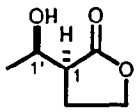
M. Kitamura, T. Ohkuma, M. Tokunaga, and R. Noyori

Tetrahedron: Asymmetry **1990**, *1*, 1

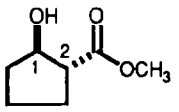


E.e. = 93.7% [by HPLC analysis of the (*R*)-MTPA ester
Source of chirality: (*R*)-BINAP—Ru(II)-based asymmetric hydrogenation
Absolute configuration: 1'*R*,1*S*

$C_6H_{10}O_3$
1-(1-Hydroxyethyl)-γ-butyrolactone

M. Kitamura, T. Ohkuma, M. Tokunaga, and R. Noyori

Tetrahedron: Asymmetry **1990**, *1*, 1

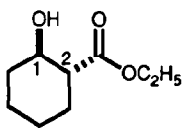


E.e. = 91.7% [by HPLC analysis of the (*R*)-MTPA ester]
Source of chirality: (*R*)-BINAP—Ru(II)-based asymmetric hydrogenation
Absolute configuration: 1*R*,2*R*

$C_7H_{12}O_3$
2-Methoxycarbonylcyclopentan-1-ol

M. Kitamura, T. Ohkuma, M. Tokunaga, and R. Noyori

Tetrahedron: Asymmetry **1990**, *1*, 1

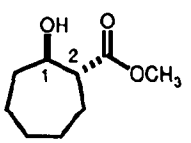


E.e. = 90.1% [by HPLC analysis of the (*R*)-MTPA ester]
Source of chirality: (*R*)-BINAP—Ru(II)-based asymmetric hydrogenation
Absolute configuration: 1*R*,2*R*

$C_9H_{16}O_3$
2-Ethoxycarbonylcyclohexan-1-ol

M. Kitamura, T. Ohkuma, M. Tokunaga, and R. Noyori

Tetrahedron: Asymmetry **1990**, *1*, 1

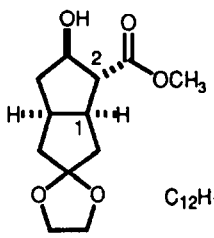


E.e. = 92.9% [by HPLC analysis of the (*R*)-MTPA ester]
Source of chirality: (*R*)-BINAP—Ru(II)-based asymmetric hydrogenation
Absolute configuration: 1*R*,2*R*

$C_9H_{16}O_3$
2-Methoxycarbonylcycloheptan-1-ol

M. Kitamura, T. Ohkuma, M. Tokunaga, and R. Noyori

Tetrahedron: Asymmetry **1990,** *1*, 1



$C_{12}H_{18}O_5$

Name: Methyl 3-hydroxy-7,7-(ethylenedioxy)bicyclo[3.3.0]octane-2-carboxylate

E.e. = 86% [by HPLC analysis of the (*R*)-MTPA ester]

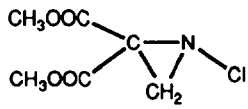
$[\alpha]_D^{28}$ +22.5° (*c* 0.46, $CHCl_3$)

Source of chirality: (*R*)-BINAP—Ru(II)-based asymmetric hydrogenation

Absolute configuration: 1*S*,2*R*,3*R*,5*R*

M. Bucciarelli, A. Forni, I. Moretti and F. Prati.

Tetrahedron: Asymmetry **1990,** *1*, 5



C_6H_8ClN

N-Chloro-2,2-bismethoxycarbonylaziridine

E.e. = >95% [by nmr with R-(-)-2,2,2-trifluoro-1-(9-anthryl)ethanol]

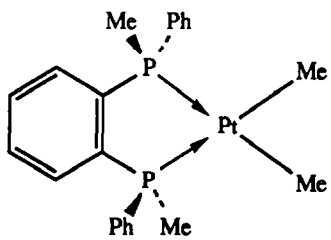
$[\alpha]_D^{20}$ = +105 (c 0.8 - $CHCl_3$)

Source of chirality: Enzymatic Kinetic Resolution

Absolute configuration: unknown.

A. Appelt, V. Ariaratnam, A.C. Willis and S.B. Wild

Tetrahedron: Asymmetry **1990,** *1*, 9



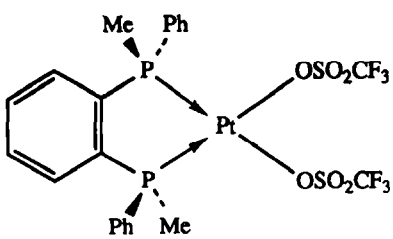
$[\alpha]_{589}^{21}$ +108.5° (*c* 0.29, CH_2Cl_2)

E.e. = 100% [prepared from optically pure (*R*,*R*)-1,2-C_6H_4(PMePh)$_2$ (*J. Am. Chem. Soc.* 1979, **101**, 6254)]

Absolute configuration: S_P,S_P

A. Appelt, V. Ariaratnam, A.C. Willis and S.B. Wild

Tetrahedron: Asymmetry **1990,** *1*, 9



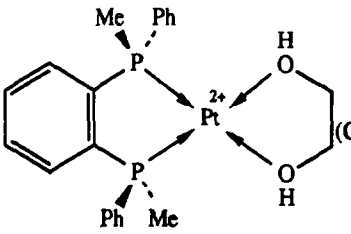
$[\alpha]_{589}^{21}$ +6.7° (*c* 0.42, CH_2Cl_2)

E.e. = 100% [prepared from optically pure (*R*,*R*)-1,2-C_6H_4(PMePh)$_2$ (*J. Am. Chem. Soc.* 1979, **101**, 6254)]

Absolute configuration: S_P,S_P (X-ray)

A. Appelt, V. Ariaratnam, A.C. Willis and S.B. Wild

Tetrahedron: Asymmetry **1990**, *1*, 9



$[\alpha]_{589}^{21}$ +40.9° (*c* 0.22, CH_2Cl_2)

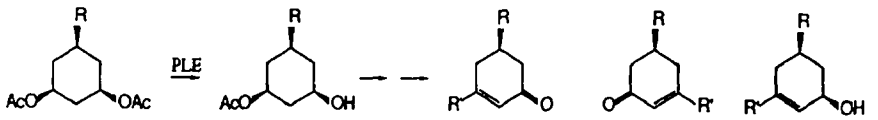
E.e. = 100% [prepared from optically pure (*R,R*)-1,2-C_6H_4(PMePh)$_2$ (*J. Am. Chem. Soc.* 1979, **101**, 6254)]

Absolute configuration: S_P,S_P (X-ray)

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990**, *1*, 17

PLE-catalyzed hydrolysis of **9** and **13** gave respectively **11** (85 % ee) and **14** (95 % ee). Transformation of **11** and **14** into some useful chiral building blocks is described.

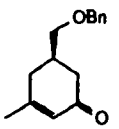


9; R = OBn **11**; R=OBn R ' = H or Me

13; R = CH_2OBn **14**; R = CH_2OBu R = OBn or CH_2OBn

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990**, *1*, 17



$C_{15}H_{18}O_2$

5(R)-Benzyloxymethyl-
3-methyl-cyclohex-2-enone

E.e. = 95 % [by ^{1}H NMR of a precursor]

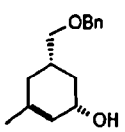
$[\alpha]_D^{20}$=-69.5 (c = 2.2, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 5R
(assigned by CD).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990**, *1*, 17



$C_{15}H_{20}O_4$

5(S)-Benzyloxymethyl-
3-methyl-cyclohex-2-en-1(S)-ol

E.e. = 95 % [by ^{1}H NMR of a precursor]

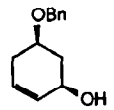
$[\alpha]_D^{20}$ = +30.0 (c = 1.9, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 1S,5S
(assigned by CD of the enone).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990,** *1*, 17



$C_{13}H_{16}O_2$

5(R)-Benzyloxy-cyclohex-2-en-(1R)-ol

E.e. = 80 % [by ^{1}H NMR of a precursor]

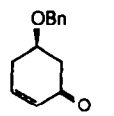
$[\alpha]_D^{20}$ = -39.3 (c = 0.6, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 1R, 5R
(assigned by CD of the enone).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990,** *1*, 17



$C_{13}H_{14}O_2$

5(R)-Benzyloxy-cyclohex-2-enone

E.e. = 80 % [by ^{1}H NMR of a precursor]

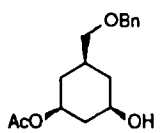
$[\alpha]_D^{20}$ = -3.0 (c = 1.8, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 5R
(assigned by CD).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990,** *1*, 17



$C_{16}H_{22}O_4$

3(S)-Acetoxy-5(S)-benzyloxymethyl-cyclohexan-(1R)-ol

E.e. = 95 % [by ^{1}H NMR of Mosher's ester derivative]

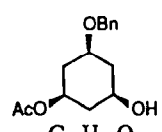
$[\alpha]_D^{20}$ =+14.2 (c = 1, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis.

Absolute configuration : 1R,3S,5S
(assigned by CD after transformation to a cyclohexenone).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990,** *1*, 17



$C_{15}H_{20}O_4$

3(R)-Acetoxy-5(S)-benzyloxy-cyclohexan-(1R)-ol

E.e. = 80 % [by ^{1}H NMR of Mosher's ester derivative]

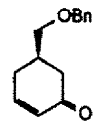
$[\alpha]_D^{20}$ = -5.0 (c = 1, $CHCl_3$)

Source of chirality : enantiotoposelective enzymatic hydrolysis.

Absolute configuration : 1R,3R,5S
(assigned by CD after transformation to a cyclohexenone).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990**, *1*, 17



$C_{14}H_{16}O_2$

5(R)-Benzyloxymethyl-cyclohex-2-enone

E.e. = 95 % [by ^{1}H NMR of a precursor]

$[\alpha]_D^{20}$ = -59.8 (c = 1.5, $CHCl_3$)

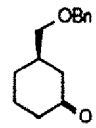
Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 5R

(assigned by CD).

M. Carda, J. Van der Eycken and M. Vandewalle*

Tetrahedron: Asymmetry **1990**, *1*, 17



$C_{14}H_{18}O_2$

3(R)-Benzyloxymethyl-cyclohexan-1-one

E.e. = 95 % [by ^{1}H NMR of a precursor]

$[\alpha]_D^{20}$ = -4.9 (c = 1.9, $CHCl_3$)

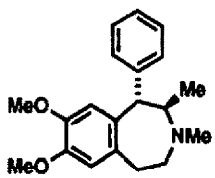
Source of chirality : enantiotoposelective enzymatic hydrolysis of a precursor.

Absolute configuration : 3R

(assigned by CD).

S.J. Coote, S.G. Davies, D. Middlemiss and A. Naylor

Tetrahedron: Asymmetry **1990**, *1*, 33



$C_{20}H_{25}NO_2$

1-phenyl-2-methyl-N-methyl-7,8-dimethoxytetrahydrobenzazepine

homochiral-single diastereoisomer derived from pseudoephedrine

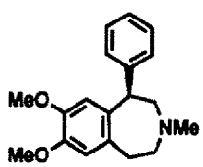
$[\alpha]_D^{21}$ = +5.4° (c 1.49, $CHCl_3$)

Source of chirality: (-)-(1R,2R)-pseudoephedrine

Absolute Configuration: 1S, 2R

S.J. Coote, S.G. Davies, D. Middlemiss and A. Naylor

Tetrahedron: Asymmetry **1990**, *1*, 33



$C_{19}H_{23}NO_2$

1-phenyl-N-methyl-7,8-dimethoxytetrahydrobenzazepine

homochiral by nmr with (-)-2,2,2-trifluoro-1-(9-anthryl)ethanol

$[\alpha]_D^{18}$ = +31.2° (c 0.99, $CHCl_3$)

Source of chirality: (+)-(S)-halostachine

Absolute Configuration: R