

GRAPHICAL ABSTRACTS

PREPARATION OF ETHER-LINKED 2-ACETAMIDO-2-DEOXY β -GLYCO-LIPIDS VIA ZINC CHLORIDE PROMOTED COUPLING OF $\text{Ac}_4\text{GlcNAc-Cl}$

Tetrahedron Letters, 1994, 35, 505

WITH LIPID HYDROXY GROUPS. Erukulla Ravi Kumar, Hoe-Sup Byun, Sihe Wang, and Robert Bittman,* Department of Chemistry and Biochemistry, Queens College of The City University of New York, Flushing, NY 11367-1597 USA

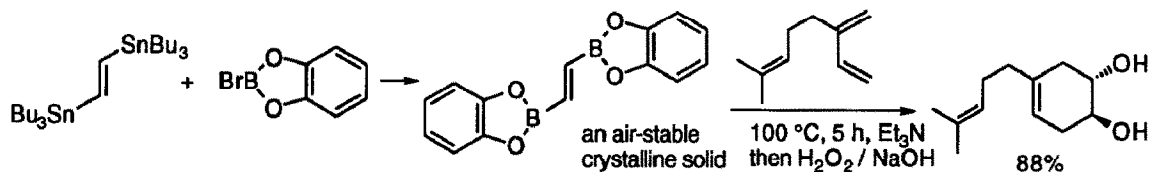
The combination of ZnCl_2 and "promoter" is shown to catalyze the transfer of $\text{Ac}_4\text{GlcNAc-Cl}$ (1b) to saturated primary alcohols as lipid acceptors, giving 2-acetamidoglycolipids 3 in good yields without prior protection of the 2-amino group. The initially formed β anomer undergoes isomerization on prolonged reaction times to afford the α glycolipids (4).



VINYLBORANES AS *trans*-DIHYDROXYETHYLENE

EQUIVALENTS FOR DIELS-ALDER REACTIONS. Daniel A. Singleton,* and Anikó M. Redman, Department of Chemistry, Texas A&M University, College Station, Texas 77843 USA

Tetrahedron Letters, 1994, 35, 509

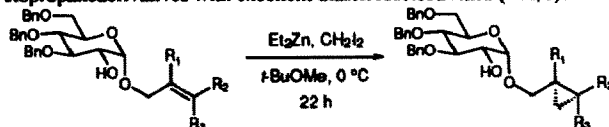


THE USE OF α -D-GLUCOPYRANOSIDES AS SURROGATES FOR THE β -L-GLUCOPYRANOSIDES IN THE STEREOSELECTIVE CYCLOPROPANATION REACTION.

A. B. Charette,* N. Turcotte, and J.-F. Marcoux. Département de Chimie, Université de Montréal, Montréal, Québec, Canada, H3C 3J7.

Tetrahedron Letters, 1994, 35, 513

Treatment of substituted allyl α -D-glucopyranosides with $\text{Et}_2\text{Zn}/\text{CH}_2\text{I}_2$ in *t*-BuOMe produced the corresponding cyclopropanoderivatives with excellent diastereoselectivities (>11/1):

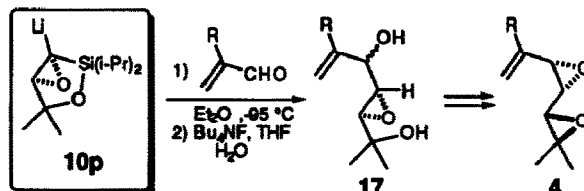


A SHORT SYNTHESIS OF THE ANTIMITOTIC ALLYLIC DIEPOXIDE FUNCTIONAL ARRAY OF SPATOL

Krishna K. Murthi and Robert G. Salomon*, Department of Chemistry, Case Western Reserve University, Cleveland, OH 44106-2699

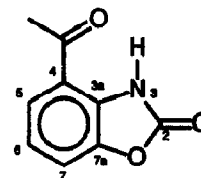
Tetrahedron Letters, 1994, 35, 517

An α -lithio epoxide 10p is a novel and effective reagent for conversion of 2-substituted acroleins into epoxydiols 17 that are precursors of the antimitotic allylic diepoxide functional array of the spatol sidechain 4.



Isolation and Characterization of 4-Acetyl-benzoxazolin-2-one (4-ABOA), a new Benzoxazolinone from *Zea mays*. David A. Fielder^{*}, F. Williams Collins, Barbara A. Blackwell, Corinne Bensimon and John W. ApSimon. ^{*}Plant Research Centre, Agriculture Canada, Ottawa, Ontario, Canada, K1A 0C6, Centre for Food and Animal Research, Agriculture Canada, Ottawa, Ontario, Canada, K1A 0C6, Ottawa-Carleton Chemistry Institute, University of Ottawa, Ontario, Canada, K1N 6N5, Ottawa-Carleton Chemistry Institute, Carleton University, Ottawa, Ontario, Canada, K1S 5B6.

The previously unreported 4-acetyl-benzoxazolin-2-one (4-ABOA, 1), was isolated from corn kernels. Its structure was elucidated by MS, NMR and X-Ray crystallography.



4-ABOA (1)

FACILE OPTICAL RESOLUTION OF DL-1,4,5,6-TETRA-*O*-BENZYL-MYO-INOSITOL: KEY SYNTHONS FOR THE PHOSPHOINOSITIDES

R. Aneja,^{*} and A. Parra, Nutrimed Biotech, Cornell University Research Park, Langmuir Laboratory, Ithaca, NY 14850 USA

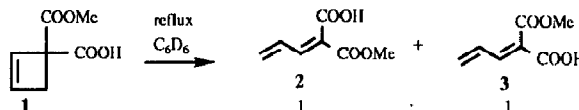
The facile preparation of 1D-1,4,5,6-tetra-*O*-benzyl-*myo*-inositol (5) and its enantiomer 1L-1,4,5,6-tetra-*O*-benzyl-*myo*-inositol (6) from the corresponding racemate via the 1-(1'*S*)-(-)-camphanic acid esters is described.



COMPETITION BETWEEN CARBOMETHOXY AND CARBOXYL IN ELECTROCYCLIC OPENING OF A 3,3-DISUBSTITUTED CYCLOBUTENE

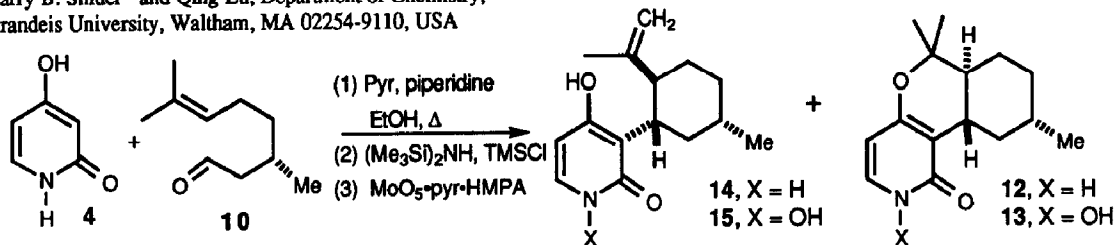
Satomi Niwayama,^a K. N. Houk^{a*} and Takenori Kusumi^b
a. Department of Chemistry and Biochemistry, University of California, Los Angeles, CA, 90024, U. S. A.
b. Faculty of Pharmaceutical Sciences, Tokushima University, Tokushima, Japan, 770

Thermolysis of 3-carbomethoxycyclobutene-3-carboxylic acid, 1, produced two dienes, 2 and 3, in equal ratio, in accord with our theoretical prediction. The structure analysis of the dienes was made by ³J_{CH} long range coupling constants between the carbonyls and the β-protons.



A TWO-STEP SYNTHESIS OF PYRIDOXATIN ANALOGUES

Barry B. Snider^{*} and Qing Lu, Department of Chemistry, Brandeis University, Waltham, MA 02254-9110, USA

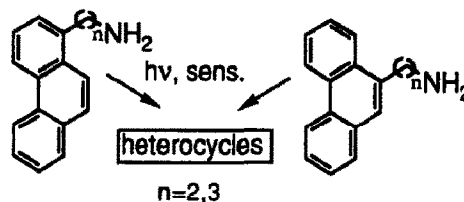


Photosensitized Synthesis of Phenanthrene Heterocycles From 1- and 9-(aminoalkyl)phenanthrenes

Tetrahedron Letters, 1994, 35, 535

Frederick D. Lewis*, G. Dasharatha Reddy and Bliss E. Cohen
Department of Chemistry, Northwestern University,
Evanston, Illinois 60208-3113

The photosensitized electron transfer reactions of several 1- and 9-(aminoalkyl)phenanthrenes with *meta*-dicyanobenzene have been investigated. These reactions provide an efficient method for the construction of the skeletal structures of the aporphine, phenanthropiperidine, and phenanthrozepine alkaloids.



CONVERSION OF ARACHIDONIC ACID TO THE PROSTAGLANDIN ENDOPEROXIDE PGG₂, A CHEMICAL ANALOG OF THE BIOSYNTHETIC PATHWAY

Tetrahedron Letters, 1994, 35, 539

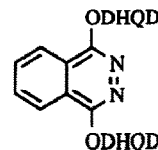
E. J. Corey and Zhe Wang
Department of Chemistry, Harvard University, Cambridge, Massachusetts, 02138



A COMPARISON OF LIGANDS PROPOSED FOR THE ASYMMETRIC DIHYDROXYLATION

Gerard A. Crispino, Atsushi Makita, Zhi-Min Wang and K. Barry Sharpless, Department of Chemistry, The Scripps Research Institute, La Jolla, California 92037, USA

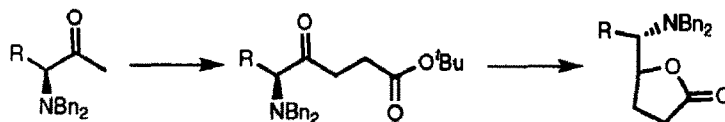
Comparative data for several ligands proposed recently for use in the osmium-catalyzed asymmetric dihydroxylation (AD) are presented.



Diastereoselective Synthesis of the Key Lactone Intermediate for the Preparation of Hydroxyethylene Dipeptide Isosteres

Bharat R. Lagu and Dennis C. Liotta*
Department of Chemistry, Emory University, Atlanta, GA 30322.

An efficient and highly stereoselective route for preparing hydroxyethylene dipeptide isosteres from α -*N,N*-dibenzylamino ketones has been developed.



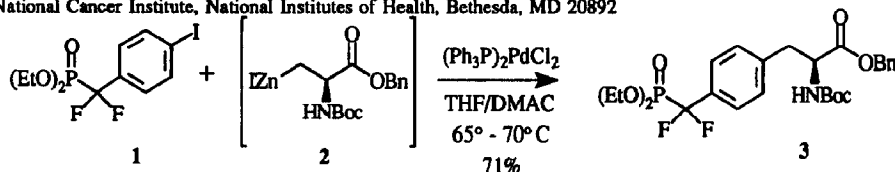
Tetrahedron Letters, 1994, 35, 547

Tetrahedron Letters, 1994, 35, 551

Enantioselective Synthesis of N-Boc and N-Fmoc Protected Diethyl 4-Phosphono (difluoromethyl)-L-phenylalanine; Agents Suitable for the Solid-Phase Synthesis of Peptides Containing Nonhydrolyzable Analogues of O-Phosphotyrosine.

Mark S. Smyth and Terrence R. Burke, Jr.

Laboratory of Medicinal Chemistry, Bldg. 37, Rm. 5C06, Developmental Therapeutics Program, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892

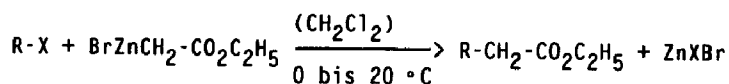


NEUE ANWENDUNGSMÖGLICHKEITEN DES REFORMATZKY-REAGENZ ZUR SYNTHESE SUBSTITUIERTER ESSIGSÄUREETHYLESTER

Tetrahedron Letters, 1994, 35, 555

Kaspar Bott, Hauptlaboratorium der BASF Aktiengesellschaft, D-67056 Ludwigshafen, Germany

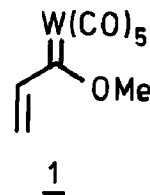
In dichloromethane as solvent the Reformatzky reagent from ethyl bromoacetate can react with diphenylchloromethane, 1-bromoadamantane and 1-phenylethyl chlorides to form the corresponding substituted ethyl acetates in excellent to good yields.



DIE REAKTIVITÄT VON PENTACARBONYL-[METHOXY-VINYLCARBEN]-WOLFRAM ALS DIENOPHIL BEI (4+2)-CYCLOADDITIONEN.

Holger Adam, Thomas Albrecht and Jürgen Sauer, Institut für Organische Chemie der Universität Regensburg, D-93040 Regensburg, Germany

The vinyl-methoxy-carbene complex **1** has been proved to be a reactive and selective 2 π -component in (4+2)-cycloadditions.

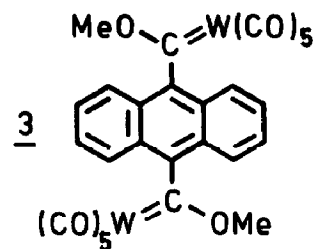


Tetrahedron Letters, 1994, 35, 557

μ -[9,10-ANTHRACENDIYL-BIS-METHOXY-CARBEN]-BIS(PENTACARBONYL-WOLFRAM) - EIN ZWEIKERNIGER ORGANYL(ALKOXY)-CARBEN-KOMPLEX. Thomas Albrecht and Jürgen Sauer, Institut für Organische Chemie der Universität Regensburg, D-93040 Regensburg, Germany
Heinrich Nöth, Institut für Anorganische Chemie der Universität München, D-80333 München, Germany

The new carbene complex **3** has been prepared.

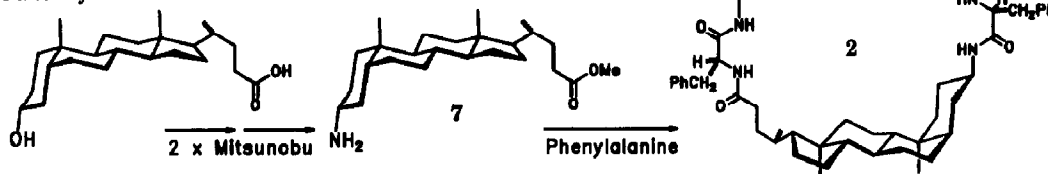
Tetrahedron Letters, 1994, 35, 561



A Steroidal Cyclopeptide, Synthesis and Shape of the Cavity.

Dieter Albert and Martin Feigel¹, Institut für Organische Chemie, Universität Erlangen, Henkestr.42, D-91054 Erlangen, Germany.

Cyclo-[3 α -(phenylalaninylamino)-5 β -cholanate]₂ **2** is synthesized from lithocholic acid and (S)-phenylalanine. NMR data and MM3 calculations support a cavity in **2**.

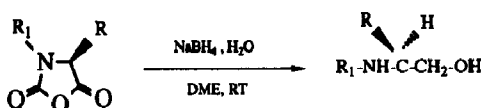
**SYNTHESIS OF CHIRAL N-PROTECTED β -AMINO ALCOHOLS****BY THE USE OF UNCAs**

Jean-Alain Fehrentz¹, Jean-Christophe Califano¹, Muriel Amblard¹, Albert Loffet² & Jean Martinez^{1*}

¹ Chimie et Pharmacologie de Molécules d'Intérêt Biologique, CNRS, Faculté de Pharmacie, 15 av. C. Flahault, 34060 Montpellier, France.

² Propeptide, 91710 Vert-le-Petit, France.

N-protected β -amino alcohol derivatives are easily prepared in high yields by sodium borohydride reduction of the N-carboxyanhydride (UNCAs) amino acid derivatives. The reaction proceeds smoothly, without racemization.



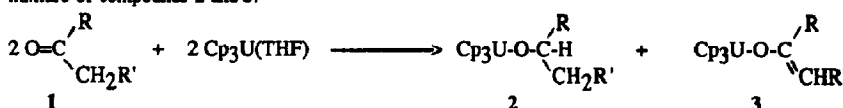
R₁ = Boc, Fmoc, Z

REACTION OF SATURATED KETONES WITH A TRIVALENT URANIUM COMPLEX. ISOLATION AND CHARACTERIZATION OF THE ALCOHOLATE AND ENOLATE PRODUCTS

Raymond Adam, Claude Villiers and Michel Ephriükhine*

Service de Chimie Moléculaire, associé au CNRS, CEA CE Saclay, 91191 Gif sur Yvette, France

Saturated ketones **1** reacted with the uranium (III) complex Cp₃U(THF) (Cp = η -C₅H₅, THF = tetrahydrofuran) to give an equimolar mixture of compounds **2** and **3**.

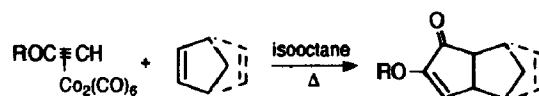
**PRACTICAL ASYMMETRIC VERSION OF THE INTERMOLECULAR PAUSON-KHAND REACTION**

Vania Bernardes^a, Xavier Verdaguer^b, Nathalie Kardos^a, Antoni Riera^{b*}, Albert Moyano^{b*}, Miquel A. Pericàs^{b*}, Andrew E. Greene^{a*}

^a LEDSS, Chimie Recherche, Université J. Fourier, BP 53X, 38041 Grenoble, France

^b Departament de Química Orgànica, Universitat de Barcelona, c/ Martí i Franquès, 1-11, 08028 Barcelona, Spain

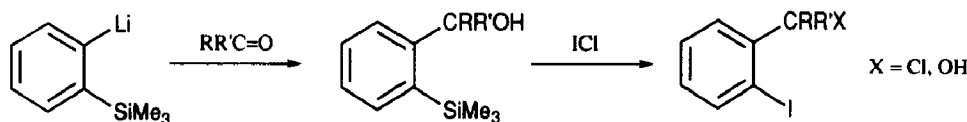
The first practical asymmetric version of the intermolecular Pauson-Khand reaction has been developed based on novel chiral (non-racemic) alkoxy acetylene dicobalt hexacarbonyl complexes. The major adduct from (1R, 2S)-2-phenylcyclohexyloxyethyne and norbornadiene, isolated in 58% yield, is shown to be useful for obtaining chiral 4-substituted 2-cyclopentenones.



***o*-Trimethylsilylphenyllithium
as a Synthetic Equivalent of *o*-Halophenyllithium**

Masaki Takahashi,* Ken Hatano, Mikio Kimura, Toshinari Watanabe, Takeshi Oriyama, and Gen Koga
Department of Chemistry, Faculty of Science, Ibaraki University, 2-1-1 Bunkyo, Mito 310, JAPAN

o-Iodophenylcarbinols and carbonyl chlorides were obtained by the reaction of *o*-trimethylsilylphenyllithium with carbonyl compounds followed by halogenodesilylation with ICl.

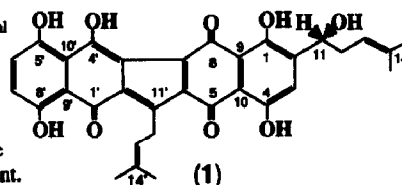


**Shikomitolins A, B, C and D, Novel Dimeric Naphthoquinone
Metabolites Obtained from Shikonin by Human Intestinal Bacteria**

Meslehy R. Meslehy,^a Shigetoshi Kadota,^{a,*} Koji Tsubono,^b Akihiko Kusai,^c Masao Hattori^a and Tsuneo Namba^a

^aResearch Institute for Wakan-Yaku (Traditional Sino-Japanese Medicines),^a Toyama Medical and Pharmaceutical University, 2630 Saginai, Toyama, 930-01, Analytical Instruments Training and Application Center, JEOL Datum Ltd.,^b and Scientific Instrument Division, JEOL Ltd.,^c Musashino, Akishima, Tokyo 196, Japan

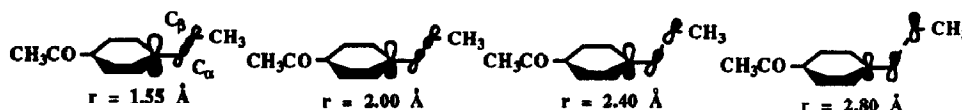
Shikomitolin A (1) and three related compounds have been isolated after anaerobic incubation of shikonin with *Bacteroides fragillis* subsp. *thetaotus*, and their structures have been determined by means of 2-D NMR spectroscopy including INADEQUATE experiment.



**THEORETICAL STUDY ON THE PHOTOCHEMICAL C-C BOND
CLEAVAGE REACTION VIA ACETOPHENONE-TYPE EXCITED
TRIPLET STATE.**

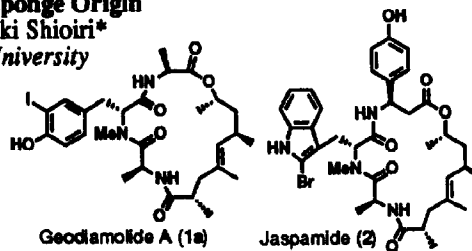
Nobuyuki Ichinose, Kazuhiko Mizuno, Yoshio Otsuji,* and Hiroto Tachikawa,** Department of Applied Chemistry, College of Engineering, University of Osaka Prefecture, Sakai, Osaka 593, Japan *Faculty of Engineering, Hokkaido University, Sapporo 060, Japan

A σ - π interaction in the lowest triplet state of 4-acetylphenylpropane was studied as a function of C_{α} - C_{β} bond length (r) by means of semi-empirical MNDO MO calculations.



**Efficient Syntheses of Geodiamolide A and Jaspamide, Cytotoxic
and Antifungal Cyclic Depsipeptides of Marine Sponge Origin**
Takayuki Imacda, Yasumasa Hamada,* and Takayuki Shioiri*
Faculty of Pharmaceutical Sciences, Nagoya City University
Tanabe-dori, Mizuho-ku, Nagoya 467, JAPAN

Geodiamolide A (1a) and jaspamide (2) have been efficiently synthesized by use of the Evans asymmetric alkylation, the Mitsunobu esterification, and the DPPA macrolactamization as key steps.

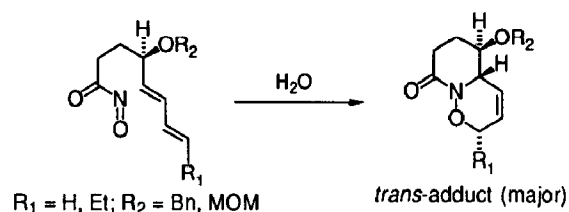


Enhanced Stereoselectivity in Aqueous Intramolecular Hetero Diels–Alder Cycloaddition of Chiral Acylnitroso Compounds

Tetrahedron Letters, 1994, 35, 595

Masaichi Naruse, Sakae Aoyagi, and Chihiro Kibayashi*
Tokyo College of Pharmacy, Horinouchi, Hachioji,
Tokyo 192-03, Japan

Intramolecular aqueous hetero Diels–Alder reaction of the chiral acylnitroso compounds shows pronounced enhancement of the trans selectivity compared with the results obtained by employing nonaqueous conditions.

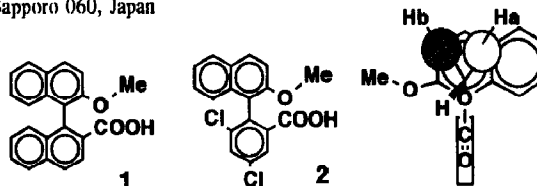


A NEW METHOD FOR ESTABLISHMENT OF ABSOLUTE CONFIGURATIONS OF SECONDARY ALCOHOLS BY NMR SPECTROSCOPY

Tetrahedron Letters, 1994, 35, 599

Yukiharu Fukushi, Chie Yajima and Junya Mizutani, Department of Applied Bioscience, Faculty of Agriculture, Hokkaido University, Kita-ku, Sapporo 060, Japan

Axially chiral carboxylic acids **1** and **2** are useful as chiral derivatizing agents to determine absolute configurations of secondary alcohols by ^1H and ^{13}C NMR.

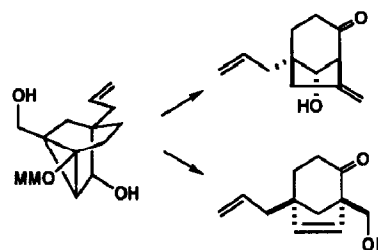


FACILE SYNTHESIS OF FUNCTIONALIZED BICYCLO-[3.2.1]OCTANE SYSTEMS USING THE SELECTIVE FRAGMENTATION REACTION

Tetrahedron Letters, 1994, 35, 603

Shoichi Sagawa, Hiroto Nagaoka, and Yasuji Yamada*
Tokyo College of Pharmacy, Horinouchi, Hachioji, Tokyo 192-03, Japan

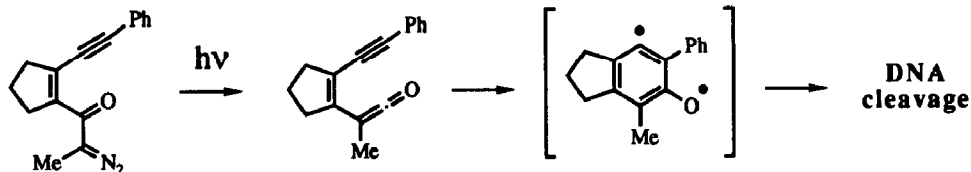
The selective fragmentation of tricyclo[3.2.1.0^{2,7}]octane derivative gave different type of bicyclo[3.2.1]octane derivatives.



PHOTOINDUCED DNA CLEAVAGE BY DESIGNED MOLECULES WITH CONJUGATED ENE-YNE-KETENE FUNCTIONALITIES

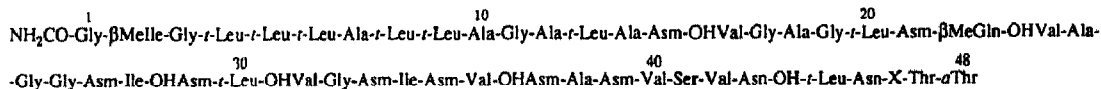
Tetrahedron Letters, 1994, 35, 605

Kazuhiko Nakatani,*[†] Sachihiko Ise,[†] Satoshi Maekawa,[‡] and Isao Saito*[‡]
[†]Institute of Organic Chemistry, Faculty of Science, Osaka City University, Osaka 558, Japan
[‡]Department of Synthetic Chemistry and Biological Chemistry, Faculty of Engineering, Kyoto University, Kyoto 606-01, Japan



Polytheonamides, Unprecedented Highly Cytotoxic Polypeptides from the Marine Sponge *Theonella swinhoei*
2. Structure Elucidation

Toshiyuki Hamada, Takeo Sugawara, Shigeki Matsunaga, and Nobuhiro Fusetani*
 Laboratory of Marine Biochemistry, Faculty of Agriculture, The University of Tokyo, Bunkyo-ku, Tokyo 113, Japan

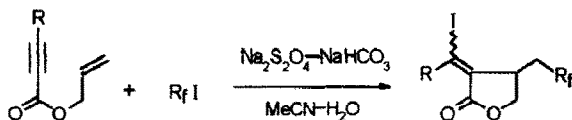


Polytheonamide A and B X=Gln
 Polytheonamide C X= β MeGln

A Convenient Stereoselective Synthesis of Fluorinated α -Alkylidene- γ -Butyrolactone Derivatives

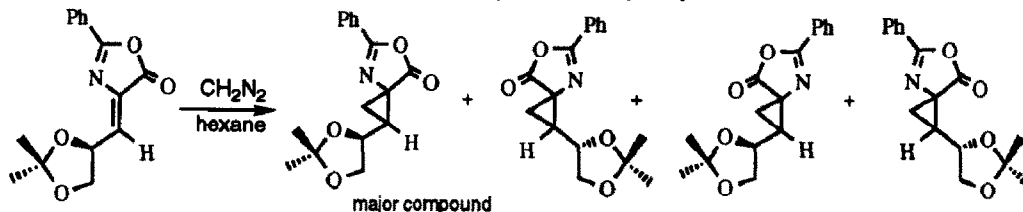
Xiyan Lu*, Zhong Wang and Jianguo Ji
 Shanghai Institute of Organic Chemistry, Academia Sinica
 354 Fenglin Lu, Shanghai 200032, China

Fluorinated α -alkylidene- γ -butyrolactone derivatives were synthesized via radical perfluoroalkylation-cyclization.



1,3-DIPOLAR CYCLOADDITION OF DIAZOMETHANE WITH A CHIRAL AZLACTONE

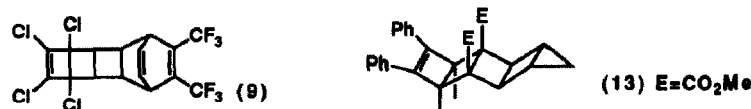
Carlos Cativiela*, Maria D. Diaz-de-Villegas, Ana I. Jimenez and Fernando Lahoz
 Instituto de Ciencia de Materiales de Aragón. Universidad de Zaragoza-CSIC, Zaragoza, Spain.



PHOTOISOMERISATION OF BICYCLO[4.2.0]OCTADIENES TO TRICYCLO[4.2.0]OCTENES: APPLICATION TO THE SYNTHESIS OF [n]LADDERANES.

Ronald N. Warrener,* Ian G. Pitt, Eric E. Nunn and Colin H.L. Kennard
 Centre for Molecular Architecture, University of Central Queensland, Rockhampton, Queensland, 4702, Australia.

A combination of cycloaddition and photochemical transformations are used to make [n]ladderanes (9) and (13) from simple precursors.



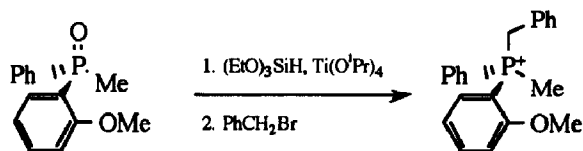
Tetrahedron Letters, 1994, 35, 625

TITANIUM (IV) CATALYSIS IN THE REDUCTION OF PHOSPHINE OXIDES.

Tristan Coumbe, Nicholas J.

Lawrence* and Faiz Muhammad, Dept. of Chemistry, UMIST, PO Box 88, Manchester, M60 1QD, UK.

Treatment of phosphine oxides with $(EtO)_3SiH/Ti(O^iPr)_4$ leads to the phosphine with retention of configuration at phosphorus.

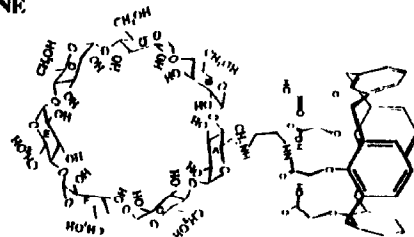


Tetrahedron Letters, 1994, 35, 629

A NEW WATER SOLUBLE HOST COMPOUND POSSESSING TWO DIFFERENT HYDROPHOBIC RECOGNITION CAVITIES: CALIX[4]ARENE DERIVATIVE CONJUGATED WITH MONOFUNCTIONALIZED β -CYCLODEXTRIN.

Franca D'Alessandro^a, Fabio G. Gulino^b, Giuseppe Impellizzeri^a, Giuseppe Pappalardo^b, Enrico Rizzarelli^{a,b}, Domenico Sciotto^a and Graziella Vecchio^b. ^aDipartimento di Scienze Chimiche, Università di Catania and ^bIstituto per lo Studio delle Sostanze Naturali di Interesse Alimentare e Chimico Farmaceutico, CNR, V.le A. Doria 8, 95125 Catania, Italy.

Reaction of a calixarene derivative with a monofunctionalized β -cyclodextrin afforded to a new compound.



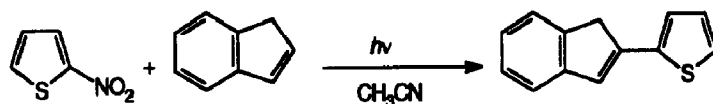
Tetrahedron Letters, 1994, 35, 633

PHOTOCHEMICAL COUPLING BETWEEN INDENE AND NITROARENES

Maurizio D'Auria

Dipartimento di Chimica, Università della Basilicata, Via N. Sauro 85, 85100 Potenza, Italy

The photochemical reaction between indene and nitroarenes gave an unusual reaction performing the substitution of the nitro group



Tetrahedron Letters, 1994, 35, 637

AN UNUSUAL RADICAL FRAGMENTATION OF 8a-CYCLOALKENYLMETHYL WIELAND-MIESCHER KETONES

MEDIATED BY TRI-n-BUTYL TIN HYDRIDE. T. Rajamannar^a and K.K. Balasubramanian^b

^aCentre for Agrochemical Research, SPIC Science Foundation, 110 Mount Road, Madras 600 032. ^bDepartment of Chemistry Indian Institute of Technology, Madras 600 036, INDIA.

