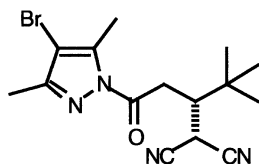


Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{15}H_{19}BrNO_4$

4-Bromo-1-(3-dicyanomethyl-4,4-dimethylpentanoyl)-3,5-dimethylpyrazole

E.e. = 91% [by HPLC on Daicel Chiral Cell ADH (hexane/2-propanol 99:1 v/v)]

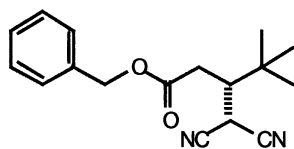
$[\alpha]_D^{25} = +21.4$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (determined by X-ray crystallography)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{17}H_{20}N_2O_2$

Benzyl 3-(dicyanomethyl)-4,4-dimethylpentanoate

E.e. = 89% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 4:1 v/v)]

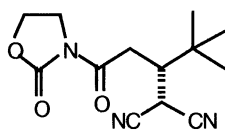
$[\alpha]_D^{25} = +19.5$ (c 0.54, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S [derived from (3S)-4-bromo-1-(3-dicyanomethyl-4,4-dimethylpentanoyl)-3,5-dimethylpyrazole]

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{13}H_{17}N_3O_3$

3-[3-(Dicyanomethyl)-4,4-dimethylpentanoyl]-2-oxazolidinone

E.e. = 89% [by HPLC after its conversion to benzyl 3-(dicyanomethyl)-4,4-dimethylpentanoate]

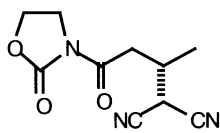
$[\alpha]_D^{25} = +16.95$ (c 0.47, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned on the basis of HPLC)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{10}H_{11}N_3O_3$

3-(4,4-Dicyano-3-methylbutanoyl)-2-oxazolidinone

E.e. = 81% [by HPLC after its conversion to benzyl 4,4-dicyano-3-methylbutanoate]

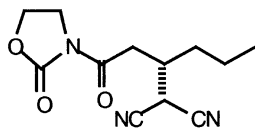
$[\alpha]_D^{25} = +19.6$ (c 0.14, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{12}H_{15}N_3O_3$

3-[3-(Dicyanomethyl)hexanoyl]-2-oxazolidinone

E.e. = 90% [by HPLC after its conversion to benzyl 3-dicyanomethylhexanoate]

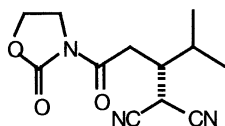
$[\alpha]_D^{25} = +37.0$ (*c* 1.47, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{12}H_{15}N_3O_3$

3-[3-(Dicyanomethyl)-4-methylpentanoyl]-2-oxazolidinone

E.e. = 88% [by HPLC after its conversion to benzyl 3-(dicyanomethyl)-4-methylpentanoate]

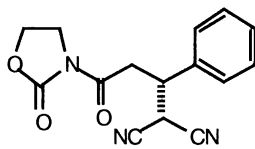
$[\alpha]_D^{25} = +34.2$ (*c* 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{15}H_{13}N_3O_3$

3-(4,4-Dicyano-3-phenylbutanoyl)-2-oxazolidinone

E.e. = 75% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 1:1 v/v)]

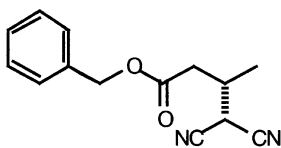
$[\alpha]_D^{25} = -8.8$ (*c* 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{14}H_{14}N_2O_2$

Benzyl 4,4-dicyano-3-methylbutanoate

E.e. = 81% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 4:1 v/v)]

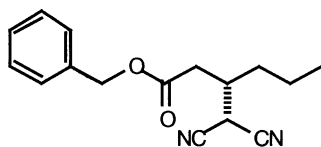
$[\alpha]_D^{25} = +22.05$ (*c* 1.28, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{16}H_{18}N_2O_2$

Benzyl 3-(dicyanomethyl)hexanoate

E.e. = 90% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 4:1 v/v)]

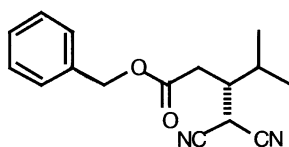
$[\alpha]_D^{25} = +23.7$ (c 0.90, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{16}H_{18}N_2O_2$

Benzyl 3-(dicyanomethyl)-4-methylpentanoate

E.e. = 88% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 4:1 v/v)]

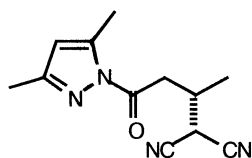
$[\alpha]_D^{25} = +25.5$ (c 1.07, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{12}H_{14}N_4O$

1-(4,4-Dicyano-3-methylbutanoyl)-3,5-dimethylpyrazole

E.e. = 88% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

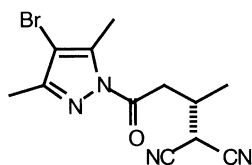
$[\alpha]_D^{25} = +16.2$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{12}H_{13}BrN_4O$

4-Bromo-1-(4,4-dicyano-3-methylbutanoyl)-3,5-dimethylpyrazole

E.e. = 86% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

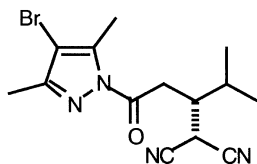
$[\alpha]_D^{25} = +16.7$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{14}H_{17}BrN_4O$

4-Bromo-1-(3-dicyanomethyl-4-methylpentanoyl)-3,5-dimethylpyrazole

E.e. = 93% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

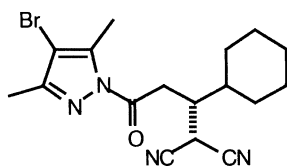
$[\alpha]_D^{25} = +26.3$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{17}H_{21}BrN_4O$

4-Bromo-1-(3-cyclohexyl-4,4-dicyanobutanoyl)-3,5-dimethylpyrazole

E.e. = 90% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

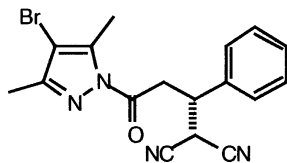
$[\alpha]_D^{25} = +26.7$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{17}H_{15}BrN_4O$

4-Bromo-1-(4,4-dicyano-3-phenylbutanoyl)-3,5-dimethylpyrazole

E.e. = 88% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

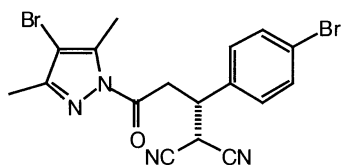
$[\alpha]_D^{25} = +13.6$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{17}H_{14}Br_2N_4O$

4-Bromo-1-[4,4-dicyano-3-(4-bromophenyl)butanoyl]-3,5-dimethylpyrazole

E.e. = 85% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

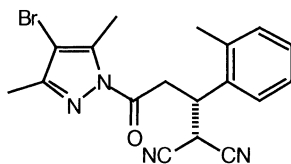
$[\alpha]_D^{25} = +13.5$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3S (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{18}H_{17}BrN_4O$

4-Bromo-1-[4,4-dicyano-3-(2-methylphenyl)butanoyl]-3,5-dimethylpyrazole

E.e. = 78% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

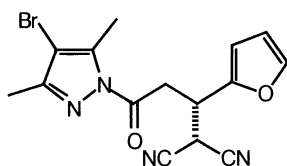
$[\alpha]_D^{25} = +6.3$ (c 1.00, acetone)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Kennosuke Itoh, Yoji Oderaotoshi and Shuji Kanemasa*

Tetrahedron: Asymmetry 14 (2003) 635



$C_{15}H_{13}BrN_4O_2$

4-Bromo-1-[4,4-dicyano-3-(2-furyl)butanoyl]-3,5-dimethylpyrazole

E.e. = 55% [by HPLC on Daicel Chiral Cell ODH (hexane/2-propanol 9:1 v/v)]

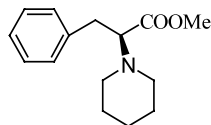
$[\alpha]_D^{25} = +10.1$ (c 1.00, $CHCl_3$)

Source of chirality: catalyzed enantioselective Michael addition

Absolute configuration: 3*S* (assigned by mechanistic considerations)

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu, Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{15}H_{21}NO_2$

(*S*)-3-Phenyl-2-piperidinopropionic acid methyl ester

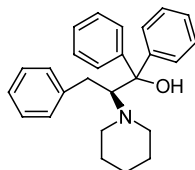
$[\alpha]_D^{19} = -30.2$ (c 4.11, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu, Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{26}H_{29}NO$

(*S*)-1,1,3-Triphenyl-2-piperidinopropan-1-ol

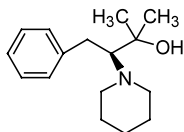
$[\alpha]_D^{20} = +39.0$ (c 1.0, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{16}H_{25}NO$

(*S*)-2-Methyl-4-phenyl-3-piperidinobutan-2-ol

Mp = 58–59°C

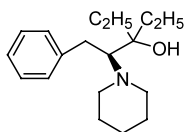
$[\alpha]_D^{20} = -49.0$ (*c* 1.0, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{18}H_{29}NO$

(*S*)-3-Ethyl-1-phenyl-2-piperidinopentanol

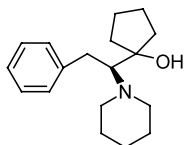
$[\alpha]_D^{20} = -26.0$ (*c* 1.0, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{18}H_{27}NO$

(*S*)-(-)-1-(2'-Phenyl-1'-piperidinoethyl)cyclopentanol

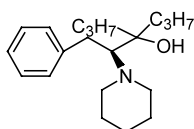
$[\alpha]_D^{20} = -26.0$ (*c* 1.0, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{20}H_{33}NO$

(*S*)-3-Propyl-1-phenyl-2-piperidinohexan-3-ol

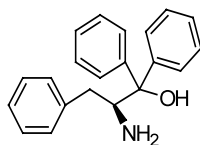
$[\alpha]_D^{22} = -29.0$ (*c* 1.7, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{21}H_{21}NO$

(*S*)-1,1,3-Triphenyl-2-aminopropan-1-ol

Mp = 134–136°C

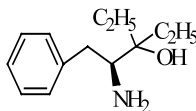
$[\alpha]_D^{25} = -86.0$ (*c* 1.53, CH_2Cl_2)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{13}H_{21}NO$

(*S*)-3-Ethyl-1-phenyl-2-aminopentan-3-ol

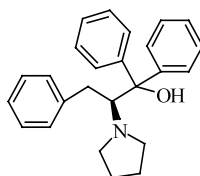
$[\alpha]_D^{25} = -41.0$ (*c* 1.83, CH_2Cl_2)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{25}H_{27}NO$

(*S*)-1,1,3-Triphenyl-2-pyrrolidinopropan-1-ol

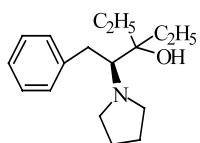
$[\alpha]_D^{19} = +14.0$ (*c* 1.07, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Chao-shan Da, Zhi-jian Han, Ming Ni, Fan Yang, Da-xue Liu,
Yi-feng Zhou and Rui Wang*

Tetrahedron: Asymmetry 14 (2003) 659



$C_{17}H_{27}NO$

(*S*)-3-Ethyl-1-phenyl-2-pyrrolidinopentan-3-ol

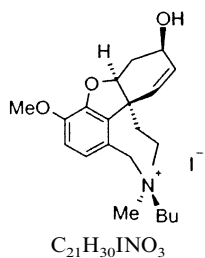
$[\alpha]_D^{25} = -35.0$ (*c* 1.01, $CH_3COOC_2H_5$)

Source of chirality: L-Phe

Absolute configuration: *S*

Manfred Hirnschall, Matthias Treu, Kurt Mereiter,
Christian Hametner, Johannes Fröhlich and Ulrich Jordis*

Tetrahedron: Asymmetry 14 (2003) 675



(4a*S*,6*R*,8a*S*,11*S*)-11-Butyl-4a,5,9,10,11,12-hexahydro-6-hydroxy-3-methoxy-11-methyl-6*H*-benzofuro[3a,3,2-ef][2]benzazepinium iodide

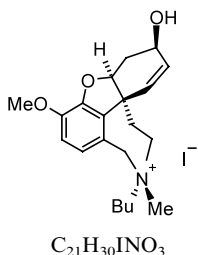
$[\alpha]_D^{20} = -114.9$

Source of chirality: stereoselective *N*-alkylation

Absolute configuration: 4a*S*,6*R*,8a*S*,11*S*

Manfred Hirnschall, Matthias Treu, Kurt Mereiter,
Christian Hametner, Johannes Fröhlich and Ulrich Jordis*

Tetrahedron: Asymmetry 14 (2003) 675



(4a*S*,6*R*,8a*S*,11*R*)-11-Butyl-4a,5,9,10,11,12-hexahydro-6-hydroxy-3-methoxy-11-methyl-6*H*-benzofuro[3a,3,2-ef][2]benzazepinium iodide

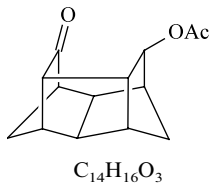
$[\alpha]_D^{20} = -122.7$

Source of chirality: stereoselective *N*-alkylation

Absolute configuration: 4a*S*,6*R*,8a*S*,11*R*

José E. D. Martins, João Alifantes, Adriana R. Pohlmann and
Valentim E. U. Costa*

Tetrahedron: Asymmetry 14 (2003) 683



(-)-10-*exo*-Acetoxy-pentacyclo[6.2.1.1^{3,6}.0^{2,7}.0^{5,9}]dodeca-4-one

Mp = 88–90°C

Ee >95% (by NMR)

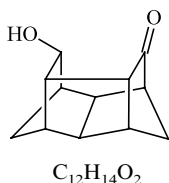
$[\alpha]_D^{20} = -31.0$ (c 1.0, ethyl acetate)

Source of chirality: enzymatic resolution

Absolute configuration: unknown

José E. D. Martins, João Alifantes, Adriana R. Pohlmann and
Valentim E. U. Costa*

Tetrahedron: Asymmetry 14 (2003) 683



(+)-10-*exo*-Hydroxy-pentacyclo[6.2.1.1^{3,6}.0^{2,7}.0^{5,9}]dodeca-4-one

Mp = 190–192°C

Ee >85% (by NMR)

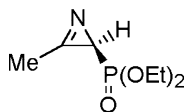
$[\alpha]_D^{20} = +30.4$ (c 1.0, ethyl acetate)

Source of chirality: enzymatic resolution

Absolute configuration: unknown

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Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(S)-(3-methyl-2H-azirin-2-yl)phosphonate

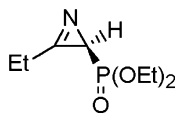
Ee = 42%

$[\alpha]_{\text{D}}^{20} = -39.2$ (c 1.23, CH_2Cl_2)

Absolute configuration: S

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(S)-(3-ethyl-2H-azirin-2-yl)phosphonate

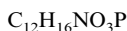
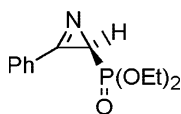
Ee = 24%

$[\alpha]_{\text{D}}^{20} = -27.1$ (c 0.75, CH_2Cl_2)

Absolute configuration: S

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(S)-(3-phenyl-2H-azirin-2-yl)phosphonate

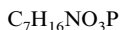
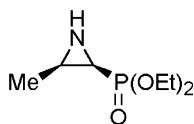
Ee = 72%

$[\alpha]_{\text{D}}^{20} = -144.4$ (c 0.70, CH_2Cl_2)

Absolute configuration: S

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2S,3R)-(3-methyl-aziridin-2-yl)phosphonate

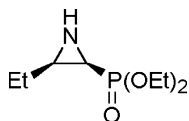
Ee = 20%

$[\alpha]_{\text{D}}^{20} = +7.9$ (c 0.75, CH_2Cl_2)

Absolute configuration: 2S,3R

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2*S*,3*R*)-(3-ethyl-aziridin-2-yl)phosphonate

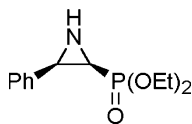
Ee = 24%

$[\alpha]_{\text{D}}^{20} = +0.8$ (c 0.74, CH₂Cl₂)

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

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Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(2*S*,3*R*)-(3-phenyl-aziridin-2-yl)phosphonate

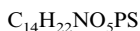
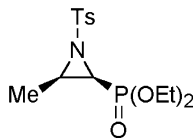
Ee = 65%

$[\alpha]_{\text{D}}^{20} = -22.6$ (c 0.62, CH₂Cl₂)

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

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Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2*S*,3*R*)-[3-methyl-1-(*p*-toluenesulfonyl)-aziridin-2-yl]phosphonate

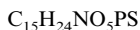
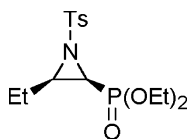
Ee = 20%

$[\alpha]_{\text{D}}^{20} = +2.2$ (c 0.45, CH₂Cl₂)

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

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2*S*,3*R*)-[3-ethyl-1-(*p*-toluenesulfonyl)-aziridin-2-yl]phosphonate

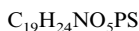
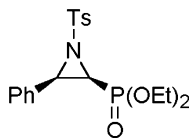
Ee = 24%

$[\alpha]_{\text{D}}^{20} = +2.4$ (c 1.00, CH₂Cl₂)

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

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(2*S*,3*R*)-[3-phenyl-1-(*p*-toluenesulfonyl)-aziridin-2-yl]phosphonate

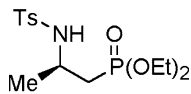
Ee = 65%

$[\alpha]_D^{20} = -35.4$ (*c* 0.54, CH_2Cl_2)

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

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2*R*)-[2-(*p*-toluenesulfonylamino)propyl]phosphonate

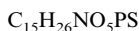
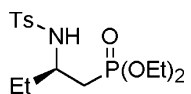
Ee = 20%

$[\alpha]_D^{20} = +6.3$ (*c* 0.24, MeOH)

Absolute configuration: 2*R*

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Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(2*R*)-[2-(*p*-toluenesulfonylamino)butyl]phosphonate

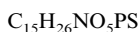
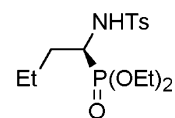
Ee = 24%

$[\alpha]_D^{20} = +3.9$ (*c* 0.38, MeOH)

Absolute configuration: 2*R*

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(S)-[1-(*p*-toluenesulfonylamino)butyl]phosphonate

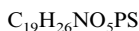
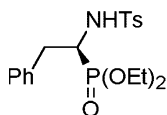
Ee = 24%

$[\alpha]_D^{20} = -0.8$ (*c* 0.24, MeOH)

Absolute configuration: *S*

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(S)-[2-phenyl-1-(p-toluenesulfonylamino)ethyl]phosphonate

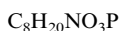
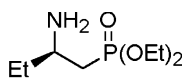
Ee = 65%

$[\alpha]_D^{20} = +20.0$ (c 0.10, CH_2Cl_2)

Absolute configuration: *S*

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (-)-(R)-(2-aminobutyl)phosphonate

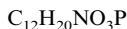
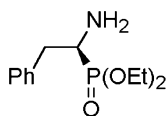
Ee = 24%

$[\alpha]_D^{20} = -3.9$ (c 0.71, CH_2Cl_2)

Absolute configuration: *R*

Francisco Palacios,* Domitila Aparicio, Ana María Ochoa de Retana,
Jesús M. de los Santos, José I. Gil and Rafael López de Munain

Tetrahedron: Asymmetry 14 (2003) 689



Diethyl (+)-(S)-[(1-amino-2-phenyl)ethyl]phosphonate

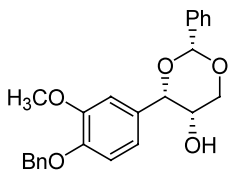
Ee = 50%

$[\alpha]_D^{20} = +8.5$ (c 0.21, CH_2Cl_2)

Absolute configuration: *S*

Xiaochuan Chen, Xinfeng Ren, Kun Peng, Xinfu Pan,*
Albert S. C. Chan and Teng-Kuei Yang

Tetrahedron: Asymmetry 14 (2003) 701



(1*S*,2*S*)-1,3-*O*-Benzylidene-1-(4-benzyloxy-3-methoxyphenyl)-1,2,3-propanetriol

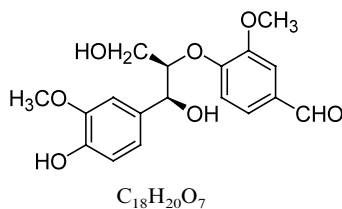
$[\alpha]_D^{25} = +55$ (c 0.7, acetone)

Source of chirality: asymmetric synthesis

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

Xiaochuan Chen, Xinfeng Ren, Kun Peng, Xinfu Pan,*
Albert S. C. Chan and Teng-Kuei Yang

Tetrahedron: Asymmetry 14 (2003) 701



(1*S*,2*R*)-1-(4-Hydroxy-3-methoxyphenyl)-2-(4-formyl-2-methoxy-phenoxy)-propane-1,3-diol

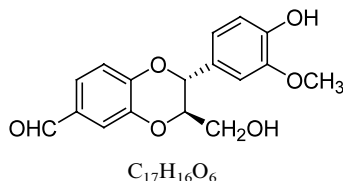
$[\alpha]_D^{25} = -12$ (*c* 0.4, acetone)

Source of chirality: asymmetric synthesis

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

Xiaochuan Chen, Xinfeng Ren, Kun Peng, Xinfu Pan,*
Albert S.C. Chan and Teng-Kuei Yang

Tetrahedron: Asymmetry 14 (2003) 701



(2*R*,3*R*)-3-Hydroxymethyl-2-(4-hydroxy-3-methoxyphenyl)-1,4-benzodioxan-6-carbaldehyde

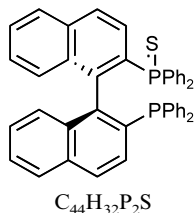
$[\alpha]_D^{25} = +24$ (*c* 0.3, acetone)

Source of chirality: asymmetric synthesis

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

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R*)-[2'-(Diphenyl-phosphinothioyl)-[1,1']binaphthalenyl-2-yl]-diphenyl-phosphane

Ee = 100%

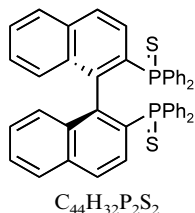
$[\alpha]_D^{20} = +35$ ($CHCl_3$, *c* 0.5)

Source of chirality: (*R*)-BINAP (commercial)

Absolute configuration: *R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R*)-2,2'-Bis-(diphenyl-phosphinothioyl)-[1,1']binaphthalenyl

Ee = 100%

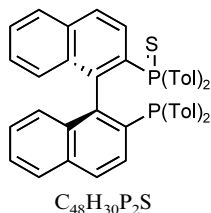
$[\alpha]_D^{20} = +72$ ($CHCl_3$, *c* 0.5)

Source of chirality: (*R*)-BINAP (commercial)

Absolute configuration: *R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R*)-[2'-(Di-*p*-tolyl-phosphinothioyl)-[1,1']binaphthalenyl-2-yl]-di-*p*-tolyl-phosphane

Ee = 100%

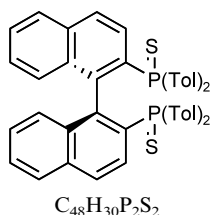
$[\alpha]_D^{20} = -4$ (CHCl₃, *c* 0.5)

Source of chirality: (*R*)-TolBINAP (commercial)

Absolute configuration: *R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R*)-2,2'-Bis-(di-*p*-tolyl-phosphinothioyl)-[1,1']binaphthalenyl

Ee = 100%

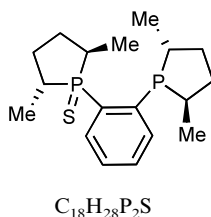
$[\alpha]_D^{20} = -18$ (CHCl₃, *c* 0.5)

Source of chirality: (*R*)-Tol-BINAP (commercial)

Absolute configuration: *R,R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R,R*)-1-[2-(2,5-Dimethyl-phospholan-1-yl)-phenyl]-2,5-dimethyl-phospholane-1-sulfide

Ee = 100%

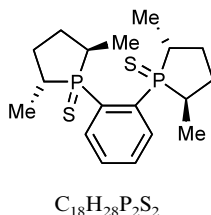
$[\alpha]_D^{20} = -140$ (CHCl₃, *c* 0.5)

Source of chirality: (*R,R*)-Me-DUPHOS (commercial)

Absolute configuration: *R,R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R,R*)-1,2-Bis-(2,5-dimethyl-phospholane-1-sulfide)benzene

Ee = 100%

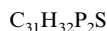
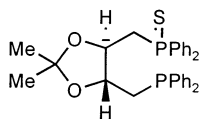
$[\alpha]_D^{20} = -44$ (CHCl₃, *c* 0.5)

Source of chirality: (*R,R*)-Me-DUPHOS (commercial)

Absolute configuration: *R,R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R,R*)-[5-(Diphenyl-phosphinothiomethyl)-2,2-dimethyl-[1,3]dioxolan-4-yl-methyl]-diphenyl-phosphane

E.e. = 100%

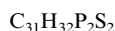
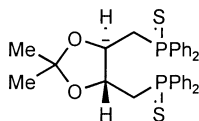
$[\alpha]_{\text{D}}^{20} = -18$ (CHCl_3 , c 1.7)

Source of chirality: (*R,R*)-DIOP (commercial)

Absolute configuration: *R,R*

Christopher J. Chapman, Christopher G. Frost,
Michael P. Gill-Carey, Gabriele Kociok-Köhn, Mary F. Mahon,
Andrew S. Weller and Michael C. Willis*

Tetrahedron: Asymmetry 14 (2003) 705



(*R,R*)-4,5-Bis-(diphenyl-phosphinothiomethyl)-2,2-dimethyl-[1,3]dioxolane

E.e. = 100%

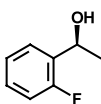
$[\alpha]_{\text{D}}^{20} = +13$ (CHCl_3 , c 0.6)

Source of chirality: (*R,R*)-DIOP (commercial)

Absolute configuration: *R,R*

João V. Comasseto, Álvaro T. Omori, Leandro H. Andrade
and André L.M. Porto*

Tetrahedron: Asymmetry 14 (2003) 711



(*S*)-(-)-*o*-(Fluorophenyl)-ethanol

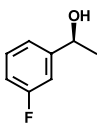
E.e. = 99%

$[\alpha]_{\text{D}}^{20} = -34.7$ (c 3.63, CH_2Cl_2)

Absolute configuration: *S*

João V. Comasseto, Álvaro T. Omori, Leandro H. Andrade
and André L.M. Porto*

Tetrahedron: Asymmetry 14 (2003) 711



(*S*)-(-)-*m*-(Fluorophenyl)-ethanol

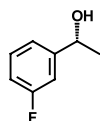
E.e. = 90%

$[\alpha]_{\text{D}}^{20} = -26.3$ (c 7.0, CH_2Cl_2)

Absolute configuration: *S*

João V. Comasseto, Álvaro T. Omori, Leandro H. Andrade
and André L.M. Porto*

Tetrahedron: Asymmetry 14 (2003) 711



C₈H₉FO

(*R*)-(+)-*m*-(Fluorophenyl)-ethanol

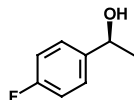
E.e. = 72%

$[\alpha]_D^{20} = +13.6$ (*c* 1.25, CH₂Cl₂)

Absolute configuration: *R*

João V. Comasseto, Álvaro T. Omori, Leandro H. Andrade
and André L.M. Porto*

Tetrahedron: Asymmetry 14 (2003) 711



C₈H₉FO

(*S*)-(-)-*p*-(Fluorophenyl)-ethanol

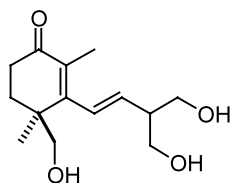
E.e. = 96%

$[\alpha]_D^{20} = -21.2$ (*c* 0.33, CH₂Cl₂)

Absolute configuration: *S*

María I. Colombo, Juan Zinczuk, María L. Bohn and
Edmundo A. Rúveda*

Tetrahedron: Asymmetry 14 (2003) 717



C₁₄H₂₂O₄

(*S*)-2,4-Dimethyl-3-[(1'*E*)-4'-hydroxy-3'-hydroxymethyl-1'-butenyl]-4-hydroxymethyl-2-cyclohexen-1-one

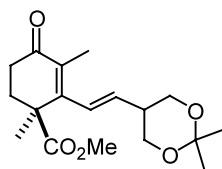
$[\alpha]_D^{30} = +8.3$ (*c* 0.35, MeOH)

Source of chirality: (8*S*)-4,8-dimethyl-1,5-dioxo-3-hydroxy-2-oxabicyclo[4.3.0]non-4(9)-ene

Absolute configuration: *S*

María I. Colombo, Juan Zinczuk, María L. Bohn and
Edmundo A. Rúveda*

Tetrahedron: Asymmetry 14 (2003) 717



C₁₈H₂₆O₅

Acetonide of (*S*)-2,4-dimethyl-3-[(1'*E*)-4'-hydroxy-3'-hydroxymethyl-1'-butenyl]-4-methoxycarbonyl-2-cyclohexen-1-one

Ee >97% by NMR

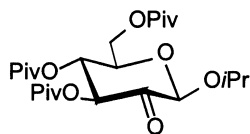
$[\alpha]_D^{27} = -25.3$ (*c* 3.0, CHCl₃)

Source of chirality: (8*S*)-4,8-dimethyl-1,5-dioxo-3-hydroxy-2-oxabicyclo[4.3.0]non-4(9)-ene

Absolute configuration: *S*

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



$C_{24}H_{40}O_9$

Isopropyl 3,4,6-tri-*O*-pivaloyl- β -D-*arabino*-hexopyranosid-2-ulose

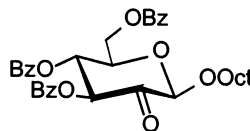
Mp = 121–128°C (from Et₂O)

$[\alpha]_D^{20} = -22.2$ (c 1, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



$C_{35}H_{38}O_9$

Octyl 3,4,6-tri-*O*-benzoyl- β -D-*arabino*-hexopyranosid-2-ulose

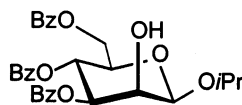
Mp = 82–84°C (from *i*Pr₂O)

$[\alpha]_D^{20} = -34.5$ (c 1.2, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



$C_{30}H_{30}O_9$

Isopropyl 3,4,6-tri-*O*-benzoyl- β -D-mannopyranoside

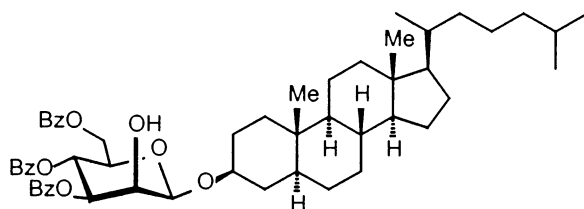
Mp = 136–137°C

$[\alpha]_D^{20} = -66.9$ (c 0.8, CHCl₃)

Source of chirality: D-glucose

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Tetrahedron: Asymmetry 14 (2003) 727



$C_{54}H_{70}O_9$

5 α -Cholestan-3 β -yl 3,4,6-tri-*O*-benzoyl- β -D-mannopyranoside

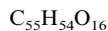
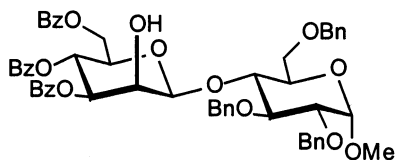
Mp = 160–162°C (from MeOH)

$[\alpha]_D^{20} = -31.2$ (c 1, CHCl₃)

Source of chirality: D-glucose, 5 α -cholestan-3 β -ol

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Tetrahedron: Asymmetry 14 (2003) 727



Methyl 4-*O*-(3,4,6-tri-*O*-benzoyl- β -D-mannopyranosyl)-2,3,6-tri-*O*-benzyl- α -D-glucopyranoside

Mp = 127°C (from Et₂O/hexane)

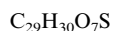
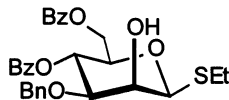
$[\alpha]_{\text{D}}^{20} = -10.2$ (*c* 0.7, CHCl₃)

$[\alpha]_{365\text{ nm}}^{20} = -57.5$ (*c* 0.7, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



Ethyl 4,6-di-*O*-benzoyl-3-*O*-benzyl-1-thio- β -D-mannopyranoside

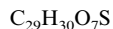
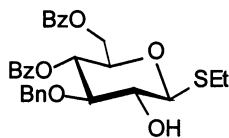
Mp = 142–143°C (from EtOH)

$[\alpha]_{\text{D}}^{20} = -52.4$ (*c* 1.1, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



Ethyl 4,6-di-*O*-benzoyl-3-*O*-benzyl-1-thio- β -D-glucopyranoside

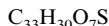
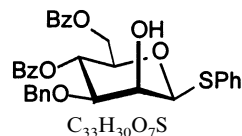
Mp = 108–109°C (from EtOH)

$[\alpha]_{\text{D}}^{20} = -24.4$ (*c* 1.2, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



Phenyl 4,6-di-*O*-benzoyl-3-*O*-benzyl-1-thio- β -D-mannopyranoside

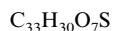
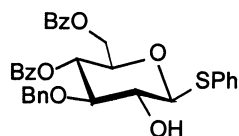
Mp = 119–121°C (from EtOH)

$[\alpha]_{\text{D}}^{20} = -85.8$ (*c* 1.0, CHCl₃)

Source of chirality: D-glucose

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Tetrahedron: Asymmetry 14 (2003) 727



Phenyl 4,6-di-*O*-benzoyl-3-*O*-benzyl-1-thio- β -D-glucopyranoside

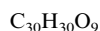
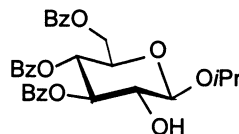
Mp = 146–148°C (from EtOH)

$[\alpha]_D^{20} = -24.1$ (*c* 1.2, CHCl₃)

Source of chirality: D-glucose

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Tetrahedron: Asymmetry 14 (2003) 727



Isopropyl 3,4,6-tri-*O*-benzoyl- β -D-glucopyranoside

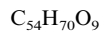
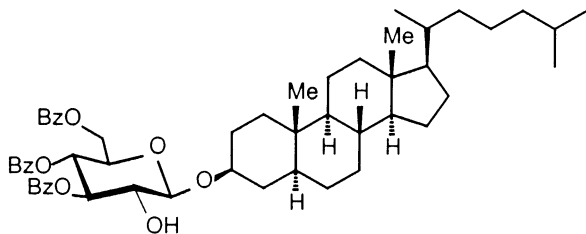
Mp = 129–131°C (from Et₂O)

$[\alpha]_D^{20} = -52.1$ (*c* 0.8, CHCl₃)

Source of chirality: D-glucose

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



5 α -Cholestan-3 β -yl 3,4,6-tri-*O*-benzoyl- β -D-glucopyranoside

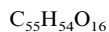
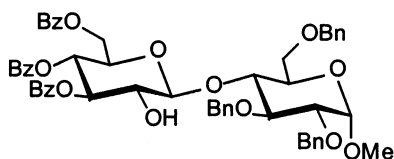
Mp = 99–101°C (from MeOH)

$[\alpha]_D^{20} = -20.8$ (*c* 1.3, CHCl₃)

Source of chirality: D-glucose, 5 α -cholestan-3 β -ol

Frieder W. Lichtenthaler,* Matthias Lergenmüller, Siegfried Peters and Zsolt Varga

Tetrahedron: Asymmetry 14 (2003) 727



Methyl 2,3,6-tri-*O*-benzyl-3',4',6'-tri-*O*-benzoyl- α -cellobioside

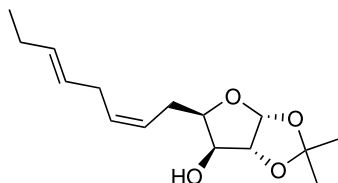
$[\alpha]_D^{20} = -2.7$ (*c* 1, CHCl₃)

$[\alpha]_{365\text{ nm}}^{20} = -32.5$ (*c* 1, CHCl₃)

Source of chirality: D-glucose

Rajendrakumar Reddy Gadikota, Adam I. Keller,
Christopher S. Callam and Todd L. Lowary*

Tetrahedron: Asymmetry 14 (2003) 737



(2*S*,3*S*,4*R*,5*R*)-2,2-Dimethyl-5-[octa-2(*Z*),5(*E*)-dienyl]-tetrahydro-furo[2,3-*d*][1,3]dioxol-6-ol

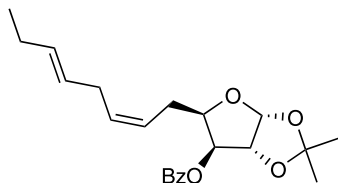
E.e. = 100%

$[\alpha]_D^{21} = +29.3$ (c 0.9, $CHCl_3$)

Source of chirality: D-glucose

Rajendrakumar Reddy Gadikota, Adam I. Keller,
Christopher S. Callam and Todd L. Lowary*

Tetrahedron: Asymmetry 14 (2003) 737



Benzoic acid (2*S*,3*S*,4*R*,5*R*)-2,2-dimethyl-5-[octa-2(*Z*),5(*E*)-dienyl]-tetrahydro-furo[2,3-*d*][1,3]dioxol-6-yl ester

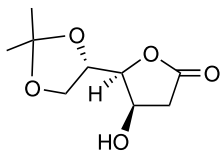
E.e. = 100%

$[\alpha]_D^{21} = +36.5$ (c 1.0, $CHCl_3$)

Source of chirality: D-glucose

Rajendrakumar Reddy Gadikota, Adam I. Keller,
Christopher S. Callam and Todd L. Lowary*

Tetrahedron: Asymmetry 14 (2003) 737



(5*R*,4*R*)-5-(2,2-Dimethyl-[1,3]dioxolan-4(*R*)-yl)-4-hydroxy-dihydro-furan-2-one

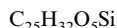
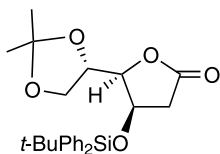
E.e. = 100%

$[\alpha]_D^{21} = +39.9$ (c 0.9, $CHCl_3$)

Source of chirality: D-mannose

Rajendrakumar Reddy Gadikota, Adam I. Keller,
Christopher S. Callam and Todd L. Lowary*

Tetrahedron: Asymmetry 14 (2003) 737



(5*R*,4*R*)-4-(*t*-Butyldiphenylsiloxy)-5-(2,2-dimethyl-[1,3]dioxolan-4(*R*)-yl)-dihydro-furan-2-one

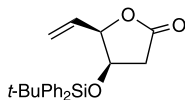
E.e. = 100%

$[\alpha]_D^{21} = +49.1$ (c 1.1, $CHCl_3$)

Source of chirality: D-mannose

Rajendrakumar Reddy Gadikota, Adam I. Keller,
Christopher S. Callam and Todd L. Lowary*

Tetrahedron: Asymmetry 14 (2003) 737



(4*R*,5*R*)-4-(*t*-Butyldiphenylsiloxy)-5-vinyl-dihydro-furan-2-one

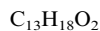
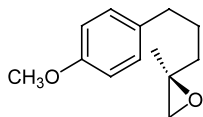
E.e. = 100%

$[\alpha]_D^{21} = +36.2$ (c 1.0, $CHCl_3$)

Source of chirality: D-mannose

Stephen K. Taylor,* Milica Ivanovic, Lloyd J. Simons and
Matthew M. Davis

Tetrahedron: Asymmetry 14 (2003) 743



(2*S*)-1,2-Epoxy-2-methyl-5-(*p*-methoxyphenyl)pentane

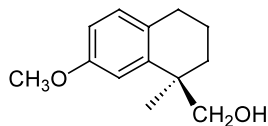
Ee >90%

$[\alpha]_D^{21} = -6.8$

Source of chirality: asymmetric synthesis

Stephen K. Taylor,* Milica Ivanovic, Lloyd J. Simons and
Matthew M. Davis

Tetrahedron: Asymmetry 14 (2003) 743



(*R*)-(C1)-1,2,3,4-Tetrahydro-7-methoxy-1-methyl-1-naphthalenemethanol

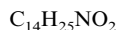
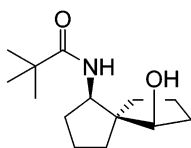
Ee >90%

$[\alpha]_D^{22} = -18.3$

Source of chirality: asymmetric synthesis

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



(1*R*,5*R*,6*R*)-6-(2,2-Dimethylpropanamido)spiro[4.4]nonan-1-ol

Ee >98%

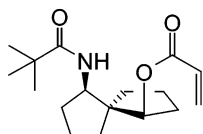
$[\alpha]_D^{20} +5.2$ (c 0.46, $CHCl_3$)

Source of chirality: derivative of 1*S*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol

Absolute configuration: 1*R*,5*R*,6*R*

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



$C_{17}H_{27}NO_3$

(1*R*,5*R*,6*R*)-6-(2,2-Dimethylpropanamido)spiro[4.4]non-1-yl propenoate

Ee >98%

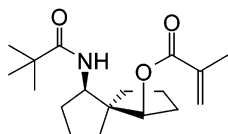
$[\alpha]_D^{22} -56.9$ (c 0.91, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol

Absolute configuration: 1*R*,5*R*,6*R*

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



$C_{18}H_{29}NO_3$

(1*R*,5*R*,6*R*)-6-(2,2-Dimethylpropanamido)spiro[4.4]non-1-yl 2-methylpropenoate

Ee >98%

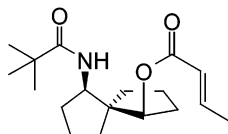
$[\alpha]_D^{20} -75.8$ (c 0.87, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol

Absolute configuration: 1*R*,5*R*,6*R*

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



$C_{18}H_{29}NO_3$

(1*R*,5*R*,6*R*)-6-(2,2-Dimethylpropanamido)spiro[4.4]non-1-yl 2*E*-butenoate

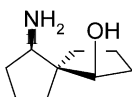
Ee >98%

$[\alpha]_D^{20} -50.8$ (c 1.07, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol
Absolute configuration: 1*R*,5*R*,6*R*

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Tetrahedron: Asymmetry 14 (2003) 749



$C_9H_{17}NO$

(1*R*,5*R*,6*R*)-6-Aminospiro[4.4]nonan-1-ol

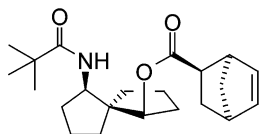
Ee >98%

$[\alpha]_D^{23} +79.3$ (c 2.0, $CHCl_3$)

Source of chirality: conversion to 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol
Absolute configuration: 1*R*,5*R*,6*R*

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Tetrahedron: Asymmetry 14 (2003) 749



$C_{22}H_{33}NO_3$

(1*R*,5*R*,6*R*)-6-(2,2-Dimethylpropanamido)-1-((2'*R*)-norborn-5'-ene-2'-endo-carboxyloxy)spiro[4.4]nonane

Ee >98%

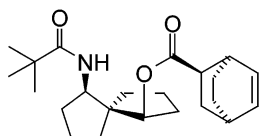
$[\alpha]_D^{24} +14.4$ (c 0.93, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol; confirmed by measuring optical rotation of cleaved acid

Absolute configuration: 1*R*,5*R*,6*R*,1'*S*,2'*R*,4'*S*

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



$C_{23}H_{35}NO_3$

(1*R*,5*R*,6*R*)-1-((2'*R*)-bicyclo[2.2.2]oct-5'-ene-2'-endo-carboxyloxy)-6-(2,2-dimethylpropanamido)spiro[4.4]nonane

Ee >98%

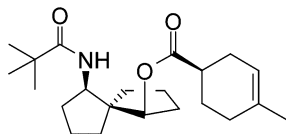
$[\alpha]_D^{23} -21.8$ (c 0.95, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol; confirmed by measuring optical rotation of cleaved acid

Absolute configuration: 1*R*,5*R*,6*R*,1'*S*,2'*R*,4'*S*

Susan M. Lait, Masood Parvez and Brian A. Keay*

Tetrahedron: Asymmetry 14 (2003) 749



$C_{22}H_{35}NO_3$

(1*R*,5*R*,6*R*)-1-((1'*R*)-4-Methylcyclohex-3'-ene-1'-carboxyloxy)-6-(2,2-dimethylpropanamido)spiro[4.4]nonane

Ee >98%

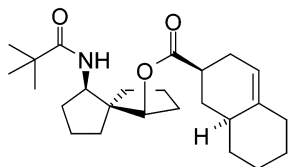
$[\alpha]_D^{20} -18.2$ (c 1.02, $CHCl_3$)

Source of chirality: derivative of 1*R*,5*R*,6*R*-6-(2,2-dimethylpropanamido)spiro[4.4]nonan-1-ol; confirmed by measuring optical rotation of cleaved acid

Absolute configuration: 1*R*,5*R*,6*R*,1'*R*

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Tetrahedron: Asymmetry 14 (2003) 749



$C_{25}H_{39}NO_3$

(1*R*,5*R*,6*R*)-1-((4'*R*,6'*S*)-Bicyclo[4.4.0]dec-1'-ene-4'-carboxyloxy)-6-(2,2-dimethylpropanamido)spiro[4.4]nonane

Ee = 85%

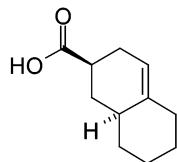
$[\alpha]_D^{24} -17.9$ (c 1.09, $CHCl_3$)

Source of chirality: X-ray crystal structure

Absolute configuration: 1*R*,5*R*,6*R*,4'*R*,6'*S*

Susan M. Lait, Masood Parvez and Brian A. Keay*

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(4*R*,6*S*)-Bicyclo[4.4.0]dec-1-ene-4-carboxylic acid

Ee = 85%

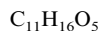
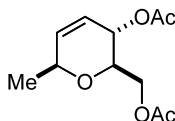
$[\alpha]_D^{24} +64.8$ (*c* 0.765, $CHCl_3$)

Source of chirality: X-ray crystal structure of spiro-pivalamido-ester

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

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



2,6-Anhydro-1,3,4-trideoxy-D-ribo-hept-3-enitol diacetate

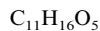
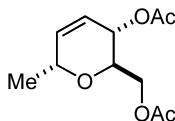
$[\alpha]_D^{23} = +109$ (*c* 0.216, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*S*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



2,6-Anhydro-1,3,4-trideoxy-D-arabino-hept-3-enitol diacetate

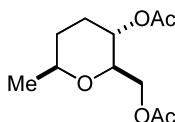
$[\alpha]_D^{23} = +71.2$ (*c* 0.332, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

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2,6-Anhydro-1,3,4-trideoxy-D-ribo-heptitol diacetate

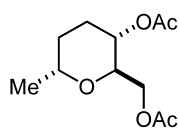
$[\alpha]_D^{23} = +50$ (*c* 0.29, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*S*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

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$C_{11}H_{18}O_5$

2,6-Anhydro-1,3,4-trideoxy-D-arabino-heptitol diacetate

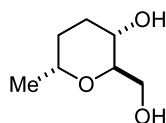
$[\alpha]_D^{23} = +32$ (*c* 0.26, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_7H_{14}O_3$

2,6-Anhydro-1,3,4-trideoxy-D-arabino-heptitol

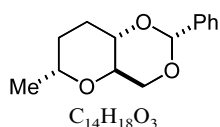
$[\alpha]_D^{23} = +43$ (*c* 0.26, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_{14}H_{18}O_3$

2,6-Anhydro-1,3,4-trideoxy-4,6-*O*-(phenylmethylene)-D-arabino-heptitol

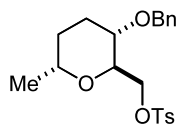
$[\alpha]_D^{23} = +29$ (*c* 0.20, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_{21}H_{26}O_5S$

2,6-Anhydro-1,3,4-trideoxy-4-*O*-(phenylmethyl)-6-methylbenzenesulfonate-D-arabino-heptitol

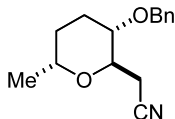
$[\alpha]_D^{23} = +45$ (*c* 0.28, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

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$C_{15}H_{19}O_2N$

6-Methyl-3-(phenylmethoxy)-tetrahydro-2*H*-pyran-2-acetonitrile

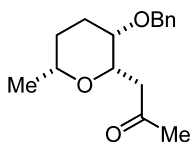
$[\alpha]_D^{23} = +91$ (*c* 0.32, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2*R*,5*S*,6*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_{16}H_{22}O_3$

cis-1-[(3'*S*,6'*R*)-Tetrahydro-6'-methyl-3'-(phenylmethoxy)-2'*H*-pyran-2'-yl]-2-propanone

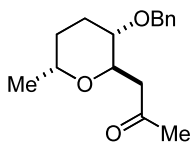
$[\alpha]_D^{23} = +25.1$ (*c* 0.432, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2'*S*,3'*S*,6'*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_{16}H_{22}O_3$

trans-1-[(3'*S*,6'*R*)-Tetrahydro-6'-methyl-3'-(phenylmethoxy)-2'*H*-pyran-2'-yl]-2-propanone

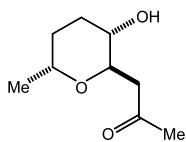
$[\alpha]_D^{23} = +43.3$ (*c* 0.448, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2'*R*,3'*S*,6'*R*

Julie M. Lukesh and William A. Donaldson*

Tetrahedron: Asymmetry 14 (2003) 757



$C_9H_{16}O_3$

1-[(2'*R*,3'*S*,6'*R*)-Tetrahydro-3-hydroxy-6'-methyl-2*H*-pyran-2-yl]-2-propanone (decastrictine L)

$[\alpha]_D^{23} = +21.1$ (*c* 0.452, $CHCl_3$)

Source of chirality: chiral pool (triacetyl-D-glucal)

Absolute configuration: 2'*R*,3'*S*,6'*R*