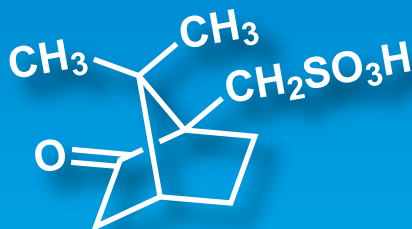
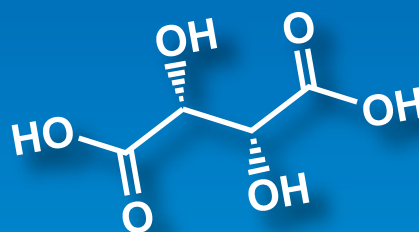
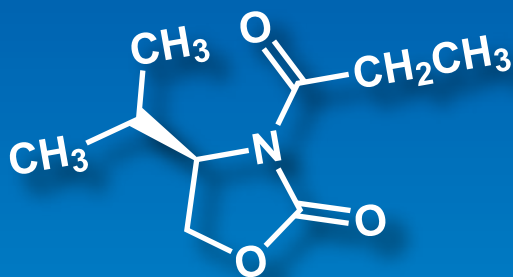


# Chiral Auxiliaries and Optical Resolving Agents



Chiral Auxiliaries

Optical Resolving Agents

# Chiral Auxiliaries and Optical Resolving Agents

Most bioactive substances are optically active. For instance, if a substance is synthesized as a racemic compound, its enantiomer may show no activity or even undesired bioactivity. Thus, methods to gain enantiopure compounds have been developed. When synthesizing enantiopure compounds, the methods are roughly divided into three methods.

## Chiral pool method:

The method using an easily available chiral compound as a starting material like an amino acid or sugar.

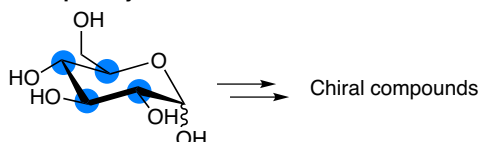
## Asymmetric synthesis:

The method to introduce an asymmetric point to compounds without an asymmetric point. Syntheses using achiral auxiliaries are included here.

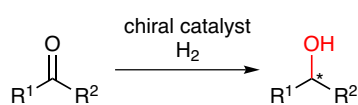
## Optical resolution:

The method to separate a racemic compound into two enantiomers. The direct method using a chiral column and the indirect method to separate two enantiomers using optical resolving agents to convert into diastereomers are examples.

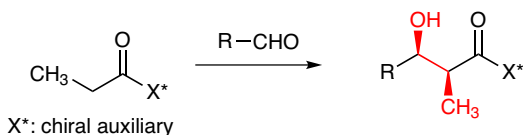
### Chiral pool synthesis



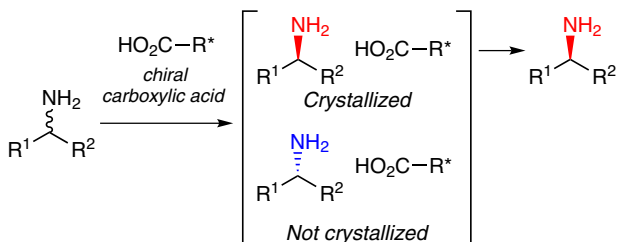
### Asymmetric synthesis



### Asymmetric synthesis with chiral auxiliaries



### Optical resolution

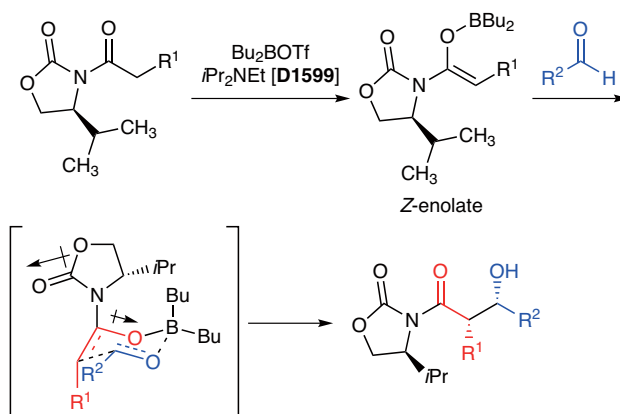


This brochure introduces a variety of chiral auxiliaries and optical resolving agents. We hope that it will be useful for your research of the synthesis of optically active compounds. Additionally, TCI has some brochures introducing chiral compounds for the chiral pool method in “Chiral Building Blocks”, “Terpenes”, “Amino Acids” and other brochures. Sugar derivatives are also introduced in a catalog, “Reagents for Glyco Chemistry & Biology”, and category pages of sugar chains. Furthermore, TCI has many kinds of catalysts for asymmetric synthesis and introduce them in brochures such as “Asymmetric Synthesis” and “Asymmetric Organocatalysts”, and other contents.

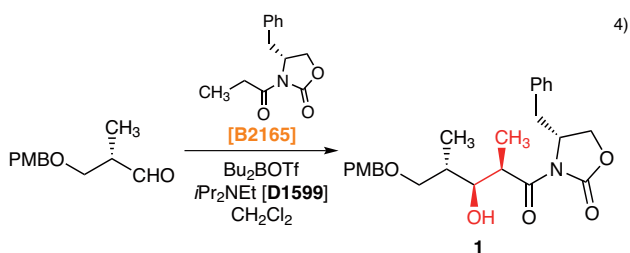
You can search our information through “asymmetric synthesis” as a keyword.

## ● Reactions with Chiral Auxiliaries

One of the most famous named reactions using chiral auxiliaries<sup>1)</sup> is the Evans aldol reaction.<sup>2)</sup> This reaction is quite useful because this reaction can efficiently introduce two asymmetric carbons into chain-shaped compounds and the stereochemistry of the product can be expected. Additionally, *N*-acyloxazolidinones are commercially available and can be prepared from amino acid derivatives and the chiral auxiliaries are removed by the hydrolysis or the conversion to Weinreb amide, so that it is superior in ease of use. Furthermore, all of the diastereomers can be synthesized by maintaining the chiral auxiliaries and Lewis acids.<sup>3)</sup>

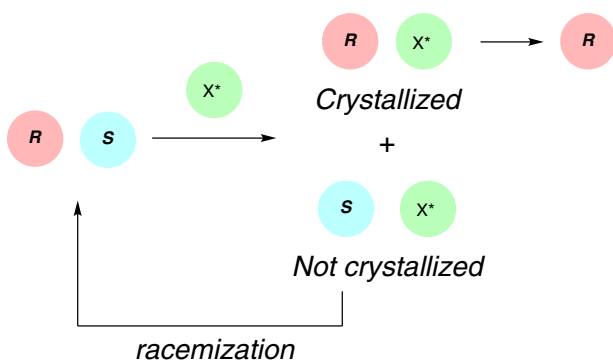


The Evans aldol reaction is applicable to larger scales. For example, the research group of Novartis used this reaction in the large-scale synthesis of discodermolide<sup>4)</sup> and they implemented the below reaction at the 30 kg scale, which afforded the intermediate **1** in high diastereoselectivity and enantioselectivity.



### ● Optical Resolution

Optical resolution<sup>5)</sup> is used in the manufacture of medicines even now, although it has some disadvantages as follows: theoretically, half of the substance will be lost; a selection process of the reagents for optical resolution and separation of the reagents is needed. However, if the undesired enantiomer can be racemized, it will be possible to do optical resolution again and the recovery rate of the desired product will be raised.



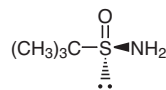
### References

- 1) reviews of chiral auxiliaries:
  - a) W. Oppolzer, *Tetrahedron* **1987**, *43*, 1969.
  - b) H. Waldmann, *Synthesis* **1994**, 535.
  - c) V. Farina, J. T. Reeves, C. H. Senanayake, J. J. Song, *Chem. Rev.* **2006**, *106*, 2734.
  - d) X. Salom-Roig, C. Bauder, *Synthesis* **2020**, *52*, 535.
- 2) a) D. A. Evans, J. Bartroli, T. L. Shih, *J. Am. Chem. Soc.* **1981**, *103*, 2127.
  - b) review: D. A. Evans, J. M. Takacs, L. R. McGee, M. D. Ennis, D. J. Mathre, J. Bartroli, *Pure Appl. Chem.* **1981**, *53*, 1109.
- 3) a) M. A. Walker, C. H. Heathcock, *J. Org. Chem.* **1991**, *56*, 5747.
  - b) M. T. Crimmins, B. W. King, E. A. Tabet, *J. Am. Chem. Soc.* **1997**, *119*, 7883.
  - c) D. A. Evans, J. S. Tedrow, J. T. Shaw, C. W. Downey, *J. Am. Chem. Soc.* **2002**, *124*, 392.
  - d) D. A. Evans, C. W. Downey, J. T. Shaw, J. S. Tedrow, *J. Am. Chem. Soc.* **2002**, *124*, 392.
- 4) S. J. Mickel, G. H. Sedelmeier, D. Niederer, R. Daeffler, A. Osmani, K. Schreiner, M. Seeger-Weibel, B. Bérod, K. Schaer, R. Gamboni, S. Chen, W. Chen, C. T. Jagoe, F. R. Kinder, M. Loo, K. Prasad, O. Repič, W.-C. Shieh, R.-M. Wang, L. Waykole, D. D. Xu, S. Xue, *Org. Proc. Res. Dev.* **2004**, *8*, 92.
- 5) reviews of optical resolution:
  - a) A. Collet, M. J. Brienne, J. Jacques, *Chem. Rev.* **1980**, *80*, 215.
  - b) E. Fogassy, M. Nógrádi, D. Kozma, G. Egri, E. Pálovics, V. Kiss, *Org. Biomol. Chem.* **2006**, *4*, 3011.
  - c) F. Faigl, E. Fogassy, M. Nógrádi, E. Pálovics, J. Schindler, *Tetrahedron Asymmetry* **2008**, *19*, 519.
  - d) S. H. Wilen, A. Collet, J. Jacques, *Tetrahedron* **1977**, *33*, 2725.

## Chiral Auxiliaries

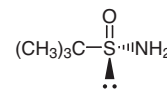
## Sulfinamides

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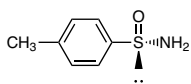
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CAS RN: 196929-78-9

**B2908** 1g 5g



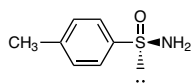
(*S*)-(-)-*tert*-Butylsulfinamide  
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**T2069** 1g 5g



(*S*)-(+)-*p*-Toluenesulfinamide  
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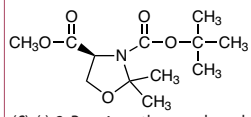
**T2814** 200mg 1g



(*R*)-(-)-*p*-Toluenesulfinamide  
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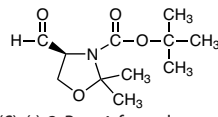
## Oxazolidines

**B1755** 1g 5g 25g



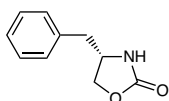
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**B1759** 1g 5g



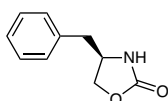
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**B1754** 5g 25g



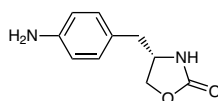
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**B1786** 5g 25g



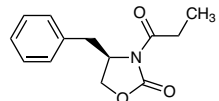
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**A2095** 1g 5g



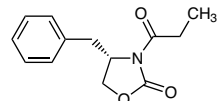
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**B2165** 1g 5g 25g



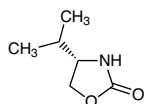
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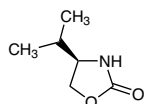
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**I0451** 1g 5g 25g



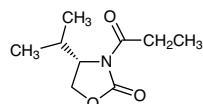
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**I0572** 1g 5g 25g



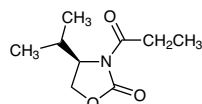
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**I0573** 1g 5g



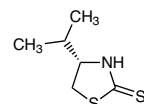
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**I0594** 1g 5g



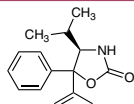
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**I0575** 1g



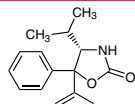
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**I0761** 1g 5g



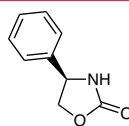
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**I0762** 1g 5g



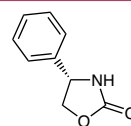
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**P1307** 5g 25g



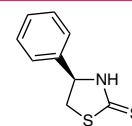
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**P1308** 5g 25g



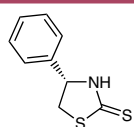
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**P1959** 1g



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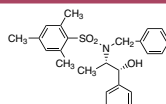
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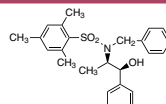
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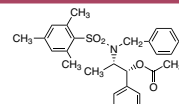
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**B2104** 1g 5g



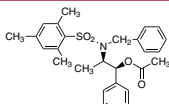
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CAS RN: 187324-64-7

**A1534** 1g



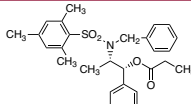
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CAS RN: 240423-74-9

**A1535** 1g



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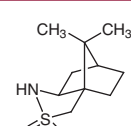
**P1371** 1g



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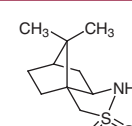
## Camphorsultams

**C1324** 1g 5g



(+)-10,2-Camphorsultam  
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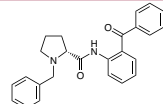
**C1325** 1g 5g



(-)-10,2-Camphorsultam  
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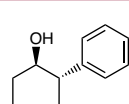
## Others

**B5518** 1g 5g



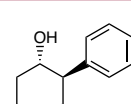
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**T1490** 100mg 1g



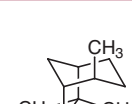
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**T1491** 100mg 1g



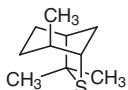
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CAS RN: 34281-92-0

**T2578** 1g 5g



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CAS RN: 5718-75-2

T2579 1g 5g

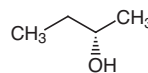


(1S,4S,5S)-4,7,7-Trimethyl-6-thiabicyclo[3.2.1]octane  
CAS RN: 1208985-45-8

## Optical Resolving Agents

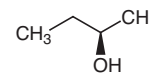
## Alcohols

B0925 1mL 5mL



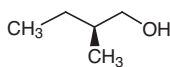
(S)-(+)-2-Butanol  
CAS RN: 4221-99-2

B0926 1mL 5mL



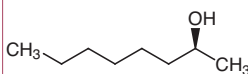
(R)-(-)-2-Butanol  
CAS RN: 14898-79-4

M0170 25mL



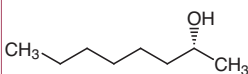
(S)-(-)-2-Methyl-1-butanol  
CAS RN: 1565-80-6

O0144 5mL 25mL



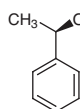
(S)-(+)-2-Octanol  
CAS RN: 6169-06-8

O0145 5mL 25mL



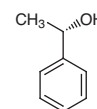
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P0795 1g 5g 25g



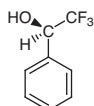
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P0796 1g 5g 25g



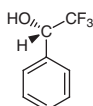
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CAS RN: 1445-91-6

P1367 1g



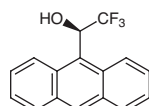
(R)-(-)-1-Phenyl-2,2,2-trifluoroethanol  
CAS RN: 10531-50-7

P1368 1g



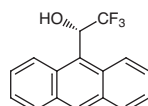
(S)-(+)-1-Phenyl-2,2,2-trifluoroethanol  
CAS RN: 340-06-7

T1520 100mg



(R)-(-)-1-(9-Anthryl)-2,2,2-trifluoroethanol  
CAS RN: 53531-34-3

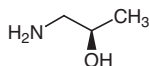
T1521 100mg



(S)-(+)-1-(9-Anthryl)-2,2,2-trifluoroethanol  
CAS RN: 60646-30-2

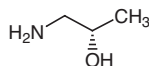
## Amines and Aminoalcohols

A0974 1g 5g 25g



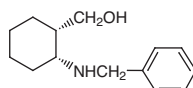
(R)-(-)-1-Amino-2-propanol  
CAS RN: 2799-16-8

A0975 1g 5g



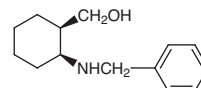
(S)-(+)-1-Amino-2-propanol  
CAS RN: 2799-17-9

B1118 1g 5g



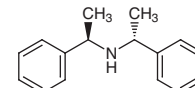
(-)-cis-2-Benzylamino-cyclohexanemethanol  
CAS RN: 71581-93-6

B1119 1g 5g



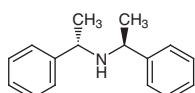
(+)-cis-2-Benzylamino-cyclohexanemethanol  
CAS RN: 71581-92-5

B2034 5g



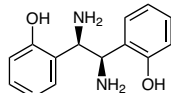
(R,R)-(+)-Bis( $\alpha$ -methylbenzyl)amine Hydrochloride  
CAS RN: 82398-30-9

B2035 5g



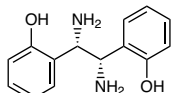
(S,S)-(-)-Bis( $\alpha$ -methylbenzyl)amine Hydrochloride  
CAS RN: 40648-92-8

B3012 100mg 1g



(1R,2R)-1,2-Bis(2-hydroxyphenyl)-ethylenediamine  
CAS RN: 870991-70-1

B3014 1g



(1S,2S)-1,2-Bis(2-hydroxyphenyl)-ethylenediamine  
CAS RN: 870991-68-7

B3672 1g 5g



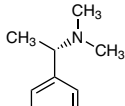
(R)-(+)-1-(4-Bromophenyl)-ethylamine  
CAS RN: 45791-36-4

B3674 5g 25g



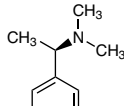
(S)-(-)-1-(4-Bromophenyl)-ethylamine  
CAS RN: 27298-97-1

D1687 1g 5g



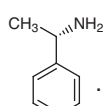
(S)-(-)-N,N-Dimethyl-1-phenylethylamine  
CAS RN: 17279-31-1

D1707 1mL



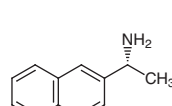
(R)-(+)-N,N-Dimethyl-1-phenylethylamine  
CAS RN: 19342-01-9

N0543 1g



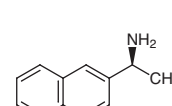
(S)-Nitroresolve  
CAS RN: 132873-57-5

N0724 1g 5g



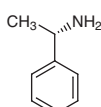
(R)-1-(2-Naphthyl)ethylamine  
CAS RN: 3906-16-9

N0726 1g 5g



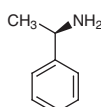
(S)-1-(2-Naphthyl)ethylamine  
CAS RN: 3082-62-0

P0793 25mL 100mL 500mL



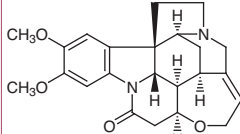
(S)-(-)-1-Phenylethylamine  
CAS RN: 2627-86-3

P0794 25mL 100mL 500mL



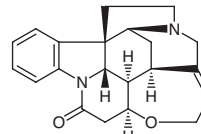
(R)-(+)-1-Phenylethylamine  
CAS RN: 3886-69-9

B0946 25g



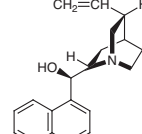
Brucine Anhydrous  
CAS RN: 357-57-3

S0249 25g

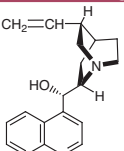
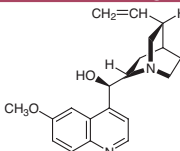
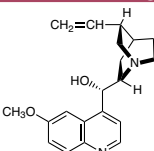
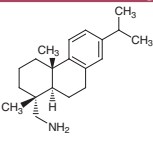
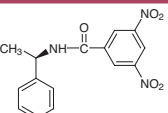
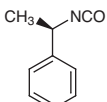
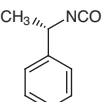
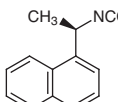
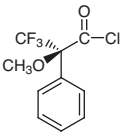
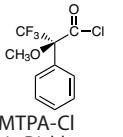
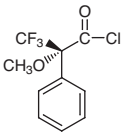
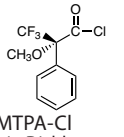
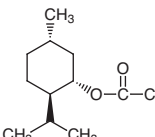
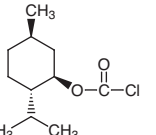
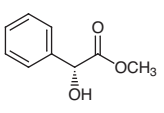
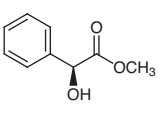
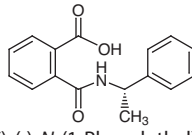
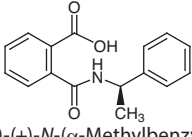
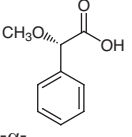
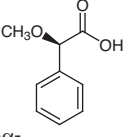
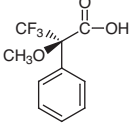
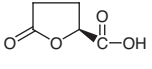
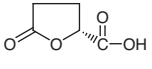
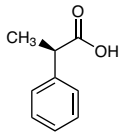
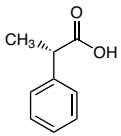
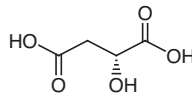
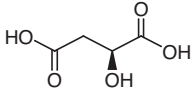
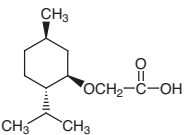
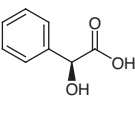
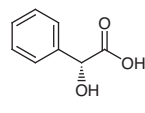
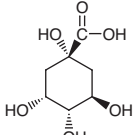
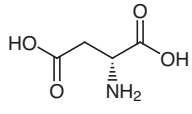
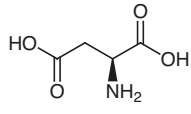
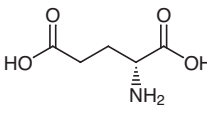
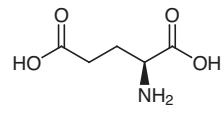


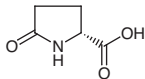
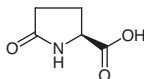
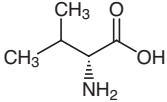
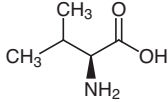
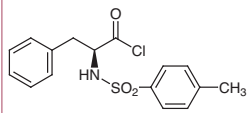
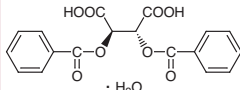
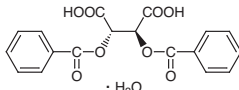
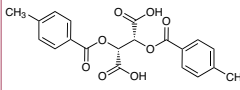
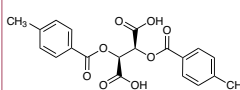
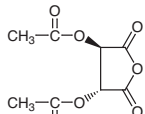
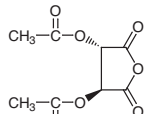
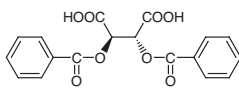
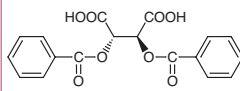
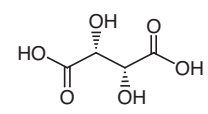
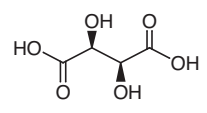
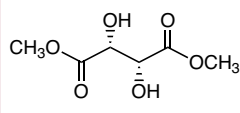
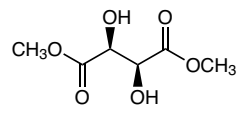
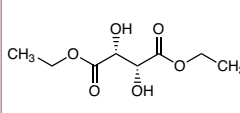
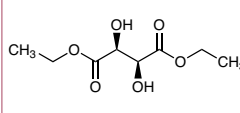
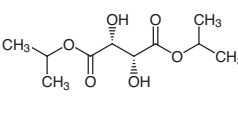
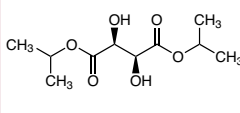
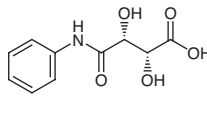
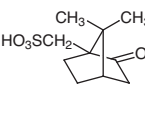
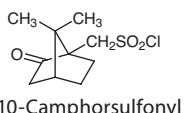
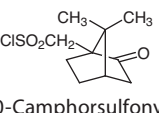
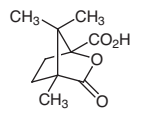
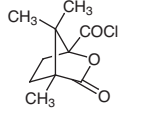
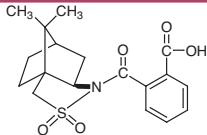
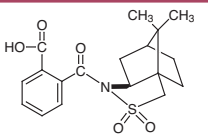
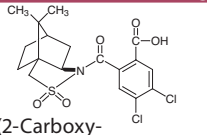
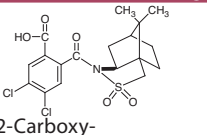
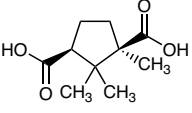
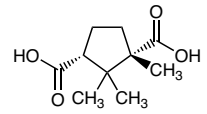
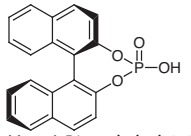
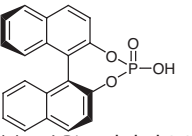
Strychnine  
CAS RN: 57-24-9

C0347 25g 100g



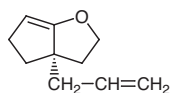
Cinchonidine  
CAS RN: 485-71-2

|  |  |  |   |   |
|--|--|--|---|---|
| <p><b>C0350</b> 25g 200g</p>  <p>Cinchonine<br/>CAS RN: 118-10-5</p>  | <p><b>Q0028</b> 25g 100g</p>  <p>Quinine<br/>CAS RN: 130-95-0</p>   | <p><b>Q0006</b> 5g 25g</p>  <p>Quinidine<br/>CAS RN: 56-54-2</p>  | <p><b>D1588</b> 5g 25g</p>  <p>(+)-Dehydroabietylamine<br/>CAS RN: 1446-61-3</p>  | <h2 style="text-align: center;">Carbonyl Compounds</h2>   |
| <p><b>D1852</b> 1g</p>  <p>(<i>R</i>)-(-)-<i>N</i>-(3,5-Dinitrobenzoyl)-<math>\alpha</math>-phenylethylamine<br/>CAS RN: 69632-32-2</p> | <p><b>I0334</b> 1g 5g 25g</p>  <p>(<i>R</i>)-(+)-<math>\alpha</math>-Methylbenzyl Isocyanate<br/>CAS RN: 33375-06-3</p>                 | <p><b>I0335</b> 1g 5g</p>  <p>(<i>S</i>)-(-)-<math>\alpha</math>-Methylbenzyl Isocyanate<br/>CAS RN: 14649-03-7</p>         | <p><b>I0336</b> 1g 5g</p>  <p>(<i>R</i>)-(-)-1-(1-Naphthyl)ethyl Isocyanate<br/>CAS RN: 42340-98-7</p>                      |   |
| <p><b>M1103</b> 100mg 1g</p>  <p>(<i>S</i>)-(+)-MTPA-Cl<br/>CAS RN: 20445-33-4</p>  | <p><b>M2214</b> 5g</p>  <p>(<i>S</i>)-(+)-MTPA-Cl<br/>(ca. 18% in Dichloromethane, ca. 1.0mol/L)<br/>CAS RN: 20445-33-4</p>             | <p><b>M1104</b> 100mg 1g</p>  <p>(<i>R</i>)-(-)-MTPA-Cl<br/>CAS RN: 39637-99-5</p>  | <p><b>M2215</b> 5g</p>  <p>(<i>R</i>)-(-)-MTPA-Cl<br/>(ca. 18% in Dichloromethane, ca. 1.0mol/L)<br/>CAS RN: 39637-99-5</p> | <p><b>M1221</b> 5mL 25mL</p>  <p>(+)-Menthyl Chloroformate<br/>CAS RN: 7635-54-3</p>                           |
| <p><b>M0990</b> 5mL 25mL</p>  <p>(-)-Menthyl Chloroformate<br/>CAS RN: 14602-86-9</p>  | <p><b>M1349</b> 1g 5g</p>  <p>Methyl D-(-)-Mandelate<br/>CAS RN: 20698-91-3</p>  | <p><b>M1350</b> 1g 5g</p>  <p>Methyl L-(+)-Mandelate<br/>CAS RN: 21210-43-5</p>  | <h2 style="text-align: center;">Carboxylic Acids</h2>   | <p><b>M0824</b> 1g</p>  <p>(<i>S</i>)-(-)-<i>N</i>-(1-Phenylethyl)-phthalamic Acid<br/>CAS RN: 21752-36-3</p> |
| <p><b>M1622</b> 1g 5g</p>  <p>(<i>R</i>)-(+)-<i>N</i>-(<math>\alpha</math>-Methylbenzyl)-phthalamic Acid<br/>CAS RN: 21752-35-2</p>   | <p><b>M0829</b> 1g 5g</p>  <p>(<i>S</i>)-(+)-<math>\alpha</math>-Methoxyphenylacetic Acid<br/>CAS RN: 26164-26-1</p>                  | <p><b>M0830</b> 100mg 1g 5g</p>  <p>(<i>R</i>)-(-)-<math>\alpha</math>-Methoxyphenylacetic Acid<br/>CAS RN: 3966-32-3</p> |   | <p><b>M0831</b> 1g 5g</p>  <p>(+)-MTPA<br/>CAS RN: 20445-31-2</p>   |
| <p><b>O0276</b> 1g 5g</p>  <p>(<i>S</i>)-(+)-<math>\gamma</math>-Carboxy-<math>\gamma</math>-butyrolactone<br/>CAS RN: 21461-84-7</p> | <p><b>O0281</b> 1g 5g</p>  <p>(<i>R</i>)-(-)-<math>\gamma</math>-Carboxy-<math>\gamma</math>-butyrolactone<br/>CAS RN: 53558-93-3</p> | <p><b>P1219</b> 1g 5g</p>  <p>(<i>R</i>)-(-)-Hydratropic Acid<br/>CAS RN: 7782-26-5</p>                                   | <p><b>P1220</b> 1g 5g</p>  <p>(<i>S</i>)-(+)-Hydratropic Acid<br/>CAS RN: 7782-24-3</p>                                   | <p><b>M0021</b> 5g 25g</p>  <p>D-(+)-Malic Acid<br/>CAS RN: 636-61-3</p>                                     |
| <p><b>M0022</b> 25g 100g 500g</p>  <p>L-(-)-Malic Acid<br/>CAS RN: 97-67-6</p>  | <p><b>M0573</b> 5g 25g</p>  <p>(-)-Menthoxycetic Acid<br/>CAS RN: 40248-63-3</p>  | <p><b>M0661</b> 25g 250g</p>  <p>L-(+)-Mandelic Acid<br/>CAS RN: 17199-29-0</p>   | <p><b>M0662</b> 25g 100g 500g</p>  <p>D-(-)-Mandelic Acid<br/>CAS RN: 611-71-2</p>  | <p><b>Q0009</b> 5g 25g</p>  <p>D-(-)-Quinic Acid<br/>CAS RN: 77-95-2</p>                                     |
| <h2 style="text-align: center;">Amino Acid Derivatives</h2>  | <p><b>A0545</b> 25g</p>  <p>D-Aspartic Acid<br/>CAS RN: 1783-96-6</p>   | <p><b>A0546</b> 25g 500g</p>  <p>L-Aspartic Acid<br/>CAS RN: 56-84-8</p>  | <p><b>G0057</b> 25g 250g</p>  <p>D-Glutamic Acid<br/>CAS RN: 6893-26-1</p>  | <p><b>G0059</b> 25g 500g</p>  <p>L-Glutamic Acid<br/>CAS RN: 56-86-0</p>                                     |

|  |   |   |   |  |   |
|--|---|---|---|--|---|
| <p><b>P1354</b> 5g 25g</p>  <p>D-Pyrroglutamic Acid<br/>CAS RN: 4042-36-8</p>                           | <p><b>P0573</b> 25g 100g 500g</p>  <p>L-Pyrroglutamic Acid<br/>CAS RN: 98-79-3</p>                       | <p><b>V0012</b> 1g 25g</p>  <p>D-Valine<br/>CAS RN: 640-68-6</p>   | <p><b>V0014</b> 25g 100g 500g</p>  <p>L-Valine<br/>CAS RN: 72-18-4</p>  | <p><b>T1444</b> 1g 5g</p>  <p>Tosyl-L-phenylalanyl Chloride<br/>CAS RN: 29739-88-6</p>                            |   |
| <p><b>Tartaric Acid Derivatives</b></p>  |   | <p><b>D1354</b> 25g 500g</p>  <p>(-)-Dibenzoyl-L-tartaric Acid Monohydrate<br/>CAS RN: 62708-56-9</p>                | <p><b>D1398</b> 25g 500g</p>  <p>(+)-Dibenzoyl-D-tartaric Acid Monohydrate<br/>CAS RN: 80822-15-7</p>                  | <p><b>D1387</b> 25g 250g</p>  <p>(-)-Di-p-toluoyl-L-tartaric Acid<br/>CAS RN: 32634-66-5</p>                       | <p><b>D1417</b> 25g 250g</p>  <p>(+)-Di-p-toluoyl-D-tartaric Acid<br/>CAS RN: 32634-68-7</p> |
| <p><b>D1911</b> 25g</p>  <p>(+)-Diacetyl-L-tartaric Anhydride<br/>CAS RN: 6283-74-5</p>                 | <p><b>D2645</b> 5g 25g</p>  <p>(-)-Diacetyl-D-tartaric Anhydride<br/>CAS RN: 70728-23-3</p>              | <p><b>D3492</b> 25g 250g</p>  <p>(-)-Dibenzoyl-L-tartaric Acid<br/>CAS RN: 2743-38-6</p>                             | <p><b>D3826</b> 25g 250g</p>  <p>(+)-Dibenzoyl-D-tartaric Acid<br/>CAS RN: 17026-42-5</p>                             | <p><b>T0025</b> 25g 500g</p>  <p>L-(+)-Tartaric Acid<br/>CAS RN: 87-69-4</p>                                      |   |
| <p><b>T0026</b> 25g 100g 500g</p>  <p>D-(-)-Tartaric Acid<br/>CAS RN: 147-71-7</p>                     | <p><b>T0006</b> 25g</p>  <p>Dimethyl L-(+)-Tartrate<br/>CAS RN: 608-68-4</p>                            | <p><b>T1659</b> 5g 25g</p>  <p>Dimethyl D-(-)-Tartrate<br/>CAS RN: 13171-64-7</p>                                   | <p><b>T0003</b> 25g 100g 500g</p>  <p>Diethyl L-(+)-Tartrate<br/>CAS RN: 87-91-2</p>                                 | <p><b>T1195</b> 25g 250g</p>  <p>Diethyl D-(-)-Tartrate<br/>CAS RN: 13811-71-7</p>                               |   |
| <p><b>T0621</b> 25g 500g</p>  <p>Diisopropyl L-(+)-Tartrate<br/>CAS RN: 2217-15-4</p>                 | <p><b>T1387</b> 25g 250g</p>  <p>Diisopropyl D-(-)-Tartrate<br/>CAS RN: 62961-64-2</p>                 | <p><b>T1702</b> 1g 5g</p>  <p>(2R,3R)-Tartranilic Acid<br/>CAS RN: 3019-58-7</p>                                   | <p><b>Camphor Derivatives</b></p>   |  |   |
| <p><b>C0972</b> 25g 100g 500g</p>  <p>(-)-CSA<br/>CAS RN: 35963-20-3</p>                              |   | <p><b>C0998</b> 5g 25g</p>  <p>(+)-10-Camphorsulfonyl Chloride<br/>CAS RN: 21286-54-4</p>                          | <p><b>C1308</b> 5g 25g</p>  <p>(-)-10-Camphorsulfonyl Chloride<br/>CAS RN: 39262-22-1</p>                            | <p><b>C1021</b> 1g 5g</p>  <p>(-)-Camphanic Acid<br/>CAS RN: 13429-83-9</p>                                     | <p><b>C1022</b> 1g 5g 25g</p>  <p>(-)-Camphanic Chloride<br/>CAS RN: 39637-74-6</p>        |
| <p><b>C1682</b> 500mg</p>  <p>N-(2-Carboxybenzoyl)-(-)-10,2-camphorsultam<br/>CAS RN: 179950-32-4</p> | <p><b>C1766</b> 500mg</p>  <p>N-(2-Carboxybenzoyl)-(+)-10,2-camphorsultam<br/>CAS RN: 1820570-99-7</p> | <p><b>C1683</b> 500mg</p>  <p>N-(2-Carboxy-4,5-dichlorobenzoyl)-(-)-10,2-camphorsultam<br/>CAS RN: 193202-37-8</p> | <p><b>C1767</b> 500mg</p>  <p>N-(2-Carboxy-4,5-dichlorobenzoyl)-(+)-10,2-camphorsultam<br/>CAS RN: 1820575-29-8</p> | <p><b>C0012</b> 25g 100g</p>  <p>(+)-Camphoric Acid<br/>CAS RN: 124-83-4</p>                                    |   |
| <p><b>C3237</b> 1g</p>  <p>(1S,3R)-(-)-Camphoric Acid<br/>CAS RN: 560-09-8</p>                        | <p><b>Phosphorous Compounds</b></p>   |   | <p><b>B1143</b> 100mg 1g 5g</p>  <p>(R)-(-)-1,1'-Binaphthyl-2,2'-diyl Hydrogen Phosphate<br/>CAS RN: 39648-67-4</p>  | <p><b>B1144</b> 100mg 1g</p>  <p>(S)-(+)-1,1'-Binaphthyl-2,2'-diyl Hydrogen Phosphate<br/>CAS RN: 35193-64-7</p> |   |

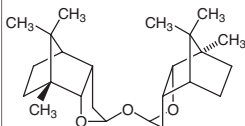
Others

**A1984** 1g



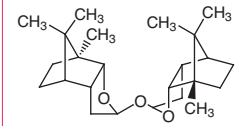
(S)-5-Allyl-2-oxa-bicyclo[3.3.0]oct-8-ene  
CAS RN: 1052236-86-8

**B1219** 100mg



(+)-MBF-OH Dimer  
CAS RN: 87248-50-8

**B1220** 100mg



(-)-MBF-OH Dimer  
CAS RN: 108031-79-4

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