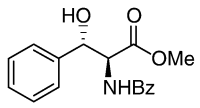
Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*

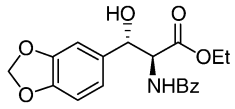


Ee = 90%
$[\alpha]_D^{25} = +127.8$ (*c* 0.93, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (2*S*,3*S*)

$C_{17}H_{17}NO_4$
(2*S*,3*S*)-Methyl 2-benzoylamino-3-hydroxy-3-phenylpropionate

Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*

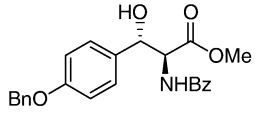


Ee = 80%
$[\alpha]_D^{25} = +96.1$ (*c* 0.21, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (2*S*,3*S*)

$C_{19}H_{19}NO_6$
(2*S*,3*S*)-Ethyl 3-benzo[1,3]dioxol-5-yl-2-benzoylamino-3-hydroxypropionate

Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*

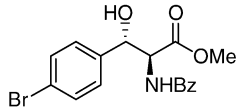


Ee = 93%
$[\alpha]_D^{25} = +105.4$ (*c* 0.97, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (2*S*,3*S*)

$C_{24}H_{23}NO_5$
(2*S*,3*S*)-Methyl 2-benzoylamino-3-(4-benzyloxyphenyl)-3-hydroxypropionate

Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*

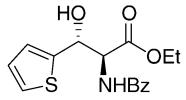


Ee = 75%
$[\alpha]_D^{25} = +97.0$ (*c* 0.99, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (2*S*,3*S*)

$C_{17}H_{16}BrNO_4$
(2*S*,3*S*)-Methyl 2-benzoylamino-3-(4-bromophenyl)-3-hydroxypropionate

Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*



$C_{16}H_{17}NO_4S$

(2*S*,3*S*)-Ethyl 2-benzoylamino-3-hydroxy-3-thiophen-2-yl-propionate

Ee = 79%

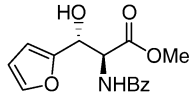
$[\alpha]_D^{25} = +63.6$ (*c* 1.16, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

Kazuishi Makino, Takefumi Fujii and Yasumasa Hamada*

Tetrahedron: Asymmetry *17 (2006) 481*



$C_{15}H_{15}NO_5$

(2*S*,3*S*)-Methyl 2-benzoylamino-3-furan-2-yl-3-hydroxypropionate

Ee = 88%

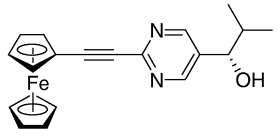
$[\alpha]_D^{25} = +88.9$ (*c* 0.97, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

François Lutz, Tsuneomi Kawasaki and Kenso Soai*

Tetrahedron: Asymmetry *17 (2006) 486*



$C_{20}H_{20}FeN_2O$

(*S*)-1-(2-Ferrocenylethynyl-5-pyrimidyl)-2-methylpropan-1-ol

Ee >99%

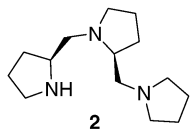
$[\alpha]_D^{18} = -18.0$ (*c* 0.99, $CHCl_3$)

Source of chirality: asymmetric autocatalysis

Absolute configuration: *S*

Ming-Kui Zhu, Lin-Feng Cun, Ai-Qiao Mi, Yao-Zhong Jiang and Liu-Zhu Gong*

Tetrahedron: Asymmetry *17 (2006) 491*



2

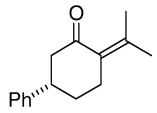
$C_{14}H_{27}N_3$

2-Pyrrolidin-1-ylmethyl-1-pyrrolidin-2-ylmethyl-pyrrolidine

$[\alpha]_D^{20} = -83$ (*c* 0.1, $CHCl_3$)

Laura Mediavilla Urbaneja and Norbert Krause*

Tetrahedron: Asymmetry *17 (2006) 494*



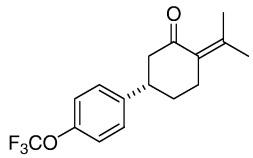
$C_{15}H_{18}O$

(*S*)-5-Phenyl-2-(propan-2-ylidene)cyclohexanone

Ee = 95%
$[\alpha]_D^{20} = -22.8$ (*c* 1.06, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: *S*

Laura Mediavilla Urbaneja and Norbert Krause*

Tetrahedron: Asymmetry *17 (2006) 494*



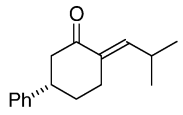
$C_{16}H_{17}F_3O_2$

(*S*)-2-(Propan-2-ylidene)-5-(4-(trifluoromethoxy)phenyl)cyclohexanone

Ee = 90%
$[\alpha]_D^{20} = -14.1$ (*c* 1.11, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: *S*

Laura Mediavilla Urbaneja and Norbert Krause*

Tetrahedron: Asymmetry *17 (2006) 494*



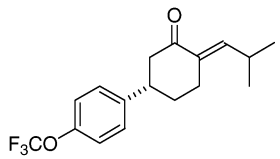
$C_{16}H_{20}O$

(*S*,*E*)-2-(2-Methylpropylidene)-5-phenylcyclohexanone

Ee = 92%
$[\alpha]_D^{20} = -50.3$ (*c* 0.51, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: *S*

Laura Mediavilla Urbaneja and Norbert Krause*

Tetrahedron: Asymmetry *17 (2006) 494*



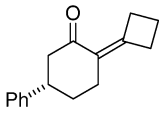
$C_{17}H_{19}F_3O_2$

(*S*,*E*)-2-(2-Methylpropylidene)-5-(4-(trifluoromethoxy)phenyl)cyclohexanone

Ee = 90%
$[\alpha]_D^{20} = -24.2$ (*c* 0.721, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: *S*

Laura Mediavilla Urbaneja and Norbert Krause*

Tetrahedron: Asymmetry *17 (2006) 494*



$C_{16}H_{18}O$

(*S*)-2-Cyclobutylidene-5-phenylcyclohexanone

Ee = 94%

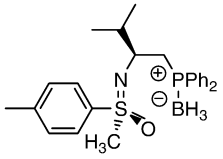
$[\alpha]_D^{20} = -47.5$ (*c* 0.49, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: *S*

Volker Spohr, Jan Philipp Kaiser and Michael Reggelin*

Tetrahedron: Asymmetry *17 (2006) 500*



$C_{25}H_{33}BNOPS$

(S_S,1*S*)-*N*-[1-(Diphenylphosphanylmethyl)-2-methylpropyl]-(*S*)-methyl-(*S*)-*para*-toluene-sulfoximine borane complex

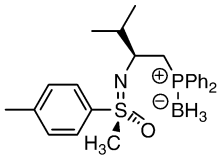
$[\alpha]_D^{20} = +3.7$ (*c* 1.01, CH_2Cl_2)

Source of chirality: (2*S*,4*S*)-4-isopropyl-2-*para*-toluene-4,5-dihydro-[1,2λ^6,3]oxathiazole-2-oxide

Absolute configuration: (S_S,1*S*)

Volker Spohr, Jan Philipp Kaiser and Michael Reggelin*

Tetrahedron: Asymmetry *17 (2006) 500*



$C_{25}H_{33}BNOPS$

(R_S,1*S*)-*N*-[1-(Diphenylphosphanylmethyl)-2-methylpropyl]-(*S*)-methyl-(*S*)-*para*-toluene-sulfoximine borane complex

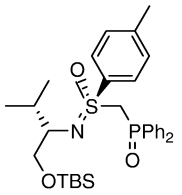
$[\alpha]_D^{20} = -72.4$ (*c* 0.45, CH_2Cl_2)

Source of chirality: (2*R*,4*S*)-4-isopropyl-2-*para*-toluene-4,5-dihydro-[1,2λ^6,3]oxathiazole-2-oxide

Absolute configuration: (R_S,1*S*)

Volker Spohr, Jan Philipp Kaiser and Michael Reggelin*

Tetrahedron: Asymmetry *17 (2006) 500*



$C_{25}H_{30}BNO_3PS$

(S_S,1*S*)-*N*-[1-(Hydroxymethyl)-2-methylpropyl]-(*S*)-methyldiphenylphaneoxide-(*S*)-*para*-toluene-sulfoximine

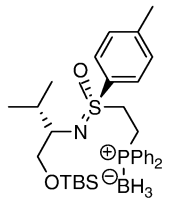
$[\alpha]_D^{20} = +9.1$ (*c* 3.20, CH_2Cl_2)

Source of chirality: (2*S*,4*S*)-4-isopropyl-2-*para*-toluene-4,5-dihydro-[1,2λ^6,3]oxathiazole-2-oxide

Absolute configuration: (S_S,1*S*)

Volker Spohr, Jan Philipp Kaiser and Michael Reggelin*

Tetrahedron: Asymmetry *17 (2006) 500*



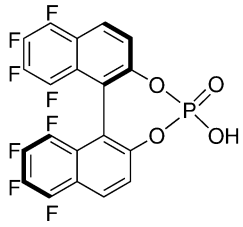
$[\alpha]_D^{20} = +25.75$ (*c* 1.2, CH_2Cl_2)
Source of chirality: (2*S*,4*S*)-4-isopropyl-2-*para*-toluene-4,5-dihydro-[1,2λ^6,3]oxathiazole-2-oxide
Absolute configuration: (S_S,1*S*)

$C_{32}H_{49}BNO_2PSSi$

(S_S,1*S*)-*N*-[1-[[(*tert*-Butyldimethylsilyl)oxy]methyl]-2-methylpropyl]-(*S*)-2-diphenylphosphanylethyl-(*S*)-*para*-toluene-sulfoximine borane complex

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*



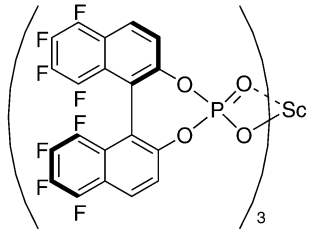
Ee >99%
$[\alpha]_D^{23} = -363.6$ (*c* 1.0, DMSO)
Source of chirality: (*R*)-5,5′,6,6′,7,7′,8,8′-octafluoro-2,2′-dihydroxy-1,1′-binaphthyl
Absolute configuration: *R*

$C_{20}H_5F_8O_4P$

(*R*)-5,5′,6,6′,7,7′,8,8′-Octafluoro-1,1′-binaphthyl-2,2′-diyl hydrogen phosphate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*



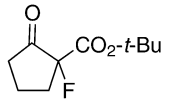
Ee >99%
$[\alpha]_D^{21} = -156.4$ (*c* 0.50, DMSO)
Source of chirality: (*R*)-5,5′,6,6′,7,7′,8,8′-octafluoro-2,2′-dihydroxy-1,1′-binaphthyl
Absolute configuration: *R*

$C_{60}H_{12}F_{24}O_{12}P_3Sc{\cdot}3H_2O$

Scandium(III) (*R*)-5,5′,6,6′,7,7′,8,8′-octafluoro-1,1′-binaphthyl-2,2′-diyl phosphate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*



Ee = 84%
$[\alpha]_D^{23} = -72.7$ (*c* 1.08, $CHCl_3$)
Source of chirality: asymmetric synthesis

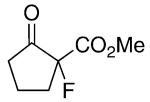
$C_{10}H_{15}FO_3$

tert-Butyl 1-fluoro-2-oxocyclopentanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 87%
$[\alpha]_D^{22} = -97.5$ (*c* 0.46, $CHCl_3$)
Source of chirality: asymmetric synthesis

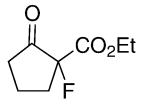


$C_7H_9FO_3$
Methyl 1-fluoro-2-oxocyclopentanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 76%
$[\alpha]_D^{21} = -72.8$ (*c* 1.10, $CHCl_3$)
Source of chirality: asymmetric synthesis

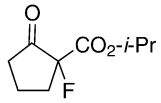


$C_8H_{11}FO_3$
Ethyl 1-fluoro-2-oxocyclopentanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 75%
$[\alpha]_D^{21} = -68.4$ (*c* 0.94, $CHCl_3$)
Source of chirality: asymmetric synthesis

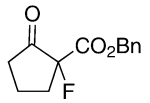


$C_9H_{13}FO_3$
Isopropyl 1-fluoro-2-oxocyclopentanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 47%
$[\alpha]_D^{22} = -38.6$ (*c* 1.73, $CHCl_3$)
Source of chirality: asymmetric synthesis

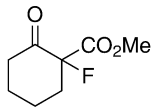


$C_{13}H_{13}FO_3$
Benzyl 1-fluoro-2-oxocyclopentanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 81%
$[\alpha]_D^{22} = -87.7$ (*c* 0.95, $CHCl_3$)
Source of chirality: asymmetric synthesis

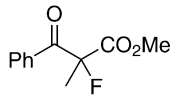


$C_8H_{11}FO_3$
Methyl 1-fluoro-2-oxocyclohexanecarboxylate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 75%
$[\alpha]_D^{21} = +75.2$ (*c* 1.0, $CHCl_3$)
Source of chirality: asymmetric synthesis

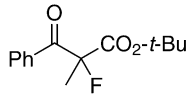


$C_{11}H_{11}FO_3$
Methyl 2-fluoro-2-methyl-3-oxo-3-phenylpropionate

Shoko Suzuki, Hiroshi Furuno, Yasuo Yokoyama and Junji Inanaga*

Tetrahedron: Asymmetry *17 (2006) 504*

Ee = 78%
$[\alpha]_D^{21} = +52.1$ (*c* 0.26, $CHCl_3$)
Source of chirality: asymmetric synthesis

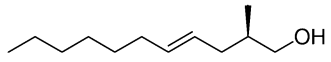


$C_{14}H_{17}FO_3$
tert-Butyl 2-fluoro-2-methyl-3-oxo-3-phenylpropionate

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*

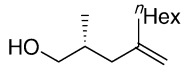
Ee = 78%
$[\alpha]_D^{23} = +4.4$ (*c* 0.89, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (2*R*)



$C_{13}H_{26}O$
(2*R*,4*E*)-2,5-Dimethyl-4-undecen-1-ol

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{12}H_{24}O$

(2*R*)-2-Methyl-4-*n*hexyl-4-penten-1-ol

Ee = 77%

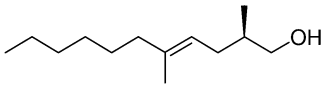
$[\alpha]_D^{23} = +7.0$ (*c* 2.1, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{12}H_{24}O$

(2*R*,4*E*)-2-Methyl-4-undecen-1-ol

Ee = 75%

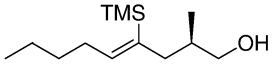
$[\alpha]_D^{23} = +5.7$ (*c* 1.66, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{13}H_{28}OSi$

(2*R*,4*Z*)-2-Methyl-4-trimethylsilanyl-4-nonen-1-ol

Ee = 74%

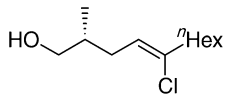
$[\alpha]_D^{23} = +5.8$ (*c* 1.5, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{12}H_{23}ClO$

(2*R*,4*Z*)-5-Chloro-2-methyl-4-undecen-1-ol

Ee = 80%

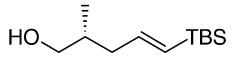
$[\alpha]_D^{23} = +4.9$ (*c* 1.6, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{12}H_{26}OSi$

(2*R*,4*Z*)-5-*tert*-Butyldimethylsilanyl-2-methyl-4-penten-1-ol

Ee = 70%

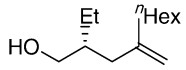
$[\alpha]_D^{23} = +2.4$ (*c* 1.8, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{13}H_{26}O$

(2*R*)-2-Ethyl-4-hexyl-4-penten-1-ol

Ee = 90%

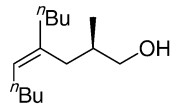
$[\alpha]_D^{23} = +8.2$ (*c* 1.8, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{14}H_{28}O$

(2*R*,4*E*)-4-^{n}Butyl-2-methyl-4-nonen-1-ol

Ee = 76%

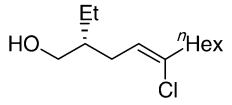
$[\alpha]_D^{23} = +5.8$ (*c* 0.93, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{13}H_{25}ClO$

(2*R*,4*Z*)-2-Ethyl-5-chloro-4-undecen-1-ol

Ee = 92%

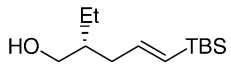
$[\alpha]_D^{23} = -2.5$ (*c* 1.3, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ze Tan, Bo Liang, Shouquan Huo, Ji-cheng Shi and Ei-ichi Negishi*

Tetrahedron: Asymmetry *17 (2006) 512*



$C_{13}H_{28}OSi$

(2*R*,4*Z*)-5-*tert*-Butyldimethylsilyl-2-ethyl-4-penten-1-ol

Ee = 90%

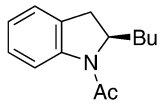
$[\alpha]_D^{23} = -4.9$ (*c* 2.1, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (2*R*)

Ryoichi Kuwano,* Manabu Kashiwabara, Koji Sato, Takashi Ito, Kohei Kaneda and Yoshihiko Ito

Tetrahedron: Asymmetry *17 (2006) 521*



$C_{14}H_{19}NO$

(*R*)–*N*-Acetyl-2-butylindoline

Ee = 94%

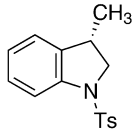
$[\alpha]_D^{20} = -94.0$ (*c* 1.00, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: *R*

Ryoichi Kuwano,* Manabu Kashiwabara, Koji Sato, Takashi Ito, Kohei Kaneda and Yoshihiko Ito

Tetrahedron: Asymmetry *17 (2006) 521*



$C_{16}H_{17}NO_2S$

(*S*)-3-Methyl-*N*-(*p*-toluenesulfonyl)indoline

Ee = 98%

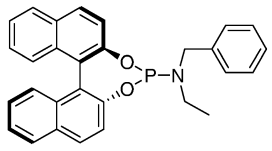
$[\alpha]_D^{20} = +29.4$ (*c* 1.06, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: *S*

Wei-Jun Tang, Yi-Yong Huang, Yan-Mei He and Qing-Hua Fan*

Tetrahedron: Asymmetry *17 (2006) 536*



$C_{29}H_{24}NO_2P$

O,*O*′-(*R*)-(1,1′-Dinaphth-2,2′-diyl)-*N*-ethyl-*N*-benzyl-phosphoramidite

Ee = 100%

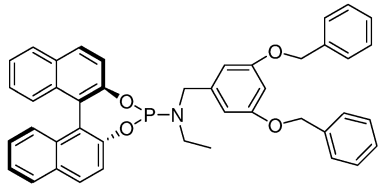
$[\alpha]_D^{16} = +315.2$ (*c* 0.33, CH_2Cl_2)

Source of chirality: (*R*)-BINOL

Absolute configuration: *R*

Wei-Jun Tang, Yi-Yong Huang, Yan-Mei He and Qing-Hua Fan*

Tetrahedron: Asymmetry *17 (2006) 536*



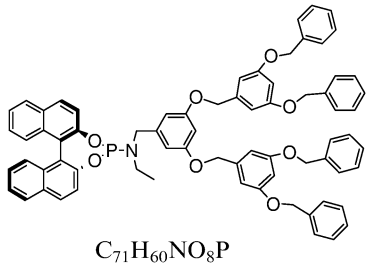
Ee = 100%
$[\alpha]_D^{16} = +254.5$ (*c* 0.33, CH_2Cl_2)
Source of chirality: (*R*)-BINOL
Absolute configuration: *R*

$C_{43}H_{36}NO_4P$

O,*O*′-(*R*)-(1,1′-Dinaphth-2,2′-diyl)-*N*-ethyl-*N*-(3,5-dibenzyloxy)benzyl-phosphoramidite

Wei-Jun Tang, Yi-Yong Huang, Yan-Mei He and Qing-Hua Fan*

Tetrahedron: Asymmetry *17 (2006) 536*



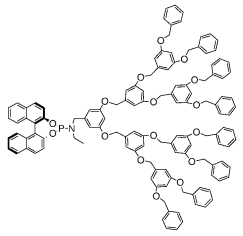
Ee = 100%
$[\alpha]_D^{16} = +151.5$ (*c* 0.33, CH_2Cl_2)
Source of chirality: (*R*)-BINOL
Absolute configuration: *R*

$C_{71}H_{60}NO_8P$

O,*O*′-(*R*)-(1,1′-Dinaphth-2,2′-diyl)-*N*-ethyl-*N*-(3,5-bis(3′,5′-dibenzyloxy)benzyloxy)benzyl-phosphoramidite

Wei-Jun Tang, Yi-Yong Huang, Yan-Mei He and Qing-Hua Fan*

Tetrahedron: Asymmetry *17 (2006) 536*



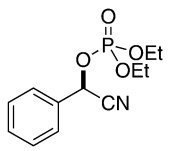
Ee = 100%
$[\alpha]_D^{16} = +72.7$ (*c* 0.33, CH_2Cl_2)
Source of chirality: (*R*)-BINOL
Absolute configuration: *R*

$C_{127}H_{108}NO_{16}P$

O,*O*′-(*R*)-(1,1′-Dinaphth-2,2′-diyl)-*N*-ethyl-*N*-(3,5-bis(3′,5′-bis(3″,5″-dibenzyloxy)benzyloxy)benzyloxy)benzyl-phosphoramidite

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



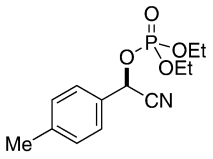
Ee = 92% ee (*R*)
$[\alpha]_D^{22} = +18.9$ (*c* 1.2, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

$C_{12}H_{16}NO_4$

(*R*)-1-Cyano-1-phenylmethyl diethyl phosphate

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



$C_{13}H_{18}NO_4P$

1-Cyano-1-(4-methylphenyl)methyl diethyl phosphate

Ee = 93% ee (*R*)

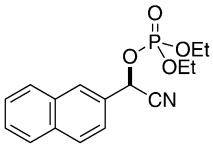
$[\alpha]_D^{23} = +16.5$ (*c* 1.4, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



$C_{16}H_{18}NO_4P$

1-Cyano-1-(2-naphthyl)methyl diethyl phosphate

Ee = 81% ee (*R*)

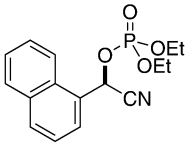
$[\alpha]_D^{22} = +10.8$ (*c* 1, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



$C_{16}H_{18}NO_4P$

1-Cyano-1-(1-naphthyl)methyl diethyl phosphate

Ee = 89% ee (*R*)

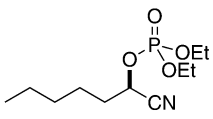
$[\alpha]_D^{23} = +67.7$ (*c* 1.1, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



$C_{11}H_{22}NO_4P$

1-Cyanohexyl diethyl phosphate

Ee = 92% ee (*R*)

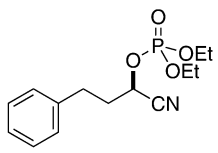
$[\alpha]_D^{24} = +21.0$ (*c* 0.9, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



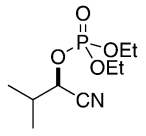
$C_{14}H_{20}NO_4P$

1-Cyano-3-phenylpropyl diethyl phosphate

Ee = 82% ee (*R*)
$[\alpha]_D^{24} = +7.4$ (*c* 1.2, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



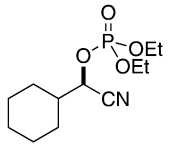
$C_9H_{18}NO_4P$

1-Cyano-2-methylpropyl diethyl phosphate

Ee = 96% ee (*R*)
$[\alpha]_D^{23} = +23.9$ (*c* 1.4, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



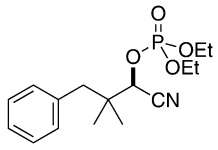
$C_{12}H_{22}NO_4P$

1-Cyano-1-cyclohexylmethyl diethyl phosphate

Ee = 97% ee (*R*)
$[\alpha]_D^{23} = +15.0$ (*c* 1.2, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



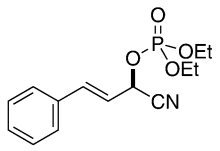
$C_{16}H_{24}NO_4P$

1-Cyano-2,2-dimethyl-3-phenylpropyl diethyl phosphate

Ee = 76% ee (*R*)
$[\alpha]_D^{24} = +8.7$ (*c* 1.5, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga* and Masakatsu Shibasaki*

Tetrahedron: Asymmetry *17 (2006) 566*



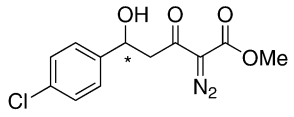
$C_{14}H_{18}NO_4P$

1-Cyano-3-phenyl-2-propen-1-yl diethyl phosphate

Ee = 24% ee (*R*)
$[\alpha]_D^{22} = -6.6$ (*c* 1, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*)

Kousik Kundu and Michael P. Doyle*

Tetrahedron: Asymmetry *17 (2006) 574*



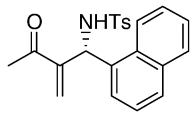
$C_{12}H_{11}ClN_2O_4$

Methyl 5-(*p*-chlorophenyl)-2-diazo-5-hydroxy-3-oxopentanoate

Ee = 92%
$[\alpha]_D^{24.3} = -63.6$ (*c* 0.506, CH_2Cl_2)
Source of chirality: asymmetric Mukaiyama aldol addition
Absolute configuration: (*S*) tentatively

Katsuya Matsui, Kouichi Tanaka, Atsushi Horii, Shinobu Takizawa and Hiroaki Sasai*

Tetrahedron: Asymmetry *17 (2006) 578*



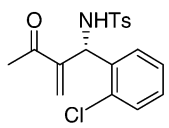
$C_{22}H_{21}NO_3S$

(*R*)-4-Methyl-*N*-(2-methylene-1-naphthalen-1-yl-3-oxobutyl)benzenesulfonamide

Ee = 70% by HPLC on Daicel Chiralpak AD-H column
$[\alpha]_D^{20} = +18.3$ (*c* 0.6, $CHCl_3$)
Source of chirality: enantioselective addition
Absolute configuration: (*R*)

Katsuya Matsui, Kouichi Tanaka, Atsushi Horii, Shinobu Takizawa and Hiroaki Sasai*

Tetrahedron: Asymmetry *17 (2006) 578*



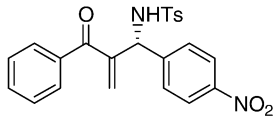
$C_{18}H_{18}ClNO_3S$

(*R*)-*N*-[1-(2-Chlorophenyl)-2-methylene-3-oxobutyl]-4-methylbenzenesulfonamide

Ee = 62% by HPLC on Daicel Chiralpak AD-H column
$[\alpha]_D^{20} = +13.0$ (*c* 0.6, $CHCl_3$)
Source of chirality: enantioselective addition
Absolute configuration: (*R*)

Katsuya Matsui, Kouichi Tanaka, Atsushi Horii, Shinobu Takizawa and Hiroaki Sasai*

Tetrahedron: Asymmetry *17 (2006) 578*



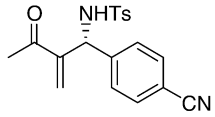
$C_{23}H_{20}N_2O_5S$

(*R*)-*N*-[2-Benzoyl-1-(4-nitrophenyl)allyl]-4-methyl-benzenesulfonamide

Ee = 58% by HPLC on Daicel Chiralpak OD-H column
$[\alpha]_D^{20} = -3.3$ (*c* 0.6, $CHCl_3$)
Source of chirality: enantioselective addition
Absolute configuration: (*R*)

Katsuya Matsui, Kouichi Tanaka, Atsushi Horii, Shinobu Takizawa and Hiroaki Sasai*

Tetrahedron: Asymmetry *17 (2006) 578*



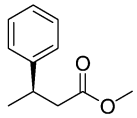
$C_{19}H_{18}N_2O_3S$

(*R*)-*N*-[1-(4-Cyanophenyl)-2-methylene-3-oxobutyl]-4-methylbenzenesulfonamide

Ee = 91% by HPLC on Daicel Chiralpak AD-H column
$[\alpha]_D^{20} = +20$ (*c* 0.6, $CHCl_3$)
Source of chirality: enantioselective addition
Absolute configuration: (*R*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



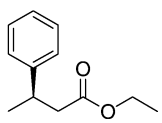
$C_{11}H_{14}O_2$

3-Phenylbutanoic acid methyl ester

Ee = 84%
$[\alpha]_D^{26} = -26$ (*c* 1.00, $CHCl_3$)
Source of chirality: asymmetric reaction
Absolute configuration: (*R*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



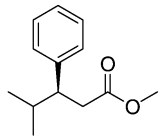
$C_{12}H_{16}O_2$

3-Phenylbutanoic acid ethyl ester

Ee = 89%
$[\alpha]_D^{24} = -29$ (*c* 1.05, Et_2O)
Source of chirality: asymmetric reaction
Absolute configuration: (*R*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



$C_{13}H_{18}O_2$

4-Methyl-3-phenylpentanoic acid methyl ester

Ee = 94%

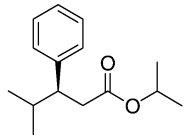
$[\alpha]_D^{26} = -26$ (*c* 0.97, $CHCl_3$)

Source of chirality: asymmetric reaction

Absolute configuration: (*S*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



$C_{15}H_{22}O_2$

4-Methyl-3-phenylpentanoic acid isopropyl ester

Ee = 97%

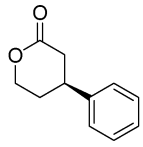
$[\alpha]_D^{22} = -23$ (*c* 1.02, $CHCl_3$)

Source of chirality: asymmetric reaction

Absolute configuration: (*S*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



$C_{11}H_{12}O_2$

4-(Phenyl)tetrahydro-2*H*-pyran-2-one

Ee = 99%

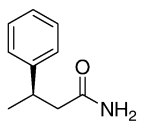
$[\alpha]_D^{20} = +4.4$ (*c* 2.70, $CHCl_3$)

Source of chirality: asymmetric reaction

Absolute configuration: (*S*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



$C_{10}H_{13}NO$

3-Phenylbutyramide

Ee = 81%

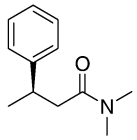
$[\alpha]_D^{24} = -36$ (*c* 1.01, $CHCl_3$)

Source of chirality: asymmetric reaction

Absolute configuration: (*R*)

Shuichi Oi,* Akio Taira, Yoshio Honma, Takashi Sato and Yoshio Inoue*

Tetrahedron: Asymmetry *17 (2006) 598*



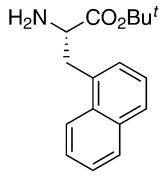
$C_{12}H_{17}NO$

N,*N*-Dimethyl-3-phenylbutyramide

Ee = 72%
$[\alpha]_D^{21} = -16$ (*c* 1.02, $CHCl_3$)
Source of chirality: asymmetric reaction
Absolute configuration: (*R*)

Takashi Ooi, Yuichiro Arimura, Yukihiro Hiraiwa, Lin Ming Yuan, Taichi Kano, Toru Inoue, Jun Matsumoto and Keiji Maruoka*

Tetrahedron: Asymmetry *17 (2006) 603*



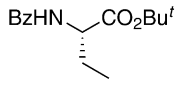
$C_{17}H_{21}NO_2$

(*S*)-2-Amino-3-(1-naphthyl)propionic acid *tert*-butyl ester

Ee 99%
$[\alpha]_D^{26} = +33.6$ (*c* 1.04, $CHCl_3$)
Source of chirality: catalytic asymmetric reaction
Absolute configuration: *S*

Takashi Ooi, Yuichiro Arimura, Yukihiro Hiraiwa, Lin Ming Yuan, Taichi Kano, Toru Inoue, Jun Matsumoto and Keiji Maruoka*

Tetrahedron: Asymmetry *17 (2006) 603*



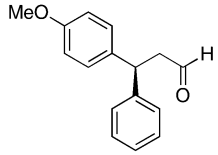
$C_{15}H_{21}NO_3$

(*S*)-2-Benzoylaminobutyric acid *tert*-butyl ester

Ee 99%
$[\alpha]_D^{29} = +42.9$ (*c* 1.00, $CHCl_3$)
Source of chirality: catalytic asymmetric reaction
Absolute configuration: *S*

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



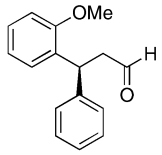
$C_{16}H_{16}O_2$

(*S*)-3-(4-Methoxyphenyl)-3-phenylpropanal

Ee = 99%
$[\alpha]_D^{20} = +4.4$ (*c* 0.77, $CHCl_3$)
Source of chirality: asymmetric arylation
Absolute configuration: (*S*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{16}H_{16}O_2$

(*S*)-3-(2-Methoxyphenyl)-3-phenylpropanal

Ee = 99%

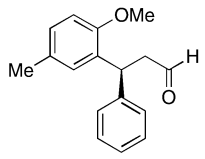
$[\alpha]_D^{20} = -54.3$ (*c* 1.4, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*S*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{17}H_{18}O_2$

(*S*)-3-(2-Methoxy-5-methylphenyl)-3-phenylpropanal

Ee = 99%

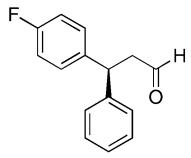
$[\alpha]_D^{20} = -16.2$ (*c* 1.4, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*S*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{15}H_{13}FO$

(*S*)-3-(4-Fluorophenyl)-3-phenylpropanal

Ee = 98%

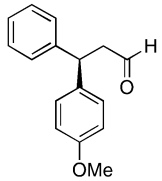
$[\alpha]_D^{20} = +3.3$ (*c* 1.8, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*S*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{16}H_{16}O_2$

(*R*)-3-(4-Methoxyphenyl)-3-phenylpropanal

Ee = 99%

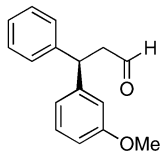
$[\alpha]_D^{20} = -4.2$ (*c* 0.80, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{16}H_{16}O_2$

(*R*)-3-(3-Methoxyphenyl)-3-phenylpropanal

Ee = 99%

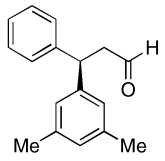
$[\alpha]_D^{20} = -0.5$ (*c* 1.9, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{17}H_{18}O$

(*R*)-3-(3,5-Dimethylphenyl)-3-phenylpropanal

Ee = 99%

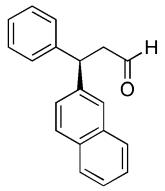
$[\alpha]_D^{20} = -6.2$ (*c* 1.6, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{19}H_{16}O$

(*R*)-3-(2-Naphthyl)-3-phenylpropanal

Ee = 99%

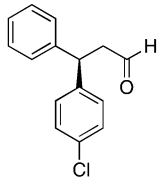
$[\alpha]_D^{20} = -36.9$ (*c* 2.0, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{15}H_{13}ClO$

(*R*)-3-(4-Chlorophenyl)-3-phenylpropanal

Ee = 99%

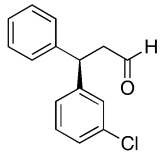
$[\alpha]_D^{20} = -5.7$ (*c* 2.0, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Norihito Tokunaga and Tamio Hayashi*

Tetrahedron: Asymmetry *17 (2006) 607*



$C_{15}H_{13}ClO$

(*R*)-3-(3-Chlorophenyl)-3-phenylpropanal

Ee = 98%

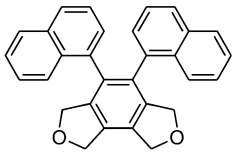
$[\alpha]_D^{20} = -4.9$ (*c* 1.6, $CHCl_3$)

Source of chirality: asymmetric arylation

Absolute configuration: (*R*)

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



$C_{30}H_{22}O_2$

(−)-4,5-Di(napthalen-1-yl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Ee = 90%

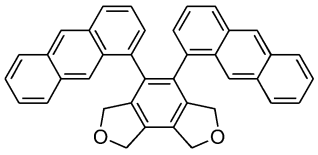
$[\alpha]_D^{29} = -347.9$ (*c* 1.7, $CHCl_3$)

Source of chirality: (*S*,*S*)-MeDUPHOS

Absolute configuration: not determined

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



$C_{38}H_{26}O_2$

(−)-4,5-Di(anthracen-1-yl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Ee = 87%

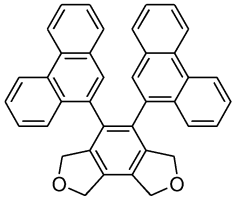
$[\alpha]_D^{23} = -604.3$ (*c* 0.19, $CHCl_3$)

Source of chirality: (*S*,*S*)-MeDUPHOS

Absolute configuration: not determined

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



$C_{38}H_{26}O_2$

(−)-4,5-Di(phenanthren-9-yl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Ee = 87%

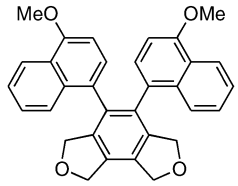
$[\alpha]_D^{23} = -120.6$ (*c* 0.79, $CHCl_3$)

Source of chirality: (*S*,*S*)-MeDUPHOS

Absolute configuration: not determined

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



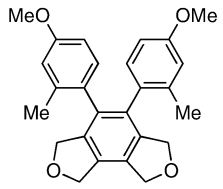
Ee = 90%
$[\alpha]_D^{24} = -282.8$ (*c* 1.8, $CHCl_3$)
Source of chirality: (*S*,*S*)-MeDUPHOS
Absolute configuration: not determined

$C_{32}H_{26}O_4$

(−)-4,5-Bis(4-methoxynaphthalen-1-yl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



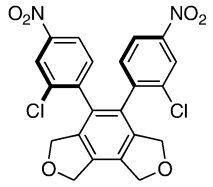
Ee = 95%
$[\alpha]_D^{21} = -31.6$ (*c* 0.61, $CHCl_3$)
Source of chirality: (*S*,*S*)-MeDUPHOS
Absolute configuration: not determined

$C_{26}H_{26}O_4$

(−)-4,5-Bis(4-methoxy-2-methylphenyl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



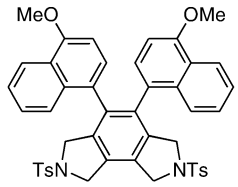
Ee = 90%
$[\alpha]_D^{21} = -116.9$ (*c* 1.8, $CHCl_3$)
Source of chirality: (*S*,*S*)-MeDUPHOS
Absolute configuration: (*S*,*S*)

$C_{22}H_{14}Cl_2N_2O_6$

(−)-4,5-Bis(2-chloro-4-nitrophenyl)-1,3,6,8-tetrahydro-2,7-dioxa*as*-indacene

Takanori Shibata,* Kyoji Tsuchikama and Maiko Otsuka

Tetrahedron: Asymmetry *17 (2006) 614*



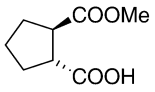
Ee = ca. 95%
$[\alpha]_D^{21} = -258.8$ (*c* 0.54, $CHCl_3$)
Source of chirality: (*S*,*S*)-MeDUPHOS
Absolute configuration: not determined

$C_{46}H_{40}N_2O_6S_2$

(−)-4,5-Bis(4-methoxynaphthalen-1-yl)-2,7-bis(*p*-toluenesulfonyl)-1,3,6,8-tetrahydro-2,7-diaza*as*-indacene

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_8H_{12}O_4$

(1*R*,2*R*)-2-Methoxycarbonylcyclopentane-1-carboxylic acid

Ee = 96%

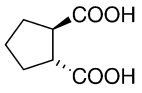
$[\alpha]_D^{25} = -83.6$ (*c* 3.60, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_7H_{10}O_4$

(1*R*,2*R*)-2-Cyclopentane-1,2-dicarboxylic acid

Ee = 96%

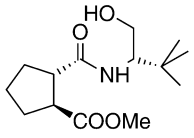
$[\alpha]_D^{25} = -75.7$ (*c* 0.65, acetone)

Source of chirality: asymmetric synthesis

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

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_{14}H_{25}NO_4$

(1*S*,2*S*)-2-[2′-Hydroxy-1′-(*S*)-*tert*-butylethylcarbamoyl]-cyclopentane-1-carboxylic acid methyl ester

De >99% (NMR), Ee >99%

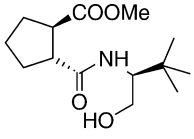
$[\alpha]_D^{25} = +36.1$ (*c* 1.00, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_{14}H_{25}NO_4$

(1*R*,2*R*)2-[2′-Hydroxy-1′-(*S*)-*tert*-butylethylcarbamoyl]-cyclopentane-1-carboxylic acid methyl ester

De >99% (NMR), Ee >99%

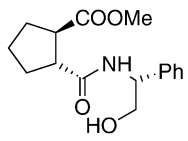
$[\alpha]_D^{25} = -68.2$ (*c* 1.00, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -84.0$ (c 1.10, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*R*)

$C_{16}H_{21}NO_4$

(1*R*,2*R*)-2-[2′-Hydroxy-1′-(*R*)-phenylethylcarbamoyl]-cyclopentane-1-carboxylic acid methyl ester

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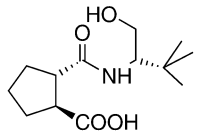
Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +46.5$ (c 1.03, acetone)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,1′*S*)

$C_{13}H_{23}NO_4$

(1*S*,2*S*)-2-[2′-Hydroxy-1′-(*S*)-*tert*-butylethylcarbamoyl]-cyclopentane-1-carboxylic acid

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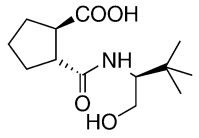
Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -55.9$ (c 0.56, acetone)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*S*)

$C_{13}H_{23}NO_4$

(1*R*,2*R*)-2-[2′-Hydroxy-1′-(*S*)-*tert*-butylethylcarbamoyl]-cyclopentane-1-carboxylic acid

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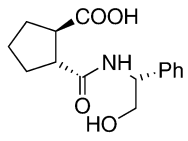
Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



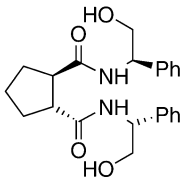
De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -96.9$ (c 1.00, acetone)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*R*)

$C_{15}H_{19}NO_4$

(1*R*,2*R*)-2-[2′-Hydroxy-1′-(*R*)-phenylethylcarbamoyl]-cyclopentane-1-carboxylic acid

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



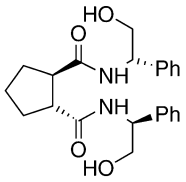
$C_{23}H_{28}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -162.5$ (c 1.00, DMSO)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*R*)

(1*R*,2*R*)-Cyclopentane-1,2-dicarboxylic acid bis-[(2′-hydroxy-1′-(*R*)-phenylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



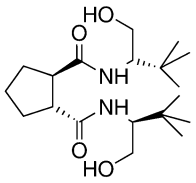
$C_{23}H_{28}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +31.5$ (c 1.10, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*S*)

(1*R*,2*R*)-Cyclopentane-1,2-dicarboxylic acid bis-[(2′-hydroxy-1′-(*S*)-phenylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



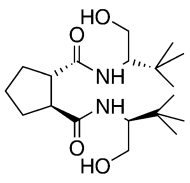
$C_{19}H_{36}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -42.7$ (c 1.10, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*S*)

(1*R*,2*R*)-Cyclopentane-1,2-dicarboxylic acid bis-[(2′-hydroxy-1′-(*S*)-*tert*-butylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



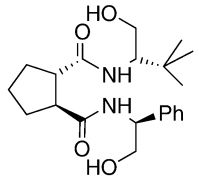
$C_{19}H_{36}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +76.6$ (c 0.50, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,1′*S*)

(1*S*,2*S*)-Cyclopentane-1,2-dicarboxylic acid bis-[(2′-hydroxy-1′-(*S*)-*tert*-butylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



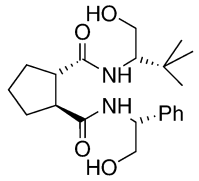
$C_{21}H_{32}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +117.2$ (c 1.00, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,1′*S*,1′*S*)

(1*S*,2*S*-Cyclopentane-1,2-dicarboxylic acid 1-[(2′-hydroxy-1′-(*S*)-*tert*-butylethyl)-amide]-2-[2″-hydroxy-1″-(*S*)-phenylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



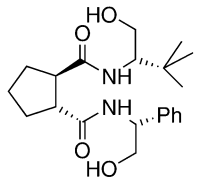
$C_{21}H_{32}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +4.2$ (c 1.15, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,1′*S*,1″*R*)

(1*S*,2*S*-Cyclopentane-1,2-dicarboxylic acid 1-[(2′-hydroxy-1′)-(*S*)-*tert*-butylethyl)-amide]-2-[(2″-hydroxy-1″-(*R*)-phenylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_{21}H_{32}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -135.5$ (c 0.40, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1′*S*,1″*R*)

(1*R*,2*R*)-Cyclopentane-1,2-dicarboxylic acid 1-[(2′-hydroxy-1′-(*S*)-*tert*-butylethyl)-amide]-2-[2″-hydroxy-1″-(*R*)-phenylethyl)-amide]

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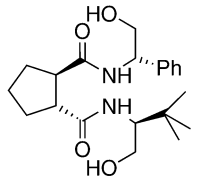
Tetrahedron: Asymmetry *17 (2006) 620*



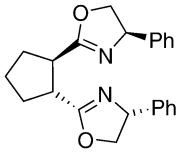
$C_{21}H_{32}N_2O_4$

De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +6.0$ (c 1.00, MeOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,1″*S*,1″*S*)

(1*R*,2*R*)-Cyclopentane-1,2-dicarboxylic acid 1-[(2′-hydroxy-1′-(*S*)-*tert*-butylethyl)-amide]-2-[(2″-hydroxy-1″-(*S*)-phenylethyl)-amide]

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



$C_{23}H_{24}N_2O_2$

(1*R*,2*R*)-Bis-[4′-(*R*)-phenyloxazolin-2′-yl]-cyclopentane

De >99% (NMR), Ee >99%

$[\alpha]_D^{25} = -20.8$ (*c* 0.65, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*R*,2*R*,4′*R*)

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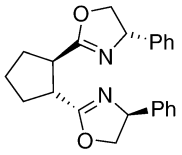
Tetrahedron: Asymmetry *17 (2006) 620*



$C_{23}H_{24}N_2O_2$

(1*R*,2*R*)-Bis-[4′-(*R*)-phenyloxazolin-2′-yl]-cyclopentane

De >99% (NMR), Ee >99%

$[\alpha]_D^{25} = -189.6$ (*c* 3.00, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*R*,2*R*,4′*R*)

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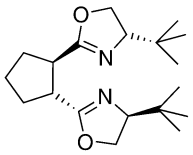
Tetrahedron: Asymmetry *17 (2006) 620*



$C_{19}H_{32}N_2O_2$

(1*R*,2*R*)-Bis-[4′-(*S*)-*tert*-butyloxazolin-2′-yl]-cyclopentane

De >99% (NMR), Ee >99%

$[\alpha]_D^{25} = -186.9$ (*c* 1.08, $CHCl_3$)

Source of chirality: asymmetric synthesis

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

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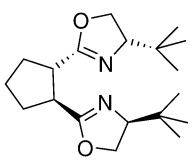
Tetrahedron: Asymmetry *17 (2006) 620*



$C_{19}H_{32}N_2O_2$

(1*S*,2*S*)-Bis-[4′-(*S*)-*tert*-butyloxazolin-2′-yl]-cyclopentane

De >99% (NMR), Ee >99%

$[\alpha]_D^{25} = +2.5$ (*c* 0.69, $CHCl_3$)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*S*,2*S*,4′*S*)

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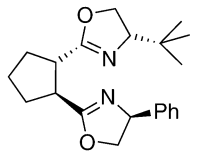
Tetrahedron: Asymmetry *17 (2006) 620*



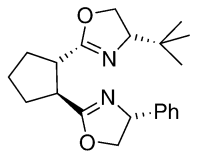
De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +9.6$ (c 1.56, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,4′*S*,4″*S*)

$C_{21}H_{28}N_2O_2$

(1*S*,2*S*)-[4′-(*S*)-*tert*-Butyloxazolin-2′-yl]-[4″-(*S*)-phenyloxazolin-2″-yl]-cyclopentane

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



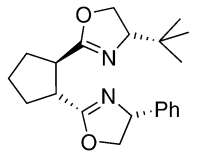
De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = +110.2$ (c 1.00, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,4′*S*,4″*R*)

$C_{21}H_{28}N_2O_2$

(1*S*,2*S*)-[4′-(*S*)-*tert*-Butyloxazolin-2′-yl]-[4″-(*R*)-phenyloxazolin-2″-yl]-cyclopentane

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



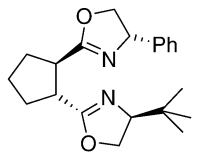
De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -96.9$ (c 2.00, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*R*,2*R*,4′*S*,4″*R*)

$C_{21}H_{28}N_2O_2$

(1*R*,2*R*)-[4′-(*S*)-*tert*-Butyloxazolin-2′-yl]-[4″-(*R*)-phenyloxazolin-2″-yl]-cyclopentane

Iuliana Atodiresei, Ingo Schiffers and Carsten Bolm*

Tetrahedron: Asymmetry *17 (2006) 620*



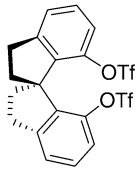
De >99% (NMR), Ee >99%
$[\alpha]_D^{25} = -197.3$ (c 1.02, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (1*S*,2*S*,4′*S*,4″*S*)

$C_{21}H_{28}N_2O_2$

(1*S*,2*S*)-[4′-(*S*)-*tert*-Butyloxazolin-2′-yl]-[4″-(*S*)-phenyloxazolin-2″-yl]-cyclopentane

Bin Liu, Shou-Fei Zhu, Li-Xin Wang and Qi-Lin Zhou*

Tetrahedron: Asymmetry *17 (2006) 634*



$C_{19}H_{14}F_6O_6S_2$

(*R*)-7,7′-Bis(trifluoromethanesulfonyloxy)-1,1′-spirobiindane

Ee = 100%

$[\alpha]_D^{20} = +143$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution

Absolute configuration: *R*

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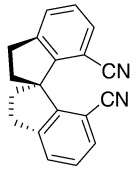
Tetrahedron: Asymmetry *17 (2006) 634*



$C_{19}H_{14}N_2$

(*R*)-1,1′-Spirobiindane-7,7′-dicarbonitrile

Ee = 100%

$[\alpha]_D^{20} = +144$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution

Absolute configuration: *R*

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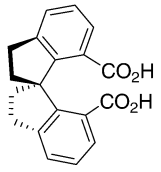
Tetrahedron: Asymmetry *17 (2006) 634*



$C_{19}H_{16}O_4$

(*R*)-1,1′-Spirobiindanyl-7,7′-dicarboxylic acid

Ee = 100%

$[\alpha]_D^{20} = +303$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution

Absolute configuration: *R*

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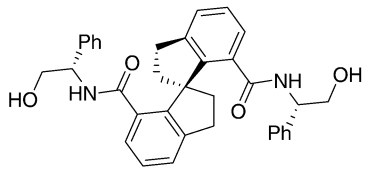
Tetrahedron: Asymmetry *17 (2006) 634*



$C_{35}H_{34}N_2O_4$

(R_a,*S*,*S*)-*N*,*N*′-Bis(2-hydroxy-1-phenylethyl)-1,1′-spirobiindane-7,7′-diamide

Ee = 100%

$[\alpha]_D^{20} = +102$ (*c* 0.5, $CHCl_3$)

Source of chirality: resolution and natural products

Absolute configuration: *R*,*S*,*S*

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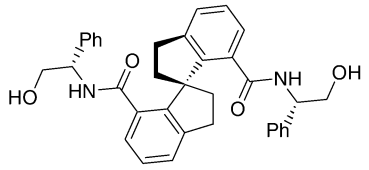
Tetrahedron: Asymmetry *17 (2006) 634*



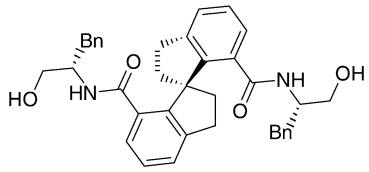
Ee = 100%
$[\alpha]_D^{20} = -103$ (*c* 0.5, $CHCl_3$)
Source of chirality: resolution and natural products
Absolute configuration: *R*,*S*,*S*

$C_{35}H_{34}N_2O_4$

(S_a,*S*,*S*)-*N*,*N*′-Bis(2-hydroxy-1-phenylethyl)-1,1′-spirobiindane-7,7′-diamide

Bin Liu, Shou-Fei Zhu, Li-Xin Wang and Qi-Lin Zhou*

Tetrahedron: Asymmetry *17 (2006) 634*



Ee = 100%
$[\alpha]_D^{20} = +90$ (*c* 0.5, $CHCl_3$)
Source of chirality: resolution and natural products
Absolute configuration: *R*,*S*,*S*

$C_{37}H_{38}N_2O_4$

(R_a,*S*,*S*)-*N*,*N*′-Bis(1-benzyl-2-hydroxyethyl)-1,1′-spirobiindane-7,7′-diamide

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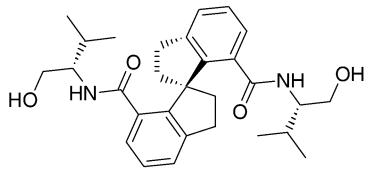
Tetrahedron: Asymmetry *17 (2006) 634*



Ee = 100%
$[\alpha]_D^{20} = +84$ (*c* 0.5, $CHCl_3$)
Source of chirality: resolution and natural products
Absolute configuration: *R*,*S*,*S*

$C_{29}H_{38}N_2O_4$

(R_a,*S*,*S*)-*N*,*N*′-Bis(1-hydroxymethyl-2-methylpropyl)-1,1′-spirobiindane-7,7′-diamide

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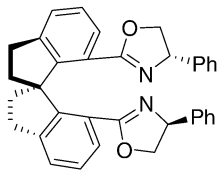
Tetrahedron: Asymmetry *17 (2006) 634*



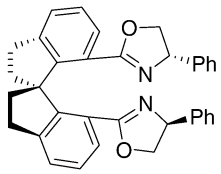
Ee = 100%
$[\alpha]_D^{20} = +93$ (*c* 0.5, CH_2Cl_2)
Source of chirality: resolution and natural products
Absolute configuration: *R*,*S*,*S*

$C_{35}H_{30}N_2O_2$

(R_a,*S*,*S*)-7,7′-Bis(4-phenyloxazolin-2-yl)-1,1′-spirobiindane

Bin Liu, Shou-Fei Zhu, Li-Xin Wang and Qi-Lin Zhou*

Tetrahedron: Asymmetry *17 (2006) 634*



$C_{35}H_{30}N_2O_2$

(S_a,*S*,*S*)-7,7′-Bis(4-phenyloxazolin-2-yl)-1,1′-spirobiindane

Ee = 100%

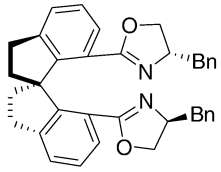
$[\alpha]_D^{20} = -322$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution and natural products

Absolute configuration: *S*,*S*,*S*

Bin Liu, Shou-Fei Zhu, Li-Xin Wang and Qi-Lin Zhou*

Tetrahedron: Asymmetry *17 (2006) 634*



$C_{37}H_{34}N_2O_2$

(R_a,*S*,*S*)-7,7′-Bis(4-benzyloxazolin-2-yl)-1,1′-spirobiindane

Ee = 100%

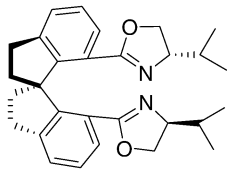
$[\alpha]_D^{20} = +111$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution and nature products

Absolute configuration: *R*,*S*,*S*

Bin Liu, Shou-Fei Zhu, Li-Xin Wang and Qi-Lin Zhou*

Tetrahedron: Asymmetry *17 (2006) 634*



$C_{29}H_{34}N_2O_2$

(R_a,*S*,*S*)-7,7′-Bis(4-isopropyloxazolin-2-yl)-1,1′-spirobiindane

Ee = 100%

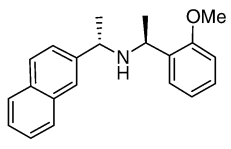
$[\alpha]_D^{20} = +155$ (*c* 0.5, CH_2Cl_2)

Source of chirality: resolution and nature products

Absolute configuration: *R*,*S*,*S*

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



$C_{21}H_{23}NO$

N,*N*-[(*S*)-1-(Naphthalen-2-yl)ethyl][(*S*)-1-(2-methoxyphenyl)ethyl]amine

Ee: 99% (by ^1H NMR of the corresponding diastereoisomer)

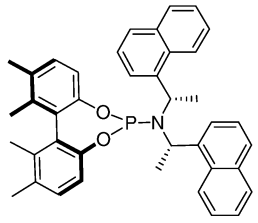
$[\alpha]_D^{22} = -187$ (*c* 1.66, $CHCl_3$)

Source of chirality: (*S*)-(−)-1-(2-naphthyl)ethylamine (99.0%)

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

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +168.2$ (c 1.32, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{40}H_{38}NO_2P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-bis[(*S*)-1-(naphthalen-1-yl)ethyl]phosphoramidite

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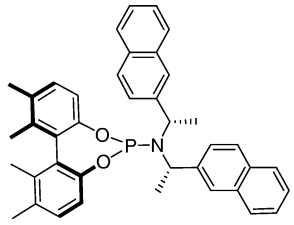
Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = -415.3$ (c 0.98, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{40}H_{38}NO_2P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-bis[(*S*)-1-(naphthalen-2-yl)ethyl]phosphoramidite

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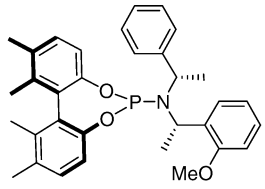
Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = -102.4$ (c 1.25, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{33}H_{37}NO_3P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-[(*S*)-1-phenylethyl][(*S*)-1-(2-methoxyphenyl)ethyl]phosphoramidite

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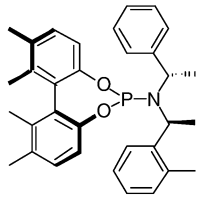
Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



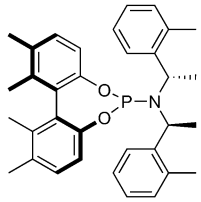
Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = -126$ (c 1.10, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{33}H_{36}NO_2P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-[(*S*)-1-phenylethyl][(*S*)-1-(2-methylphenyl)ethyl]phosphoramidite

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



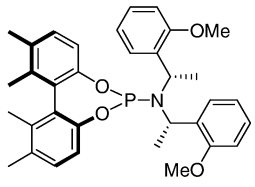
Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +72$ (*c* 1.05, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{34}H_{39}NO_2P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-bis[(*S*)-1-(2-methylphenyl)ethyl]phosphoramidite

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



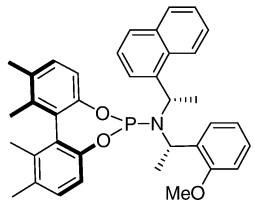
Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +34.4$ (*c* 0.64, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{34}H_{39}NO_3P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-bis[(*S*)-1-(2-methoxyphenyl)ethyl]phosphoramidite

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



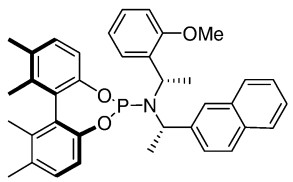
Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +96.7$ (*c* 1.23, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{37}H_{39}NO_3P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-[(*S*)-1-(naphthalen-1-yl)ethyl][(*S*)-1-(2-methoxyphenyl)ethyl]phosphoramidite

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*



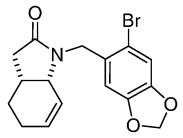
Ee: 99% (by ^{1}H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +246$ (*c* 0.80, $CHCl_3$)
Source of chirality: resolution
Absolute configuration: (*S*,*S*,*S*)

$C_{37}H_{39}NO_3P$

O,*O*′-(*S*)-(5,5′,6,6′-Tetramethyl-2,2′-diyl)-*N*,*N*-[(*S*)-1-(naphthalen-2-yl)ethyl][(*S*)-1-(2-methoxyphenyl)ethyl]phosphoramidite

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*

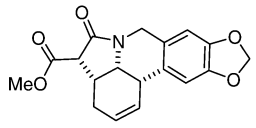


Ee: 99.4% (by HPLC Chiralpak ADRH CH_3CN/H_2O 60:40)
$[\alpha]_D^{22} = -40.0$ (*c* 0.5, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*,*S*)

$C_{17}H_{22}NO$
(3a*R*,7a*S*)-1-[6-Bromo-3,4-(methylenedioxy)benzyl]-3a,4,5,7a-tetrahydroindolin-2-one

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*

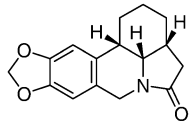


Ee: 99.4% (by ^1H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = -19.6$ (*c* 0.51, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*,*S*,*S*)

$C_{18}H_{18}NO_5$
(3a*R*,11b*S*,11c*S*)-4-Methoxycarbonyl-3,3a,4,7,11b,11c-hexahydro-9,10-(methylenedioxy)pyrrolo[3,2,1*de*]phenanthridin-5-one

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*

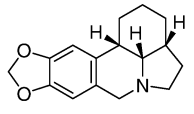


Ee: 99.4% (by ^1H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +83.8$ (*c* 0.74, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (*R*,*S*,*S*)

$C_{16}H_{16}NO_3P$
(3a*R*,12b*S*,12c*S*)-5-Oxo-γ-lycorane

Bruno D. Chapsal, Zihao Hua and Iwao Ojima*

Tetrahedron: Asymmetry *17 (2006) 642*

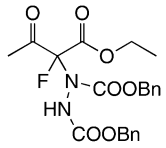


Ee: 99.4% (by ^1H NMR of the corresponding diastereoisomer)
$[\alpha]_D^{22} = +18.1$ (*c* 1.10, EtOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (*S*,*S*,*S*)

$C_{16}H_{20}NO_2$
(+)-γ-Lycorane

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



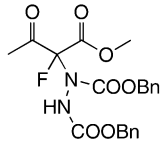
Ee = 67%
$[\alpha]_D = +10.9$ (*c* 2.0, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{22}H_{23}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(benzyloxycarbonyl)-2-hydrazino-3-oxo-butyric acid ethyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



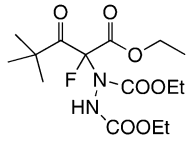
Ee = 90%
$[\alpha]_D = +13.1$ (*c* 2.6, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{21}H_{21}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(benzyloxycarbonyl)-2-hydrazino-3-oxo-butyric acid methyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



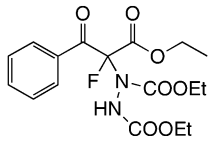
Ee = 28%
$[\alpha]_D = +28$ (*c* 0.94, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{15}H_{25}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(ethoxycarbonyl)-2-hydrazino-2,2-dimethyl-3-oxo-pentanoic acid ethyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



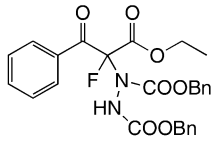
Ee = 87%
$[\alpha]_D = -2.6$ (*c* 1.06, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{17}H_{21}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(ethoxycarbonyl)-2-hydrazino-3-oxo-3-phenyl-butyric acid ethyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



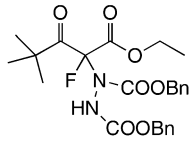
Ee = 60%
$[\alpha]_D = -4.8$ (*c* 0.84, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{27}H_{25}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(benzyloxycarbonyl)-2-hydrazino-3-oxo-3-phenyl-butyric acid ethyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



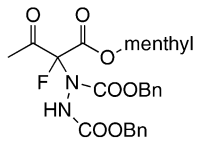
Ee = 88%
$[\alpha]_D = +44$ (*c* 1.0, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{25}H_{29}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(benzyloxycarbonyl)-2-hydrazino-2,2-dimethyl-3-oxo-pentanoic acid ethyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



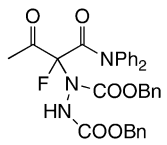
Ee = 87.5:12.5 dr
$[\alpha]_D = +44.6$ (*c* 1.2, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{30}H_{37}FN_2O_7$

2-Fluoro-*N*′,*N*-bis(benzyloxycarbonyl)-2-hydrazino-3-oxo-butyric acid menthyl ester

Dominique Pascal Huber, Kyrill Stanek and Antonio Togni*

Tetrahedron: Asymmetry *17 (2006) 658*



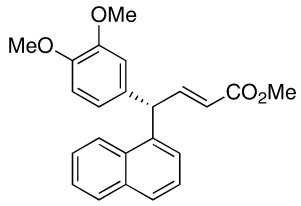
Ee = 69%
$[\alpha]_D = +23.8$ (*c* 1.0, CH_2Cl_2)
Source of chirality: asymmetric catalysis

$C_{32}H_{28}FN_3O_6$

2-Fluoro-*N*,*N*′-bis(benzyloxycarbonyl)-2-hydrazino-3-oxobutyric acid-diphenylamide

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



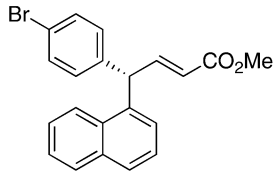
$C_{23}H_{22}O_4$

(*S*,*E*)-Methyl 4-(3,4-dimethoxyphenyl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.5% (by HPLC)
$[\alpha]_D^{25} = +33.6$ (*c* 1.80, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



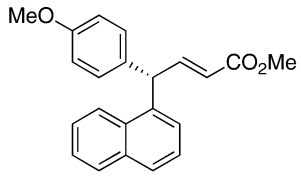
$C_{21}H_{17}BrO_2$

(*S*,*E*)-Methyl 4-(4-bromophenyl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.4% (by HPLC)
$[\alpha]_D^{25} = +24.5$ (*c* 0.80, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



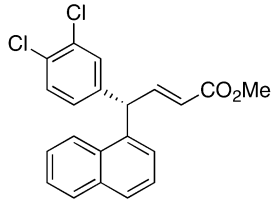
$C_{22}H_{20}O_3$

(*S*,*E*)-Methyl 4-(4-methoxyphenyl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.1% (by HPLC)
$[\alpha]_D^{25} = +35.1$ (*c* 1.51, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



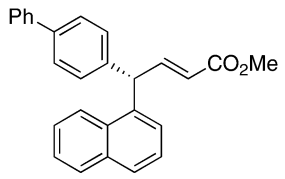
$C_{21}H_{16}Cl_2O_2$

(*S*,*E*)-Methyl 4-(3,4-dichlorophenyl)-4-(naphthalen-5-yl)but-2-enoate

Ee >98% (by HPLC)
$[\alpha]_D^{25} = +37.7$ (*c* 4.88, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



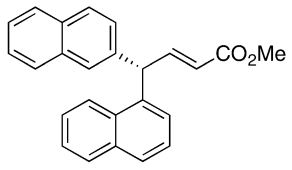
$C_{27}H_{22}O_2$

(*S*,*E*)-Methyl 4-(4-biphenyl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 98.5% (by HPLC)
$[\alpha]_D^{25} = +2.4$ (*c* 3.02, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



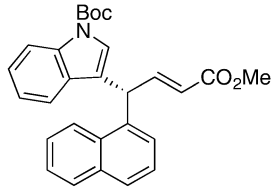
$C_{25}H_{20}O_2$

(*S*,*E*)-Methyl 4-(naphthalen-3-yl)-4-(naphthalen-5-yl)but-2-enoate

Ee >98% (by HPLC)
$[\alpha]_D^{25} = +6.9$ (*c* 0.64, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

Huw M. L. Davies,* Jaemoon Yang and James R. Manning

Tetrahedron: Asymmetry *17 (2006) 665*



$C_{28}H_{27}NO_4$

tert-Butyl 3-((*R*,*E*)-3-(methoxycarbonyl)-1-(naphthalen-5-yl)allyl)-1*H*-indole-1-carboxylate

Ee >98% (by HPLC)
$[\alpha]_D^{25} = +2.3$ (*c* 3.02, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *S*

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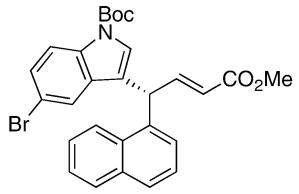
Tetrahedron: Asymmetry *17 (2006) 665*



$C_{28}H_{27}BrNO_4$

tert-Butyl 3-((*R*,*E*)-3-(methoxycarbonyl)-1-(naphthalen-5-yl)allyl)-5-bromo-1*H*-indole-1-carboxylate

Ee >98% (by HPLC)
$[\alpha]_D^{25} = +27.9$ (*c* 4.14, $CHCl_3$)
Source of chirality: chiral catalyst [Rh_2(*S*-DOSP)$_4$]
Absolute configuration: *R*

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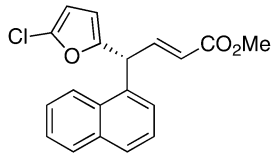
Tetrahedron: Asymmetry *17 (2006) 665*



$C_{19}H_{15}ClO_3$

(*R*,*E*)-Methyl 4-(5-chlorofuran-2-yl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.6% (by HPLC)
$[\alpha]_D^{25} = +26.9$ (*c* 0.87, $CHCl_3$)
Source of chirality: chiral catalyst $[Rh_2(S\text{-DOSP})_4]$
Absolute configuration: *R*

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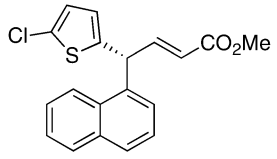
Tetrahedron: Asymmetry *17 (2006) 665*



$C_{19}H_{15}ClO_2S$

(*R*,*E*)-Methyl 4-(5-chlorothiophen-2-yl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.5% (by HPLC)
$[\alpha]_D^{25} = +69.8$ (*c* 1.25, $CHCl_3$)
Source of chirality: chiral catalyst $[Rh_2(S\text{-DOSP})_4]$
Absolute configuration: *R*

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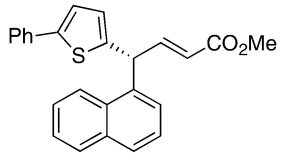
Tetrahedron: Asymmetry *17 (2006) 665*



$C_{25}H_{20}O_2S$

(*R*,*E*)-Methyl 4-(naphthalen-5-yl)-4-(5-phenylthiophen-2-yl)but-2-enoate

Ee = 99.3% (by HPLC)
$[\alpha]_D^{25} = +18.9$ (*c* 1.32, $CHCl_3$)
Source of chirality: chiral catalyst $[Rh_2(S\text{-DOSP})_4]$
Absolute configuration: *R*

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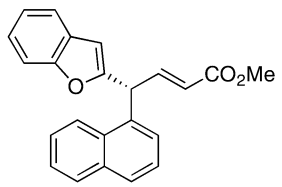
Tetrahedron: Asymmetry *17 (2006) 665*



$C_{23}H_{18}O_3$

(*R*,*E*)-Methyl 4-(benzofuran-2-yl)-4-(naphthalen-5-yl)but-2-enoate

Ee = 99.1% (by HPLC)
$[\alpha]_D^{25} = -33.5$ (*c* 0.936, $CHCl_3$)
Source of chirality: chiral catalyst $[Rh_2(S\text{-DOSP})_4]$
Absolute configuration: *R*

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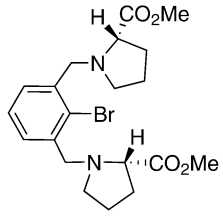
Tetrahedron: Asymmetry *17 (2006) 674*



$C_{20}H_{27}BrN_2O_4$

2,6-Bis[[(*S*)-2-(methoxycarbonyl)-1-pyrrolidinyl]methyl]bromobenzene

$[\alpha]_D^{21} = -78.8$ (*c* 1.0, $CHCl_3$)

Source of chirality: L-proline

Absolute configuration: S_C

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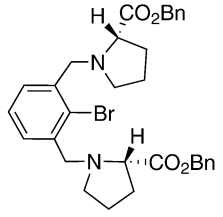
Tetrahedron: Asymmetry *17 (2006) 674*



$C_{35}H_{35}BrN_2O_4$

2,6-Bis[[(*S*)-2-(benzyloxycarbonyl)-1-pyrrolidinyl]methyl]bromobenzene

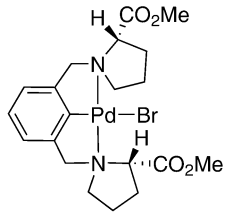
$[\alpha]_D^{21} = -52.9$ (*c* 1.0, $CHCl_3$)

Source of chirality: L-proline

Absolute configuration: S_C

Silvia Gosiewska, Marije Huis in't Veld, Jeroen J. M. de Pater, Pieter C. A. Bruijnincx, Martin Lutz, Anthony L. Spek, Gerard van Koten* and Robertus J. M. Klein Gebbink*

Tetrahedron: Asymmetry *17 (2006) 674*



$C_{20}H_{27}BrN_2O_4Pd$

2,6-Bis[[(*S*)-2-(methoxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium

$[\alpha]_D^{21} = -8.7$ (*c* 1.0, $CHCl_3$)

Source of chirality: L-proline and coordination to the metal

Absolute configuration: $S_NS_NS_CS_C$, $R_NR_NS_CS_C$ and $R_NS_NS_CS_C$

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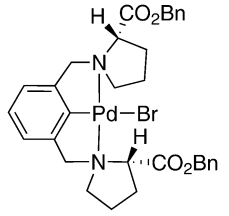
Tetrahedron: Asymmetry *17 (2006) 674*



$C_{35}H_{35}BrN_2O_4Pd$

2,6-Bis[[(*S*)-2-(benzyloxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium

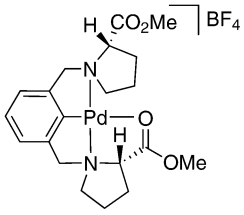
$[\alpha]_D^{21} = -88.6$ (*c* 1.0, $CHCl_3$)

Source of chirality: L-proline and coordination to the metal

Absolute configuration: $S_NS_NS_CS_C$, $R_NR_NS_CS_C$ and $R_NS_NS_CS_C$

Silvia Gosiewska, Marije Huis in't Veld, Jeroen J. M. de Pater, Pieter C. A. Bruijnincx, Martin Lutz, Anthony L. Spek, Gerard van Koten* and Robertus J. M. Klein Gebbink*

Tetrahedron: Asymmetry *17 (2006) 674*



$C_{20}H_{27}N_2O_4PdBF_4$

$[\alpha]_D^{21} = +42.7$ (c 0.5, acetone)

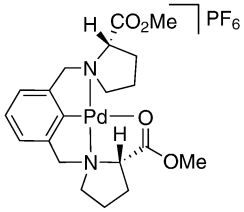
Source of chirality: L-proline and coordination to the metal

Absolute configuration: $R_N R_N S_C S_C$

2,6-Bis[[(*S*)-2-(methoxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium tetraflouroborate

Silvia Gosiewska, Marije Huis in't Veld, Jeroen J. M. de Pater, Pieter C. A. Bruijnincx, Martin Lutz, Anthony L. Spek, Gerard van Koten* and Robertus J. M. Klein Gebbink*

Tetrahedron: Asymmetry *17 (2006) 674*



$C_{20}H_{27}N_2O_4PdPF_6$

$[\alpha]_D^{21} = +48.9$ (c 0.5, acetone)

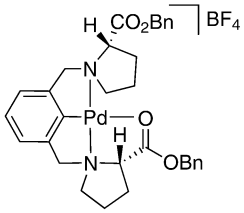
Source of chirality: L-proline and coordination to the metal

Absolute configuration: $R_N R_N S_C S_C$

2,6-Bis[[(*S*)-2-(methoxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium hexafluorophosphate

Silvia Gosiewska, Marije Huis in't Veld, Jeroen J. M. de Pater, Pieter C. A. Bruijnincx, Martin Lutz, Anthony L. Spek, Gerard van Koten* and Robertus J. M. Klein Gebbink*

Tetrahedron: Asymmetry *17 (2006) 674*



$C_{32}H_{35}N_2O_4PdBF_4$

$[\alpha]_D^{21} = +22$ (c 0.5, acetone)

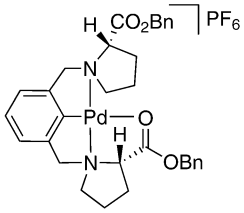
Source of chirality: L-proline and coordination to the metal

Absolute configuration: $R_N R_N S_C S_C$

2,6-Bis[[(*S*)-2-(benzyloxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium tetraflouroborate

Silvia Gosiewska, Marije Huis in't Veld, Jeroen J. M. de Pater, Pieter C. A. Bruijnincx, Martin Lutz, Anthony L. Spek, Gerard van Koten* and Robertus J. M. Klein Gebbink*

Tetrahedron: Asymmetry *17 (2006) 674*



$C_{32}H_{35}N_2O_4PdPF_6$

$[\alpha]_D^{21} = +56.4$ (c 0.62, acetone)

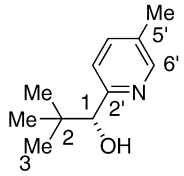
Source of chirality: L-proline and coordination to the metal

Absolute configuration: $R_N R_N S_C S_C$

2,6-Bis[[(*S*)-2-(benzyloxycarbonyl)-1-pyrrolidinyl]methyl]phenylpalladium hexafluorophosphate

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{11}H_{17}NO$ (177.25)

(*R*)-1-[2-(5-Methylpyridyl)]-2,2-dimethylpropanol

Er = 97.8/2.2

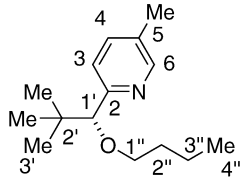
$[\alpha]_D^{24} = +28.4$ (*c* 0.89, EtOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*R*)

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{15}H_{25}NO$ (235.37)

(*R*)-5-Methyl-1-(1-butyloxy-2,2-dimethylpropyl)pyridine

Er = 97.8/2.2

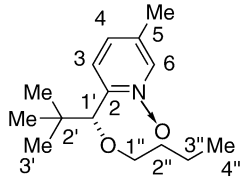
$[\alpha]_D^{24} = +37.8$ (*c* 0.67, EtOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*R*)

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{15}H_{25}NO$ (251.37)

(*R*)-5-Methyl-1-(1-butyloxy-2,2-dimethylpropyl)pyridine *N*-oxide

Er = 97.8/2.2

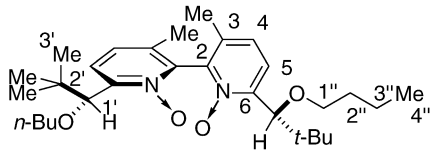
$[\alpha]_D^{24} = +87.5$ (*c* 0.535, EtOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (1*R*)

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{30}H_{48}N_2O_4$ (500.72)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide

Er >99.9/0.1

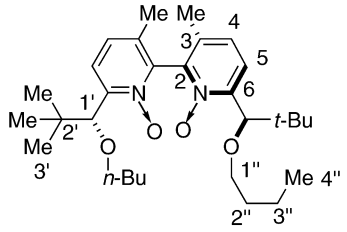
$[\alpha]_D^{24} = -39.7$ (*c* 1.03, EtOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (*P*)-(*R*,*R*)

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{30}H_{48}N_2O_4$ (500.72)

Er >99.9/0.1

$[\alpha]_D^{24} = +129.5$ (*c* 0.74, EtOH)

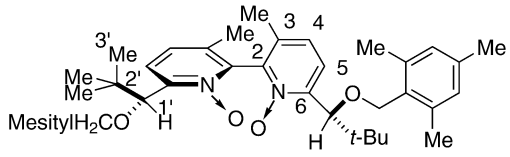
Source of chirality: asymmetric synthesis

Absolute configuration: (*M*)-(*R*,*R*)

(*M*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{42}H_{59}N_2O_4$ (653.43)

Er >99.9/0.1

$[\alpha]_D^{24} = -101.7$ (*c* 1.27, EtOH)

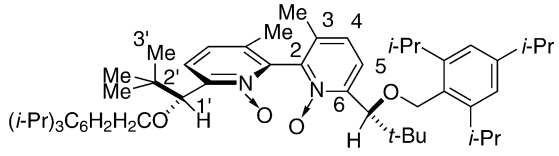
Source of chirality: asymmetric synthesis

Absolute configuration: (*P*)-(*R*,*R*)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-(2,4,6-trimethyl)benzyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{54}H_{80}N_2O_4$ (822.62)

Er >99.9/0.1

$[\alpha]_D^{24} = -42.3$ (*c* 0.50, EtOH)

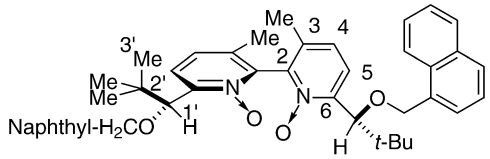
Source of chirality: asymmetric synthesis

Absolute configuration: (*P*)-(*R*,*R*)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-(2,4,6-triisopropyl)benzyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



$C_{44}H_{49}N_2O_4$ (669.37)

Er >99.9/0.1

$[\alpha]_D^{24} = -80.9$ (*c* 1.54, EtOH)

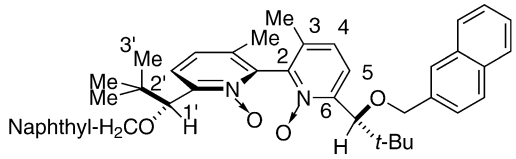
Source of chirality: asymmetric synthesis

Absolute configuration: (*P*)-(*R*,*R*)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-(1-naphthylmethoxy-2,2-dimethylpropyl))-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



Er >99.9/0.1
$[\alpha]_D^{24} = -61.4$ (*c* 1.80, EtOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (*P*)-(*R*,*R*)

$C_{44}H_{49}N_2O_4$ (669.37)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-(naphthylmethoxy-2,2-dimethylpropyl))-2,2′-bipyridine bis-*N*-oxide

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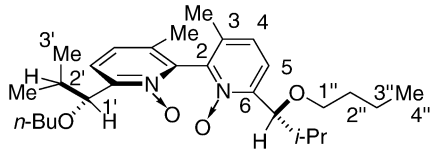
Tetrahedron: Asymmetry *17 (2006) 687*



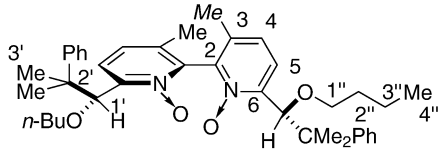
Er >99.9/0.1
$[\alpha]_D^{24} = +39.7$ (*c* 0.67, EtOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (*P*)-(*R*,*R*)

$C_{28}H_{44}N_2O_4$ (472.66)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2-methyl-2-phenylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



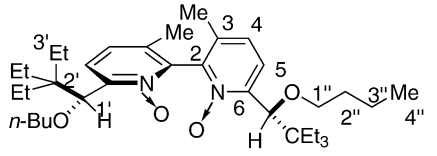
Er >99.9/0.1
$[\alpha]_D^{24} = +27.5$ (*c* 1.01, EtOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (*P*)-(*R*,*R*)

$C_{40}H_{52}N_2O_4$ (624.42)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2-methyl-2-phenylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



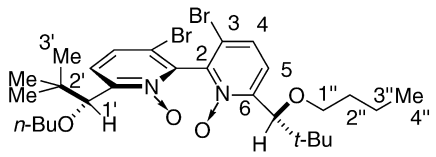
Er >99.9/0.1
$[\alpha]_D^{24} = -30.7$ (*c* 1.34, EtOH)
Source of chirality: asymmetric synthesis
Absolute configuration: (*P*)-(*R*,*R*)

$C_{30}H_{48}N_2O_4$ (584.88)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2,2-diethylbutyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



Er >99.9/0.1

$[\alpha]_D^{24} = -29.9$ (*c* 0.28, EtOH)

Source of chirality: asymmetric synthesis

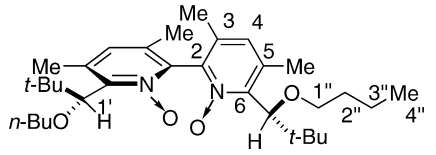
Absolute configuration: (*P*)-(*R*,*R*)

$C_{28}H_{42}Br_2N_2O_4$ (629.16)

(*P*)-(*R*,*R*)-3,3′-Dibromo-6,6′-bis-(1-butyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide

Scott E. Denmark* and Yu Fan

Tetrahedron: Asymmetry *17 (2006) 687*



Er >99.9/0.1

$[\alpha]_D^{24} = -39.4$ (*c* 0.89, EtOH)

Source of chirality: asymmetric synthesis

Absolute configuration: (*P*)-(*R*,*R*)

$C_{32}H_{57}N_2O_4$ (529.40)

(*P*)-(*R*,*R*)-3,3′-Dimethyl-6,6′-bis-(1-butyloxy-2,2-dimethylpropyl)-2,2′-bipyridine bis-*N*-oxide