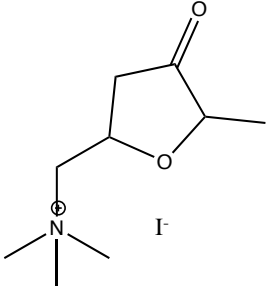
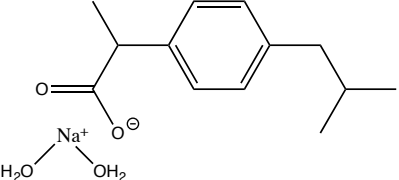
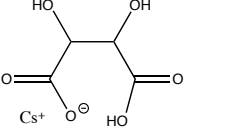
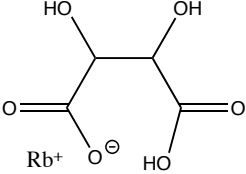
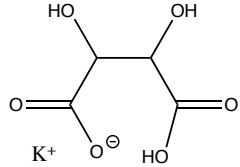
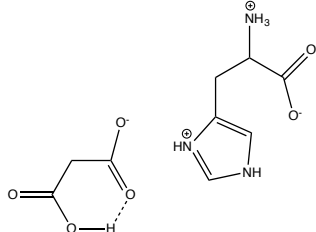
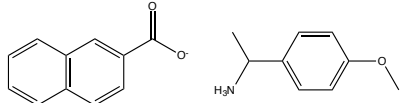
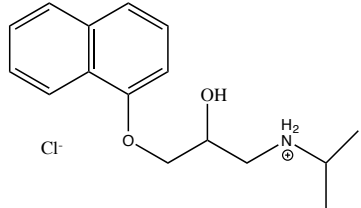
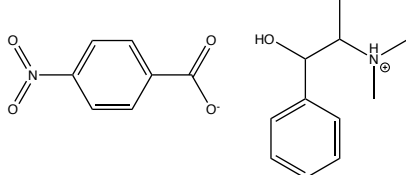
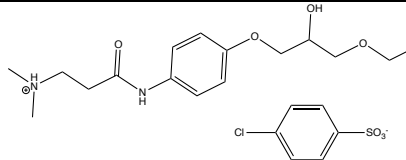
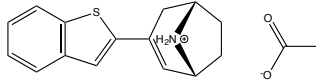
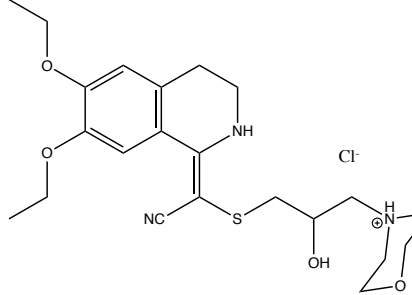
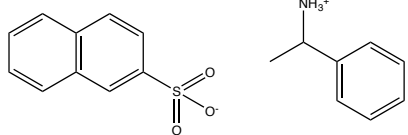
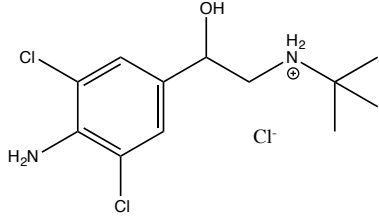
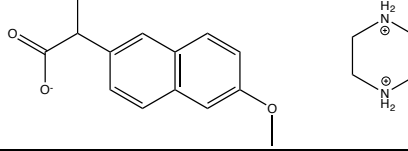
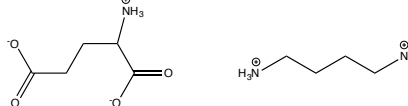


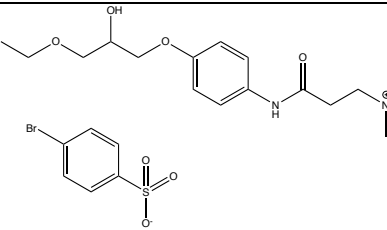
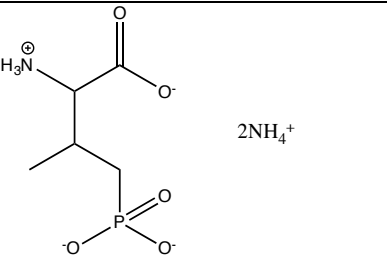
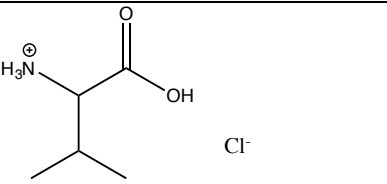
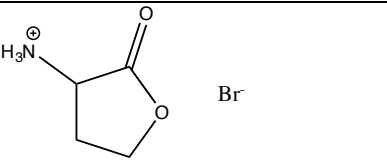
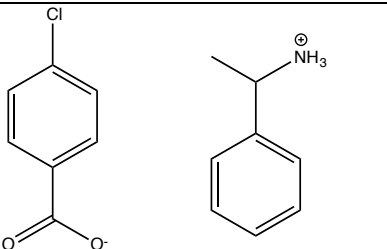
**Systems with same crystal structure.**

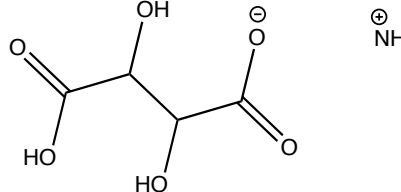
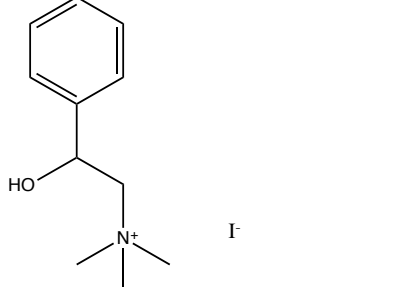
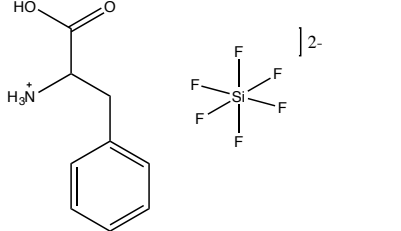
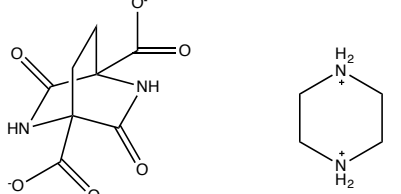
Salts

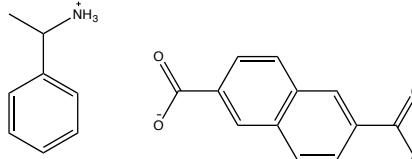
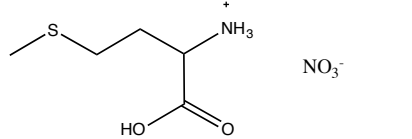
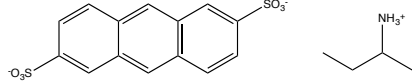
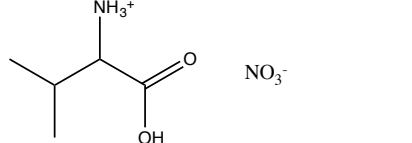
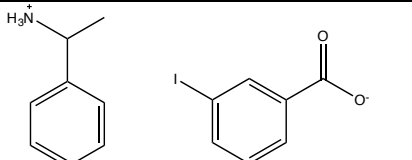
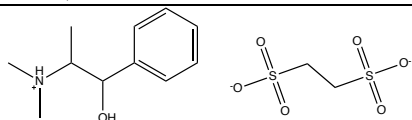
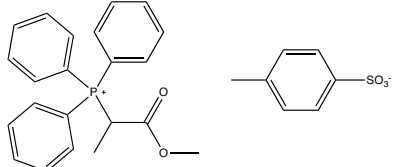
| System  | Enantiopur<br>e REFCODE | Racemic<br>REFCODE | Chemical Structure  | Interaction<br>between<br>Components           |
|---|-------------------------|--------------------|---|--|
| Muscarone iodide (1:1)  | LAVFAP (S,<br>S)        | TAPMAY             |    | Electrostatic I <sup>-</sup> ...N <sup>+</sup> |
| catena-(bis(μ <sup>2</sup> -aqua)-bis(μ <sup>2</sup> -(S)-ibuprofen-O,O')-diaqua-di-sodium) (1:1:2) | KATNOJ (S)              | KASVEG             |    | Na <sup>+</sup> ...-O <sub>2</sub> C           |
| Caesium hydrogen tartrate (1:1)   | CSHTAR10<br>(R, R)      | XAHZIQ             |   | Cs <sup>+</sup> ...-O <sub>2</sub> C           |
| Rubidium hydrogen tartrate (1:1)  | KAMBIJ (R,<br>R)        | XAHZEM             |  | Rb <sup>+</sup> ...-O <sub>2</sub> C           |

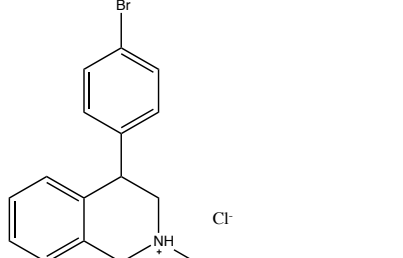
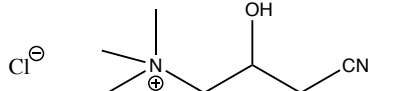
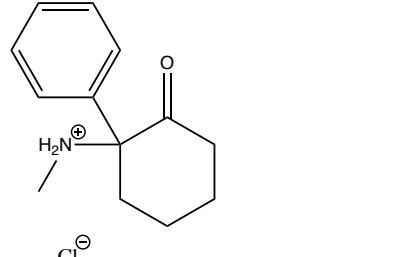
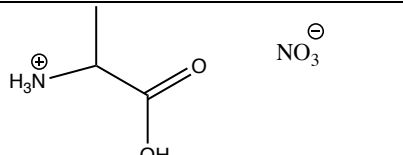
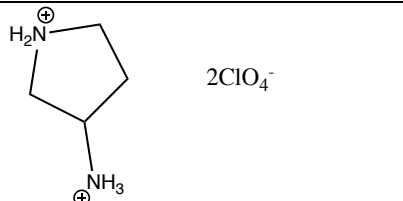
|  |               |        |   |  |
|--|---------------|--------|---|--|
| Potassium hydrogen tartrate (1:1)  | ZZZRZW (R, R) | XAHZAI |    | $K^+ \dots O_2C$                       |
| Histidine malonic acid (1:1)   | CAMWUJ (S)    | CAMWOD |    | $O^- \dots HN^+$                       |
| 1-(4-Methoxyphenyl)ethylammonium 2-naphthoate (1:1)  | CARWEZ (S)    | OSEVOY |    | $O^- \dots HN^+$                       |
| Propranolol hydrochloride (1:1)  | FIDGAB (R)    | PROPLD |    | $Cl^- \dots HN^+$                      |
| N-methylephedrinium 4-nitrobenzoate (1:1)  | IVULOB (R, S) | IVULUH |   | $OH \dots O, NH^+ \dots O^-$           |
| (2-(4-(3-Ethoxy-2-hydroxypropoxy)phenylcarbamoyl)ethyl)dimethylammonium p-chlorobenzenesulfonate (1:1) | JISREI (S)    | JISQUX |  | $NH \dots O=S; +NH \dots O^-$<br>$O=S$ |

|  |               |        |   |                                    |
|--|---------------|--------|---|------------------------------------|
| 3-(1-benzothiophen-2-yl)-8-azoniabicyclo[3.2.1]oct-2-ene acetate (1:1)   | MEDNAM (R, S) | MEDMUF |    | NH...O=C                           |
| 2-(6,7-Diethoxy-1,2,3,4-tetrahydro-1-isoquinolidene)-2-(2-hydroxy-3-(4-morpholinyl)propyl)mercaptoacetonitrile hydrochloride (1:1) | OCEDEF (S)    | OCEDIJ |    | NH <sup>+</sup> ...Cl <sup>-</sup> |
| 1-phenylethylammonium naphthalene-2-sulfonate (1:1)  | RUCGAY (R)    | XOZTUC |    | NH <sup>+</sup> ...O <sup>-</sup>  |
| 1-(4-Amino-3,5-dichlorophenyl)-2-( <i>t</i> -butylamino)ethanol hydrochloride (1:1)  | SAZRUH (S)    | ACBUET |    | NH <sup>+</sup> ...Cl <sup>-</sup> |
| Naproxen - piperidine (2:1)  | TOBMII (S)    | TOBMEE |  | NH <sup>+</sup> ...O <sup>-</sup>  |
| Putrescine bis(glutamic acid) (1:2)  | VOWHOE (S)    | VOWHUK |  | NH <sup>+</sup> ...O <sup>-</sup>  |

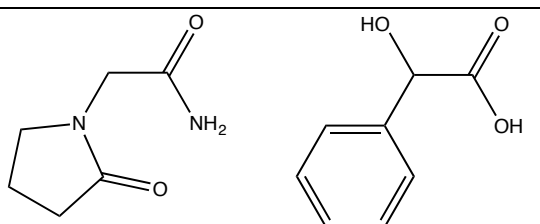
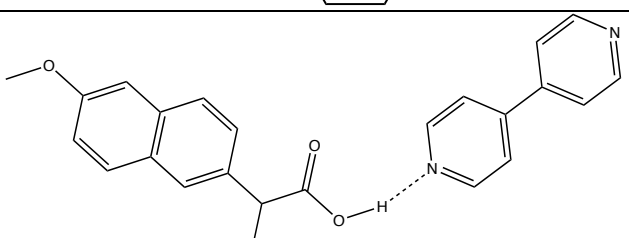
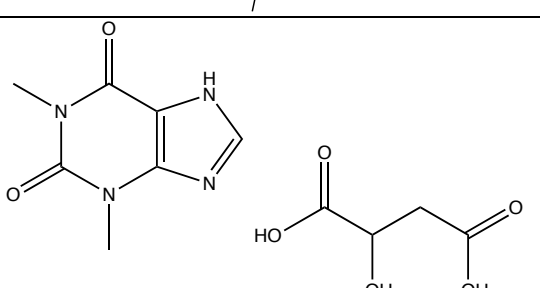
|  |               |         |   |  |
|--|---------------|---------|---|--|
| 2-(4-(3-Ethoxy-2-hydroxypropoxy)phenylcarbamoyl)ethyl)trimethylamm onium p-bromobenzenesulfonate (1:1) | XUQYEN (S)    | XUQYAJ  |    | NH <sup>+</sup> ...O <sup>-</sup>      |
| Diammonium O-phosphothreonine (2:1)  | IJICIN (R, S) | GEJKUC  |    | NH <sup>+</sup> ...-O=P/O=C            |
| Valine hydrochloride (1:1)   | VALEHC10 (S)  | DLVALC  |    | Cl <sup>-</sup> ...HN <sup>+</sup> /OH |
| 2-Oxotetrahydrofuran-3-aminium bromide (1:1)   | LEGKEP (S)    | BAKHA W |   | Br <sup>-</sup> ...HN <sup>+</sup>     |
| 1-Phenylethylammonium p-chlorobenzoate (1:1)   | ZUSNEG (R)    | ZUSNAC  |  | NH <sup>+</sup> ...O <sup>-</sup>      |

|   |                  |        |   |                                  |
|---|------------------|--------|---|----------------------------------|
| Ammonium hydrogen tartrate (1:1)  | AMHTAR<br>(R, R) | PUXKAU |    | NH <sup>+</sup> ...O             |
| (2-Hydroxy-2-phenylethyl)trimethylammonium iodide (1:1)                         | JAMLUE (S)       | JAMLUF |    | I <sup>-</sup> ...N <sup>+</sup> |
| bis(1-carboxy-2-phenylethylammonium) hexafluorosilicate (2:1)                   | BEZPAZ (S)       | PAXXUJ |    | Electrostatic                    |
| Piperidinediium 2,5-diaza-3,6-dioxobicyclo(2.2.2)octane-1,4-dicarboxylate (1:1) | FECVUF (S, S)    | FEFQOX |  | +NH...O=C/-O-C                   |

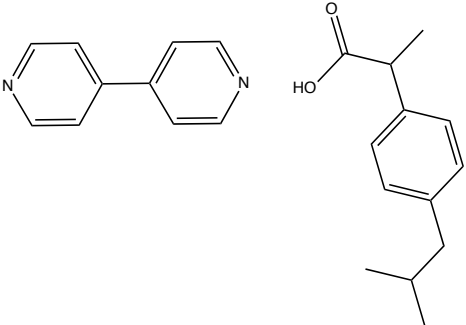
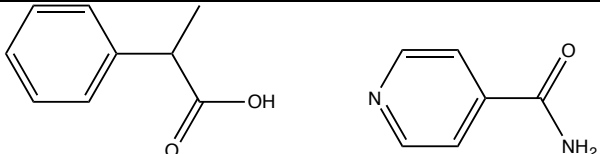
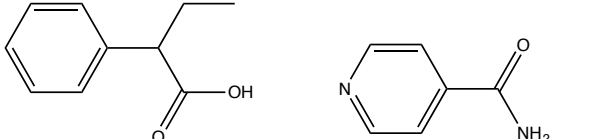
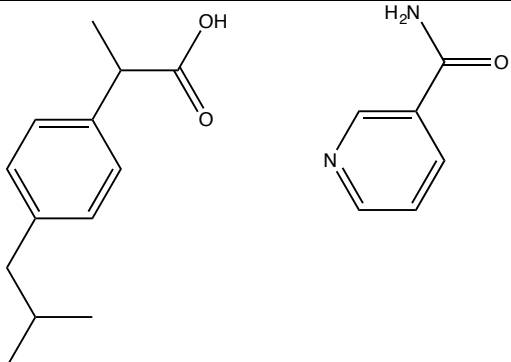
|   |               |        |   |                        |
|---|---------------|--------|---|------------------------|
| 1-Phenylethylammonium naphthalene-2,6-dicarboxylate (2:1)                       | KOLMAA (R)    | KONBEV |    | +NH...O=C/-O-C         |
| Methioninium nitrate (1:1)  | LUDHEX (S)    | CONZIO |    | +NH...O/OH...O         |
| 2-Butylammonium anthracene-2,6-disulfonate (2:1)                                | MIHGUG (R)    | IGIXUS |    | +NH...O <sup>-</sup>   |
| Valine nitrate (1:1)  | ROKBOI02 (S)  | VALNIT |    | +NH...O/OH...O         |
| 1-phenylethylammonium <i>m</i> -iodobenzoate (1:1)                              | KOBGIS (R)    | KOFNAV |    | +NH...O <sup>-</sup>   |
| N-methylephedrinium ethane-1,2-disulfonate (2:1)                                | IVUMUI (R, S) | IVUNAP |   | +NH...O=S/OH...O<br>=S |
| (1-(Methoxycarbonyl)ethyl)triphenylphosphonium <i>p</i> -toluenesulfonate (1:1) | KEDVOF (S)    | TUKLER |  | C-H...O=S              |

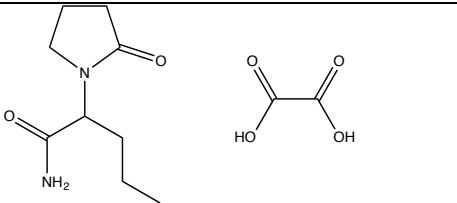
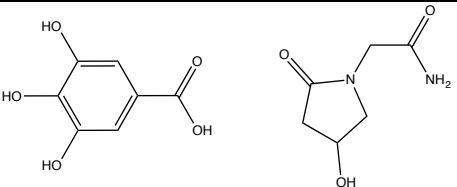
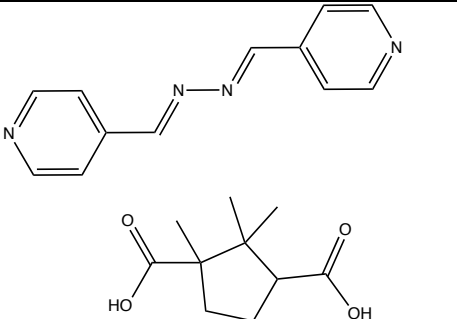
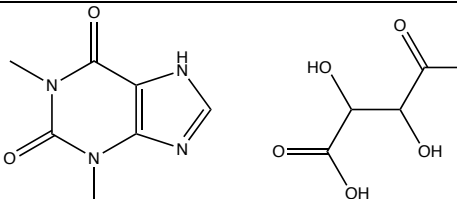
|  |                          |        |   |  |
|--|--------------------------|--------|---|--|
| 4-Bromophenyl)-2-methyl-1,2,3,4-tetrahydroisoquinoline hydrochloride (1:1) | POKYET (R)<br>R)         | POKYAP |    | NH <sup>+</sup> ...Cl <sup>-</sup>               |
| 3-cyano-2-hydroxy-N, N, N-trimethylpropan-1-aminium chloride (1:1)         | FIRFAQ (R)               | FIRDOC |    | OH...Cl <sup>-</sup>                             |
| deschloroketamine hydrochloride (1:1)                                      | QIMGOL (S)<br>QIMGUR (R) | QIMGIF |    | NH <sup>+</sup> ...Cl <sup>-</sup>               |
| Alaninium nitrate (1:1)  | DENVAW (R)<br>LOKFIA (S) | ZOKZAA |   | OH...ONO <sub>2</sub> <sup>-</sup> ,<br>NH...O=N |
| 3-azaniumylpyrrolidin-1-ium diperchlorate (1:2)                            | DODYAZ01 (R)             | QIHTAC |  | NH...OCl   |

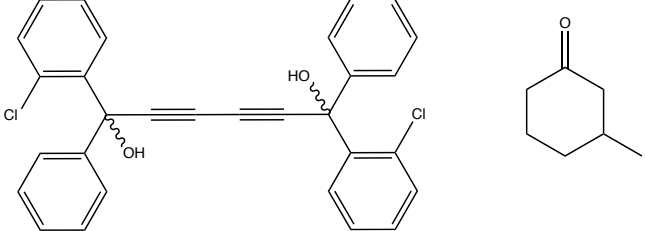
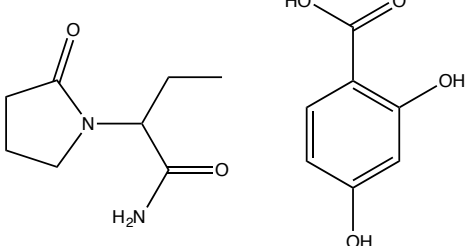
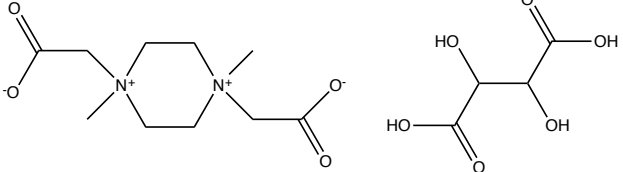
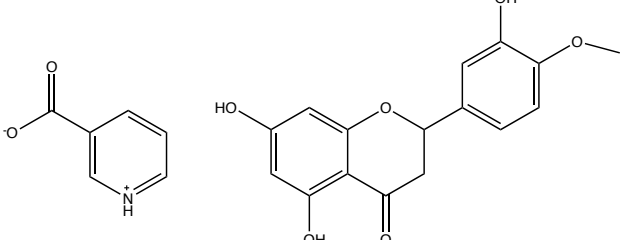
Co-crystals

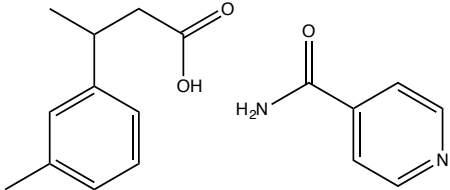
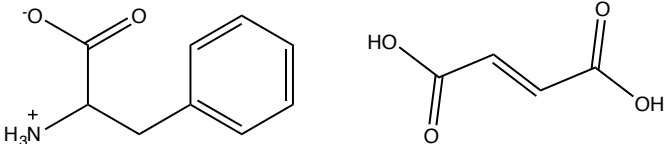
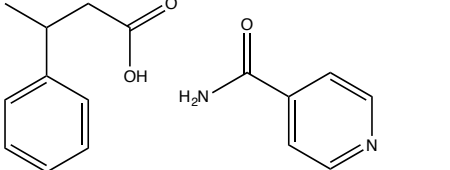
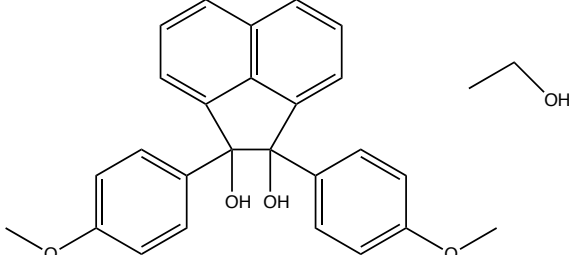
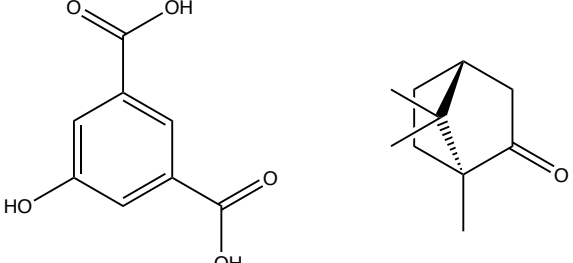
| <u>System</u>                  | <u>Enantiopure REFCODE</u> | <u>Racemic REFCODE</u> | <u>Chemical Structure</u>  | <u>Interaction between Components</u>                 |
|--------------------------------|----------------------------|------------------------|--|---|
| Piracetam mandelic acid (2:1)  | XOZSOV (S)                 | RUCFIF                 |   | NH...O=C;<br>OH...O=C;<br>OH...O=C                    |
| Naproxen 4,4'-bipyridine (2:1) | TOBMAA (S)                 | TOBLUT                 |   | OH...N <sub>ring</sub>                                |
| theophylline malic acid (1:1)  | CODCOO (R)                 | CIZTAH                 |  | OH...N <sub>ring</sub> ,<br>C=O...HO (x2),<br>NH...OH |



|   |  |        |  |                        |
|---|--|--------|--|------------------------|
| ibuprofen hemikis(4,4'-bipyridine)<br>(2:1)     | IJIJAN (S)<br>IJIHOZ (3S, 1R<br>mixed crystal) | HUPPAJ |  <p>The image shows two chemical structures. On the left is 4,4'-bipyridine, consisting of two pyridine rings connected at their 4-positions. On the right is ibuprofen, which features a central chiral carbon atom bonded to a carboxylic acid group (-COOH), a methyl group (-CH3), a 4-(4-isobutylphenyl)phenyl group, and a hydrogen atom.</p> | OH...N <sub>ring</sub> |
| 2-phenylpropionic acid<br>isonicotinamide (1:1) | RONDAA (R)                                     | ROLFOO |  <p>The image shows two chemical structures. On the left is 2-phenylpropionic acid, with a phenyl ring attached to a propionic acid chain at the 2-position. On the right is isonicotinamide, which is a pyridine ring with an amide group (-CONH2) at the 4-position.</p>  | OH...N <sub>ring</sub> |
| 2-phenylbutyric acid<br>isonicotinamide (1:1)   | RONDEE (R)                                     | ROLFUU |  <p>The image shows two chemical structures. On the left is 2-phenylbutyric acid, with a phenyl ring attached to a butyric acid chain at the 2-position. On the right is isonicotinamide, which is a pyridine ring with an amide group (-CONH2) at the 4-position.</p>  | OH...N <sub>ring</sub> |
| Ibuprofen nicotinamide (1:1)                    | SOGLAC (S)                                     | SODDIZ |  <p>The image shows two chemical structures. On the left is ibuprofen, with a phenyl ring attached to a propionic acid chain at the 2-position, and an isobutyl group at the 4-position of the phenyl ring. On the right is nicotinamide, which is a pyridine ring with an amide group (-CONH2) at the 3-position.</p>                             | OH...N <sub>ring</sub> |

|  |               |        |   |                        |
|--|---------------|--------|---|------------------------|
| Etiracetam oxalic acid (1:1)   | XOGPEQ (S)    | XOGPAM |  <p>The image shows two chemical structures. On the left is Etiracetam, a pyrrolidine ring with a carbonyl group at the 2-position and a propyl chain at the 3-position, with an acetamide group attached to the propyl chain. On the right is Oxalic acid, a two-carbon dicarboxylic acid.</p>  | OH...O=C,<br>NH...O=C  |
| Oxiracetam gallic acid (1:1)   | ZEBXEL (S)    | ZEBXIP |  <p>The image shows two chemical structures. On the left is Gallic acid, a benzene ring with three hydroxyl groups and a carboxylic acid group. On the right is Oxiracetam, a pyrrolidine ring with a carbonyl group at the 2-position and a propyl chain at the 3-position, with an acetamide group attached to the propyl chain.</p> | OH...O=C,<br>NH...OH   |
| Camphoric acid 4,4'-(hydrazine-1,2-diylidenedimethylidene)dipyridine (2:3) | ZIZZAL (R, S) | ZIZZEP |  <p>The image shows two chemical structures. On the left is 4,4'-(hydrazine-1,2-diylidenedimethylidene)dipyridine, consisting of two pyridine rings connected by a hydrazine bridge. On the right is Camphoric acid, a bicyclic system with two carboxylic acid groups.</p>  | OH...N <sub>ring</sub> |
| Theophylline L-tartaric acid (2:1)   | NUJCAY (R, R) | NUJCEC |  <p>The image shows two chemical structures. On the left is Theophylline, a purine ring system with two methyl groups. On the right is L-tartaric acid, a four-carbon dicarboxylic acid with two hydroxyl groups on the central carbons.</p>  | OH...N <sub>ring</sub> |

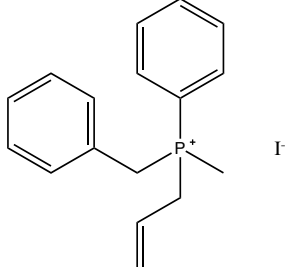
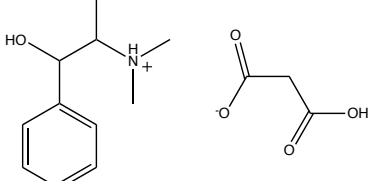
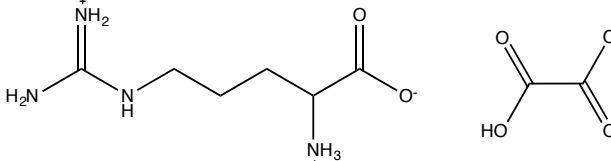
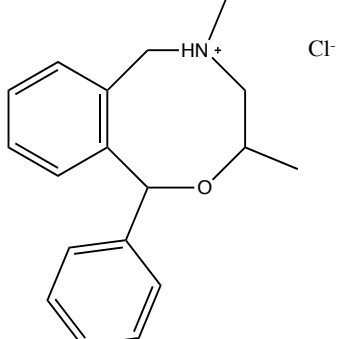
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|--|---------------------|---------------------------|--|---------------|
| 1,6-bis(o-chlorophenyl)-1,6-diphenylhexa-2,4-diyne-1,6-diol bis(3-methylcyclohexanone) (1:2) | VEGFIY (S, S) & (R) | VEGFEU (S, S) and (R)/(S) |   | OH...O=C      |
| Levetiracetam 2,4-dihydroxybenzoic acid (1:1)  | YASGAC (S)          | XOGMUD                    |   | NH...O/OH...O |
| 1,4-Dimethylpiperazine di-betaine L-tartaric acid (1:1)                                      | ROKNAH (R, R)       | BOWKAA                    |   | OH...O        |
| Nicotinic acid hesperetin (1:1)  | RUWHIB (S)          | RUWHEX                    |  | OH...O        |

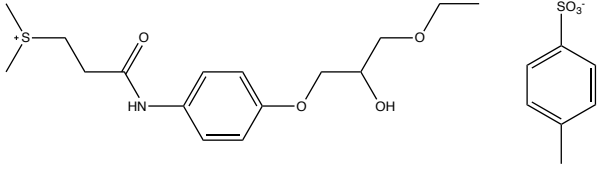
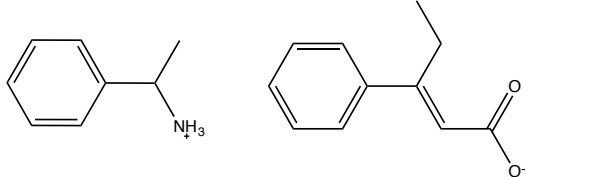
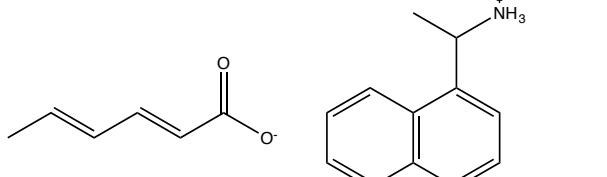
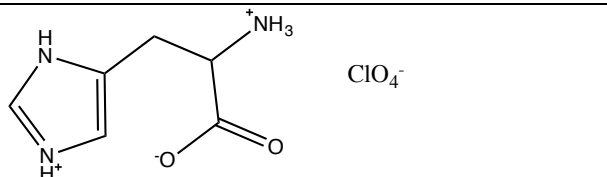
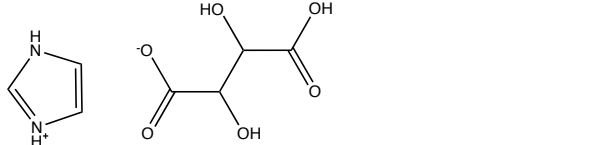
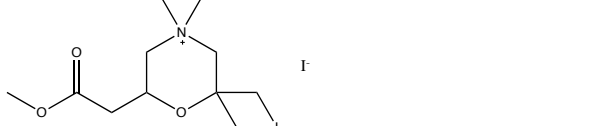
|   |               |        |   |                                       |
|---|---------------|--------|---|---------------------------------------|
| 3-(3-Methylphenyl)butanoic acid<br>isonicotinamide (1:1)                      | UYOTOS (S)    | UYOTIM |    | OH...N <sub>ring</sub>                |
| Phenylalanine fumaric acid (1:1)  | OJEPEY (R)    | VIKLOR |    | +NH...O/OH... <sup>-</sup><br>O       |
| 3-Phenylbutanoic acid<br>isonicotinamide (1:1)                                | UYOSUX (S)    | UYOVEK |    | OH...N <sub>ring</sub>                |
| 1,2-bis(4-Methoxyphenyl)acenaphthene-1,2-diol ethanol (1:1)                   | QATQAE (S, S) | QARGEW |   | OH...O                                |
| 5-hydroxyisophthalic acid (+)-1,7,7-trimethylbicyclo[2.2.1]heptan-2-one (2:1) | PAMFOB (R, R) | PAMFER |  | Inclusion complex in acid...acid ring |

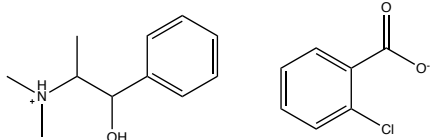
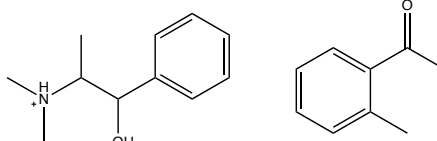
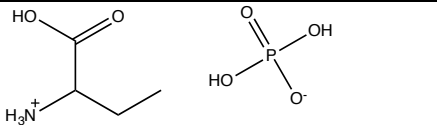
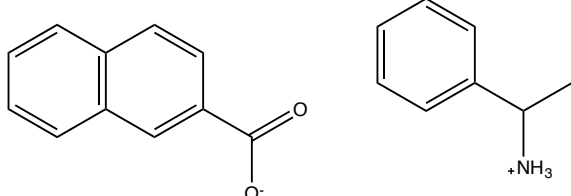
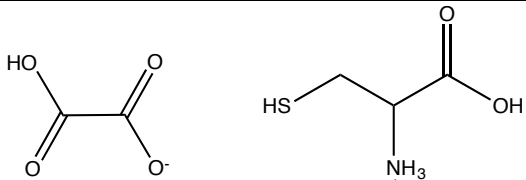
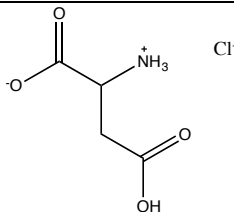
## Systems that do not match

### Salts

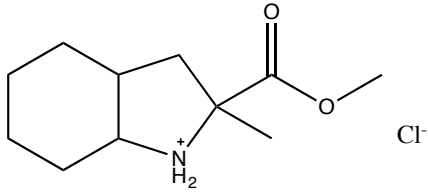
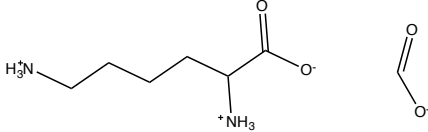
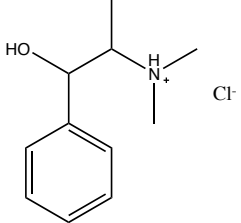
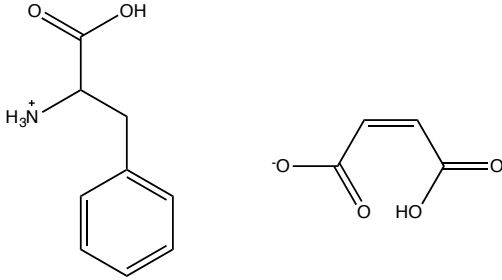
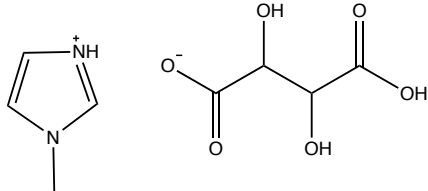
| <u>System</u>                             | <u>Enantiopure REFCODE</u>                            | <u>Racemic REFCODE</u> | <u>Chemical Structure</u> | <u>Interaction between Components</u>        |
|---|---|------------------------|---------------------------|--|
| Acetylcholine hydrogen tartrate (1:1)     | ACTART10 (R, R) (Form I)<br>ACTART11 (R, R) (Form II) | ACHTAR                 |                           | electrostatic N <sup>+</sup> /O <sup>-</sup> |
| 1-Phenylethylammonium chloroacetate (1:1) | HISREG (R)  | <u>HISRIK</u>          |                           | +NH...O=C/-O-C                               |
| Asparaginium nitrate (1:1)                | MAPFIT (S)  | <u>COTZOB</u>          |                           | +NH...ONO <sub>2</sub>                       |
| 1,3-Diammoniopropane L-tartrate (1:1)     | DILYUU (R, R)   | <u>XOJTOH</u>          |                           | +NH...O                                      |

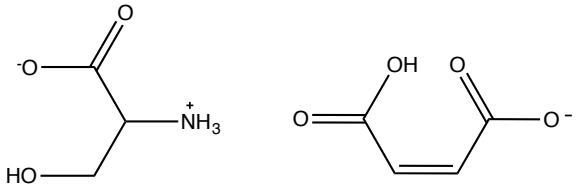
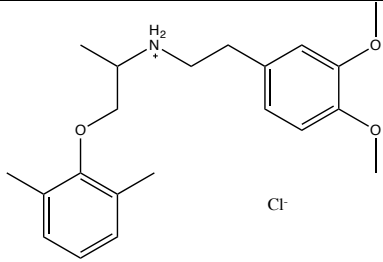
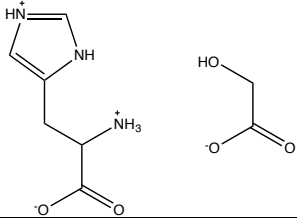
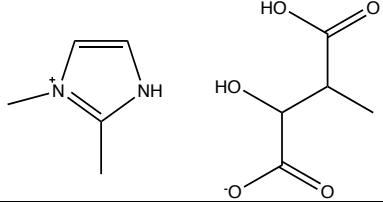
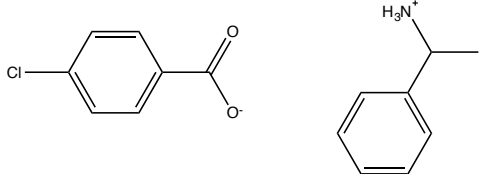
|   |               |               |  |  |
|---|---------------|---------------|--|--|
| Allyl(benzyl)(methyl)phenylphosphonium iodide (1:1) | IGUSOT (S)    | <u>IGUSIN</u> |   | electrostatic P <sup>+</sup> /I <sup>-</sup> |
| N-methylephedrinium carboxyacetate (1:1)            | IVUPIZ (R, S) | <u>IVUPOF</u> |   | +NH...O <sup>-</sup> /OH...O=C               |
| Arginine hydrogen oxalate (1:1)                     | NOSXEY (S)    | <u>NOSXAU</u> |   | NH...O/OH...O=C                              |
| 3-Methylnefopam hydrochloride (1:1)                 | PODPUT (S, S) | <u>PODPON</u> |  | +NH...Cl <sup>-</sup>                        |

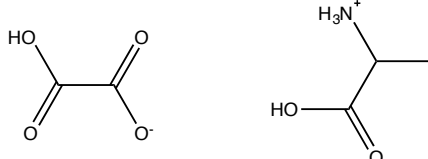
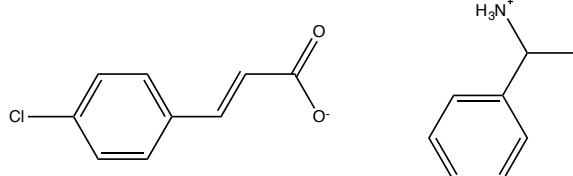
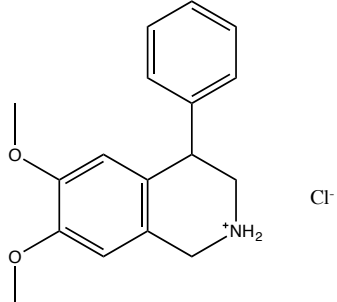
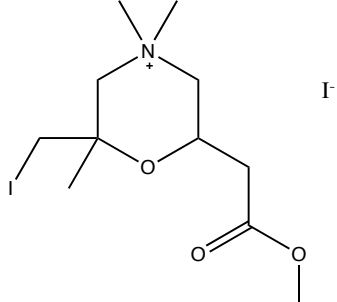
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|--|--|---|---|---------------------|
| 2-(4-(3-Ethoxy-2-hydroxypropoxy)phenylcarbamoylethyl) dimethylsulfonium <i>p</i> -toluenesulfonate (1:1) | TUBDOJ (R)                                 | <u>TUBDUP (Form I)</u><br><u>TUBDUP02 (Form II)</u> |    | NH...O=S/OH...O=C   |
| 1-Phenylethylammonium (Z)-3-phenyl-2-pentenoate (1:1)  | ZUSLUU (R)                                 | <u>ZOHPER</u>                                       |    | +NH...O=C           |
| 1-(1-Naphthyl)ethylammonium sorbate (1:1)  | ASONIF R<br>(by Mercury calc, listed as S) | <u>ASONEB</u>                                       |    | +NH...O=C           |
| Histidinium perchlorate (1:1)  | GASKAM (S)                                 | <u>BOWJUT</u>                                       |    | +NH...O/NH...O      |
| 1H-Imidazolium hydrogen-L-tartrate (1:1)   | HAZHEV (R, R)                              | <u>KOFCOZ</u>                                       |  | +NH...O/NH...O      |
| 2-(iodomethyl)-6-(2-methoxy-2-oxoethyl)-2,4,4-trimethylmorpholin-4-ium iodide (1:1)                      | HIZFAZ (S, R)                              | <u>BIZVUD</u>                                       |  | electrostatic N+/I- |

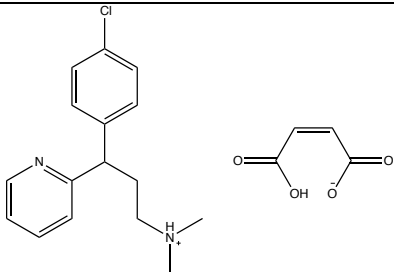
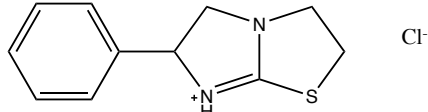
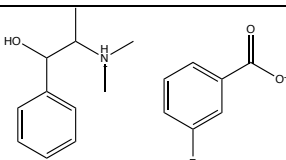
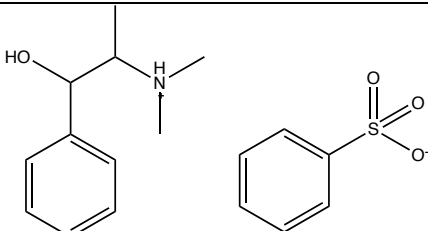
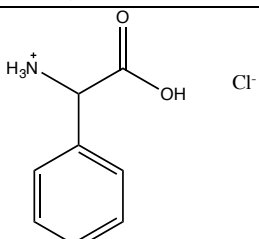
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|--|----|---|---------------|---|---|
| N-methylephedrinium chlorobenzoate (1:1)               | 2- | IVUKIU (R, S)                                 | <u>IVUKOA</u> |    | OH...O/+NH...O                              |
| N-methylephedrinium methylbenzoate (1:1)               | 2- | IVUMAO (R, S)                                 | <u>IVUMES</u> |    | OH...O/+NH...O                              |
| $\beta$ -Methyl-alaninium dihydrogen monophosphate     |    | KENDUC (S)                                    | <u>IFALEG</u> |    | NH...O=P/OH...O=P                           |
| 1-Phenylethylammonium) naphthalene-2-carboxylate (1:1) |    | KOLLUT (R)                                    | <u>KOMZUI</u> |    | +NH...O                                     |
| Cysteinium hydrogen oxalate (1:1)                      |    | LOCLOF (R) (Form I)<br>LOCLOF)1 (R) (Form II) | <u>BOWKOO</u> |   | +NH...O                                     |
| Aspartic acid hydrochloride (1:1)                      |    | MUCKUR01 (S) Form I<br>MUCKUR02 (S) Form II   | <u>ASPART</u> |  | +NH...Cl <sup>-</sup> /OH...Cl <sup>-</sup> |

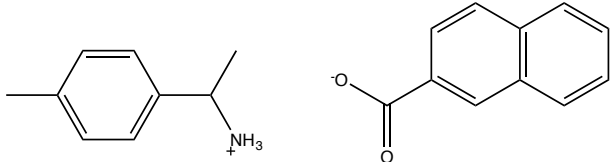
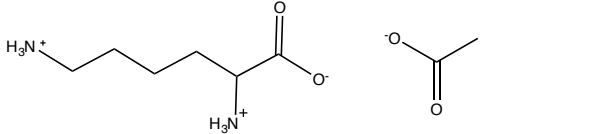
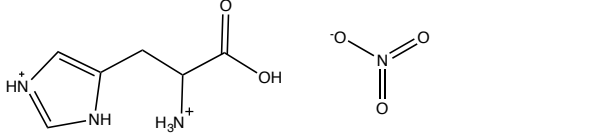

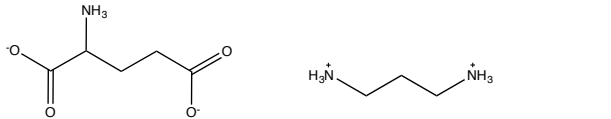

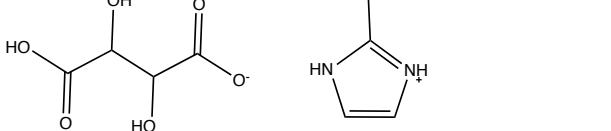


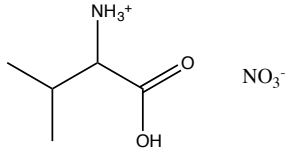
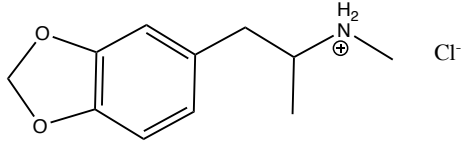
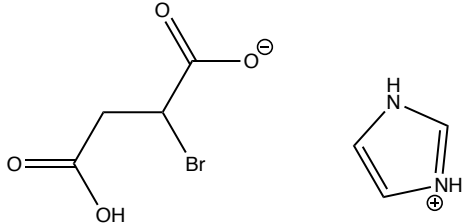
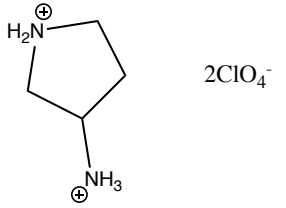
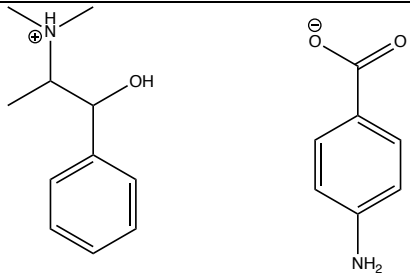
|   |                |                 |   |                       |
|---|----------------|-----------------|---|-----------------------|
| Methyl (2S,3aS,7aS)-2-methyloctahydroindole-2-carboxylate hydrochloride (1:1) | SORPOF (S, S)  | <u>UBIZAI</u>   |    | +NH...Cl <sup>-</sup> |
| Lysine formate (1:1)  | YUHGAJ (S)     | <u>YUHGEN</u>   |    | +NH...O               |
| N-methylephedrinium chloride (1:1)  | ZZZQSE01(R, S) | <u>ZZZLUA01</u> |    | +NH...Cl <sup>-</sup> |
| Phenylalaninium maleate (1:1)   | EDAXIQ (R)     | <u>VAGVIJ</u>   |   | +NH...O               |
| 1-Methylimidazolium hydrogen-D-tartrate (1:1)                                 | ZAMXIU (S, S)  | <u>XOLYUU</u>   |  | NH...O                |

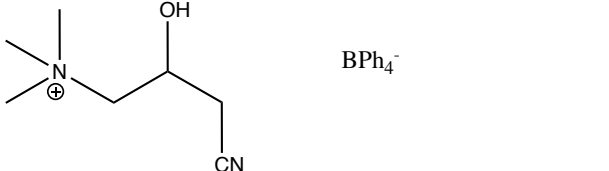
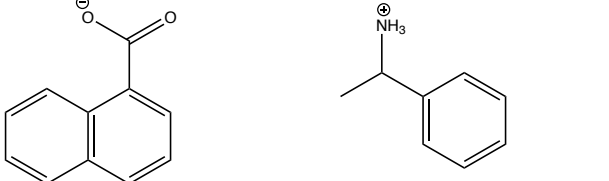
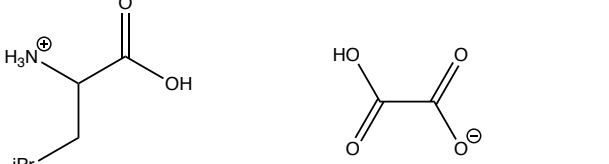
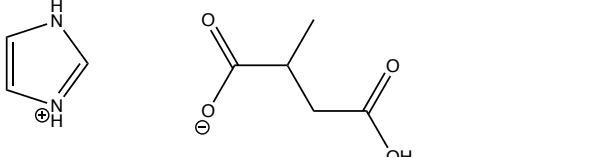
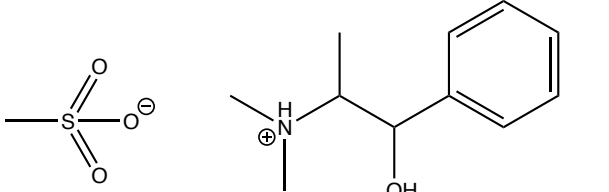
|  |                |               |   |                 |
|--|----------------|---------------|---|-----------------|
| L-Serinium semi-maleate (1:1)  | REZPET (S)     | <u>REZPAP</u> |    | +NH...O         |
| 1-(2,6-Dimethylphenoxy)-2-(3,4-dimethoxyphenylethylamino) propane chloride (1:1) | RICNEW (S)     | <u>RICNAS</u> |    | +NH...Cl-       |
| Histidine glycolate (1:1)  | TEJWAG (S)     | <u>TEJVUZ</u> |    | N-H...O/O-H...O |
| 2,3-dimethyl-1H-imidazol-3-ium hydrogen tartrate (1:1)                           | XOJCOQ (S, S)  | <u>KODVAC</u> |   | NH...O          |
| 1-Phenylethanaminium chlorobenzoate (1:1)  | 4-ZUSNEG01 (R) | <u>ZUSNAC</u> |  | NH...O          |

|   |                      |               |   |  |
|---|----------------------|---------------|---|--|
| Alaninium oxalate (1:1)   | YEJYIV (S)           | <u>NELPUP</u> |  <p>The image shows the chemical structures of oxalate and L-alanine. Oxalate is a dicarboxylate ion with two carboxylate groups. L-alanine is an amino acid in its zwitterionic form, with a protonated amino group (H<sub>3</sub>N<sup>+</sup>) and a carboxylate group.</p>   | NH...O/OH...O                                |
| 1-Phenylethylammonium chlorocinnamate (1:1)   | <i>p</i> -ZUSLOO (R) | <u>ZUSLII</u> |  <p>The image shows the chemical structures of p-chlorocinnamate and 1-phenylethylammonium. p-chlorocinnamate is a cinnamate derivative with a chlorine atom at the para position. 1-phenylethylammonium is an ammonium salt of 1-phenylethylamine, shown as a zwitterion with a protonated amino group (H<sub>3</sub>N<sup>+</sup>) and a carboxylate group.</p>                        | NH...O                                       |
| 6,7-Dimethoxy-4-phenyl-1,2,3,4-tetrahydroisoquinoline hydrochloride (1:1)           | PEFCUY               | <u>KINJUM</u> |  <p>The image shows the chemical structures of 6,7-dimethoxy-4-phenyl-1,2,3,4-tetrahydroisoquinolinium and a chloride ion (Cl<sup>-</sup>). The isoquinolinium ring has methoxy groups at positions 6 and 7, and a phenyl group at position 4.</p>   | +NH...Cl <sup>-</sup>                        |
| 2-(Iodomethyl)-6-(2-methoxy-2-oxoethyl)-2,4,4-trimethylmorpholin-4-ium iodide (1:1) | BIZVOX (S, S)        | <u>BIZVUD</u> |  <p>The image shows the chemical structures of 2-(iodomethyl)-6-(2-methoxy-2-oxoethyl)-2,4,4-trimethylmorpholinium and an iodide ion (I<sup>-</sup>). The morpholinium ring has a methyl group at position 2, a methyl group at position 4, and a methyl group at position 4. The side chains are an iodomethyl group at position 2 and a 2-methoxy-2-oxoethyl group at position 6.</p> | electrostatic N <sup>+</sup> /I <sup>-</sup> |

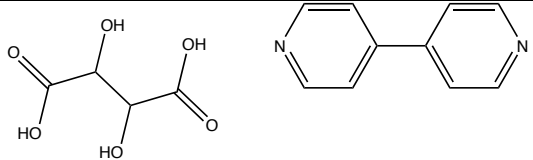
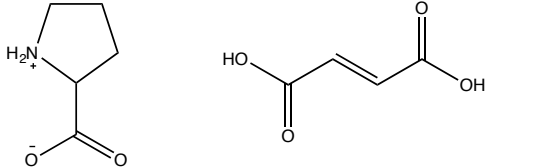
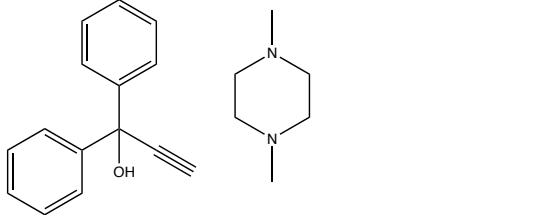
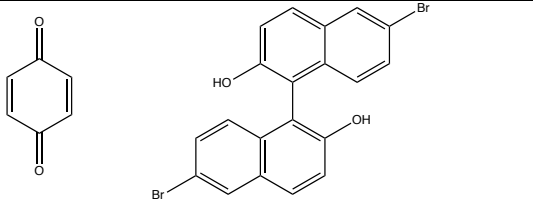
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| Chloropheniramine maleate (1:1)  | CPHMAL10 (S)    | <u>JEGWUN</u> |    | NH...O                                      |
| 2,3,6,7-Tetrahydro-6-phenyl-5H-imidazo(2,1-b)thiazolium chloride (1:1) | HPIMTZ (S)      | <u>KOSPUD</u> |    | +NH...Cl <sup>-</sup>                       |
| N-methylephedrinium fluorobenzoate (1:1)                               | 3-IVULER (S, R) | <u>IVULIV</u> |    | OH...O/NH...O                               |
| N-methylephedrinium benzenesulfonate (1:1)                             | IVUMIW (s, R)   | <u>IVUMOC</u> |   | OH...O/NH...O                               |
| Phenylglycine hydrochloride (1:1)                                      | NILXUB (R)      | <u>HAZGIZ</u> |  | +NH...Cl <sup>-</sup> /OH...Cl <sup>-</sup> |

|  |                 |                 |   |   |
|--|-----------------|-----------------|---|---|
| 1-(4-Methylphenyl)ethylammonium 2-naphthoate (1:1) | CARWAV (R)      | <u>OSEVIS</u>   |    | +NH...O <sup>-</sup>                              |
| Lysine acetate (1:1)                               | CETSOJ (S)      | <u>SIHCER</u>   |    | +NH...O <sup>-</sup>                              |
| Histidinium dinitrate (1:2)                        | MUFMIJ (S)      | <u>SOBBOA</u>   |    | NH...O/OH...O                                     |
| N-methylephedrinium bromide (1:1)                  | ZZZQOS01 (S, R) | <u>ZZZFGS02</u> |    | electrostatic Br <sup>-</sup> /<br>N <sup>+</sup> |
| 1,3-Diammoniopropane bis(glutamate) (1:2)          | KUJKUV (S)      | <u>KUJLAC</u>   |   | NH...O  |
| Carnitine hydrochloride (1:1)                      | ZAPXOF (R)      | <u>DLCARC</u>   |  | OH...Cl <sup>-</sup>                              |
| 2-Methylimidazolium hydrogen-D-tartrate (1:1)      | ZELRIR (R, R)   | <u>KODVEG</u>   |  | NH...O  |

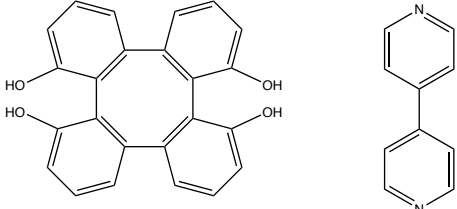
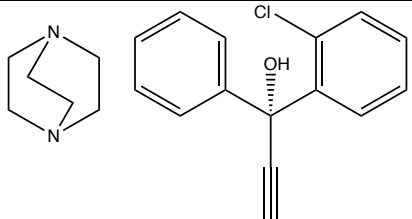
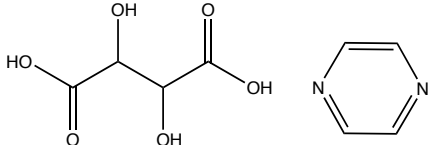
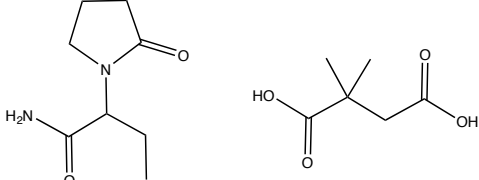
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| valinium nitrate (1:1)  | ROKBOI (S)                                       | VALNIT |    | +NH...O/OH...O                                     |
| 1-(2H-1,3-benzodioxol-5-yl)-N-methylpropan-2-aminium chloride (1:1) | BEQRUN (R)<br>BEQWUS (S)                         | NEDMIS |    | +R <sub>2</sub> NH <sub>2</sub> ...Cl <sup>-</sup> |
| 1H-imidazol-3-ium (-)-2-bromo-3-carboxypropanoate (1:1)             | IREQUT (S)                                       | IREQON |    | NH...O=C   |
| 3-azaniumylpyrrolidin-1-ium diperchlorate (1:2)                     | DODYAZ (R)(Form I)<br><br>DODYAZ02 (R)(Form III) | QIHTAC |    | NH...OCl   |
| Methyl ephedrinium 4-aminobenzoate (1:1)                            | VAVJEK   | VAVKUB |  | +NH...-O=C   |

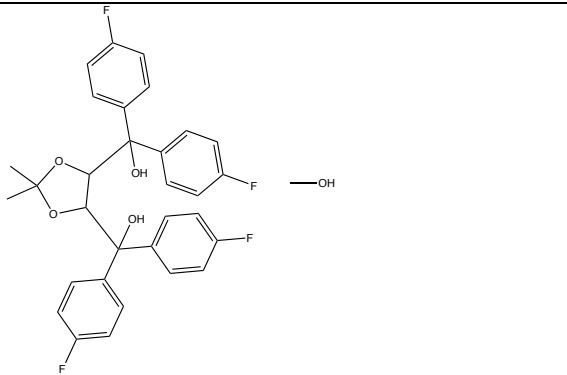
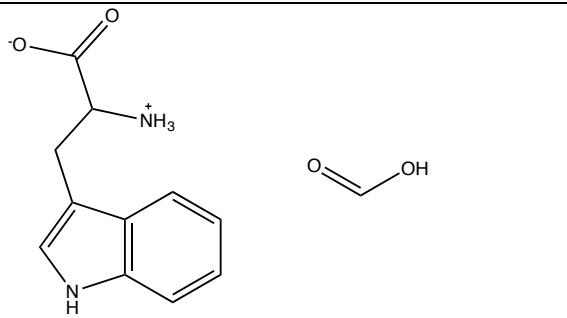
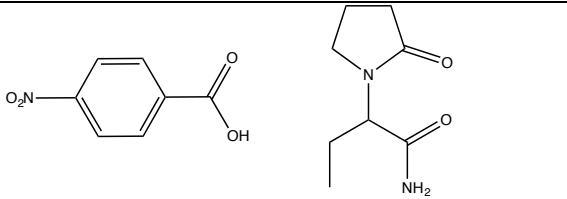
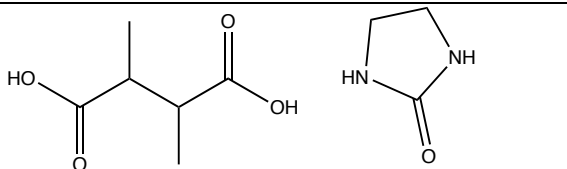
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| 3-cyano-2-hydroxy-N,N,N-trimethylpropan-1-aminium tetraphenylborate (1:1) | ZEXQUR (R)  | ZEXRAY |   | CH...N                 |
| 1-phenylethylammonium 1-naphthoate (1:1)                                  | BIFTIW (R)<br>(form I)<br><br>BIFTIW01<br>(form II) | ENOBOZ |   | NH...O                 |
| Leucinium hydrogen oxalate (1:1)  | HAGZUL (R)  | WIPQOE |   | NH...O                 |
| 1H-imidazol-3-ium 3-carboxy-2-chloropropanoate (1:1)                      | IRERAA (R)  | MEQPUT |   | NH...O                 |
| N-methylephedrinium methanesulfonate                                      | IVUNET<br>(1R, 2S).                                 | IVUNIX |  | +NH...O=S/OH...O<br>=S |

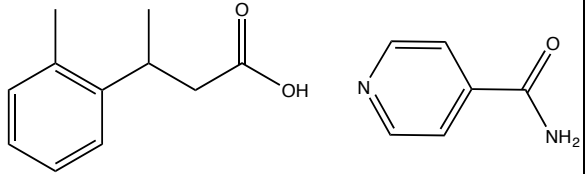
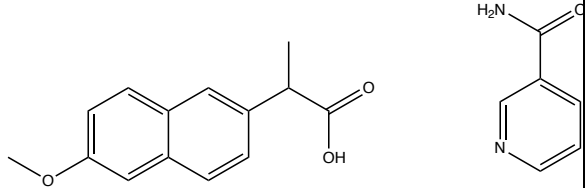
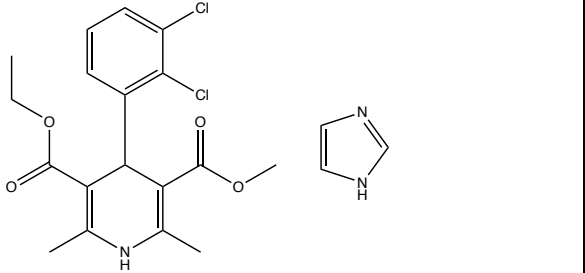
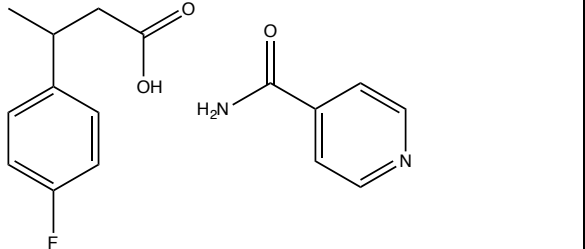
Co-crystals

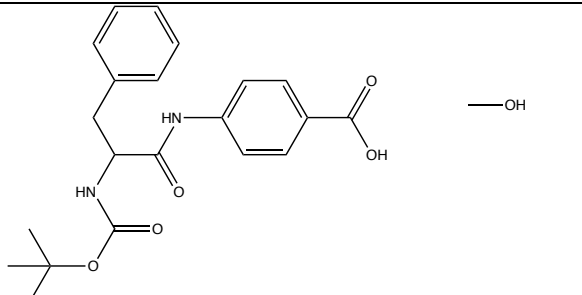
| <u>System</u>  | <u>Enantiopure REFCODE</u> | <u>Racemic REFCODE</u> | <u>Chemical Structure</u>  | <u>Interaction between Components</u> |
|--|----------------------------|------------------------|--|---------------------------------------|
| 4,4'-Bipyridyl Tartaric acid (1:1)   | OFESOH (R, R)              | OFESIB                 |   | OH...N                                |
| Proline fumaric acid (2:1)   | GIHSH (S)                  | GIHSAT                 |   | +NH...O=C                             |
| N,N'-Dimethylpiperazine bis((-)-1-(o-chlorophenyl)-1-phenylprop-2-yn-1-ol) (1:2) | GERWIJ (S)                 | GERWEF                 |   | OH...N                                |
| 6,6'-Dibromo-1,1'-bi-2-naphthol benzoquinone (1:1)                               | p-ESAWOK (R)               | ESAWUQ                 |  | OH...O=C                              |



|  |               |        |  |                        |
|--|---------------|--------|--|------------------------|
| 1,8,9,16-Tetrahydroxytetraphenylene 4,4'-bipyridyl (1:1)                               | MAQYAF (S, S) | RAPXAI |   | OH...N <sub>ring</sub> |
| 1,4-Diazabicyclo(2.2.2)octane bis((-)-1-(o-chlorophenyl)-1-phenylprop-2-yn-1-ol) (1:2) | VAWLAG (S)    | VAWLEK |   | OH...N <sub>ring</sub> |
| tartaric acid pyrazine (1:1)   | ANOLIZ (R, R) | ANOLUL |   | OH...N <sub>ring</sub> |
| Levetiracetam 2,2-dimethylsuccinic acid (1:1)  | XOGMOX (S)    | XOGMIR |  | NH...O/OH...O          |

|   |                  |        |   |                        |
|---|------------------|--------|---|------------------------|
| 2,2-Dimethyl- $\alpha,\alpha,\alpha',\alpha'$ -tetrakis(p-fluorophenyl)-1,3-dioxolane-4,5-dimethanol methanol (1:1) | EABGUJ (S,<br>S) | EABJAS |    | OH...O                 |
| Tryptophan formic acid (1:1)  | MUGKAA (S)       | TRYPTF |    | NH...O/OH...O          |
| Levetiracetam bis(4-nitrobenzoic acid) (1:2)  | XOGNUE (S)       | XOGNOY |   | NH...O/OH...O          |
| Imidazolidin-2-one tartaric acid (1:1)  | UHAFEP (S,<br>S) | UHACIQ |  | OH...O=C/NH...O=C<br>C |

|   |      |               |        |  |   |
|---|------|---------------|--------|--|---|
| 3-(2-Methylphenyl)butanoic<br>isonicotinamide (1:1) | acid | UYOTEI (S)    | UYOTAE |   | OH...N <sub>ring</sub>  |
| Naproxen nicotinamide (2:1)                         |      | HEGGAD<br>(S) | JULJEH |   | OH...N, NH...O=C,<br>CO <sub>2</sub> H...CONH <sub>2</sub><br>ring. |
| Felodipine 1H-imidazole (1:1)                       |      | BEMQIW<br>(R) | EFAHOL |   | NH...N  |
| 3-(4-Fluorophenyl)butanoic<br>isonicotinamide (1:1) | acid | UYOVAG (S)    | UYOTUY |  | OH...N <sub>ring</sub>  |

|  |                   |               |   |                 |
|--|-------------------|---------------|---|-----------------|
| <p>4-((N-(<i>t</i>-Butoxycarbonyl)phenylalanyl)amino)benzoic acid methanol (1:1)</p> | <p>TIFJAV (S)</p> | <p>YASPAL</p> |  | <p>OH...O=C</p> |
|--|-------------------|---------------|---|-----------------|