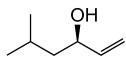


**Stereochemistry abstracts**

Anna Chojnacka,\* Robert Obara and Czesław Wawrzeńczyk

*Tetrahedron: Asymmetry* 18 (2007) 101



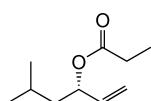
$C_7H_{14}O$   
(*R*)-5-Methylhex-1-en-3-ol

Ee = 91%

$[\alpha]_{589}^{23} = +12.0$  (*c* 1.9,  $CHCl_3$ )

Source of chirality: enzyme-mediated kinetic resolution

Configuration predicted: (*R*)



$C_{10}H_{18}O_2$   
(*S*)-3-Methyl-1-vinyl-butyl propionate

Ee = 100%

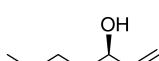
$[\alpha]_{589}^{23} = -6.9$  (*c* 2.5,  $CHCl_3$ )

Source of chirality: enzyme-mediated kinetic resolution

Configuration predicted: (*S*)

Anna Chojnacka,\* Robert Obara and Czesław Wawrzeńczyk

*Tetrahedron: Asymmetry* 18 (2007) 101



$C_7H_{14}O$   
(*R*)-Hept-1-en-3-ol

Ee = 96%

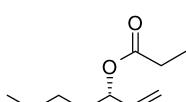
$[\alpha]_{589}^{23} = -8.1$  (*c* 1.1,  $CHCl_3$ )

Source of chirality: enzyme-mediated kinetic resolution

Absolute configuration: (*R*)

Anna Chojnacka,\* Robert Obara and Czesław Wawrzeńczyk

*Tetrahedron: Asymmetry* 18 (2007) 101



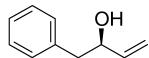
$C_{10}H_{18}O_2$   
(*S*)-1-Vinyl-pentyl propionate

Ee = 100%

$[\alpha]_{589}^{23} = 6.5$  (*c* 1.9,  $CHCl_3$ )

Source of chirality: enzyme-mediated kinetic resolution

Absolute configuration: (*S*)



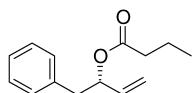
Ee = 95%

 $[\alpha]_{589}^{23} = -12.5$  (c 1.0, CHCl<sub>3</sub>)

Source of chirality: enzyme-mediated kinetic resolution

Absolute configuration: (R)

C<sub>10</sub>H<sub>12</sub>O  
(R)-1-Phenylbut-3-en-2-ol



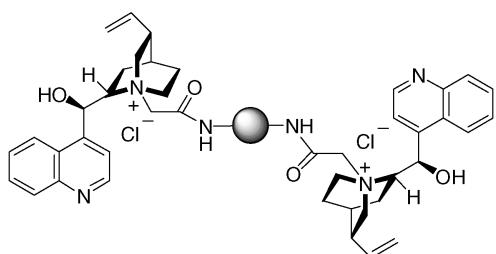
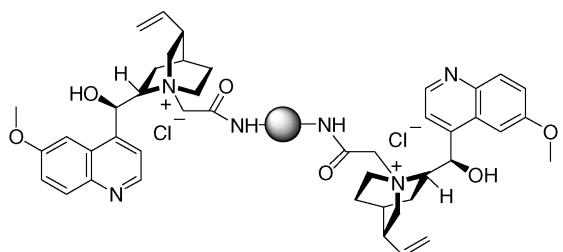
C<sub>10</sub>H<sub>16</sub>O<sub>2</sub>  
(S)-1-Benzyl-allyl butanoate

Ee = 100%

 $[\alpha]_{589}^{23} = -5.9$  (c 1.0, CHCl<sub>3</sub>)

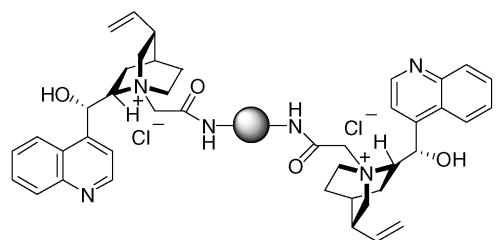
Source of chirality: enzyme-mediated kinetic resolution

Absolute configuration: (S)

 $[\alpha]_D^{20} = -15.6$  (c 0.4, CH<sub>2</sub>Cl<sub>2</sub>)Diacetamido-PEG<sub>2000</sub> N-bound cinchonidinium chloride $[\alpha]_D^{20} = -20.2$  (c 0.4, CH<sub>2</sub>Cl<sub>2</sub>)Diacetamido-PEG<sub>2000</sub> N-bound quininium chloride

Xin Wang, Liang Yin, Ting Yang and Yongmei Wang\*

Tetrahedron: Asymmetry 18 (2007) 108

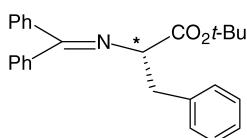


$$[\alpha]_D^{20} = +45.3 \text{ (} c \text{ 0.4, CH}_2\text{Cl}_2 \text{)}$$

## Diacetamido-PEG<sub>2000</sub> N-bound cinchoninium chloride

Xin Wang, Liang Yin, Ting Yang and Yongmei Wang\*

Tetrahedron: Asymmetry 18 (2007) 108



Ee = 83%

$$[\alpha]_D^{20} = -12.6 \text{ (} c \text{ 0.2, CHCl}_3 \text{)}$$

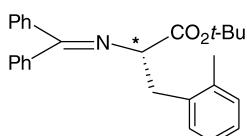
## Source of chirality: asymmetric synthesis

Absolute configuration: *S*

$C_{26}H_{27}NO_2$   
 $(S)$ -*tert*-Butyl-3-phenyl-2-diphenylmethylene amino propanoate

Xin Wang, Liang Yin, Ting Yang and Yongmei Wang\*

Tetrahedron: Asymmetry 18 (2007) 108



Ee = 82%

$$[\alpha]_{\text{D}}^{20} = -14.1 \text{ (c 0.2, CHCl}_3\text{)}$$

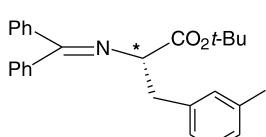
Source of chirality: asymmetric synthesis

Absolute configuration: *S*

$C_{27}H_{29}NO_2$   
 $(S)$ -*tert*-Butyl-3-(2-methylphenyl)-2-diphenylmethylene amino propanoate

Xin Wang, Jiang Yin, Ting Yang and Yongmei Wang\*

Tetrahedron: Asymmetry 18 (2007) 108



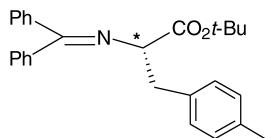
E<sub>e</sub> = 90%

$$[\alpha]_{\text{D}}^{20} = -13.7 \text{ (c 0.2, CHCl}_3\text{)}$$

## Source of chirality: asymmetric synthesis

Absolute configuration: *S*

$C_{27}H_{29}NO_2$   
 $(S)$ -*tert*-Butyl-3-(3-methylphenyl)-2-diphenylmethylene amino propanoate



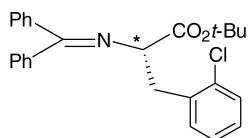
Ee = 85%

 $[\alpha]_D^{20} = -15.7$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>27</sub>H<sub>29</sub>NO<sub>2</sub>  
(S)-*tert*-Butyl-3-(4-methylphenyl)-2-diphenylmethylenamino propanoate



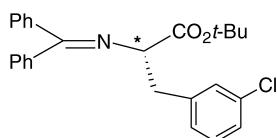
Ee = 97%

 $[\alpha]_D^{20} = -16.3$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>26</sub>H<sub>26</sub>ClNO<sub>2</sub>  
(S)-*tert*-Butyl-3-(2-chlorophenyl)-2-diphenylmethylenamino propanoate



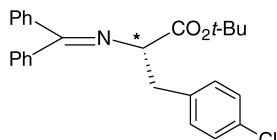
Ee = 92%

 $[\alpha]_D^{20} = -16.6$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>26</sub>H<sub>26</sub>ClNO<sub>2</sub>  
(S)-*tert*-Butyl-3-(3-chlorophenyl)-2-diphenylmethylenamino propanoate



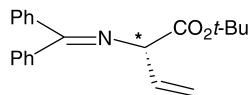
Ee = 91%

 $[\alpha]_D^{20} = -15.8$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>26</sub>H<sub>26</sub>ClNO<sub>2</sub>  
(S)-*tert*-Butyl-3-(4-chlorophenyl)-2-diphenylmethylenamino propanoate



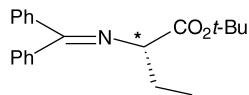
Ee = 86%

 $[\alpha]_D^{20} = -11.4$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>21</sub>H<sub>23</sub>NO<sub>2</sub>  
(S)-tert-Butyl-3-(2-allyl)-2-diphenylmethylenamino propanoate



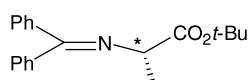
Ee = 90%

 $[\alpha]_D^{20} = -12.2$  (c 0.2, CHCl<sub>3</sub>)

Source of chirality: asymmetric synthesis

Absolute configuration: S

C<sub>21</sub>H<sub>25</sub>NO<sub>2</sub>  
(S)-tert-Butyl-3-ethyl-2-diphenylmethylenamino propanoate



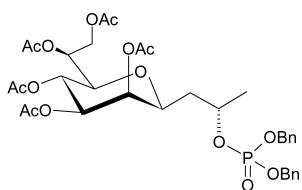
Ee = 83%

 $[\alpha]_D^{20} = -10.8$  (c 0.2, CHCl<sub>3</sub>)

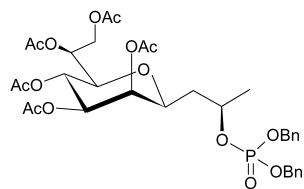
Source of chirality: asymmetric synthesis

Absolute configuration: S

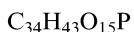
C<sub>20</sub>H<sub>23</sub>NO<sub>2</sub>  
(S)-tert-Butyl-3-methyl-2-diphenylmethylenamino propanoate

 $[\alpha]_D^{20} = -31$  (c 0.8, CHCl<sub>3</sub>)

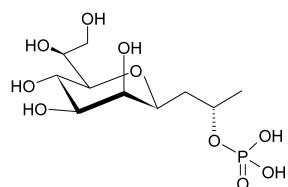
C<sub>34</sub>H<sub>43</sub>O<sub>15</sub>P  
5,6,7,9,10-Penta-O-acetyl-4,8-anhydro-2-O-[bis(benzyloxy)]phosphoryl]-1,3-dideoxy-L-lyxo-L-manno-decitol



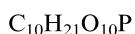
$[\alpha]_D^{20} = -49$  (*c* 0.7, CHCl<sub>3</sub>)



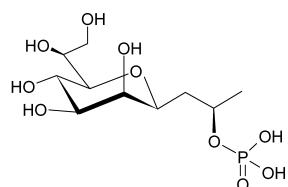
5,6,7,9,10-Penta-O-acetyl-4,8-anhydro-2-O-[bis(benzyloxy)]phosphoryl]-1,3-dideoxy-L-lyxo-L-glucitol



$[\alpha]_D^{20} = -29$  (*c* 0.7, H<sub>2</sub>O)



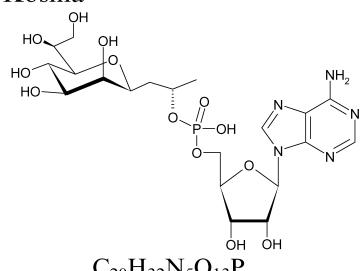
4,8-Anhydro-1,3-dideoxy-L-lyxo-L-manno-decit-2-yl phosphate (ammonium salt)



$[\alpha]_D^{20} = -50$  (*c* 0.7, H<sub>2</sub>O)

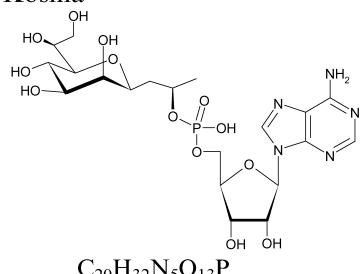


4,8-Anhydro-1,3-dideoxy-L-lyxo-L-gluco-decit-2-yl phosphate (ammonium salt)



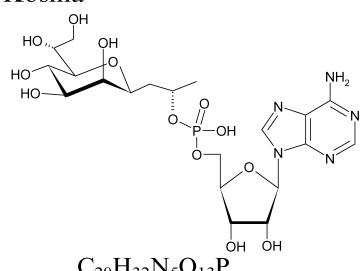
$[\alpha]_D^{20} = -34$  (*c* 0.8, H<sub>2</sub>O)

Adenosine 5'- (4,8-anhydro-1,3-dideoxy-L-lyxo-L-manno-decit-2-yl)phosphate (triethylammonium salt)



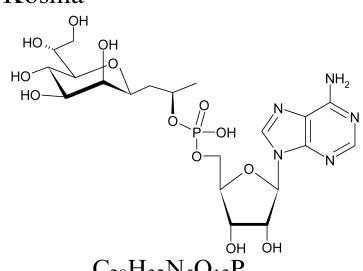
$[\alpha]_D^{20} = -45$  (c 0.8, H<sub>2</sub>O)

Adenosine 5'-(4,8-anhydro-1,3-dideoxy-L-lyxo-L-glucopyranosyl-decit-2-yl)phosphate (triethylammonium salt)



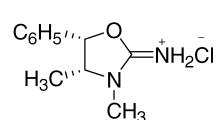
$[\alpha]_D^{20} = -19.8$  (c 0.8, H<sub>2</sub>O)

Adenosine 5'-(4,8-anhydro-1,3-dideoxy-D-ribo-L-mannopyranosyl-decit-2-yl)phosphate (triethylammonium salt)



$[\alpha]_D^{20} = -31$  (c 0.8, H<sub>2</sub>O)

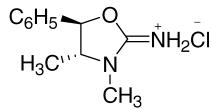
Adenosine 5'-(4,8-anhydro-1,3-dideoxy-D-ribo-L-glucopyranosyl-decit-2-yl)phosphate (triethylammonium salt)



$[\alpha]_D^{24} = -15.0$  (c 2.0 × 10<sup>-4</sup> g/mL, methanol)

Source of chirality: (1S,2R)-(+)-ephedrine

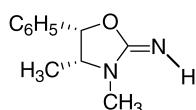
C<sub>11</sub>H<sub>15</sub>N<sub>2</sub>OCl  
(1S,2R)-(-)-cis-3,4-Dimethyl-5-phenyl-oxazolidine-2-iminium chloride



$[\alpha]_D^{24} = -15.0$  (*c*  $2.0 \times 10^{-4}$  g/mL, methanol)

Source of chirality: (1*S*,2*R*)-(+)-ephedrine

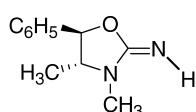
$C_{11}H_{15}N_2OCl$   
(1*R*,2*R*)-(-)-*trans*-3,4-Dimethyl-5-phenyl-oxazolidine-2-iminium chloride



$[\alpha]_D^{24} = -120.0$  (*c*  $2.0 \times 10^{-4}$  g/mL, chloroform)

Source of chirality: (1*S*,2*R*)-(-)-ephedrine

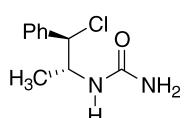
$C_{11}H_{14}N_2O$   
(1*S*,2*R*)-(-)-*cis*-3,4-Dimethyl-5-phenyl-oxazolidine-2-imine



$[\alpha]_D^{24} = -5.0$  (*c*  $2.04 \times 10^{-4}$  g/mL, chloroform)

Source of chirality: (1*S*,2*R*)-(-)-ephedrine

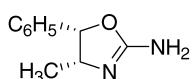
$C_{11}H_{14}N_2O$   
(1*R*,2*R*)-(-)-*trans*-3,4-Dimethyl-5-phenyl-oxazolidine-2-imine



$[\alpha]_D^{24} = -45.0$  (*c*  $2.02 \times 10^{-4}$  g/mL, methanol)

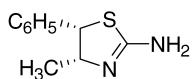
Source of chirality: (1*S*,2*R*)-(+)-norephedrine

$C_{10}H_{13}N_2OCl$   
(1*R*,2*R*)-(-)-(2-Chloro-1-methyl-2-phenyl-ethyl)-urea



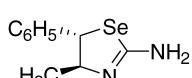
$C_{10}H_{12}N_2O$   
(1S,2R)-(-)-*cis*-4-Methyl-5-phenyl-oxazoline-2-amine

$[\alpha]_D^{24} = -200.0$  (*c*  $2.0 \times 10^{-4}$  g/mL, chloroform)  
Source of chirality: (1*S*,2*R*)-(+) -norephedrine



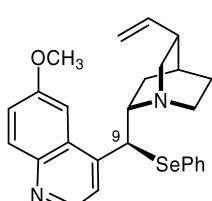
$C_{10}H_{12}N_2S$   
(1S,2R)-(-)-*cis*-4-Methyl-5-phenyl-thiazoline-2-amine

$[\alpha]_D^{24} = -75.0$  (*c*  $2.04 \times 10^{-4}$  g/mL, chloroform)  
Source of chirality: (1*S*,2*R*)-(+) -norephedrine



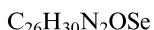
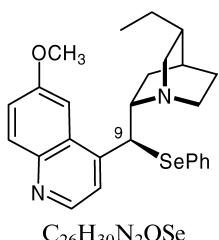
$C_{10}H_{12}N_2Se$   
(1*S*,2*S*)-(-)-*trans*-4-Methyl-5-phenyl-selenazoline-2-amine

$[\alpha]_D^{24} = -120.0$  (*c*  $2.0 \times 10^{-4}$  g/mL, chloroform)  
Source of chirality: (1*R*,2*S*)-(-)-norephedrine



$C_{26}H_{28}N_2OSe$   
(1*S*,3*R*,4*S*,8*S*,9*S*)-6'-Methoxy-9-phenylselenylcinchonine

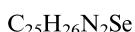
$[\alpha]_D = -46.7$  (*c* 1.20,  $CH_2Cl_2$ )  
Ee >95%  
Source of chirality:  $S_N2$  substitution on natural quinine



(1S,3R,4S,8S,9S)-10,11-Dihydro-6'-methoxy-9-phenylselenylcinchonine

 $[\alpha]_D = -73.3$  (*c* 1.80, CH<sub>2</sub>Cl<sub>2</sub>)

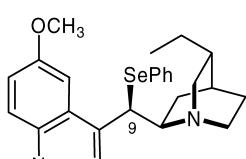
Ee &gt;95%

Source of chirality: S<sub>N</sub>2 substitution on natural dihydroquinine

(1S,3R,4S,8R,9R)-9-Phenylselenylcinchonine

 $[\alpha]_D = +69.1$  (*c* 0.98, CH<sub>2</sub>Cl<sub>2</sub>)

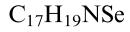
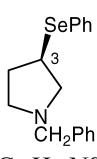
Ee &gt;95%

Source of chirality: S<sub>N</sub>2 substitution on natural cinchonine

(1S,3R,4S,8R,9R)-10,11-Dihydro-6'-methoxy-9-phenylselenylcinchonine

 $[\alpha]_D = +160.4$  (*c* 0.96, CH<sub>2</sub>Cl<sub>2</sub>)

Ee &gt;98%

Source of chirality: S<sub>N</sub>2 substitution on natural dihydroquinidine

(R)-(+)-1-Benzyl-3-2-phenylselenyl pyrrolidine

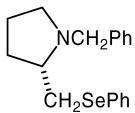
 $[\alpha]_D = +17.6$  (*c* 0.82, CH<sub>2</sub>Cl<sub>2</sub>)

Ee &gt;95%

Source of chirality: S<sub>N</sub>2 reaction of (−)-(S)-3-hydroxypyrrolidineAbsolute configuration: 3*R* (determined by chemical correlation)

$[\alpha]_D = -70.2$  (*c* 0.94, CH<sub>2</sub>Cl<sub>2</sub>)

Ee &gt;95%

C<sub>18</sub>H<sub>21</sub>NSe

(-)-(S)-1-Benzyl-2-(phenylselenylmethyl)pyrrolidine

Source of chirality: transformation of (-)-(S)-benzyl-2-pyrrolidinemethanol

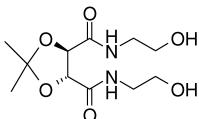
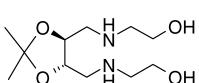
 $[\alpha]_D = +119.8$  (*c* 1.06, CH<sub>2</sub>Cl<sub>3</sub>)

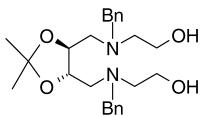
Ee &gt;98%

Source of chirality: transformation of L-valinol

C<sub>26</sub>H<sub>30</sub>N<sub>2</sub>OSe

(S)-(+)-(2-Chloro-benzylidene)-(2-methyl-1-phenylselenyl-propyl)-amine

 $[\alpha]_D^{22} = -20.9$  (*c* 2.40, MeOH)Source of chirality: (*R,R*)-dimethyl tartrateAbsolute configuration: (4*R*,5*R*)C<sub>11</sub>H<sub>20</sub>N<sub>2</sub>O<sub>6</sub>(4*R*,5*R*)-*N,N'*-Bis(2-hydroxyethyl)-2,2-dimethyl-1,3-dioxolane-4,5-dicarboxamide $[\alpha]_D^{23} = -28.0$  (*c* 2.63, MeOH)Source of chirality: (*R,R*)-dimethyl tartrateAbsolute configuration: (4*S*,5*S*)C<sub>11</sub>H<sub>24</sub>N<sub>2</sub>O<sub>4</sub>2,2'-{[(4*S*,5*S*)-2,2-Dimethyl-1,3-dioxolane-4,5-diyl]bis(methyleneimino)}diethanol

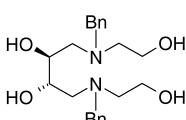


$C_{25}H_{36}N_2O_4$   
2,2'-{[(4S,5S)-2,2-Dimethyl-1,3-dioxolane-4,5-diyl]bis[methylene(benzylimino)]}diethanol

$[\alpha]_D^{23} = -8.4$  (*c* 2.37, MeOH)

Source of chirality: (*R,R*)-dimethyl tartrate

Absolute configuration: (4*S*,5*S*)

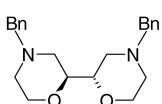


$C_{22}H_{32}N_2O_4$   
(2*S*,3*S*)-1,4-Bis[(2-hydroxyethyl)(benzyl)amino]butane-2,3-diol

$[\alpha]_D^{22} = -25.2$  (*c* 4.87, MeOH)

Source of chirality: (*R,R*)-dimethyl tartrate

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



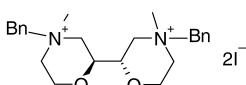
$C_{22}H_{28}N_2O_2$   
(2*S*,2'*S*)-4,4'-Dibenzyl-2,2'-bimorpholine

$[\alpha]_D^{23} = +49.4$  (*c* 6.36, MeOH)

Ee 99% (chiral HPLC analysis)

Source of chirality: (*R,R*)-dimethyl tartrate

Absolute configuration: (2*S*,2'*S*)

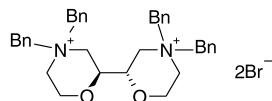


$C_{24}H_{34}N_2O_2I_2$   
(2*S*,2'*S*)-4,4'-Dibenzyl-4,4'-dimethyl-2,2'-bimorpholinium diiodide

$[\alpha]_D^{22} = +41.2$  (*c* 4.74, MeOH)

Source of chirality: (*R,R*)-dimethyl tartrate

Absolute configuration: (2*S*,2'*S*, *N* and *N'* unknown)

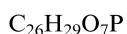
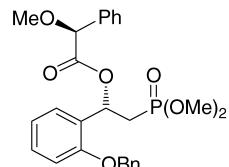


$C_{36}H_{42}N_2O_2Br_2$   
(2S,2'S)-4,4',4',4'-Tetrabenzyl-2,2'-bimorpholinium dibromide

$[\alpha]_D^{22} = -53.7$  (*c* 2.5, MeOH)

Source of chirality: (*R,R*)-dimethyl tartrate

Absolute configuration: (2*S*,2'*S*)



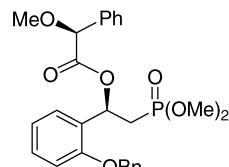
Dimethyl (*S*)-2-(2-*O*-benzylphenyl)-2-[(*S*)-*O*-methylmandelate]ethylphosphonate

De >98%

$[\alpha]_D = +26.9$  (*c* 1.8, CHCl<sub>3</sub>)

Source of chirality: chemical resolution

Absolute configuration: (*S,S*)



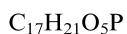
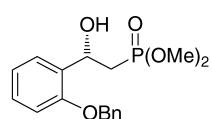
Dimethyl (*R*)-2-(2-*O*-benzylphenyl)-2-[(*S*)-*O*-methylmandelate]ethylphosphonate

De >98%

$[\alpha]_D = +27.2$  (*c* 1.7, CHCl<sub>3</sub>)

Source of chirality: chemical resolution

Absolute configuration: (*R,S*)



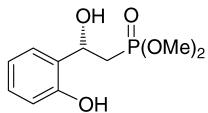
Dimethyl (*S*)-2-(2-*O*-benzylphenyl)-2-hydroxyethylphosphonate

Ee >98%

$[\alpha]_D = +46.8$  (*c* 1.23, CHCl<sub>3</sub>)

Source of chirality: chemical resolution

Absolute configuration: (*S*)

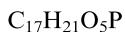


Ee >98%

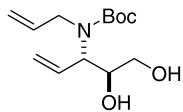
$[\alpha]_D = -0.3$  (*c* 3.0, CHCl<sub>3</sub>)

Source of chirality: chemical resolution

Absolute configuration: (S)



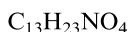
Dimethyl (S)-2-(2-hydroxyphenyl)-2-hydroxyethylphosphonate



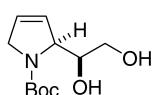
$[\alpha]_D = -22.6$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation

Absolute configuration: (2S,3S)



(2S,3S)-3-(N-Allyl-N-tert-butoxycarbonyl)-4-penten-1,2-diol



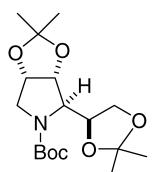
$[\alpha]_D = -108.1$  (*c* 0.97, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation

Absolute configuration: (2S,1'S)



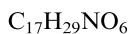
(2S)-N-tert-Butoxycarbonyl-2-[(1'S)-1',2'-dihydroxyethyl]-2,5-dihydropyrrole



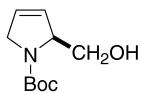
$[\alpha]_D = -58.5$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation

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



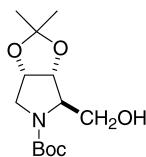
1,4-Dideoxy-1,4-imino-D-allitol bis-isopropylidene acetal



$[\alpha]_D = -124.6$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation  
Absolute configuration: (2*S*)

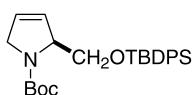
C<sub>10</sub>H<sub>17</sub>NO<sub>3</sub>  
(2*S*)-*N*-tert-Butoxycarbonyl-2-hydroxymethyl-2,5-dihydro-1*H*-pyrrole



$[\alpha]_D = -30.3$  (*c* 0.3, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation  
Absolute configuration: (2*R*,3*R*,4*S*)

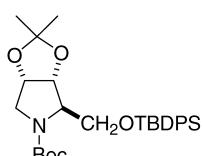
C<sub>13</sub>H<sub>23</sub>NO<sub>3</sub>  
(2*R*,3*R*,4*S*)-*N*-tert-Butoxycarbonyl-2-hydroxymethyl-3,4-isopropylidendioxy-pyrrolidine



$[\alpha]_D = -24.6$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation  
Absolute configuration: (2*R*)

C<sub>26</sub>H<sub>36</sub>NO<sub>3</sub>Si  
(2*R*)-*N*-tert-Butoxycarbonyl-2-tert-butyldiphenylsilyloxymethyl-2,5-dihydro-1*H*-pyrrole



$[\alpha]_D = -36.1$  (*c* 1.05, CHCl<sub>3</sub>)

Source of chirality: Sharpless asymmetric epoxidation  
Absolute configuration: (2*R*,3*R*,4*S*)

C<sub>29</sub>H<sub>41</sub>NO<sub>5</sub>Si  
(2*R*,3*R*,4*S*)-*N*-tert-Butoxycarbonyl-2-tert-butyldiphenylsilyloxymethyl-3,4-dihydroxypyrrolidine isopropylidene acetal