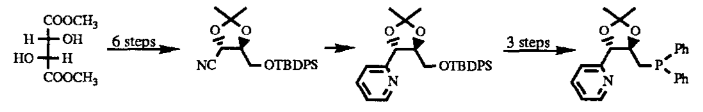
Tetrahedron: Asymmetry **1994,** *5,* 299

(-)-(4S,5R)-4-(2-Pyridyl)-5-(diphenylphosphino)methyl-2,2-dimethyl-1,3-dioxolane a new chiral ligand for enantioselective catalysis

Giorgio Chelucci,[a*] *M. Antonietta Cabras,*[a] *Carlo Botteghi*[b] *and M. Marchetti*[c]
[a]Dipartimento di Chimica, Universita' di Sassari, Via Vienna 2, I-07100 Sassari, Italy; [b] Dipartimento di Chimica, Universita' di Venezia, S. Marta 2137, Venezia, Italy; [c]Istituto A.T.C.A.P.A., C.N.R., via Vienna 2, I-07100 Sassari, Italy



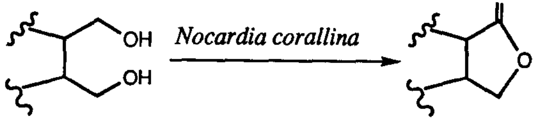
The title compound has been prepared by a ten reaction sequence from L-(+)-tartrate and checked in asymmetric hydroesterification and cross-coupling reactions.

Tetrahedron: Asymmetry **1994,** *5,* 303

Oxidation of Diols to Lactones by *Nocardia corallina* B-276

H. Luna, K. Prasad,* O. Repic;
Chemical Research & Development, Technical R & D,
Sandoz Reseach Institute, Route 10, East Hanover, NJ 07936, USA

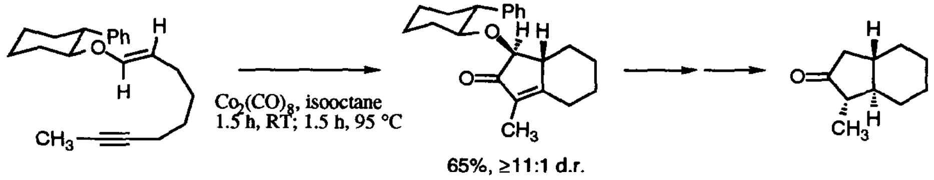
1,4- Diols were oxidized by *Nocardia corallina* B-276, to the corresponding lactones with good to excellent optically purities where applicable.



Tetrahedron: Asymmetry **1994,** *5,* 307

ASYMMETRIC SYNTHESIS OF BICYCLO[4.3.0]NONAN-8-ONES BY INTRAMOLECULAR PAUSON-KHAND REACTION

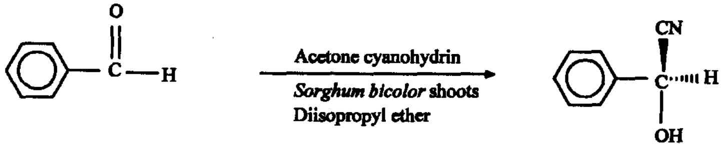
Jaume Castro, Albert Moyano*, Miquel A. Pericàs*, Antoni Riera and Andrew E. Greene[a]
Dep. de Química Orgànica, Universitat de Barcelona, C/ Martí i Franquès, 1-11. 08028-Barcelona, Spain
[a]LEDSS, Université J. Fourier, BP 53X, 38041 Grenoble, France



Tetrahedron: Asymmetry **1994,** *5,* 311

Sorghum bicolor **Shoots in the Synthesis of (*S*)-Mandelonitrile**

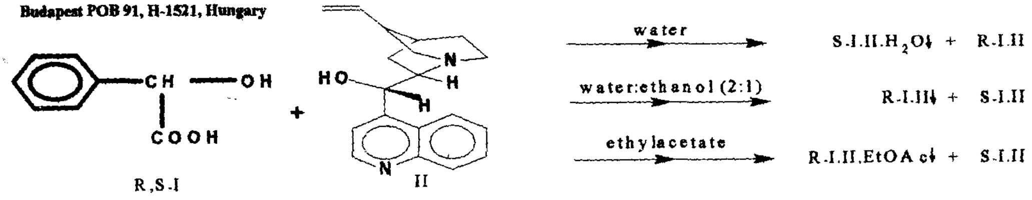
Eero Kiljunen and Liisa T. Kanerva
Departments of Chemistry and Biomedicine, University of Turku, 20500 Turku, Finland



Tetrahedron: Asymmetry **1994,** *5,* 315

OPTICAL RESOLUTION OF MANDELIC ACID BY CINCHONINE IN DIFFERENT SOLVENTS

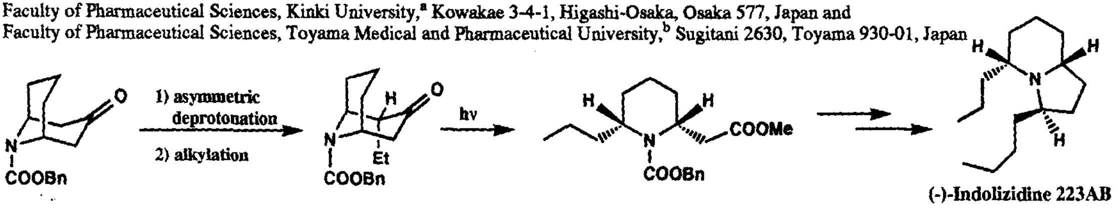
Dávid Kozma*[a], Ágnes Nyéki[a], Mária Ács[b], Elemér Fogassy[a]
a) Department of Organic Chemical Technology and b)Institute of General and Analytical Chemistry, Technical University of Budapest, Budapest POB 91, H-1521, Hungary



Tetrahedron: Asymmetry **1994,** *5,* 317

The Norrish Type I Photo-cleavage of (+)-2β-Ethyl-9-azabicyclo[3.3.1]nonan-3-one: A Short, Enantioselective Formal Synthesis of (-)-Indolizidine 223 AB

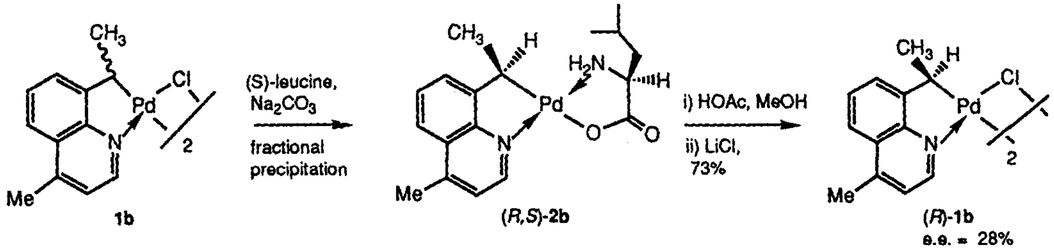
Osamu Muraoka,* Kazuhito Okumura, Tomomi Maeda, Genzoh Tanabe,[a] and Takefumi Momose*[b]
Faculty of Pharmaceutical Sciences, Kinki University,[a] Kowakae 3-4-1, Higashi-Osaka, Osaka 577, Japan and
Faculty of Pharmaceutical Sciences, Toyama Medical and Pharmaceutical University,[b] Sugitani 2630, Toyama 930-01, Japan



Tetrahedron: Asymmetry **1994,** *5,* 321

Resolution of a Cyclopalladated Complex Containing an Asymmetric Metallated Carbon Atom

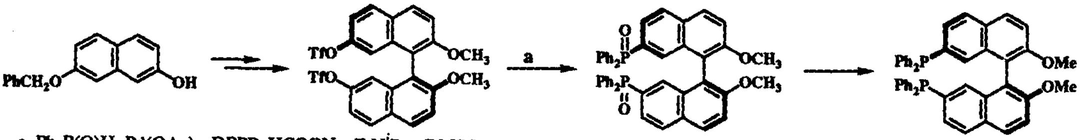
John Spencer, Fida Maassarani, Michel Pfeffer *, André De Cian, Jean Fischer
U.L.P., 4 rue Blaise Pascal, F-67070, Strasbourg Cedex, France.



Tetrahedron: Asymmetry **1994,** *5,* 325

Synthesis of (*R*)- and (*S*)-7,7'-Bis(diphenylphosphino)-2,2'-dimethoxy-1,1'-binaphthyl, a New Axially Dissymmetric Bis(triarylphosphine)

Toshihide Horiuchi, Tetsuo Ohta, Massoud Stephan and Hidemasa Takaya*
Division of Material Chemistry, Faculty of Engineering, Kyoto University, Sakyo-ku, Kyoto 606-01, Japan

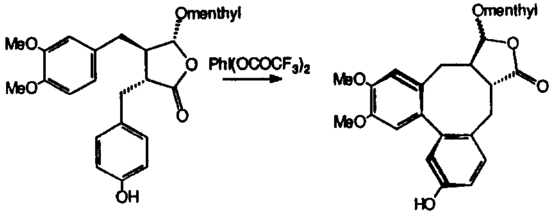


a. $Ph_2P(O)H$, $Pd(OAc)_2$, DPPP, HCOONa, EtN^iPr_2, DMSO

Tetrahedron: Asymmetry **1994,** *5,* 329

Asymmetric Syntheses of Isostegane Derivatives using Trivalent Iodine Reagents.

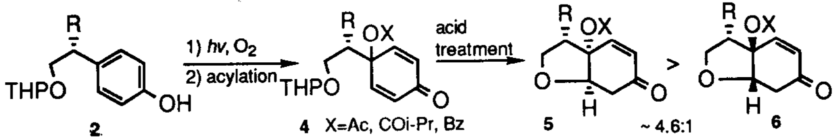
Andrew Pelter, Robert S. Ward and Atef Abd-el-Ghani
Chemistry Department, University of Wales, Singleton Park, Swansea SA2 8PP, UK.



Tetrahedron: Asymmetry **1994,** *5,* 333

Diastereotopic Group Selective Intramolecular Conjugate Addition of 4-(2-Hydroxyethyl)-*p*-Quinol Derivatives: Synthesis of the Optically Pure *cis*-7-Oxabicyclo[4,3,0]non-2-en-4-one Skeleton

Hiromichi Fujioka[a], Shinji Kitagaki[a], Naoko Ohno[a], Hidetoshi Kitagawa[a], Yasuyuki Kita[a] and Keita Matsumoto[b]
[a] Faculty of Pharmaceutical Sciences, Osaka University, 1-6 Yamada-oka, Suita, Osaka 565, Japan
[b] Research Center, Taisho Pharmaceutical Co., Ltd., Yoshino-cho, Omiya, Saitama 330, Japan

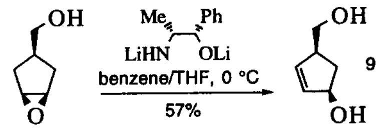


(R=CH_2OBn, X=Bz)
2; $[\alpha]_D$ +6.7
5; $[\alpha]_D$ -99.6
6; $[\alpha]_D$ +159

Tetrahedron: Asymmetry **1994,** *5,* 337

Highly Enantioselective Rearrangement of a *meso*-Epoxide to an Allyl Alcohol for Carbocyclic Nucleoside Synthesis: an Internal Alkoxide Effect

David M. Hodgson,*[a] Jason Witherington[a] and Brian A. Moloney[b]
a Department of Chemistry, University of Reading,
Whiteknights, PO Box 224, Reading RG6 2AD, U.K.
b Schering Agrochemicals Limited, Chesterford Park,
Saffron Walden, Essex CB10 1XL, U.K.



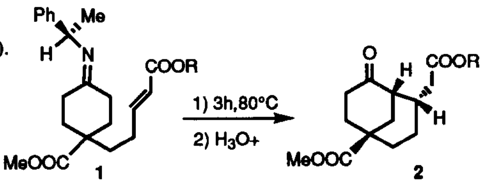
95% e.e.

Tetrahedron: Asymmetry **1994,** *5,* 339

A New Asymmetric Bridging Annulation Reaction Involving the Intramolecular Michael Addition of Chiral Imines to Enoates

Françoise Dumas, Véronique Maine, Christian Cavé, Jean d'Angelo
Laboratoire de Chimie Organique, associé au CNRS, Faculté de Pharmacie, 5 rue J.-B. Clément, 92296 Châtenay-Malabry (France)
Angèle Chiaroni, Claude Riche
Institut de Chimie des Substances Naturelles,
CNRS, Avenue de la Terrasse,91198 Gif-sur-Yvette (France).

Thermal cyclization of imine 1 led to bicyclic derivative 2 with high stereocontrol.



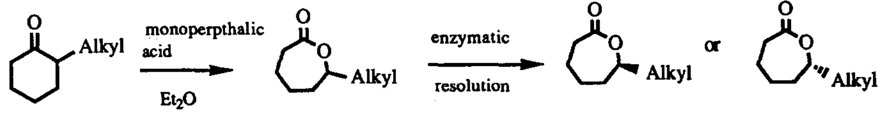
80 % yield
100 % de
90 % ee

Tetrahedron: Asymmetry **1994,** 5, 343

RESOLUTION OF RACEMIC ε-LACTONES

R.FELLOUS *, L.LIZZANI-CUVELIER, M.A.LOISEAU and E.SASSY
Laboratoire de Chimie des Arômes, Université de Nice Sophia-Antipolis, Parc Valrose - 06108 - Nice Cédex 2

ε-lactones obtained by Baeyer-Villiger oxidation from to 2-n-alkylcyclohexanones is regioselective. Enzymatic resolution of 6-n-alkyl ε-lactones with PLE gives preferentially lactone of configuration *R* ; with HLE enantiomer *S* of lactone is collected from the butyl group.

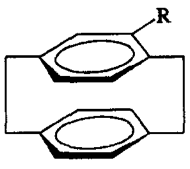


Tetrahedron: Asymmetry **1994,** *5,* 347

Resolution of Chiral [2.2]Paracyclophanes by Enantioselective Gas Chromatography

Wilfried A. König*[1] , Bärbel Gehrcke[1], Detlev H. Hochmuth[1], Cornelia Mlynek[2] and Henning Hopf[2]

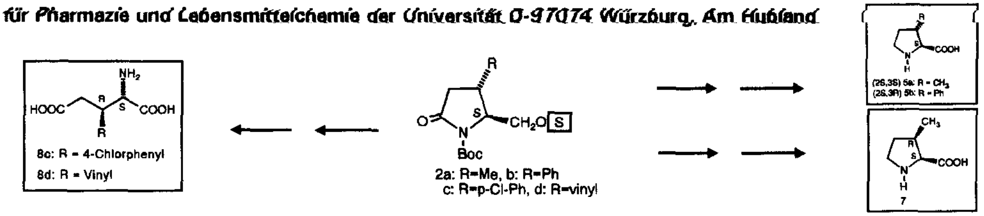
1) Institut für Organische Chemie, Universität Hamburg, Martin-Luther-King-Platz 6, D-20146 Hamburg, Germany
2) Institut für Organische Chemie, Technische Universität Braunschweig, Hagenring 30, D-38106 Braunschweig, Germany



Tetrahedron: Asymmetry **1994,** *5,* 351

Synthesis of Homochiral 3-Substituted Glutamic Acids and Prolines from S-Pyroglutamic Acid

Claus Herdeis*, Hans Peter Hubmann and Hermann Lotter
Institut für Pharmazie und Lebensmittelchemie der Universität D-97074 Würzburg, Am Hubland

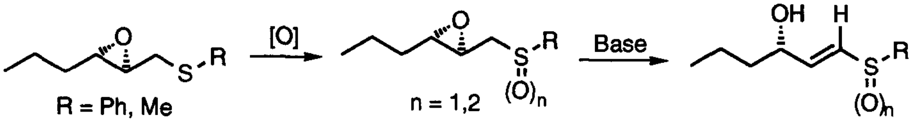


Tetrahedron: Asymmetry **1994,** *5,* 355

HOMOCHIRAL 2,3-EPOXY SULPHIDES AS PRECURSORS TO E-γ-HYDROXY-α,β-UNSATURATED SULPHOXIDES AND SULPHONES.

Christopher M. Rayner* and Andrew D. Westwell
School of Chemistry, University of Leeds, Leeds LS2 9JT, U.K.

Abstract: The synthesis of E-γ-hydroxy-α,β-unsaturated sulphoxides and sulphones from the corresponding homochiral 2,3-epoxy sulphides is described with good to excellent stereochemical control.

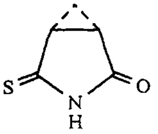


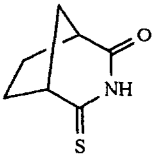
Tetrahedron: Asymmetry **1994,** *5,* 359

SYNTHESIS OF OPTICALLY ACTIVE MONOTHIOIMIDES WITH CHIRALITY DUE TO SULPHUR SUBSTITUTION.

Maria J. Milewska and Tadeusz Połoński*, Department of Chemistry,
Technical University of Gdańsk, 80-952 Gdańsk, Poland

Bicyclic monothioimides of the known absolute configuration were obtained by treatment of corresponding monoamides with Lawesson's reagent

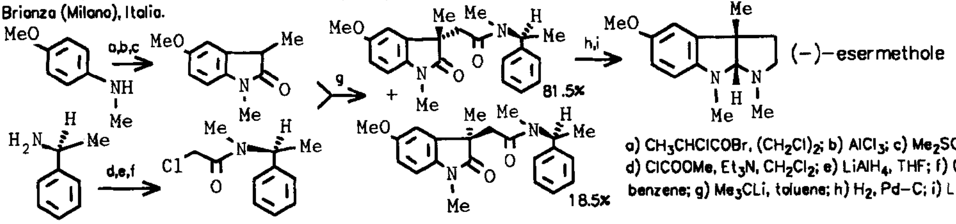




Tetrahedron: Asymmetry **1994,** *5,* 363

New asymmetric synthesis of (–)-esermethole.

M.Pallavicini[a*], E.Valoti[a*], L.Villa[a] and I.Resta[b]. [a] Istituto di Chimica Farmaceutica e Tossicologico dell'Universita' di Milano, viale Abruzzi 42, 20131 Milano, Italia. [b] Biochimica Opos S.p.a., via delle Industrie 84, 20041 Agrate Brianza (Milano), Italia.

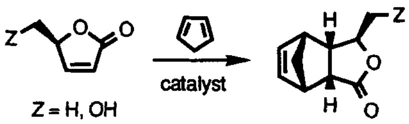


a) $CH_3CHClCOBr$, $(CH_2Cl)_2$; b) $AlCl_3$; c) Me_2SO_4, KOH; d) ClCOOMe, Et_3N, CH_2Cl_2; e) $LiAlH_4$, THF; f) $ClCH_2COCl$, benzene; g) Me_3CLi, toluene; h) H_2, Pd–C; i) $LiAlH_4$, THF.

Tetrahedron: Asymmetry **1994,** *5,* 371

LEWIS ACID CATALYZED DIELS-ALDER CYCLOADDITIONS OF CHIRAL BUTENOLIDES TO CYCLOPENTADIENE: *endo/exo* STEREOSELECTIVITY

Zhiyu Chen and Rosa M. Ortuño*
Departament de Química, Universitat Autònoma de Barcelona, 08193 Bellatera, Barcelona, Spain.



catalyst: $ZnCl_2$ / $EtAlCl_2$ for Z = H

ZnI_2 for Z = OH

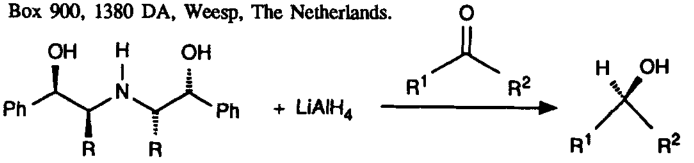
endo isomers: 80 - 90% yield

Tetrahedron: Asymmetry **1994,** *5,* 377

Stereoselective Reduction of Prochiral Ketones, Using Aluminum Hydride Reagents Prepared from $LiAlH_4$ and Chiral Diethanolamines.

Erik F.J. de Vries[1], Johannes Brussee[1*], Chris G. Kruse[2] and Arne van der Gen[1].
1) Department of Chemistry, Gorlaeus Laboratories, Leiden University, P.O. Box 9502, 2300 RA Leiden, The Netherlands.
2) Solvay Duphar B.V., P.O. Box 900, 1380 DA, Weesp, The Netherlands.

The asymmetric reduction of prochiral ketones by $LiAlH_4$, modified with chiral diethanolamines, was studied.

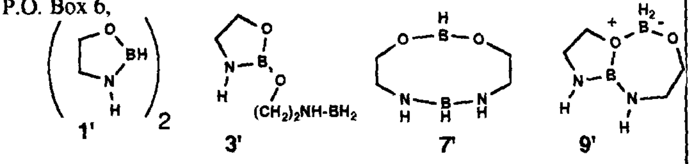


Tetrahedron: Asymmetry **1994,** *5,* 387

Quantum Chemical Modeling of Chiral Catalysis. Part 16. On the Isomerism of Dimers of Chiral Oxazaborolidines Used in the Catalytic Enantioselective Reduction of Ketones

Vesa Nevalainen, Division of Organic Chemistry, P.O. Box 6,
SF-00014 University of Helsinki, Finland.

Abstract: Relative stabilities of dimeric isomers of oxazaborolidines were studied by means of *ab initio* MO (RHF) methods (**1'** as a model of oxazaborolidines). Formation of several dimeric isomers (e.g. **3'**, **7'** and **9'**) was found to be energetically advantageous.



1' **3'** **7'** **9'**

$E_{rel.}$ = 0 -19 -21 -16 kJ / mol

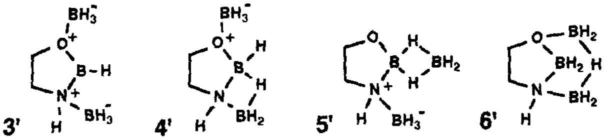
6-31G//6-31G

Tetrahedron: Asymmetry **1994,** *5,* 395

Quantum Chemical Modeling of Chiral Catalysis. Part 17. On the Diborane Derivatives of Chiral Oxazaborolidines Used as Catalysts in the Enantioselective Reduction of Ketones

Vesa Nevalainen, Division of Organic Chemistry, P.O. Box 6,
SF-00014 University of Helsinki, Finland.

Abstract: Relative stabilities of isomers of borane (H_3B) diadducts (e.g. **3'** - **6'**) of oxazaborolidines were investigated by means of *ab initio* MO (RHF) methods (1,3,2-oxazaborolidine as a model of oxazaborolidines). A new plausible regeneration pathway for the CBS reduction was proposed.



3' **4'** **5'** **6'**

$E_{rel.}$ = 0 -51 -24 -69 kJ / mol

MP2/6-31G*//6-31G*

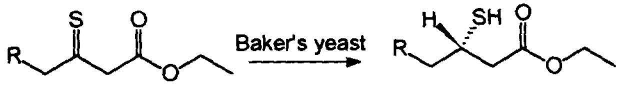
Tetrahedron: Asymmetry **1994,** *5,* 403

Stereoselective Reduction of Thiocarbonyl Compounds with Baker's Yeast

Jens Kærgaard Nielsen and Jørgen Øgaard Madsen, Department of Organic Chemistry, The Technical University of Denmark, DK-2800 Lyngby, Denmark

Optically active thiols are produced by baker's yeast reduction of open-chain and cyclic β-thioxo esters

e.g.



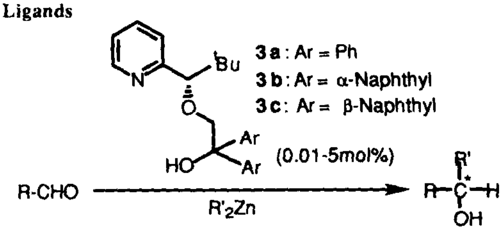
R=H, Me, Et

Tetrahedron: Asymmetry **1994,** *5,* 411

Catalysed Asymmetric Reaction of Aldehydes with Dialkylzinc in the Presence of Chiral Pyridyl Alcohols as Ligands

Miyuki Ishizaki, Ko-ichi Fujita, Mahoko Shimamoto, and Osamu Hoshino*
Faculty of Pharmaceutical Sciences, Science University of Tokyo, Shinjuku-ku, Tokyo 162, Japan

Catalysed asymmetric addition of dialkylzinc to various aldehydes using 3a-c proceeded in a short reaction time to give optically active alcohols (up to 95% e.e.).

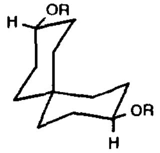


3a : Ar = Ph
3b : Ar = α-Naphthyl
3c : Ar = β-Naphthyl

Tetrahedron: Asymmetry **1994,** *5,* 425

Resolution and Absolute Configuration of the Enantiomeric Spiro[5.5]undecane-3,9-diols

Gundula Voß and H. Gerlach
Laboratory of Organic Chemistry, University of Bayreuth, D-95440 Bayreuth, Germany



(*aS*) - (-) - **1** R = H (+) - **3** R = 4-$MeOC_6H_4CO$
(-) - **2** R = (1*S*,4*R*)-camphanoyl (+) - **4** R = 4-BrC_6H_4CO

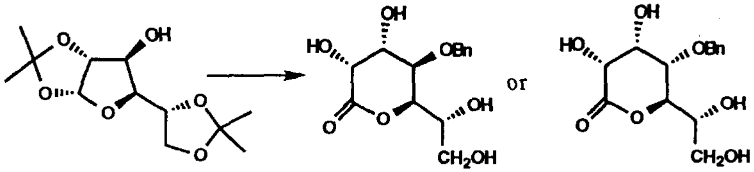
The absolute configuration of **3** and **4** was derived from their chiroptical properties.

Tetrahedron: Asymmetry **1994,** *5,* 431

ACETONIDES OF HEPTONOLACTONES: KILIANI ASCENSION OF 3-*O*-BENZYL-D-GLUCOSE AND 3-*O*-BENZYL-D-ALLOSE

Claire J. F. Bichard, Joseph R. Wheatley and George W. J. Fleet
Dyson Perrins Laboratory, Oxford Centre for Molecular Sciences, South Parks Road, Oxford OX1 3QY, UK

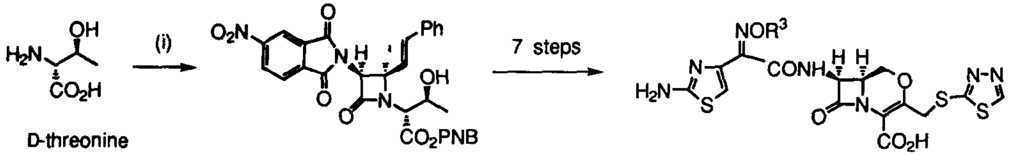
Two δ-heptonolactones, epimeric at C-4, and their acetonides have been prepared from diacetone glucose.



Tetrahedron: Asymmetry **1994,** *5,* 441

A Convenient One Pot Asymmetric Synthesis of cis-β-Lactams: Key Precursors for Optically Active 2-oxaisocephems

Hidetsugu Tsubouchi,* Koichi Tsuji, Koichi Yasumura, Nobuhito Tada, Shinji Nishitani, Jun-ichi Minamikawa, and Hiroshi Ishikawa



D-threonine

(i) one pot asymmetric synthesis : 63% yield , PNB = p-nitrobenzyl

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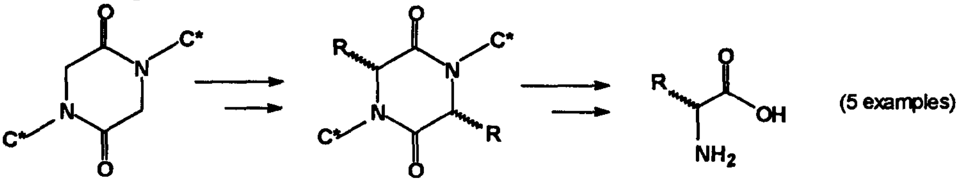
Tetrahedron: Asymmetry **1994,** *5,* 453

SYNTHESIS OF (3*R*,6*R*)- AND (3*S*,6*S*)-3,6-DIALKYLPIPERAZIN-2,5-DIONE DERIVATIVES AS USEFUL INTERMEDIATES TO BOTH (*R*)-AND (*S*) α-AMINOACIDS

Gianni PORZI and Sergio SANDRI-Dipartimento di Chimica "G.Ciamician" Università di Bologna Italy

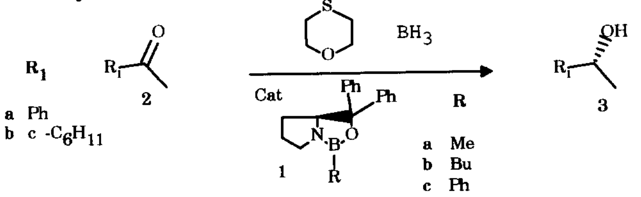


(3*R*,6*R*) or (3*S*,6*S*) **(*R*) or (*S*)-α-aminoacids**

Tetrahedron: Asymmetry **1994,** *5,* 465

Oxazaborolidine Catalyzed Borane Reductions of Ketones: A Signifificant Effect of Temperature on Selectivity.

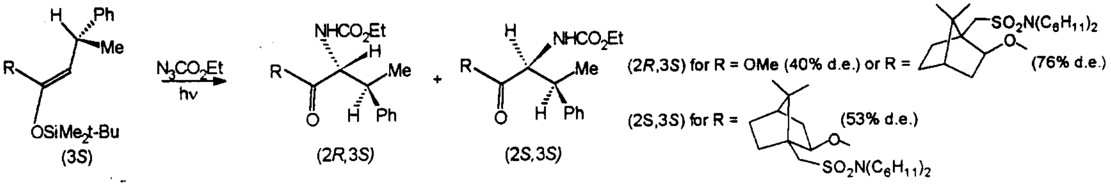
Guy B. Stone
Sandoz Pharma AG
Chemical Process and
Development Department,
CH-4002 Basel, Switzerland.



Tetrahedron: Asymmetry **1994,** *5,* 473

ASYMMETRIC SYNTHESIS OF *N*-(ETHOXYCARBONYL)-β-METHYLPHENYLALANINE ESTERS

Stefania Fioravanti, M. Antonietta Loreto*, Lucio Pellacani, Fabio Sabbatini, Paolo A. Tardella*
Dipartimento di Chimica, Università "La Sapienza", P.le Aldo Moro 2, I-00185 Roma, Italy.



Tetrahedron: Asymmetry **1994,** *5,* 479

Synthesis of New Chiral Heterocycles of Pyrazole and 2-Isoxazoline Types from (+)-3-Carene.

Sergey A. Popov, Alexey Yu. Denisov, Yuti V. Gatilov, Irina Yu. Bagryanskaya Alexey V. Tkachev*
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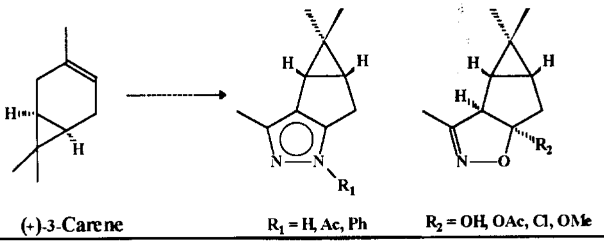
Syntheses of new chiral heterocyclic compounds of the pyrazole and isoxazoline types from natural monoterpene hydrocarbon (+)-3-carene are described.



Tetrahedron: Asymmetry **1994,** *5,* 491

Synthesis of Optically Active Oxazolines from Optically Active Epoxides.

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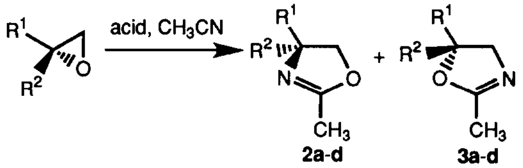

1a : R^1=n-C_6H_{13}, R^2=H
1b : R^1=n-$C_6H_{13}OCH_2$, R^2=H
1c : R^1=n-C_4H_9, R^2=CH_3
1d : R^1=C_6F_5, R^2=H