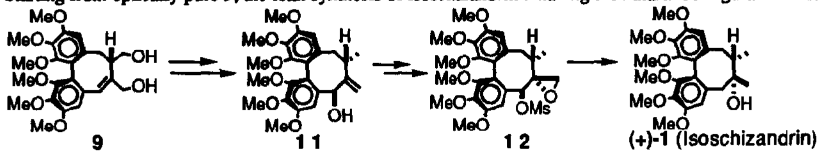
Tetrahedron: Asymmetry **1993**, *4*, 605

The Stereoselective First Total Synthesis of Isoschizandrin Having The Natural Configuration

Masahide Tanaka, Hiroyuki Itoh, Hiroshi Mitsuhashi, Masao Maruno, and Takeshi Wakamatsu*
3586 Yoshiwara, Ami-machi, Inashiki-gun, Ibaraki 300-11, Japan

Starting from optically pure 9, the total synthesis of isoschizandrin 1 having the natural configuration was accomplished.

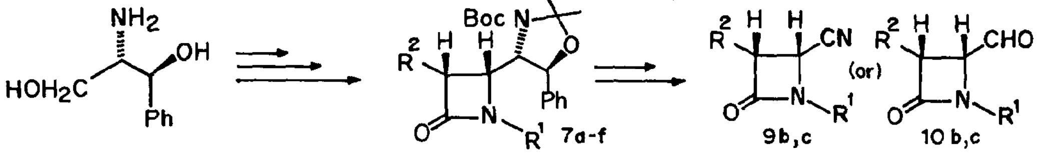


Tetrahedron: Asymmetry **1993**, *4*, 609

Synthesis of Optically Pure 4-Cyano and 4- Formyl *cis*-β-Lactams via Enantiospecific Staudinger Reaction.

M. Jayaraman, M. Nandi, K.M. Sathe, A.R.A.S. Deshmukh and B.M. Bhawal*

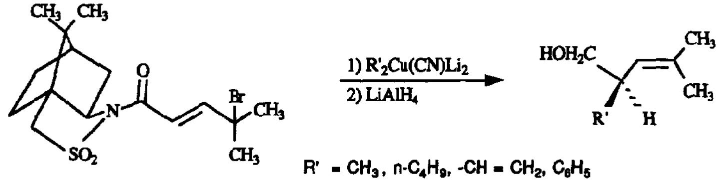
Abstract:
The selective synthesis of 4-cyano and 4-formyl cis-β-Lactams by LTA oxidation under different reaction conditions has been described.



Tetrahedron: Asymmetry **1993**, *4*, 613

Regioselective SN' allylic Substitution versus 1,4-Addition: Asymmetric Induction with Oppolzer's Chiral Sultam.

Christian Girard, Gérard Mandville and Robert Bloch*
Laboratoire des Carbocycles, associé au CNRS, Institut de Chimie Moléculaire d'Orsay, Bât. 420, Université de Paris-Sud 91405 Orsay (France)



ee ≥ 95%

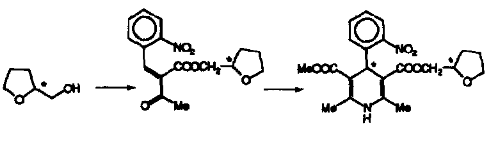
R' = CH_3, n-C_4H_9, -CH = CH_2, C_6H_5

Tetrahedron: Asymmetry **1993**, *4*, 617

SYNTHESIS AND CHROMATOGRAPHIC SEPARATION OF THE STEREOISOMERS OF FURNIDIPINE

R. Alajarin,[a] J. Alvarez-Builla,[a] J. J. Vaquero,[a] C. Sunkel,[b]
M. Fau de Casa-Juana,[b] P. R. Statkow[b] and J. Sanz-Aparicio[c]
[a]Departamento de Química Orgánica, Universidad de Alcalá. Alcalá de Henares. Madrid. Spain. [b]Cermol S. A.
62 Rue de Lyon. Geneve. Switzerland. [c]Departamento de Rayos-X. Instituto Rocasolano, CSIC. 28006-Madrid. Spain.

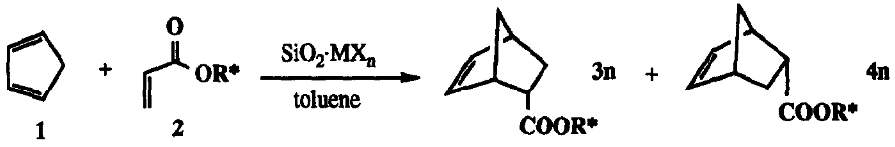
The diastereomers of methyl tetrahydrofuran-2-ylmethyl 2,6-dimethyl-4-(*o*-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxilate (Furnidipine) have been separated by preparative chiral chromatography.



Tetrahedron: Asymmetry **1993**, *4*, 621

Silica and Alumina Modified by Lewis Acids as Catalysts in Diels-Alder Reactions of Chiral Acrylates

C.Cativiela, F.Figueras, J.I.García, J.A.Mayoral,* E.Pires, A.J.Royo



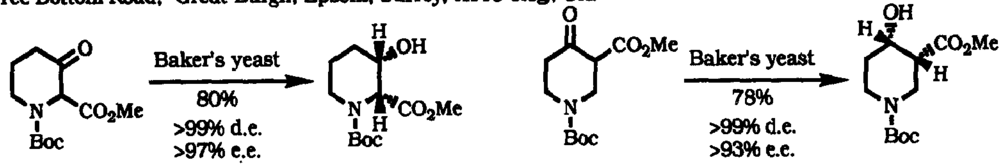
R*=(-)-menthol, MX_n=$AlClEt_2$ (-50°C), 95% of conversion, *endo/exo*=95:5, **4n**/**3n**=2.3

R*=(R)-pantolactone, MX_n=$TiCl_4$ (-25°C), 85% of conversion, *endo/exo*=95:5, **3n**/**4n**=3.4

Tetrahedron: Asymmetry **1993**, *4*, 625

NEW MEMBERS OF THE CHIRAL POOL: β-HYDROXYPIPERIDINE CARBOXYLATES FROM BAKER'S YEAST REDUCTIONS OF THE CORRESPONDING KETO-ESTERS

David W. Knight, Neil Lewis, Andrew C. Share, Department of Chemistry, University Park, Nottingham, NG7 2RD, UK, and David Haigh, SmithKline Beecham Pharmaceuticals, Yew Tree Bottom Road, Great Burgh, Epsom, Surrey, KT18 5XQ, UK.

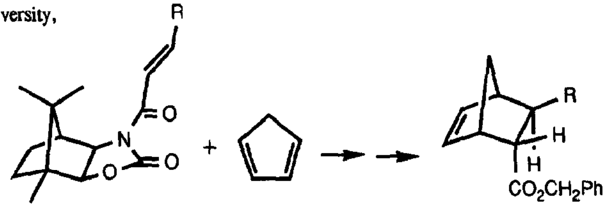


Tetrahedron: Asymmetry **1993**, *4*, 629

STEREOCONTROLLED DIELS-ALDER REACTIONS WITH CHIRAL TRICYCLIC OXAZOLIDINONES

Kazuhiko Tanaka, Hiroe Uno, Hideji Osuga, and Hitomi Suzuki
Department of Chemistry, Faculty of Science, Kyoto University,
Kitashirakawa, Sakyo, Kyoto 606, Japan

Both enantiomers of Diels-Alder adducts were prepared by selecting the proper diastereomer of tricyclic oxazolidinones derived from D-camphor.



Tetrahedron: Asymmetry **1993**, *4*, 633

AN IMPROVED SYNTHESIS OF HOMOCHIRAL OCTALONES FROM (-)-CARVONE

Beatriz S. M. Tenius[1], Eduardo R. de Oliveira[1] and Helena M. C. Ferraz[2]
[1]-Instituto de Química, UFRGS, Porto Alegre, Av. Bento Gonçalves, 9500, Brazil
[2]-Instituto de Química, USP, São Paulo, Brazil

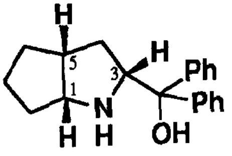
Synthesis of homochiral octalones 3 and 4 via deracemizing alkylation of chiral imines from (-)-carvone.

Tetrahedron: Asymmetry **1993, *4*, 637**

CATALYTIC ENANTIOSELECTIVE ADDITION OF DIETHYLZINC TO ALDEHYDES: APPLICATION OF A NEW BICYCLIC CATALYST

S. Wallbaum and J. Martens
Fachbereich Chemie, Universitat Oldenburg
Ammerländer Heerstr. 114-118, D-2900 Oldenburg

The optically active β-amino alcohol (1*R*,3*R*,5*R*)-**1** derived from a bicyclic proline analogue catalyzes the enantioselective addition of diethylzinc to various aldehydes. The resulting chiral secondary alcohols are obtained in high optical purities up to 100 % under mild reaction conditions. Compared with to proline derived catalyst (*S*)-**4**, the bicyclic catalyst (1*R*,3*R*,5*R*)-**1** is much more effective.

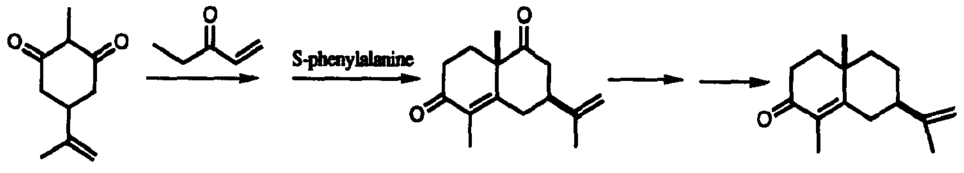


(1*R*,3*R*,5*R*)-**1**

Tetrahedron: Asymmetry **1993, *4*, 641**

SYNTHESIS OF HOMOCHIRAL α-CYPERONE VIA ENANTIOSELECTIVE CATALYSIS

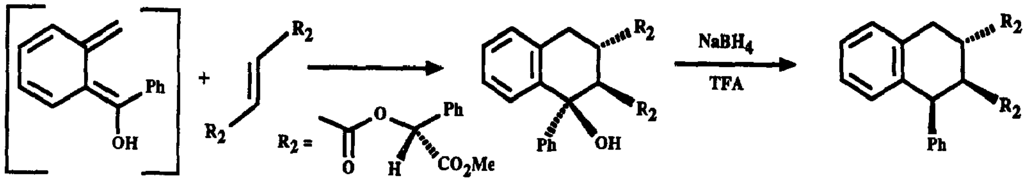
C. AGAMI,* C. KADOURI-PUCHOT and V. LE GUEN
Laboratoire de Chimie Organique Associé au CNRS, Université P. et M. Curie, 4 place Jussieu, 75005 Paris, France.



Tetrahedron: Asymmetry **1993, *4*, 645**

AN ASYMMETRIC DIELS-ALDER CYCLOADDITION TO ALPHA-HYDROXY-ALPHA-PHENYL-ORTHOQUINODIMETHANE

James L. Charlton, Shawn Maddaford, Kevin Koh, Serge Boulet and Marilyn H. Saunders
Department of Chemistry, University of Manitoba, Winnipeg, Canada R3T 2N2

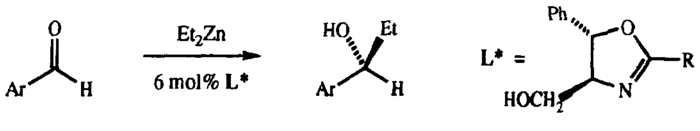


Tetrahedron: Asymmetry **1993, *4*, 649**

ASYMMETRIC ADDITION OF DIETHYLZINC TO AROMATIC ALDEHYDES USING ENANTIOMERICALY PURE HYDROXYMETHYL OXAZOLINE LIGANDS

Joanne V. Allen, Christopher G. Frost and Jonathan M. J. Williams*
Department of Chemistry, Loughborough University of Technology, Loughborough, Leicestershire, LE11 3TU, UK.

The addition of diethylzinc to aromatic aldehydes is catalysed by hydroxymethyl oxazolines with up to 67% ee

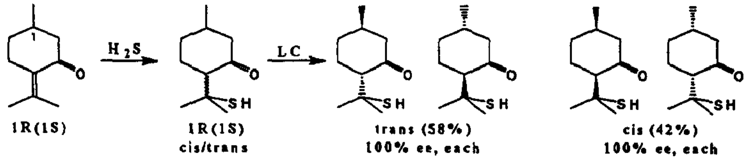


Tetrahedron: Asymmetry **1993**, *4*, 651

Stereoisomeric Flavour Compounds LXII.
Structure Elucidation of 8-mercapto-p-menthan-3-one Isomers

Armin Mosandl*[a], Thomas Köpke[a], and Wolfgang Bensch[b]
Institut für Lebensmittelchemie[a], Institut für Anorganische Chemie[b], Universität Frankfurt, D-6000 Frankfurt/Main, Germany

Enantiopure cis/trans 8-mercapto-p-menthan-3-one isomers were generated by addition of H_2S to pulegone enantiomers and separated by liquid chromatography (LC):

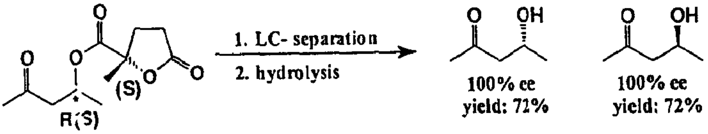


Tetrahedron: Asymmetry **1993**, *4*, 655

Stereoisomeric Flavour Compounds LXIII.
4-Hydroxypentan-2-one Enantiomers - Structure and Properties

Wolfgang Bensch[a], Armin Mosandl*[b], and Katja Fischer[b]
Institut für Anorganische Chemie[a], Institut für Lebensmittelchemie[b], Universität Frankfurt, D-6000 Frankfurt/Main, Germany

The enantiomers are generated via diastereomeric esters:



Tetrahedron: Asymmetry **1993**, *4*, 657

THE CIP SEQUENCE RULES: ANALYSIS AND PROPOSAL FOR A REVISION.

Paulina Mata*, Ana M. Lobo, Departamento de Química and SINTOR-UNINOVA, *campus* of Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Quinta da Torre, 2825 Monte da Caparica, Portugal
Chris Marshall, A. Peter Johnson, School of Chemistry, University of Leeds, Leeds LS2 9JT, UK

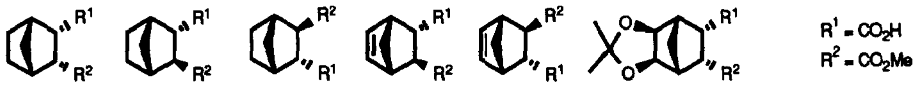
A complete analysis of the Cahn, Ingold and Prelog (CIP) Sequence Rules is made and modified rules are proposed to overcome the deficiencies encountered.

Tetrahedron: Asymmetry **1993**, *4*, 669

A VERSATILE AND HIGHLY STEREOCONTROLLED SYNTHETIC APPROACH TO HOMOCHIRAL POLYFUNCTIONAL NORBORNENE AND NORBORNANE DERIVATIVES

Ramon Casas, Javier Ibarzo, José M. Jiménez, and Rosa M. Ortuño*
Departament de Química, Universitat Autònoma de Barcelona, 08193 Bellatera, Barcelona, Spain.

Several title compounds have been synthesized from D-mannitol, some of them being key intermediates in the synthesis of biologically active products.

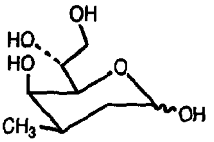


Total Synthesis of 2,3-Dideoxy-*C*-methylheptose Derivatives

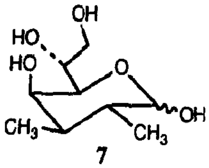
Tetrahedron: Asymmetry **1993**, *4*, 681

Giovanni Casiraghi, Luigi Pinna, Gloria Rassu, Pietro Spanu, and Fausta Ulgheri
Dipartimento di Chimica dell'Università and CNR, Via Vienna 2, I-07100 Sassari, Italy.

2,3-Dideoxy-3-*C*-methyl-D-*manno*-heptose (**6**) and 2,3-dideoxy-2,3-di-*C*-methyl-D-*glycero*-D-*galacto*-heptose (**7**) have been synthesized from 2-(trimethylsiloxy)furan and 2,3-*O*-isopropylidene-D-glyceraldehyde.



6



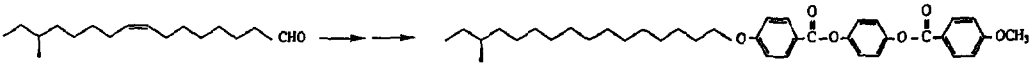
7

PREDICTION OF THE ABSOLUTE CONFIGURATION OF OPTICALLY ACTIVE PHEROMONES USING LIQUID CRYSTALS

Tetrahedron: Asymmetry **1993**, *4*, 687

Tetsuya Ikemoto, Kazuhiro Mitsuhashi and Kenji Mori,* Department of Agricultural Chemistry, The University of Tokyo, Yayoi 1-1-1, Bunkyo-ku, Tokyo 113, Japan

Prediction of the absolute configuration of optically active methyl branched pheromones is possible by combining them with mesogens to give them liquid crystalline properties and measuring the helical senses of the chiral nematic phases.

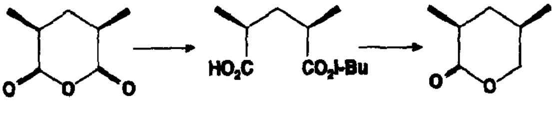


SYNTHESIS OF 2,4-DIMETHYLGLUTARIC ACID MONOESTERS VIA ENZYME-CATALYZED ASYMMETRIC ALCOHOLYSIS OF *meso*-2,4-DIMETHYLGLUTARIC ANHYDRIDE

Tetrahedron: Asymmetry **1993**, *4*, 695

Rüdiger Ozegowski, Annamarie Kunath, and Hans Schick
Centre of Selective Organic Synthesis, Rudower Chaussee 5, D(O)-1199 Berlin-Adlershof, Federal Republic of Germany

Enantiomerically pure lactone **3** was prepared by reduction with lithium borohydride from the monoester **2**, which was obtained by an enantioselective enzyme-catalyzed alcoholysis of the prochiral anhydride **1**.



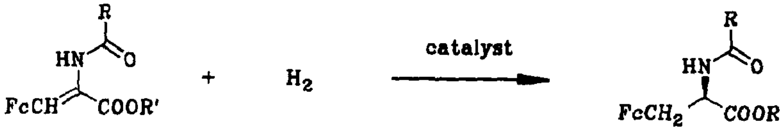
1 **2** **3**

SYNTHESIS OF OPTICALLY ACTIVE FERROCENYLALANINE

Tetrahedron: Asymmetry **1993**, *4*, 699

H. Brunner*, W. König, and B. Nuber
Institut für Anorganische Chemie, Universität Regensburg, D-8400 Regensburg, and
Institut für Anorganische Chemie, Universität Heidelberg, D-6900 Heidelberg, FR Germany

Enantioselective hydrogenation of ferrocenyl-substituted dehydro acylamino acid with rhodium/phosphine catalysts

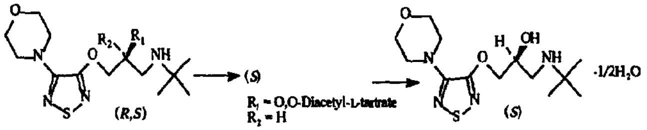


Tetrahedron: Asymmetry **1993, *4*, 709**

Timolol Derivatives. I. Extremely Facile Crystallization Aptitude of (*S*)-Timolol *O,O*-Diacetyl-L-tartaric Acid Monoester. X-ray, NMR and Theoretical Studies

Jussi Kivikoski,[a*] Jouko Vepsäläinen,[b] Reijo Suontamo,[a] Esko Pohjala[c] and Reino Laatikainen[b]
[a]Department of Chemistry, University of Jyväskylä, P. O. Box 35, SF-40351 Jyväskylä, Finland
[b]Department of Chemistry, University of Kuopio, P.O. Box 1627, SF-70211 Kuopio, Finland
[c]Leiras Oy, P.O Box 33, SF-33721 Tampere, Finland

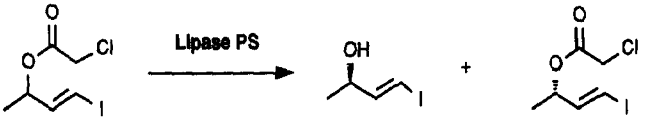
Preparation of (*S*)-timolol hemihydrate using the resolution of (*R,S*)-timolol as *O,O*-diacetyl-L-tartrate followed by hydrolysis.



Tetrahedron: Asymmetry **1993, *4*, 723**

A Facile Synthesis of (2R,3E)-4-Iodobut-3-en-2-ol and (2S,3E)-4-Iodobut-3-en-2-yl chloroacetate

Markus Bänziger*, Gareth J. Griffiths, John F. McGarrity
Research Department Lonza AG, 3930 Visp, Switzerland



7

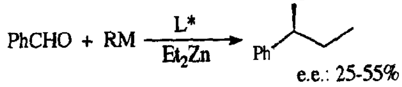
(R)-1
32 % yield; 98 % ee

(S)-7
40 % yield; 98 % ee

Tetrahedron: Asymmetry **1993, *4*, 727**

Catalytic Activity of Chiral β-Hydroxysulfoxides in the Enantioselective Addition of Diethylzinc to Benzaldehyde.

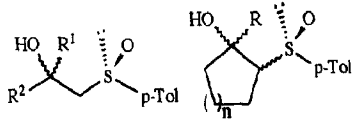
M. Carmen Carreño*, José L. García Ruano*, M. Carmen Maestro
and Luisa M. Martín Cabrejas.
Departamento de Química (C-I). Facultad de Ciencias. Universidad Autónoma.
Cantoblanco 28049-Madrid. Spain.



e.e.: 25-55%

RM=Et$_2$Zn, Me$_3$Al, n-BuLi, BH$_3$.SMe$_2$

L*:



Tetrahedron: Asymmetry **1993, *4*, 735**

A PRACTICAL PREPARATION OF PURE ENANTIOMERS OF *ENDO*-BICYCLO[3.3.0]OCT-7-EN-2-OL, VERSATILE INTERMEDIATE FOR THE SYNTHESIS OF NATURAL PRODUCTS

E. Marotta, E. Rastelli, P. Righi and G. Rosini
Dipartimento di Chimica Organica "A. Mangini" dell'Universita Viale Risorgimento n.4, I-40136
Bologna (Italy)

Enantiomerically pure (1*R*,2*R*,5*R*)-(+)-**1** and (1*S*,2*S*,5*S*)-(−)-**1** were prepared. The resolution was achieved by the sequential utilization of (2*S*)-(−)-**2** [(2*S*)-NTP-Cl] and (2*R*)-(+)-**2** [(2*R*)-NTP-Cl] as resolving agents.

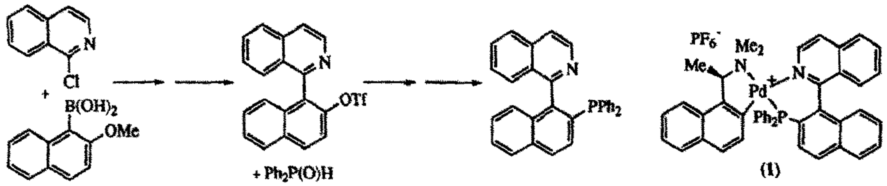
(1*R*,2*R*,5*R*)-(+)-1 (1*S*,2*S*,5*S*)-(−)-1 (2S)-(−)-2 (2R)-(+)-2

Tetrahedron: Asymmetry **1993**, *4*, 743

Synthesis and Resolution of 1-(2-Diphenylphosphino-1-naphthyl)isoquinoline; a P-N Chelating Ligand for Asymmetric Catalysis

Nathaniel W. Alcock, Department of Chemistry, University of Warwick, Coventry CV4 7AL, U.K.
John M. Brown and David I. Hulmes Dyson Perrins Laboratory, South Parks Road, Oxford OX1 3QY, U.K.

The synthesis of the title compound *via* Pd-catalysed biaryl coupling and its resolution *via* the palladium complex (1) are described.



(1)