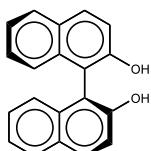


Marcela Juárez-Hernandez, Dean V. Johnson, Herbert L. Holland,*
James McNulty and Alfredo Capretta

Tetrahedron: Asymmetry 14 (2003) 289



C₂₀H₁₄O₂
(S)-1,1'-Binaphthyl-2,2'-diol

E.e. = 55%

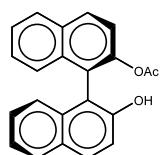
[α]_D²⁵ = -15.3 (*c* 1.47, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *S*

Marcela Juárez-Hernandez, Dean V. Johnson, Herbert L. Holland,*
James McNulty and Alfredo Capretta

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C₂₂H₁₆O₃
(R)-1,1'-Binaphthyl-2,2'-diol monoacetate

E.e. = 96%

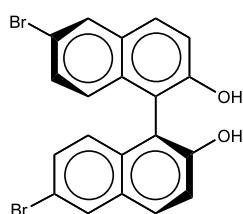
[α]_D²⁵ = +28.0 (*c* 0.95, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *R*

Marcela Juárez-Hernandez, Dean V. Johnson, Herbert L. Holland,*
James McNulty and Alfredo Capretta

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C₂₀H₁₂Br₂O₂
(S)-6,6'-Dibromo-1,1'-binaphthyl-2,2'-diol

E.e. = 80%

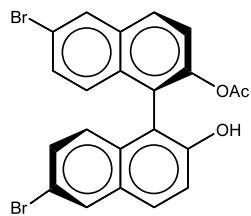
[α]_D²⁵ = +33.1 (*c* 1.36, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *S*

Marcela Juárez-Hernandez, Dean V. Johnson, Herbert L. Holland,*
James McNulty and Alfredo Capretta

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C₂₂H₁₄Br₂O₃
(R)-6,6'-Dibromo-1,1'-binaphthyl-2,2'-diol monoacetate

E.e. = 94%

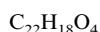
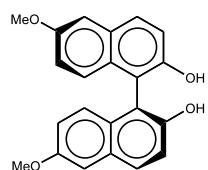
[α]_D²⁵ = -35.7 (*c* 1.14, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *R*

Marcela Juárez-Hernandez, Dean V. Johnson, Herbert L. Holland,*
James McNulty and Alfredo Capretta

Tetrahedron: Asymmetry 14 (2003) 289



(S)-6,6'-Dimethoxy-1,1'-binaphthyl-2,2'-diol

E.e. = 58%

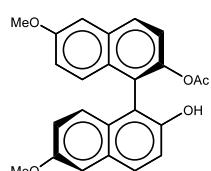
[α]_D²⁵ = +29.8 (c 1.26, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *S*

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James McNulty and Alfredo Capretta

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(R)-6,6'-Dimethoxy-1,1'-binaphthyl-2,2'-diol monoacetate

E.e. = 78%

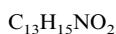
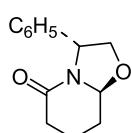
[α]_D²⁵ = -23.8 (c 1.84, THF)

Source of chirality: lipase-catalyzed enantioselective transesterification

Absolute configuration: *R*

Mercedes Amat,* Núria Llor, Carmen Escolano, Marta Huguet,
Maria Pérez, Elies Molins and Joan Bosch*

Tetrahedron: Asymmetry 14 (2003) 293



(3*R*,8a*S*)-5-Oxo-3-phenyl-2,3,6,7,8,8a-hexahydro-5*H*-oxazolo[3,2-*a*]pyridine

[α]_D²² = -90.8 (c 0.6, CH₂Cl₂)

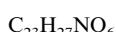
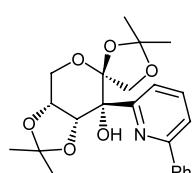
Source of chirality: (*R*)(-)phenylglycinol

Absolute configuration: 3*R*,8a*S*

(determined by X-ray crystallography)

Hanmin Huang, Huilin Chen, Xinquan Hu, Changmin Bai
and Zhuo Zheng*

Tetrahedron: Asymmetry 14 (2003) 297



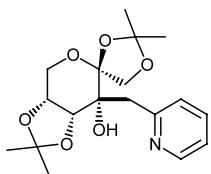
1,2:4,5-Di-*O*-isopropylidene-3-(6-phenylpyridin-2-yl)-β-D-fructopyranose

E.e. ≥ 99%

[α]_D²⁵ = -151.6 (c 0.60, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2*S*,3*R*,4*R*,5*R*



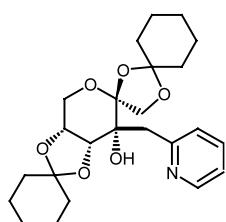
C₁₈H₂₅NO₆
1,2:4,5-Di-O-isopropylidene-3-pyridin-2-ylmethyl-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -41.8 (c 0.53, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



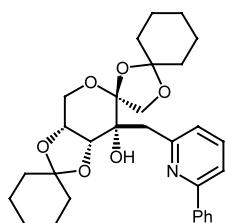
C₂₄H₃₃NO₆
1,2:4,5-Di-O-cyclohexylidene-3-pyridin-2-ylmethyl-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -40.2 (c 0.58, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



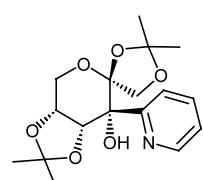
C₃₀H₃₇NO₆
1,2:4,5-Di-O-cyclohexylidene-3-(6-phenylpyridin-2-ylmethyl)-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = +93.4 (c 0.51, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



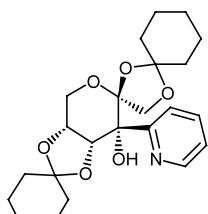
C₁₇H₂₃NO₆
1,2:4,5-Di-O-isopropylidene-3-pyridin-2-yl-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -175.3 (c 0.46, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



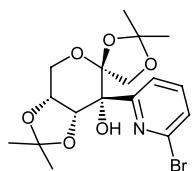
1,2:4,5-Di-O-cyclohexylidene-3-pyridin-2-yl-beta-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -172.0 (*c* 0.99, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



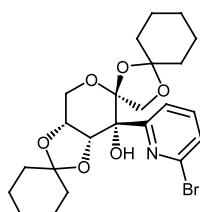
1,2:4,5-Di-O-isopropylidene-3-(6-bromopyridin-2-yl)-beta-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -153.5 (*c* 0.70, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



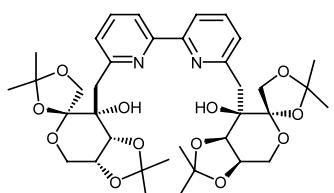
1,2:4,5-Di-O-cyclohexylidene-3-(6-bromopyridin-2-yl)-beta-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = -149.8 (*c* 0.86, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



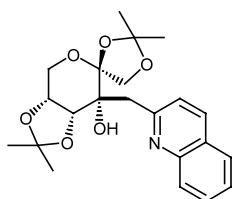
6,6'-Di-(1,2:4,5-di-O-isopropylidene-beta-D-fructopyranose)ylmethyl-2,2'-bipyridine

E.e. ≥99%, de = 4% (¹H NMR and HPLC)

[α]_D²⁵ = +65.8 (*c* 0.23, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R,2'S,3'R,4'R,5'R



C₂₂H₂₇NO₆

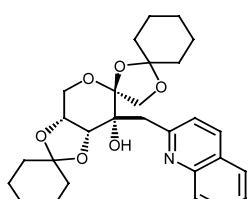
1,2:4,5-Di-O-isopropylidene-3-quinolin-2-ylmethyl-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = +36.5 (c 0.66, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



C₂₈H₃₅NO₆

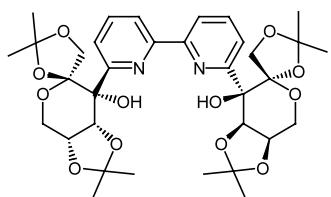
1,2:4,5-Di-O-cyclohexylidene-3-quinolin-2-ylmethyl-β-D-fructopyranose

E.e. ≥99%

[α]_D²⁵ = +35.6 (c 0.70, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R



C₃₄H₄₄N₂O₁₂

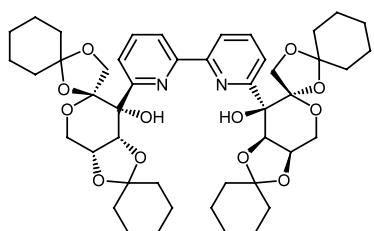
6,6'-Di-1,2:4,5-di-O-isopropylidene-β-D-fructopyranose-2,2'-bipyridine

E.e. ≥99%

[α]_D²⁵ = -200.6 (c 0.30, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

Absolute configuration: 2S,3R,4R,5R,2'S,3'R,4'R,5'R



C₄₆H₆₀N₂O₁₂

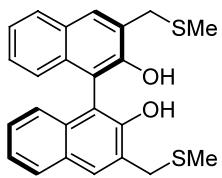
6,6'-Di-1,2:4,5-di-O-cyclohexylidene-β-D-fructopyranose-2,2'-bipyridine

E.e. ≥99%

[α]_D²⁵ = -171.2 (c 0.59, CHCl₃)

Source of chirality: D-fructose and stereoselective synthesis

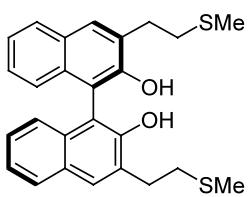
Absolute configuration: 2S,3R,4R,5R,2'S,3'R,4'R,5'R

 $C_{24}H_{22}O_2S_2$

(R)-3,3'-Bis(methylsulfanylmethyl)-(1,1')-binaphthalenyl-2,2'-diol

 $[\alpha]_D^{25} = +105.5$ (*c* 1.0, CHCl₃)

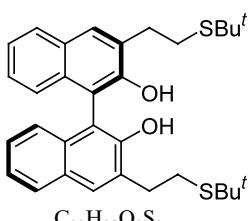
Source of chirality: (R)-binaphthol

Absolute configuration: *R* $C_{26}H_{26}O_2S_2$

(R)-3,3'-Bis(2-methylsulfanylethyl)-(1,1')-binaphthalenyl-2,2'-diol

 $[\alpha]_D^{25} = +66.5$ (*c* 1.0, CHCl₃)

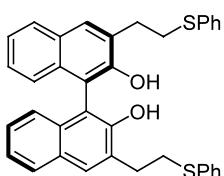
Source of chirality: (R)-binaphthol

Absolute configuration: *R* $C_{32}H_{38}O_2S_2$

(R)-3,3'-Bis(2-t-butylsulfanylethyl)-(1,1')-binaphthalenyl-2,2'-diol

 $[\alpha]_D^{25} = +60.2$ (*c* 1.0, CHCl₃)

Source of chirality: (R)-binaphthol

Absolute configuration: *R* $C_{36}H_{30}O_2S_2$

(R)-3,3'-Bis(2-phenylsulfanylethyl)-(1,1')-binaphthalenyl-2,2'-diol

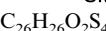
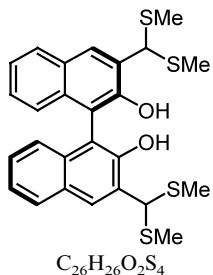
 $[\alpha]_D^{25} = +67.3$ (*c* 1.0, CHCl₃)

Source of chirality: (R)-binaphthol

Absolute configuration: *R*

Jahyo Kang,* Jae Hoon Lee and Dae Sung Lim

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(*R*)-3,3'-Bis(bis(methylsulfanyl)methyl)-(1,1')-binaphthalenyl-2,2'-diol

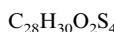
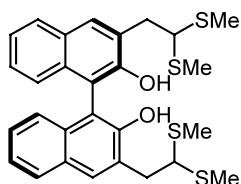
$[\alpha]_D^{25} = +61.5$ (*c* 1.0, CHCl₃)

Source of chirality: (*R*)-binaphthol

Absolute configuration: *R*

Jahyo Kang,* Jae Hoon Lee and Dae Sung Lim

Tetrahedron: Asymmetry 14 (2003) 305



(*R*)-3,3'-Bis-(2,2-bis(methylsulfanyl)ethyl)-(1,1')-binaphthalenyl-2,2'-diol

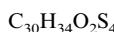
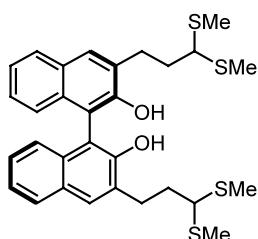
$[\alpha]_D^{25} = +60.8$ (*c* 0.12, CHCl₃)

Source of chirality: (*R*)-binaphthol

Absolute configuration: *R*

Jahyo Kang,* Jae Hoon Lee and Dae Sung Lim

Tetrahedron: Asymmetry 14 (2003) 305



(*R*)-3,3'-Bis(3,3-bis(methylsulfanyl)propyl)-(1,1')-binaphthalenyl-2,2'-diol

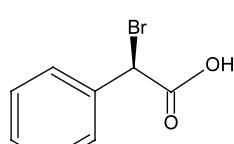
$[\alpha]_D^{25} = +57.7$ (*c* 0.18, CHCl₃)

Source of chirality: (*R*)-binaphthol

Absolute configuration: *R*

David Guiyesse, Christophe Salagnad, Pierre Monsan and Magali Remaud-Simeon*

Tetrahedron: Asymmetry 14 (2003) 317

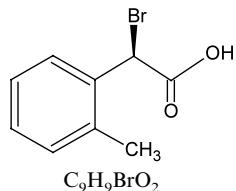


(2*R*)-Bromophenylacetic acid

E.e. = 97% (by Chiral HPLC)

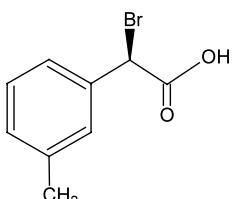
$[\alpha]_D^{20} = -92$ (*c* 0.5, diethyl ether)

Absolute configuration: (2*R*)



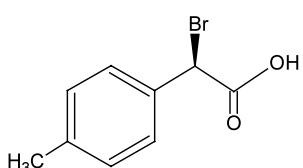
(2R)-Bromo-*o*-tolylacetic acid

E.e.=96% (by Chiral HPLC)
 $[\alpha]_D^{20}=-3.6$ (*c* 0.1, diethyl ether)
 Absolute configuration: (2*R*)



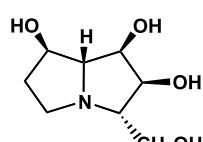
(2R)-Bromo-*m*-tolylacetic acid

E.e.=95% (by Chiral HPLC)
 $[\alpha]_D^{20}=-101$ (*c* 0.6, diethyl ether)
 Absolute configuration: (2*R*)



(2R)-Bromo-*p*-tolylacetic acid

E.e.=95% (by Chiral HPLC)
 $[\alpha]_D^{20}=-76$ (*c* 0.5, diethyl ether)
 Absolute configuration: (2*R*)

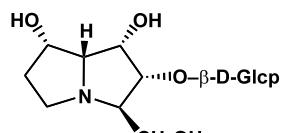


2,3,7-Triepi-australine (*1R**,*2S**,*3S**,*7R**,*7aR**)-3-hydroxymethyl-1,2,7-trihydroxy-pyrrolizidine

E.e.=100%
 $[\alpha]_D=+59.7$ (*c* 0.58, H_2O)
 Source of chirality: natural product isolated from
Castanospermum australe

Atsushi Kato, Erika Kano, Isao Adachi, Russell J. Molyneux,
Alison A. Watson, Robert J. Nash, George W. J. Fleet,
Mark R. Wormald, Haruhisa Kizu, Kyoko Ikeda and Naoki Asano*

Tetrahedron: Asymmetry 14 (2003) 325



C₁₄H₂₅NO₉

1-*epi*-Australine-2-*O*-β-D-glucopyranoside (1*S*,2*R*,3*R*,7*S*,7*aR*)-2-*O*-β-D-glucopyranosyl-3-hydroxymethyl-1,2,7-trihydroxy-pyrrolizidine

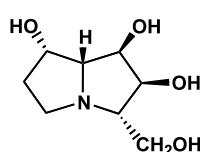
E.e. = 100%

[α]_D = +35.8 (*c* 0.42, H₂O)

Source of chirality: natural product isolated from *Castanospermum australe*

Atsushi Kato, Erika Kano, Isao Adachi, Russell J. Molyneux,
Alison A. Watson, Robert J. Nash, George W. J. Fleet,
Mark R. Wormald, Haruhisa Kizu, Kyoko Ikeda and Naoki Asano*

Tetrahedron: Asymmetry 14 (2003) 325



C₈H₁₅NO₄

2,3-Diepi-australine (1*R*^{*},2*S*^{*},3*S*^{*},7*S*^{*},7*aR*^{*})-3-hydroxymethyl-1,2,7-trihydroxy-pyrrolizidine

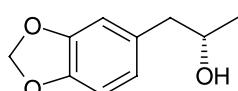
E.e. = 100%

[α]_D = +38.2 (*c* 0.51, H₂O)

Source of chirality: natural product isolated from *Castanospermum australe*

Srinivasan Easwar and Narshinha P. Argade*

Tetrahedron: Asymmetry 14 (2003) 333



C₁₀H₁₂O₃

(+)-(S)-α-Methyl-1,3-benzodioxole-5-ethanol

E.e. = 80%

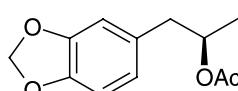
[α]₅₈₉²⁰ = +27.6 (*c* 1.0, CHCl₃)

Source of chirality: enzyme ‘Amano PS’

Absolute configuration: *S*

Srinivasan Easwar and Narshinha P. Argade*

Tetrahedron: Asymmetry 14 (2003) 333



C₁₂H₁₄O₄

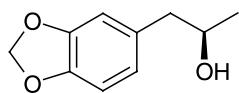
(-)-(R)-α-Methyl-1,3-benzodioxole-5-ethyl acetate

E.e. = 96%

[α]₅₈₉²⁰ = -5.4 (*c* 1.0, CHCl₃)

Source of chirality: enzyme ‘Amano PS’

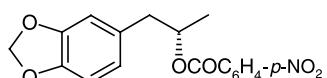
Absolute configuration: *R*

 $C_{10}H_{12}O_3$ (-)-(*R*)- α -Methyl-1,3-benzodioxole-5-ethanol

E.e. = 96%

 $[\alpha]_{D}^{20} = -34.2$ (*c* 1.0, CHCl₃)

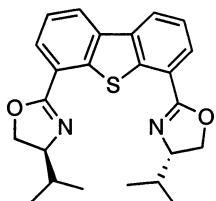
Source of chirality: enzyme ‘Amano PS’

Absolute configuration: *R* $C_{17}H_{15}NO_6$ (+)-(*S*)- α -Methyl-1,3-benzodioxole-5-ethyl *p*-nitrobenzoate

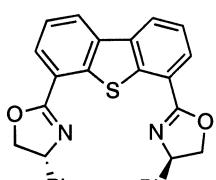
E.e. = 96%

 $[\alpha]_{D}^{20} = +103.1$ (*c* 1.0, CHCl₃)

Source of chirality: enzyme ‘Amano PS’

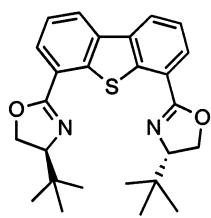
Absolute configuration: *S* $C_{24}H_{26}N_2O_2S$

(S,S)-4,6-DibenzothiophenediyI-2,2'-bis(4-isopropylloxazoline)

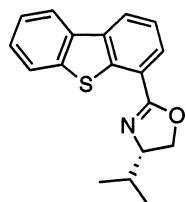
 $[\alpha]_{D}^{20} = -74.3$ (*c* 2.28, CHCl₃)Source of chirality: commercially available
(*S*)-(+)-2-amino-3-methyl-1-butanolAbsolute configuration: (4*S*,4'*S*) $C_{30}H_{22}N_2O_2S$

(R,R)-4,6-DibenzothiophenediyI-2,2'-bis(4-phenyloxazoline)

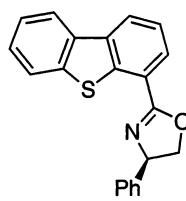
 $[\alpha]_{D}^{20} = -247.7$ (*c* 1.29, CHCl₃)Source of chirality: commercially available
(*R*)-(-)-2-phenylglycinol
Absolute configuration: (4*R*,4*R'*)

 $C_{26}H_{30}N_2O_2S$

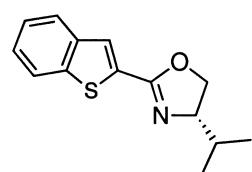
(S,S)-4,6-DibenzothiophenediyI-2,2'-bis(4-tert-butylloxazoline)

 $[\alpha]_D^{20} = -49.4$ (*c* 1.06, CHCl₃)Source of chirality: commercially available
(*S*)-*tert*-leucinolAbsolute configuration: (4*S*,4'*S*) $C_{18}H_{17}NOS$

(S)-2-Dibenzothiophen-4-yl-4-isopropylloxazoline

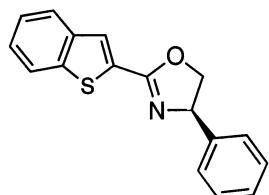
 $[\alpha]_D^{20} = -28.3$ (*c* 0.86, CHCl₃)Source of chirality: commercially available
(*S*)-(+)2-amino-3-methyl-1-butanolAbsolute configuration: (4*S*) $C_{21}H_{15}NOS$

(R)-2-Dibenzothiophen-4-yl-4-phenyloxazoline

 $[\alpha]_D^{20} = -190.1$ (*c* 1.03, CHCl₃)Source of chirality: commercially available
(*R*)-(−)-2-phenylglycinolAbsolute configuration: (4*R*) $C_{14}H_{15}NOS$

(S)-2-Benz[b]thiophen-2-yl-4-isopropylloxazoline

 $[\alpha]_D^{20} = -57.6$ (*c* 0.99, CHCl₃)Source of chirality: commercially available
(*S*)-(+)2-amino-3-methyl-1-butanolAbsolute configuration: (4*S*)

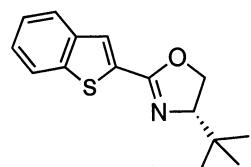


$C_{17}H_{13}NOS$
(*R*)-2-Benzothiophen-2-yl-4-phenyloxazoline

$[\alpha]_D^{20} = +6.6$ (*c* 0.99, $CHCl_3$)

Source of chirality: commercially available
(*R*)-(−)-2-phenylglycinol

Absolute configuration: (4*R*)

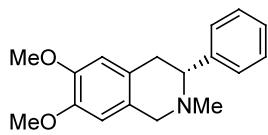


$C_{15}H_{17}NOS$
(*S*)-2-Benzothiophen-2-yl-4-*tert*-butyloxazoline

$[\alpha]_D^{20} = -58.7$ (*c* 1.01, $CHCl_3$)

Source of chirality: commercially available
(*S*)-*tert*-leucinol

Absolute configuration: (4*S*)

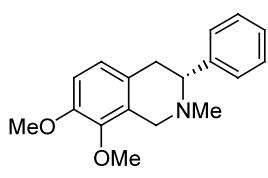


$C_{18}H_{21}NO_2$
[3*R*]-6,7-Dimethoxy-2-methyl-3-phenyl-1,2,3,4-tetrahydroisoquinoline

$[\alpha]_D^{20} = +28.0$ (*c* 0.5, CH_2Cl_2)

Source of chirality: (*S*)-(+) -phenylglycine

Absolute configuration: 3*R*

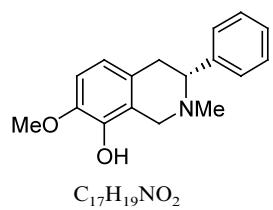


$C_{18}H_{21}NO_2$
[3*R*]-7,8-Dimethoxy-2-methyl-3-phenyl-1,2,3,4-tetrahydroisoquinoline

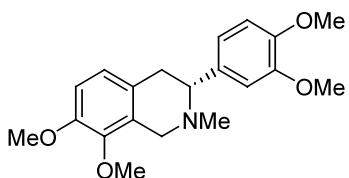
$[\alpha]_D^{20} = +96.2$ (*c* 0.1, CH_2Cl_2)

Source of chirality: (*S*)-(+) -phenylglycine

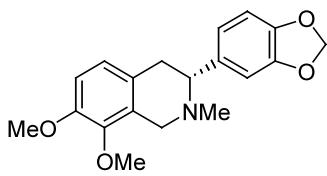
Absolute configuration: 3*R*



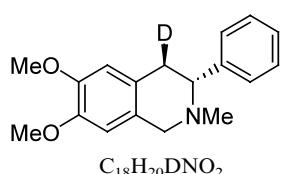
[3R]-8-Hydroxy-2-methyl-7-methoxy-3-phenyl-1,2,3,4-tetrahydroisoquinoline

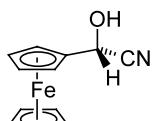
 $[\alpha]_D^{20} = +77.6$ (*c* 0.1, CH_2Cl_2)Source of chirality: (*S*)-(+)-phenylglycineAbsolute configuration: 3*R*

[3R]-3-(3,4-Dimethoxyphenyl)-7,8-dimethoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline

 $[\alpha]_D^{20} = +45.2$ (*c* 0.1, CH_2Cl_2)Source of chirality: (*S,S*)-(+)-pseudoephedrineAbsolute configuration: 3*R*

[3R]-7,8-Dimethoxy-2-methyl-3-(3,4-methylenedioxyphenyl)-1,2,3,4-tetrahydroisoquinoline

 $[\alpha]_D^{20} = +50.1$ (*c* 0.1, CH_2Cl_2)Source of chirality: (*S,S*)-(+)-pseudoephedrineAbsolute configuration: 3*R*[3*R*,4*R*]-4-Deutero-6,7-dimethoxy-2-methyl-3-phenyl-1,2,3,4-tetrahydroisoquinoline $[\alpha]_D^{20} = +27.1$ (*c* 0.1, CH_2Cl_2)Source of chirality: (*S*)-(+)-phenylglycineAbsolute configuration: 3*R*,4*R*



Cyanohydroxymethylferrocene

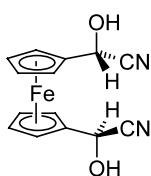
E.e. = 99%

[α]_D²⁰ = +150 (*c* 0.30, CH₃CN)

Source of chirality: enzyme *HbHNL*

Absolute configuration: *R*

M.p. = 73–76°C



1,1'-Bis(cyanohydroxymethyl)ferrocene

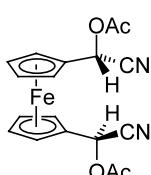
D.e. = 91%, e.e. = 96%

[α]_D²⁰ = +172 (*c* 0.07, CH₃CN)

Source of chirality: enzyme *HbHNL*

Absolute configuration: *R,R*

M.p. = 109–111°C



1,1'-Bis(acetoxycyanomethyl)ferrocene

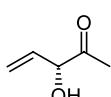
D.e. = 96%, e.e. = 98%

[α]_D²⁰ = +105 (*c* 0.494, CH₃CN)

Source of chirality: Enzyme *HbHNL*

Absolute configuration: *R,R*

M.p. = 119–121°C

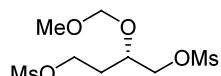


(*R*)-(-)-3-Hydroxy-1-penten-4-one

E.e. = 72%

[α]_D²⁵ = -75 (*c* 0.06, CHCl₃)

Absolute configuration: *R*

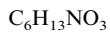
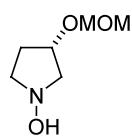


Methanesulfonic acid 4-methanesulfonyloxy-2-methoxymethoxy-butyl ester

$[\alpha]_D^{25} = -40$ (*c* 0.46, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2S

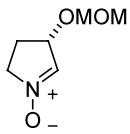


3-Methoxymethoxy-pyrrolidin-1-ol

$[\alpha]_D^{25} = 17$ (*c* 2.20, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 3S

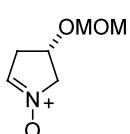


4-Methoxymethoxy-3,4-dihydro-2*H*-pyrrole 1-oxide

$[\alpha]_D^{25} = -77$ (*c* 1.28, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 4S



3-Methoxymethoxy-3,4-dihydro-2*H*-pyrrole 1-oxide

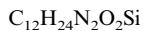
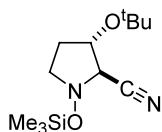
$[\alpha]_D^{25} = 33$ (*c* 2.63, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 3S

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Stefano Cicchi, Vanni Mannucci, Alberto Brandi and Andrea Goti*

Tetrahedron: Asymmetry 14 (2003) 367



3-*tert*-Butoxy-1-(trimethylsiloxy)-pyrrolidine-2-carbonitrile

d.r. >20:1 (by NMR); e.e. 99% (GLC)

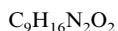
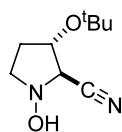
[α]_D²⁵ = -62 (*c* 0.56, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*R*,3*S*

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Stefano Cicchi, Vanni Mannucci, Alberto Brandi and Andrea Goti*

Tetrahedron: Asymmetry 14 (2003) 367



3-*tert*-Butoxy-1-hydroxy-pyrrolidine-2-carbonitrile

d.r. >20:1 (by NMR); e.e. 99% (GLC)

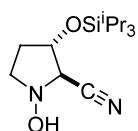
[α]_D²⁵ = +20 (*c* 1.00, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*R*,3*S*

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Stefano Cicchi, Vanni Mannucci, Alberto Brandi and Andrea Goti*

Tetrahedron: Asymmetry 14 (2003) 367



1-Hydroxy-3-(triisopropylsiloxy)-pyrrolidine-2-carbonitrile

d.r. >20:1 (by NMR); e.e. 99% (GLC)

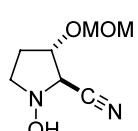
[α]_D²⁵ = -37 (*c* 0.27, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*R*,3*S*

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Stefano Cicchi, Vanni Mannucci, Alberto Brandi and Andrea Goti*

Tetrahedron: Asymmetry 14 (2003) 367



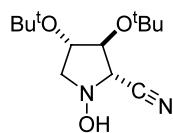
1-Hydroxy-3-(methoxymethoxy)-pyrrolidine-2-carbonitrile

d.r. >20:1 (by NMR); e.e. 99% (GLC)

[α]_D²⁵ = +9 (*c* 0.22, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*R*,3*S*



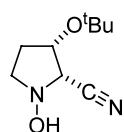
C₁₃H₂₄N₂O₃
3,4-Di-*tert*-butoxy-1-hydroxy-pyrrolidine-2-carbonitrile

d.r. >20:1 (by NMR); e.e. 99% (GLC)

[α]_D²⁵ = -16 (*c* 0.80, CHCl₃)

Source of chirality: L-tartaric acid

Absolute configuration: 2*S*,3*S*,4*S*



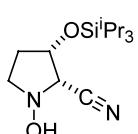
C₉H₁₆N₂O₂
3-*tert*-Butoxy-1-hydroxy-pyrrolidine-2-carbonitrile

d.r. = 33:67 (by NMR); e.e. 99% (GLC)

[α]_D²⁵ = +21 (*c* 0.40, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*S*,3*S*



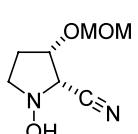
C₁₄H₂₈N₂O₂Si
1-Hydroxy-3-(triisopropylsiloxy)-pyrrolidine-2-carbonitrile

d.r. = 33:67 (by NMR); e.e. 99% (GLC)

[α]_D²⁵ = +15 (*c* 0.10, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*S*,3*S*



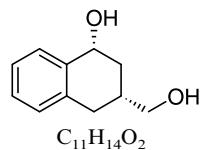
C₇H₁₂N₂O₃
1-Hydroxy-3-(methoxymethoxy)-pyrrolidine-2-carbonitrile

d.r. = 30:70 (by NMR); e.e. 99% (GLC)

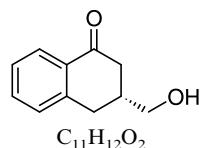
[α]_D²⁵ = -50 (*c* 0.10, CHCl₃)

Source of chirality: L-malic acid

Absolute configuration: 2*S*,3*S*

(1*R*,*3R*)-3-Hydroxymethyl-1,2,3,4-tetrahydronaphthalen-1-ol $Ee = 98\%$ $[\alpha]_D^{20} = -103$ (*c* 1.0, EtOAc)

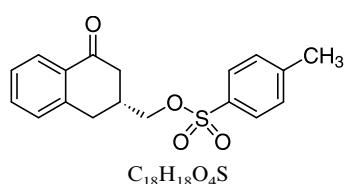
Source of chirality: chiral precursor

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

(R)-3-Hydroxymethyl-1,2,3,4-tetrahydronaphthalen-1-one

 $Ee = 97\%$ $[\alpha]_D^{20} = -27.7$ (*c* 0.5, EtOAc)

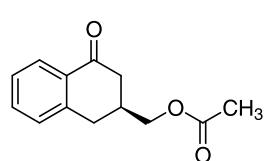
Source of chirality: chiral precursor

Absolute configuration: *R*

(R)-(4-Oxo-1,2,3,4-tetrahydronaphthalen-2-yl)methyl 4-methylbenzenesulfonate

 $Ee = 97\%$ $[\alpha]_D^{20} = -12.0$ (*c* 0.5, EtOAc)

Source of chirality: chiral precursor

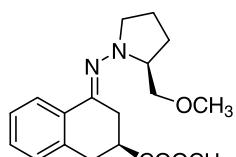
Absolute configuration: *R*

(S)-(1-Oxo-1,2,3,4-tetrahydro-3-naphthyl)methyl acetate

 $Ee = 91\%$ $[\alpha]_D^{20} = +24.2$ (*c* 1.0, EtOAc)

Source of chirality: lipase-catalyzed resolution

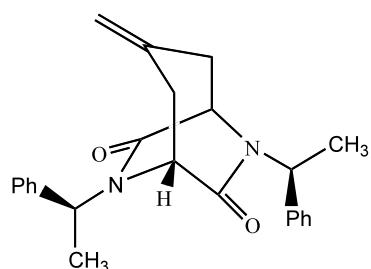
Absolute configuration: *S*

 $C_{18}H_{24}N_2O_3$

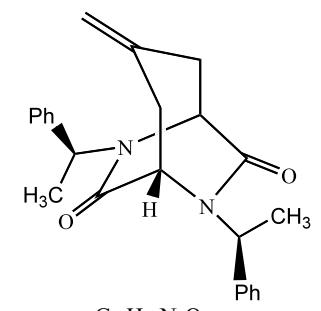
Methyl (S,S)-4-{[2-(methoxymethyl)pyrrolidin-1-yl]imino}-1,2,3,4-tetrahydronaphthalene-2-carboxylate: SAMP-Hydrazone

 $D_e = 100\%$ $[\alpha]_D^{20} = +906$ (*c* 1.0, EtOAc)

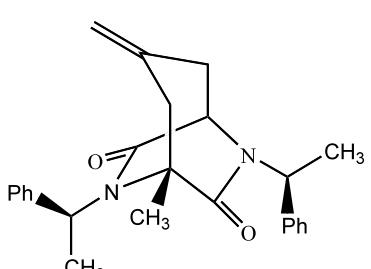
Source of chirality: SAMP

Absolute configuration: *S,S* $C_{24}H_{26}N_2O_2$ (3*R*,6*R*,1'*S*)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -243$ (*c* 1.02, CHCl₃)

Source of chirality: (S)-phenethylamine

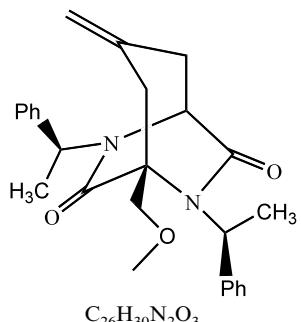
Absolute configuration: 1*R*,4*R*,1'*S* $C_{24}H_{26}N_2O_2$ (3*S*,6*S*,1'*S*)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -165.9$ (*c* 1, CHCl₃)

Source of chirality: (S)-phenethylamine

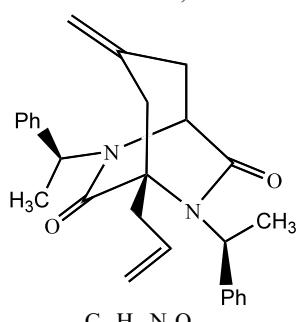
Absolute configuration: 1*S*,4*S*,1'*S* $C_{25}H_{28}N_2O_2$ (3*R*,6*R*,1'*S*)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-3-methyl-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -89.7$ (*c* 1.46, CHCl₃)

Source of chirality: (S)-phenethylamine

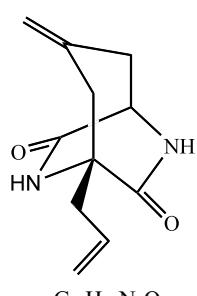
Absolute configuration: 1*R*,4*R*,1'*S*

(3*R*,6*S*,1'*S*)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-8-methylene-3-methoxymethyl-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} +20.8$ (*c* 0.83, CHCl₃)

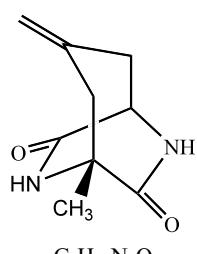
Source of chirality: (S)-phenethylamine

Absolute configuration: 1*R*,4*S*,1'*S*(3*R*,6*S*,1'*S*)-1,4-Bis-(1'-phenethyl)-3-allyl-2,5-dioxo-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} +50.9$ (*c* 2.52, CHCl₃)

Source of chirality: (S)-phenethylamine

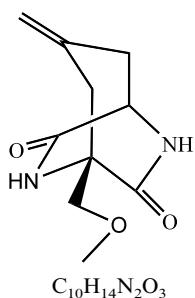
Absolute configuration: 1*R*,4*S*,1'*S*(3*S*,6*R*)-2,5-Dioxo-3-allyl-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -117.2$ (*c* 0.48, CH₃OH)

Source of chirality: (S)-phenethylamine

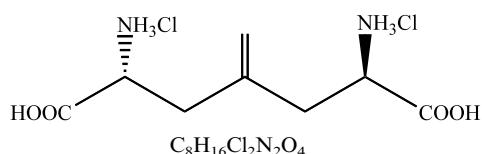
Absolute configuration: 1*S*,4*R*(3*R*,6*R*)-2,5-Dioxo-3-methyl-8-methylene-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -86$ (*c* 0.4, CH₃OH)

Source of chirality: (S)-phenethylamine

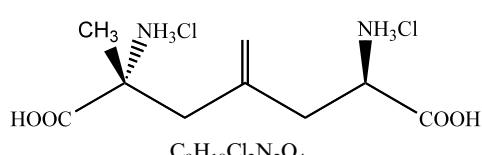
Absolute configuration: 1*R*,4*R*

(3*S*,6*R*)-2,5-Dioxo-8-methylene-3-methoxymethyl-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -77.4$ (*c* 0.42, CH₃OH)

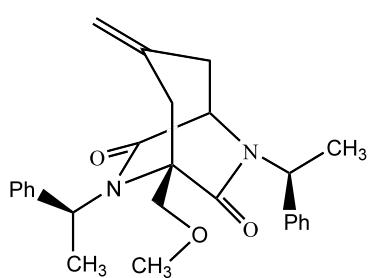
Source of chirality: (S)-phenethylamine

Absolute configuration: 1*S*,4*R*(2*R*,6*R*)-2,6-Diamino-4-methylene-1,7-heptanedioic acid dihydrochloride $[\alpha]_D^{25} +20.1$ (*c* 0.73, H₂O)

Source of chirality: (S)-phenethylamine

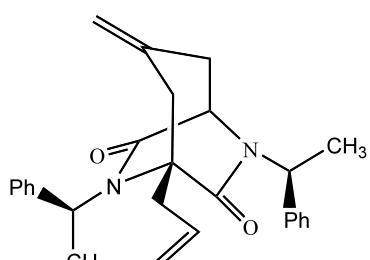
Absolute configuration: 2*R*,6*R*(2*R*,6*R*)-2,6-Diamino-4-methylene-1,7-heptanedioic acid dihydrochloride $[\alpha]_D^{25} +6.9$ (*c* 0.79, 1N HCl)

Source of chirality: (S)-phenethylamine

Absolute configuration: 2*R*,6*R*(3*S*,6*R*,1'*S*)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-8-methylene-3-methoxymethyl-1,4-diazabicyclo[3.2.2]nonane $[\alpha]_D^{25} -95.4$ (*c* 0.75, CHCl₃)

Source of chirality: (S)-phenethylamine

Absolute configuration: 1*S*,4*R*,1'*S*

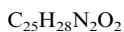
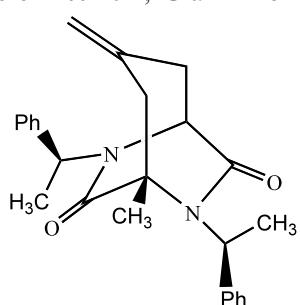


(3S,6R,1'S)-1,4-Bis-(1'-phenethyl)-3-allyl-2,5-dioxo-8-methylene-1,4-diazabicyclo[3.2.2]nonane

 $[\alpha]_D^{25} -117.1 (c\ 1.1, \text{CHCl}_3)$

Source of chirality: (S)-phenethylamine

Absolute configuration: 1S,4R,1'S

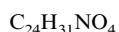
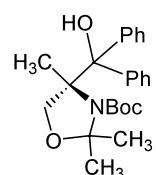


(3S,6S,1'S)-1,4-Bis-(1'-phenethyl)-2,5-dioxo-3-methyl-8-methylene-1,4-diazabicyclo[3.2.2]nonane

 $[\alpha]_D^{25} -76.6 (c\ 1.15, \text{CHCl}_3)$

Source of chirality: (S)-phenethylamine

Absolute configuration: 1S,4S,1'S

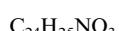
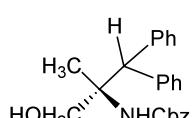
*N*-(tert-Butoxycarbonyl)-4-(hydroxydiphenylmethyl)-2,2,4-trimethyloxazolidine

E.e. >95%

 $[\alpha]_D^{25} = +54.1 (c\ 1.10, \text{MeOH})$

Source of chirality: asymmetric synthesis

Absolute configuration: R



(1-Hydroxymethyl-1-methyl-2,2-diphenylethyl)carbamic acid benzyl ester

E.e. >95%

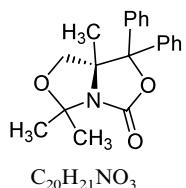
 $[\alpha]_D^{25} = -2.5 (c\ 1.02, \text{MeOH})$

Source of chirality: asymmetric synthesis

Absolute configuration: S

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C₂₀H₂₁NO₃
5,5,7a-Trimethyl-1,1-diphenyldihydrooxazolo[3,4-c]oxazol-3-one

E.e. >95%

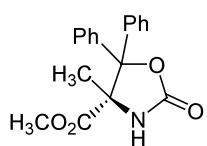
[α]_D²⁵ = -0.8 (*c* 1.02, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *R*

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C₁₈H₁₇NO₄
4-Methyl-5,5-diphenyloxazolidin-2-one-4-carboxylic acid methyl ester

E.e. >95%

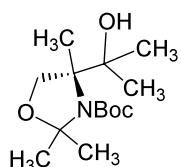
[α]_D²⁵ = -15.2 (*c* 1.20, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *S*

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C₁₄H₂₇NO₄
N-(tert-Butoxycarbonyl)-4-(1-hydroxy-1-methylethyl)-2,2,4-trimethyloxazolidine

E.e. >95%

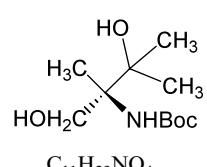
[α]_D²⁵ = +4.1 (*c* 0.66, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *R*

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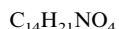
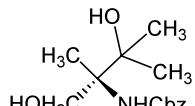
C₁₁H₂₃NO₄
(2-Hydroxy-1-hydroxymethyl-1,2-dimethylpropyl)carbamic acid *tert*-butyl ester

E.e. >95%

[α]_D²⁵ = -3.1 (*c* 1.07, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *R*



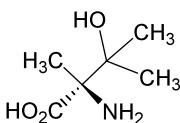
(2-Hydroxy-1-hydroxymethyl-1,2-dimethylpropyl)carbamic acid benzyl ester

E.e. >95%

$[\alpha]_D^{25} = -5.8$ (*c* 1.34, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *R*



2-Amino-3-hydroxy-2,3-dimethylbutyric acid

E.e. >95%

$[\alpha]_D^{25} = +6.3$ (*c* 1.20, H₂O)

Source of chirality: asymmetric synthesis

Absolute configuration: *S*