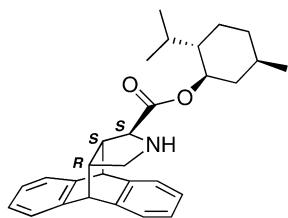


Stereochemistry abstracts

Aika Sasaoka, Md. Imam Uddin, Ai Shimomoto, Yoshiyasu Ichikawa,  
Motoo Shiro and Hiyoshizo Kotsuki\*

Tetrahedron: Asymmetry 17 (2006) 2963



(1S,3aR,9aS)-4,9[1',2']Benzeno-1,3,3a,4,9,9a-hexahydro-1H-benz[f]isoindole-1-carboxylic acid (-)-menthyl ester

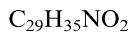
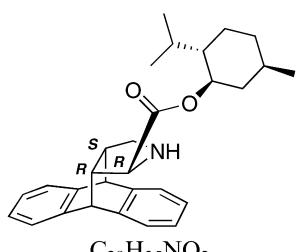
$[\alpha]_D^{22} = +20.9$  (*c* 1.62, MeOH)

Source of chirality: diastereomeric ester resolution

Absolute configuration: (1*S*,3*aR*,9*aS*)

Aika Sasaoka, Md. Imam Uddin, Ai Shimomoto, Yoshiyasu Ichikawa,  
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Tetrahedron: Asymmetry 17 (2006) 2963



(1*R*,3*aS*,9*aR*)-4,9[1',2']Benzeno-1,3,3a,4,9,9a-hexahydro-1H-benz[f]isoindole-1-carboxylic acid (-)-menthyl ester

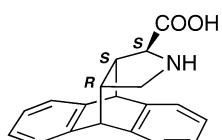
$[\alpha]_D^{22} = -93.1$  (*c* 1.41, MeOH)

Source of chirality: diastereomeric ester resolution

Absolute configuration: (1*R*,3*aS*,9*aR*)

Aika Sasaoka, Md. Imam Uddin, Ai Shimomoto, Yoshiyasu Ichikawa,  
Motoo Shiro and Hiyoshizo Kotsuki\*

Tetrahedron: Asymmetry 17 (2006) 2963



(1*S*,3*aR*,9*aS*)-4,9[1',2']Benzeno-1,3,3a,4,9,9a-hexahydro-1H-benz[f]isoindole-1-carboxylic acid

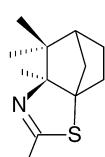
$[\alpha]_D^{22} = +57.6$  (*c* 0.62, MeOH)

Source of chirality: diastereomeric ester resolution

Absolute configuration: (1*S*,3*aR*,9*aS*)

Antonio García Martínez,\* Enrique Teso Vilar,\*  
Florencio Moreno-Jiménez and Ana M<sup>a</sup> Álvarez García

Tetrahedron: Asymmetry 17 (2006) 2970

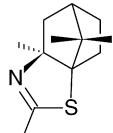


(1*R*,5*S*,7*R*)-3,5,6,6-Tetramethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

$[\alpha]_D^{20} = +116.6$  (*c* 0.84, CH<sub>2</sub>Cl<sub>2</sub>)

Source of chirality: natural (1*R*)-(+)camphor

Absolute configuration: (1*R*,5*S*,7*R*)



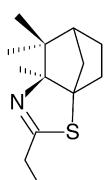
C<sub>12</sub>H<sub>19</sub>NS

(1R,5S,7S)-3,5,10,10-Tetramethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +113.6 (*c* 0.72, CH<sub>2</sub>Cl<sub>2</sub>)

Source of chirality: natural (1*R*)-(−)-fenchone

Absolute configuration: (1*R*,5*S*,7*S*)



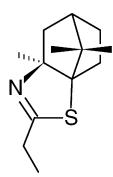
C<sub>13</sub>H<sub>21</sub>NS

(1*R*,5*S*,7*R*)-3-Ethyl-5,6,6-trimethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +86.8 (*c* 0.58, CH<sub>2</sub>Cl<sub>2</sub>)

Source of chirality: natural (1*R*)-(+)camphor

Absolute configuration: (1*R*,5*S*,7*R*)



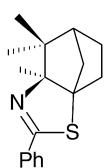
C<sub>13</sub>H<sub>21</sub>NS

(1*R*,5*S*,7*S*)-3-Ethyl-5,10,10-trimethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +121.6 (*c* 0.82, CH<sub>2</sub>Cl<sub>2</sub>)

Source of chirality: natural (1*R*)-(−)-fenchone

Absolute configuration: (1*R*,5*S*,7*S*)



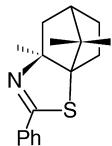
C<sub>17</sub>H<sub>21</sub>NS

(1*R*,5*S*,7*R*)-3-Phenyl-5,6,6-trimethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +35.3 (*c* 0.73, CH<sub>2</sub>Cl<sub>2</sub>)

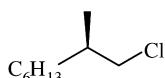
Source of chirality: natural (1*R*)-(+)camphor

Absolute configuration: (1*R*,5*S*,7*R*)



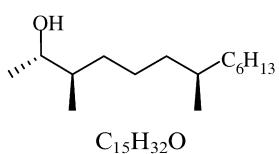
C<sub>17</sub>H<sub>21</sub>NS  
(1*R*,5*S*,7*S*)-3-Phenyl-5,10,10-trimethyl-2-thia-4-azatricyclo [5.2.1.0<sup>1,5</sup>]dec-3-ene

[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +118.8 (*c* 1.91, CH<sub>2</sub>Cl<sub>2</sub>)  
Source of chirality: natural (1*R*)-(−)-fenchone  
Absolute configuration: (1*R*,5*S*,7*S*)



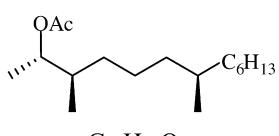
C<sub>9</sub>H<sub>19</sub>Cl  
(2*R*)-1-Chloro-2-methyloctane

Ee 95%  
[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +3.3 (*c* 34.8, hexane)  
Source of chirality: baker's yeast  
Absolute configuration: (2*R*)



C<sub>15</sub>H<sub>32</sub>O  
(2*S*,3*R*,7*R*)-3,7-Dimethyltridecan-2-ol

Ee >99%; dr >99:1  
[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +16.5 (*c* 4.8, hexane)  
Source of chirality: diastereomeric salt formation  
Absolute configuration: (2*S*,3*R*,7*R*)



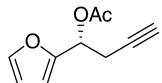
C<sub>17</sub>H<sub>34</sub>O<sub>2</sub>  
(2*S*,3*R*,7*R*)-3,7-Dimethyltridec-2-yl acetate

Ee >99%; dr >99:1  
[ $\alpha$ ]<sub>D</sub><sup>20</sup> = +8.3 (*c* 2.7, hexane)  
Source of chirality: diastereomeric salt formation  
Absolute configuration: (2*S*,3*R*,7*R*)

Ee = 90%

 $[\alpha]_D^{29} = +54.6$  (*c* 4.0, MeOH)

Source of chirality: enzymatic resolution

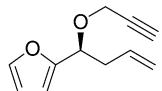
Absolute configuration: (1*R*) $C_{10}H_{10}O_3$ 

(R)-(+)-1-(Furan-2-yl)but-3-ynyl acetate

Ee = 99%

 $[\alpha]_D^{20} = -67.5$  (*c* 2.7,  $CH_2Cl_2$ )

Source of chirality: enzymatic resolution

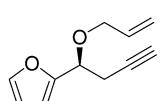
Absolute configuration: (1*S*) $C_{11}H_{12}O_2$ 

(S)-(-)-2-(1-prop-2-nyloxy)but-3-enylfuran

Ee = 93%

 $[\alpha]_D^{20} = -8.5$  (*c* 0.5, MeOH)

Source of chirality: enzymatic resolution

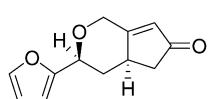
Absolute configuration: (1*S*) $C_{11}H_{12}O_2$ 

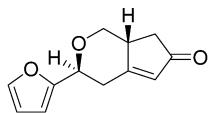
(S)-(-)-2-(1-allyloxy)but-3-ynylfuran

Ee = 99%

 $[\alpha]_D^{20} = +35.5$  (*c* 1.7,  $CH_2Cl_2$ )

Source of chirality: enzymatic resolution

Absolute configuration: (3*S*,4*a**R*) $C_{12}H_{12}O_3$ (3*S*,4*a**R*)-(+)-3-(Furan-2-yl)-3,4,4a,5-tetrahydrocyclopenta[c]pyran-6(1*H*)-one



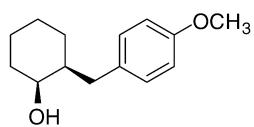
Ee = 93%

 $[\alpha]_D^{20} = +99.1$  (*c* 3.6, MeOH)

Source of chirality: enzymatic resolution

Absolute configuration: (3*S*,7a*R*)

$C_{12}H_{12}O_3$   
(3*S*,7a*R*)-(+)-3-(Furan-2-yl)-3,4,7,7a-tetrahydrocyclopenta[c]pyran-6(1*H*)-one



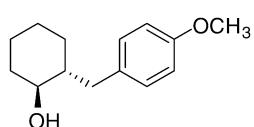
Ee &gt;99%

 $[\alpha]_D^{20} = +34.4$  (*c* 0.116, CHCl<sub>3</sub>)

Source of chirality: enzymic resolution by lipase-mediated hydrolysis

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

$C_{14}H_{20}O_2$   
(1*S*,2*S*)-2-(4-Methoxybenzyl)cyclohexanol



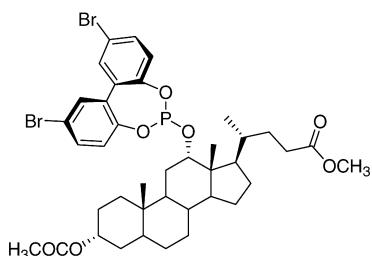
Ee &gt;99%

 $[\alpha]_D^{20} = -21.3$  (*c* 0.083, CHCl<sub>3</sub>)

Source of chirality: enzymic resolution by lipase-mediated hydrolysis

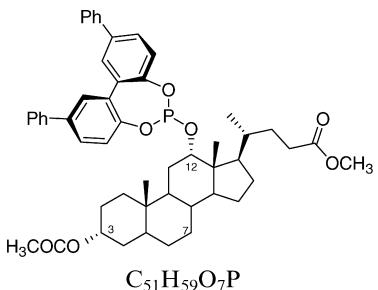
Absolute configuration: (1*S*,2*R*)

$C_{14}H_{20}O_2$   
(1*S*,2*R*)-2-(4-Methoxybenzyl)cyclohexanol

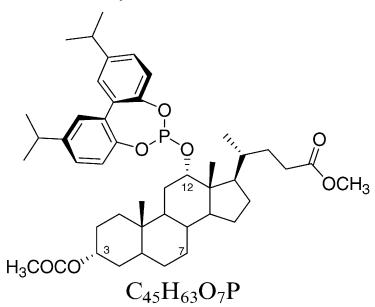
 $[\alpha]_D^{22} = +24.3$  (*c* 1.00, CH<sub>2</sub>Cl<sub>2</sub>)

Source of chirality: natural source

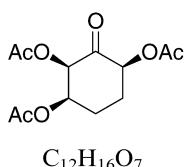
$C_{39}H_{49}Br_2O_7P$   
Methyl 3α-acetoxy-12α-(5,5'-dibromobiphenyl-2,2'-diyl)phosphite-5β-cholan-24-oate


 $[\alpha]_D^{24} = +28.6 (c \ 0.95, \text{CH}_2\text{Cl}_2)$ 

Source of chirality: natural source

Methyl 3 $\alpha$ -acetoxy-12 $\alpha$ -(5,5'-diphenylbiphenyl-2,2'-diyl)phosphite-5 $\beta$ -cholan-24-oate
 $[\alpha]_D^{25} = +52.0 (c \ 1.03, \text{CH}_2\text{Cl}_2)$ 

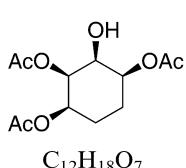
Source of chirality: natural source

Methyl 3 $\alpha$ -acetoxy-12 $\alpha$ -(5,5'-diisopropylbiphenyl-2,2'-diyl)phosphite-5 $\beta$ -cholan-24-oate(1 $R$ ,2 $R$ ,4 $S$ )-(-)-3-Oxocyclohexane-1,2,4-triyl triacetate

Ee = 97%

 $[\alpha]_D^{20} = -7.25 (c \ 0.02, \text{CHCl}_3)$ 

Source of chirality: enzymatic resolution

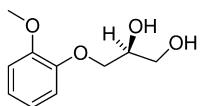
Absolute configuration: (1 $R$ ,2 $R$ ,4 $S$ )(1 $R$ ,2 $S$ ,3 $S$ ,4 $S$ )-(-)-3-Hydroxycyclohexane-1,2,4-triyl triacetate

Ee = 97%

 $[\alpha]_D^{20} = -1.3 (c \ 0.02, \text{CHCl}_3)$ 

Source of chirality: enzymatic resolution

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



C<sub>10</sub>H<sub>14</sub>O<sub>4</sub>  
(S)-3-(2-Methoxyphenoxy)-propane-1,2-diol

Ee >99% [by thermal analysis]

[α]<sub>D</sub><sup>20</sup> = +9.5 (c 1.0, anhydrous MeOH)

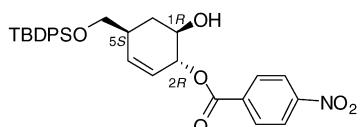
[α]<sub>D</sub><sup>20</sup> = +11.7 (c 1.0, anhydrous EtOH)

[α]<sub>D</sub><sup>20</sup> = +15.0 (c 1.0, rectified EtOH)

Initial source of chirality: (S)-3-chloropropane-1,2-diol

Subsequent source of chirality: spontaneous resolution

Absolute configuration: (S)

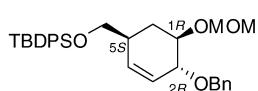


C<sub>30</sub>H<sub>33</sub>NO<sub>6</sub>Si  
(1R,2R,5S)-5-(tert-Butyl-diphenylsilanyloxymethyl)-2-p-nitrobenzoyloxy-cyclohex-3-ene-1-ol

[α]<sub>D</sub><sup>27</sup> = -131.5 (c 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

Absolute configuration: (1S,2R,5S)

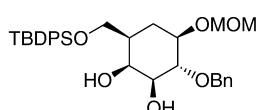


C<sub>32</sub>H<sub>40</sub>O<sub>4</sub>Si  
(1R,2R,5S)-5-(tert-Butyl-diphenylsilanyloxymethyl)-1-methoxymethoxy-2-benzyloxy-cyclohex-3-ene

[α]<sub>D</sub><sup>26</sup> = -92.2 (c 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

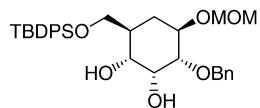
Absolute configuration: (1R,2R,5S)



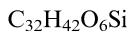
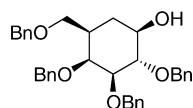
C<sub>32</sub>H<sub>42</sub>O<sub>6</sub>Si  
Methoxymethyl 2-O-benzyl-6-O-(tert-butyl-diphenyl)silyl-5a-carba-β-D-galactopyranoside

[α]<sub>D</sub><sup>27</sup> = +29.2 (c 1.0, CHCl<sub>3</sub>)

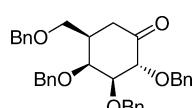
Source of chirality: enzymatic resolution


 $[\alpha]_D^{27} = +0.6$  (*c* 1.0, CHCl<sub>3</sub>)

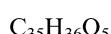
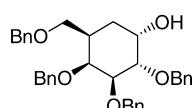
Source of chirality: enzymatic resolution

Methoxymethyl 2-*O*-benzyl-6-*O*-(*tert*-butyl-diphenyl)silyl-5*a*-carba- $\beta$ -D-allopyranoside
 $[\alpha]_D^{27} = -12.6$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

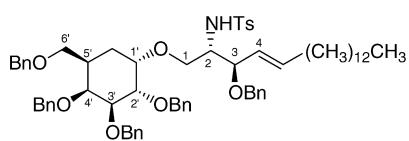
2,3,4,6-Tetra-*O*-benzyl-5*a*-carba- $\beta$ -D-galactopyranose
 $[\alpha]_D^{27} = +10.1$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

Absolute configuration: (2*R*,3*S*,4*S*,5*R*)(2*R*,3*S*,4*S*,5*R*)-2,3,4-Tri-bezyloxy-5-benzyloxymethyl-cyclohexanone
 $[\alpha]_D^{25} = +20.8$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

2,3,4,6-Tetra-*O*-benzyl-5*a*-carba- $\alpha$ -D-galactopyranose



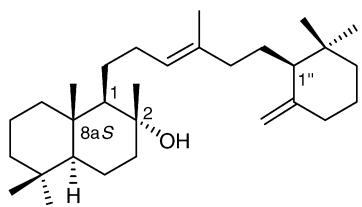
$[\alpha]_D^{25} = +13.1$  (*c* 1.0, CHCl<sub>3</sub>)

Source of chirality: enzymatic resolution

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



(2*S*,3*R*,4*E*)-3-Benzyl-1-(2',3',4',6'-tetra-O-benzyl-5a-carba- $\alpha$ -D-galactopyranosyloxy)-2-(*p*-toluenesulfonylamino)-4-octadecene



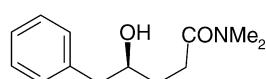
(+)-Ambrein

Ee = >99%

$[\alpha]_D^{24} = +18.9$  (*c* 0.47, EtOH)

Source of chirality: lipase

Absolute configuration: (1*R*,2*R*,4*aS*,8*aS*,1''*S*)



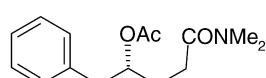
(*S*)-(-)-4-Hydroxy-*N,N*-dimethyl-5-phenylpentanamide

Ee = 99%

$[\alpha]_D = -9.7$

Source of chirality: lipase catalyzed kinetic resolution (*Pseudomonas fluorescence*)

Absolute configuration: (*S*)



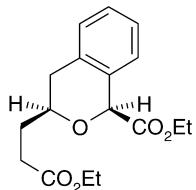
(+)-[(*R*)-4-(*N,N*-Dimethylcarbamoyl)-1-phenylbutan-2-yl] acetate

Ee = 98.4%

$[\alpha]_D = +3.4$

Source of chirality: lipase catalyzed kinetic resolution (*Pseudomonas fluorescence*)

Absolute configuration: (*R*)



Ee = 99%

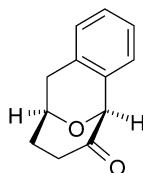
$[\alpha]_D = +9.1$

Source of chirality: lipase catalyzed kinetic resolution

Absolute configuration: (1S,3S)

C<sub>17</sub>H<sub>22</sub>O<sub>5</sub>

(+)-Ethyl (1S,3S)-3-(2-ethoxycarbonylethyl)-3,4-dihydro-1H-2-benzopyran-1-carboxylate



Ee = 99%

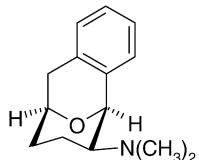
$[\alpha]_D = -221$

Source of chirality: lipase catalyzed kinetic resolution

Absolute configuration: (5S,9S)

C<sub>12</sub>H<sub>12</sub>O<sub>2</sub>

(5S,9S)-(-)-7,8,9,10-Tetrahydro-5,9-epoxybenzocycloocten-6(5H)-one



Ee = 99%

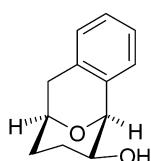
$[\alpha]_D = -40.4$  (HCl)

Source of chirality: lipase catalyzed kinetic resolution

Absolute configuration: (5S,6S,9S)

C<sub>14</sub>H<sub>19</sub>NO

(5S,6S,9S)-(-)-N,N-Dimethyl-5,6,7,8,9,10-hexahydro-5,9-epoxybenzocycloocten-6-amine



Ee = 99%

$[\alpha]_D = -71.8$

Source of chirality: lipase catalyzed kinetic resolution

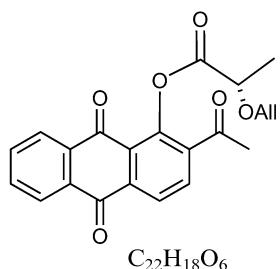
Absolute configuration: (5S,6S,9S)

C<sub>12</sub>H<sub>14</sub>O<sub>2</sub>

(5S,6S,9S)-(-)-5,6,7,8,9,10-Hexahydro-5,9-epoxybenzocycloocten-6-ol

Karsten Krohn,\* Anne Vidal, Jürgen Vitz, Bernhard Westermann,  
Muhammad Abbas and Ivan Green

Tetrahedron: Asymmetry 17 (2006) 3051

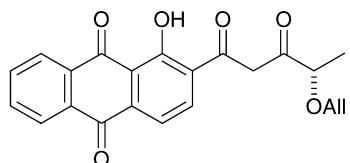


$[\alpha]_D^{20} = -16$  (*c* 1.03, CHCl<sub>3</sub>)

(*S*)-2-Acetyl-9,10-dihydro-9,10-dioxoanthracen-1-yl 2-(allyloxy)propanoate

Karsten Krohn,\* Anne Vidal, Jürgen Vitz, Bernhard Westermann,  
Muhammad Abbas and Ivan Green

Tetrahedron: Asymmetry 17 (2006) 3051

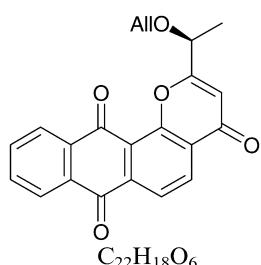


$[\alpha]_D^{20} = -88$  (*c* 0.52, CHCl<sub>3</sub>)

$C_{22}H_{18}O_6$   
2-(4-Allyloxy-3-oxo-pentanoyl)-1-hydroxy-anthraquinone

Karsten Krohn,\* Anne Vidal, Jürgen Vitz, Bernhard Westermann,  
Muhammad Abbas and Ivan Green

Tetrahedron: Asymmetry 17 (2006) 3051

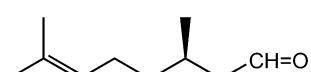


$[\alpha]_D^{20} = -87$  (*c* 0.52, CHCl<sub>3</sub>)

2-(1-(Allyloxy)ethyl)-4*H*-naphtho[2,3-*h*]chromene-4,7,12-trione

Mélanie Hall, Bernhard Hauer, Rainer Stuermer, Wolfgang Kroutil  
and Kurt Faber\*

Tetrahedron: Asymmetry 17 (2006) 3058



Ee >95%

$[\alpha]_D^{20} = +10.1$  (*c* 1.0, EtOH)

Source of chirality: asymmetric bioreduction

Absolute configuration: (*R*)

$C_{10}H_{18}O$   
(*R*)-3,7-Dimethyl-6-octenal (citronellal)