N. Harada, T. Soutome, S. Murai, and H. Uda

Tetrahedron: Asymmetry **1993**, *4*, 1755

$C_{11}H_{16}O_4$
2,6-dimethylspiro[3.3]heptane-2,6-dicarboxylic acid

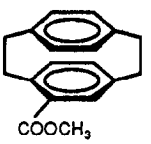
E.e. = 100.0% [by optical resolution of synthetic intermediate]
$[\alpha]_D^{20}$ = +9.07° (c 1.67, acetone)

Source of chirality: optical resolution

Absolute configuration *S*
(assigned by X-ray of camphorsultam amide derivative)

N. Harada, T. Soutome, S. Murai, and H. Uda

Tetrahedron: Asymmetry **1993**, *4*, 1755



$C_{18}H_{18}O_2$
methyl [2.2]paracyclophane-4-carboxylate

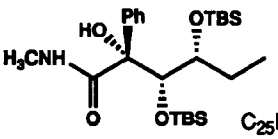
E.e. = 100.0% [by optical resolution of camphorsultam amide]
$[\alpha]_D^{20}$ = –149 (c 0.3738, $CHCl_3$)

Source of chirality: optical resolution

Absolute configuration *R*
(assigned by X-ray of camphorsultam amide derivative)

H. Yoda, H. Kitayama, K. Takabe and A. Kakehi

Tetrahedron: Asymmetry **1993**, *4*, 1759



$C_{25}H_{47}NO_4Si_2$

3,4-Bis[(*tert*-butyldimethylsilyl)-oxy]-2-hydroxy-*N*-methyl-2-phenylhexanamide

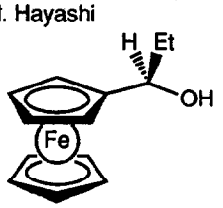
D.e.=100% [by HPLC using Cosmosil (Nacalai tesque)]
$[\alpha]_D^{23}$ -17.0(c 1.74,$CHCl_3$)

Source of chirality: natural and synthetic by nucleophilic addition

Absolute configuration 2R,3S,4R
(assigned by X-ray analysis)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



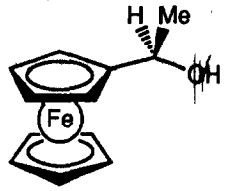
$C_{13}H_{16}OFe$
1-Ferrocenylpropanol

E.e. = >96% [by ^1H NMR in the presence of $Eu(hfc)_3$]
$[\alpha]_D^{20}$ –57.5 (*c* 1.0, benzene)

Source of chirality: Enantioselective ethylation with diethylzinc
Absolute configuration: *R*
(assigned by mechanistic considerations)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{12}H_{14}OFe$

1-Ferrocenylethanol

E.e. = >99% [by optical rotation]

$[\alpha]_D^{25}$ –31.1 (*c* 1.0, benzene)

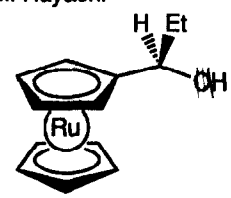
Source of chirality: Enantioselective methylation with dimethylzinc

Absolute configuration: *R*

(assigned by optical rotation)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{13}H_{16}ORu$

1-Ruthenocenylpropanol

E.e. = >96% [by ^{1}H NMR in the presence of Eu(hfc)$_3$]

$[\alpha]_D^{20}$ –49.0 (*c* 1.1, benzene)

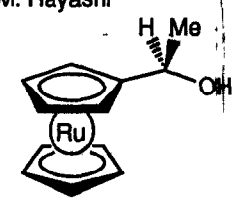
Source of chirality: Enantioselective ethylation with diethylzinc

Absolute configuration: *R*

(assigned by mechanistic considerations)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{12}H_{14}ORu$

1-Ruthenocenylethanol

E.e. = 90% [by HPLC on Sumichiral OA-1100]

$[\alpha]_D^{20}$ –24.0 (*c* 0.5, benzene)

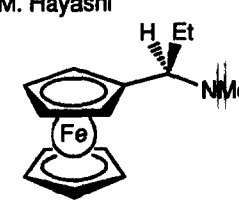
Source of chirality: Enantioselective methylation with dimethylzinc

Absolute configuration: *R*

(assigned by mechanistic considerations)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{15}H_{21}NFe$

N,N-Dimethyl-1-ferrocenylpropylamine

E.e. = >96% [% e.e. of the precursor]

$[\alpha]_D^{20}$ –43.8 (*c* 1.0, benzene)

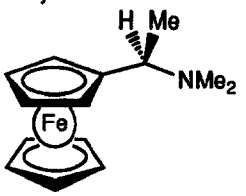
Source of chirality: (*R*)-1-Ferrocenypropanol

Absolute configuration: *R*

(assigned by correlation with (*R*)-1-ferrocenypropanol)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{14}H_{19}NFe$

N,N-Dimethyl-1-ferrocenylethylamine

E.e. = >99% [by optical rotation]

$[\alpha]_D^{25}$ –14.2 (*c* 1.0, ethanol)

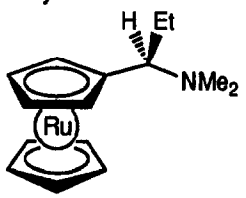
Source of chirality: (*R*)-1-Ferrocenyethanol

Absolute configuration: *R*

(assigned by optical rotation)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{15}H_{21}NRu$

N,N-Dimethyl-1-ruthenocenylpropylamine

E.e. = >96% [% e.e. of the precursor]

$[\alpha]_D^{20}$ +13.2 (*c* 1.0, benzene)

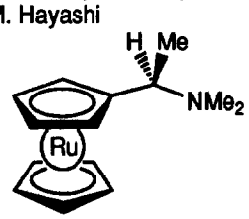
Source of chirality: (*R*)-1-Ruthenocenylpropanol

Absolute configuration: *R*

(assigned by correlation with (*R*)-1-ruthenocenylpropanol)

Y. Matsumoto, A. Ohno, S. Lu, T. Hayashi,* N. Oguni, and M. Hayashi

Tetrahedron: Asymmetry **1993**, *4*, 1763



$C_{14}H_{19}NRu$

N,N-Dimethyl-1-ruthenocenylethylamine

E.e. = 90% [% e.e. of the precursor]

$[\alpha]_D^{20}$ +22.1 (*c* 1.8, benzene)

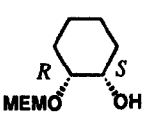
Source of chirality: (*R*)-1-Ruthenocenylethanol

Absolute configuration: *R*

(assigned by correlation with (*R*)-1-ruthenocenylethanol)

Tetrahedron: Asymmetry **1993**, *4*, 1767

H. Suemune, K. Watanabe, K. Kato, and K. Sakai



$C_{10}H_{20}O_4$

(1*S*,2*R*)-2-Methoxyethoxymethoxycyclohexanol

E.e.= 72% (determined by ^{1}H-NMR)

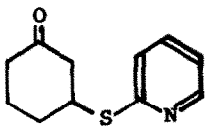
$[\alpha]_D^{24}$ -20.1 (c=0.7, $CHCl_3$)

Source of chirality: diastereoselective elimination

Absolute configuration: 1*S*,2*R*

Fumio Toda, Koichi Tanaka, and Jin Sato

Tetrahedron: Asymmetry **1993**, *4*, 1771



E.e.= 80% [by HPLC on Chiralpak AS]

$[\alpha]_D$ = +66.0 (c 0.55, MeOH)

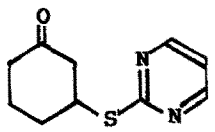
$C_{11}H_{13}ONS$

Source of chirality: asymm. synth. (aldol) in the solid state

3-[2-(Pyridyl)thio]cyclohexanone

Fumio Toda, Koichi Tanaka, and Jin Sato

Tetrahedron: Asymmetry **1993**, *4*, 1771



E.e.= 78% [by HPLC on Chiralpak AS]

$[\alpha]_D$ = +77.4 (c 1.0, MeOH)

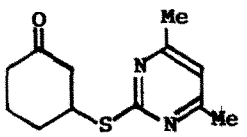
$C_{10}H_{12}OSN_2$

Source of chirality: asymm. synth. (aldol) in the solid state

3-[(2-Pyrimidyl)thio]cyclohexanone

Fumio Toda, Koichi Tanaka, and Jin Sato

Tetrahedron: Asymmetry **1993**, *4*, 1771



E.e.= 74% [by HPLC on Chiralpak AS]

$[\alpha]_D$ = +76.4 (c 0.72, MeOH)

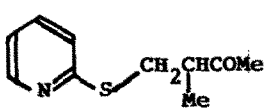
$C_{12}H_{16}OSN_2$

Source of chirality: asymm. synth. (aldol) in the solid state

3-[2-(4,6-Dimethylpyrimidyl)thio]cyclohexanone

Fumio Toda, Koichi Tanaka, and Jin Sato

Tetrahedron: Asymmetry **1993**, *4*, 1771



E.e.= 49% [by HPLC on Chiralpak AS]

$[\alpha]_D$ =+35.3 (c 0.96, MeOH)

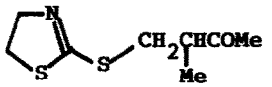
$C_{10}H_{13}OSN$

Source of chirality: asymm. synth. (aldol) in the solid state

4-[(2-Pyridyl)thio]-3-methylbutan-2-one

Fumio Toda, Koichi Tanaka, and Jin Sato

Tetrahedron: Asymmetry **1993**, *4*, 1771



E.e.= 53% [by HPLC on Chiralpak AS]

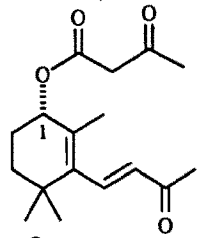
$C_8H_{13}OS_2N$

$[\alpha]_D$ +4.0 (c 1.0, MeOH)

4-[(2-Thiazoline)thio]-3-methylbutan-2-one Source of chirality: aymm. synth. (aldol) in the solid state

J.-Y. Lallemand, M. Leclaire, R. Levet and G. Aranda.

Tetrahedron: Asymmetry **1993**, *4*, 1775



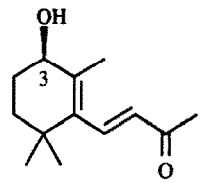
$C_{17}H_{24}O_4$

3-Oxo-butyric acid 2,4,4-trimethyl-3-(3-oxo-but-1-enyl)-cyclohex-2-enyl ester.

E. e. = 95% (by NMR with Eu^{III} D3-heptafluoro-butyrylcamphorate)
$[\alpha]_D^{20}$ = -51.4 (c= 1.62, EtOH)
Source of chirality : enzymatic resolution
Absolute configuration : 1S.

J.-Y. Lallemand, M. Leclaire, R. Levet and G. Aranda.

Tetrahedron: Asymmetry **1993**, *4*, 1775



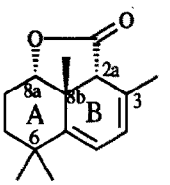
$C_{13}H_{20}O_2$

4-(3-Hydroxy-2,6,6-trimethyl-cyclohex-1-enyl)-but-3-en-2-one

E. e. = 95% by NMR with Eu^{III} D3-heptafluoro-butyrylcamphorate.
$[\alpha]_D^{20}$ = -7.0 (c= 2.06, EtOH)
Source of chirality : enzymatic resolution
Absolute configuration : 3R.

J.-Y. Lallemand, M. Leclaire, R. Levet and G. Aranda.

Tetrahedron: Asymmetry **1993**, *4*, 1775

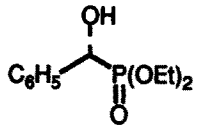


$C_{15}O_2H_{20}$

(2aβ,8aβ,8bβ)-3,6,6,8b-Tetramethyl-2a,6,7,8,8a,8b-hexahydro-2H- naphto[1,8-bc] furan-2-one.
mp=124-125°C.
E. e. > 99% (by NMR with Eu^{III} D3-heptafluoro-butyrylcamphorate) and GC analysis on a chiral column.
$[\alpha]_D^{20}$ = -150.0 (c= 0.80, EtOH).
Source of chirality : enzymatic resolution
Absolute configuration : 2aR,8aS,8bR

Tsutomu Yokomatsu, Takehiro Yamagishi, and Shiroshi Shibuya

Tetrahedron: Asymmetry **1993**, *4*, 1779



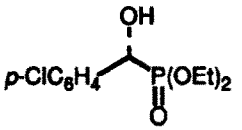
E. e.= 53% [by ^{1}H-NMR as (*R*)-Mosher ester]
$[\alpha]_D^{20}$ +18.2 (c 1.0, $CHCl_3$)
mp 74-76 °C (Hexane and CH_2Cl_2)
Source of Chirality: L-tartaric acid
Abusolute configuration: *R*

$C_{11}H_{17}O_4P$

Diethyl (2*R*)-2-hydroxy-2-phenylmethylphosphonate

Tsutomu Yokomatsu, Takehiro Yamagishi, and Shiroshi Shibuya

Tetrahedron: Asymmetry **1993**, *4*, 1779



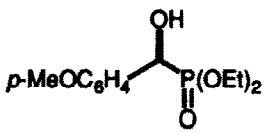
E. e.= 52% [by ^{1}H-NMR as (*R*)-Mosher ester]
$[\alpha]_D^{20}$ +21.9 (c 1.0, $CHCl_3$)
mp 67-70 °C (Hexane and CH_2Cl_2)
Source of Chirality: L-tartaric acid
Abusolute configuration: *R*

$C_{11}H_{16}ClO_4P$

Diethyl (2*R*)-2-hydroxy-2-[4-chlorophenyl]methylphosphonate

Tsutomu Yokomatsu, Takehiro Yamagishi, and Shiroshi Shibuya

Tetrahedron: Asymmetry **1993**, *4*, 1783



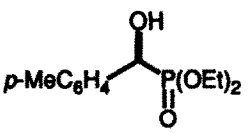
E.e.=82%[by ^{1}H-NMR as (*R*)-Mosher ester]
$[\alpha]_D^{20}$-31.1 (c 1.0, $CHCl_3$)
mp 120-121 °C (Hexane-CH_2Cl_2)
Source of Chirality: (*R*)-binaphthol
Abusolute configuration: *S*

$C_{12}H_{19}O_5P$

Diethyl (2*S*)-2-hydroxy-2-[4-methoxyphenyl]methylphosphonate

Tsutomu Yokomatsu, Takehiro Yamagishi, and Shiroshi Shibuya

Tetrahedron: Asymmetry **1993**, *4*, 1783



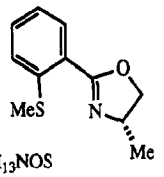
E.e.=58%[by ^{1}H-NMR as (*R*)-Mosher ester]
$[\alpha]_D^{20}$-20.0 (c 1.0, $CHCl_3$)
mp 93-94 °C (Hexane-CH_2Cl_2)
Source of Chirality: (*R*)-binaphthol
Abusolute configuration: *S*

$C_{12}H_{19}O_4P$

Diethyl (2*S*)-2-hydroxy-2-[4-methylphenyl]methylphosphonate

Tetrahedron: Asymmetry **1993**, *4*, 1785

Christopher G. Frost and Jonathan M. J. Williams*



$[\alpha]_D^{25}$ = -21.4 (c = 0.28, $CHCl_3$)

Source of chirality: (S)-(+)-Alaninol

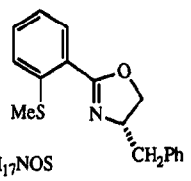
Absolute configuration: 4S

$C_{11}H_{13}NOS$

2-(2-thiomethylphenyl)-(4S)-4-methyl-1,3-oxazoline

Tetrahedron: Asymmetry **1993**, *4*, 1785

Christopher G. Frost and Jonathan M. J. Williams*



$[\alpha]_D^{25}$ = +18.7 (c = 0.16, $CHCl_3$)

Source of chirality: (S)-(-)-Phenylalaninol

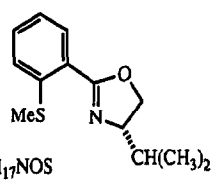
Absolute configuration: 4S

$C_{17}H_{17}NOS$

2-(2-thiomethylphenyl)-(4S)-4-benzyl-1,3-oxazoline

Tetrahedron: Asymmetry **1993**, *4*, 1785

Christopher G. Frost and Jonathan M. J. Williams*



$[\alpha]_D^{25}$ = -72.2 (c = 0.18, $CHCl_3$)

Source of chirality: (S)-(+)-Valinol

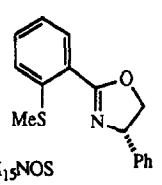
Absolute configuration: 4S

$C_{13}H_{17}NOS$

2-(2-thiomethylphenyl)-(4S)-4-isopropyl-1,3-oxazoline

Tetrahedron: Asymmetry **1993**, *4*, 1785

Christopher G. Frost and Jonathan M. J. Williams*



$[\alpha]_D^{25}$ = +100 (c = 0.12, $CHCl_3$)

Source of chirality: (S)-(+)-2-Phenylglycinol

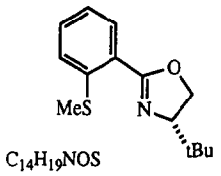
Absolute configuration: 4S

$C_{16}H_{15}NOS$

2-(2-thiomethylphenyl)-(4S)-4-phenyl-1,3-oxazoline

Christopher G. Frost and Jonathan M. J. Williams*

Tetrahedron: Asymmetry **1993**, *4*, 1785



$C_{14}H_{19}NOS$

2-(2-thiomethylphenyl)-(4S)-4-tert-butyl-1,3-oxazoline

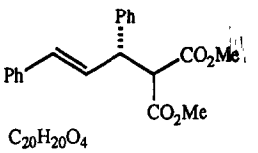
$[\alpha]_D^{25}$ = -121 (c = 0.38, $CHCl_3$)

Source of chirality: (S)-(-)-tert-Leucine

Absolute configuration: 4S

Christopher G. Frost and Jonathan M. J. Williams*

Tetrahedron: Asymmetry **1993**, *4*, 1785



$C_{20}H_{20}O_4$

Methyl-2-carbomethoxy-3,5-diphenylpent-4-enoate

$[\alpha]_D^{25}$ = -13.6 (c = 0.28, $CHCl_3$)

Source of chirality: Asymmetric synthesis

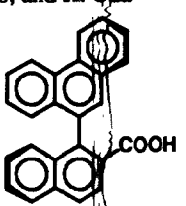
Absolute configuration: 3S

Enantiomeric excess: 80%

Determined with $Eu(hfc)_3$ ^1H nmr shift experiments

N. Harada, T. Hattori, T. Suzuki, A. Okamura, H. Ono, S. Miyano, and H. Uda

Tetrahedron: Asymmetry **1993**, *4*, 1789



$C_{25}H_{16}O_2$

1-(9-phenanthryl)-2-naphthoic acid

E.e. = 61% [by HPLC using the Pirkle column]

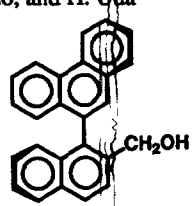
$[\alpha]_D^{17}$ = +36.2 (c 1.30, THF)

Source of chirality: asymmetric synthesis

Absolute configuration (a*S*)
(assigned by X-ray and CD of a derivative)

N. Harada, T. Hattori, T. Suzuki, A. Okamura, H. Ono, S. Miyano, and H. Uda

Tetrahedron: Asymmetry **1993**, *4*, 1789



$C_{25}H_{18}O$

1-(9-phenanthryl)-2-naphthalenemethanol

E.e. = 100.0% [by optical resolution of camphorsultam amide]

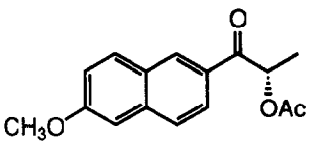
$[\alpha]_D^{21}$ = +97.3 (c 1.20, CH_3OH)

Source of chirality: optical resolution

Absolute configuration (a*S*)
(assigned by CD and X-ray of a derivative)

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993,** *4*, 1793



$C_{16}H_{16}O_4$

2-Acetyl-1-(6-methoxy-2-naphthyl)-1-oxopropane

E.e. = 61 % by ^1H NMR with $Eu(hfc)_3$

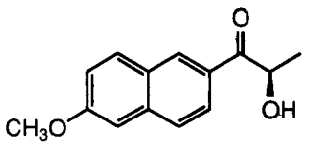
$[\alpha]_D^{25}$ = -9.3 (c 1.0, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: S

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993,** *4*, 1793



$C_{14}H_{14}O_3$

2-Hydroxy-1-(6-methoxy-2-naphthyl)-1-oxopropane

E.e. = 89 % by ^1H NMR of the acetate with $Eu(hfc)_3$

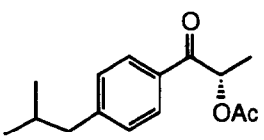
$[\alpha]_D^{25}$ = +69.7 (c 1.1, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: R

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993,** *4*, 1793



$C_{15}H_{20}O_3$

2-Acetyl-1-(4-(2-methylpropyl)phenyl)-1-oxopropane

E.e. = 90 % by ^1H NMR with $Eu(hfc)_3$

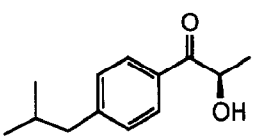
$[\alpha]_D^{25}$ = -15.0 (c 1.2, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: R

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993,** *4*, 1793



$C_{13}H_{18}O_2$

2-Hydroxy-1-(4-(2-methylpropyl)phenyl)-1-oxopropane

E.e. = 85 % by ^1H NMR of the acetate with $Eu(hfc)_3$

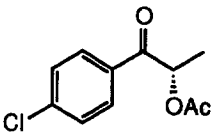
$[\alpha]_D^{25}$ = +46.0 (c 0.8, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: S

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_{11}H_{11}ClO_3$

2-Acetyl-1-(4-chlorophenyl)-1-oxopropane

E.e. = 95 % by ^1H NMR with $Eu(hfc)_3$

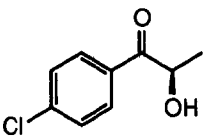
$[\alpha]_D^{25}$ = -11.5 (c 1.2, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: S

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_9H_9ClO_2$

1-(4-Chlorophenyl)-2-hydroxy-1-oxopropane

E.e. = 83 % by ^1H NMR of the acetate with $Eu(hfc)_3$

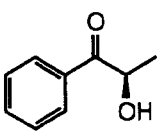
$[\alpha]_D^{25}$ = +15.2 (c 0.9, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: R

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_9H_{10}O_2$

2-Hydroxy-1-phenyl-1-oxopropane

E.e. = 85 % by ^1H NMR of the acetate with $Eu(hfc)_3$

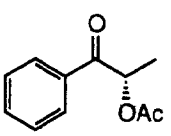
$[\alpha]_D^{25}$ = +104.9 (c 1.7, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: R

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_{11}H_{12}O_3$

2-Acetyl-1-phenyl-1-oxopropane

E.e. = 72 % by ^1H NMR with $Eu(hfc)_3$

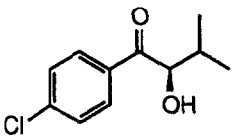
$[\alpha]_D^{25}$ = -72.7 (c 2.2, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: S

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_{11}H_{13}ClO_2$

1-(4-Chlorophenyl)-2-hydroxy-3-methyl-1-oxopropane

E.e. = 9 % by ^1H NMR of the acetate with $Eu(hfc)_3$

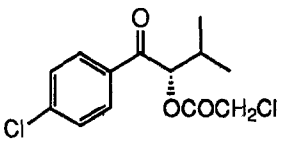
$[\alpha]_D^{25}$ = 0.0 (c 1.0, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: R

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_{13}H_{14}Cl_2O_3$

2-(α-Chloroacetyl)-1-(4-chlorophenyl)-3-methyl-1-oxopropane

E.e. = 77 % by ^1H NMR with $Eu(hfc)_3$

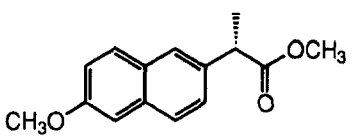
$[\alpha]_D^{25}$ = -7.6 (c 0.9, $CHCl_3$)

Source of chirality: LPL catalyzed resolution

Absolute configuration: S

T. H. Duh, Y. F. Wang, and M. J. Wu

Tetrahedron: Asymmetry **1993**, *4*, 1793



$C_{15}H_{16}O_3$

Methyl 2-(6-methoxy-2-naphthyl)proionate

E.e. = 89 % by ^1H NMR with $Eu(hfc)_3$

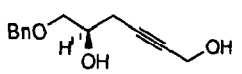
$[\alpha]_D^{25}$ = +68.4 (c 1.0, $CHCl_3$)

Source of chirality: LPL catalyzed resolution and asymm. synth.

Absolute configuration: S

Tetrahedron: Asymmetry **1993**, *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



$C_{13}H_{16}O_3$

6-Benzyloxy-2-hexyn-1,5-diol

Absolute configuration 5*R*

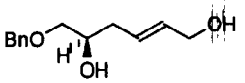
$[\alpha]_D^{28}$ –6.79 (*c* 1.1, $CHCl_3$)

source of chirality: (*S*)-*O*-benzylglycidol

E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993,** *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



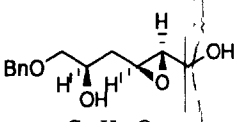
$C_{13}H_{18}O_3$

E-6-Benzyloxy-2-hexen-1,5-diol

Absolute configuration 5*R*
$[\alpha]_D^{29}$ –2.65 (*c* 1.0, $CHCl_3$)
source of chirality: (*S*)-*O*-benzylglycidol
E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993,** *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



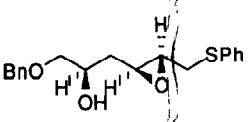
$C_{13}H_{18}O_4$

6-Benzyloxy-2,3-epoxyhexan-1,5-diol

Absolute configuration 2*S*:3*S*:5*R*
$[\alpha]_D^{29}$ –21.26 (*c* 1.1, $CHCl_3$)
source of chirality: (*S*)-*O*-benzylglycidol
E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993,** *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



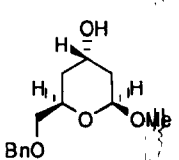
$C_{19}H_{22}O_3S$

1-Benzyloxy-4,5-epoxy-6-phenylthio-2-hexanol

Absolute configuration 2*R*:4*S*:5*R*
$[\alpha]_D^{29}$ +2.95 (*c* 1.0, $CHCl_3$)
source of chirality: (*S*)-*O*-benzylglycidol
E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993,** *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



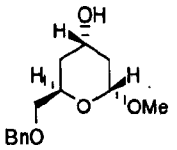
$C_{14}H_{20}O_4$

6-Benzyloxymethyl-4-hydroxy-2-methoxy-tetrahydropyran

Absolute configuration 2*S*:4*S*:6*R*
$[\alpha]_D^{27}$ –81.01 (*c* 0.5, $CHCl_3$)
source of chirality: (*S*)-*O*-benzylglycidol
E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993, *4*,** 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



$C_{14}H_{20}O_4$

6-Benzyloxymethyl-4-hydroxy-2-methoxy-tetrahydropyran

Absolute configuration 2*R*:4*S*:6*R*

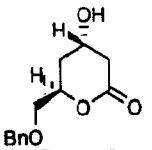
$[\alpha]_D^{28}$ +56.91 (*c* 1.0, $CHCl_3$)

source of chirality: (*S*)-*O*-benzylglycidol

E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993, *4*,** 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



$C_{13}H_{16}O_4$

6-Benzyloxymethyl-4-hydroxytetrahydro-2-pyrone

Absolute configuration 4*S*:6*R*

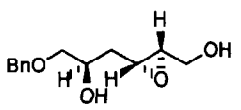
$[\alpha]_D^{29}$ –9.80 (*c* 0.6, $CHCl_3$)

source of chirality: (*S*)-*O*-benzylglycidol

E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993, *4*,** 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



$C_{13}H_{18}O_4$

6-Benzyloxy-2,3-epoxyhexan-1,5-diol

Absolute configuration 2*R*:3*R*:5*R*

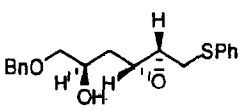
$[\alpha]_D^{29}$ +30.93 (*c* 1.0, $CHCl_3$)

source of chirality: (*S*)-*O*-benzylglycidol

E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993, *4*,** 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



$C_{19}H_{22}O_3S$

1-Benzyloxy-4,5-epoxy-6-phenylthio-2-hexanol

Absolute configuration 2*R*:4*R*:5*S*

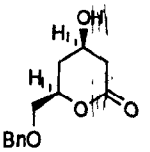
$[\alpha]_D^{29}$ +4.94 (*c* 1.2, $CHCl_3$)

source of chirality: (*S*)-*O*-benzylglycidol

E. e.=>98% (based on starting material)

Tetrahedron: Asymmetry **1993**, *4*, 1795

Seiichi Takano,* Yoshiaki Sugihara, and Kunio Ogasawara



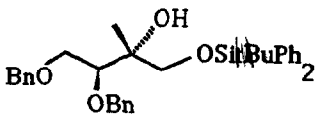
$C_{13}H_{16}O_4$

6-Benzyloxymethyl-4-hydroxytetrahydro-2-pyrone

Absolute configuration 4*R*:6*R*
$[\alpha]_D^{29}$ −18.71 (*c* 0.9, $CHCl_3$)
source of chirality: (*S*)-*O*-benzylglycidol
E. e.=>98% (based on starting material)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{35}H_{42}O_4Si$

(2S,3S)-1-O-t-Butyldiphenylsilyl-3,4-di-O-benzyl-2-methylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ −6.5 (*c* 3, $CHCl_3$)

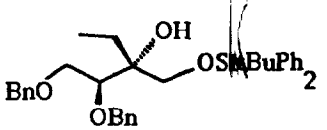
99% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{36}H_{44}O_4Si$

(2S,3S)-1-O-t-Butyldiphenylsilyl-3,4-di-O-benzyl-2-ethylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ +1.5 (*c* 6.5, $CHCl_3$)

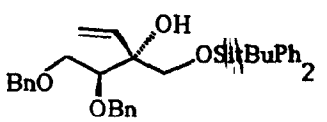
94% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{36}H_{42}O_4Si$

(2S,3S)-1-O-t-Butyldiphenylsilyl-3,4-di-O-benzyl-2-vinylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ −15.8 (*c* 8.2, $CHCl_3$)

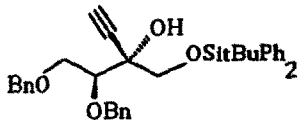
96% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{36}H_{40}O_4Si$

(2S,3S)-1-O-t-Butyldiphenylsilyl-3,4-di-O-benzyl-2-ethynylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ −9.2 (*c* 7.4, $CHCl_3$)

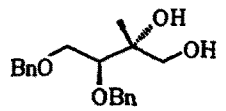
88% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{19}H_{24}O_4$

(2R,3S)-3,4-Di-O-benzyl-2-methylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ +23.6 (*c* 7.2, $CHCl_3$)

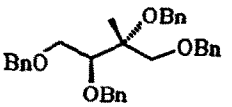
99% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{33}H_{36}O_4$

(2R,3S)-Tetra-O-benzyl-2-methylbutane-1,2,3,4-tetraol

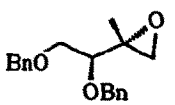
$[\alpha]_D^{23}$ +5.3 (*c* 0.75, $CHCl_3$)

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{19}H_{22}O_3$

(2R,3S)-3,4-Di-O-benzyl-1,2-epoxy-2-methylbutane-3,4-diol

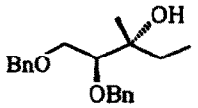
$[\alpha]_D^{23}$ +2.2 (*c* 3.6, $CHCl_3$)

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{26}O_3$

(2S,3R)-1,2-Di-O-benzyl-3-methylpentane-1,2,3-triol

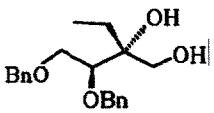
$[\alpha]_D^{23}$ +20.7 (*c* 3.5, $CHCl_3$)

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*R* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{26}O_4$

(2R,3S)-3,4-Di-O-benzyl-2-ethylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ +17.2 (*c* 8.2, $CHCl_3$)

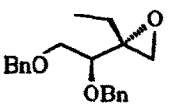
94% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{24}O_3$

(2R,3S)-3,4-Di-O-benzyl-1,2-epoxy-2-ethylbutane-3,4-diol

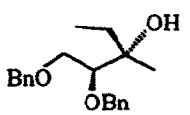
$[\alpha]_D^{23}$ −8.1 (*c* 6, $CHCl_3$)

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{26}O_3$

(2S,3S)-1,2-Di-O-benzyl-3-methylpentane-1,2,3-triol

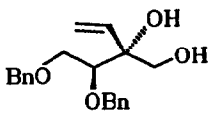
$[\alpha]_D^{23}$ +9.5 (*c* 3.7, $CHCl_3$)

Source of chirality: L-ascorbic acid

Absolute configuration: 2*S*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{24}O_4$

(2R,3S)-3,4-Di-O-benzyl-
2-vinylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ −4.5 (*c* 4, $CHCl_3$)

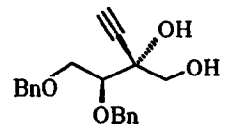
96% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

M. Carda, F. González, S. Rodríguez, J.A. Marco*

Tetrahedron: Asymmetry **1993**, *4*, 1799



$C_{20}H_{22}O_4$

(2R,3S)-3,4-Di-O-benzyl-
2-ethynylbutane-1,2,3,4-tetraol

$[\alpha]_D^{23}$ +10.9 (*c* 3.8, $CHCl_3$)

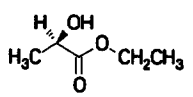
88% diastereomeric purity

Source of chirality: L-ascorbic acid

Absolute configuration: 2*R*, 3*S* (assignment via chemical correlation)

R. L. Augustine, S. K. Tanielyan and L. K. Doyle

Tetrahedron: Asymmetry **1993**, *4*, 1803



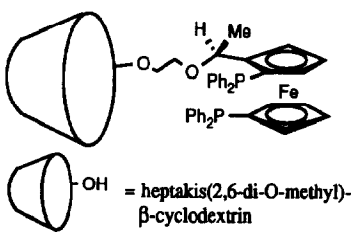
E. e. Up to 60%[by gc analysis using a 30m x .25mm Chiraldex B-TA column run isothermally at 75°C.

Source of chirality: Hydrogenation of ethyl pyruvate over dihydrocinchonidine modified Pt/Al_2O_3 catalysts.

$C_5H_{10}O_3$
(R) Ethyl Lactate

M. Sawamura, K. Kitayama, and Y. Ito

Tetrahedron: Asymmetry **1993**, *4*, 1829



= heptakis(2,6-di-O-methyl)-β-cyclodextrin

$C_{94}H_{132}FeO_{36}P_2$

E.e. = 100%

$[\alpha]_D^{25}$ = +171 (*c* 1.1, $CHCl_3$)

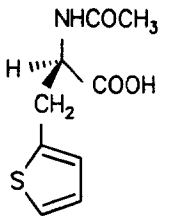
Source of chirality: synthesized from (*R*)-*N*,*N*-Dimethyl-1-(1-ferrocenyl)ethylamine

Absolute configuration: (*S*,*R*) for ferrocenylphosphine moiety

mp 148-153 °C

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_9H_{11}NO_3S$

(R)–N–Acetyl–3–(2–thienyl)–alanine

E.e. > 99 % (by GLC)

$[\alpha]_D^{25}$= –42.8 (c 1.0 , EtOH)

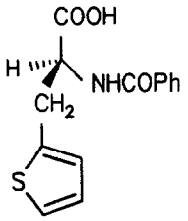
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{14}H_{13}NO_3S$

(S)–N–Benzoyl–3–(2–thienyl)–alanine

E.e. = 91 % (by GLC)

$[\alpha]_D^{25}$= –13.3 (c 1.0 , EtOH)

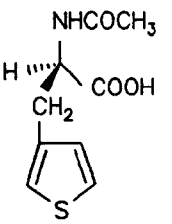
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : S

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_9H_{11}NO_3S$

(R)–N–Acetyl–3–(3–thienyl)–alanine

E.e. > 99 % (by GLC)

$[\alpha]_D^{25}$= –46.2 (c 1.0 , EtOH)

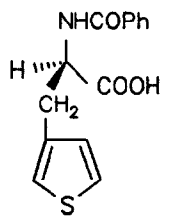
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{14}H_{13}NO_3S$

(R)–N–Benzoyl–3–(3–thienyl)–alanine

E.e. = 96 % (by GLC)

$[\alpha]_D^{25}$= +4.1 (c 1.0 , EtOH)

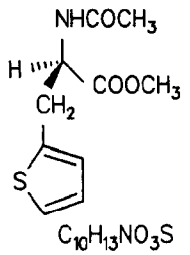
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{10}H_{13}NO_3S$

(R)–N–Acetyl–3–(2–thienyl)–alanine–methylester

E.e. > 99 % (by GLC)

$[\alpha]_D^{25}$= –16.7 (c 1.0 , EtOH)

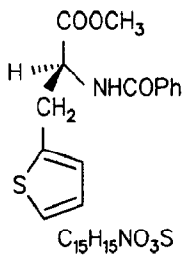
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{15}H_{15}NO_3S$

(S)–N–Benzoyl–3–(2–thienyl)–alanine–methylester

E.e. = 90 % (by GLC)

$[\alpha]_D^{25}$= –39.7 (c 1.0 , EtOH)

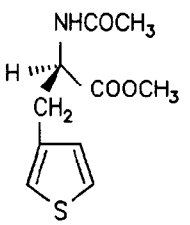
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : S

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{10}H_{13}NO_3S$

(R)–N–Acetyl–3–(3–thienyl)–alanine–methylester

E.e. = 98 % (by GLC)

$[\alpha]_D^{25}$= –14.6 (c 1.0 , EtOH)

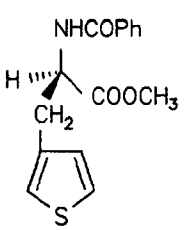
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_{15}H_{15}NO_3S$

(R)–N–Benzoyl–3–(3–thienyl)–alanine–methylester

E.e. = 93 % (by GLC)

$[\alpha]_D^{25}$= +35.2 (c 1.0 , EtOH)

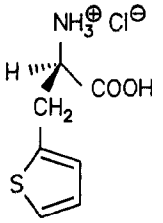
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_7H_{10}ClNO_2S$

(R)–3–(2–Thienyl)–alanine–hydrochlorid

E.e. > 99 % (by HPLC)

$[\alpha]_D^{25}$= +15.0 (c 1.0 , H_2O)

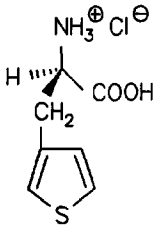
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_7H_{10}ClNO_2S$

(R)–3–(3–Thienyl)–alanine–hydrochlorid

E.e. > 99 % (by HPLC)

$[\alpha]_D^{25}$= +23.2 (c 1.0 , H_2O)

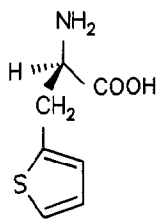
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_7H_9NO_2S$

(R)–3–(2–Thienyl)–alanine

E.e. > 99 % (by HPLC)

$[\alpha]_D^{25}$= +31.8 (c 1.0 , H_2O)

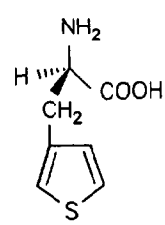
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

Chr. Döbler, H.–J. Kreuzfeld, H.W. Krause, M. Michalik

Tetrahedron: Asymmetry **1993**, *4*, 1833



$C_7H_9NO_2S$

(R)–3–(3–Thienyl)–alanine

E.e. > 99 % (by HPLC)

$[\alpha]_D^{25}$= +42.6 (c 1.0 , H_2O)

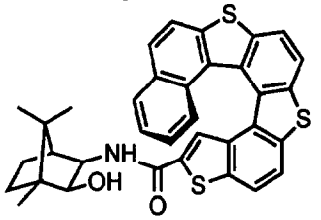
Source of chirality : enantioselective hydrogenation of a precursor.

Absolute configuration : R

(assigned by catalyst configuration)

K. Tanaka, H. Osuga, H. Suzuki

Tetrahedron: Asymmetry **1993**, *4*, 1843



d.e. > 99.5% (by NMR and HPLC)

Absolute configuration: 1*R*, 2*S*, 3*R*, 4*S*; *P*

$[\alpha]_D^{24}$ +2070 (c 0.058, $CHCl_3$)

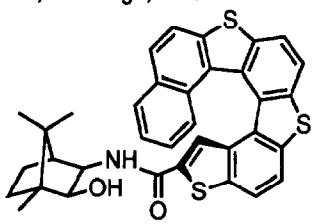
Source of chirality: (1*R*, 2*S*, 3*R*, 4*S*)-3-Amino-2-hydroxybornane

$C_{35}H_{29}O_2NS_3$

N-[2-Hydroxy-1,7,7-trimethylbicyclo-[2.2.1]heptan-3-yl-][1]benzothieno-[5,4-b]naphto[1',2':4,5]thieno[3,2-e][1]benzothiophene-2-carboxamide

K. Tanaka, H. Osuga, H. Suzuki

Tetrahedron: Asymmetry **1993**, *4*, 1843



d.e. > 99.5% (by NMR and HPLC)

Absolute configuration: 1*R*, 2*S*, 3*R*, 4*S*; *M*

$[\alpha]_D^{24}$ -2380 (c 0.052, $CHCl_3$)

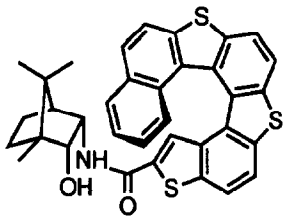
Source of chirality: (1*R*, 2*S*, 3*R*, 4*S*)-3-Amino-2-hydroxybornane

$C_{35}H_{29}O_2NS_3$

N-[2-Hydroxy-1,7,7-trimethylbicyclo-[2.2.1]heptan-3-yl-][1]benzothieno-[5,4-b]naphto[1',2':4,5]thieno[3,2-e][1]benzothiophene-2-carboxamide

K. Tanaka, H. Osuga, H. Suzuki

Tetrahedron: Asymmetry **1993**, *4*, 1843



d.e. > 99.5% (by NMR and HPLC)

Absolute configuration: 1*R*, 2*R*, 3*S*, 4*S*; *P*

$[\alpha]_D^{24}$ +2320 (c 0.058, $CHCl_3$)

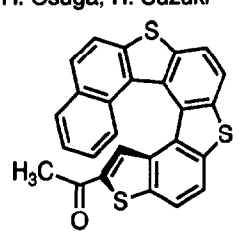
Source of chirality: (1*R*, 2*R*, 3*S*, 4*S*)-3-Amino-2-hydroxybornane

$C_{35}H_{29}O_2NS_3$

N-[2-Hydroxy-1,7,7-trimethylbicyclo-[2.2.1]heptan-3-yl-][1]benzothieno-[5,4-b]naphto[1',2':4,5]thieno[3,2-e][1]benzothiophene-2-carboxamide

K. Tanaka, H. Osuga, H. Suzuki

Tetrahedron: Asymmetry **1993**, *4*, 1843



e.e. > 99.5% (by d.e. of precursor)

Absolute configuration: *M*

$[\alpha]_D^{24}$ -2770 (c 0.053, $CHCl_3$)

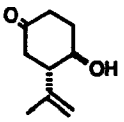
Source of chirality: (1*R*, 2*S*, 3*R*, 4*S*)-3-Amino-2-hydroxybornane

$C_{26}H_{14}O_2S_3$

Methyl [1]benzothieno[5,4-b]naphto[1',2':4,5]thieno[3,2-e][1]benzothiophene-2-carboxylate

Tetrahedron: Asymmetry **1993**, *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



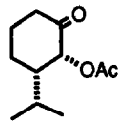
$C_9H_{14}O_2$

(3S,4R)-3-Isopropenyl-
4-hydroxycyclohexanone

76% E.e. [by ^{1}H-NMR of the MTPA ester]
Ab. conf. [by CD]

Tetrahedron: Asymmetry **1993**, *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



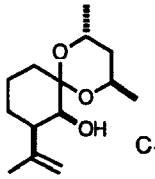
$C_{11}H_{18}O_3$

(2R,3S)-2-Acetoxy-3-
isopropylcyclohexanone

>99%E.e.
$[\alpha]_D$ +31.7 (c=3.1, $CHCl_3$)
Ab. conf. [by CD]

Tetrahedron: Asymmetry **1993**, *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



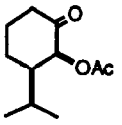
$C_{14}H_{24}O_3$

(2S,3R)-2-Hydroxy-3-isopropenyl-
1,1-[(2R,4R)-2,4-pentandioxy]cyclohexane

>99%D.e. [by ^{1}H-NMR]
$[\alpha]_D$ -5.6 (c=3.8, $CHCl_3$)
Souce of chirality; (2R,4R)-2,4-pentanediol

Tetrahedron: Asymmetry **1993**, *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



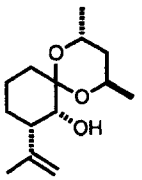
$C_{11}H_{18}O_3$

(2S,3R)-2-Acetoxy-3-
isopropylcyclohexanone

>99%E.e.
$[\alpha]_D$ -30.1 (c=1.9, $CHCl_3$)
Ab. conf. [by CD]

Tetrahedron: Asymmetry **1993,** *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



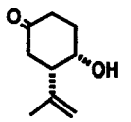
$C_{14}H_{24}O_3$

(2R,3S)-2-Hydroxy-3-isopropenyl-
1,1-[(2R,4R)-2,4-pentandioxy]cyclohexane

>99%D.e. [by ^{1}H-NMR]
$[\alpha]_D$ -25.5 (c=3.8, $CHCl_3$)
Souce of chirality; (2R,4R)-2,4-pentanediol

Tetrahedron: Asymmetry **1993,** *4*, 1857

I.Koga, K.Funakoshi, A.Matsuda, K.Sakai



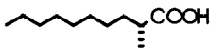
$C_9H_{14}O_2$

(3S,4S)-3-Isopropenyl-
4-hydroxycyclohexanone

80% E.e. [by ^{1}H-NMR of the MTPA ester]
Ab. conf. [by CD]

Tetrahedron: Asymmetry **1993,** *4*, 1869

P. Berglund, M. Holmquist, E. Hedenström, K. Hult, H.-E. Högberg

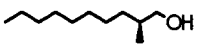


$C_{11}H_{22}O_2$
(*R*)-2-methyldecanoic acid

ee > 99.8% (by GC as phenylethyl-amide)
$[\alpha]_D^{20}$ -15.79 (neat)
Source of chirality: lipase catalysed esterification
Absolute configuration: R

Tetrahedron: Asymmetry **1993,** *4*, 1869

P. Berglund, M. Holmquist, E. Hedenström, K. Hult, H.-E. Högberg

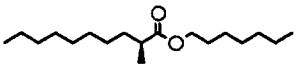


$C_{11}H_{24}O$
(*S*)-2-methyl-1-decanol

ee = 96.7% (by GC as phenylethyl-amide)
$[\alpha]_D^{20}$ -9.77 (neat)
$[\alpha]_D^{20}$ -10.69 (*c* 4.03, CH_2Cl_2)
Source of chirality: lipase catalysed esterification
Absolute configuration: S

P. Berglund, M. Holmquist, E. Hedenström, K. Hult, H.-E. Högberg

Tetrahedron: Asymmetry **1993**, *4*, 1869



$C_{18}H_{36}O_2$

(*S*)-1-heptyl 2-methyldecanoate

ee = 76.6% (by GC as phenylethyl-amide)

$[\alpha]_D^{20}$ +7.80 (*c* 1.29, $CHCl_3$)

Source of chirality: lipase catalysed esterification

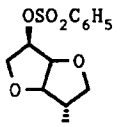
Absolute configuration: S

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER

David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{14}H_{16}O_7S$

$[\alpha]_D^{20}$ = + 82.0 (*c* 0.600, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8R

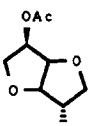
4-Acetoxy-8-benzenesulfonyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER

David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{14}H_{16}O_7S$

$[\alpha]_D^{20}$ = + 90.0 (*c* 0.738, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8S

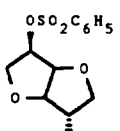
4-Acetoxy-8-benzenesulfonyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER

David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{12}H_{14}O_6S$

$[\alpha]_D^{20}$ = + 55.4 (*c* 0.838, $CHCl_3$)

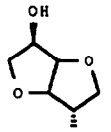
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8R

8-Benzenesulfonyloxy-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4***, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{12}H_{14}O_6S$

$[\alpha]_D^{20}$ = + 45.4 (c 0.835, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8S

8-Benzenesulfonyloxy-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4***, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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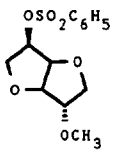


$C_{13}H_{16}O_6S$

$[\alpha]_D^{20}$ = + 56.6 (c 0.812, $CHCl_3$)

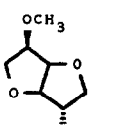
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8S

4-Benzenesulfonyloxy-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4***, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{13}H_{16}O_6S$

$[\alpha]_D^{20}$ = + 84.8 (c 0.838, $CHCl_3$)

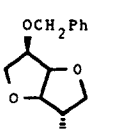
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8R

4-benzenesulfonyloxy-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4***, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{19}H_{20}O_6S$

$[\alpha]_D^{20}$ = + 94.3 (c 0.800, $CHCl_3$)

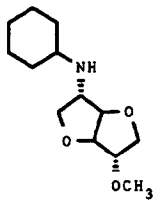
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8R

4-benzenesulfonyloxy-8-benzyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{13}H_{23}NO_3$

$[\alpha]_D^{20}$ = + 9.8 (*c* 0.884, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8S

4-Cyclohexylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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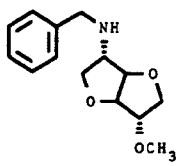

$C_{14}H_{19}NO_3$

$[\alpha]_D^{20}$ = + 14.7 (*c* 0.823, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8S

4-Benzylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE *Tetrahedron: Asymmetry* **1993, *4*, 1879**

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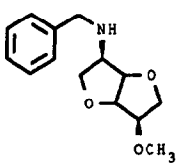

$C_{14}H_{18}NO_3$

$[\alpha]_D^{20}$ = + 130.3 (c 0.742, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-Benzylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE *Tetrahedron: Asymmetry* **1993, *4*, 1879**

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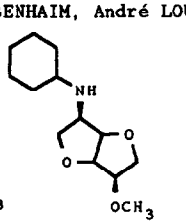
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{13}H_{23}NO_3$

$[\alpha]_D^{20}$ = + 144.1 (c 0.879, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-Cyclohexylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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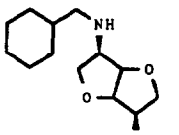


$C_{14}H_{24}NO_3$

$[\alpha]_D^{20}$ = + 116.8 (*c* 0.816, $CHCl_3$)

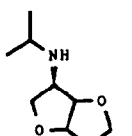
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-Cyclohexylmethylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{10}H_{19}NO_3$

$[\alpha]_D^{20}$ = + 143.2 (*c* 0.915, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-isopropylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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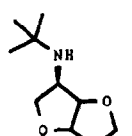


$C_{11}H_{24}NO_3$

$[\alpha]_D^{20}$ = + 151.9 (*c* 0.758, $CHCl_3$)

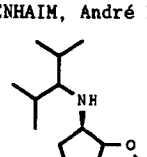
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-terbutylamino-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{14}H_{27}NO_3$

$[\alpha]_D^{20}$ = + 125.0 (*c* 0.752, $CHCl_3$)

Source of chirality: asymm. Synth.

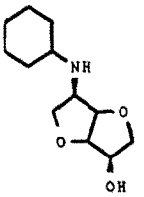
Absolute configuration: 1R,4R,5R,8R

4-[1-(1-Methylethyl)-2-methylpropylamino]-8-methoxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{12}H_{21}NO_3$

$[\alpha]_D^{20}$ = + 79.2 (*c* 0.852, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

8-Cyclohexylamino-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

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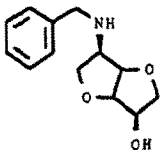

$C_{13}H_{17}NO_3$

$[\alpha]_D^{20}$ = + 71.3 (*c* 0.868, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

8-Benzylamino-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

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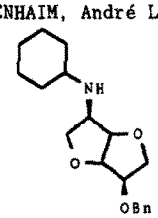


$C_{19}H_{27}NO_3$

$[\alpha]_D^{20}$ = + 135.1 (*c* 0.916, $CHCl_3$)

Source of chirality: asymm. Synth.

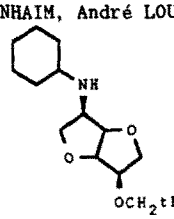
Absolute configuration: 1R,4R,5R,8R

4-Cyclohexylamino-8-benzyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry **1993**, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{17}H_{31}NO_3$

$[\alpha]_D^{20}$ = + 130.9 (*c* 0.618, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

4-Cyclohexylamino-8-(2,2-dimethylpropoxy)-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993,** *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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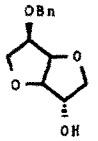

$C_{13}H_{16}O_4$

$[\alpha]_D^{20}$ = + 121.2 (*c* 0.536, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R 8R

8-Benzyloxy-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993,** *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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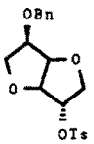

$C_{20}H_{22}O_6S$

$[\alpha]_D^{20}$ = + 95.1 (*c* 0.515, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4S,5R,8R

8-Benzyloxy-4-toluenesulfonyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993,** *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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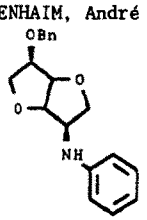


$C_{19}H_{21}NO_3$

$[\alpha]_D^{20}$ = + 100.0 (*c* 0.590, $CHCl_3$)

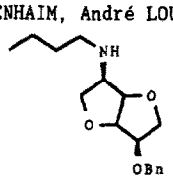
Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

8-Benzyloxy-4-phenylamino-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM STARCH | *Tetrahedron: Asymmetry* **1993,** *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{17}H_{25}NO_3$

$[\alpha]_D^{20}$= + 137.8 (*c* 0.450, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration 1R,4R,5R,8R

8-Benzyloxy-4-butylamino-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM STARCH | *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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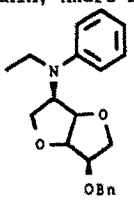


$C_{21}H_{25}NO_3$

$[\alpha]_D^{20}$ = + 206.5 (*c* 0.397, $CHCl_3$)

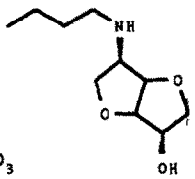
Source of chirality: asymm. Synth.

Absolute configuration 1R,4R,5R,8R

8-benzyloxy-4-(N-ethylphenylamino)-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_{10}H_{19}NO_3$

$[\alpha]_D^{20}$ = + 62.0 (*c* 0.437, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

8-butylamino-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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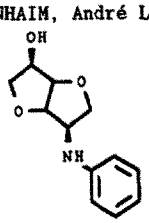

$C_{12}H_{15}NO_3$

$[\alpha]_D^{20}$ = + 33.8 (*c* 0.551, $CHCl_3$)

Source of chirality: asymm. Synth.

Absolute configuration: 1R,4R,5R,8R

8-phenylamino-2,6-dioxabicyclo[3.3.0]octan-4-ol

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE | *Tetrahedron: Asymmetry* **1993, *4*, 1879**

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
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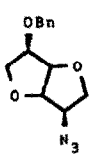


$C_{13}H_{15}N_3O_3$

Source of chirality: asymm. Synth.

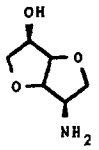
Absolute configuration: 1R,4R,5R,8R

4-azido-8-benzyloxy-2,6-dioxabicyclo[3.3.0]octane

SYNTHESIS OF NEW CHIRAL AUXILIARIES DERIVED FROM ISOSORBIDE

Tetrahedron: Asymmetry 1993, *4*, 1879

Rodolphe TAMION, Francis MARSAIS, Pierre RIBEREAU and Guy QUEGUINER
David ABENHAIM, André LOUPY and Laurent MUNNIER.



$C_6H_{11}NO_3$

$[\alpha]_D^{20}$ = + 110.1° (*c* 0.208, $CHCl_3$)

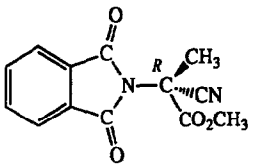
Source of chirality: asymm. Synth.

Absolute configuration: 1R, 4R, 5R, 8R

8-amino-2,6-dioxabicyclo[3.3.0]octan-4-ol

P. Hudhomme and G. Duguay*

Tetrahedron: Asymmetry 1993, *4*, 1891



E.e. = 100%

$[\alpha]_D^{26}$ = +14.8 (c = 0.4, $CHCl_3$)

Source of chirality : (-)-(*S*)-Ethyl Lactate Absolute configuration : *R*

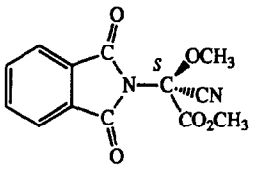
(assigned by rel. X-ray of synth. intermed.)

$C_{13}H_{10}N_2O_4$

(*R*)-Methyl 2-cyano-2-phthalimido propanoate

P. Hudhomme and G. Duguay*

Tetrahedron: Asymmetry 1993, *4*, 1891



E.e. = 76%

Source of chirality : (-)-(*S*)-Ethyl Lactate

Absolute configuration : *S*

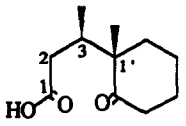
(assigned by rel. X-ray of synth. intermed.)

$C_{13}H_{10}N_2O_5$

(*S*)-Methyl 2-cyano-2-methoxy-2-phthalimido ethanoate

Nathalie Dahuron and Nicole Langlois*

Tetrahedron: Asymmetry 1993, *4*, 1901



E.e. > 95% (determined by ^1H NMR of the methylester)

$[\alpha]_D^{20}$ =-66 (c 1.3, $CHCl_3$)

Source of chirality: (+) camphor

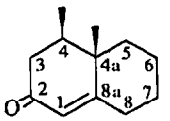
Absolute configuration : 3*R*,1'*S*

$C_{11}H_{18}O_3$

3-1'-methyl-2'-oxocyclohexanyl-butanoic acid.

Tetrahedron: Asymmetry **1993**, *4*, 1901

Nathalie Dahuron and Nicole Langlois*

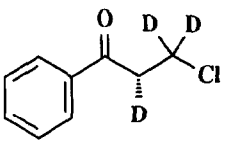


E.e. > 95%
$[\alpha]_D$ = +213 (c 0.2, $CHCl_3$)
Source of chirality: (+) camphor
Absolute configuration : 4*R*,4a*S*

$C_{12}H_{18}O_3$
4,4a-dimethyl-4,4a,5,6,7,8-hexahydro-2-(3*H*) naphthalenone.

Tetrahedron: Asymmetry **1993**, *4*, 1909

G.Fronza, C. Fuganti and P. Grasselli

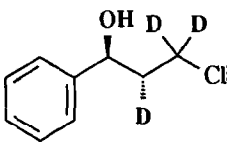


E.e = 100% by nmr
Source of chirality: asymm. synyth. (epoxidation)
Absolute configuration 2R

[2-$^2H_1$;3-$^2H_2$] 3-chloropropiophenone

Tetrahedron: Asymmetry **1993**, *4*, 1909

G. Fronza, C. Fuganti and P. Grasselli

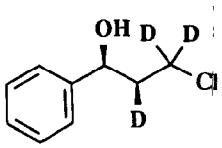


E.e. = 100% by nmr
$[\alpha]_D^{20}$= - 23.9 (c 1, $CHCl_3$)
Source of chirality: baker's yeast reduction
Absolute configuration 3S,2R

[2-$^2H_1$;3-$^2H_2$] 3-chloro-1-phenylpropan-1-ol

Tetrahedron: Asymmetry **1993**, *4*, 1909

G. Fronza, C. Fuganti and P. Grasselli

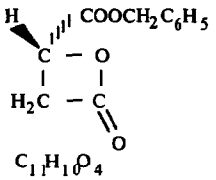


E.e. = 100% by nmr
$[\alpha]_D^{20}$= - 24.0 (c 1, $CHCl_3$)
Source of chirality: baker's yeast reduction
Absolute configuration 3S,2S

[2-$^2H_1$;3-$^2H_2$] 3-chloro-1-phenylpropan-1-ol

Tetrahedron: Asymmetry **1993**, *4*, 1925

S. Cammas, I. Renard, K. Boutault and Ph. Guérin *



$C_{11}H_{10}O_4$

4-benzyloxycarbonyl-2-oxetanone

E.e. > 98 % [by nmr with $Eu(hfc)_3$]

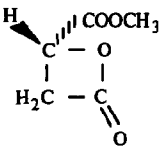
$[\alpha]_D^{20}$ = + 5.5 (c = 2.0, dioxane)

Source of chirality : L-(S)-Malic acid

Absolute configuration : 4R

Tetrahedron: Asymmetry **1993**, *4*, 1925

S. Cammas, I. Renard, K. Boutault and Ph. Guérin*



$C_5H_6O_4$

4-methyloxycarbonyl-2-oxetanone

E.e. > 98 % [by nmr with $Eu(hfc)_3$]

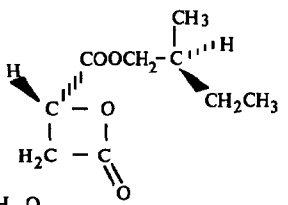
$[\alpha]_D^{20}$ = +1.5 (c =2.0 dioxane)

Source of chirality : L-(S)-Malic acid

Absolute configuration : 4R

Tetrahedron: Asymmetry **1993**, *4*, 1925

S. Cammas, I. Renard, K. Boutault and Ph. Guérin*



$C_9H_{14}O_4$

4-[2-methyl-1-butyl]oxycarbonyl-2-oxetanone

E.e. > 98 % [by nmr with $Eu(hfc)_3$]

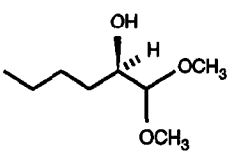
$[\alpha]_D^{20}$ = + 2.5 (c = 2.0 THF)

Source of chirality : L-(S)-Malic acid ; S-(-)-2-Methyl-1-butanol

Absolute configuration : 4R, 7S

Tetrahedron: Asymmetry **1993**, *4*, 1931

P. Ferraboschi, E. Santaniello, M. Tingoli, F. Aragozzini, F. Molinari.



$C_8H_{18}O_3$

(R)-1,1-Dimethoxy-2-hydroxyhexane.

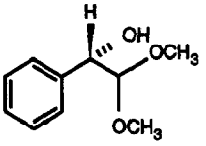
E.e. = 100%

Source of chirality: *Kluyveromyces fragilis* or *K. marxianus*

Absolute configuration: (*R*).

P. Ferraboschi, E. Santaniello, M. Tingoli, F. Aragozzini, F. Molinari.

Tetrahedron: Asymmetry, **1993**, *4*, 1931

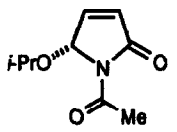


E.e. = 46%
Source of chirality: Baker's yeast
E.e. = 100%
Source of chirality: *Kluyveromyces marxianus MIM 287*
Absolute configuration: (S).

$C_{10}H_{14}O_3$
(S)-1,1-Dimethoxy-2-hydroxy-2-phenylethane.

Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98% [by NMR with $Eu(hfc)_3$]

$[\alpha]^{20}_D$ -149 (*c* 0.50, $CHCl_3$)

m.p. 49-49.5 °C

Source of chirality: natural and asymm. synth.

Absolute configuration 5R

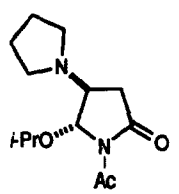
$C_9H_{13}NO_3$

Anal. calc. C, 59.00; H, 7.15. Found C, 58.71; H, 7.15

1-Acetyl-1,5-dihydro-5-(1-methylethoxy)-2*H*-pyrrol-2-one

Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ -51 (*c* 0.65, $CHCl_3$)

m.p. 47-48 °C

Source of chirality: natural and asymm. synth.

Absolute configuration 4S,5R

$C_{13}H_{22}N_2O_3$

1-Acetyl-5-(1-methylethoxy)-4-(1-pyrrolidinyl)pyrrolidin-2-one

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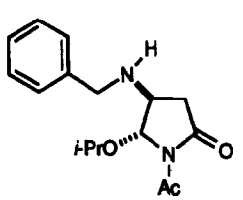
Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ -34 (*c* 0.95, $CHCl_3$)

Source of chirality: natural and asymm. synth.

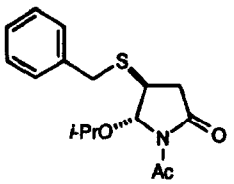
Absolute configuration 4S,5R

$C_{16}H_{22}N_2O_3$

1-Acetyl-4-(*N*-benzylamino)-5-(1-methylethoxy)pyrrolidin-2-one

Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ -94 (*c* 0.53, $CHCl_3$)

Source of chirality: natural and asymm. synth.

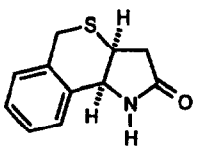
Absolute configuration 4S,5R

$C_{16}H_{21}NO_3S$

1-Acetyl-4-(benzylthio)-5-(1-methylethoxy)pyrrolidin-2-one

Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ -146 (*c* 0.19, $CHCl_3$)

m.p. 214-214.5 °C

Source of chirality: natural and asymm. synth.

Absolute configuration 4S,5S

$C_{11}H_{11}NOS$

Anal. calc. C, 64.36; H, 5.40. Found C, 64.59; H, 5.51

[3aβ,9bβ]-1,3,3a,4,5,9b-Hexahydro-4-thia-2*H*-benz(g)indol-2-one

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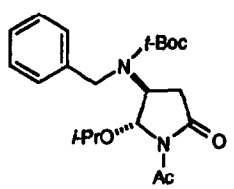
Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ +14 (*c* 1.21, $CHCl_3$)

m.p. 71.5-72.5 °C

Source of chirality: natural and asymm. synth.

Absolute configuration 4S,5R

$C_{21}H_{30}N_2O_5$

Anal. calc. C, 64.60; H, 7.74; N, 7.17.
Found C, 64.73; H, 7.81; N, 7.20.

1-Acetyl-4-(*N*-benzyl-*N*-(1,1-dimethylethoxycarbonyl)amino)-5-(1-methylethoxy)pyrrolidin-2-one

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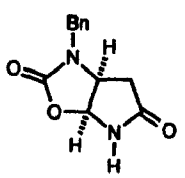
Wim-Jan Koot, Henk Hiemstra and W. Nico Speckamp

Tetrahedron: Asymmetry **1993**, *4*, 1941



e.e. ≥98%

$[\alpha]^{20}_D$ +145 (*c* 0.32, $CHCl_3$)

m.p. 138.5-140 °C

Source of chirality: natural and asymm. synth.

Absolute configuration 4S,5S

$C_{11}H_{11}NOS$

Anal. calc. C, 62.06; H, 5.21; N, 12.06.
Found C, 62.02; H, 5.17; N, 12.03.