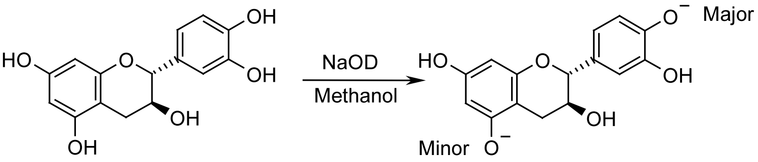

The ^{13}C NMR study of catechin and epicatechin upon addition of base is reported. These flavan-3-ols show an interesting deprotonation behavior, dramatically different from the other flavonoïdes. Catechin and epicatechin exhibit competitive deprotonation on B and A ring leading to a mixture of monophenolates.

Palladium-mediated total synthesis of 2-styrylbenzoic acids: a general route to 2-azachrysenes

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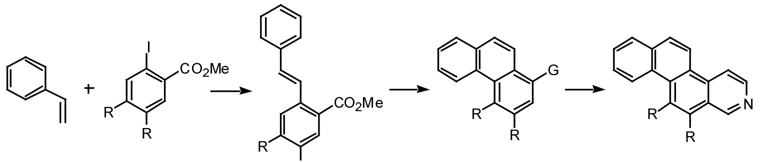
We describe a new total synthesis of 2-styrylbenzoic acids by Heck coupling of methyl *o*-iodobenzoates to styrenes. Additionally, in the first general synthesis of naphtho[2,1-*f*]isoquinolines, these acids were transformed into phenanthrenoic acids and thence into the target compounds by a six-step sequence including a Bischler–Napieralski cyclization.



G=CO_2Me, CHO, CH=CH-CO_2H, CH=CH-CON_3, CH=CH-NCO

Encapsulated $AlCl_3$: a convenient catalyst for the alkylation of benzene with dodecene

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A novel method for the encapsulation of $AlCl_3$ was successfully carried out using the insoluble polymer wall obtained from the reaction of P(St-*co*-DMAEMA) and Sat. PB containing -COOH groups. The encapsulated $AlCl_3$ was used to catalyze the Friedel–Crafts alkylation of benzene with dodecene and was separated by simple filtration. The alkylbenzenes were obtained in excellent yields.

Synthesis of the racemic tetracyclic core of CP-225,917: use of a strain-assisted Cope rearrangement

Tetrahedron Letters 43 (2002) 4559

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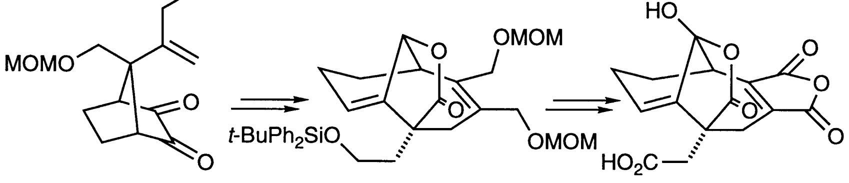

Tetrahedron Letters 43 (2002) 4565

Stereospecific preparation of symmetrical (1*Z*,3*Z*) 2,3-difluoro-1,4-disubstituted-buta-1,3-dienes by the coupling reaction between bis(tributyltin) and high *E*/*Z* 1-bromo-1-fluoroalkenes

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