

GRAPHICAL ABSTRACTS

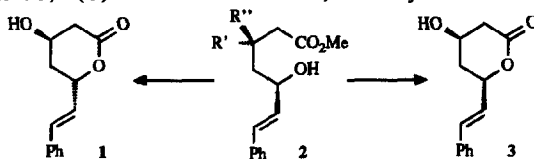
Tetrahedron: Asymmetry 1993, 4, 153

ENZYME-CATALYZED LACTONIZATION OF METHYL
(±)-(E)-3,5-DIHYDROXY-7-PHENYL-6-HEPTENOATES. -
A COMPARISON OF THE BEHAVIOUR OF *SYN*- AND *ANTI*-COMPOUNDS

Birgitta Henkel, Annamarie Kunath and Hans Schick*

Centre of Selective Organic Synthesis, Rudower Chaussee 5, D(O)-1199 Berlin-Adlershof, Germany

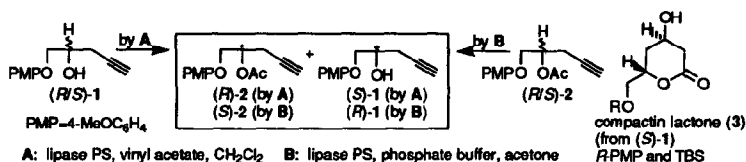
Pancreatin catalyzes the preferential formation of the (3*R*,5*S*)-lactone 1 from the *syn*-diol *rac*-2 (R' = OH; R'' = H), whereas the lipase from *Candida sp.* 382 gives rise to the preferential formation of the (3*R*,5*R*)-lactone 3 from the *anti*-diol *rac*-2 (R' = H; R'' = OH).



ENANTIOMPLEMENTARY RESOLUTION OF 4-HYDROXY-
5-(4-METHOXYPHENOXY)-1-PENTYNE USING THE SAME LIPASE

Seiichi Takano,* Masaki Setoh, and Kunio Ogasawara

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



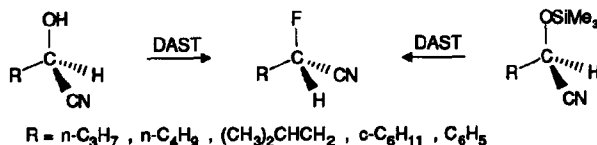
Tetrahedron: Asymmetry 1993, 4, 157

PREPARATION OF 2-FLUORONITRILES

Franz Effenberger* and Uwe Stelzer

Institut für Organische Chemie, Universität Stuttgart, Germany

2-Fluoronitriles were obtained from unprotected or *O*-trimethylsilyl-protected cyanohydrins by fluorination with DAST or by substitution of α -sulfonyloxynitriles with fluoride.



Tetrahedron: Asymmetry 1993, 4, 161

DIRECT GAS CHROMATOGRAPHIC ENANTIOMERIC
RESOLUTION OF JUVENILE HORMONES I - III

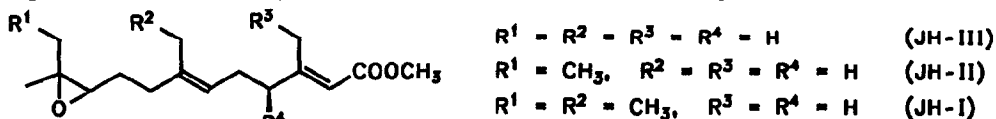
Tetrahedron: Asymmetry 1993, 4, 165

Wilfried A. König¹, Bärbel Gehrcke¹, Martin G. Peter² and Glenn D. Prestwich³

¹Institut für Organische Chemie, Universität Hamburg, D-2000 Hamburg 13, FRG

²Institut für Organische Chemie, Universität Bonn, D-5300 Bonn 1, FRG

³Department of Chemistry, State University of New York, Stony Brook, NY



Vitamin C in Organic Synthesis. II. C-2 Methylation.*Tetrahedron: Asymmetry* 1993, 4, 169

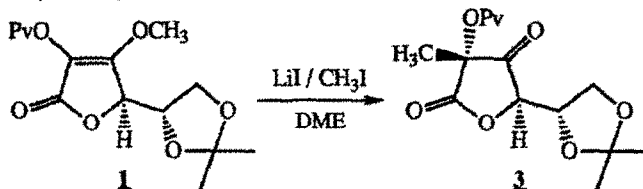
A. J. Poss* and R. K. Belter

Dept. of Chemistry, SUNY at Buffalo, Buffalo, NY 14214

C. Bensimon

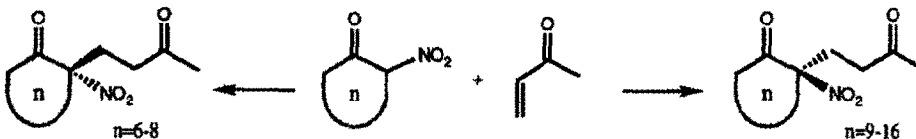
Dept. of Chemistry, Univ. of Ottawa, Ottawa, Ont. K1N 6N5

L-Ascorbic acid derivative **1** was methylated at the 2 position via oxygen to carbon transfer to give **2** in 61% yield with 92% d.e. in the R configuration.

**UNEXPECTED CHANGE OF ABSOLUTE CONFIGURATION IN ASYMMETRIC MICHAEL ADDITION OF METHYL VINYL KETONE TO 2-NITROCYCLOALKANONES.***Tetrahedron: Asymmetry* 1993, 4, 173

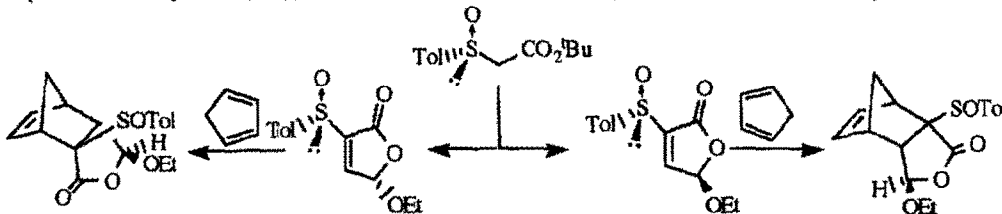
Anita Latvaia, Stephan Stanchev, Anthony Linden and Manfred Hesse*, Department of Organic Chemistry, University of Zürich, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland

Michael addition of methyl vinyl ketone to 2-nitrocycloalkanones catalyzed by cinchonine affords adducts in high chemical yields and in up to 60% e.e. The absolute configuration of the products depends on the ring size.

**Asymmetric Diels Alder Reactions of γ -Alkoxy- α -sulfinylbutenolides***Tetrahedron: Asymmetry* 1993, 4, 177

J. Carlos Carretero, J.L. García Ruano, A. Lorente and F. Yuste.

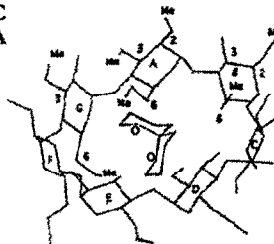
Departamento de Química (C-1), Universidad Autónoma de Madrid, Cantoblanco 28049-Madrid, SPAIN.

**INCLUSION, COMPLEXATION AND EFFICIENT ENANTIOMERIC DISCRIMINATION BY REGIOSPECIFIC OERMETHYLATION OF A DIMETHYL- β -CYCLODEXTRIN***Tetrahedron: Asymmetry* 1993, 4, 181

Hervé Galons*, Jallal Gnaïm, Nicole Rysanek, Geneviève LeBas, Françoise Villain, Georges Tsoucaris*

Faculté de Pharmacie, 4, avenue de l'Observatoire 75270 Paris FRANCE.

Resolution of 1,7-dioxaspiro(5,5)undecane by the formation of diastereoisomeric inclusion complexes in an unsymmetrically methylated- β -cyclodextrin.

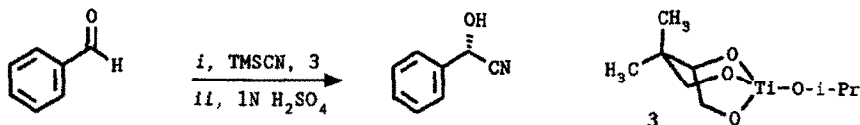


(S)-3,3-Dimethyl-1,2,4-Butanetriol as Ligand for Titanium Catalysed Silylcyanation

Dominique Callant, Dirk Stanssens and Johannes G. de Vries*
DSM-Research, Dept. CP-IM, p.o. box 18, 6160 MD Geleen, The Netherlands

Tetrahedron: Asymmetry 1993, 4, 185

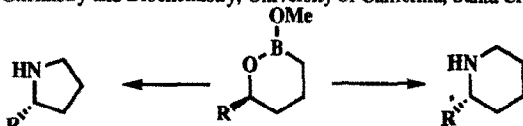
Asymmetric silylcyanation of benzaldehyde in up to 76% e.e. was catalysed by 3



Enantiospecific Synthesis of *N*-Benzyl-2-alkyl Pyrrolidines and Piperidines Mediated by Chiral Organoborane Reagents.

Tom Nguyen, Dan Sherman, David Ball, Michael Solow and Bakthan Singaram*
Department of Chemistry and Biochemistry, University of California, Santa Cruz, Santa Cruz, CA 95064, USA

Tetrahedron: Asymmetry 1993, 4, 189



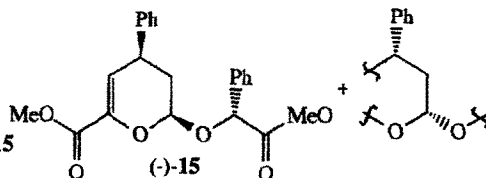
A new general method for synthesizing *N*-benzyl-2-alkylpyrrolidines and *N*-benzyl-2-alkylpiperidines, having very high enantiomeric excess, has been achieved starting from aldehydes and organoborane reagents.

ASYMMETRIC SYNTHESIS OF SUBSTITUTED DIHYDROPYRANS BY DIELS-ALDER HETEROCYCLOADDITIONS INVOLVING CHIRAL VINYL ETHERS AS DIENOPHILES

Gilles Dujardin, Samira Molato and Eric Brown
Faculté des Sciences, avenue Olivier Messiaen, BP535,
72017 Le Mans, France

Tetrahedron: Asymmetry 1993, 4, 193

Methyl *E*-benzylidenepyruvate **1** reacted with methyl (R)-(-)-2-vinyloxyphenylacetate **8b** in the presence of $\text{En}(\text{fod})_3$ as a catalyst, and gave the *endo* adduct (-)-15 in 83% yield and with 72% diastereomeric excess.

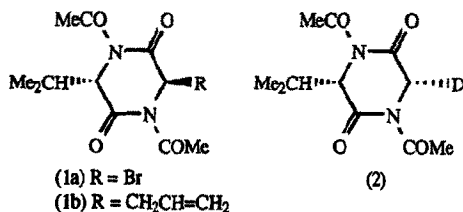


A NEW α -HALOGLYCINE TEMPLATE FOR THE ASYMMETRIC SYNTHESIS OF AMINO ACID DERIVATIVES

Terry W. Badran, Christopher J. Easton,* Ernst Horn, Katherine Kociuba, Bruce L. May, Darren M. Schliebs, and Edward R. T. Tiekink
Departments of Chemistry, University of Adelaide, GPO Box 498, Adelaide, South Australia 5001, and Chemicals Analysis and Standards Division, National Chemical Laboratory, Tsukuba, Ibaraki 305, Japan

Tetrahedron: Asymmetry 1993, 4, 197

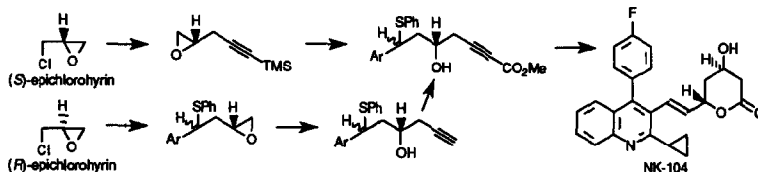
The bromide (**1a**) reacted diastereoselectively with allyltributyltin and deuterium over palladium chloride to give the corresponding α -allyl- and α -deuterio-glycine derivatives (**1b**) and (**2**), respectively.



Enantioconvergent Synthesis of a Promising HMG Co-A Reductase Inhibitor
NK-104 from Both Enantiomers of Epichlorohydrin

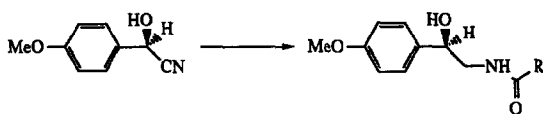
Seiichi Takano,* Takashi Kamikubo, Takumichi Sugihara, Mikio Suzuki,† and Kunio Ogasawara
Pharmaceutical Institute, Tohoku University, Aobayama, Sendai 980, Japan

Tetrahedron: Asymmetry 1993, 4, 201



Roger F.C. Brown, W. Roy Jackson and Tom D. McCarthy*
Department of Chemistry, Monash University, Wellington Road,
Clayton, 3168, Victoria, Australia.

Tetrahedron: Asymmetry 1993, 4, 205



1 E.e. > 99%

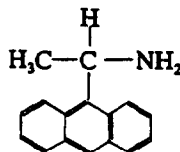
2 R = Ph
3 R = (E)-Ph-CH=CH-

The chiral naturally occurring hydroxy amides tembamide (2) and aegeline (3) are available in high chemical yield from the (R)-cyanohydrin (1).

ANALYSIS OF CHIRAL CARBOXYLIC ACIDS BY
NMR USING NEW OPTICALLY ACTIVE AMINES

Tetrahedron: Asymmetry 1993, 4, 207

Michael Kühn and Joachim Buddrus
Institut für Spektrochemie, Dortmund, Germany



The optically active amines **3** and **4** were prepared. **4** is well suited for the NMR-analysis of chiral carboxylic acids.

4

Unexpected Effects of Lewis Acids in the Synthesis
of Optically Pure 2'-Deoxy-3'-oxacytidine Nucleoside Analogues.

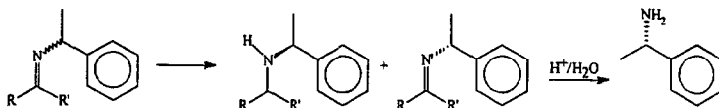
Tetrahedron: Asymmetry 1993, 4, 211

Haolun Jin, H.L. Allan Tse, Colleen A. Evans, Tarek S. Mansour, Christopher M. Beels, Paul Ravenscroft, David C. Humber, Martin F. Jones, Jeremy J. Payne and Michael V.J. Ramsay

TiCl₄ and SnCl₄ promote the formation of dioxolane nucleosides with racemization in the coupling of enantiomerically pure 2'-deoxy-3'-oxaribosides with silylated N-acetylcytosine. The use of TMSOTf, TMSI or TiCl₄(Oi-Pr)₂ furnishes enantiomerically pure cytosine dioxolane nucleosides in low diastereoselectivity.

DIASTERESELECTIVE HYDROGENATION AND KINETIC RESOLUTION OF IMINES
 USING RHODIUM/DIPHOSPHINE CATALYZED HYDROGENATION
 Cornelis Lensink* and Johannes G. de Vries
 DSM Research, P.O.Box 18, 6160 MD Geleen, The Netherlands

Tetrahedron: Asymmetry 1993, 4, 215

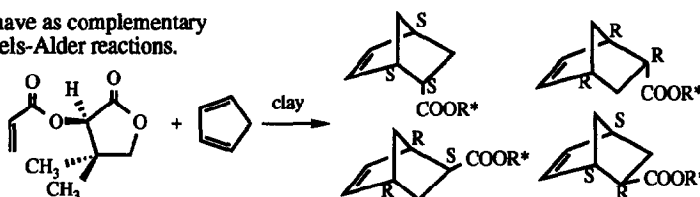


CLAY-CATALYSED ASYMMETRIC DIELS-ALDER REACTION
 OF CYCLOPENTADIENE WITH CHIRAL ACRYLATES
 C. Catiuela, F. Figueras, J. M. Fraile, J. I. García, J. A. Mayoral*.

Tetrahedron: Asymmetry 1993, 4, 223

(-)-Menthol and (R)-pantolactone behave as complementary
 chiral auxiliaries in clay-catalysed Diels-Alder reactions.

endo/exo = 95:5
 53% d.e.
 (1*S*,2*S*,4*S*) major
 cycloadduct



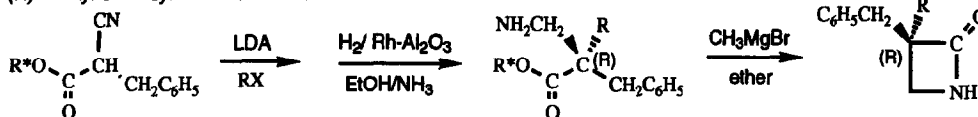
SYNTHESIS OF (*R*)-3-ALKYL-3-BENZYL-2-AZETIDINONES
 IN ENANTIOMERICALLY PURE FORM

Tetrahedron: Asymmetry 1993, 4, 229

Carlos Catiuela*, María D. Díaz-de-Villegas and José A. Gálvez

Instituto de Ciencia de Materiales de Aragón. Departamento de Química Orgánica. Universidad de Zaragoza-CSIC. Zaragoza. Spain.

Diastereoselective alkylation of chiral 2-cyanoesters, subsequent reduction and cyclization of the β -aminoesters gave (*R*)-3-alkyl-3-benzyl-2-azetidiones.



MICROBIOLOGICAL REDUCTION OF KETO-SULFONES. APPLICATION
 IN A THREE-STEP SYNTHESIS OF (*S*)-(+)- β -ANGELICA LACTONE

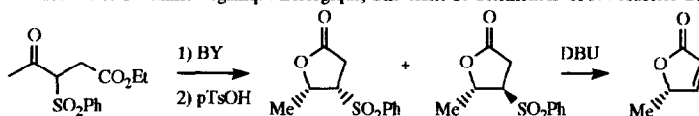
Tetrahedron: Asymmetry 1993, 4, 239

Sylvie Robin^a, François Huet^{a,b}, Annie Fauve^c and Henri Veschambre^c

^aLaboratoire des Carbocycles, Bâtiment 420, Université de Paris Sud 91405 Orsay Cedex France

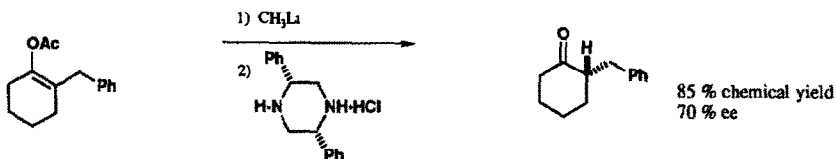
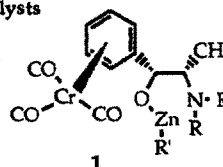
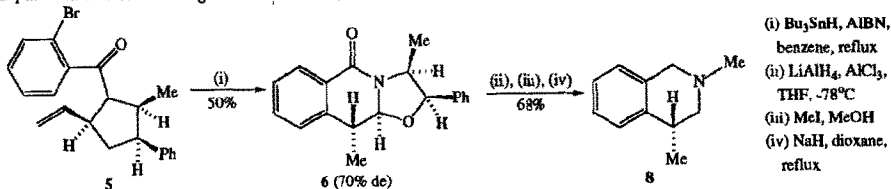
^bLaboratoire de Synthèse Organique, Université du Maine BP 535 72017 Le Mans Cedex France

^cLaboratoire de chimie Organique Biologique, Université de Clermont II 63177 Aubière Cedex France



HYDROCHLORIDE OF CHIRAL PIPERAZINE AS A CHIRAL PROTON SOURCEKaoru Fuji,* Kiyoshi Tanaka and Hisashi Miyamoto
*Institute for Chemical Research, Kyoto University, Uji 611, Japan**Tetrahedron: Asymmetry 1993, 4, 247*

Asymmetric protonation utilizing hydrochlorides of chiral 2,5-diphenylpiperazine derivatives

**Catalytic Asymmetric Induction Part 2: Chiral Tricarbonyl (η^6 arene) Chromium (0) Complexes as Enantioselective Catalysts**Graham B. Jones* and Steven B. Heaton, Department of Chemistry,
Clemson University, Clemson, SC 29634 - 1905 U.S.A.Catalysts of type 1 mediate the addition of
diethyl zincs to aldehydes in >99% e.e.*Tetrahedron: Asymmetry 1993, 4, 261***Stereoselective Radical-Mediated Cyclization of Norephedrine Derived *o*-Bromobenzamides: Enantioselective Synthesis of 4-Substituted 1,2,3,4-Tetrahydroisoquinolines**
Laura Belvisi, Cesare Gennari, Giovanni Poli, Carlo Scolastico*, and Barbara Salom, Dipartimento di Chimica Organica e Industriale, Universita di Milano, via Venezian 21, 20133 Milano, Italy.**Tetrahedron: Asymmetry 1993, 4, 273*