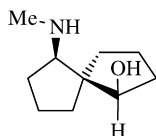


Stereochemistry abstracts

Wendy L. Benoit, Masood Parvez, Brian A. Keay \*

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$C_{10}H_{19}NO$

(1*R*,5*R*,6*R*)-6-Methylamino-spiro[4.4]nonan-1-ol

Ee = >98%

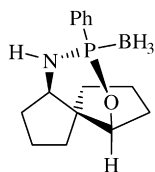
$[\alpha]_D^{20} = -9.6$  (c 0.4,  $CHCl_3$ )

Source of chirality: derivative of (1*R*,5*R*,6*R*)-aminospiro[4.4]nonan-1-ol

Absolute configuration: (1*R*,5*R*,6*R*)

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$C_{16}H_{25}BNOP$

(*S*<sub>p</sub>)-(3*aR*,6*aR*,9*aR*)-6-Methyl-5-phenyl-1,2,3,3*a*,5,6,6*a*,7,8,9-decahydro-4-oxa-6-aza-5-phosphacyclopenta-[*d*]indene borane

Ee = >98%

$[\alpha]_D^{23} = +27.1$  (c 7.0,  $CHCl_3$ )

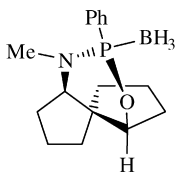
Source of chirality: derivative of (1*R*,5*R*,6*R*)-aminospiro[4.4]nonan-1-ol

Absolute configuration: (*S*<sub>p</sub>)-(3*aR*,6*aR*,9*aR*)

(*S*<sub>p</sub>)-confirmed by X-ray crystal structure

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$C_{15}H_{23}BNOP$

(*S*<sub>p</sub>)-(3*aR*,6*aR*,9*aR*)-5-Phenyl-1,2,3,3*a*,5,6,6*a*,7,8,9-decahydro-4-oxa-6-aza-5-phosphacyclopenta[*d*]-indene borane

Ee = >98%

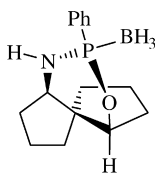
$[\alpha]_D^{20} = +11.75$  (c 0.4,  $CHCl_3$ )

Source of chirality: derivative of (1*R*,5*R*,6*R*)-aminospiro[4.4]nonan-1-ol

Absolute configuration: (*S*<sub>p</sub>)-(3*aR*,6*aR*,9*aR*)

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$C_{15}H_{23}BNOP$

*R*<sub>p</sub>-(3*aR*,6*aR*,9*aR*)-5-Phenyl-1,2,3,3*a*,5,6,6*a*,7,8,9-decahydro-4-oxa-6-aza-5-phosphacyclopenta-[*d*]indene borane

Ee = >98%

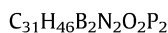
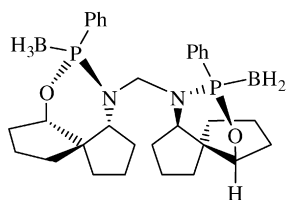
$[\alpha]_D^{20} = -2.6$  (c 0.4,  $CHCl_3$ )

Source of chirality: derivative of 1*R*,5*R*,6*R*-aminospiro[4.4]nonan-1-ol

Absolute configuration: (*R*<sub>p</sub>)-(3*aR*,6*aR*,9*aR*)

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(*S<sub>p</sub>*)-Bis[(3*aR*,6*aR*,9*aR*)-6-methyl-5-phenyl-1,2,3,3*a*,5,6,6*a*,7,8,9-decahydro-4-oxa-6-aza-5-phospha-cyclopenta[*d*]indene borane] methane

Ee = >98%

$[\alpha]_D^{20} = -54.5$  (c 0.5, CHCl<sub>3</sub>)

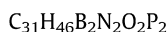
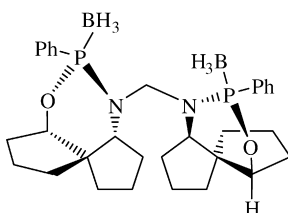
Source of chirality: derivative of (1*R*,5*R*,6*R*)-aminospiro[4.4]nonan-1-ol

Absolute configuration: (*S<sub>p</sub>*)-(3*aR*,6*aR*,9*aR*)

(*S<sub>p</sub>*)-confirmed by X-ray crystal structure

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(*R<sub>p</sub>*)-Bis[(3*aR*,6*aR*,9*aR*)-6-methyl-5-phenyl-1,2,3,3*a*,5,6,6*a*,7,8,9-decahydro-4-oxa-6-aza-5-phospha-cyclopenta[*d*]indene borane] methane

Ee = >98%

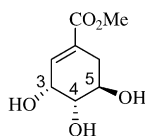
$[\alpha]_D^{20} = -19.1$  (c 1.1, CHCl<sub>3</sub>)

Source of chirality: derivative of (1*R*,5*R*,6*R*)-aminospiro[4.4]nonan-1-ol

Absolute configuration: (*R<sub>p</sub>*)-(3*aR*,6*aR*,9*aR*) confirmed by X-ray crystal structure

Shi-Ling Liu, Xiao-Xin Shi \*, Yu-Lan Xu, Wei Xu, Jing Dong

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(-)-Methyl shikimate

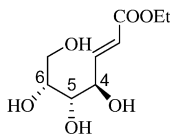
$[\alpha]_D^{25} = -131.5$  (c 0.75, EtOH)

Source of chirality: *D*-arabinose

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

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(*E*)-(4*R*,5*S*,6*R*)-Ethyl 4,5,6,7-tetrahydroxy-hept-2-enoate

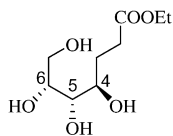
$[\alpha]_D^{25} = +15.1$  (c 0.4, MeOH)

Source of chirality: *D*-arabinose

Absolute configuration: (4*R*,5*S*,6*R*)

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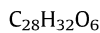
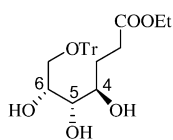


(4R,5S,6R)-Ethyl 4,5,6,7-tetrahydroxy-heptanoate

$[\alpha]_D^{25} = +9.2$  (c 0.5, H<sub>2</sub>O)  
Source of chirality: D-arabinose  
Absolute configuration: (4R,5S,6R)

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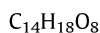
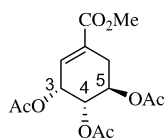


(4R,5S,6R)-Ethyl 4,5,6-trihydroxy-7-triphenylmethoxy-heptanoate

$[\alpha]_D^{25} = +6.8$  (c 2.6, EtOAc)  
Source of chirality: D-arabinose  
Absolute configuration: (4R,5S,6R)

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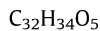
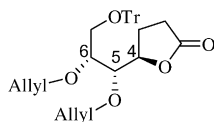


(-)-Methyl 3,4,5-O-triacetyl shikimate

$[\alpha]_D^{25} = -172.4$  (c 0.47, CHCl<sub>3</sub>)  
Source of chirality: D-arabinose  
Absolute configuration: (3R,4S,5R)

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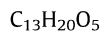
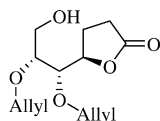


(4R,5S,6R)-5,6-Diallyloxy-7-triphenylmethoxy-heptano-1,4-lactone

$[\alpha]_D^{25} = -5.7$  (c 3, EtOAc)  
Source of chirality: D-arabinose  
Absolute configuration: (4R,5S,6R)

Shi-Ling Liu, Xiao-Xin Shi\*, Yu-Lan Xu, Wei Xu, Jing Dong

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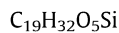
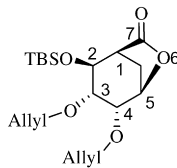


(4R,5S,6R)-5,6-Diallyloxy-7-hydroxy-heptano-1,4-lactone

$[\alpha]_D^{25} = -37.5$  (c 1.4, EtOAc)  
Source of chirality: D-arabinose  
Absolute configuration: (4R,5S,6R)

Shi-Ling Liu, Xiao-Xin Shi\*, Yu-Lan Xu, Wei Xu, Jing Dong

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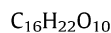
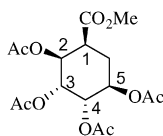


(1S,2S,3S,4S,5R)-2-(*tert*-Butyldimethylsilyloxy)-3,4-diallyloxy-6-oxa-bicyclo[3,2,1]octan-7-one

$[\alpha]_D^{25} = +56.0$  (c 1.05, EtOH)  
Source of chirality: D-arabinose  
Absolute configuration: (1S,2S,3S,4S,5R)

Shi-Ling Liu, Xiao-Xin Shi\*, Yu-Lan Xu, Wei Xu, Jing Dong

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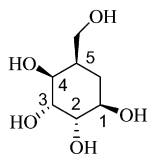


(1S,2S,3R,4S,5R)-Methyl 2,3,4,5-tetraacetoxy-cyclohexanecarboxylate

$[\alpha]_D^{25} = -3.3$  (c 1.5,  $CHCl_3$ )  
Source of chirality: D-arabinose  
Absolute configuration: (1S,2S,3R,4S,5R)

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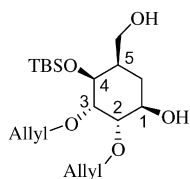


(1R,2S,3R,4S,5R)-5-Hydroxymethyl-cyclohexane-1,2,3,4-tetrol

$[\alpha]_D^{25} = -58.3$  (c 0.4, MeOH)  
Source of chirality: D-arabinose  
Absolute configuration: (1R,2S,3R,4S,5R)

Shi-Ling Liu, Xiao-Xin Shi \*, Yu-Lan Xu, Wei Xu, Jing Dong

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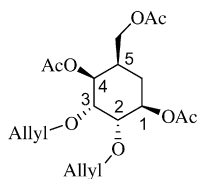
$C_{19}H_{36}O_5Si$

(1R,2S,3S,4S,5R)-4-(*tert*-Butyldimethylsilyloxy)-2,3-diallyloxy-5-hydroxymethyl cyclohexanol

$[\alpha]_D^{25} = -38.3$  (c 1.2, EtOH)  
Source of chirality: D-arabinose  
Absolute configuration: (1R,2S,3S,4S,5R)

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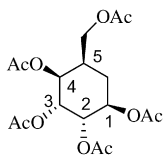
$C_{19}H_{28}O_8$

(1R,2S,3R,4S,5R)-5-Acetoxymethyl-1,4-diacetoxy-2,3-diallyloxy-cyclohexane

$[\alpha]_D^{25} = -43.7$  (c 1.1, MeOH)  
Source of chirality: D-arabinose  
Absolute configuration: (1R,2S,3R,4S,5R)

Shi-Ling Liu, Xiao-Xin Shi \*, Yu-Lan Xu, Wei Xu, Jing Dong

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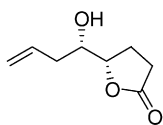
$C_{17}H_{24}O_{10}$

(1R,2S,3R,4S,5R)-1,2,3,4-O-Tetraacetyl-5-acetoxymethyl-cyclohexane-1,2,3,4-tetrol

$[\alpha]_D^{25} = -22.3$  (c 1, CHCl<sub>3</sub>)  
Source of chirality: D-arabinose  
Absolute configuration: (1R,2S,3R,4S,5R)

Lourdusamy Emmanuvel, Dayanand A. Kamble, Arumugam Sudalai \*

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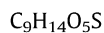
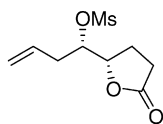
$C_8H_{12}O_3$

(S)-Dihydro-5-((S)-1-hydroxybut-3-enyl)furan-2(3H)-one

$[\alpha]_D^{25} = +42$  (c 0.6, CHCl<sub>3</sub>)  
Source of chirality: asymmetric dihydroxylation  
Absolute configuration: (4S,5S)

Lourdusamy Emmanuvel, Dayanand A. Kamble, Arumugam Sudalai \*

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(S)-1-((S)-Tetrahydro-5-oxofuran-2-yl)but-3-enyl methanesulfonate

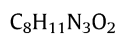
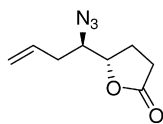
$$[\alpha]_D^{25} = +28 \text{ (c 1.4, CHCl}_3\text{)}$$

Source of chirality: asymmetric dihydroxylation

Absolute configuration: (4S,5S)

Lourdusamy Emmanuvel, Dayanand A. Kamble, Arumugam Sudalai \*

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(S)-5-((R)-1-Azidobut-3-enyl)-dihydrofuran-2(3H)-one

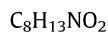
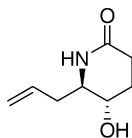
$$[\alpha]_D^{25} = -21 \text{ (c 0.5, CHCl}_3\text{)}$$

Source of chirality: asymmetric dihydroxylation

Absolute configuration: (4R,5R)

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(5S,6R)-6-Allyl-5-hydroxypiperidin-2-one

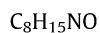
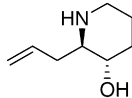
$$[\alpha]_D^{25} = +10 \text{ (c 0.8, CHCl}_3\text{)}$$

Source of chirality: asymmetric dihydroxylation

Absolute configuration: (5S,6R)

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(2R,3S)-2-Allylpiperidin-3-ol

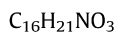
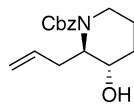
$$[\alpha]_D^{25} = -46 \text{ (c 1, MeOH)}$$

Source of chirality: asymmetric dihydroxylation

Absolute configuration: (2R,3S)

Lourdusamy Emmanuvel, Dayanand A. Kamble, Arumugam Sudalai \*

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(2*R*,3*S*)-Benzyl 2-allyl-3-hydroxypiperidine-1-carboxylate

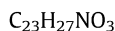
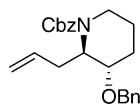
$$[\alpha]_D^{25} = -37 \text{ (c 1, CHCl}_3\text{)}$$

Source of chirality: asymmetric dihydroxylation

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

Lourdusamy Emmanuvel, Dayanand A. Kamble, Arumugam Sudalai \*

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(2*R*,3*S*)-Benzyl 2-allyl-3-(benzyloxy)piperidine-1-carboxylate

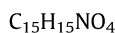
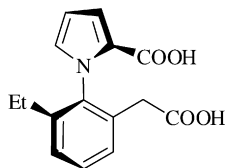
$$[\alpha]_D^{25} = -37 \text{ (c 0.8, CHCl}_3\text{)}$$

Source of chirality: asymmetric dihydroxylation

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

Ferenc Faigl \*, Bernadett Vas-Feldhoffer, Miklós Kubinyi, Krisztina Pál,  
Gábor Tárkányi, Máttyás Czugler

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(*R*)-1-(2-carboxymethyl-6-ethylphenyl)-1*H*-pyrrole-2-carboxylic acid

ee = >99%

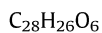
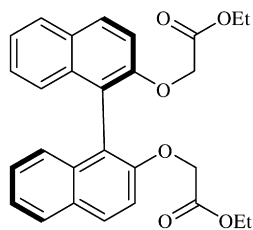
$$[\alpha]_D = -85.5 \text{ (c 1, ethanol)}$$

Source of chirality: resolution

Absolute configuration: (*R*)

Chenguang Hu, Yongbing He \*, Zhihong Chen, Xiaohuan Huang

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(*S*)-Diethyl 2,2'-(1,1'-binaphthyl-2,2'-diylbisloxy)diacetate

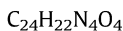
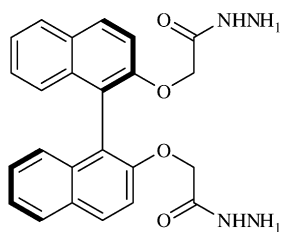
$$[\alpha]_D^{20} = +35 \text{ (c 0.2, CHCl}_3\text{)}$$

Source of chirality: binaphthol

Absolute configuration: *S*

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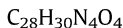
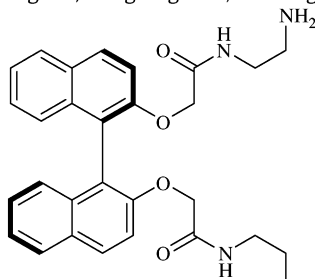


(S)-2,2'-(1,1'-Binaphthyl-2,2'-diyl)bis(oxy)diacetohydrazide

$[\alpha]_D^{20} = +177.5$  (c 0.2,  $CHCl_3$ )  
Source of chirality: binaphthol  
Absolute configuration: S

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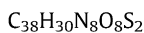
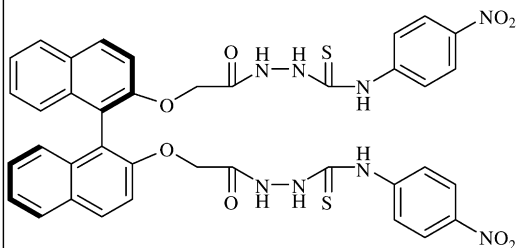


(S)-2,2'-(1,1'-Binaphthyl-2,2'-diyl)bis(oxy)bis(N-(2-aminoethyl)acetamide)

$[\alpha]_D^{20} = +145$  (c 0.4,  $CHCl_3$ )  
Source of chirality: binaphthol  
Absolute configuration: S

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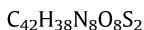
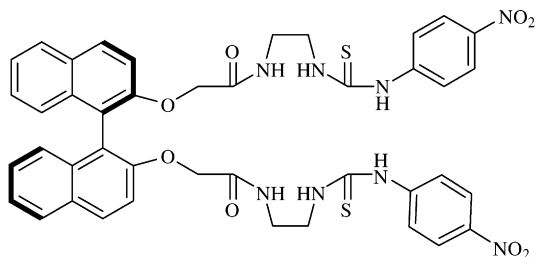


Bis(p-nitrophenylthioureylene-carbamoyl-methoxy)-2,2'-(S)-1,1'-binaphthalene

$[\alpha]_D^{20} = +19.75$  (c 0.05, DMSO)  
Source of chirality: binaphthol  
Absolute configuration: S

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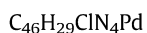
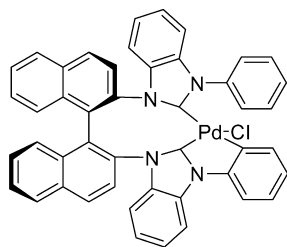
Bis(p-nitrophenylthioureylene-ethenecarbamoyl-methoxy)-2,2'-(S)-1,1'-binaphthalene

$[\alpha]_D^{20} = +39.5$  (c 0.05, DMSO)  
Source of chirality: binaphthol  
Absolute configuration: S



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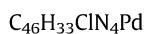
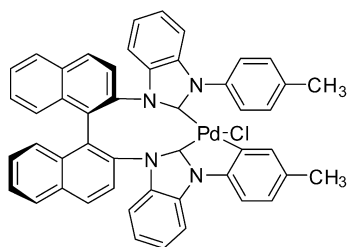


(R)-(+)-Axially chiral cyclometalated bidentate NHC-Pd(II) complex **1a**

Ee = 100%  
 $[\alpha]_D^{20} = +126.1$  (c 0.95,  $CHCl_3$ ).  
Source of chirality: resolution  
Absolute configuration: (R)

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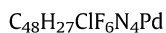
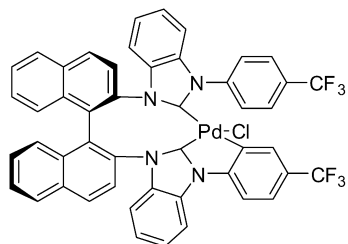


(R)-(+)-Axially chiral cyclometalated bidentate NHC-Pd(II) complex **1b**

Ee = 100%  
 $[\alpha]_D^{20} = +247.6$  (c 1.01,  $CHCl_3$ )  
Source of chirality: resolution  
Absolute configuration: (R)

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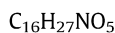
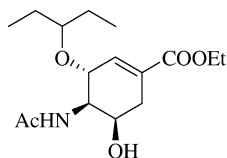


(R)-(+)-Axially chiral cyclometalated bidentate NHC-Pd(II) complex **1c**

Ee = 100%  
 $[\alpha]_D^{20} = +218.3$  (c 1.08,  $CHCl_3$ )  
Source of chirality: resolution  
Absolute configuration: (R)

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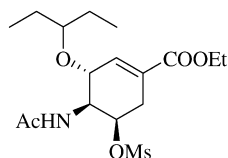


Ethyl (3R,4R,5R)-4-N-acetyl-3-(1-ethyl-propoxy)-5-hydroxy-cyclohex-1-ene-1-carboxylate

$[\alpha]_D^{25} = -104$  (c 3.0, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4R,5R)

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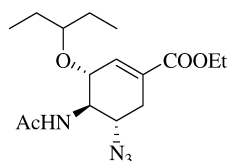
$[\alpha]_D^{25} = -85$  (c 0.7, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4S,5R)

$C_{17}H_{29}NO_7S$

Ethyl (3R,4S,5R)-4-N-acetylamino-3-(1-ethyl-propoxy)-5-methansulfonyloxy-cyclohex-1-ene-1-carboxylate

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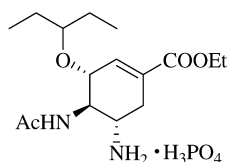
$[\alpha]_D^{20} = -44$  (c 1.5,  $CHCl_3$ )  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4R,5S)

$C_{16}H_{26}N_4O_4$

Ethyl (3R,4R,5S)-4-N-acetylamino-5-azido-3-(1-ethyl-propoxy)-cyclohex-1-ene-1-carboxylate

Liang-Deng Nie, Xiao-Xin Shi \*

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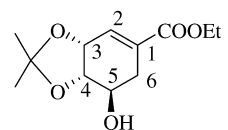
$[\alpha]_D^{20} = -39$  (c 1,  $H_2O$ )  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4R,5S)

$C_{16}H_{31}N_2O_8P$

Osetamivir phosphate (Tamiflu)

Liang-Deng Nie, Xiao-Xin Shi \*

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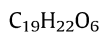
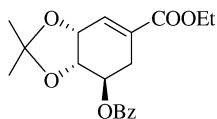
$[\alpha]_D^{20} = -31$  (c 3.0, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4S,5R)

$C_{12}H_{18}O_5$

Ethyl (3R,4S,5R)-3,4-O-isopropylidene-shikimate

Liang-Deng Nie, Xiao-Xin Shi \*

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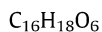
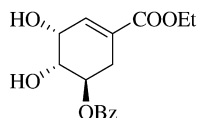


Ethyl (3R,4S,5R)-5-O-benzoyl-3,4-O-isopropylidene-shikimate

$[\alpha]_D^{25} = -55$  (c 3.4, EtOAc)  
Source of chirality: (–)-Shikimic acid  
Absolute configuration: (3R,4S,5R)

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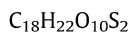
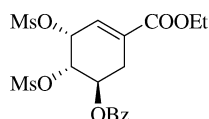


Ethyl (3R,4R,5R)-5-O-benzoyl-shikimate

$[\alpha]_D^{25} = -122$  (c 2.7, EtOAc)  
Source of chirality: (–)-Shikimic acid  
Absolute configuration: (3R,4R,5R)

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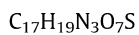
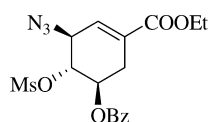


Ethyl (3R,4S,5R)-5-O-benzoyl-3,4-O-bismethanesulfonyl-shikimate

$[\alpha]_D^{25} = -135$  (c 1.9, EtOAc)  
Source of chirality: (–)-Shikimic acid  
Absolute configuration: (3R,4S,5R)

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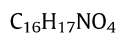
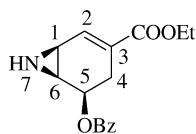


Ethyl (3S,4R,5R)-3-azido-5-benzoyloxy-4-methanesulfonyloxy-cyclohex-1-ene-1-carboxylate

$[\alpha]_D^{25} = -27$  (c 2.8, EtOAc)  
Source of chirality: (–)-Shikimic acid  
Absolute configuration: (3S,4R,5R)

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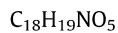
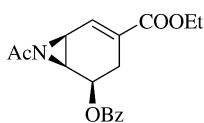


Ethyl (1S,5R,6S)-5-benzoyloxy-7-aza-bicyclo[4,1,0]hept-2-ene-3-carboxylate

$[\alpha]_D^{25} = -63$  (c 0.8, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (1S,5R,6S)

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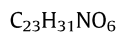
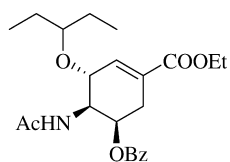


Ethyl (1S,5R,6S)-7-acetyl-5-benzoyloxy-7-aza-bicyclo[4,1,0]hept-2-ene-3-carboxylate

$[\alpha]_D^{25} = -41$  (c 1.6, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (1S,5R,6S)

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Ethyl (3R,4R,5R)-4-N-acetyl-5-benzoyloxy-3-(1-ethyl-propoxy)-cyclohex-1-ene-1-carboxylate

$[\alpha]_D^{25} = -113$  (c 1.6, EtOAc)  
Source of chirality: (-)-Shikimic acid  
Absolute configuration: (3R,4R,5R)