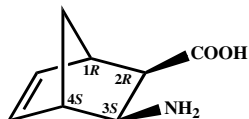


Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry 15 (2004) 573



(1*R*,2*R*,3*S*,4*S*)-3-Aminobicyclo[2.2.1]hept-5-ene-2-carboxylic acid

Ee = 98% by GC on CP-Chirasil-Dex CB column after double derivatization

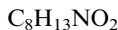
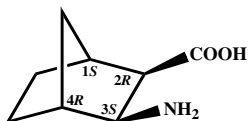
$[\alpha]_D^{25} = -12.2$ (c 0.4, H₂O)

Source of chirality: Lipolase-catalyzed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry 15 (2004) 573



(1*S*,2*R*,3*S*,4*R*)-3-Aminobicyclo[2.2.1]heptane-2-carboxylic acid

Ee = 99% by GC on CP-Chirasil-Dex CB column after double derivatization

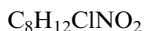
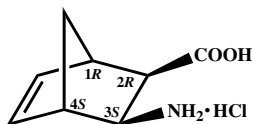
$[\alpha]_D^{25} = +9.1$ (c 0.5, H₂O)

Source of chirality: Lipolase-catalyzed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

Tetrahedron: Asymmetry 15 (2004) 573



(1*R*,2*R*,3*S*,4*S*)-3-Aminobicyclo[2.2.1]hept-5-ene-2-carboxylic acid hydrochloride

Ee = 99% by GC on CP-Chirasil-Dex CB column after double derivatization

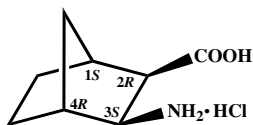
$[\alpha]_D^{25} = -13.2$ (c 0.5, MeOH); -10.8 (c 0.5, H₂O)

Source of chirality: Lipolase-catalyzed enantioselective ring opening

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

Enikő Forró and Ferenc Fülöp*

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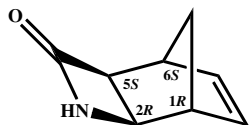
(1*S*,2*R*,3*S*,4*R*)-3-Aminobicyclo[2.2.1]heptane-2-carboxylic acid hydrochloride

Ee = 99% by GC on CP-Chirasil-Dex CB column after double derivatization

$[\alpha]_D^{25} = +3.8$ (c 0.4, MeOH)

Source of chirality: Lipolase-catalyzed enantioselective ring opening

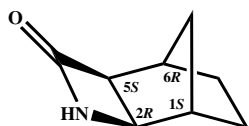
Absolute configuration: (1*S*,2*R*,3*S*,4*R*)

(1*R*,2*R*,5*S*,6*S*)-3-Azatricyclo[4.2.1.0^{2,5}]non-7-en-4-one

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

[α]_D²⁵ = +123.7 (*c* 0.5, CHCl₃)

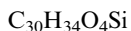
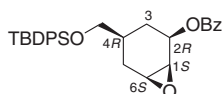
Source of chirality: Lipolase-catalyzed enantioselective ring opening

Absolute configuration: (1*R*,2*R*,5*S*,6*S*)(1*S*,2*R*,5*S*,6*R*)-3-Azatricyclo[4.2.1.0^{2,5}]nonan-4-one

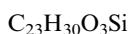
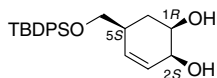
Ee = 99% by GC on CP-Chirasil-Dex CB column

[α]_D²⁵ = +64.1 (*c* 0.5, CHCl₃)

Source of chirality: Lipolase-catalyzed enantioselective ring opening

Absolute configuration: (1*S*,2*R*,5*S*,6*R*)(1*S*,2*R*,4*R*,6*S*)-2-*O*-Benzoyloxy-4-(*tert*-butyl-diphenyl-silanyloxymethyl)-7-oxa-bicyclo[4.1.0]heptane[α]_D²⁵ = +34.5 (*c* 1.21, CHCl₃)

Source of chirality: enzymatic resolution

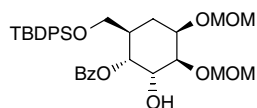
Absolute configuration: (1*S*,2*R*,4*R*,6*S*)(1*R*,2*S*,5*S*)-5-(*tert*-Butyl-diphenyl-silanyloxymethyl)-cyclohex-3-ene-1,2-diol[α]_D²⁵ = −26.4 (*c* 1.06, CHCl₃)

Source of chirality: enzymatic resolution

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

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{44}O_8Si$

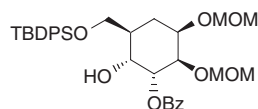
D-4-*O*-Benzoyl-6-*O*-(*tert*-butyldiphenyl)silyl-1,2-di-*O*-(methoxymethyl)-5a-carba- β -altropyranoside

$[\alpha]_D^{23} = +2.4$ (*c* 1.40, $CHCl_3$)

Source of chirality: enzymatic resolution

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{44}O_8Si$

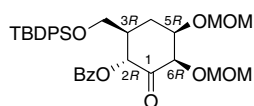
D-3-*O*-Benzoyl-6-*O*-(*tert*-butyldiphenyl)silyl-1,2-di-*O*-(methoxymethyl)-5a-carba- β -altropyranoside

$[\alpha]_D^{23} = -42.5$ (*c* 1.58, $CHCl_3$)

Source of chirality: enzymatic resolution

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{42}O_8Si$

(2*R*,3*R*,5*R*,6*R*)-2-Benzoyloxy-3-(*tert*-butyl-diphenyl-silanyloxymethyl)-5,6-bis-(methoxymethoxy)-cyclohexanone

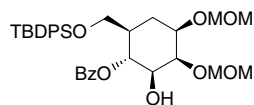
$[\alpha]_D^{23} = +27.9$ (*c* 1.50, $CHCl_3$)

Source of chirality: enzymatic resolution

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

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{44}O_8Si$

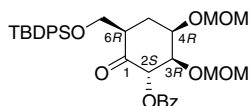
D-4-*O*-Benzoyl-6-*O*-(*tert*-butyldiphenyl)silyl-1,2-di-*O*-(methoxymethyl)-5a-carba- β -mannopyranoside

$[\alpha]_D^{23} = -23.1$ (*c* 1.77, $CHCl_3$)

Source of chirality: enzymatic resolution

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{42}O_8Si$

(2*S*,3*R*,4*R*,6*R*)-2-Benzoyloxy-6-(*tert*-butyl-diphenyl-silanyloxymethyl)-3,4-bis-(methoxymethoxy)-cyclohexanone

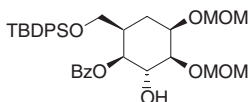
$[\alpha]_D^{23} = +4.5$ (*c* 1.42, $CHCl_3$)

Source of chirality: enzymatic resolution

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

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{44}O_8Si$

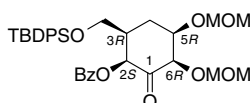
D-4-*O*-Benzoyl-6-*O*-(*tert*-butyldiphenyl)silyl-1,2-di-*O*-(methoxymethyl)-5a-carba-β-idopyranoside

$[\alpha]_D^{23} = -9.4$ (*c* 1.32, $CHCl_3$)

Source of chirality: enzymatic resolution

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{42}O_8Si$

(2*S*,3*R*,5*R*,6*R*)-2-Benzoyloxy-3-(*tert*-butyl-diphenyl-silanyloxymethyl)-5,6-bis-(methoxymethoxy)-cyclohexanone

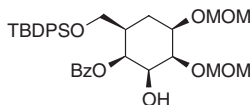
$[\alpha]_D^{23} = +15.1$ (*c* 1.50, $CHCl_3$)

Source of chirality: enzymatic resolution

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

Seok-Ho Yu and Sung-Kee Chung*

Tetrahedron: Asymmetry 15 (2004) 581



$C_{34}H_{44}O_8Si$

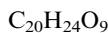
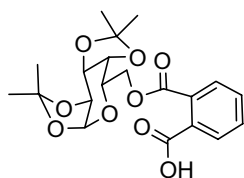
D-4-*O*-Benzoyl-6-*O*-(*tert*-butyldiphenyl)silyl-1,2-di-*O*-(methoxymethyl)-5a-carba-β-talopyranoside

$[\alpha]_D^{23} = -0.2$ (*c* 1.68, $CHCl_3$)

Source of chirality: enzymatic resolution

Hari Babu Mereyala,* Liyakat Fatima and Pallavi Pola

Tetrahedron: Asymmetry 15 (2004) 585



6-(1,2:3,4-Di-*O*-isopropylidene- α -D-galactopyranosyl)hydrogen phthalate

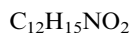
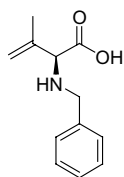
$[\alpha]_D^{25} = +8.4$ (*c* 2.0, $CHCl_3$)

Source of chirality: D-galactose

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

Giuliana Cardillo,* Serena Fabbri, Luca Gentilucci,
Rossana Perciaccante and Alessandra Tolomelli

Tetrahedron: Asymmetry 15 (2004) 593



2-Benzylamino-3-methyl-3-butenic acid

Ee = 82%

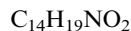
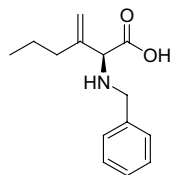
$[\alpha]_D^{20} = +44$ (*c* 1.4, H_2O)

Source of chirality: (*R*)-pantolactone

Absolute configuration: (2*S*)

Giuliana Cardillo,* Serena Fabbri, Luca Gentilucci,
Rossana Perciaccante and Alessandra Tolomelli

Tetrahedron: Asymmetry 15 (2004) 593



2-Benzylamino-3-propyl-3-butenic acid

Ee = 88%

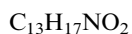
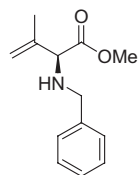
$[\alpha]_D^{20} = +13.1$ (*c* 0.7, H_2O)

Source of chirality: (*R*)-pantolactone

Absolute configuration: (2*S*)

Giuliana Cardillo,* Serena Fabbri, Luca Gentilucci,
Rossana Perciaccante and Alessandra Tolomelli

Tetrahedron: Asymmetry 15 (2004) 593



2-Benzylamino-3-methyl-3-butenic acid methyl ester

Ee = 82%

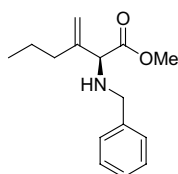
$[\alpha]_D^{20} = +41$ (*c* 1, $CHCl_3$)

Source of chirality: (*R*)-pantolactone

Absolute configuration: (2*S*)

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Rossana Perciaccante and Alessandra Tolomelli

Tetrahedron: Asymmetry 15 (2004) 593



$C_{15}H_{21}NO_2$

2-Benzylamino-3-propyl-3-butenic acid methyl ester

Ee = 88%

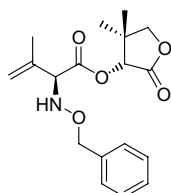
$[\alpha]_D^{20} = +44.6$ (c 1, $CHCl_3$)

Source of chirality: (R)-pantolactone

Absolute configuration: (2S)

Giuliana Cardillo,* Serena Fabbri, Luca Gentilucci,
Rossana Perciaccante and Alessandra Tolomelli

Tetrahedron: Asymmetry 15 (2004) 593



$C_{18}H_{23}NO_5$

2-(O-Benzyl)hydroxylamino-3-methyl-3-butenic acid 4',4'-dimethyl-2'-oxo-tetrahydro-furan-3'-yl ester

De >95%

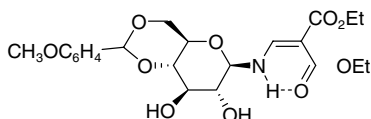
$[\alpha]_D^{20} = +30.9$ (c 1, $CHCl_3$)

Source of chirality: (R)-pantolactone

Absolute configuration: (2S,3'R)

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{22}H_{29}NO_{10}$

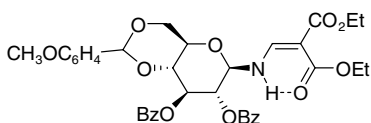
N-(2,2-Diethoxycarbonylvinyl)-4,6-O-(4-methoxybenzylidene)-β-D-glucopyranosylamine

$[\alpha]_D^{21} = +20$ (c 0.7, CH_2Cl_2)

Source of chirality: D-glucose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{36}H_{37}NO_{12}$

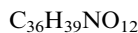
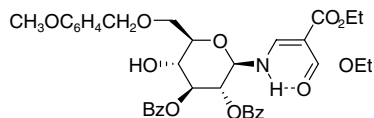
2,3-Di-O-benzoyl-N-(2,2-diethoxycarbonylvinyl)-4,6-O-(4-methoxybenzylidene)-β-D-glucopyranosylamine

$[\alpha]_D^{23} = -36$ (c 0.9, CH_2Cl_2)

Source of chirality: D-glucose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



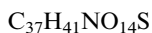
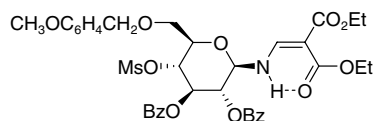
2,3-Di-O-benzoyl-N-(2,2-diethoxycarbonylvinyl)-6-O-(4-methoxybenzyl)-β-D-glucopyranosylamine

$[\alpha]_D^{22} = -10$ (c 0.5, CH₂Cl₂)

Source of chirality: D-glucose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

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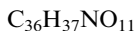
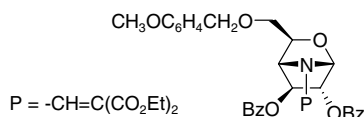
2,3-Di-O-benzoyl-N-(2,2-diethoxycarbonylvinyl)-4-O-mesyl-6-O-(4-methoxybenzyl)-β-D-glucopyranosylamine

$[\alpha]_D^{28} = 0$ (c 1.0, CH₂Cl₂)

Source of chirality: D-glucose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



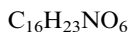
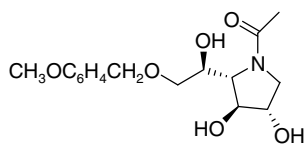
1,4-Anhydro-2,3-di-O-benzoyl-N-(2,2-diethoxycarbonylvinyl)-6-O-(4-methoxybenzyl)-β-D-glucopyranosylamine

$[\alpha]_D^{23} = +49$ (c 0.5, CH₂Cl₂)

Source of chirality: D-glucose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



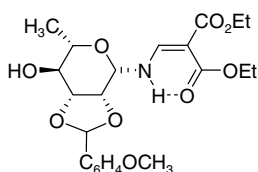
(2S,3S,4S,1'R)-1-Acetyl-3,4-dihydroxy-2-(1'-hydroxy-2'-p-methoxybenzyloxy)ethylpyrrolidine

$[\alpha]_D^{30} = +47$ (c 1.0, CH₂Cl₂)

Source of chirality: D-glucose and
diastereoselective synthesis

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Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{22}H_{29}NO_9$

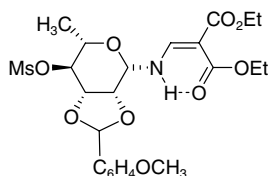
N-(2,2-Diethoxycarbonylvinyl)-2,3-*O*-(4-methoxybenzylidene)-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{25} = +27$ (*c* 0.9, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{23}H_{31}NO_{11}S$

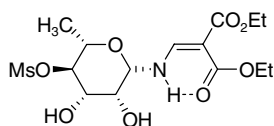
N-(2,2-Diethoxycarbonylvinyl)-4-*O*-mesyl-2,3-*O*-(4-methoxybenzylidene)-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{24} = +39$ (*c* 0.9, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{15}H_{26}NO_{10}S$

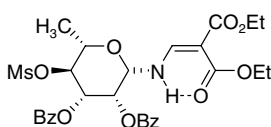
N-(2,2-Diethoxycarbonylvinyl)-4-*O*-mesyl-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{24} = -45$ (*c* 1.0, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

José Fuentes,* Francisco J. Sayago, José M. Illangua,
Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

Tetrahedron: Asymmetry 15 (2004) 603



$C_{29}H_{33}NO_{12}S$

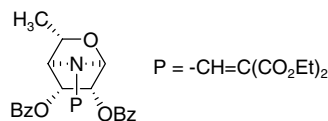
2,3-Di-*O*-benzoyl-*N*-(2,2-diethoxycarbonylvinyl)-4-*O*-mesyl-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{26} = +14$ (*c* 0.9, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

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$C_{28}H_{29}NO_9$

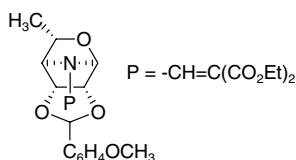
1,4-Anhydro-2,3-di-*O*-benzoyl-*N*-(2,2-diethoxy-carbonylviny)-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{24} = +22$ (*c* 0.9, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

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$C_{22}H_{27}NO_8$

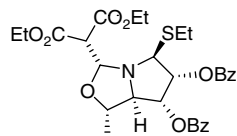
1,4-Anhydro-*N*-(2,2-diethoxycarbonylviny)-2,3-*O*-(4-methoxybenzylidene)-β-*L*-rhamnopyranosylamine

$[\alpha]_D^{28} = -53$ (*c* 1.0, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

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$C_{30}H_{35}NO_9S$

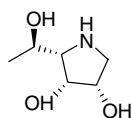
(1*S*,3*R*,5*S*,6*R*,7*R*,7*aR*)-6,7-Dibenzoyloxy-3-diethoxycarbonylmethyl-5-ethylthio-1-methyl-2-oxapyrrolizidine

$[\alpha]_D^{26} = +37$ (*c* 0.9, CH_2Cl_2)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

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Consolación Gasch, Manuel Angulo and M. Ángeles Pradera

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$C_6H_{13}NO_3$

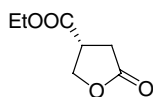
(2*R*,3*R*,4*S*,1'*S*)-3,4-Dihydroxy-2-(1'-hydroxy)ethylpyrrolidine

$[\alpha]_D^{23} = +27$ (*c* 1.5, EtOH)

Source of chirality: *L*-rhamnose and
diastereoselective synthesis

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Ennio Valentin*

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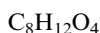
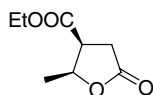


Ethyl (*R*)-(+)-5-oxo-tetrahydro-3-furancarboxylate

Ee = 93% (by chiral HRGC)
 $[\alpha]_D^{25} = +35.8$ (*c* 1.43, MeOH)
 $\Delta\epsilon_{205} = +0.23$ (MeCN)
 Source of chirality: enzymatic resolution
 Absolute configuration: *R*

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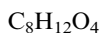
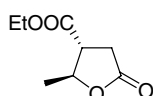


Ethyl (*2S,3S*)-(-)-2-methyl-5-oxo-tetrahydro-3-furancarboxylate

Ee >99% (by chiral HRGC)
 $[\alpha]_D^{25} = -89.1$ (*c* 0.54, MeCN)
 $\Delta\epsilon_{223} = +0.21$ (MeCN)
 Source of chirality: baker's yeast reduction
 Absolute configuration: *2S,3S*

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Ennio Valentin*

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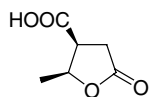


Ethyl (*2S,3R*)-(-)-2-methyl-5-oxo-tetrahydro-3-furancarboxylate

Ee >99% (by chiral HRGC)
 $[\alpha]_D^{25} = -30.0$ (*c* 0.64, MeCN)
 $\Delta\epsilon_{222} = -0.33$ (MeCN)
 Source of chirality: baker's yeast reduction
 Absolute configuration: *2S,3R*

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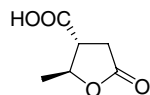


(*2S,3S*)-(-)-2-Methyl-5-oxo-tetrahydro-3-furancarboxylic acid

Ee >99% (by chiral HRGC)
 $[\alpha]_D^{25} = -92.0$ (*c* 0.68, MeCN)
 $\Delta\epsilon_{227} = +0.13$ (MeCN)
 Source of chirality: baker's yeast reduction
 Absolute configuration: *2S,3S*

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(2*S*,3*R*)-(-)-2-Methyl-5-oxo-tetrahydro-3-furancarboxylic acid

Ee >99% (by chiral HRGC)

$[\alpha]_D^{25} = -34.3$ (*c* 0.70, MeCN)

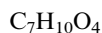
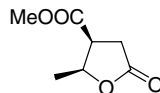
$\Delta\epsilon_{226} = -0.26$ (MeCN)

Source of chirality: baker's yeast reduction

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

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Methyl (2*S*,3*S*)-(-)-2-methyl-5-oxo-tetrahydro-3-furancarboxylate

Ee >99% (by chiral HRGC)

$[\alpha]_D^{25} = -77.1$ (*c* 0.14, MeCN)

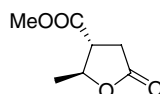
$\Delta\epsilon_{223} = +0.16$ (MeCN)

Source of chirality: baker's yeast reduction

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

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Methyl (2*S*,3*R*)-(-)-2-methyl-5-oxo-tetrahydro-3-furancarboxylate

Ee >99% (by chiral HRGC)

$[\alpha]_D^{25} = -34.4$ (*c* 0.16, MeCN)

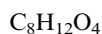
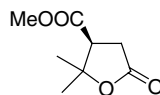
$\Delta\epsilon_{222} = -0.30$ (MeCN)

Source of chirality: baker's yeast reduction

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

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Methyl (*S*)-(-)-2,2-dimethyl-5-oxo-tetrahydro-3-furancarboxylate

Ee = 76% (by chiral HRGC)

$[\alpha]_D^{25} = -3.2$ (*c* 1.70, MeCN)

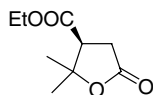
$\Delta\epsilon_{218} = +0.82$ (MeCN)

Source of chirality: enzymatic resolution

Absolute configuration: *S*

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Ethyl (S)-(-)-2,2-dimethyl-5-oxo-tetrahydro-3-furancarboxylate

Ee = 63% (by chiral HRGC)

$[\alpha]_{\text{D}}^{25} = -4.3$ (c 1.09, MeCN)

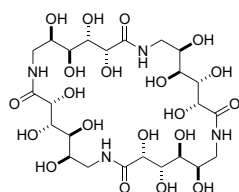
$\Delta\epsilon_{218} = +0.59$ (MeCN)

Source of chirality: enzymatic resolution

Absolute configuration: S

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Cyclo[-(6-amino-6-deoxy-2,3:4,5-di-O-isopropylidene-D-galactonic acid)₄-]

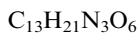
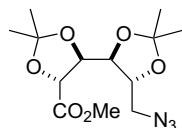
Ee = 100%

$[\alpha]_{\text{D}}^{25} = +3.0$ (c 0.2, H₂O)

Source of chirality: D-galactonolactone as starting material

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Methyl 6-azido-6-deoxy-2,3:4,5-di-O-isopropylidene-D-galactonate

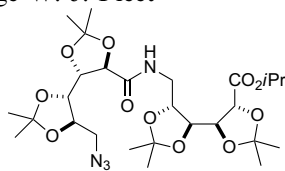
Ee = 100%

$[\alpha]_{\text{D}}^{25} = +31.3$ (c 0.8, CHCl₃)

Source of chirality: D-galactonolactone as starting material

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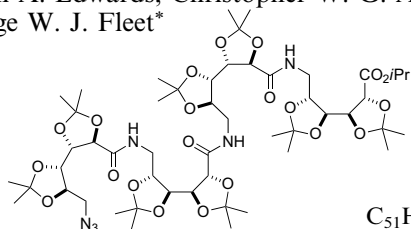
Isopropyl 6-amino-6-deoxy-2,3:4,5-di-O-isopropylidene-6-N-(6-azido-6-deoxy-2,3:4,5-di-O-isopropylidene-D-galactonyl)-D-galactonate (dimer)

Ee = 100%

$[\alpha]_{\text{D}}^{23} = +10.0$ (c 1.59, CHCl₃)

Source of chirality: D-galactonolactone as starting material

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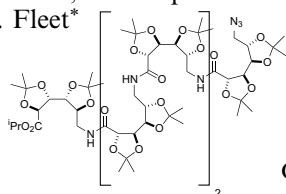

$$E_e = 100\%$$
$$[\alpha]_{\text{D}}^{23} = +1.5 \text{ (} c \text{ 1.05, CHCl}_3 \text{)}$$

Source of chirality: D-galactonolactone as starting material

$$\text{C}_{51}\text{H}_{82}\text{N}_6\text{O}_{21}$$

Isopropyl 6-amino-6-deoxy-2,3,4,5-di-*O*-isopropylidene-6-*N*-(6-amino-6-deoxy-2,3,4,5-di-*O*-isopropylidene-6-*N*-(6-amino-6-deoxy-2,3,4,5-di-*O*-isopropylidene-6-*N*-(6-azido-6-deoxy-2,3,4,5-di-*O*-isopropylidene-D-galactonyl)-D-galactonyl)-D-galactonyl)-D-galactonate (linear tetramer)

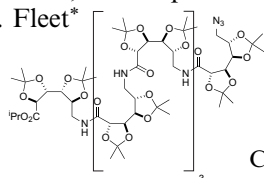
Tetrahedron: Asymmetry 15 (2004) 627


$$E_e = 100\%$$
$$[\alpha]_{\text{D}}^{23} = -3.5 \text{ (} c \text{ 0.84, CHCl}_3 \text{)}$$

Source of chirality: D-galactonolactone as starting material

$$\text{C}_{75}\text{H}_{120}\text{N}_8\text{O}_{31}$$
[illegible]

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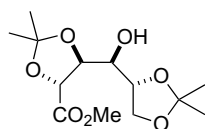
Fe = 100%

$$[\alpha]_{\text{D}}^{23} = -5.3 \text{ (} c \text{ 0.88, CHCl}_3 \text{)}$$

Source of chirality: D-galactonolactone as starting material

$$\text{C}_{99}\text{H}_{158}\text{N}_{10}\text{O}_{41}$$
[illegible]

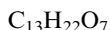
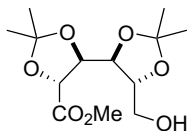
Tetrahedron: Asymmetry 15 (2004) 627


$$\text{C}_{13}\text{H}_{22}\text{O}_7$$
Methyl 2,3:5,6-di-*O*-isopropylidene-D-galactonate
$$\text{Fe} = 100\%$$
$$[\alpha]_{\text{D}}^{23} = -22.2 \text{ (} c \text{ 1.03, CHCl}_3 \text{)}$$

Source of chirality: D-galactonolactone as starting material

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Methyl 2,3:4,5-di-*O*-isopropylidene-*D*-galactonate

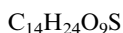
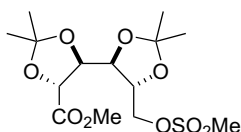
Ee = 100%

$[\alpha]_{\text{D}}^{23} = -20.5$ (c 1.24, CHCl_3)

Source of chirality: *D*-galactonolactone as starting material

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Alison A. Edwards, Christopher W. G. Ansell, George E. Tranter and
George W. J. Fleet*

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Methyl 2,3:4,5-di-*O*-isopropylidene-6-*O*-methanesulfonyl-*D*-galactonate

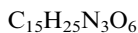
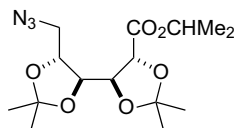
Ee = 100%

$[\alpha]_{\text{D}}^{24} = -5.1$ (c 0.9, CHCl_3)

Source of chirality: *D*-galactonolactone as starting material

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Alison A. Edwards, Christopher W. G. Ansell, George E. Tranter and
George W. J. Fleet*

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Isopropyl 6-azido-6-deoxy-2,3:4,5-di-*O*-isopropylidene-*D*-galactonate

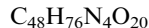
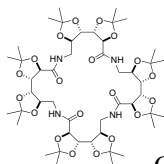
Ee = 100%

$[\alpha]_{\text{D}}^{25} = +29.0$ (c 1.12, CHCl_3)

Source of chirality: *D*-galactonolactone as starting material

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Alison A. Edwards, Christopher W. G. Ansell, George E. Tranter and
George W. J. Fleet*

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Cyclo 6-amino-6-deoxy-2,3:4,5-di-*O*-isopropylidene-6-*N*-(6-amino-6-deoxy-2,3:4,5-di-*O*-isopropylidene-6-*N*-(6-amino-6-deoxy-2,3:4,5-di-*O*-isopropylidene-*D*-galactonyl)-*D*-galactonyl)-*D*-galactonic acid (cyclic tetramer)

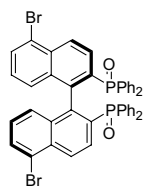
Ee = 100%

$[\alpha]_{\text{D}}^{22} = -27.9$ (c 0.14, CHCl_3)

Source of chirality: *D*-galactonolactone as starting material

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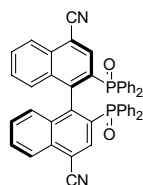


$C_{44}H_{30}Br_2O_2P_2$
(*R*)-5,5'-DibromoBINAPO

$[\alpha]_D^{25} = +97.7$ (*c* 1, DMF)
Absolute configuration: *R*

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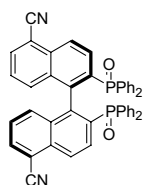


$C_{46}H_{30}N_2O_2P_2$
(*R*)-4,4'-DicyanoBINAPO

$[\alpha]_D^{25} = -94.3$ (*c* 1, DMF)
Absolute configuration: *S*

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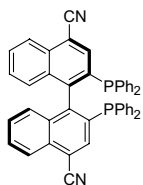


$C_{46}H_{30}N_2O_2P_2$
(*R*)-5,5'-DicyanoBINAP

$[\alpha]_D^{25} = +95.3$ (*c* 1, DMF)
Absolute configuration: *R*

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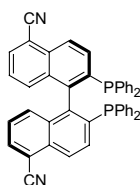


$C_{46}H_{30}N_2P_2$
(*R*)-4,4'-DicyanoBINAP

$[\alpha]_D^{25} = -96.3$ (*c* 1, DMF)
Absolute configuration: *S*

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Marc Lemaire*

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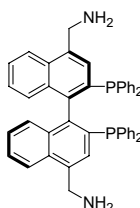


$C_{46}H_{30}N_2P_2$
(*R*)-5,5'-DicyanoBINAP

$[\alpha]_D^{25} = +98.6$ (*c* 1, DMF)
Absolute configuration: *R*

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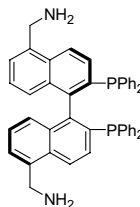


$C_{46}H_{38}N_2P_2$
(*R*)-4,4'-DiamBINAP

$[\alpha]_D^{25} = -102.4$ (*c* 1, DMF)
 $[\alpha]_D^{25} = +101.7$ (*c* 1, DMF)
Absolute configuration: *S*

Mikaël Berthod, Christine Saluzzo, Gerard Mignani and
Marc Lemaire*

Tetrahedron: Asymmetry 15 (2004) 639

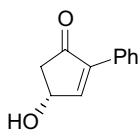


$C_{46}H_{38}N_2P_2$
(*R*)-5,5'-DiamBINAP

$[\alpha]_D^{25} = -100.3$ (*c* 1, DMF)
 $[\alpha]_D^{25} = +101.4$ (*c* 1, DMF)
Absolute configuration: *R*

Aurelio G. Csáky,* Myriam Mba and Joaquín Plumet

Tetrahedron: Asymmetry 15 (2004) 647

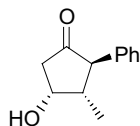


$C_{11}H_{10}O_2$
4-Hydroxy-2-phenylcyclopent-2-enone

$[\alpha]_D^{25} = -14.1$ (*c* 0.82, $CHCl_3$), ee >98%
Source of chirality: lipase resolution
Absolute configuration: 4*R*

Aurelio G. Csáký,* Myriam Mba and Joaquín Plumet

Tetrahedron: Asymmetry 15 (2004) 647



C₁₂H₁₄O₂

4-Hydroxy-3-methyl-2-phenylcyclopentanone

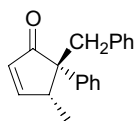
$[\alpha]_D^{25} = +42.0$ (*c* 1.57, CHCl₃), ee >98%

Source of chirality: lipase resolution

Absolute configuration: 3*R*,4*S*,5*R*

Aurelio G. Csáký,* Myriam Mba and Joaquín Plumet

Tetrahedron: Asymmetry 15 (2004) 647



C₁₉H₁₈O

5-Benzyl-4-methyl-5-phenylcyclopent-2-enone

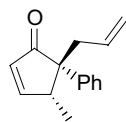
$[\alpha]_D^{25} = -203.5$ (*c* 1.10, CHCl₃), ee >98%

Source of chirality: lipase resolution

Absolute configuration: 4*R*,5*S*

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Tetrahedron: Asymmetry 15 (2004) 647



C₁₅H₁₆O

5-Allyl-4-methyl-5-phenylcyclopent-2-enone

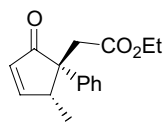
$[\alpha]_D^{25} = -314.8$ (*c* 1.06, CHCl₃), ee >98%

Source of chirality: lipase resolution

Absolute configuration: 4*R*,5*S*

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Tetrahedron: Asymmetry 15 (2004) 647



C₁₆H₁₈O₃

5-Ethoxycarbonylmethyl-4-methyl-5-phenylcyclopentenone

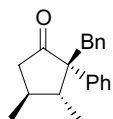
$[\alpha]_D^{25} = -232.5$ (*c* 0.65, CHCl₃), ee >98%

Source of chirality: lipase resolution

Absolute configuration: 4*R*,5*S*

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Tetrahedron: Asymmetry 15 (2004) 647



$C_{20}H_{22}O$

2-Benzyl-3,4-dimethyl-2-phenylcyclopentanone

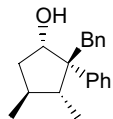
$[\alpha]_D^{25} = +29.0$ (*c* 1.26, $CHCl_3$), ee >98%

Source of chirality: lipase resolution

Absolute configuration: 2*S*,3*R*,4*S*

Aurelio G. Csáký,* Myriam Mba and Joaquín Plumet

Tetrahedron: Asymmetry 15 (2004) 647



$C_{20}H_{24}O$

2-Benzyl-3,4-dimethyl-2-phenylcyclopentanol

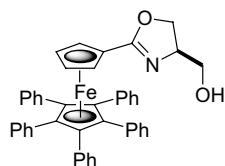
$[\alpha]_D^{25} = +46.1$ (*c* 0.5, $CHCl_3$), ee >98%

Source of chirality: lipase resolution

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

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



$C_{44}H_{35}FeNO_2$

(η^5 -(*R*)-2-(4-Hydroxymethyl)oxazolinylcyclopentadienyl)(η^5 -pentaphenylcyclopentadienyl)iron

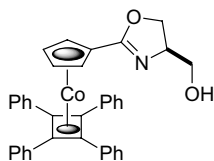
$[\alpha]_D^{20} = +96$ (*c* 0.31, $CHCl_3$)

Source of chirality: (*S*)-serine

Absolute configuration: (*R*)

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



$C_{37}H_{30}CoNO_2$

(η^5 -(*R*)-2-(4-Hydroxymethyl)oxazolinylcyclopentadienyl)(η^4 -tetraphenylcyclobutadiene)cobalt

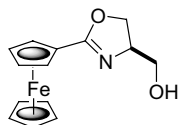
$[\alpha]_D^{20} = -192$ (*c* 0.36, $CHCl_3$)

Source of chirality: (*S*)-serine

Absolute configuration: (*R*)

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



$C_{14}H_{15}FeNO_2$

(*R*)-4-Hydroxymethyl-2-ferrocenyloxazoline

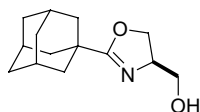
$[\alpha]_D^{20} = +96$ (*c* 0.05, CH_2Cl_2)

Source of chirality: (*S*)-serine

Absolute configuration: (*R*)

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



$C_{14}H_{21}NO_2$

(*R*)-4-Hydroxymethyl-2-(1-adamantyl)loxazoline

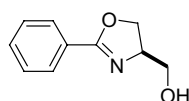
$[\alpha]_D^{20} = +100$ (*c* 0.1, CH_2Cl_2)

Source of chirality: (*S*)-serine

Absolute configuration: (*R*)

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



$C_{10}H_{11}NO_2$

(*R*)-4-Hydroxymethyl-2-phenyloxazoline

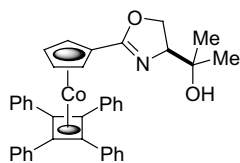
$[\alpha]_D^{20} = +82$ (*c* 0.1, CH_2Cl_2)

Source of chirality: (*S*)-serine

Absolute configuration: (*R*)

Geraint Jones and Christopher J. Richards*

Tetrahedron: Asymmetry 15 (2004) 653



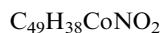
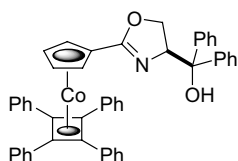
$C_{39}H_{34}CoNO_2$

(η^5 -(*S*)-2-(4-Dimethylhydroxymethyl)oxazolinylcyclopentadienyl)(η^4 -tetraphenylcyclobutadiene)cobalt

$[\alpha]_D^{20} = -2$ (*c* 0.13, $CHCl_3$)

Source of chirality: (*S*)-serine

Absolute configuration: (*S*)

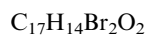
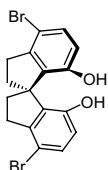


(η^5 -(*S*)-2-(4-Diphenylhydroxymethyl)oxazoliny)cyclopentadienyl(η^4 -tetraphenylcyclobutadiene)cobalt

$[\alpha]_{\text{D}}^{20} = -166$ (*c* 0.39, CHCl_3)

Source of chirality: (*S*)-serine

Absolute configuration: (*S*)



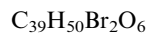
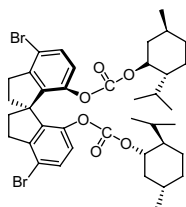
(*S*)-(+)-4,4'-Dibromo-1,1'-spirobiindane-7,7'-diol

Ee >99%

$[\alpha]_{\text{D}}^{18} = +93.9$ (*c* 0.5, THF)

Source of chirality: resolution

Absolute configuration: *S* (assigned by chemical correlation)

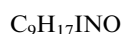
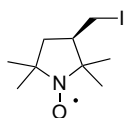


(1*S*)-(-)-4,4'-Dibromo-1,1'-spirobiindane-7,7'-diyl bis[(1''*R*,2''*S*,5''*R*)-5-methyl-2-(1-methylethyl)cyclohexyl]carbonate

$[\alpha]_{\text{D}}^{25} = -91.0$ (*c* 1.0, CHCl_3)

Source of chirality: synthesized

Absolute configuration: 1*S*,1''*R*,2''*S*,5''*R* (assigned by chemical correlation)



1-Oxyl-3-(*R*)-iodomethyl-2,2,5,5-tetramethylpyrrolidine

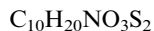
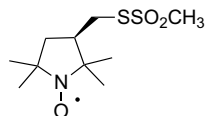
$[\alpha]_{\text{D}}^{20} = +88$ (*c* 0.1, CHCl_3)

Source of chirality: enzymatic acetylation

Absolute configuration: *R*

József Bálint, Violetta Kiss, Gabriella Egri, Tamás Kálai,
 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



1-Oxyl-3-(*R*)-methanesulfonylthiomethyl-2,2,5,5-tetramethylpyrrolidine

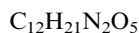
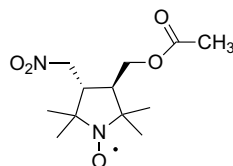
$[\alpha]_D^{20} = +82$ (*c* 0.1, $CHCl_3$)

Source of chirality: enzymatic acetylation

Absolute configuration: *R*

József Bálint, Violetta Kiss, Gabriella Egri, Tamás Kálai,
 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



1-Oxyl-3-(*R*)-acetoxymethyl-4-(*S*)-nitromethyl-2,2,5,5-tetramethylpyrrolidine

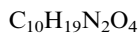
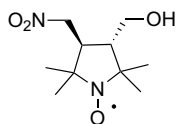
$[\alpha]_D^{20} = +60.7$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

Absolute configuration: 3*R*,4*S*

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 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



1-Oxyl-3-(*S*)-hydroxymethyl-4-(*R*)-nitromethyl-2,2,5,5-tetramethylpyrrolidine

Ee: 97% (by chiral HPLC)

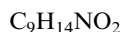
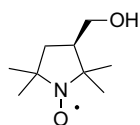
$[\alpha]_D^{20} = -110.5$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

Absolute configuration: 3*S*,4*R*

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 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



(*R*)-1-Oxyl-3-hydroxymethyl-2,2,5,5-tetramethylpyrrolidine

Ee: 98% (by chiral HPLC)

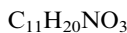
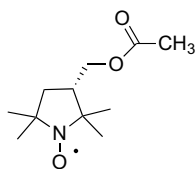
$[\alpha]_D^{20} = +119.4$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

Absolute configuration: *R*

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 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



(*S*)-1-Oxyl-3-acetoxymethyl-2,2,5,5-tetramethylpyrrolidine

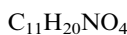
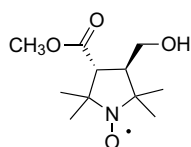
$[\alpha]_D^{20} = -82.7$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

Absolute configurations: *S*

József Bálint, Violetta Kiss, Gabriella Egri, Tamás Kálai,
 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



1-Oxyl-3-(*R*)-hydroxymethyl-4-(*R*)-carbomethoxy-2,2,5,5-tetramethylpyrrolidine

Ee: 98% (by chiral HPLC)

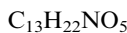
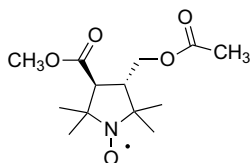
$[\alpha]_D^{20} = +118.9$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

Absolute configuration: 3*R*,4*R*

József Bálint, Violetta Kiss, Gabriella Egri, Tamás Kálai,
 Ádám Demeter, Mária Balog, Elemér Fogassy and Kálmán Hideg*

Tetrahedron: Asymmetry 15 (2004) 671



1-Oxyl-3-(*S*)-acetoxymethyl-4-(*S*)-carbomethoxy-2,2,5,5-tetramethylpyrrolidine

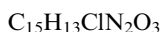
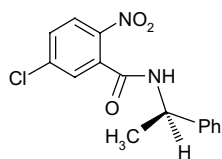
$[\alpha]_D^{20} = -44.9$ (*c* 1, MeOH)

Source of chirality: enzymatic acetylation

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

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 and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



(*R*)-5-Chloro-2-nitro-*N*-(α -phenylethyl)-benzamide

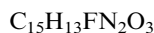
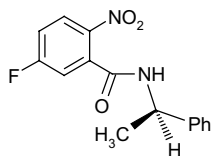
$[\alpha]_D^{20} = +61.0$ (*c* 0.20, CHCl₃)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

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and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



(*R*)-5-Fluoro-2-nitro-*N*-(α -phenylethyl)-benzamide

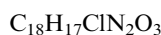
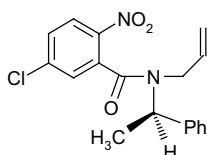
$[\alpha]_D^{20} = +14.6$ (*c* 0.28, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

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and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



(*R*)-*N*-Allyl-5-chloro-2-nitro-*N*-(α -phenylethyl)-benzamide

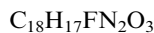
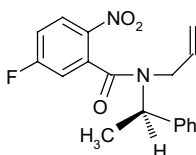
$[\alpha]_D^{20} = +144.1$ (*c* 0.34, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

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and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



(*R*)-*N*-Allyl-5-fluoro-2-nitro-*N*-(α -phenylethyl)-benzamide

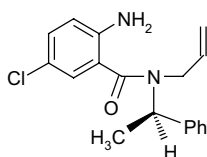
$[\alpha]_D^{20} = +82.4$ (*c* 0.65, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

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and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



(*R*)-*N*-Allyl-2-amino-5-chloro-*N*-(α -phenylethyl)-benzamide

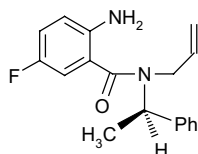
$[\alpha]_D^{20} = +59.7$ (*c* 0.16, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{19}FN_2O$

(*R*)-*N*-Allyl-2-amino-5-fluoro-*N*-(α -phenylethyl)-benzamide

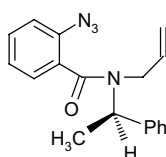
$[\alpha]_D^{20} = +129.7$ (*c* 0.50, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

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and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{18}N_4O$

(*R*)-*N*-Allyl-2-azido-*N*-(α -phenylethyl)-benzamide

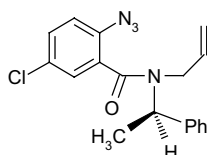
$[\alpha]_D^{20} = +71.4$ (*c* 0.23, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{17}ClN_4O$

(*R*)-*N*-Allyl-2-azido-5-chloro-*N*-(α -phenylethyl)-benzamide

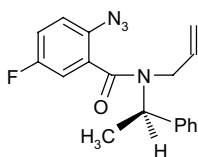
$[\alpha]_D^{20} = +122.9$ (*c* 0.18, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{17}FN_4O$

(*R*)-*N*-Allyl-2-azido-5-fluoro-*N*-(α -phenylethyl)-benzamide

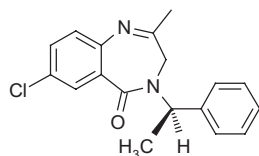
$[\alpha]_D^{20} = +136.6$ (*c* 0.60, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogginì,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{17}ClN_2O$

(*R*)-7-Chloro-2-methyl-4-(α -phenylethyl)-3,4-dihydro-benzo[*e*][1,4]diazepin-5-one

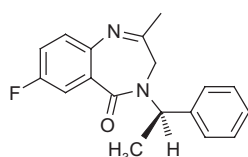
$[\alpha]_D^{20} = +307.1$ (*c* 0.40, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine
and stereoselective synthesis

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogginì,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{17}FN_2O$

(*R*)-7-Fluoro-2-methyl-4-(α -phenylethyl)-3,4-dihydro-benzo[*e*][1,4]diazepin-5-one

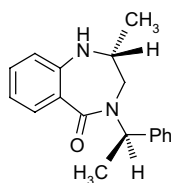
$[\alpha]_D^{20} = +339.0$ (*c* 0.30, $CHCl_3$)

Source of chirality: (*R*)-1-phenylethylamine
and stereoselective synthesis

Absolute configuration: *R*

Egle Beccalli, Gianluigi Brogginì,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{20}N_2O$

($\alpha R,2R$)-2-Methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[*e*][1,4]diazepin-5-one

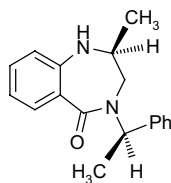
$[\alpha]_D^{20} = -24.1$ (*c* 0.34, $CHCl_3$)

Source of chirality: (*R*)- α -phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2R$

Egle Beccalli, Gianluigi Brogginì,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{20}N_2O$

($\alpha R,2S$)-2-Methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[*e*][1,4]diazepin-5-one

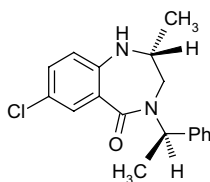
$[\alpha]_D^{20} = +155.0$ (*c* 0.36, $CHCl_3$)

Source of chirality: (*R*)- α -phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2S$

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{19}ClN_2O$

($\alpha R,2R$)-7-Chloro-2-methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[e][1,4]diazepin-5-one

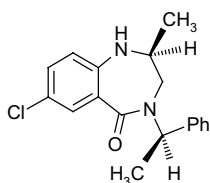
$[\alpha]_D^{20} = -18.7$ (c 0.24, $CHCl_3$)

Source of chirality: (R)- α -phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2R$

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{19}ClN_2O$

($\alpha R,2S$)-7-Chloro-2-methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[e][1,4]diazepin-5-one

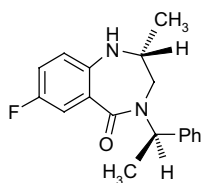
$[\alpha]_D^{20} = +108.1$ (c 0.38, $CHCl_3$)

Source of chirality: (R)-1-phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2S$

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{19}FN_2O$

($\alpha R,2R$)-7-Fluoro-2-methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[e][1,4]diazepin-5-one

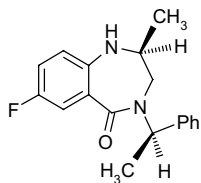
$[\alpha]_D^{20} = -23.1$ (c 0.01, $CHCl_3$)

Source of chirality: (R)-1-phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2R$

Egle Beccalli, Gianluigi Brogini,* Giuseppe Paladino, Tullio Pilati
and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$C_{18}H_{19}FN_2O$

($\alpha R,2S$)-7-Fluoro-2-methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[e][1,4]diazepin-5-one

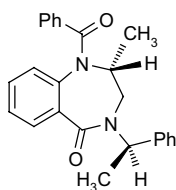
$[\alpha]_D^{20} = +81.7$ (c 0.14, $CHCl_3$)

Source of chirality: (R)-1-phenylethylamine
and stereoselective synthesis

Absolute configuration: $\alpha R,2S$

Egle Beccalli, Gianluigi Broggini,* Giuseppe Paladino, Tullio Pilati and Guido Pontremoli

Tetrahedron: Asymmetry 15 (2004) 687



$[\alpha]_D^{20} = -362.9$ (*c* 0.30, CHCl₃)

Source of chirality: (*R*)-1-phenylethylamine and stereoselective synthesis

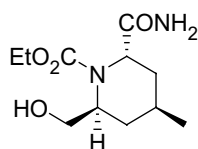
Absolute configuration: $\alpha R, 2R$

C₂₅H₂₄N₂O₂

($\alpha R, 2R$)-1-Benzoyl-2-methyl-4-(α -phenylethyl)-1,2,3,4-tetrahydro-benzo[*e*][1,4]diazepin-5-one

Hassan Acherki, Carlos Alvarez-Ibarra,* Susana Guzmán-Fernández and María L. Quiroga-Feijóo

Tetrahedron: Asymmetry 15 (2004) 693



Ee >97%

$[\alpha]_D^{23} = +14.3$ (*c* 1.4, CHCl₃)

Source of chirality: asymmetric synthesis

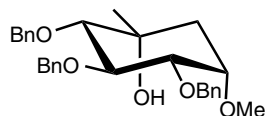
Absolute configuration: 2*S*,4*S*,6*S*

C₁₁H₂₀N₂O₄

(2*S*,4*S*,6*S*)-1-Ethoxycarbonyl-6-hydroxymethyl-4-methylpipecolamide

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang, Matthieu Sollogoub* and Pierre Sinay*

Tetrahedron: Asymmetry 15 (2004) 699



Ee = 100%

$[\alpha]_D^{20} = -0.7$ (*c* 2.4, CHCl₃)

Source of chirality: natural (*D*-glucose) and stereoselective rearrangement

C₂₉H₃₄O₅

(1*R*,2*S*,3*R*,4*S*,5*S*)-2,3,4-Tribenzyloxy-5-methoxy-1-hydroxy-1-methyl cyclohexane

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang, Matthieu Sollogoub* and Pierre Sinay*

Tetrahedron: Asymmetry 15 (2004) 699



Ee = 100%

$[\alpha]_D^{20} = -16$ (*c* 1.0, CHCl₃)

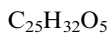
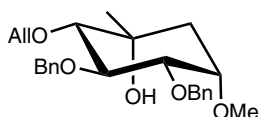
Source of chirality: natural (*D*-glucose)

C₂₄H₂₈O₅

Methyl 2,3-di-*O*-benzyl-4-*O*-allyl-6-deoxy- α -*D*-xyllo-hex-5-enopyranoside

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang,
Matthieu Sollogoub* and Pierre Sinaÿ*

Tetrahedron: Asymmetry 15 (2004) 699



(1*R*,2*S*,3*R*,4*S*,5*S*)-2-Allyloxy-3,4-dibenzyloxy-5-methoxy-1-hydroxy-1-methyl cyclohexane

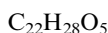
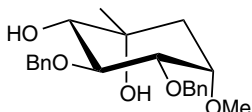
Ee = 100%

$[\alpha]_{\text{D}}^{20} = +7.5$ (*c* 0.8, CHCl_3)

Source of chirality: natural (*D*-glucose)
and stereoselective rearrangement

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang,
Matthieu Sollogoub* and Pierre Sinaÿ*

Tetrahedron: Asymmetry 15 (2004) 699



(1*R*,2*S*,3*R*,4*S*,5*S*)-2,3,4-Tribenzyloxy-5-methoxy-1,2-dihydroxy-1-methyl cyclohexane

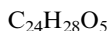
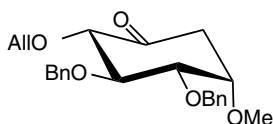
Ee = 100%

$[\alpha]_{\text{D}}^{20} = -6.4$ (*c* 0.7, CHCl_3)

Source of chirality: natural (*D*-glucose)
and stereoselective rearrangement

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang,
Matthieu Sollogoub* and Pierre Sinaÿ*

Tetrahedron: Asymmetry 15 (2004) 699



(2*S*,3*R*,4*S*,5*S*)-2-allyloxy-3,4-tribenzyloxy-5-methoxy cyclohexanone

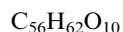
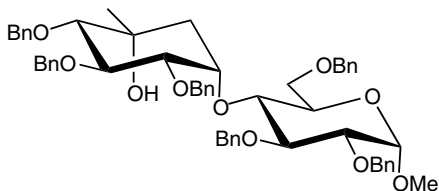
Ee = 100%

$[\alpha]_{\text{D}}^{20} = -41$ (*c* 1.0, CHCl_3)

Source of chirality: natural (*D*-glucose)
and stereoselective rearrangement

Cai Jia, Alan J. Pearce, Yves Blériot, Yongmin Zhang, Li-He Zhang,
Matthieu Sollogoub* and Pierre Sinaÿ*

Tetrahedron: Asymmetry 15 (2004) 699



Methyl 4-[(1*R*,2*S*,3*R*,4*S*,5*S*)-2,3,4-tribenzyloxy-1,5-dihydroxy-5-methyl-cyclohexyl]-2,3,4-*O*-benzyl- α -*D*-glucopyranoside

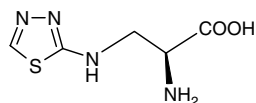
Ee = 100%

$[\alpha]_{\text{D}}^{20} = +33.5$ (*c* 0.8, CHCl_3)

Source of chirality: natural (*D*-maltose)
and stereoselective rearrangement

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



L-β-(2'-Amino-1,3,4-thiodiazolyl)-α-alanine

Ee pure

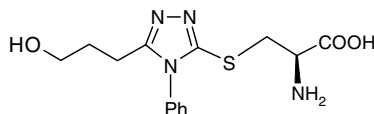
$[\alpha]_D^{25} = +31.5$ (c 1, 5.7 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (S)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



L-(S)-5-(3'-Hydroxypropyl)-4-phenyl-1,2,4-triazol-3-yl-cysteine

Ee pure

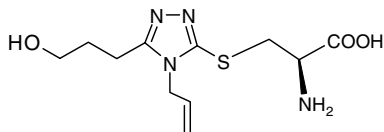
$[\alpha]_D^{25} = -22.3$ (c 1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



L-(S)-5-(3'-Hydroxypropyl)-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

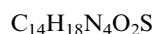
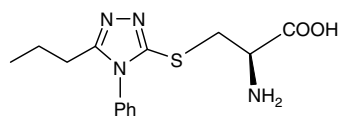
$[\alpha]_D^{25} = -5.5$ (c 1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



L-(S)-5-Propyl-4-phenyl-1,2,4-triazol-3-yl-cysteine

Ee pure

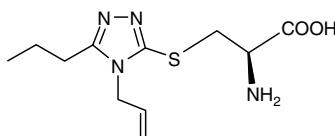
$[\alpha]_D^{20} = -24.0$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{11}H_{18}N_4O_2S$

L-(S)-5-Propyl-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

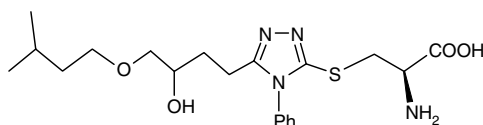
$[\alpha]_D^{20} = -5.0$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{20}H_{30}N_4O_4S$

L-(S)-5-(3'-Hydroxy-4'-isoamyloxybutyl)-4-phenyl-1,2,4-triazol-3-yl-cysteine

Ee pure

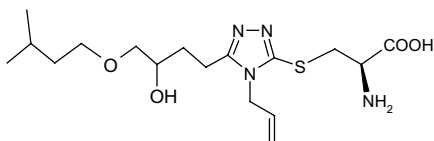
$[\alpha]_D^{20} = -17.0$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{17}H_{30}N_4O_4S$

L-(S)-5-(3'-Hydroxy-4'-isoamyloxybutyl)-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

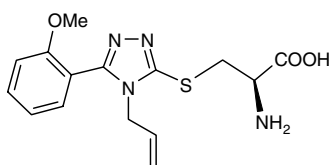
$[\alpha]_D^{20} = -4.5$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{15}H_{18}N_4O_3S$

L-(S)-5-(2'-Methoxyphenyl)-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

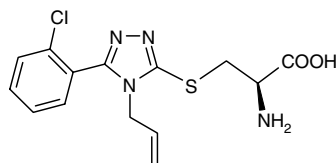
$[\alpha]_D^{20} = -5.0$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{14}H_{15}N_4O_2SCl$

L-(S)-5-(2'-Chlorophenyl)-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

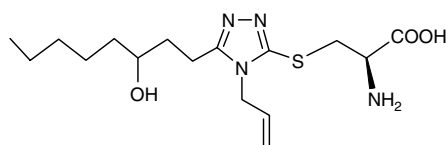
$[\alpha]_D^{20} = -2.0$ (c 0.5, 1 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

A. S. Saghiyan,* A. V. Geolchanyan, S. G. Petrosyan, T. V. Ghochikyan,
V. S. Haroutunyan, A. A. Avetisyan, Yu. N. Belokon' and K. Fisher

Tetrahedron: Asymmetry 15 (2004) 705



$C_{16}H_{28}N_4O_3S$

L-(S)-5-(3'-Hydroxyoctyl)-4-allyl-1,2,4-triazol-3-yl-cysteine

Ee pure

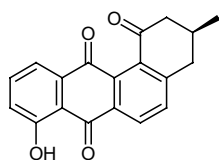
$[\alpha]_D^{20} = -4.0$ (c 0.1, 6 M HCl)

Source of chirality: asymmetric synthesis

Absolute configuration: L or (R)

Karsten Krohn,* Md. Hossain Sohrab and Ulrich Flörke

Tetrahedron: Asymmetry 15 (2004) 713



$C_{19}H_{14}O_4$

(S)-3,4-Dihydro-8-hydroxy-3-methyltetraphene-1,7,12(2H)-trione;
(+)-ochromycinone

Ee = 99% (by HPLC analysis)

$[\alpha]_D^{25} = +158.3$ (c 0.012, $CHCl_3$), +143.8 (c 0.016, $CHCl_3$), +109.8 (c 0.041, $CHCl_3$), +100.0 (c 0.069, $CHCl_3$), +95.1 (c 0.081, $CHCl_3$), +87.7 (c 0.13, $CHCl_3$)

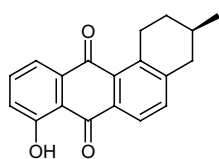
$[\alpha]_D^{25} = +74.0$ (c 0.1, acetonitrile)

Source of chirality: (R)-(+)-3-Methylcyclohexanone (Aldrich, 99% ee), starting substrate

Absolute configuration: (3S)

Karsten Krohn,* Md. Hossain Sohrab and Ulrich Flörke

Tetrahedron: Asymmetry 15 (2004) 713



$C_{19}H_{16}O_3$

(R)-1,2,3,4-Tetrahydro-8-hydroxy-3-methyltetraphene-7,12-dione

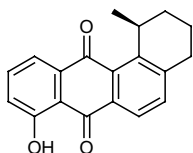
$[\alpha]_D^{25} = +114$ (c 0.09, $CHCl_3$)

Source of chirality: (R)-(+)-3-Methylcyclohexanone (Aldrich, 99% ee), starting substrate

Absolute configuration: (3R)

Karsten Krohn,* Md. Hossain Sohrab and Ulrich Flörke

Tetrahedron: Asymmetry 15 (2004) 713



$C_{19}H_{16}O_3$

(S)-1,2,3,4-Tetrahydro-8-hydroxy-1-methyltetraphene-7,12-dione

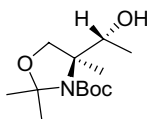
$[\alpha]_D^{25} = -173$ (c 0.07, $CHCl_3$)

Source of chirality: (R)-(+)-3-Methylcyclohexanone (Aldrich, 99% ee), starting substrate

Absolute configuration: (1S)

Alberto Avenoza,* Jesús H. Busto, Francisco Corzana,
Jesús M. Peregrina,* David Sucunza and María M. Zurbano

Tetrahedron: Asymmetry 15 (2004) 719



$C_{13}H_{25}NO_4$

N-(tert-Butoxycarbonyl)-4-(1'-hydroxyethyl)-2,2,4-trimethyloxazolidine

Ee >95%

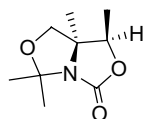
$[\alpha]_D^{25} = -11.1$ (c 0.91, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: 4S,1'R

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Jesús M. Peregrina,* David Sucunza and María M. Zurbano

Tetrahedron: Asymmetry 15 (2004) 719



$C_9H_{15}NO_3$

1,5,5,7a-Tetramethyl-2,6-dioxo-4-azapentalen-3-one

Ee >95%

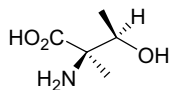
$[\alpha]_D^{25} = +25.5$ (c 1.00, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: 1R,7aS

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Jesús M. Peregrina,* David Sucunza and María M. Zurbano

Tetrahedron: Asymmetry 15 (2004) 719



$C_5H_{11}NO_3$

α -Methylthreonine

Ee >95%

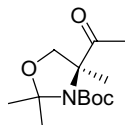
$[\alpha]_D^{25} = -11.6$ (c 0.85, H_2O)

Source of chirality: asymmetric synthesis

Absolute configuration: 2R,3R

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$C_{13}H_{23}NO_4$

N-(*tert*-Butoxycarbonyl)-4-acetyl-2,2,4-trimethyloxazolidine

Ee >95%

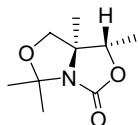
$[\alpha]_D^{25} = -18.0$ (*c* 1.45, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: *S*

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Tetrahedron: Asymmetry 15 (2004) 719



$C_9H_{15}NO_3$

1,5,5,7a-Tetramethyl-2,6-dioxo-4-azapentalen-3-one

Ee >95%

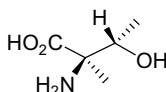
$[\alpha]_D^{25} = -18.0$ (*c* 1.05, MeOH)

Source of chirality: asymmetric synthesis

Absolute configuration: 1*S*,7a*S*

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Jesús M. Peregrina,* David Sucunza and María M. Zurbano

Tetrahedron: Asymmetry 15 (2004) 719



$C_5H_{11}NO_3$

α -Methylthreonine

Ee >95%

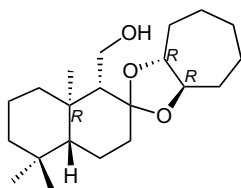
$[\alpha]_D^{25} = +13.4$ (*c* 0.75, H₂O)

Source of chirality: asymmetric synthesis

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

Hiroyuki Akita,* Youhei Amano, Keisuke Kato and Masako Kinoshita

Tetrahedron: Asymmetry 15 (2004) 725



$C_{21}H_{36}O_3$

(-)-(1*R*,4a*R*,8a*R*)-1,2,3,4,4a,5,6,7,8,8a-Decahydro-5,5,8a-trimethyl-2-oxo-naphthalene-1-methanol-2-[(1*R*,2*R*)-cycloheptane acetal]

Ee >99%

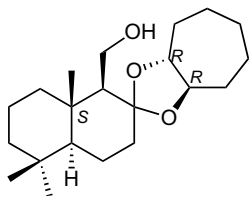
$[\alpha]_D^{24} = -12.8$ (*c* 0.90, CHCl₃)

Source of chirality: resolution

Absolute configuration: (1*R*,4a*R*,8a*R*)

Hiroyuki Akita,* Youhei Amano, Keisuke Kato and Masako Kinoshita

Tetrahedron: Asymmetry 15 (2004) 725



$C_{21}H_{36}O_3$

(-)-(1*S*,4*aS*,8*aS*)-1,2,3,4,4*a*,5,6,7,8,8*a*-Decahydro-5,5,8*a*-trimethyl-2-oxo-naphthalene-1-methanol-2-[(1*R*,2*R*)-cycloheptane acetal]

Ee >99%

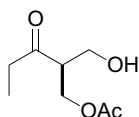
$[\alpha]_D^{24} = -38.3$ (c 0.92, $CHCl_3$)

Source of chirality: resolution

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

Noriyoshi Arai, Noriko Chikaraishi, Mitsuhiro Ikawa, Satoshi Ōmura and Isao Kuwajima*

Tetrahedron: Asymmetry 15 (2004) 733



$C_8H_{14}O_4$

2-Hydroxymethyl-3-oxopentyl acetate

Ee = 34%

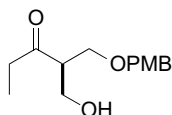
$[\alpha]_D^{27} = +7.8$ (c 0.660, $CHCl_3$)

Source of chirality: asymmetric transesterification with lipase

Absolute configuration: *S* (assigned by chemical transformation to a known compound)

Noriyoshi Arai, Noriko Chikaraishi, Mitsuhiro Ikawa, Satoshi Ōmura and Isao Kuwajima*

Tetrahedron: Asymmetry 15 (2004) 733



$C_{14}H_{20}O_4$

2-Hydroxymethyl-1-(4-methoxybenzyloxy)-3-pentanone

Ee = 98%

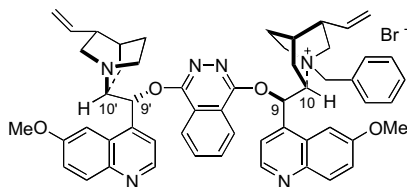
$[\alpha]_D^{26} = +18.4$ (c 0.710, $CHCl_3$)

Source of chirality: asymmetric transesterification with lipase

Absolute configuration: *R* (assigned by chemical transformation to a known compound)

Ru Jiang, Yongqing Kuang, Xiaoli Sun and Shengyong Zhang*

Tetrahedron: Asymmetry 15 (2004) 743



$C_{55}H_{57}N_6O_4Br$

1,4-Bis(9-*O*-quininyl)phthalazine mono-quaternary ammonium salt

$[\alpha]_D = +249.6$ (c 1, EtOH)

Source of chirality: quinine

Absolute configuration: 9*R*,10*S*,9'*R*,10'*S*