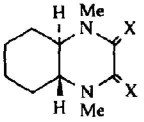
GRAPHICAL ABSTRACTS

Tetrahedron: Asymmetry **1994,** *5,* 149

Optical Activity of cis-Oxamide and -Dithiooxamide Chromophores

Tadeusz Połoński
Department of Chemistry, Technical University of Gdańsk,
80-952 Gdańsk, Poland

Synthesis, absorption and CD spectra

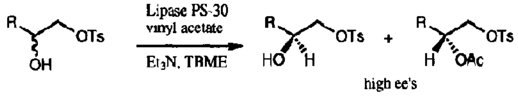


1, X = O; 2, X = S

Tetrahedron: Asymmetry **1994,** *5,* 153

AMINE ASSISTED ENZYMATIC ESTERIFICATION OF 1,2-DIOL MONOTOSYLATES

Neil W. Boaz* and Rebecca L. Zimmerman
Eastman Fine Chemicals, Eastman Kodak Company, Rochester, NY USA 14652-3638

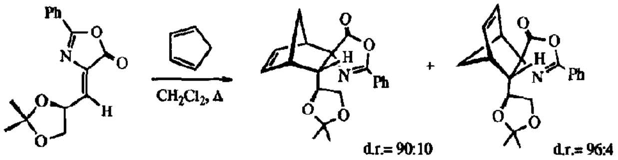


The presence of triethylamine avoids reaction stalling (due to enzyme inactivation by acidic contaminants) and affords enhanced enantioselectivities.

Tetrahedron: Asymmetry **1994,** *5,* 157

ASYMMETRIC DIELS-ALDER REACTION OF A CHIRAL AZLACTONE

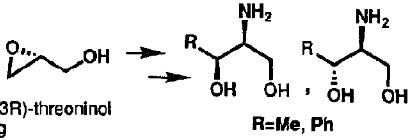
Elena Buñuel, Carlos Cativiela*, and Maria D. Diaz-de-Villegas
Instituto de Ciencia de Materiales de Aragón. Departamento de Química Orgánica. Universidad de Zaragoza-CSIC. Zaragoza. Spain.



Tetrahedron: Asymmetry **1994,** *5,* 161

Diastereoselective Synthesis of γ-Hydroxy-β-amino Alcohols, (2S, 3S)- and (2S, 3R)-Threoninol and -Hydroxyphenylalaninol, from (R)-Glycidol via the Derived 4-Hydroxymethyloxazolidinone

S. Katsumura,* N. Yamamoto, M. Morita, and Q. Han
School of Science, Kwansei Gakuin University,
Uegahara, 1-1-155, Nishinomiya 662, Japan



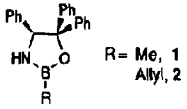
Syntheses of enantiomerically pure (2S,3S)- and (2S,3R)-threoninol and -hydroxyphenylalaninol was demonstrated starting from (R)-glycidol via (S)-4-methoxycarbonyl-2-oxazolidinone.

Tetrahedron: Asymmetry **1994**, *5*, 165

ENANTIOSELECTIVE REDUCTION OF KETONES CATALYSED BY 1,3,2-OXAZABOROLIDINES PREPARED FROM PHENYLGLYCINE

R. Berenguer, J. Garcia* and J. Vilarrasa,
Department of Organic Chemistry, University of Barcelona (III), 08028 Barcelona (Spain)

Oxazaborolidines 1 and 2 have been synthesised and used in the borane-mediated reduction of prochiral ketones to afford secondary alcohols in excellent chemical yields and with moderate-to-high (61 to 96%) enantiomeric excesses.

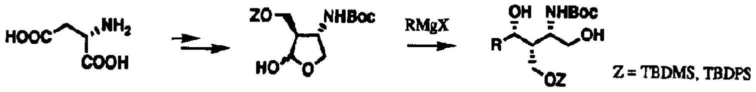


Tetrahedron: Asymmetry **1994**, *5*, 169

Diastereoselective Reactions of Grignard Reagents with Chiral Amino Lactols Derived from L-Aspartic Acid.

Hidemi Yoda,* Yoshiaki Nakagami, and Kunihiko Takabe*
Department of Applied Chemistry, Faculty of Engineering, Shizuoka University, Hamamatsu 432, Japan

Highly diastereofacial selection to chiral amino lactols elaborated from L-aspartic acid was conducted with simple Grignard reagents under 6- or 7-membered chelation structure conditions.

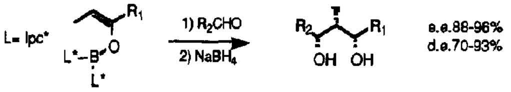


Tetrahedron: Asymmetry **1994**, *5*, 173

Boron Mediated One-Pot Aldol-reduction Sequence: Enantio and Diastereoselective Synthesis of Typical Polyketide Fragments

Carlo Bonini*[a], Rocco Racioppi[a], Giuliana Righi[b], Leucio Rossi[b]
[a]Dipartimento di Chimica, Università degli Studi della Basilicata, Via N. Sauro 85, 85100 Potenza. [b]Centro C.N.R. per lo Studio della Chimica delle Sostanze Organiche Naturali, c/o Dipartimento di Chimica, Università "La Sapienza", P.le A. Moro 5, 00185 Roma, ITALY

An aldol-reduction one-pot sequence allows *syn-syn* polyketide fragments to be obtained enantio and diastereoselectively by the use of enol diisopinocampheylborinate.

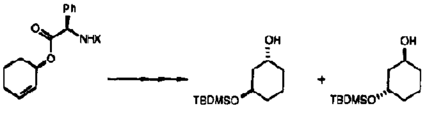


Tetrahedron: Asymmetry **1994**, *5*, 177

Diastereospecific Hydroxyselenation of Cyclohex-2-enyl Phenylglycinates

Alan F. Haughan and J. B. Sweeney*
School of Chemistry, University of Bristol, Cantocks Close, Bristol BS8 1TS U.K.

The diasterespecific hydroxyselenation of cyclohexenyl esters of phenyl glycine allows facile and efficient preparation of monosilylated cyclohexane-1,3-diols



Tetrahedron: Asymmetry **1994**, *5*, 181

Stereospecific Synthesis of 1-Alkylimidazole Derivatives *via* Mitsunobu Reactions

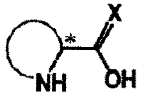
Maurizio Botta*, Vincenzo Summa, Gianna Trapassi, Edith Monteagudo and Federico Corelli*
Dipartimento Farmaco Chimico Tecnologico
Banchi di Sotto 55, 53100 Siena (Italy)

Mitsunobu reaction between 4,5-dicyanoimidazole and racemic or enantiopure alcohols **1**, followed by hydrolysis-decarboxylation, gave 1-alkylimidazoles **4** in good overall yield and high enantiomeric excess.

Tetrahedron: Asymmetry **1994**, *5*, 185

Enantioselective Catalytic Reduction of Acetophenone with Borane in the Presence of Cyclic α-Amino Acids and their Corresponding β-Amino Alcohols

T. Mehler, W. Behnen, J. Wilken, J. Martens*
Fachbereich Chemie, Universität Oldenburg
Ammerländer Heerstr. 114-118, D-26129 Oldenburg



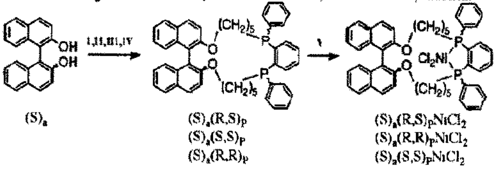
1 (X = O) **2** (X = H_2)

Optically active cyclic α-amino acids **1** (R = O) and β-amino alcohols **2** (R = H_2) catalyze the enantioselective borane reduction of acetophenone to to chiral 1-phenyl-1-ethanol in up to 51 % *ee*.

Tetrahedron: Asymmetry **1994**, *5*, 189

Relative and Absolute Configurations of Diastereomeric Macrocyclic Diphosphine Ligands and their Ni(II) Complexes.

Michael Widhalm and Gerd Klintschar
Institut für Organische Chemie, Universitat Wien, A-1090 Wien, Austria.



i: $Br(CH_2)_4CO_2C_2H_5$, tert BuOK, THF reflux, 71%
ii $LiAlH_4$, Et_2O, 79%
iii 4 equiv TsCl, Py, 0°C, 24h, 51%
iv: o-phenylenebis(phenylphosphine), n-BuLi, THF reflux, high dilution, total yield 56% (m d)
v $NiCl_2$

Absolute and relative chiralities have been estimated on the basis of NMR and CD measurements and optical comparison. The assignment has been confirmed by an X-ray structure determination

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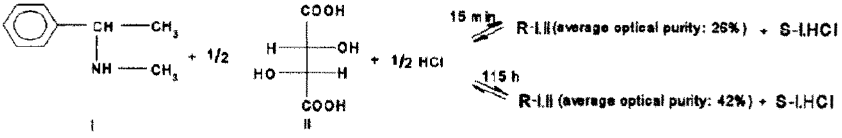
Tetrahedron: Asymmetry **1994**, *5*, 193

STUDY OF THE MECHANISM OF THE OPTICAL RESOLUTION OF N-METHYLAMPHETAMINE VIA DIASTEREOISOMERIC SALT FORMATION BY THE POPE-PEACHEY METHOD

Dávid Kozma*[a], Zoltán Madarász[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

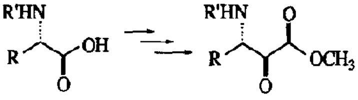


Tetrahedron: Asymmetry **1994**, *5*, 195

FIRST SYNTHESIS OF ENANTIOMERICALLY PURE N-PROTECTED β-AMINO-α-KETO ESTERS FROM α-AMINO ACIDS AND DIPEPTIDES

Paul Darkins, Noreen McCarthy, M. Anthony McKervey* Kevin O'Donnell, and Tao Ye
School of Chemistry, The Queen's University, Belfast BT9 5AG, N. Ireland
Brian Walker*
School of Biology and Biochemistry, The Queen's University, Belfast BT7 7BL, N. Ireland

A racemization-free route from N-protected α-amino acids and dipeptides to N-protected β-amino-α-keto esters is described.

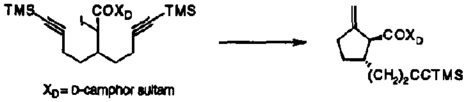


Tetrahedron: Asymmetry **1994**, *5*, 199

Group Selective Radical Cyclizations with Oppolzer's Camphor Sultam

Dennis P. Curran,* Steven J. Geib and Chien-Hsing Lin
Department of Chemistry, University of Pittsburgh, Pittsburgh, PA 15260, USA

Summary: *Acyl derivatives of Oppolzer's camphor sultam provide moderate levels of group selectivity (~85/15) in representative radical cyclizations of dienes and diynes.*

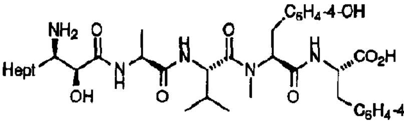


Tetrahedron: Asymmetry **1994**, *5*, 203

Asymmetric Synthesis of (2*S*,3*R*)-3-Amino-2-Hydroxydecanoic Acid: The Unknown Amino Acid Component of Microginin

Mark E. Bunnage,[a] Anthony J. Burke,[a] Stephen G. Davies,[a]* and Christopher J. Goodwin[b]
a The Dyson Perrins Laboratory, South Parks Road, Oxford, OX1 3QY, UK.
b Fisons plc, Pharmaceutical Division, Research and Development Laboratories, Bakewell Road, Loughborough, LE11 ORH, UK.

Asymmetric synthesis of the *N*-terminal component of microginin allows the structural and stereochemical assignment of this novel ACE inhibitor to be completed.

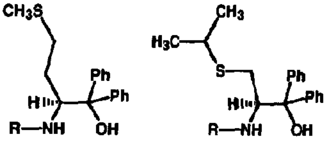


Microginin

Tetrahedron: Asymmetry **1994**, *5*, 207

New Thioether Derivatives as Catalysts for the Enantioselective Addition of Diethylzinc to Benzaldehyde

Th. Mehler, J. Martens*
Fachbereich Chemie, Universität Oldenburg, Ammerländer Heerstr. 114-118, D-26129 Oldenburg



1-5 (R=H, C_2H_5, n-C_3H_7)

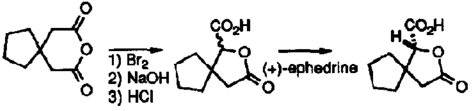
Different sulfur-containing β-amino alcohols 1-5 have been synthesized from L-methionine and L-cysteine. The application as catalysts in the enantioselective addition of diethylzinc to to benzaldehyde afforded chiral 1-phenyl-1-propanol in up to 94% *op* under mild reaction conditions.

Tetrahedron: Asymmetry **1994**, *5*, 211

Synthesis of *R*- and *S*-3-Oxo-2-oxaspiro[4.4]-nonane-1-carboxylic acid.

Frank J. Urban, Pfizer Inc, Central Research Division
Process Research and Development Department,Eastern Point Rd.,Groton, CT 06340

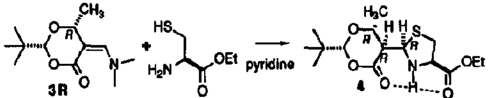
An efficient synthesis and temperature dependent resolution of the title acids are described.



Tetrahedron: Asymmetry **1994**, *5*, 215

Synthesis and Stereochemistry of Some Thiazolidines Related to 6-(Hydroxyethyl)-Penams.

Frank J. Urban*, Jon Bordner, Debra DeCosta, Michael F. Dee, Lawrence A. Vincent
Pfizer Inc, Central Research Division,Eastern Point Rd.,Groton, Connecticut 06340



3R **4**

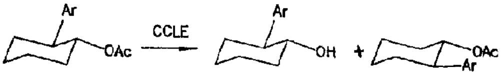
L-Cysteine and D-penicillamine esters reacted with (R,R)- or (S,S)-2-t-butyl-5-dimethylaminomethylene-6-methyl-[1,3]dioxan-4-one **3** to provide thiazolidines with high stereospecificity.

Tetrahedron: Asymmetry **1994**, *5*, 223

Enzymatic Resolution of *trans*-2-Arylcyclohexan-1-ols using Crude Chicken Liver Esterase (CCLE) as Biocatalyst

Deevi Basavaiah and Polisetti Dharma Rao
School of Chemistry, University of Hyderabad, Hyderabad 500 134, INDIA

Enantioselective hydrolysis of (±)-*trans*-1-acetoxy-2-arylcyclohexanes.



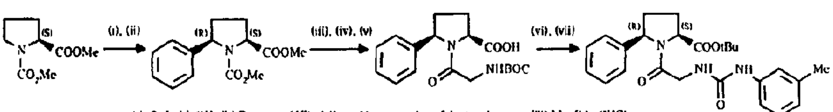
(±)-2(a-g)   (1R,2S)-1(a-g)   (1S,2R)-2(a-g)

7 examples   >99% ee

Tetrahedron: Asymmetry **1994**, *5*, 235

Enantiospecific Synthesis and Absolute Configuration of (+) - RP 66803 a New Non-Peptide CCK Antagonist

Franco Manfré and Jean Pierre Pulicani
Rhône-Poulenc Rorer Central Research, Vitry-sur-Seine, France



(i) -2 e⁻, MeOH, (ii) Benzene, $AlCl_3$ followed by separation of the two isomers; (iii) Me_3SiI, $CHCl_3$
(iv) BOC-Glycine, DCC, (v) NaOH, dioxane, (vi) Isobutene, H_2SO_4, $CHCl_3$, (vii) m-Tolyl isocyanate, THF

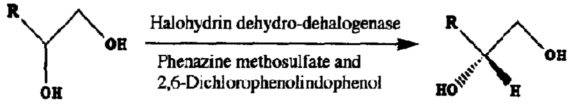
(+) RP 66803

Tetrahedron: Asymmetry **1994**, *5*, 239

A novel generation of optically active 1,2-diols from the racemates by using halohydrin dehydro-dehalogenase

Toshio SUZUKI,*[a] Naoya KASAI[a] and Noshi MINAMIURA[b]
[a] Research Laboratories of DAISO, Co., Ltd., 9 Otakasu-cho, Amagasaki, Hyogo 660, Japan
[b] Faculty of Science, Osaka City University, 3-3-138 Sugimoto, Sumiyoshi-ku, Osaka 558, Japan

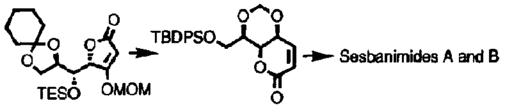
Enzymatic resolution of racemic halogenated and non-halogenated 1,2-diols by a novel type of dehalogenase



Tetrahedron: Asymmetry **1994**, *5*, 247

STEREOCONTROLLED SYNTHESIS OF THE B-RING MOIETY OF SESBANIMIDE ALKALOIDS: FORMAL CHIRAL SYNTHESIS OF SESBANIMIDES A AND B

Toshio Honda,* Toshio Yamada, Tomohisa Hayakawa, and Kazuo Kanai
Institute of Medicinal Chemistry, Hoshi University, Ebara 2-4-41, Shinagawa-ku, Tokyo 142, Japan



Formal chiral synthesis of sesbanimides A and B has been achieved starting from (*R*)-glyceraldehyde.

Tetrahedron: Asymmetry **1994**, *5*, 255

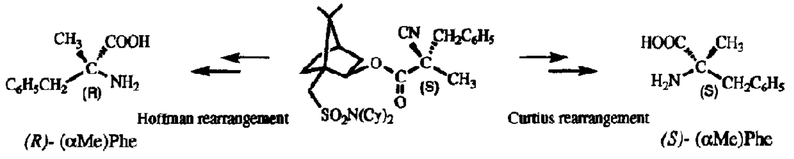
Asymmetric Synthesis of chiral Spiroacetals from Chiral Diketodisulfoxides: 2,8-dimethyl-1,7-dioxaspiro [5,5] undecane.

Guy Solladié*, Nathalie Huser
Ecole Européenne des Hautes Etudes des Industries Chimiques, 1 Rue B. Pascal, 67008-Strasbourg, France.

Tetrahedron: Asymmetry **1994**, *5*, 261

NEW APPROACHES TO THE ASYMMETRIC SYNTHESIS OF α-METHYLPHENYLALANINE

Carlos Cativiela*, Maria D. Diaz-de-Villegas, and José A. Galvez
Instituto de Ciencia de Materiales de Aragón. Departamento de Química Orgánica. Universidad de Zaragoza-CSIC. Zaragoza. Spain.



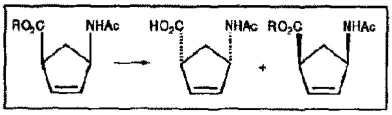
Tetrahedron: Asymmetry **1994,** *5,* 269

BIOCATALYTICAL TRANSFORMATIONS. IV. ENANTIOSELECTIVE ENZYMATIC HYDROLYSES OF BUILDING BLOCKS FOR THE SYNTHESIS OF CARBOCYCLIC NUCLEOSIDES

RENÉ CSUK* and PETRA DÖRR

PHARMAZEUTISCH-CHEMISCHES INSTITUT, UNIVERSITÄT HEIDELBERG, Im Neuenheimer Feld 364,
D-69120 Heidelberg, Germany.

Enantiomerically pure alkyl (1*S*, 4*R*)- and (1*R*, 4*S*)-4-acetamido-cyclopent-2-ene-carboxylates are obtained from their corresponding racemates by hydrolysis with PLE or the lipase from *Candida cylindracea*



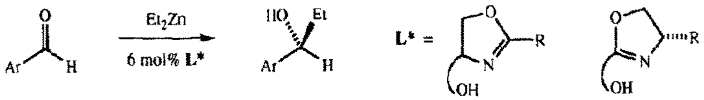
Tetrahedron: Asymmetry **1994,** *5,* 277

ENANTIOMERICALLY PURE OXAZOLINES TETHERED TO ALCOHOLS. PREPARATION AND USE IN ASYMMETRIC CATALYSIS

Joanne V. Allen and Jonathan M. J. Williams*

Department of Chemistry, Loughborough University of Technology, Loughborough, Leicestershire, LE11 3TU, UK.

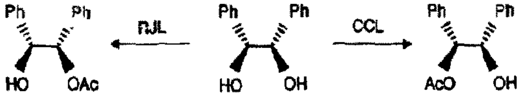
The addition of diethylzinc to aromatic aldehydes is catalysed by hydroxy containing oxazolines with up to 67% ee



Tetrahedron: Asymmetry **1994,** *5,* 283

Desymmetrization of *meso*-Hydrobenzoin *via* Stereoselective Enzymatic Esterification

Giovanni Nicolosi*, Angela Patti, Mario Piattelli and Claudia Sanfilippo
Istituto CNR Studio Sostanze Naturali, Via del Santuario 110, 95028 Valverde CT, Italy



Desymmetrization of *meso*-hydrobenzoin by transesterification using lipase from *Candida cylindracea* or *Rhizopus javanicus* as catalyst afforded both enantiomers of 1-acetoxy-2-hydroxy-1,2-diphenylethane.

Tetrahedron: Asymmetry **1994,** *5,* 289

Quantum Chemical Modeling of Chiral Catalysis. Part 15. On the Role of Hydride-Bridged Borane - Alkoxyborane Complexes in the Catalytic Enantioselective Reduction of Ketones Promoted by Chiral Oxazaborolidines

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

Abstract: - Hydride-bridged borane - alkoxyborane complexes of oxazaborolidines were investigated by means of *ab initio* MO methods (RHF). The complexes were found to be stable in the absence of Lewis basic solvents. In the presence of a Lewis basic solvent the borane - alkoxyborane complexes were predicted to decompose leading to the formation of borane - solvent complexes of the oxazaborolidines.