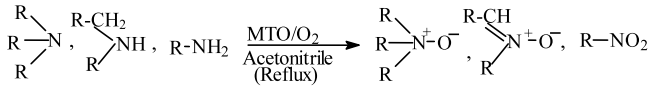
Methyltrioxorhenium catalyzed aerobic oxidation of organonitrogen compounds

Tetrahedron Letters 44 (2003) 3235

Vishal B. Sharma, Suman L. Jain and Bir Sain*

Chemical and Biosciences Division, Indian Institute of Petroleum, Dehradun 248005, India

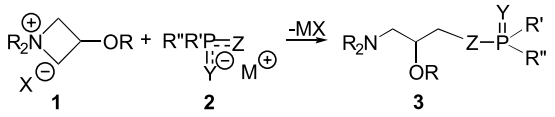


Synthesis of polyfunctional phosphorodithioates and structural analogues mediated by azetidinium ions and epoxides

Tetrahedron Letters 44 (2003) 3239

Agata Jeziorna, Jan Heliński and Bożena Krawiecka*

Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Sienkiewicza 112, 90-363 Łódź, Poland

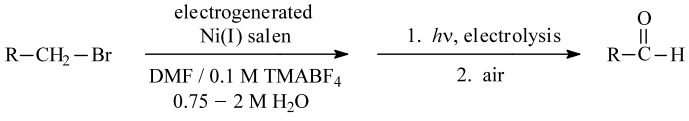


Formation of aldehydes and ketones via reduction of alkyl monohalides by electrogenerated nickel(I) salen in dimethylformamide in the presence of water, oxygen, and light

Tetrahedron Letters 44 (2003) 3245

Parichatr Vanalabhpatana and Dennis G. Peters*

Department of Chemistry, Indiana University, Bloomington, IN 47405, USA

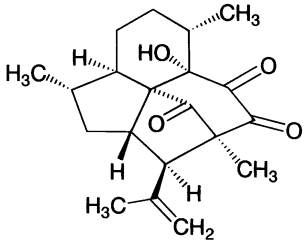


Elisapterosins D and E: complex polycyclic diterpenes of the rare elisapterane class of natural products from the Caribbean sea whip *Pseudopterogorgia elisabethae* (Bayer)

Tetrahedron Letters 44 (2003) 3249

Yan-Ping Shi, Ileana I. Rodríguez and Abimael D. Rodríguez*

Department of Chemistry, University of Puerto Rico, PO Box 23346, U.P.R. Station, San Juan 00931-3346, Puerto Rico



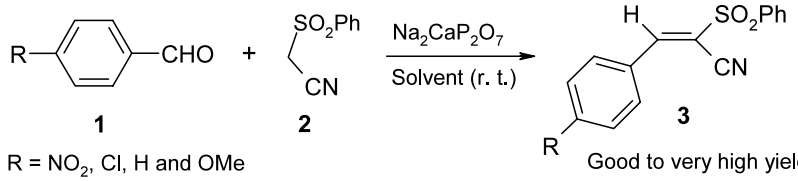
$Na_2CaP_2O_7$, a new catalyst for the synthesis of unsaturated arylsulfones

Tetrahedron Letters 44 (2003) 3255

Mohamed Zahouily,[a,*] Mohamed Salah,[a] Jamal Bennazha,[a] Ahmed Rayadh[a] and Saïd Sebti[b]

[a]*Laboratoire de Synthèse Organique et Traitement de l'Information, UFR de Chimie Appliquée, Université Hassan II, Faculté des Sciences et Techniques, BP 146, 20650 Mohammadia, Morocco*

[b]*Laboratoire de Chimie Organique Appliquée et Catalyse, Université Hassan II, Faculté des Sciences Ben M'Sik, BP 7955, 20702 Casablanca, Morocco*



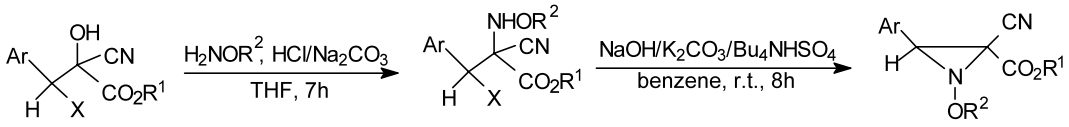
Easy access to β-halo amino esters and aziridine 2-carboxylic esters from halohydrins

Tetrahedron Letters 44 (2003) 3259

Saïd Boukhris* and Abdelaziz Souizi

Laboratoire de Synthèse Organique et d'Agrochimie, Département de Chimie, Faculté des Sciences, Université Ibn Tofaïl, BP 133 Kénitra, Morocco

Practical synthesis of β-halo α-amino esters and limited *N*-hydroxy aziridine 2-carboxylic esters.



Palladium-catalyzed cyclization/allylation of in situ-generated α-hydroxy-[3]-cumulene samarium alkoxides: synthesis of allylated furans

Tetrahedron Letters 44 (2003) 3263

José M. Aurrecoechea* and Elena Pérez

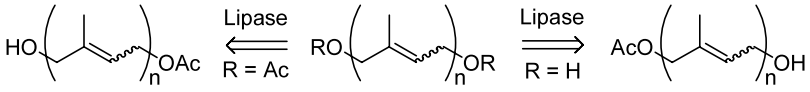
Departamento de Química Orgánica II, Facultad de Ciencias, Universidad del País Vasco, Apartado 644, 48080 Bilbao, Spain

Highly regioselective lipase-catalyzed acetylation and hydrolysis of acyclic α,ω-terpenediols and their diacetates

Tetrahedron Letters 44 (2003) 3267

Kunihiko Takabe,* Nobuyuki Mase, Takaya Hisano and Hidemi Yoda

Department of Molecular Science, Faculty of Engineering, Shizuoka University, 3-5-1 Johoku, Hamamatsu 432-8561, Japan

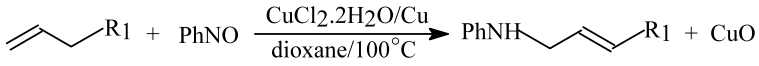


Tetrahedron Letters 44 (2003) 3271

Copper-catalyzed allylic amination of olefins with nitrosoarenes

Radhey S. Srivastava

Department of Chemistry, University of Louisiana at Lafayette, LA 70504, USA



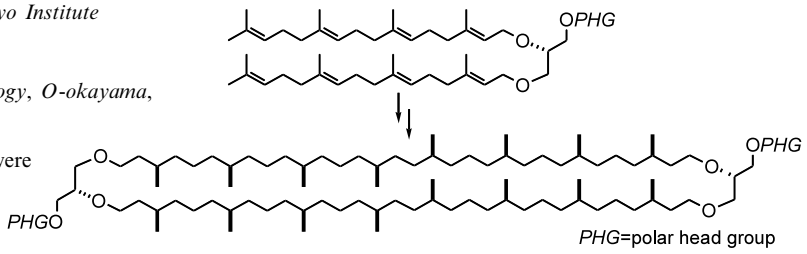
Tetrahedron Letters 44 (2003) 3275

Importance of the isopropylidene terminal of geranylgeranyl group for the formation of tetraether lipid in methanogenic archaea

Tadashi Eguchi,[a,*] Yuji Nishimura[a] and Katsumi Kakinuma[b]

[a]*Department of Chemistry and Materials Science, Tokyo Institute of Technology, O-okayama, Meguro-ku, Tokyo 152-8551, Japan*
[b]*Department of Chemistry, Tokyo Institute of Technology, O-okayama, Meguro-ku, Tokyo 152-8551, Japan*

Labeling experiments using several deuterated lipids were pursued to clarify the formation of macrocyclic lipids in thermophilic methanogenic archaea.



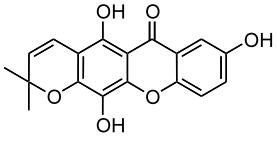
Tetrahedron Letters 44 (2003) 3281

Total synthesis of atroviridin

Eric J. Tisdale, David A. Kochman and Emmanuel A. Theodorakis*

Department of Chemistry and Biochemistry, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0358, USA

An efficient and convergent synthesis of atroviridin (**1**) has been accomplished based on biosynthetic principles and is presented herein.



1: atroviridin

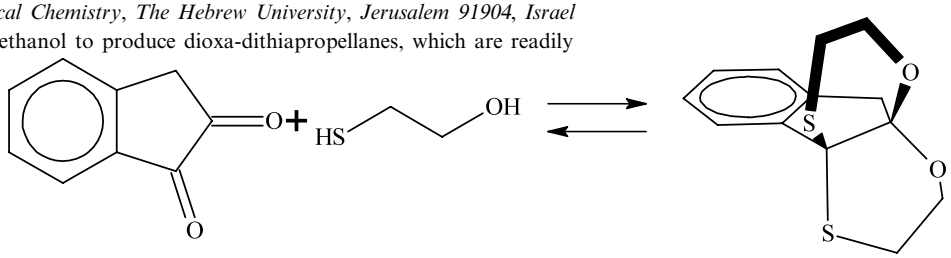
Tetrahedron Letters 44 (2003) 3285

A novel method for protection and deprotection of the carbonyl groups in 1,2-indanedione by conversion to dioxa-dithiapropellanes

Joseph Almog,[a,*] Yirmi Zehavy[a] and Shmuel Cohen[b]

[a]*Casali Institute of Applied Chemistry, The Hebrew University, Jerusalem 91904, Israel*
[b]*Department of Inorganic and Analytical Chemistry, The Hebrew University, Jerusalem 91904, Israel*

1,2-Indanediones react with mercaptoethanol to produce dioxa-dithiapropellanes, which are readily converted to the starting diketones.



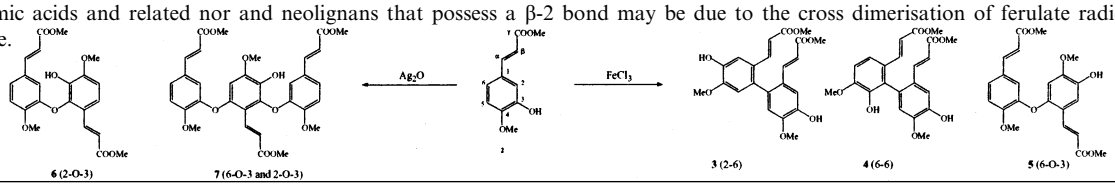
The reaction of methyl isoferulate with $FeCl_3$ or Ag_2O—hypothesis on the biosynthesis of lithospermic acids and related nor and neolignans

Tetrahedron Letters 44 (2003) 3289

Philippe Cotelle* and Hervé Vezin

Laboratoire de Chimie Organique et Macromoléculaire, UMR CNRS 8009, Université des Sciences et Technologies de Lille, 59655 Villeneuve d'Ascq, France

Methyl isoferulate reacts with $FeCl_3$ to give (2-6) dimer **3**, (6-6) dimer **4** and (6-O-3) dimer **5** in low yields, whereas it reacts with Ag_2O leading to (2-O-3) dimer **6** and (6-O-3, 2-O-3) trimer **7**. By comparison with literature data, we suggest that the biosynthesis of lithospermic acids and related nor and neolignans that possess a β-2 bond may be due to the cross dimerisation of ferulate radical on isoferulate.

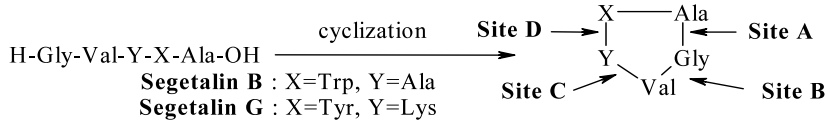


First synthesis of segetalins B and G: two cyclopentapeptides with estrogen-like activity

Tetrahedron Letters 44 (2003) 3293

Pascal Sonnet,[a,*] Sophie Da Nascimento,[a] Danielle Marty,[a] Nicolas Franceschini,[a] Jean Guillon,[b] Jean-Daniel Brion[c] and Jacques Rochette[a]

[a]*G.R.B.P.D., EA 2629, 1 rue des Louvels, F-80037 Amiens Cedex 1, France*
[b]*EA 2962 Pharmacochimie, Université Victor Segalen Bordeaux 2, 146, rue Léo Saignat, F-33076 Bordeaux Cedex, France*
[c]*Faculté de Pharmacie, Université Paris XI, Laboratoire de Chimie Thérapeutique, UMR CNRS 8076 BioCIS, 5, rue J.-B. Clément, F-92296 Châtenay-Malabry Cedex, France*

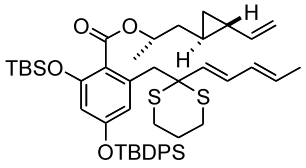


Effects of temperature and concentration in some ring closing metathesis reactions

Tetrahedron Letters 44 (2003) 3297

Kana Yamamoto,[a,*] Kaustav Biswas,[a] Christoph Gaul[a] and Samuel J. Danishefsky[a,b]

[a]*Laboratory for Bioorganic Chemistry, Sloan-Kettering Institute for Cancer Research, 1275 York Ave., New York, NY 10021, USA*
[b]*Department of Chemistry, Columbia University, Havemayer Hall, 3000 Broadway, New York, NY 10027, USA*



		yield of mono/dimers
CH_2Cl_2, 42°C, 12 h	0.5 mM	16% 30%
PhH, 80°C, 35 min	0.5 mM	33% 36%
PhMe, 110°C, 10 min	0.2 mM	55% -

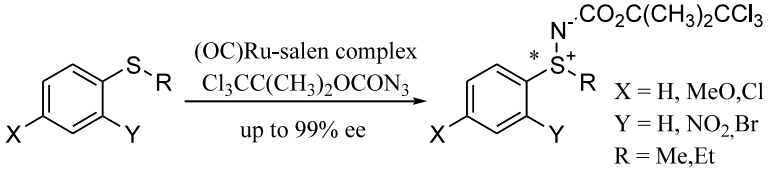
Highly enantioselective (OC)Ru(salen)-catalyzed sulfimidation using *N*-alkoxycarbonyl azide as nitrene precursor

Tetrahedron Letters 44 (2003) 3301

Yuusuke Tamura, Tatsuya Uchida and Tsutomu Katsuki*

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

2,2,2-Trichloro-1,1-dimethylethoxycarbonyl azide is an excellent nitrene precursor for (OC)Ru–salen catalyzed asymmetric imidation of alkyl aryl sulfides.



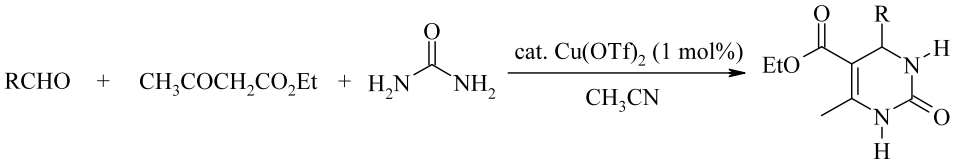
$Cu(OTf)_2$: a reusable catalyst for high-yield synthesis of 3,4-dihydropyrimidin-2(1*H*)-ones

Tetrahedron Letters 44 (2003) 3305

A. S. Paraskar, G. K. Dewkar and A. Sudalai*

Process Development Division, National Chemical Laboratory, Pashan Road, Pune 411008, India

Copper(II) triflate catalyzes efficiently the three-component condensation reaction of an aldehyde, β-ketoester and urea in acetonitrile to afford the corresponding 3,4-dihydropyrimidin-2(1*H*)-ones in high yields. The catalyst exhibited remarkable reusable activity.



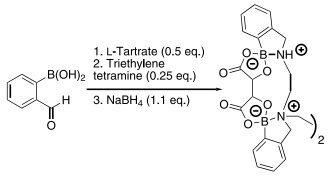
Boronate derivatives of bioactive amines: potential neutral receptors for anionic oligosaccharides

Tetrahedron Letters 44 (2003) 3309

Charles W. Gray, Jr.,[a] Brian T. Walker,[a] Robin A. Foley[a] and Todd A. Houston[a,b,*]

[a]*Department of Chemistry, Virginia Commonwealth University, Richmond, VA 23284-2006, USA*
[b]*School of Science, Griffith University, Nathan, QLD 4111, Australia*

L-Tartrate provides a useful template for reductive amination of oligomeric amines with *o*-formylphenylboronic acid.

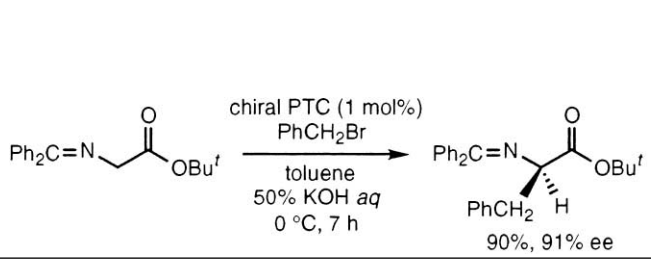


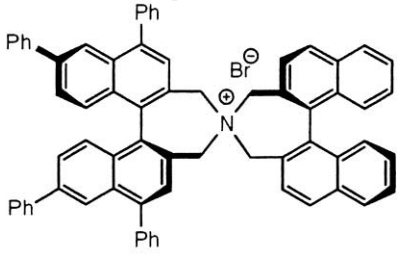
Substituent effect of binaphthyl-modified spiro-type chiral phase-transfer catalysts

Tetrahedron Letters 44 (2003) 3313

Takuya Hashimoto and Keiji Maruoka*

Department of Chemistry, Graduate School of Science, Kyoto University, Kyoto 606-8502, Japan





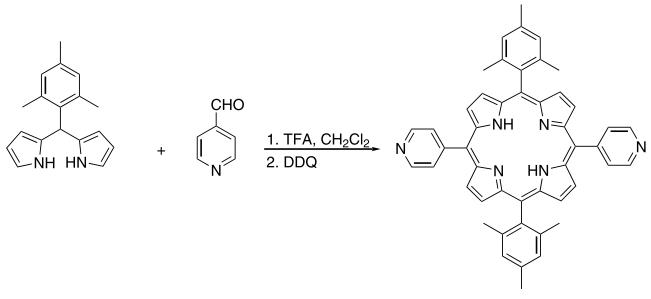
Simple route to *meso*-substituted *trans*-A_2B_2-porphyrins bearing pyridyl units

Tetrahedron Letters 44 (2003) 3317

Daniel T. Gryko* and Mariusz Tasior

Institute of Organic Chemistry of the Polish Academy of Sciences, Kasprzaka 44/52, 01-227 Warsaw, Poland

A rational, comprehensive route to porphyrins with two pyridyl units is described.

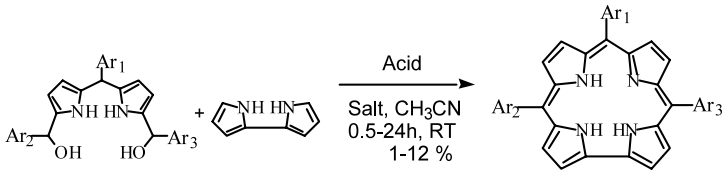


Tetrahedron Letters 44 (2003) 3323

Corrole synthesis by dipyrromethane–dicarbinol and 2,2′-bipyrrole condensation

Richard A. Decréau and James P. Collman*

Department of Chemistry, Stanford University, Stauffer II, CA 94305-5080, USA

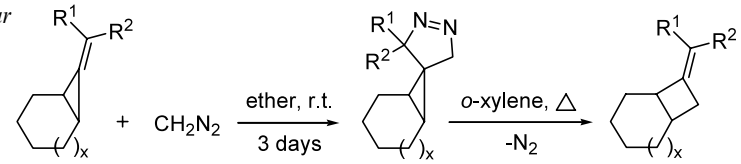


Tetrahedron Letters 44 (2003) 3329

A new synthesis of ring-fused alkylidenecyclobutanes by ring-enlargement reaction of bicyclo[*n*.1.0]alkylidene derivatives

Morshed Alam Chowdhury, Hisanori Senboku and Masao Tokuda*

Laboratory of Organic Synthesis, Division of Molecular Chemistry, Graduate School of Engineering, Hokkaido University, Sapporo 060-8628, Japan



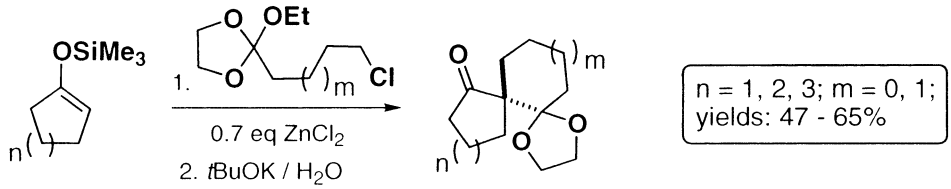
x = 1, 2
R^1 = H, Me, $CH_2CH{=}CH_2$
R^2 = COOR

Tetrahedron Letters 44 (2003) 3333

Efficient and convergent stereocontrolled spiroannulation of ketones

István E. Markó,* Jean-Christophe Vanherck, Ali Ates, Bernard Tinant and Jean-Paul Declercq

Université catholique de Louvain, Département de Chimie, Bâtiment Lavoisier, Place Louis Pasteur 1, 1348 Louvain-la-Neuve, Belgium

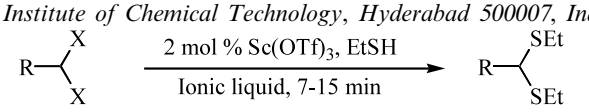


Tetrahedron Letters 44 (2003) 3337

Chemoselective thioacetalization and transthioacetalization of carbonyl compounds catalyzed by immobilized scandium(III) triflate in ionic liquids

Ahmed Kamal* and Gagan Chouhan

Division of Organic Chemistry, Indian Institute of Chemical Technology, Hyderabad 500007, India



R=aryl, alkyl,
allyl, heterocyclic
X= OMe, OAc, OEt
XX= O

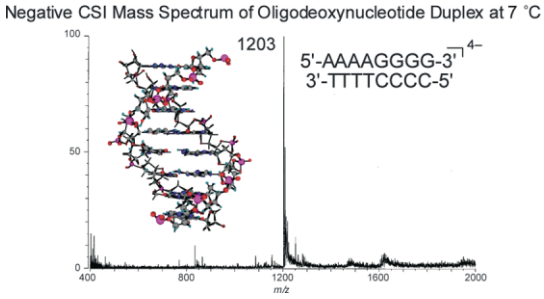
Tetrahedron Letters 44 (2003) 3341

Low *Tm* DNA duplexes observed by cold-spray ionization mass spectrometry

Shigeru Sakamoto and Kentaro Yamaguchi*

Chemical Analysis Center, Chiba University, Yayoicho, Inage-ku, Chiba, 263-8522 Japan, and CREST, Japan Science and Technology Corporation (JST), Japan

Double-stranded oligodeoxynucleotides (6- to 14-mer) were observed by using CSI–MS. This method made it possible to observe very unstable species such as low *Tm* DNA duplexes which can not be detectable by conventional ESI–MS.

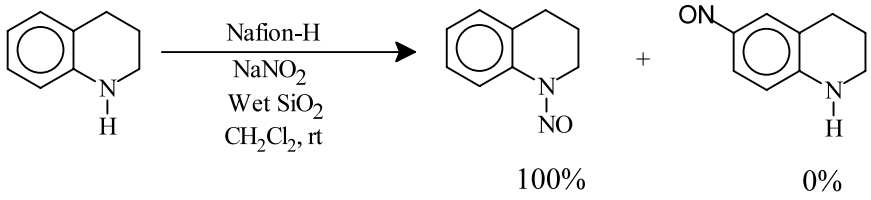


Tetrahedron Letters 44 (2003) 3345

The use of Nafion-H®/$NaNO_2$ as an efficient procedure for the chemoselective *N*-nitrosation of secondary amines under mild and heterogeneous conditions

Mohammad Ali Zolfigol,[a,*] Davood Habibi,[a] BiBi Fatemeh Mirjalili[b] and Abdolhamid Bamoniri[a]

[a]*Chemistry Department, College of Science, Bu-Ali Sina University, Hamadan 65174, Iran*
[b]*Department of Chemistry, College of Science, Yazd University, Yazd, Iran*

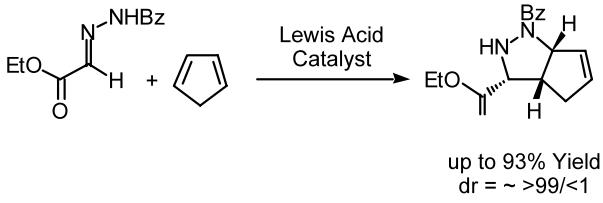


Tetrahedron Letters 44 (2003) 3351

Lewis acid-mediated [3+2] cycloaddition between hydrazones and olefins

Shū Kobayashi,* Ryoji Hirabayashi, Haruka Shimizu, Haruro Ishitani and Yasuhiro Yamashita

Graduate School of Pharmaceutical Sciences, The University of Tokyo, Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

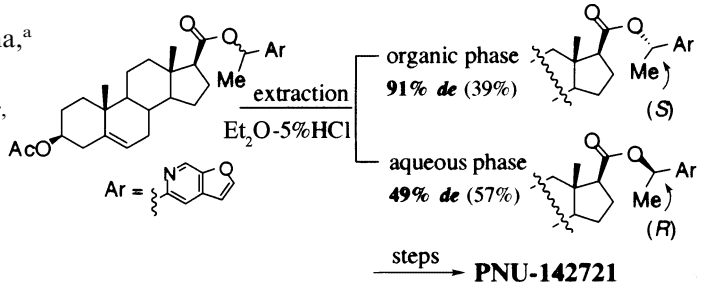


Tetrahedron Letters 44 (2003) 3355

Optical resolution of (±)-1-furo[2,3-*c*]pyridin-5-yl-ethanol using extraction technique: formal total synthesis of PNU-142721, HIV-1 reverse transcriptase inhibitor

Masato Matsugi,[a] Kinuyo Itoh,[a] Masatomo Nojima,[a] Yuri Hagimoto[b] and Yasuyuki Kita[b,*]

[a]*Department of Materials Chemistry & Frontier Research Center, Graduate School of Engineering, Osaka University, 2-1, Yamada-oka, Suita, Osaka 565-0871, Japan*
[b]*Graduate School of Pharmaceutical Sciences, Osaka University, 1-6, Yamada-oka, Suita, Osaka 565-0871, Japan*

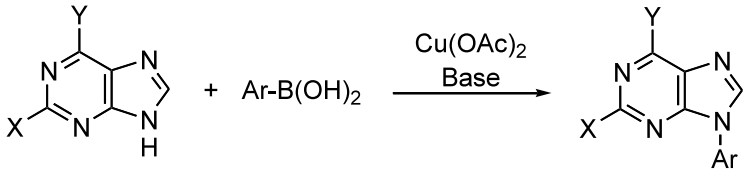


Tetrahedron Letters 44 (2003) 3359

Regioselective *N*-9 arylation of purines employing arylboronic acids in the presence of Cu(II)

Anne Kristin Bakkestuen and Lise-Lotte Gundersen*

Department of Chemistry, University of Oslo, PO Box 1033 Blindern, N-0315 Oslo, Norway



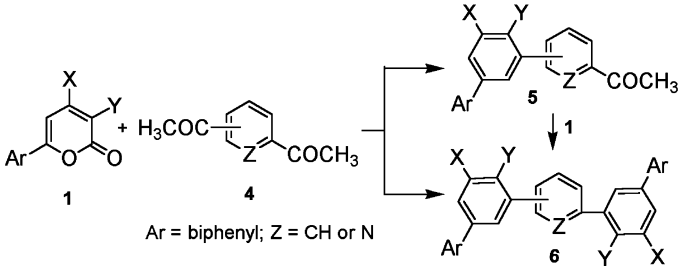
Tetrahedron Letters 44 (2003) 3363

An efficient controlled synthesis of bent-core oligoarenes and heteroarenes through ring transformation of 2*H*-pyran-2-ones

Diptesh Sil, Atul Goel and Vishnu Ji Ram*

Medicinal Chemistry Division, Central Drug Research Institute, Lucknow 226001, India

A convenient synthesis of oligoarenes and heteroarenes through ring transformation of 2*H*-pyran-2-ones is described.

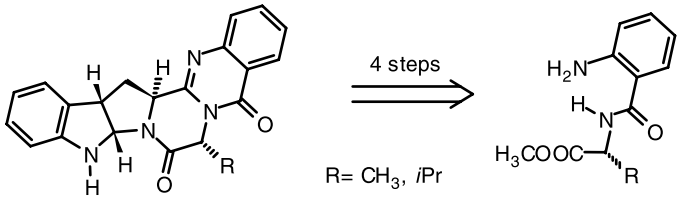


Tetrahedron Letters 44 (2003) 3367

A short synthesis of de-'prenyl'-ardeemin

Fernando Hernández, Carmen Avendaño* and Mónica Söllhuber*

Departamento de Química Orgánica y Farmacéutica, Facultad de Farmacia, Universidad Complutense, 28040 Madrid, Spain.

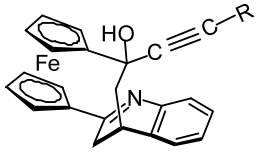


Tetrahedron Letters 44 (2003) 3371

New strained ferrocenophane-based receptors for the selective electrochemical recognition of Mg^{2+} in the presence of Ca^{2+} cations

Alberto Tárraga,* Pedro Molina,* Juan L. López and M[a] Desamparados Velasco

Departamento de Química Orgánica, Facultad de Química, Universidad de Murcia, Campus de Espinardo, E-30100, Murcia, Spain



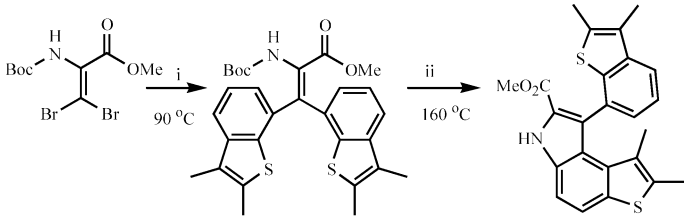
Synthesis and intramolecular cyclization of novel β,β-bis-(benzo[*b*]thienyl)dehydroalanine derivatives

Tetrahedron Letters 44 (2003) 3377

Ana S. Abreu, Natália O. Silva, Paula M. T. Ferreira and Maria-João R. P. Queiroz*

Departamento de Química, Universidade do Minho, Campus de Gualtar, 4710-057 Braga, Portugal

New β,β-bis-(benzo[*b*]thienyl)dehydroalanine derivatives were obtained in high yields reacting the methyl ester of the *N-tert*-butyloxycarbonyl-β,β-dibromodehydroalanine with several boronic benzo[*b*]thiophene acids, under Suzuki cross-coupling conditions. Intramolecular cyclization of these dehydroamino acids gave pyrrole derivatives.



i) 7-boronic-2,3-dimethylbenzo[*b*]thiophene acid, $PdCl_2(PPh_3)_2$, Na_2CO_3, DME/H_2O (10:1). ii) $Pd(OAc)_2$, $Cu(OAc)_2$, DMF.

4-Amino-1-oxyl-2,2,6,6-tetramethylpiperidine-3-carboxylic acid (β-TOAC), the first spin-labelled, cyclic, chiral β-amino acid resolved in an enantiomerically pure state

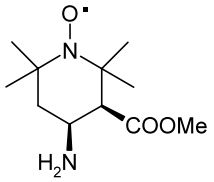
Tetrahedron Letters 44 (2003) 3381

Karen Wright,[a,*] Marco Crisma,[b] Claudio Toniolo,[b] Roland Török,[c] Antal Péter,[c] Michel Wakselman[a] and Jean-Paul Mazaleyrat[a]

[a]*SIRCOB, UMR CNRS 8086, Bât. Lavoisier, University of Versailles, F-78000 Versailles, France*

[b]*Institute of Biomolecular Chemistry, CNR, Department of Organic Chemistry, University of Padova, I-35131 Padova, Italy*

[c]*Department of Inorganic and Analytical Chemistry, University of Szeged, PO Box 440, H-6701 Szeged, Hungary*



(3S,4S) H-β-TOAC-OMe

Enantiopure (3*S*,4*S*) H-β-TOAC-OMe and (3*R*,4*R*) H-β-TOAC-OMe, as well as their N^{β}-Fmoc derivatives, have been synthesized.

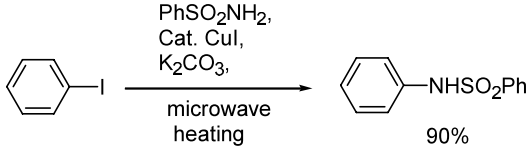
Copper-catalyzed *N*-arylation of sulfonamides with aryl bromides and iodides using microwave heating

Tetrahedron Letters 44 (2003) 3385

Huan He and Yong-Jin Wu*

Bristol-Myers Squibb Pharmaceutical Research Institute, 5 Research Parkway, Wallingford, CT 06492, USA

The copper-catalyzed *N*-arylation of sulfonamides with a variety of aryl bromides and iodides using microwave heating is described.



Synthesis and enzymatic incorporation of a novel, bicyclic pyrimidine nucleoside: a thymidine mimic

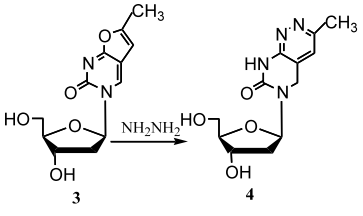
Tetrahedron Letters 44 (2003) 3387

David Loakes,[a] Daniel M. Brown,[a] Stephen A. Salisbury,[b] Mark G. McDougall,[c] Constantin Neagu,[c] Satyam Nampalli[c] and Shiv Kumar[c,*]

[a]*Medical Research Council, Laboratory of Molecular Biology, Hills Road, Cambridge CB2 2QH, UK*

[b]*Cambridge Crystallographic Data Centre, 12 Union Road, Cambridge CB2 1EZ, UK*

[c]*Amersham Biosciences, 800 Centennial Avenue, Piscataway, NJ 08855, USA*



A novel, bicyclic thymidine mimic (**4**) has been synthesized by reacting hydrazine with the furanopyrimidine nucleoside (**3**), in a nucleophilic ring-opened rearrangement reaction and the substrate activity tested with DNA polymerases.

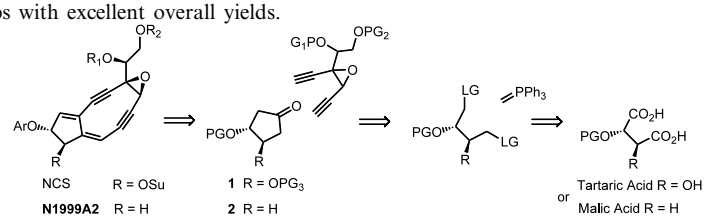
Asymmetric synthesis of the cyclopentanones related to NCS and N1999A2 antitumor antibiotics

Tetrahedron Letters 44 (2003) 3391

Philippe Bertus, Jing-Heng Zhang, Geoffroy Sir, Jean-Marc Weibel and Patrick Pale*

Laboratoire de synthèse et réactivité organique, associé au CNRS, Institut Le Bel, Université L. Pasteur, 67000 Strasbourg, France

Protected mono- or dihydroxylated cyclopentanones, precursors for the core of the antitumor antibiotics NCS and N1999A2, **1** and **2**, were obtained in six to eight steps with excellent overall yields.

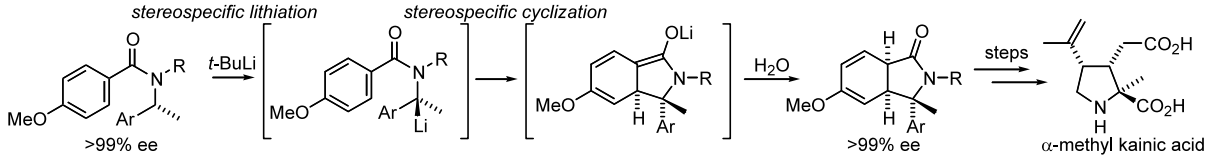


Synthesis of α-methyl kainic acid by stereospecific lithiation–dearomatizing cyclization of a chiral benzamide

Tetrahedron Letters 44 (2003) 3397

Jonathan Clayden,* Faye E. Knowles and Christel J. Menet

Department of Chemistry, University of Manchester, Oxford Road, Manchester M13 9PL, UK

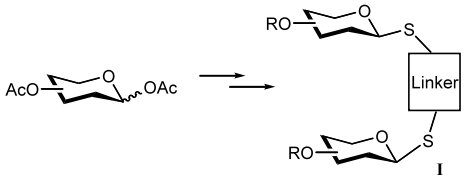


C_2-Symmetric bis-thioglycosides as new ligands for palladium-catalyzed allylic substitutions

Tetrahedron Letters 44 (2003) 3401

Noureddine Khiar,[a,*] Cristina S. Araújo,[a,b] Eleuterio Alvarez[a] and Inmaculada Fernández[a,*]

[a]*Instituto de Investigaciones Químicas, C.S.I.C-Universidad de Sevilla, c/Américo Vespucio, s/n, Isla de la Cartuja, 41092 Sevilla, Spain*
[b]*Departamento de Química Orgánica y Farmacéutica, Facultad de Farmacia, Universidad de Sevilla, 41012 Sevilla, Spain*



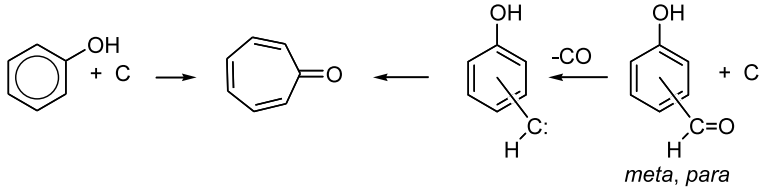
Bis-thioglycosides type I are used for the first time in palladium-catalyzed allylic substitutions.

Trapping of a cycloheptatetraene in the reaction of atomic carbon with phenol

Tetrahedron Letters 44 (2003) 3405

Fatma Sevin,[a] Ikay Sökmen,[a] Bülent Düz[a] and Philip B. Shevlin[b,*]

[a]*Department of Chemistry, Hacettepe University, Beytepe-Ankara 06532, Turkey*
[b]*Department of Chemistry, Auburn University, Auburn, AL 36849-5312, USA*



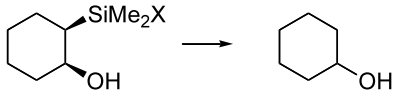
Tetrahedron Letters 44 (2003) 3409

Desilylation versus elimination reactions of β-hydroxysilanes: effect of substituents on silicon

Paul F. Hudrlik,* Petros Gebreselassie, Laykea Tafesse and Anne M. Hudrlik

Department of Chemistry, Howard University, Washington, DC 20059, USA

β-Hydroxysilanes having *i*-PrO, HO, or H ligands on the silicon undergo base-induced desilylation reactions with much less competition from β elimination than the corresponding Me_3Si compounds.



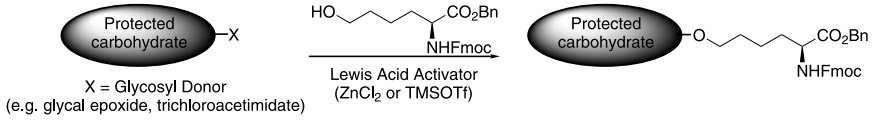
Tetrahedron Letters 44 (2003) 3413

Hydroxynorleucine as a glycosyl acceptor is an efficient means for introducing amino acid functionality into complex carbohydrates

Stacy J. Keding,[a] Endo Atsushi,[a] Kaustav Biswas,[a] Andrzej Zatorski,[a] Don M. Coltart[a] and Samuel J. Danishefsky[a,b,*]

[a]*Laboratory for Bioorganic Chemistry, Sloan-Kettering Institute for Cancer Research, 1275 York Avenue, New York, NY 10021, USA*

[b]*Department of Chemistry, Columbia University, New York, NY 10027, USA*



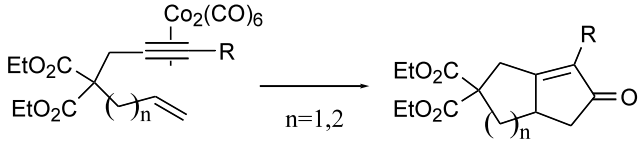
Tetrahedron Letters 44 (2003) 3417

Aqueous-phase, thermal Pauson–Khand reactions in the presence of surfactants

Marie E. Krafft,* James A. Wright and Llorente V. R. Boñaga

Department of Chemistry and Biochemistry, The Florida State University, Tallahassee, FL 32306-4390, USA

Stoichiometric Pauson–Khand reactions proceed efficiently in water in the presence of surfactants.

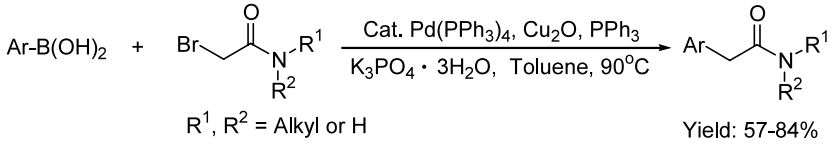


Tetrahedron Letters 44 (2003) 3423

Palladium-catalyzed synthesis of arylacetamides from arylboronic acids

Ya-Zhen Duan and Min-Zhi Deng*

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

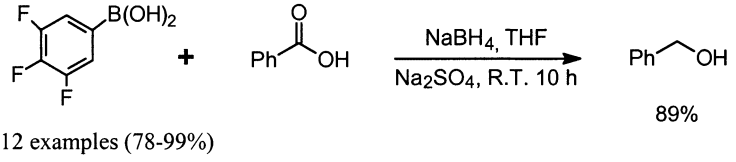


Tetrahedron Letters 44 (2003) 3427

An extremely simple, convenient and mild one-pot reduction of carboxylic acids to alcohols using 3,4,5-trifluorophenylboronic acid and sodium borohydride

R. H. Tale,* K. M. Patil and S. E. Dapurkar

School of Chemical Sciences, S. R. T. M. University, Nanded-431 606 Maharastra, India



12 examples (78-99%)