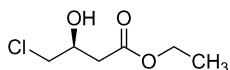


Stereochemistry abstracts

Stefan Bräutigam,* Stephanie Bringer-Meyer and Dirk Weuster-Botz*

Tetrahedron: Asymmetry 18 (2007) 1883



Ethyl (S)-4-chloro-3-hydroxybutyrate

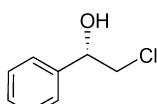
Ee > 99.7%

$[\alpha]_D^{20} = -14$ neat

Source of chirality: asymmetric whole cell biocatalysis with ionic liquids

Stefan Bräutigam,* Stephanie Bringer-Meyer and Dirk Weuster-Botz*

Tetrahedron: Asymmetry 18 (2007) 1883



(S)- α -Chloro-1-phenylethanol

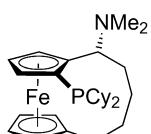
Ee > 99.7%

$[\alpha]_D^{20} = +48$ (*c* 2.8, cyclohexane)

Source of chirality: asymmetric whole cell biocatalysis with ionic liquids

Ambroz Almássy, Katalin Barta, Giancarlo Franciò, Radovan Šebesta,*
Walter Leitner* and Štefan Toma

Tetrahedron: Asymmetry 18 (2007) 1893



$[\alpha]_D = -207$ (*c* 0.70, acetone)

Source of chirality: asymmetric synthesis

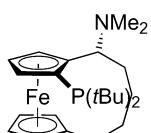
Absolute configuration: (R,pS)



(R,pS)-1-(Dicyclohexylphosphanyl)-2,1'-[1-(dimethylamino)pentan-1,5-diyl]ferrocene

Ambroz Almássy, Katalin Barta, Giancarlo Franciò, Radovan Šebesta,*
Walter Leitner* and Štefan Toma

Tetrahedron: Asymmetry 18 (2007) 1893



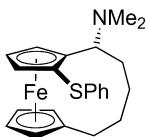
$[\alpha]_D = -395$ (*c* 0.45, methanol)

Source of chirality: asymmetric synthesis

Absolute configuration: (R,pS)



(R,pS)-1-(Di-tert-butylphosphanyl)-2,1'-[1-(dimethylamino)pentan-1,5-diyl]ferrocene

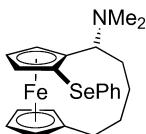


C₂₃H₂₇FeNS
(*R,pS*)-1-(Phenylsulfanyl)-2,1'-(dimethylamino)pentan-1,5-diyl ferrocene

[α]_D = -155 (*c* 0.79, CHCl₃)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,pS*)

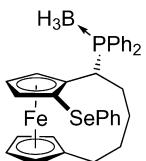


C₂₃H₂₇FeNSE
(*R,pS*)-1-(Phenylseleneny)-2,1'-(dimethylamino)pentan-1,5-diyl ferrocene

[α]_D = -148 (*c* 0.85, CHCl₃)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,pS*)

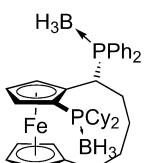


C₃₃H₃₄BFePSe
(*R,pS*)-1-(Phenylseleneny)-2,1'-(diphenylphosphoryl)pentan-1,5-diyl ferrocene, borane complex

[α]_D = -259 (*c* 0.27, CHCl₃)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,pS*)

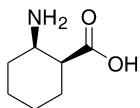


C₃₉H₅₄B₂FeP₂
(*R,pS*)-1-(Dicyclohexylphosphoryl)-2,1'-(diphenylphosphoryl)pentan-1,5-diyl ferrocene, bis(borane) complex

[α]_D = -204 (*c* 0.32, CHCl₃)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,pS*)



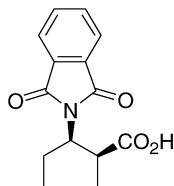
C₇H₁₃NO₂
(1S,2R)-2-Aminocyclohexanecarboxylic acid

Ee = >99%

[α]_D²⁹ = +20.2 (c 0.25, H₂O)

Source of chirality: asymmetric synthesis

Absolute configuration: (1S,2R)



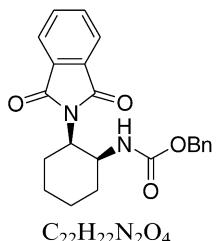
C₁₅H₁₅NO₄
(1S,2R)-2-Phthalimidocyclohexanecarboxylic acid

Ee = >99%

[α]_D²⁸ = +98.3 (c 1.00, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1S,2R)



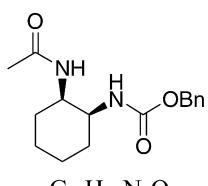
C₂₂H₂₂N₂O₄
(1S,2R)-1-(N-Benzylloxycarbonylamino)-2-phthalimidocyclohexane

Ee = >99%

[α]_D²⁹ = +92.1 (c 0.10, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1S,2R)



C₁₆H₂₂N₂O₃
(1S,2R)-1-(N-Benzylloxycarbonylamino)-2-acetamidecyclohexane

Ee = >99%

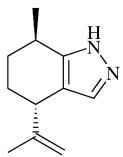
[α]_D²⁹ = +33.6 (c 0.10, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1S,2R)

Eva Tur, Guillaume Vives, Gwénaël Rapenne, Jeanne Crassous,*
Nicolas Vanthuyne, Christian Roussel, Rosina Lombardi,
Teresa Freedman and Laurence Nafie

Tetrahedron: Asymmetry 18 (2007) 1911



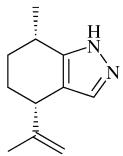
$[\alpha]_D^{23} = -29.5$ (*c* 0.49, CH₂Cl₂)
Absolute configuration: (4*S*,7*R*)



4-Isopropylidene-7-methyl-4,5,6,7-tetrahydro-2(1*H*)-indazole

Eva Tur, Guillaume Vives, Gwénaël Rapenne, Jeanne Crassous,*
Nicolas Vanthuyne, Christian Roussel, Rosina Lombardi,
Teresa Freedman and Laurence Nafie

Tetrahedron: Asymmetry 18 (2007) 1911



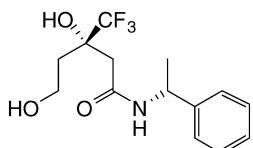
$[\alpha]_D^{23} = +15.8$ (*c* 0.51, CH₂Cl₂)
Absolute configuration: (4*S*,7*S*)



4-Isopropylidene-7-methyl-4,5,6,7-tetrahydro-2(1*H*)-indazole

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918



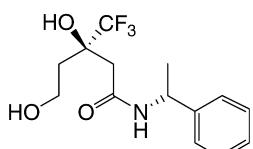
Ee >98% (by NMR)
 $[\alpha]_D^{25} = -39.4$ (*c* 1.3, CHCl₃)
Source of chirality: chiral resolution
Absolute configuration: (3*S*)



(3*S*)-3,5-Dihydroxy-N-[(1*S*)-1-phenylethyl]-3-(trifluoromethyl)pentanamide

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918



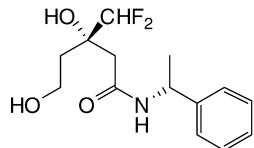
Ee >98% (by NMR)
 $[\alpha]_D^{25} = -54.0$ (*c* 0.6, CHCl₃)
Source of chirality: chiral resolution
Absolute configuration: (3*R*)



(3*R*)-3,5-Dihydroxy-N-[(1*S*)-1-phenylethyl]-3-(trifluoromethyl)pentanamide

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918

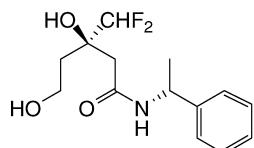


Ee >98% (by NMR)
 $[\alpha]_D^{25} = -33.2$ (*c* 0.7, CHCl₃)
 Source of chirality: chiral resolution
 Absolute configuration: (3*S*)

C₁₄H₁₉F₂NO₃
 (3*S*)-3-(Difluoromethyl)-3,5-dihydroxy-N-((1*S*)-1-phenylethyl)pentanamide

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918

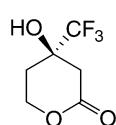


Ee >98% (by NMR)
 $[\alpha]_D^{25} = -45.5$ (*c* 0.7, CHCl₃)
 Source of chirality: chiral resolution
 Absolute configuration: (3*R*)

C₁₄H₁₉F₂NO₃
 (3*R*)-3-(Difluoromethyl)-3,5-dihydroxy-N-((1*S*)-1-phenylethyl)pentanamide

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918

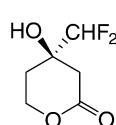


Ee = 100%
 $[\alpha]_D^{25} = -17.0$ (*c* 0.8, CHCl₃)
 Source of chirality: corresponding phenylethylamide
 Absolute configuration: (4*R*)

C₆H₇F₃O₃
 (4*R*)-4-Hydroxy-4-(trifluoromethyl)tetrahydro-2*H*-pyran-2-one

Ivan S. Kondratov,* Igor I. Gerus, Valery P. Kukhar and
Olga V. Manoilenko

Tetrahedron: Asymmetry 18 (2007) 1918

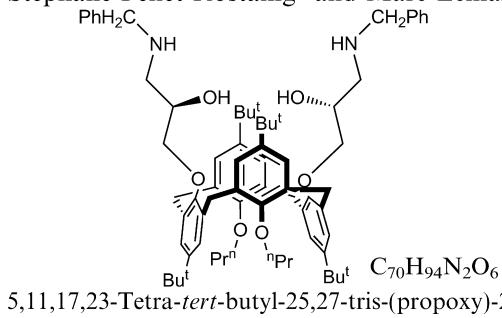


Ee = 100%
 $[\alpha]_D^{25} = -10.5$ (*c* 0.7, CHCl₃)
 Source of chirality: corresponding phenylethylamide
 Absolute configuration: (4*R*)

C₆H₈F₂O₃
 (4*R*)-4-Tetrahydro-4-(difluoromethyl)-4-hydroxy-2*H*-pyran-2-one

Adrien Quintard, Ulrich Darbost, Francis Vocanson,*
Stéphane Pellet-Rostaing* and Marc Lemaire

Tetrahedron: Asymmetry 18 (2007) 1926

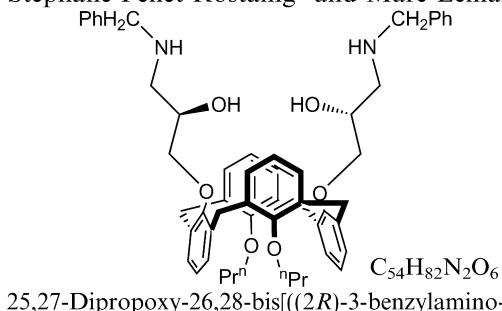


Ee = 99%
[α]_D²⁵ = +3.4 (c 0.75, CHCl₃)
Source of chirality: asymmetric synthesis
Absolute configuration: (R,R)

5,11,17,23-Tetra-tert-butyl-25,27-tris-(propoxy)-26,28-bis[((2R)-3-benzylamino-2-hydroxy)propoxy]calix[4]arene

Adrien Quintard, Ulrich Darbost, Francis Vocanson,*
Stéphane Pellet-Rostaing* and Marc Lemaire

Tetrahedron: Asymmetry 18 (2007) 1926

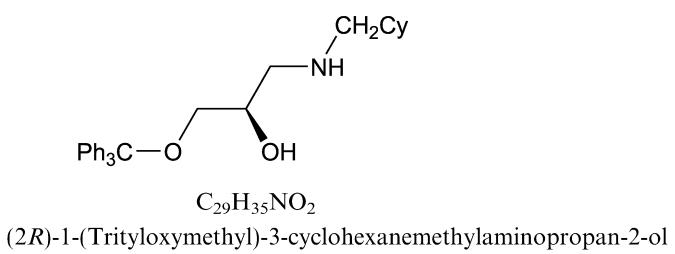


Ee = 99%
[α]_D²⁵ = -36.3 (c 0.885, CHCl₃)
Source of chirality: asymmetric synthesis
Absolute configuration: (R,R)

25,27-Dipropoxy-26,28-bis[((2R)-3-benzylamino-2-hydroxy)propoxy]calix[4]arene

Adrien Quintard, Ulrich Darbost, Francis Vocanson,*
Stéphane Pellet-Rostaing* and Marc Lemaire

Tetrahedron: Asymmetry 18 (2007) 1926

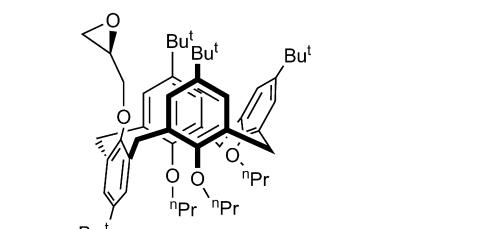


Ee = 99%
[α]_D²⁵ = +10.6 (c 1, CHCl₃)
Source of chirality: asymmetric synthesis
Absolute configuration: (R)

(2R)-1-(Trityloxymethyl)-3-cyclohexanemethylaminopropan-2-ol

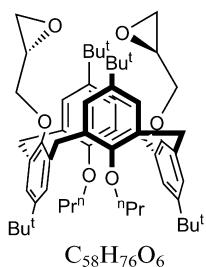
Adrien Quintard, Ulrich Darbost, Francis Vocanson,*
Stéphane Pellet-Rostaing* and Marc Lemaire

Tetrahedron: Asymmetry 18 (2007) 1926



Ee = 99%
[α]_D²⁵ = -2.2 (c 1.135, CHCl)
Source of chirality: asymmetric synthesis
Absolute configuration: (R)

(R)-5,11,17,23-Tetra-tert-butyl-25,26,27-tris-(propoxy)-28-glycidylcalix[4]arene



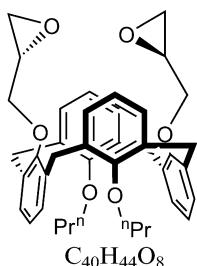
(*R,R*)-5,11,17,23-Tetra-*tert*-butyl-25,27-dipropoxy-26,28-bis(glycidyl)calix[4]arene

Ee = 99%

$[\alpha]_D^{25} = -6.2$ (*c* 0.975, CHCl)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,R*)



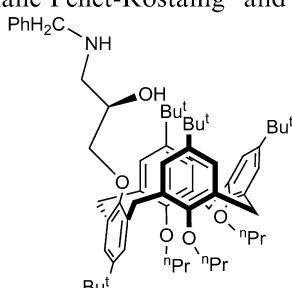
(*R,R*)-25,27-Dipropoxy-26,28-bisglycidylcalix[4]arene

Ee = 99%

$[\alpha]_D^{25} = -8.5$ (*c* 1.015, CHCl)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R,R*)



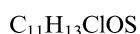
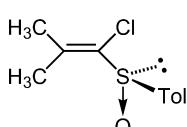
5,11,17,23-Tetra-*tert*-butyl-25,26,27-tris(propoxyl)-28-[(2*R*)-3-benzylamino-2-hydroxy]propoxy]calix[4]arene

Ee = 99%

$[\alpha]_D^{25} = -2.5$ (*c* 0.91, CHCl₃)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R*)



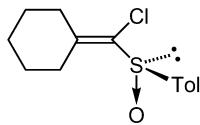
(*R*)-1-Chloro-2-methyl-1-(*p*-tolylsulfinyl)-1-propene

Ee = 99%

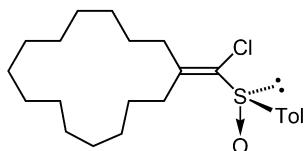
$[\alpha]_D^{24} = +156.2$ (*c* 1.0, ethanol)

Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxide

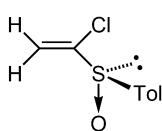
Absolute configuration: (*R*)

 $C_{14}H_{17}ClOS$ (R)-[Chloro-(*p*-tolylsulfiny)methylidene]cyclohexane

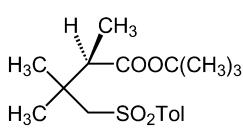
Ee = 99%

 $[\alpha]_D^{25} = +213.0$ (*c* 1.0, ethanol)Source of chirality: (*R*)-(–)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*) $C_{22}H_{35}ClOS$ (R)-[Chloro-(*p*-tolylsulfinyl)methylidene]cyclopentadecane

Ee = 99%

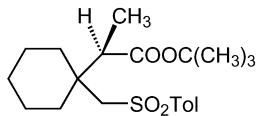
 $[\alpha]_D^{24} = +120.7$ (*c* 1.3, ethanol)Source of chirality: (*R*)-(–)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*) C_9H_9ClOS (R)-1-Chloroethenyl *p*-tolyl sulfoxide

Ee = 99%

 $[\alpha]_D^{25} = +151.4$ (*c* 0.8, ethanol)Source of chirality: (*R*)-(–)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*) $C_{18}H_{28}O_4S$ (2*R*)-(–)-tert-Butyl 2,3,3-trimethyl-4-(*p*-tolylsulfonyl)butanoate

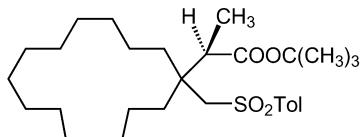
Ee = 96%

 $[\alpha]_D^{30} = -14.3$ (*c* 1.2, ethanol)Source of chirality: (*R*)-(–)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)



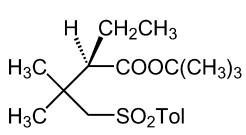
$C_{21}H_{32}O_4S$
(*2R*)-(*-*)-*tert*-Butyl 2-{1-[{(p-tolylsulfonyl)methyl]cyclohexyl}propionate

Ee = 97%

 $[\alpha]_D^{26} = -5.3$ (*c* 1.8, ethanol)Source of chirality: (*R*)-(*-*)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

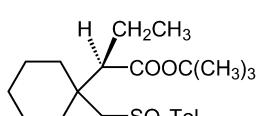
$C_{30}H_{50}O_4S$
(*2R*)-(*-*)-*tert*-Butyl 2-{1-[{(p-tolylsulfonyl)methyl]cyclopentadecyl}propionate

Ee = 97%

 $[\alpha]_D^{24} = -4.3$ (*c* 0.9, ethanol)Source of chirality: (*R*)-(*-*)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

$C_{19}H_{30}O_4S$
(*2R*)-(*-*)-*tert*-Butyl 2-ethyl-3,3-dimethyl-4-(p-tolylsulfonyl)butanoate

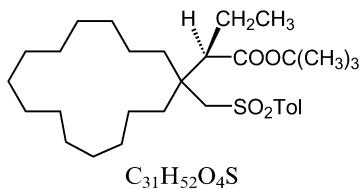
Ee = 93%

 $[\alpha]_D^{26} = -3.0$ (*c* 1.7, ethanol)Source of chirality: (*R*)-(*-*)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

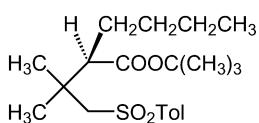
$C_{22}H_{34}O_4S$
(*2R*)-(*-*)-*tert*-Butyl 2-{1-[{(p-tolylsulfonyl)methyl]cyclohexyl}butanoate

Ee = 99%

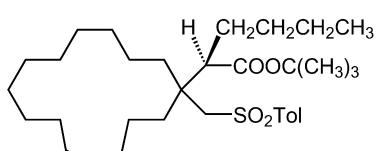
 $[\alpha]_D^{26} = -4.9$ (*c* 1.8, ethanol)Source of chirality: (*R*)-(*-*)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)



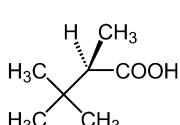
(2R)-(-)-tert-Butyl 2-{1-[{(p-tolylsulfonyl)methyl]cyclopentadecyl}butanoate

 $Ee = 97\%$ $[\alpha]_D^{26} = -1.7 (c \ 0.9, \text{ ethanol})$ Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

(2R)-(-)-tert-Butyl 2-[1,1-dimethyl-2-(p-tolylsulfonyl)ethyl]hexanoate

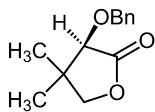
 $Ee = 96\%$ $[\alpha]_D^{28} = -0.5 (c \ 2.8, \text{ ethanol})$ Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

(2R)-(-)-tert-Butyl 2-{1-[{(p-tolylsulfonyl)methyl]cyclopentadecyl}hexanoate

 $Ee = 97\%$ $[\alpha]_D^{27} = -1.9 (c \ 0.9, \text{ ethanol})$ Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

(R)-(-)-2,3,3-Trimethylbutyric acid

 $Ee = 96\%$ $[\alpha]_D^{28} = -20.8 (c \ 0.7, \text{ ethanol})$ Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

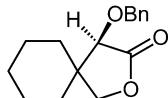
 $C_{13}H_{16}O_3$

(R)-(+)-3-Benzyl-4,4-dimethyl-2-oxahydrofuran

Ee = 99%

 $[\alpha]_D^{28} = +112.5$ (*c* 0.22, CHCl₃)Source of chirality: (R)-(-)-chloromethyl *p*-tolyl sulfoxide

Absolute configuration: (R)

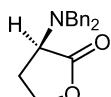
 $C_{16}H_{20}O_3$

(R)-(+)-4-Benzyl-2-oxaspiro[4.5]decane

Ee = 97%

 $[\alpha]_D^{27} = +101.2$ (*c* 0.91, CHCl₃)Source of chirality: (R)-(-)-chloromethyl *p*-tolyl sulfoxide

Absolute configuration: (R)

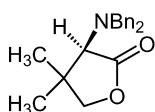
 $C_{18}H_{19}NO_2$

(R)-(+)-3-Dibenzylaminodihydrofuran

Ee = 87%

 $[\alpha]_D^{28} = +26.5$ (*c* 0.22, ethanol)Source of chirality: (R)-(-)-chloromethyl *p*-tolyl sulfoxide

Absolute configuration: (R)

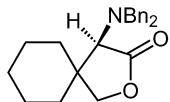
 $C_{20}H_{23}NO_2$

(R)-(+)-3-Dibenzylamino-4,4-dimethyl-2-oxahydrofuran

Ee = 99%

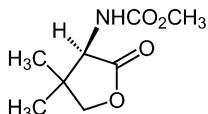
 $[\alpha]_D^{29} = +137$ (*c* 0.47, ethanol)Source of chirality: (R)-(-)-chloromethyl *p*-tolyl sulfoxide

Absolute configuration: (R)



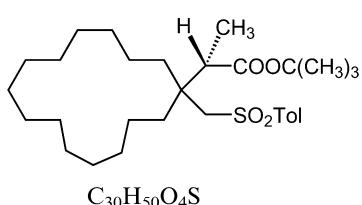
$C_{23}H_{27}NO_2$
(*R*)-(+)-4-Dibenzylamino-2-oxaspiro[4.5]decan-3-one

Ee = 99%

 $[\alpha]_D^{27} = +91.5$ (*c* 1.0, ethanol)Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

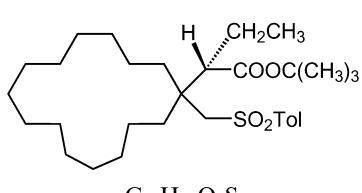
$C_8H_{13}NO_4$
(*R*)-(−)-(4,4-dimethyl-2-oxotetrahydrofuran-3-yl)carbamic acid methyl ester

Ee = 99%

 $[\alpha]_D^{28} = -8.2$ (*c* 1.0, CHCl₃)Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*R*)

$C_{30}H_{50}O_4S$
(2*S*)-(+)-*tert*-Butyl 2-{1-[(*p*-tolylsulfonyl)methyl]cyclopentadecyl}propionate

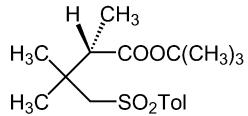
Ee = 99%

 $[\alpha]_D^{23} = +5.05$ (*c* 1.34, ethanol)Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*S*)

$C_{31}H_{52}O_4S$
(2*S*)-(+)-*tert*-Butyl 2-{1-[(*p*-tolylsulfonyl)methyl]cyclopentadecyl}butanoate

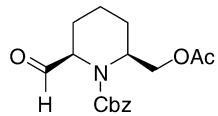
Ee = 99%

 $[\alpha]_D^{25} = +1.75$ (*c* 0.45, ethanol)Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*S*)



$C_{18}H_{28}O_4S$
(*2S*)-(+)-*tert*-Butyl 2,3,3-trimethyl-4-(*p*-tolylsulfonyl)butanoate

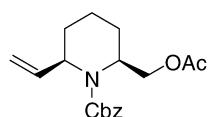
Ee = 80%

 $[\alpha]_D^{28} = +9.8$ (*c* 0.84, ethanol)Source of chirality: (*R*)-(−)-chloromethyl *p*-tolyl sulfoxideAbsolute configuration: (*S*)

$C_{17}H_{21}NO_5$
(*2S,6R*)-2-Acetoxyethyl-6-formyl-piperidine-1-carboxylic acid benzyl ester

 $[\alpha]_D^{25} = -20.9$ (*c* 1, $CHCl_3$)

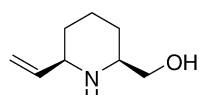
Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (*2S,6R*)

$C_{18}H_{23}NO$
(*2S,6R*)-2-Acetoxyethyl-6-vinyl-piperidine-1-carboxylic acid benzyl ester

 $[\alpha]_D^{25} = -2.3$ (*c* 1, $CHCl_3$)

Source of chirality: lipase-catalyzed transesterification

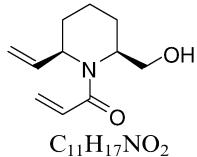
Absolute configuration: (*2S,6R*)

$C_8H_{15}NO$
((*2S,6R*)-6-Vinyl-piperidin-2-yl)-methanol

 $[\alpha]_D^{25} = -3.3$ (*c* 1, $CHCl_3$)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (*2S,6R*)

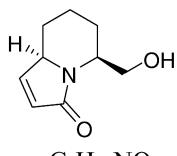


1-((2*S*,6*R*)-2-Hydroxymethyl-6-vinyl-piperidin-1-yl)-propenone

$[\alpha]_D^{25} = +10.4$ (*c* 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (2*S*,6*R*)

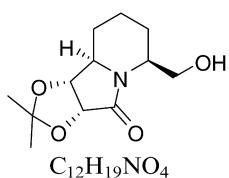


(5*S*,8*a**R*)-5-Hydroxymethyl-6,7,8,8*a*-tetrahydro-5*H*-indolizin-3-one

$[\alpha]_D^{25} = -4.5$ (*c* 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (5*S*,8*a**R*)

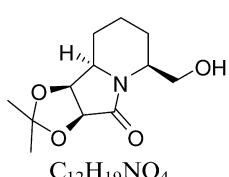


(3*a**R*,6*S*,9*a**R*,9*b**R*)-6-Hydroxymethyl-2,2-dimethyl-hexahydro-[1,3]dioxolo[4,5-a]indolizin-4-one

$[\alpha]_D^{25} = +6.4$ (*c* 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (3*a**R*,6*S*,9*a**R*,9*b**R*)



(3*a**S*,6*S*,9*a**R*,9*b**S*)-6-Hydroxymethyl-2,2-dimethyl-hexahydro-[1,3]dioxolo[4,5-a]indolizin-4-one

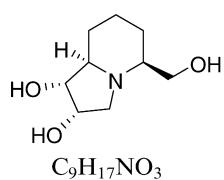
$[\alpha]_D^{25} = -2.0$ (*c* 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (3*a**S*,6*S*,9*a**R*,9*b**S*)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



C₉H₁₇NO₃
((3aS,6S,9aR,9bR)-2,2-Dimethyl-octahydro-[1,3]dioxolo[4,5-a]indolizin-6-yl)-methanol

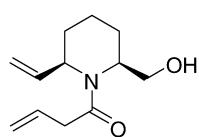
[α]_D²⁵ = -5.1 (c 1, MeOH)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (3aS,6S,9aR,9bS)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



C₁₂H₁₉NO₂
1-((2S,6R)-2-Hydroxymethyl-6-vinyl-piperidin-1-yl)-but-3-en-1-one

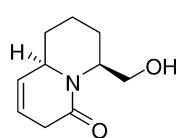
[α]_D²⁵ = -2.5 (c 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (2S,6R)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



C₁₀H₁₅NO₂
(6S,9aR)-6-Hydroxymethyl-3,6,7,8,9,9a-hexahydro-quinolizin-4-one

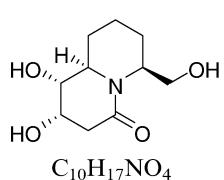
[α]_D²⁵ = -4.5 (c 1, CHCl₃)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (6S,9aR)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



C₁₀H₁₇NO₄
(1R,2S,6S,9aR)-1,2-Dihydroxy-6-hydroxymethyl-octahydro-quinolizin-4-one

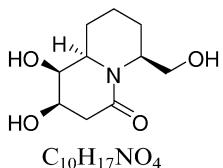
[α]_D²⁵ = +8.6 (c 1, MeOH)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (1R,2S,6S,9aR)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



(1S,2R,6S,9aR)-1,2-Dihydroxy-6-hydroxymethyl-octahydro-quinolizin-4-one

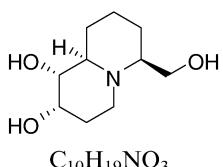
$[\alpha]_D^{25} = -6.6$ (*c* 1, MeOH)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (1*S*,2*R*,6*S*,9*aR*)

Giordano Lesma,* Alessia Colombo, Nicola Landoni,
Alessandro Sacchetti and Alessandra Silvani*

Tetrahedron: Asymmetry 18 (2007) 1948



(1*R*,2*S*,6*S*,9*aR*)-6-Hydroxymethyl-octahydro-quinolizine-1,2-diol

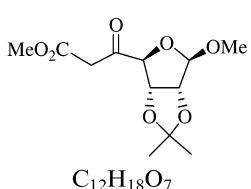
$[\alpha]_D^{25} = -7.9$ (*c* 1, MeOH)

Source of chirality: lipase-catalyzed transesterification

Absolute configuration: (1*R*,2*S*,6*S*,9*aR*)

Bruno Drouillat, Yann Bourdreux, Delphine Perdon and
Christine Greck*

Tetrahedron: Asymmetry 18 (2007) 1955



Methyl (methyl 6-deoxy-2,3-O-isopropylidene-5-oxo- β -D-ribo-heptafuranosid)uronate

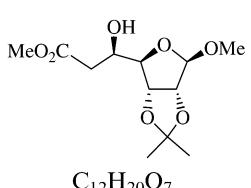
$[\alpha]_D^{25} = -119$ (*c* 1.1, CH₂Cl₂)

Source of chirality: D-ribose

Absolute configuration: (1*S*,2*R*,3*R*,4*S*)

Bruno Drouillat, Yann Bourdreux, Delphine Perdon and
Christine Greck*

Tetrahedron: Asymmetry 18 (2007) 1955

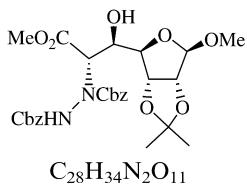


Methyl (methyl 6-deoxy-2,3-O-isopropylidene- β -D-*allo*-heptafuranosid)uronate

$[\alpha]_D^{25} = -45$ (*c* 1.0, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*)

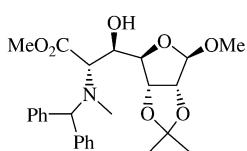


Methyl (methyl 6-deoxy-6-N,N'-dibenzylloxycarbonylhydrazino-2,3-O-isopropylidene-D-glycero- β -D-allo-heptafuranosid)uronate

$[\alpha]_D^{25} = -10$ (*c* 1.0, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,6*S*)

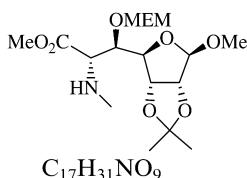


Methyl (methyl 6-deoxy-2,3-O-isopropylidene-6-[(*N*-benzhydryl-*N*-methyl)amino]-D-glycero- β -D-allo-heptafuranosid)uronate

$[\alpha]_D^{25} = -105$ (*c* 1.2, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,6*S*)

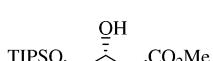


Methyl (methyl 6-deoxy-2,3-O-isopropylidene-5-O-(2-methoxyethoxymethyl)-6-N-methylamino-D-glycero- β -D-allo-heptafuranosid)uronate

$[\alpha]_D^{25} = +1$ (*c* 0.9, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,6*S*)



Methyl (3*R*)-3-hydroxy-4-(triisopropylsilyloxy)butanoate

$[\alpha]_D^{25} = +16$ (*c* 1.3, EtOH)

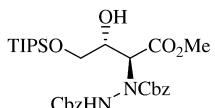
Source of chirality: asymmetric synthesis

Absolute configuration: (3*R*)

$[\alpha]_D^{25} = +2$ (*c* 1.7, EtOH)

Source of chirality: asymmetric synthesis

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

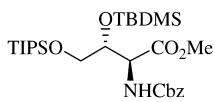


Methyl (2*S*,3*R*)-2-*N,N'*-dibenzylloxycarbonylhydrazino-3-hydroxy-4-(triisopropylsilyloxy)butanoate

$[\alpha]_D^{25} = +24$ (*c* 2.1, CH₂Cl₂)

Source of chirality: asymmetric synthesis

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

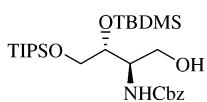


Methyl (2*S*,3*R*)-2-*N*-benzylloxycarbonylamino-4-triisopropylsilyloxy-3-(*tert*-butyldimethylsilyloxy)butanoate

$[\alpha]_D^{25} = +7$ (*c* 2.1, CH₂Cl₂)

Source of chirality: asymmetric synthesis

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

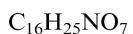
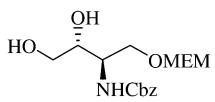


(2*R*,3*R*)-2-*N*-Benzylloxycarbonylamino-3-*O*-*tert*-butyldimethylsilyl-4-*O*-(triisopropylsilyl)butane-1,3,4-triol

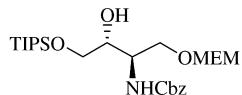
$[\alpha]_D^{25} = -2$ (*c* 2.6, CH₂Cl₂)

Source of chirality: asymmetric synthesis

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



(2*R*,3*R*)-2-*N*-Benzylloxycarbonylamino-1-*O*-(2-methoxyethoxymethyl)butane-1,3,4-triol

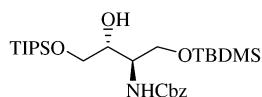


C₂₅H₄₅NO₇Si
(2*R*,*3R*)-2-*N*-Benzylloxycarbonylamino-1-*O*-(2-methoxyethoxymethyl)-4-*O*-(triisopropylsilyl)butane-1,3,4-triol

[α]_D²⁵ = -11 (*c* 2.1, CH₂Cl₂)

Source of chirality: asymmetric synthesis

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

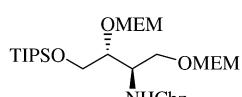


C₂₇H₅₁NO₅Si₂
(2*R*,*3R*)-1-*O*-*tert*-Butyldimethylsilyl-2-*N*-Benzylloxycarbonylamino-4-*O*-(triisopropylsilyl)butane-1,3,4-triol

[α]_D²⁵ = +11 (*c* 1.3, EtOH)

Source of chirality: asymmetric synthesis

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

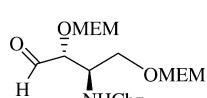


C₂₉H₅₃NO₉Si
(2*R*,*3R*)-2-*N*-Benzylloxycarbonylamino-1,3-*O*-bis(2-methoxyethoxymethyl)-4-*O*-(triisopropylsilyl)butane-1,3,4-triol

[α]_D²⁵ = +18 (*c* 1.2, CH₂Cl₂)

Source of chirality: asymmetric synthesis

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

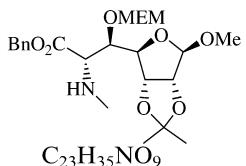


C₂₀H₃₁NO₉
(2*R*,*3R*)-3-*N*-Benzylloxycarbonylamino-2,4-bis(2-methoxyethoxymethoxy)butanal

[α]_D²⁵ = +14 (*c* 1.3, EtOH)

Source of chirality: asymmetric synthesis

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

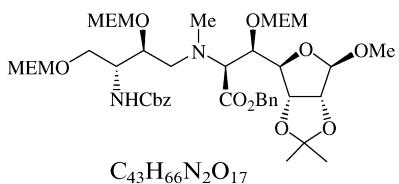


Benzyl (methyl 6-deoxy-2,3-O-isopropylidene-5-O-(2-methoxyethoxymethyl)-6-N-methylamino- α -D-glycero- β -D-allo-heptafuranosiduronate

$[\alpha]_D^{25} = -19$ (*c* 1.3, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,6*S*)

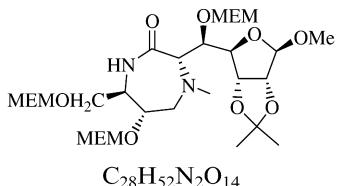


Benzyl (methyl 6-deoxy-2,3-O-isopropylidene-5-O-(2-methoxyethoxymethyl)-6-N,N-{methyl[(2'S,3'R)-3'-N-benzyloxycarbonyl-amino-2'-(2-methoxyethoxymethoxy)-4'-(2-methoxyethoxymethoxy)butyl]amino}- α -D-glycero- β -D-allo-heptafuranosiduronate

$[\alpha]_D^{25} = -16$ (*c* 0.5, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,6*S*,2*'S*,3*'R*)



Methyl (5*R*)-5-O-(2-methoxyethoxymethyl)-5-C-[(2'S,5'S,6'S)-6'-(2-methoxyethoxymethoxy)-5'-(2-methoxyethoxymethoxymethyl)-1'-methyl-3'-oxo-1',4'-diazepan-2'-yl]-2,3-O-isopropylidene- β -D-ribofuranoside

$[\alpha]_D^{25} = -10$ (*c* 0.6, CH₂Cl₂)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*R*,3*R*,4*R*,5*R*,2*'S*,5*'S*,6*'S*)



(*S*)-3-(2-Ethoxyphenoxy)-propane-1,2-diol

Ee = 99.2% [chiral HPLC]

$[\alpha]_D^{20} = +8.8$ (*c* 1, hexane/EtOH 4:1),

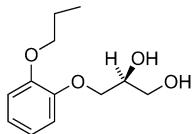
$[\alpha]_D^{20} = +11.7$ (*c* 1, EtOH)

Source of chirality: (*S*)-3-chloro-1,2-propanediol

Absolute configuration: (*S*)

Alexander A. Bredikhin,* Zemfira A. Bredikhina, Dmitry V. Zakharychev
and Larisa V. Konoshenko

Tetrahedron: Asymmetry 18 (2007) 1964



C₁₂H₁₈O₄

(S)-3-(2-n-Propoxypheoxy)-propane-1,2-diol

Ee = 99.8% [chiral HPLC]

[α]_D²⁰ = +3.1 (c 1, hexane/EtOH 4:1)

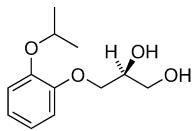
[α]_D²⁰ = +6.8 (c 1, EtOH)

Source of chirality: (S)-3-chloro-1,2-propanediol

Absolute configuration: (S)

Alexander A. Bredikhin,* Zemfira A. Bredikhina, Dmitry V. Zakharychev
and Larisa V. Konoshenko

Tetrahedron: Asymmetry 18 (2007) 1964



C₁₂H₁₈O₄

(S)-3-(2-Isopropoxypheoxy)-propane-1,2-diol

Ee = 99.3% [chiral HPLC]

[α]_D²⁰ = +6.6 (c 1, hexane/EtOH 4:1)

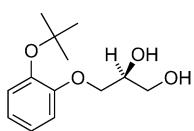
[α]_D²⁰ = +7.8 (c 1, EtOH)

Source of chirality: (S)-3-chloro-1,2-propanediol

Absolute configuration: (S)

Alexander A. Bredikhin,* Zemfira A. Bredikhina, Dmitry V. Zakharychev
and Larisa V. Konoshenko

Tetrahedron: Asymmetry 18 (2007) 1964



C₁₃H₂₀O₄

(S)-3-(2-tert-Butoxyphenoxy)-propane-1,2-diol

Ee = 87.8% [chiral HPLC]

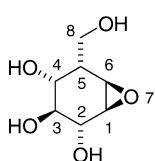
[α]_D²⁰ = +8.8 (c 1, EtOH)

Source of chirality: (S)-3-chloro-1,2-propanediol

Absolute configuration: (S)

Pedro Serrano, Meritxell Egido-Gabás, Amadeu Llebaria and
Antonio Delgado*

Tetrahedron: Asymmetry 18 (2007) 1971



C₇H₁₂O₅

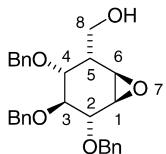
(+)-5-*epi*-Cyclophellitol; 5-hydroxymethyl-7-oxabicyclo[4.1.0]heptane-2,3,4-triol

Ee = 100%

[α]_D = +65.95 (c 0.4, H₂O)

Source of chirality: stereoselective reduction from
chiral pool

Absolute configuration: (1*S*,2*R*,3*S*,4*R*,5*S*,6*R*)



C₂₈H₃₀O₅

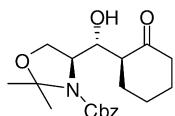
2,3,4-Tri-O-benzyl-5-epi-cyclophellitol; 2,3,4-tri-O-benzyl-5-hydroxymethyl-7-oxabicyclo[4.1.0]heptane-2,3,4-triol

Ee = 100%

[α]_D = +4.0 (c 1, CHCl₃)

Source of chirality: stereoselective reduction from chiral pool

Absolute configuration: (1S,2R,3S,4R,5S,6R)

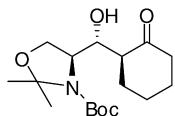


C₂₀H₂₇NO₅

(S)-Benzyl 4-((R)-hydroxy-((S)-2-oxocyclohexyl)methyl)-2,2-dimethyloxazolidine-3-carboxylate

[α]_D²⁵ = -70.8 (c 1, CHCl₃)

Source of chirality: L-serine

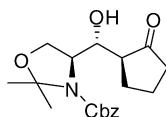


C₁₇H₂₉NO₅

(S)-tert-Butyl 4-(R)-hydroxy-((S)-2-oxocyclohexyl)methyl-2,2-dimethyloxazolidine-3-carboxylate

[α]_D²⁵ = -119.7 (c 0.85, CHCl₃)

Source of chirality: L-serine

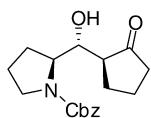


C₁₉H₂₅NO₅

(S)-Benzyl 4-((R)-hydroxy-((S)-2-oxocyclopentyl)methyl)-2,2-dimethyloxazolidine-3-carboxylate

[α]_D²⁵ = -66.5 (c 1, CHCl₃)

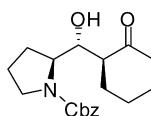
Source of chirality: L-serine



$C_{18}H_{23}NO_4$
(*S*)-Benzyl 2-((*R*)-hydroxy-((*S*)-2-oxocyclopentyl)methyl)pyrrolidine-1-carboxylate

$[\alpha]_D^{25} = -99.5$ (*c* 1, CHCl₃)

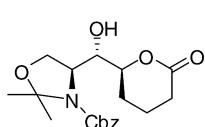
Source of chirality: L-proline



$C_{19}H_{25}NO_4$
(*S*)-Benzyl 2-((*R*)-hydroxy-((*S*)-2-oxocyclohexyl)methyl)pyrrolidine-1-carboxylate

$[\alpha]_D^{25} = -90.9$ (*c* 1, CHCl₃)

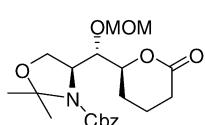
Source of chirality: L-proline



$C_{19}H_{25}NO_6$
(*S*)-Benzyl 4-((*S*)-hydroxy((*S*)-6-oxotetrahydro-2*H*-2-pyran-2-yl)methyl)-2,2-dimethyloxazolidin-3-carboxylate

$[\alpha]_D^{25} = -14.2$ (*c* 0.7, CHCl₃)

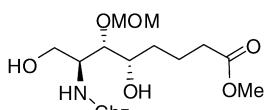
Source of chirality: L-serine



$C_{21}H_{29}NO_7$
(*S*)-Benzyl-4-((*S*)-(methoxymethoxy)((*S*)-6-oxotetrahydro-2*H*-2-pyran-2-yl)methyl)-2,2-dimethyloxazolidin-3-carboxylate

$[\alpha]_D^{25} = -5.85$ (*c* 0.6, CHCl₃)

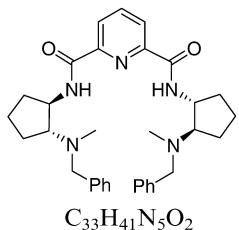
Source of chirality: L-serine



$C_{19}H_{29}NO_8$
(*5S,6S,7S*)-Methyl 7-(benzyloxycarbonylamino)-5,8-dihydroxy-6-(methoxymethoxy)octanoate

$[\alpha]_D^{25} = -6.6$ (*c* 0.7, CHCl₃)

Source of chirality: L-serine

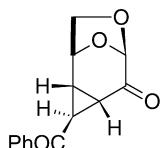


(1'*R*,1''*R*,2'*R*,2''*R*)-*N,N'*-Bis-{2-[(*N*-benzyl-*N*-methyl)amino]cyclopentyl}pyridine-2,6-dicarboxamide

Ee >99%

$[\alpha]_D^{20} = -146.9$ (*c* 0.85, CHCl₃)

Source of chirality: enzymatic resolution



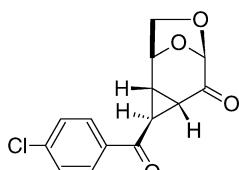
$C_{14}H_{12}O_4$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-Benzoyl-7,9-dioxatricyclo[4.2.1.0^2,4]-nonane-5-one

Ee = 100%

$[\alpha]_D^{22} = -55.1$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)



$C_{14}H_{11}ClO_4$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-(4-Chlorobenzoyl)-7,9-dioxatricyclo[4.2.1.0^2,4]-nonane-5-one

Ee = 100%

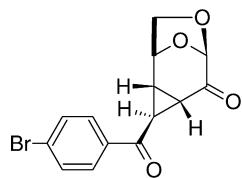
$[\alpha]_D^{22} = -69.8$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)

Alexander V. Samet,* Anatolly M. Shestopalov, Dmitriy N. Lutov,
Lyudmila A. Rodinovskaya, Alexander A. Shestopalov and
Victor V. Semenov

Tetrahedron: Asymmetry 18 (2007) 1986



$C_{14}H_{11}BrO_4$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-(4-Bromobenzoyl)-7,9-dioxatricyclo[4.2.1.0^{2,4}]-nonane-5-one

Ee = 100%

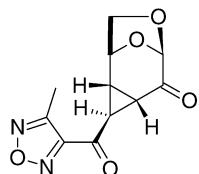
$[\alpha]_D^{23} = -58.6$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)

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Tetrahedron: Asymmetry 18 (2007) 1986



$C_{11}H_{10}N_2O_5$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-(5-Methylfurazane-4-yl)carbonyl-7,9-dioxatricyclo[4.2.1.0^{2,4}]-nonane-5-one

Ee = 100%

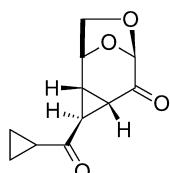
$[\alpha]_D^{24} = -4.8$ (*c* 1.0, DMSO)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)

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Tetrahedron: Asymmetry 18 (2007) 1986



$C_{11}H_{12}O_4$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-(Cyclopropyl)carbonyl-7,9-dioxatricyclo[4.2.1.0^{2,4}]-nonane-5-one

Ee = 100%

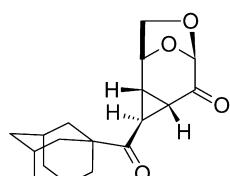
$[\alpha]_D^{23} = +37.3$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)

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Lyudmila A. Rodinovskaya, Alexander A. Shestopalov and
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Tetrahedron: Asymmetry 18 (2007) 1986



$C_{18}H_{22}O_4$
(1*S*,2*S*,3*S*,4*S*,6*R*)-3-(1-Adamantoyl)-7,9-dioxatricyclo[4.2.1.0^{2,4}]-nonane-5-one

Ee = 100%

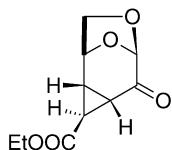
$[\alpha]_D^{22} = -13.3$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

Absolute configuration: (1*S*,2*S*,3*S*,4*S*,6*R*)

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Tetrahedron: Asymmetry 18 (2007) 1986



Ee = 100%

$[\alpha]_D^{23} = -24.2$ (*c* 1.0, CHCl₃)

Source of chirality: levoglucosenone

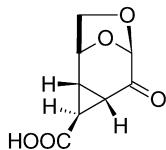
Absolute configuration: (1*S*,2*R*,3*S*,4*S*,6*R*)

C₁₀H₁₂O₅

Ethyl (1*S*,2*R*,3*S*,4*S*,6*R*)-5-oxo-7,9-dioxatricyclo[4.2.1.0^{2,4}]nonane-3-carboxylate

Alexander V. Samet,* Anatolly M. Shestopalov, Dmitriy N. Lutov,
Lyudmila A. Rodinovskaya, Alexander A. Shestopalov and
Victor V. Semenov

Tetrahedron: Asymmetry 18 (2007) 1986



Ee = 100%

$[\alpha]_D^{24} = -30.1$ (*c* 1.0, DMSO)

Source of chirality: levoglucosenone

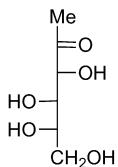
Absolute configuration: (1*S*,2*R*,3*S*,4*S*,6*R*)

C₈H₈O₅

(1*S*,2*R*,3*S*,4*S*,6*R*)-5-Oxo-7,9-dioxatricyclo[4.2.1.0^{2,4}]nonane-3-carboxylic acid

Pushpakiran Gullapalli, Takayuki Shiji, Devendar Rao,
Akihide Yoshihara, Kenji Morimoto, Goro Takata,
George W. J. Fleet and Ken Izumori*

Tetrahedron: Asymmetry 18 (2007) 1995



Ee = 100%

$[\alpha]_D^{20} = +85.5$ (*c* 1.4, H₂O)

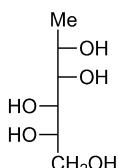
Source of chirality: L-rhamnose as starting material

C₆H₁₂O₅

1-Deoxy-L-fructose

Pushpakiran Gullapalli, Takayuki Shiji, Devendar Rao,
Akihide Yoshihara, Kenji Morimoto, Goro Takata,
George W. J. Fleet and Ken Izumori*

Tetrahedron: Asymmetry 18 (2007) 1995



Ee = 100%

$[\alpha]_D^{20} = +1.4$ (*c* 1.4, H₂O)

Source of chirality: L-rhamnose as starting material

C₆H₁₄O₅

1-Deoxy-L-mannitol [rhamnitol]