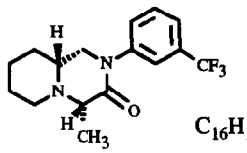
Tetrahedron: Asymmetry **1991**, *2*, 231

Leandro Baiocchi e Giuseppe Picconi



$C_{16}H_{19}F_3N_2O$

2-(3-trifluoromethylphenil)-4-methyl-3-oxo,octahydro-2H-pyrido[1,2-a]pyrazine

E.e.=100 (by nmr with $Eu(hfc)_3$

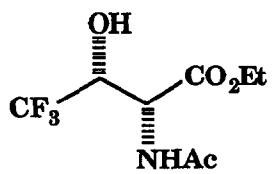
$[\alpha]_D$= +33.0 (c 4.5, EtOH)

Source of chirality : asymm. synth.

Absolute configuration 4R,9aS
(assigned by mechanistic considerations)

Tetrahedron: Asymmetry **1991**, *2*, 235

T. Kitazume, J. T. Lin and T. Yamazaki



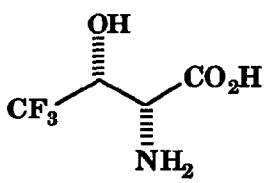
$C_8H_{12}F_3NO_4$

Ethyl 2-acetylamino-3-hydroxy-4,4,4-trifluorobutyrate

E.e = >97% [by GLC with (-)-MTPA ester]
$[\alpha]_D^{23}$ = +18.7 (c = 1.13 , MeOH)
Source of chirality: enzymatic kinetic resolution
Absolute configuration *syn*-2*R*, 3*R* (assigned by comparison with *syn*-2*S*, 3*S* enantiomer)

Tetrahedron: Asymmetry **1991**, *2*, 235

T. Kitazume, J. T. Lin and T. Yamazaki



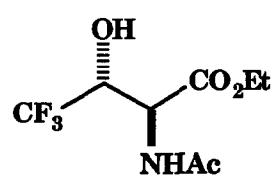
$C_8H_{12}F_3NO_4$

4,4,4-Trifluorothreonine

E.e = >97% : mp 209 - 211 °C
$[\alpha]_D^{23}$ = +12.5 (c = 1, H_2O)
Source of chirality: enzymatic kinetic resolution
Absolute configuration *syn*-2*R*, 3*R*

Tetrahedron: Asymmetry **1991**, *2*, 235

T. Kitazume, J. T. Lin and T. Yamazaki



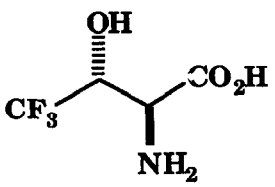
$C_8H_{12}F_3NO_4$

Ethyl 2-acetylamino-3-hydroxy-4,4,4-trifluorobutyrate

E.e = 95% [by GLC with (-)-MTPA ester]
$[\alpha]_D^{23}$ = +26.9 (c = 1.15, MeOH)
Source of chirality: enzymatic kinetic resolution
Absolute configuration *syn*-2*S*, 3*R* (assigned by chem correlation with (R)-(+)-3-hydroxy-4,4,4-trifluorobutanol

T. Kitazume, J. T. Lin and T. Yamazaki

Tetrahedron: Asymmetry **1991**, *2*, 235



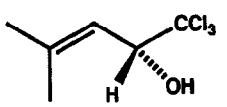
$C_8H_{12}F_3NO_4$

4,4,4-Trifluoro-*allo*-threonine

E.e = >95% : mp 190 - 193 °C
$[\alpha]_D^{23}$ = -11.9 (c = 1, H_2O)
Source of chirality: enzymatic kinetic resolution
Absolute configuration *syn*-2*S*, 3*R*

Z. Muljiani, S.R. Gadre, S.R. Modak, N. Pathan and R.B. Mitra

Tetrahedron: Asymmetry **1991**, *2*, 239



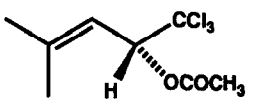
$C_6H_9Cl_3O$

(-)-1,1,1-trichloro-2-hydroxy-4-methyl-3-pentene

E.e ≥ 98% [by nmr of acetate with Eu $(tfc)_3$]
$[\alpha]_D^{25}$ = -12 (c 2, $CHCl_3$) m.p. = 109°
Source of chirality : Microbial kinetic resolution
Absolute configuration : R (Lit. assignment)

Z. Muljiani, S.R. Gadre, S.R. Modak, N. Pathan and R.B. Mitra

Tetrahedron: Asymmetry **1991**, *2*, 239



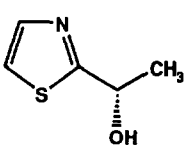
$C_8H_{11}Cl_3O_2$

(+)-1,1,1-trichloro-2-acetoxy-4-methyl-3-pentene

E.e ≥ 98% [by nmr with Eu $(tfc)_3$]
$[\alpha]_D^{23}$ = +0.93 (c 7.5, $CHCl_3$)
Source of chirality : Microbial kinetic resolution
Absolute configuration : R [Prepared from R-(-)-alcohol]

G. Fantin, M. Fogagnolo, A. Medici, P. Pedrini, S. Poli, M. E. Guerzoni and F. Gardini

Tetrahedron: Asymmetry **1991**, *2*, 243



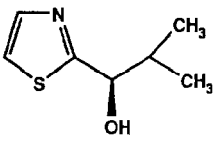
C_5H_7NOS

1-(2-Thiazolyl)ethanol

ee => 95% [by GLC analysis on a 25 m permethylated β-cyclodextrine in OV 1701]
$[\alpha]_D^{25}$ = - 19.2 (c = 1.16, $CHCl_3$)
Source of chirality: microbial reduction
Absolute configuration: S

G. Fantin, M. Fogagnolo, A. Medici, P. Pedrini, S. Poli, M. E. Guerzoni and F. Gardini

Tetrahedron: Asymmetry **1991**, *2*, 243



ee => 95% [by GLC analysis on a 25 m permethylated β-cyclodextrine in OV 1701]

$[\alpha]_D^{25}$ = -16.7 (c = 1.6, $CHCl_3$)

Source of chirality: microbial reduction

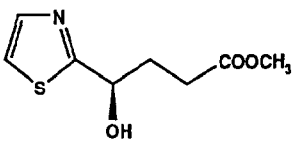
Absolute configuration: R

$C_7H_{11}NOS$

2-Methyl-1-(2-thiazolyl)propanol

G. Fantin, M. Fogagnolo, A. Medici, P. Pedrini, S. Poli, M. E. Guerzoni and F. Gardini

Tetrahedron: Asymmetry **1991**, *2*, 243



ee => 95% [by GLC analysis on a 25 m permethylated β-cyclodextrine in OV 1701]

$[\alpha]_D^{25}$ = +15.8 (c = 3.0, $CHCl_3$)

Source of chirality: microbial reduction

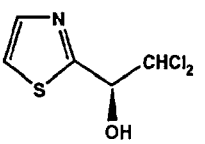
Absolute configuration: R

$C_8H_{11}NO_3S$

Methyl 4-Hydroxy-4-(2-thiazolyl)butanoate

G. Fantin, M. Fogagnolo, A. Medici, P. Pedrini, S. Poli, M. E. Guerzoni and F. Gardini

Tetrahedron: Asymmetry **1991**, *2*, 243



ee => 95% [by GLC analysis on a 25 m permethylated β-cyclodextrine in OV 1701]

$[\alpha]_D^{25}$ = +2.9 (c =1.85, $CHCl_3$)

Source of chirality: microbial reduction

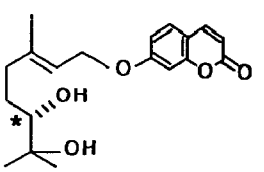
Absolute configuration: S

$C_5H_5Cl_2NOS$

2,2-Dichloro-1-(2-thiazolyl)ethanol

X.M. Zhang, A. Archelas, A. Méou and R. Furstoss*

Tetrahedron: Asymmetry **1991**, *2*, 247



E.e. = 100% [by HPLC analysis of the (-)-camphanic ester]

$[\alpha]^{25}_D$ = -17.1 (c 0.6, $CHCl_3$)

Source of chirality: microbiological oxygenation

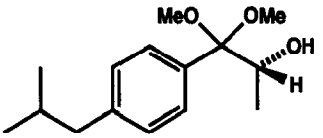
$C_{19}H_{24}O_5$

Marmin: 7-[(6',7'-dihydroxy-3',7'-dimethyl-2'-octenyl)oxy]coumarin

Absolute configuration: 6S (assigned by comparison with literature values)

H.R. Sonawane, B.S. Nanjundiah, D.G. Kulkarni and J.R. Ahuja

Tetrahedron: Asymmetry **1991,** *2*, 251



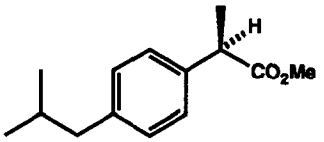
$C_{15}H_{24}O_3$

(R)-1,1-Dimethoxy-2-hydroxy-
1-[4-(2-methyl propyl)phenyl]propane

E.e = 82% by ^{1}H-NMR using chiral shift reagent Eu(hfc)$_3$
$[\alpha]_D^{25}$ = -1.79 (C1, $CHCl_3$)
Source of chirality: S(-)-Ethyl Lactate
Absolute configuration: R

H.R. Sonawane, B.S. Nanjundiah, D.G. Kulkarni and J.R. Ahuja

Tetrahedron: Asymmetry **1991,** *2*, 251



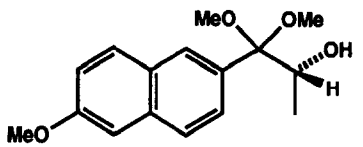
$C_{14}H_{20}O_2$

Methyl (R)-2-[4-(2-methylpropyl)-
phenyl]propanoate

E.e = 82% by ^{1}H-NMR using chiral shift reagent Eu(hfc)$_3$
$[\alpha]_D^{25}$ = -46.8 (C1, $CHCl_3$)
Source of chirality: S(-)-Ethyl Lactate and stereospecific rearrangement of the hydroxy acetal
Absolute configuration: R

H.R. Sonawane, B.S. Nanjundiah, D.G. Kulkarni and J.R. Ahuja

Tetrahedron: Asymmetry **1991,** *2*, 251



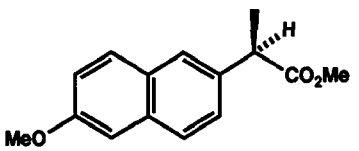
$C_{16}H_{20}O_4$

(R)-1,1-Dimethoxy-2-hydroxy-
1-(6-methoxy-2-naphthyl)propane

E.e = 70% by ^{1}H-NMR using chiral shift reagent Eu(hfc)$_3$
$[\alpha]_D^{25}$ = -9.7 (C 0.92, MeOH)
Source of chirality: S-(-)-Ethyl Lactate
Absolute configuration: R

H.R. Sonawane, B.S. Nanjundiah, D.G. Kulkarni and J.R. Ahuja

Tetrahedron: Asymmetry **1991,** *2*, 251



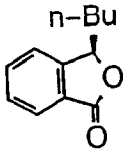
$C_{15}H_{16}O_3$

Methyl (R)-2-(6-methoxy-2-
naphthyl) propanoate

E.e = 70% by ^{1}H-NMR using chiral shift reagent Eu(hfc)$_3$
$[\alpha]_D^{25}$ = -53.7 (C1, $CHCl_3$)
Source of chirality: S-(-)-Ethyl Lactate and stereospecific rearrangement of the hydroxy acetal
Absolute configuration: R

K. Soai, H. Hori, and M. Kawahara

Tetrahedron: Asymmetry **1991**, *2*, 253



$C_{12}H_{13}O_2$

3-n-Butylphthalide

E.e. = 86% (by HPLC using a chiral column)

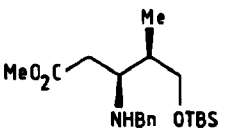
$[\alpha]_D^{24}$ +29.0 (c 4.3, $CHCl_3$)

Source of chirality: asymm.synth.(alkylation)

Absolute configuration R

A V Rama Rao, M K Gurjar and B Ashok

Tetrahedron: Asymmetry **1991**, *2*, 255



$C_{20}H_{35}NO_3Si$

E.e = 100%

$[\alpha]_D$ = +1.73 (c 1.01, $CHCl_3$)

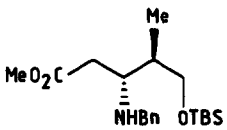
Source of Chirality: S-methyl-3-hydroxy-2-methylpropionate and resolution of diastereomers.

Absolute configuration - 3S,4R.

Methyl-3-benzylamino-5-tert.butyldimethylsiloxy-4-methylpentanoate.

A V Rama Rao, M K Gurjar and B Ashok

Tetrahedron: Asymmetry **1991**, *2*, 255



$C_{20}H_{35}NO_3Si$

E.e = 100%

$[\alpha]_D$ = +3.32 (c 1.03, $CHCl_3$)

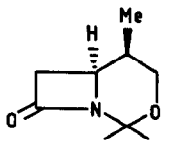
Source of Chirality: S-methyl-3-hydroxy-2-methyl-propionate and resolution of diastereomers.

Absolute configuration - 3R,4R.

Methyl-3-benzylamino-5-tert.butyldimethylsiloxy-4-methylpentanoate.

A V Rama Rao, M K Gurjar and B Ashok

Tetrahedron: Asymmetry **1991**, *2*, 255



$C_9H_{15}NO_2$

E.e = 100%

$[\alpha]_D$ = +37 (c 1.18, $CHCl_3$)

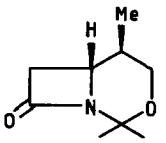
Source of Chirality: S-methyl-3-hydroxy-2-methyl-propionate and resolution of diastereomers.

Absolute configuration - 5R,6S.

1-Aza-3-oxa-2,2,5-trimethylbicyclo[4.2.0]octan-8-one.

Tetrahedron: Asymmetry **1991**, *2*, 255

A V Rama Rao, M K Gurjar and B Ashok



$C_9H_{15}NO_2$

E.e = 100%

$[\alpha]_D$ = +22 (c 0.8, $CHCl_3$)

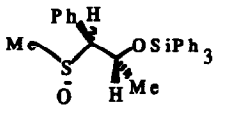
Source of Chirality: S-methyl-3-hydroxy-2-methyl-propionate and resolution of diastereomers.

Absolute configuration - 5R,6R.

1-Aza-3-oxa-2,2,5-trimethylbicyclo[4.2.0]octan-8-one.

V. Conte, F. Di Furia*, G. Licini, G. Sbampato, G. Modena* and G. Valle

Tetrahedron: Asymmetry **1991**, *2*, 257



$C_{28}H_{28}O_2SSi$

1-Methyl-2-(methylsulfinyl)-2-phenyl-1-(triphenylsilyloxy)ethane

e.e. > 98% [by ^1H NMR in the presence of (S)-(+)-2,2,2-trifluoro-1-(9-anthryl)-ethanol]

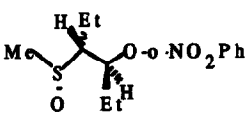
$[\alpha]_D^{25}$ = + 19.6 (c=1.1, chloroform)

Source of chirality: oxidation with Ti(i-PrO)$_4$/(+)-DET/alkylhydroperoxide

Absolute configuration 1-R, 2-S, *S*-R: (determined by correlation of its X-ray struct. with known abs. config. of derivatives)

V. Conte, F. Di Furia*, G. Licini, G. Sbampato, G. Modena* and G. Valle

Tetrahedron: Asymmetry **1991**, *2*, 257



$C_{14}H_{19}NO_5S$

3-(methylsulfinyl)-4-hexyl-*o*-nitrobenzoate

e.e. > 98% [by ^1H NMR in the presence of (S)-(+)-2,2,2-trifluoro-1-(9-anthryl)-ethanol]

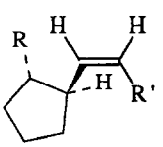
$[\alpha]_D^{25}$ = -104.8 (c=1.1, chloroform)

Source of chirality: oxidation with Ti(i-PrO)$_4$/(+)-DET/alkylhydroperoxide

Proposed absolute configuration: 1-R, 2-S, *S*-R (by correlation of its X-ray struct. with gc elution order of derivatives determined on a Ni(II)-bis-[1-S-(+)-heptafluorobutanoyl-10-ethylidencamphorate]-coated capillary column)

H. C. Brown, R. R. Iyer, V. K. Mahindroo, N. G. Bhat

Tetrahedron: Asymmetry **1991**, *2*, 277



≥99% ee.

1)$[\alpha]^{23}D$ + 25.1 (c 0.45, MeOH)

2)$[\alpha]^{23}D$ + 86.0 (c 2.50, MeOH)

Source of chirality : (*R*)-(+)-α-pinene

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

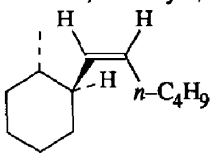
2) 1'*S*, 2'*S*

1) R = CH_3, R'= *n*-C_4H_9 (*Z*)-1-(1'*S*, 2'*S*-*trans*-methylcyclopentyl)-2-butylethylene

2) R = Ph, R' = $-C(CH_3)_3$ (*Z*)-1-(*t*-butyl)-2-(1'*S*, 2'*S*-*trans*-phenylcyclopentyl)ethylene

Tetrahedron: Asymmetry **1991**, *2*, 277

H. C. Brown, R. R. Iyer, V. K. Mahindroo, N. G. Bhat



≥ 99% ee.

$[\alpha]^{23}D$ + 35.7 (c 3.5, MeOH)

Source of chirality : (*R*)-(+)-α-pinene

Absolute configuration : 1'*S*, 2'*S*

(*Z*)-1-(1'*S*, 2'*S*-*trans*-methylcyclohexyl)-2-butylethylene

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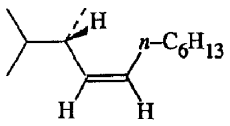
Tetrahedron: Asymmetry **1991**, *2*, 277

H. C. Brown, R. R. Iyer, V. K. Mahindroo, N. G. Bhat



≥ 99% ee.

$[\alpha]^{23}D$ + 28.5 (c 3.05, MeOH)

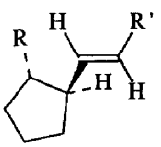
Source of chirality : (*R*)-(+)-α-pinene

Absolute configuration : *S*

(*S*)-(*Z*)-2,3-dimethyl-4-undecene

Tetrahedron: Asymmetry **1991**, *2*, 277

H. C. Brown, R. R. Iyer, V. K. Mahindroo, N. G. Bhat



≥ 99% ee.

1)$[\alpha]^{23}D$ + 25.5 (c 4.90, MeOH)

2)$[\alpha]^{23}D$ + 86.8 (c 4.65, MeOH)

Source of chirality : (*R*)-(+)-α-pinene

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

2) 1'*S*, 2'*S*

1) R = CH_3, R' = n-C_4H_9 (*E*)-1-(1'*S*, 2'*S*-*trans*-methylcyclopentyl)-2-butylethylene

2) R = Ph, R' = $-C(CH_3)_3$ (*E*)-1-(*t*-butyl)-2-(1'*S*, 2'*S*-*trans*-phenylcyclopentyl)ethylene

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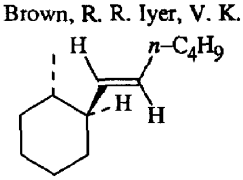
Tetrahedron: Asymmetry **1991**, *2*, 277

H. C. Brown, R. R. Iyer, V. K. Mahindroo, N. G. Bhat



≥ 99% ee.

$[\alpha]^{23}D$ + 35.8 (c 3.05, MeOH)

Source of chirality : (*R*)-(+)-α-pinene

Absolute configuration : 1'*S*, 2'*S*

(*E*)-1-(1'*S*, 2'*S*-*trans*-methylcyclohexyl)-2-butylethylene

Tetrahedron: Asymmetry **1991,** *2*, 277

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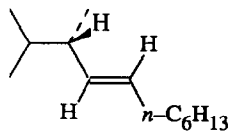

(*S*)-(*E*)-2,3-dimethyl-4-undecene

≥ 99% ee.
$[\alpha]^{23}D$ + 28.5 (c 2.0, MeOH)
Source of chirality : (*R*)-(+)-α-pinene
Absolute configuration : *S*

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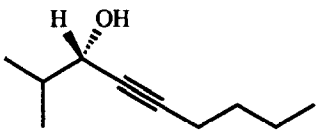

$C_{10}H_{18}O$

2-Methyl-4-nonyn-3-ol

E.e. = 82% [by nmr with (*R*)-2-methoxy-2-tri-fluoromethyl-2-phenylacetic ester]
$[\alpha]_D^{25}$ = -6.70 (neat)
b.p. 90°C/25 Torr
Source of chirality: asymmetric reduction of 2-methyl-4-nonyn-3-one
Absolute configuration: 2*S*

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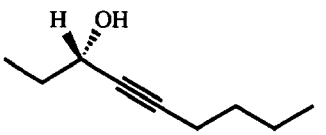

$C_9H_{16}O$

4-Nonyn-3-ol

E.e. = 66% [by nmr with (*R*)-2-methoxy-2-tri-fluoromethyl-2-phenylacetic ester]
$[\alpha]_D^{25}$ = -10.30 (*c* 2, hexane)
b.p. 78°C/25 Torr
Source of chirality: asymmetric reduction of 4-nonyn-3-one
Absolute configuration: 2*S*

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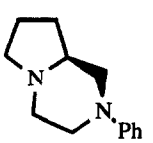

$C_{13}H_{18}N_2$

4-Phenyl-1,4-diaza[4.3.0]bicyclononane

E.e. = about 99%
$[\alpha]_D^{25}$ = +17.7 (*c* 1.5, Et_2O)
b.p. 118-125°C/0.07 Torr
Source of chirality: natural (*S*)- proline
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis
See: M. Falorni et. al. *Tetrahedron Lett.*, **1989**, *30*, 3551.

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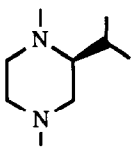
Tetrahedron: Asymmetry **1991**, *2*, 287



$C_9H_{20}N_2$

2-Isopropyl-1,4-dimethylpiperazine

E.e. = about 99%
$[\alpha]_D^{25}$ = +60.50 (*c* 2, Et_2O)
b.p. 175-180°C
Source of chirality: natural (*S*)- valine
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis
See: M. Falorni et. al. *Gazz. Chim. Ital.*, **1990**, *120*, 765.

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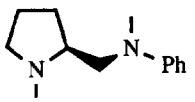
Tetrahedron: Asymmetry **1991**, *2*, 287



$C_{13}H_{20}N_2$

N,N-Dimethyl-2-(anilinomethyl)pyrrolidine

E.e. = about 99%
$[\alpha]_D^{25}$ = -115.56 (*c* 2, Et_2O)
b.p. 106-110°C/0.01 Torr
Source of chirality: natural (*S*)- proline
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis
See: T. Mukaiyama *Tetrahedron*, **1981**, *37*, 4111.

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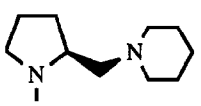
Tetrahedron: Asymmetry **1991**, *2*, 287



$C_{11}H_{22}N_2$

1-Methyl-2-(piperidinomethyl)pyrrolidine

E.e. = about 99%
$[\alpha]_D^{25}$ = -46.0 (*c* 2, EtOH)
b.p. 67°C/0.02 Torr
Source of chirality: natural (*S*)- proline
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis
See: T. Mukaiyama et al. *Chem. Lett.*, **1984**, 2071.

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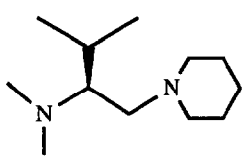

$C_{12}H_{26}N_2$

1-Piperidyl-2-(*N,N*-dimethylamino)-3-methylbutane

E.e. = about 99%
$[\alpha]_D^{25}$ = +19.27 (*c* 2, Et_2O)
b.p. 60-65°C/0.01 Torr
Source of chirality: natural (*S*)- valine
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis

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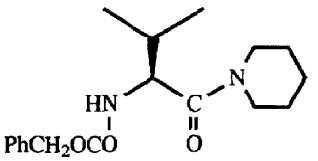

$C_{18}H_{26}N_2O_3$

N-(Benziloxycarbonyl)valine piperidylamide

E.e. = about 99%
$[\alpha]_D^{25}$ = +22.53 (*c* 3, $CHCl_3$)
b.p. 200-205°C/0.01 Torr
Source of chirality: natural (*S*)- valine
Absolute configuration: 2*S*
Intermediate in chiral ligand synthesis

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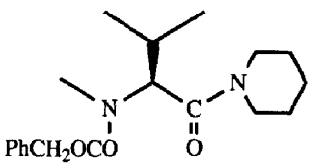

$C_{19}H_{28}N_2O_3$

N-Methyl-*N*-(benziloxycarbonyl)valine piperidylamide

E.e. = about 99% [by nmr with (*R*)-2-methoxy-2-trifluoromethyl-2-phenylacetic amide of the *N*-deprotected derivative]
$[\alpha]_D^{25}$ = -78.83 (*c* 2, $CHCl_3$)
b.p. 168-175°C/0.01 Torr
Source of chirality: natural (*S*)- valine
Absolute configuration: 2*S*
Intermediate in the chiral ligand synthesis

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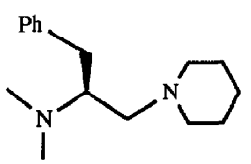

$C_{16}H_{26}N_2$

1-Piperidyl-2-(*N*,*N*-dimethylamino)-3-phenylpropane

E.e. = about 99% [by nmr with (*R*)-2-methoxy-2-trifluoromethyl-2-phenylacetic amide of the *N*-unmethylated derivative]
$[\alpha]_D^{25}$ = -18.69 (*c* 2, Et_2O)
b.p. 105°C/0.02 Torr
Source of chirality: natural (*S*)- phenylalanine
Absolute configuration: 2*S*
Use: chiral ligand in asymmetric synthesis

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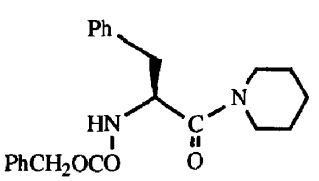

$C_{22}H_{26}N_2O_3$

N-(Benzyloxycarbonyl)phenylalanine piperidylamide

E.e. = about 99%
$[\alpha]_D^{25}$ = +21.49 (*c* 2, $CHCl_3$)
m.p. 66-68°C
Source of chirality: natural (*S*)- phenylalanine
Absolute configuration: 2*S*
Intermediate in chiral ligand synthesis

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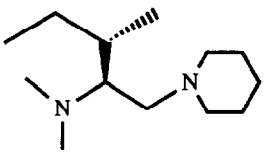

$C_{13}H_{28}N_2$

E.e. = about 99%
$[\alpha]_D^{25}$ = -5.61 (*c* 1, Et_2O)
b.p. 60-65°C/0.02 Torr
Source of chirality: natural (2*S*, 3*S*)- isoleucine
Absolute configuration: 2*S*, 3*S*
Use: chiral ligand in asymmetric synthesis

1-Piperidyl-2-(*N*,*N*-dimethylamino)-3-methylpentane

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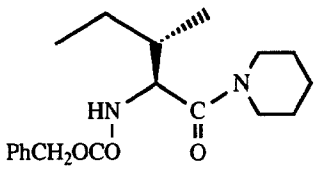
Tetrahedron: Asymmetry **1991,** *2*, 287



$C_{19}H_{28}N_2O_3$

E.e. = about 99%
$[\alpha]_D^{25}$ = +11.03 (*c* 2, $CHCl_3$)
b.p. 220°C/0.05 Torr
Source of chirality: natural (2*S*, 3*S*)- isoleucine
Absolute configuration: 2*S*, 3*S*
Intermediate in chiral ligand synthesis

N-(Benzyloxycarbonyl)isoleucine piperidylamide

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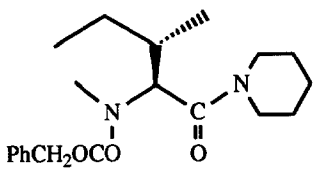
Tetrahedron: Asymmetry **1991,** *2*, 287



$C_{20}H_{30}N_2O_3$

N-Methyl-*N*-(benzyloxycarbonyl)isoleucine piperidylamide

E.e. = about 99% [by nmr with (*R*)-2-methoxy-2-trifluoromethyl-2-phenylacetic amide of the *N*-deprotected derivative]
$[\alpha]_D^{25}$ = -81.36 (*c* 3, $CHCl_3$)
b.p. 175°C/0.02 Torr
Source of chirality: natural (2*S*, 3*S*)- isoleucine
Absolute configuration: 2*S*, 3*S*
Intermediate in chiral ligand synthesis