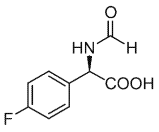
Jennifer A. Chaplin,* Michael D. Levin, Brian Morgan, Nancy Farid, Jen Li, Zuolin Zhu, Jeff McQuaid, Lawrence W. Nicholson, Cynthia A. Rand and Mark J. Burk

Tetrahedron: Asymmetry *15 (2004) 2793*



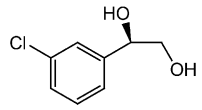
$C_9H_8FNO_3$

(*R*)-*N*-Formyl-4-fluorophenylglycine

$[\alpha]_D^{25} = -204.3$ (*c* 1.012, MeOH)
Ee = 99.8% (determined by chiral HPLC)
Absolute configuration: *R*

Maria I. Monterde, Murielle Lombard, Alain Archelas, Annette Cronin, Michael Arand and Roland Furstoss*

Tetrahedron: Asymmetry *15 (2004) 2801*



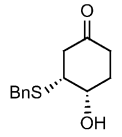
$C_8H_9O_2Cl$

(*R*)-1-(3-Chlorophenyl)-1,2-ethanediol

Ee = 97%
$[\alpha]_D^{22} = -23.4$ (*c* 1.55, EtOH)
Source of chirality: enzymatic resolution using *Solanum tuberosum* epoxide hydrolase
Absolute configuration: *R*

Ben S. Morgan, Dorothée Hoenner, Paul Evans and Stanley M. Roberts*

Tetrahedron: Asymmetry *15 (2004) 2807*



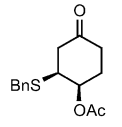
$C_{13}H_{16}O_2S$

(3*S*,4*S*)-3-Benzylsulfanyl-4-hydroxy-cyclohexanone

Ee >99% (HPLC)
$[\alpha]_D = +5.5$ (*c* 1.65, $CHCl_3$)
Source of chirality: enzymatic kinetic resolution
Absolute configuration: (3*S*,4*S*)

Ben S. Morgan, Dorothée Hoenner, Paul Evans and Stanley M. Roberts*

Tetrahedron: Asymmetry *15 (2004) 2807*



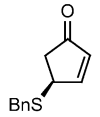
$C_{15}H_{18}O_3S$

(3*R*,4*R*)-3-Benzylsulfanyl-4-hydroxy-cyclohexanone

Ee >99% (HPLC)
$[\alpha]_D = -31.9$ (*c* 1.0, $CHCl_3$)
Source of chirality: enzymatic kinetic resolution
Absolute configuration: (3*R*,4*R*)

Ben S. Morgan, Dorothée Hoenner, Paul Evans and Stanley M. Roberts*

Tetrahedron: Asymmetry *15 (2004) 2807*



$C_{12}H_{12}OS$

(*S*)-4-Benzylsulfanyl-cyclopent-2-enone

Ee >99% (HPLC)

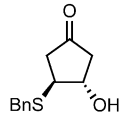
$[\alpha]_D = +178$ (*c* 1.0, $CHCl_3$)

Source of chirality: enzymatic kinetic resolution

Absolute configuration: (4*S*)

Ben S. Morgan, Dorothée Hoenner, Paul Evans and Stanley M. Roberts*

Tetrahedron: Asymmetry *15 (2004) 2807*



$C_{12}H_{14}O_2S$

(3*S*,4*S*)-3-Benzylsulfanyl-4-hydroxy-cyclopentanone

Ee >99% (HPLC)

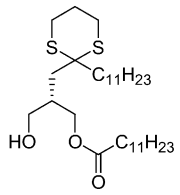
$[\alpha]_D = -60$ (*c* 1.0, $CHCl_3$)

Source of chirality: enzymatic kinetic resolution

Absolute configuration: (3*S*,4*S*)

Karsten Lange and Manfred P. Schneider*

Tetrahedron: Asymmetry *15 (2004) 2811*



$C_{31}H_{60}O_3S_2$

(2*S*)-3-Hydroxy-2-[(2-undecyl-1,3-dithian-2-yl)methyl]propyl laurate

Source of chirality: enzymatic transformation

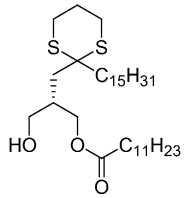
E.e.: 97%

$[\alpha]_D^{20} = +5.3$ (*c* 0.38, $CHCl_3$)

Absolute configuration: 2*S*

Karsten Lange and Manfred P. Schneider*

Tetrahedron: Asymmetry *15 (2004) 2811*



$C_{35}H_{68}O_2S_2$

(2*S*)-3-Hydroxy-2-[(2-pentadecyl-1,3-dithian-2-yl)methyl]propyl laurate

Source of chirality: enzymatic transformation

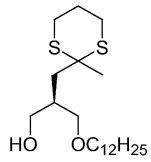
E.e.: 95%

$[\alpha]_D^{20} = -3.6$ (*c* 0.74, $CHCl_3$)

Absolute configuration: 2*S*

Karsten Lange and Manfred P. Schneider*

Tetrahedron: Asymmetry *15 (2004) 2811*

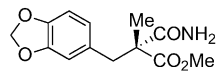


Source of chirality: enzymatic resolution
E.e.: 96%
$[\alpha]_D^{20} = +2.2$ (c 0.68, $CHCl_3$)
Absolute configuration: 2*R*

$C_{21}H_{42}O_2S_2$
(2*R*)-3-(Dodecyloxy)-2-[(2-methyl-1,3-dithian-2-yl)methyl]propan-1-ol

Masahiro Yokoyama, Mieko Kashiwagi, Masakazu Iwasaki, Ken-ichi Fuhshuku, Hiromichi Ohta and Takeshi Sugai*

Tetrahedron: Asymmetry *15 (2004) 2817*

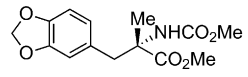


Ee = 98.2%
$[\alpha]_D^{22} = -7.3$ (c 0.75, EtOH)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (*R*)

$C_{13}H_{15}NO_5$
Methyl 2-aminocarbonyl-2-methyl-3-(3,4-methylenedioxy)phenylpropionate

Masahiro Yokoyama, Mieko Kashiwagi, Masakazu Iwasaki, Ken-ichi Fuhshuku, Hiromichi Ohta and Takeshi Sugai*

Tetrahedron: Asymmetry *15 (2004) 2817*

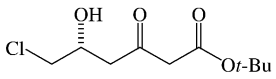


Ee = 98.4%
$[\alpha]_D^{24} = -27.9$ (c 0.57, EtOH)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (*S*)

$C_{14}H_{17}NO_6$
Methyl 2-methyl-3-(3,4-methylenedioxy)phenyl-2-methoxycarbonylaminopropionate

Michael Wolberg, Iwona A. Kaluzna, Michael Müller* and Jon D. Stewart*

Tetrahedron: Asymmetry *15 (2004) 2825*

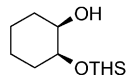


Ee = 94%
$[\alpha]_D = +22.8$ (c 1.6, $CHCl_3$)
Source of chirality: enzymatic reduction
Absolute configuration: (5*R*)

$C_{10}H_{17}ClO_4$
t-Butyl (*R*)-6-chloro-5-hydroxy-3-oxohexanoate

Kevin J. Finn, Petr Cankař, Timothy R. B. Jones and Tomas Hudlicky*

Tetrahedron: Asymmetry *15 (2004) 2833*



$C_{14}H_{30}O_2Si$

2-Dimethylthexylsiloxy-(1*R*,2*S*)-cyclohexanol

Ee = >98%

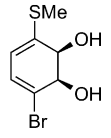
$[\alpha]_D^{23} = +10.6$ (*c* 1.0, $CHCl_3$)

Source of chirality: enzymatic oxidation

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

Kevin J. Finn, Petr Cankař, Timothy R. B. Jones and Tomas Hudlicky*

Tetrahedron: Asymmetry *15 (2004) 2833*



$C_7H_9BrO_2S$

1-Bromo-4-thiomethyl-(2*R*,3*S*)-dihydroxycyclohexa-4,6-diene

Ee = >98%

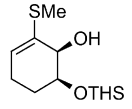
$[\alpha]_D^{19} = -10.0$ (*c* 1.08, $CHCl_3$)

Source of chirality: enzymatic oxidation

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

Kevin J. Finn, Petr Cankař, Timothy R. B. Jones and Tomas Hudlicky*

Tetrahedron: Asymmetry *15 (2004) 2833*



$C_{15}H_{30}O_2SSi$

2-Dimethylthexylsiloxy-(1*S*,2*S*)-6-thiomethyl-cyclohex-5-ene

Ee = >98%

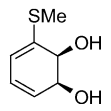
$[\alpha]_D^{22} = -41.5$ (*c* 0.84, $CHCl_3$)

Source of chirality: enzymatic oxidation

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

Kevin J. Finn, Petr Cankař, Timothy R. B. Jones and Tomas Hudlicky*

Tetrahedron: Asymmetry *15 (2004) 2833*



$C_7H_{10}O_2S$

1-Thiomethyl-(2*S*,3*S*)-dihydroxycyclohexa-4,6-diene

Ee = >98%

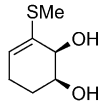
$[\alpha]_D^{24} = +81.3$ (*c* 0.27, MeOH)

Source of chirality: enzymatic oxidation

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

Kevin J. Finn, Petr Cankař, Timothy R. B. Jones and Tomas Hudlicky*

Tetrahedron: Asymmetry *15 (2004) 2833*



$C_7H_{12}O_2S$

1-Thiomethyl-(2*S*,3*S*)-dihydroxycyclohex-6-ene

Ee = >98%

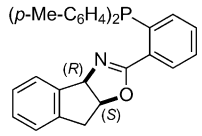
$[\alpha]_D^{24} = -104$ (*c* 0.75, $CHCl_3$)

Source of chirality: enzymatic oxidation

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

David B. Berkowitz,* Weijun Shen and Gourhari Maiti

Tetrahedron: Asymmetry *15 (2004) 2845*



$C_{30}H_{26}NOP$

(3a*R*,8a*S*)-2-(2′-Di-*p*-tolylphosphino)phenyl-3a,8a-dihydro-8*H*-indeno[1,2-d]oxazole

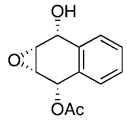
Source of chirality: (1*R*,2*S*)-1-amino-2-indanol

$[\alpha]_D^{25} = +145$ (*c* 1.22, $CHCl_3$)

Absolute configuration: 3a*R*,8a*S*

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



$C_{12}H_{12}O_4$

(1*R*,2*R*,3*S*,4*S*)-4-Acetoxy-2,3-epoxy-1,2,3,4-tetrahydronaphthalen-1-ol

Ee = >95%

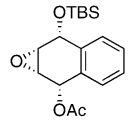
$[\alpha]_D^{24} = +4.0$ (*c* 1.0, CH_2Cl_2)

Source of chirality: enzymatic desymmetrization

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

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



$C_{18}H_{26}O_4Si$

(1*S*,2*S*,3*S*,4*R*)-1-Acetoxy-4-(*tert*-butyldimethylsilyoxy)-2,3-epoxy-1,2,3,4-tetrahydronaphthalene

Ee = >95%

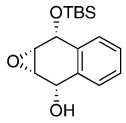
$[\alpha]_D^{24} = -22.0$ (*c* 1.5, CH_2Cl_2)

Source of chirality: enzymatic desymmetrization

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

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



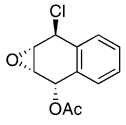
Ee = >95%
$[\alpha]_D^{24} = -18.0$ (*c* 1.0, CH_2Cl_2)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*S*,2*S*,3*S*,4*R*)

$C_{16}H_{24}O_3Si$

(1*S*,2*S*,3*S*,4*R*)-2,3-Epoxy-4-(*tert*-butyldimethylsilyoxy)-1,2,3,4-tetrahydronaphthalene-1-o1

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



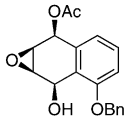
Ee = >95%
$[\alpha]_D^{24} = +109$ (*c* 1.27, CH_2Cl_2)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*S*,2*S*,3*S*,4*S*)

$C_{12}H_{11}ClO_3$

(1*S*,2*S*,3*S*,4*S*)-1-Acetoxy-4-chloro-2,3-epoxy-1,2,3,4-tetrahydronaphthalene

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



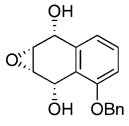
Ee = >95%
$[\alpha]_D^{24} = +58.4$ (*c* 0.46, CH_2Cl_2)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*R*,2*R*,3*S*,4*R*)

$C_{19}H_{18}O_5$

(1*S*,2*R*,3*S*,4*S*)-4-Acetoxy-8-benzyloxy-2,3-epoxy-1,2,3,4-tetrahydronaphthalene-1-o1

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



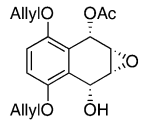
Ee = >95%
$[\alpha]_D^{24} = -26.5$ (*c* 2.5, CH_2Cl_2)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*S*,2*S*,3*R*,4*R*)

$C_{17}H_{16}O_4$

(1*S*,2*S*,3*R*,4*R*)-8-Benzyloxy-2,3-epoxy-1,2,3,4-tetrahydronaphthalene-1,4-diol

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



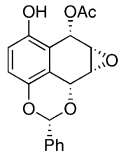
$C_{16}H_{20}O_5$

(1*R*,2*R*,3*S*,4*S*)-4-Acetoxy-5,8-diallyloxy-2,3-epoxy-1,2,3,4-tetrahydronaphthalen-1-ol

Ee = >98%
$[\alpha]_D^{21} = -28.2$ (*c* 1.0, $CHCl_3$)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*R*,2*R*,3*S*,4*S*)

Russell L. Betts, Sean T. Murphy and Carl R. Johnson*

Tetrahedron: Asymmetry *15 (2004) 2853*



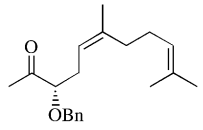
$C_{19}H_{16}O_6$

(1*S*,2*S*,3*R*,4*R*)-1-Acetoxy-4,5-benzylidenedioxy-2,3-epoxy-1,2,3,4-tetrahydronaphthalen-8-ol

Ee = >98%
$[\alpha]_D^{21} = -139$ (*c* 1.0, $CHCl_3$)
Source of chirality: enzymatic desymmetrization
Absolute configuration: (1*S*,2*S*,3*R*,4*R*)

Günther Scheid, Eelco Ruijter, Monika Konarzycka-Bessler, Uwe T. Bornscheuer* and Ludger A. Wessjohann*

Tetrahedron: Asymmetry *15 (2004) 2861*



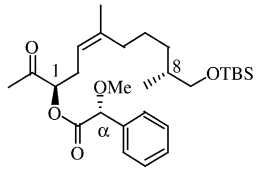
$C_{20}H_{28}O_2$

Z-(3*S*)-3-Benzyloxy-6,10-dimethylundeca-5,9-dien-2-one

Ee ≫95%
$[\alpha]_D^{25} = -18.0$ (*c* 1.0, $CHCl_3$)
Source of chirality: asymmetric synthesis
Absolute configuration: (3*S*)

Günther Scheid, Eelco Ruijter, Monika Konarzycka-Bessler, Uwe T. Bornscheuer* and Ludger A. Wessjohann*

Tetrahedron: Asymmetry *15 (2004) 2861*



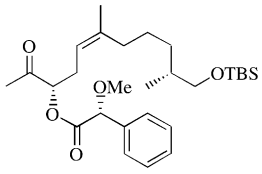
$C_{28}H_{46}O_5Si$

(*R*)-α-Methoxyphenylacetic acid *Z*-(1*R*,8*R*)-1-acetyl-9-(*tert*-butyldimethylsilyloxy)-4,8-dimethylnon-3-enyl ester

Ee >99%, de >95% (C1), de = 21% (C8)
$[\alpha]_D^{25} = -19$ (*c* 1, $CHCl_3$)
Source of chirality: asymmetric synthesis, resolution of diastereomers
Absolute configuration: (α*R*,1*R*,8*R*)

Günther Scheid, Eelco Ruijter, Monika Konarzycka-Bessler, Uwe T. Bornscheuer* and Ludger A. Wessjohann*

Tetrahedron: Asymmetry *15 (2004) 2861*



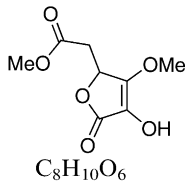
$C_{28}H_{46}O_5Si$

Ee >99%, de >98% (C1), de = 21% (C8)
$[\alpha]_D^{25} = -23.9$ (*c* 0.91, $CHCl_3$)
Source of chirality: asymmetric synthesis, resolution of diastereomers
Absolute configuration: (α*R*,1*S*,8*R*)

(*R*)-α-Methoxyphenylacetic acid *Z*-(1*S*,8*R*)-1-acetyl-9-(*tert*-butyldimethylsilyloxy)-4,8-dimethylnon-3-enyl ester

Anett Kirschner, Peter Langer* and Uwe T. Bornscheuer*

Tetrahedron: Asymmetry *15 (2004) 2871*



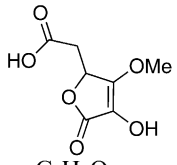
$C_8H_{10}O_6$

Ee = 95%
$[\alpha]_D^{21} = +40$ (*c* 1, MeOH)
Source of chirality: enzymatic resolution

(+)-(4-Hydroxy-3-methoxy-5-oxo-2,5-dihydrofuran-2-yl)-acetic acid methyl ester

Anett Kirschner, Peter Langer* and Uwe T. Bornscheuer*

Tetrahedron: Asymmetry *15 (2004) 2871*



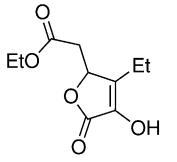
$C_7H_8O_6$

Ee = 92%
$[\alpha]_D^{21} = -28$ (*c* 1, MeOH)
Source of chirality: enzymatic resolution

(−)-(4-Hydroxy-3-methoxy-5-oxo-2,5-dihydrofuran-2-yl)-acetic acid

Anett Kirschner, Peter Langer* and Uwe T. Bornscheuer*

Tetrahedron: Asymmetry *15 (2004) 2871*



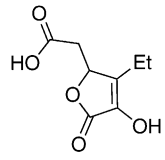
$C_{10}H_{14}O_5$

Ee = 97%
$[\alpha]_D^{21} = +21$ (*c* 1, EtOH)
Source of chirality: enzymatic resolution

(+)-(3-Ethyl-4-hydroxy-5-oxo-2,5-dihydrofuran-2-yl)-acetic acid ethyl ester

Anett Kirschner, Peter Langer* and Uwe T. Bornscheuer*

Tetrahedron: Asymmetry *15 (2004) 2871*



$C_8H_{10}O_5$

(−)-(3-Ethyl-4-hydroxy-5-oxo-2,5-dihydrofuran-2-yl)-acetic acid

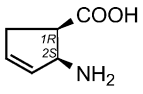
Ee = 97%

$[\alpha]_D^{21} = -26$ (*c* 1, MeOH)

Source of chirality: enzymatic resolution

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_6H_9NO_2$

(1*R*,2*S*)-2-Aminocyclopent-3-ene-carboxylic acid

Ee = 96% by GC on a Chirasil-L-Val column after double derivatization

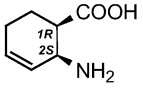
$[\alpha]_D^{25} = +96.7$ (*c* 0.3, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_7H_{11}NO_2$

(1*R*,2*S*)-2-Aminocyclohex-3-ene-carboxylic acid

Ee = 98% by GC on a Chirasil-L-Val column after double derivatization

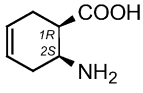
$[\alpha]_D^{25} = +121.1$ (*c* 0.5, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_7H_{11}NO_2$

(1*R*,2*S*)-2-Aminocyclohex-4-ene-carboxylic acid

Ee = 99% by GC on a Chirasil-L-Val column after double derivatization

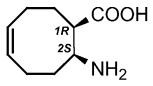
$[\alpha]_D^{25} = -38.8$ (*c* 0.5, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_9H_{15}NO_2$

(1*R*,2*S*)-2-Aminocyclooct-5-ene-carboxylic acid

Ee = 95% by GC on a CP-Chirasil-Dex CB column

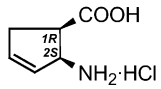
$[\alpha]_D^{25} = +23.9$ (*c* 0.3, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_6H_{10}ClNO_2$

(1*R*,2*S*)-2-Aminocyclopent-3-ene-carboxylic acid hydrochloride

Ee = 99% by GC on a Chirasil-L-Val column after double derivatization

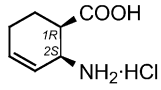
$[\alpha]_D^{25} = +81.6$ (*c* 0.3, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_7H_{12}ClNO_2$

(1*R*,2*S*)-2-Aminocyclohex-3-ene-carboxylic acid hydrochloride

Ee = 99% by GC on a Chirasil-L-Val column after double derivatization

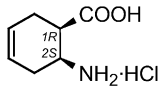
$[\alpha]_D^{25} = +121.7$ (*c* 0.4, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_7H_{12}ClNO_2$

(1*R*,2*S*)-2-Aminocyclohex-4-ene-carboxylic acid hydrochloride

Ee = 99% by GC on a Chirasil-L-Val column after double derivatization

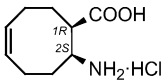
$[\alpha]_D^{25} = -26$ (*c* 0.25, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_9H_{16}ClNO_2$

(1*R*,2*S*)-2-Aminocyclooct-5-ene-carboxylic acid hydrochloride

Ee = 95% by GC on a CP-Chirasil-Dex CB column

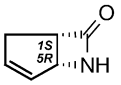
$[\alpha]_D^{25} = +14.2$ (*c* 0.35, H_2O)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



C_6H_7NO

(1*S*,5*R*)-6-Azabicyclo[3.2.0]hept-3-en-7-one

Ee = 99% by GC on a CP-Chirasil-Dex CB column

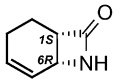
$[\alpha]_D^{25} = -34.8$ (*c* 0.45, $CHCl_3$)

Source of chirality: lipolase-catalysed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



C_7H_9NO

(1*S*,6*R*)-7-Azabicyclo[4.2.0]oct-4-en-8-one

Ee = 99% by GC on a CP-Chirasil-Dex CB column

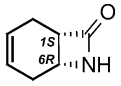
$[\alpha]_D^{25} = +161.1$ (*c* 0.45, $CHCl_3$)

Source of chirality: lipolase-catalysed enantioselective ring opening

Absolute configuration: (1*S*,6*R*)

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



C_7H_9NO

(1*S*,6*R*)-7-Azabicyclo[4.2.0]oct-3-en-8-one

Ee = 99% by GC on a CP-Chirasil-Dex CB column

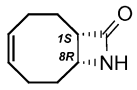
$[\alpha]_D^{25} = -29.1$ (*c* 0.45, $CHCl_3$)

Source of chirality: lipolase-catalysed enantioselective ring opening

Absolute configuration: (1*S*,6*R*)

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry *15 (2004) 2875*



$C_9H_{13}NO$

(1*S*,8*R*)-9-Azabicyclo[6.2.0]oct-4-en-10-one

Ee = 99% by GC on a CP-Chirasil-Dex CB column

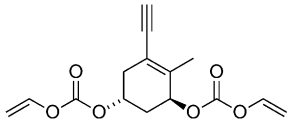
$[\alpha]_D^{25} = -24.9$ (*c* 0.4, $CHCl_3$)

Source of chirality: lipolase-catalysed enantioselective ring opening

Absolute configuration: (1*S*,8*R*)

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*



$C_{15}H_{16}O_6$

(3*S*,5*R*)-1-Ethynyl-2-methyl-3,5-bis[(vinyloxy)carbonyloxy]-1-cyclohexene

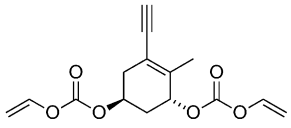
$[\alpha]_D^{20} = -112$ (*c* 0.65, $CHCl_3$)

Source of chirality: (*S*)-(+)-carvone

Absolute configuration: 3*S*,5*R*

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*



$C_{15}H_{16}O_6$

(3*R*,5*S*)-1-Ethynyl-2-methyl-3,5-bis[(vinyloxy)carbonyloxy]-1-cyclohexene

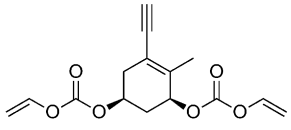
$[\alpha]_D^{20} = +108$ (*c* 0.85, $CHCl_3$)

Source of chirality: (*R*)-(−)-carvone

Absolute configuration: 3*R*,5*S*

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*



$C_{15}H_{16}O_6$

(3*S*,5*S*)-1-Ethynyl-2-methyl-3,5-bis[(vinyloxy)carbonyloxy]-1-cyclohexene

$[\alpha]_D^{20} = -41$ (*c* 0.57, $CHCl_3$)

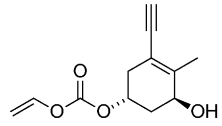
Source of chirality: (*R*)-(−)-carvone

Absolute configuration: 3*S*,5*S*

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*

$[\alpha]_D^{20} = -45$ (*c* 0.35, $CHCl_3$)
Source of chirality: (*S*)-(+)-carvone
Absolute configuration: 3*S*,5*R*



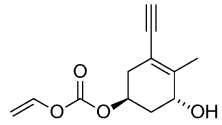
$C_{12}H_{14}O_4$

(3*S*,5*R*)-1-Ethynyl-3-hydroxy-2-methyl-5-[(vinyloxy)carbonyloxy]-1-cyclohexene

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*

$[\alpha]_D^{20} = +50$ (*c* 0.58, $CHCl_3$)
Source of chirality: (*R*)-(−)-carvone
Absolute configuration: 3*R*,5*S*



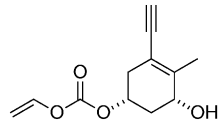
$C_{12}H_{14}O_4$

(3*R*,5*S*)-1-Ethynyl-3-hydroxy-2-methyl-5-[(vinyloxy)carbonyloxy]-1-cyclohexene

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*

$[\alpha]_D^{20} = +51$ (*c* 0.8, $CHCl_3$)
Source of chirality: (*S*)-(+)-carvone
Absolute configuration: 3*R*,5*R*



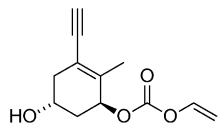
$C_{12}H_{14}O_4$

(3*R*,5*R*)-1-Ethynyl-3-hydroxy-2-methyl-5-[(vinyloxy)carbonyloxy]-1-cyclohexene

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*

$[\alpha]_D^{20} = -104$ (*c* 0.31, $CHCl_3$)
Source of chirality: (*S*)-(+)-carvone
Absolute configuration: 3*S*,5*R*

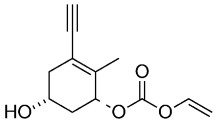


$C_{12}H_{14}O_4$

(3*S*,5*R*)-1-Ethynyl-5-hydroxy-2-methyl-3-[(vinyloxy)carbonyloxy]-1-cyclohexene

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*



$C_{12}H_{14}O_4$

(3*R*,5*R*)-1-Ethynyl-5-hydroxy-2-methyl-3-[(vinyloxy)carbonyloxy]-1-cyclohexene

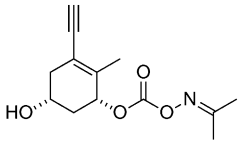
$[\alpha]_D^{20} = +42$ (*c* 0.63, $CHCl_3$)

Source of chirality: (*S*)-(+)-carvone

Absolute configuration: 3*R*,5*R*

Daniel Oves, Vicente Gotor-Fernández, Susana Fernández, Miguel Ferrero and Vicente Gotor*

Tetrahedron: Asymmetry *15 (2004) 2881*



$C_{13}H_{17}NO_4$

(3*R*,5*R*)-3-[(Acetonoxime)carbonyloxy]-1-ethynyl-5-hydroxy-2-methyl-1-cyclohexene

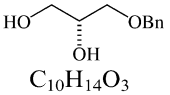
$[\alpha]_D^{20} = +57$ (*c* 0.5, $CHCl_3$)

Source of chirality: (*S*)-(+)-carvone

Absolute configuration: 3*R*,5*R*

Giuseppe Guanti,* Luca Banfi, Andrea Basso, Elisabetta Bevilacqua, Laura Bondanza and Renata Riva

Tetrahedron: Asymmetry *15 (2004) 2889*



$C_{10}H_{14}O_3$

3-*O*-Benzyl-*sn*-glycerol

Ee = 96.0% [by NMR or HPLC of Mosher's double ester]

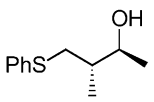
$[\alpha]_D^{25} = +5.5$ (*c* 20, $CHCl_3$)

Source of chirality: enzymatic double kinetic resolution/Mitsunobu inversion

Absolute configuration; *R* (assigned by chemical correlation)

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{11}H_{16}OS$

(2*S*,3*S*)-3-Methyl-4-(phenylsulfanyl)butan-2-ol

Ee >99%; dr >99:1

$[\alpha]_D^{25} = +55.0$ (*c* 2.0, $CHCl_3$)

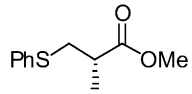
$[\alpha]_{578}^{25} = +57.3$ (*c* 2.0, $CHCl_3$)

Source of chirality: ex-chiral pool synthesis combined with enzymatic isomer separation

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

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{11}H_{14}O_2S$

(*S*)-2-Methyl-3-(phenylsulfanyl)propionic acid methyl ester

Ee >97%

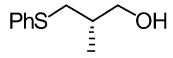
$[\alpha]_D^{25} = -63.6$ (*c* 1.6, $CHCl_3$)

Source of chirality: ex-chiral pool synthesis

Absolute configuration: (2*S*)

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{10}H_{14}OS$

(*S*)-2-Methyl-3-(phenylsulfanyl)propan-1-ol

Ee >97%

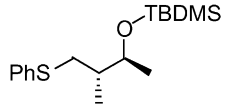
$[\alpha]_D^{25} = +15.3$ (*c* 2.0, $CHCl_3$)

Source of chirality: ex-chiral pool synthesis

Absolute configuration: (2*S*)

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{17}H_{30}OSSi$

(1*S*,2*S*)-*tert*-Butyl-(1,2-dimethyl-3-(phenylsulfanyl)propoxy)-dimethylsilane

Ee >99%; dr >99:1

$[\alpha]_{578}^{25} = +41.1$ (*c* 2.0, $CHCl_3$)

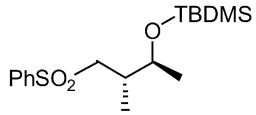
$[\alpha]_{546}^{25} = +46.8$ (*c* 2.0, $CHCl_3$)

Source of chirality: ex-chiral pool synthesis combined with enzymatic isomer separation

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

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{17}H_{30}O_3SSi$

(1*S*,2*S*)-*tert*-Butyl-(1,2-dimethyl-3-(phenylsulfonyl)propoxy)-dimethylsilane

Ee >99%; dr >99:1

$[\alpha]_{578}^{25} = +16.0$ (*c* 2.6, $CHCl_3$)

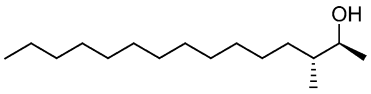
$[\alpha]_{546}^{25} = +18.1$ (*c* 2.6, $CHCl_3$)

Source of chirality: ex-chiral pool synthesis combined with enzymatic isomer separation

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

Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högberg*

Tetrahedron: Asymmetry *15 (2004) 2907*



$C_{16}H_{34}O$

(2*S*,3*R*)-3-Methylpentadecan-2-ol

Ee >99%; dr >99:1

$[\alpha]_{578}^{25} = +18.3$ (*c* 2.2, *n*-hexane)

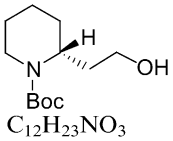
$[\alpha]_{546}^{25} = +20.8$ (*c* 2.2, *n*-hexane)

Source of chirality: ex-chiral pool synthesis combined with enzymatic isomer separation

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

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{12}H_{23}NO_3$

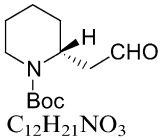
N-Boc-piperidine-2-ethanol

Ee 90%

$[\alpha]_{D}^{25} = +19.3$ (*c* 1, $CHCl_3$)

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{12}H_{21}NO_3$

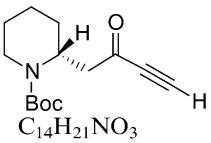
2-(2-Oxo-ethyl)-piperidine-1-carboxylic acid *tert*-butyl ester

Ee 90%

$[\alpha]_{D}^{25} = +48.0$ (*c* 1, $CHCl_3$)

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{14}H_{21}NO_3$

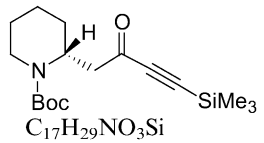
2-(2-Oxo-but-3-ynyl)-piperidine-1-carboxylic acid *tert*-butyl ester

Ee 90%

$[\alpha]_{D}^{25} = -30$ (*c* 1, $CHCl_3$)

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{17}H_{29}NO_3Si$

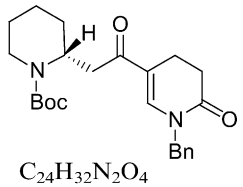
Ee 90%

$[\alpha]_D^{25} = -32.5$ (c 1, $CHCl_3$)

2-(2-Oxo-4-trimethylsilanyl-but-3-ynyl)-piperidine-1-carboxylic acid *tert*-butyl ester

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{24}H_{32}N_2O_4$

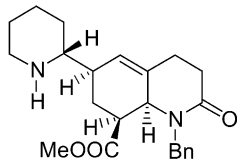
Ee 90%

$[\alpha]_D^{25} = -46$ (c 1, $CHCl_3$)

2-[2-Benzyl-6-oxo-1,4,5,6-tetrahydro-pyridin-3-yl)-2-oxo-ethyl]-piperidine-1-carboxylic acid *tert*-butyl ester

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{23}H_{30}N_2O_3$

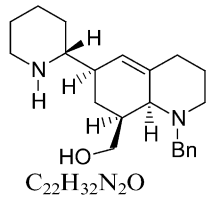
Ee 90%

$[\alpha]_D^{25} = +162$ (c 1, $CHCl_3$)

1-Benzyl-2-oxo-6-piperidin-2-yl-1,2,3,4,6,7,8,8a-octahydro-quinoline-8-carboxylic acid methyl ester

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{22}H_{32}N_2O$

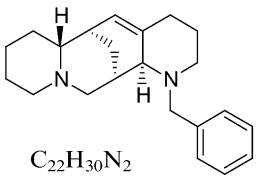
Ee 90%

$[\alpha]_D^{25} = +14$ (c 1, $CHCl_3$)

1-Benzyl-8-hydroxymethyl-6-piperidin-2-yl-1,2,3,4,6,7,8,8a-octahydro-1*H*-quinoline

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{22}H_{30}N_2$

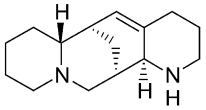
N-Benzyl-aloperine

Ee 90%

$[\alpha]_D^{25} = +56$ (*c* 0.7, EtOH)

Alessio Barilli, Francesca Belinghieri, Daniele Passarella,* Giordano Lesma, Sergio Riva,* Alessandra Silvani and Bruno Danieli

Tetrahedron: Asymmetry *15 (2004) 2921*



$C_{15}H_{24}N_2$

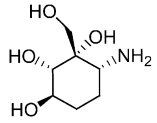
(+)-Aloperine

Ee 90%

$[\alpha]_D^{25} = +68$ (*c* 1, EtOH)

Lahssen El Blidi, Dominique Crestia, Estelle Gallienne, Colette Demuynck, Jean Bolte and Marielle Lemaire*

Tetrahedron: Asymmetry *15 (2004) 2951*



$C_7H_{15}NO_4$

6-Amino-1-hydroxymethylcyclohexane-1,2,3-triol

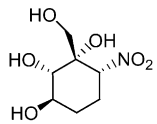
$[\alpha]_D^{25} = -5$ (*c* 2.5, MeOH)

Source of chirality: fructose-1,6-diphosphate aldolase from rabbit muscle

Absolute configuration: 1*S*,2*S*,3*R*,6*R*

Lahssen El Blidi, Dominique Crestia, Estelle Gallienne, Colette Demuynck, Jean Bolte and Marielle Lemaire*

Tetrahedron: Asymmetry *15 (2004) 2951*



$C_7H_{13}NO_6$

1-Hydroxymethyl-6-nitrocyclohexane-1,2,3-triol

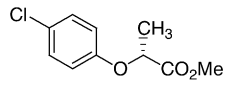
$[\alpha]_D^{25} = -3.9$ (*c* 1.4, MeOH)

Source of chirality: fructose-1,6-diphosphate aldolase from rabbit muscle

Absolute configuration: 1*S*,2*S*,3*R*,6*R*

Dai-ichiro Kato, Kenji Miyamoto and Hiromichi Ohta*

Tetrahedron: Asymmetry *15 (2004) 2965*



$C_{10}H_{11}ClO_3$

Methyl (*R*)-(+)-2-(4-chlorophenoxy)propanoate

Ee = 97%

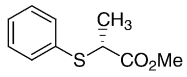
$[\alpha]_D^{20} = +44.7$ (*c* 0.94, EtOH)

Source of chirality: biotransformation

Absolute configuration: *R*

Dai-ichiro Kato, Kenji Miyamoto and Hiromichi Ohta*

Tetrahedron: Asymmetry *15 (2004) 2965*



$C_{10}H_{12}O_2S$

Methyl (*R*)-(+)-2-phenylthiopropanoate

Ee = 93%

$[\alpha]_D^{23} = +145.7$ (*c* 1.02, EtOH)

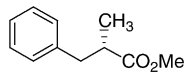
$[\alpha]_D^{22} = +141.2$ (*c* 0.68, acetone)

Source of chirality: biotransformation

Absolute configuration: *R*

Dai-ichiro Kato, Kenji Miyamoto and Hiromichi Ohta*

Tetrahedron: Asymmetry *15 (2004) 2965*



$C_{11}H_{14}O_2$

Methyl (*S*)-(+)-2-methyl-3-phenylpropanoate

Ee = 88%

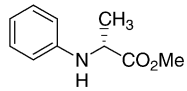
$[\alpha]_D^{25} = +39.3$ (*c* 0.95, MeOH)

Source of chirality: biotransformation

Absolute configuration: *S*

Dai-ichiro Kato, Kenji Miyamoto and Hiromichi Ohta*

Tetrahedron: Asymmetry *15 (2004) 2965*



$C_{10}H_{13}NO_2$

Methyl (*R*)-(+)-2-phenylaminopropanoate

Ee = >99%

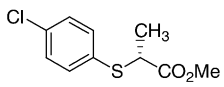
$[\alpha]_D^{22} = +84.6$ (*c* 0.53, MeOH)

Source of chirality: biotransformation

Absolute configuration: *R*

Dai-ichiro Kato, Kenji Miyamoto and Hiromichi Ohta*

Tetrahedron: Asymmetry *15 (2004) 2965*



$C_{10}H_{11}ClO_2S$

Methyl (*R*)-(+)-2-(4-chlorophenylthio)propanoate

Ee = 90%

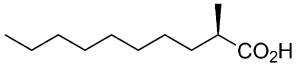
$[\alpha]_D^{21} = +140.2$ (*c* 1.00, MeOH)

Source of chirality: biotransformation

Absolute configuration: *R*

Lauren M. Hutchins, Luke Hunter, Noosha Ehya, Moreland D. Gibbs, Peter L. Bergquist and Craig A. Hutton*

Tetrahedron: Asymmetry *15 (2004) 2975*



$C_{11}H_{22}O_2$

(*R*)-2-Methyldecanoic acid

Ee = 99.6%

$[\alpha]_D = -15.4$ (*c* 0.84, MeOH)