



Guangzhou PI & PI Biotech Inc. Ltd.

<http://www.pipitech.com/>

Drug Polymer Impurity Pamphlet

2020.06

Company Profile

Guangzhou Pi & Pi Biotech Inc. was set up in 2009. Currently, the company employs more than 70 full time staff. All the employees have bachelor degree or above, and they are professionals in pharmacology, chemistry and biology related majors. The company management team consists of PHD, MBA and EMBA. Guangzhou PI & PI has got many sci-tech project grants awarded by the province and the city. In 2017, the company passed the certification of “National New High-tech Enterprise”.

The company operating in 5,000 square meters of facilities in Guangzhou, containing the quality control department, the synthesis department, the purification department, the pilot-scale test reaction area etc. Equipped with advanced R&D equipment including 37 HPLCs (1 UPLC; 3 UHPLCs; 1 CAD detector; 3 DAD detectors; 1 LC-ESI-LCQ-MS(11); 1 Orbitrap-Q Exactive Focus MSMS; 1 BR-TSQ Altis QQQ MS-ZH; 1MWUV - 6UV detector). The company is also equipped with vacuum drying oven, various vacuum/circulating pump, precision balance and detecting instrument etc.

For more information of the company and products, please refer to <http://www.pipitech.com/>



QR Code for Website



WeChat Public Number

Index

1.Cephalosporin Impurities.....	3
Aztreonam	3
Cefaclor	3
Cefadroxil	4
Cefdinir	5
Cefditoren Pivoxil	5
Cefetamet.....	6
Cefetamet Pivoxil	7
Cefixime.....	7
Cefminox Sodium.....	10
Cefodizime Sodium.....	11
Cefotaxime Sodium	12
Cefotiam	13
Cefoxitin.....	15
Cefpodoxime Proxetil	15
Cefprozil	18
Cefradine.....	19
Ceftazidime	20
Ceftiofur	21
Ceftizoxime	21
Ceftriaxone Sodium	22
Cefuroxime Axetil	23
Cephalexin	24
7-ACA	24
7-ADCA.....	25
7-ANCA.....	25
2.Penicillins	26
Amoxicillin	26
Ampicillin	28
Cloxacillin	30
Flucloxacillin Sodium	31
Mezlocillin.....	31
Piperacillin.....	33
Pivampicillin	35
Sultamicillin Tosilate.....	36
3.Carbapenems.....	36
Biapenem	36
Ertapenem.....	37
Meropenem.....	38
4.Antiviral.....	39
Acyclovir	39
Adefovir.....	40

Lamivudine.....	41
Tenofovir.....	42
5.Anticancer.....	43
Bexarotene.....	43
Bortezomib.....	43
6.Cardiovascular.....	44
Eletriptan.....	45
Levosimendan.....	45
7. Digestive System Drugs.....	46
Ranitidine.....	46
8.Hormones.....	46
Salbutamol.....	46
9.Others.....	47
Aminocaproic Acid.....	47
Empagliflozin.....	48
Entacapone.....	48
Felbamate.....	49
Gabapentin.....	49
Hydroxychloroquine.....	50
Pregabalin.....	51

2

[Return to the Index](#)

Catalogue No.	Product Name	Structure	Chemical Definition
---------------	--------------	-----------	---------------------

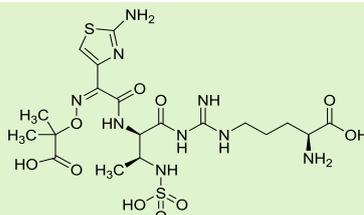
1.Cephalosporin Impurities

3

[Return to the Index](#)

Aztreonam

PI20008005 **Aztreonam and Arginine Polymerization Impurity 1**



Chemical Formula: $C_{19}H_{31}N_9O_{10}S_2$
 Exact Mass: 609.16353
 Molecular Weight: 609.63000

Nw-((2R,3S)-2-((Z)-2-(2-aminothiazol-4-yl)-2-(((2-carboxypropan-2-yl)oxyimino)acetamido)-3-

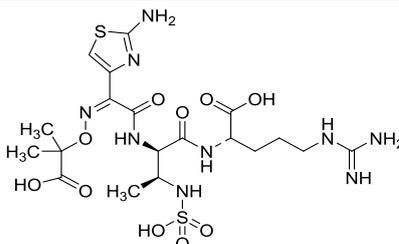
(sulfoamino)butanoyl)-L-arginine

Chemical Formula: $C_{19}H_{31}N_9O_{10}S_2$

Exact Mass: 609.16353

Molecular Weight: 609.63000

PI20008006 **Aztreonam and Arginine Polymerization Impurity 2**



Chemical Formula: $C_{19}H_{31}N_9O_{10}S_2$
 Exact Mass: 609.16353
 Molecular Weight: 609.63000

((2R,3S)-2-((Z)-2-(2-aminothiazol-4-yl)-2-(((2-carboxypropan-2-yl)oxyimino)acetamido)-3-

(sulfoamino)butanoyl)-L-arginine

Chemical Formula: $C_{19}H_{31}N_9O_{10}S_2$

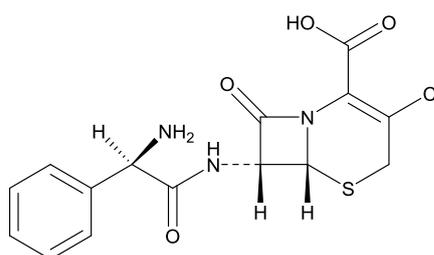
Exact Mass: 609.16353

Molecular Weight: 609.63000

[Return to the Index](#)

Cefaclor

PI00023001 **Cefaclor**



Chemical Formula: $C_{15}H_{14}ClN_3O_4S$
 Exact Mass: 367.03935
 Molecular Weight: 367.80400

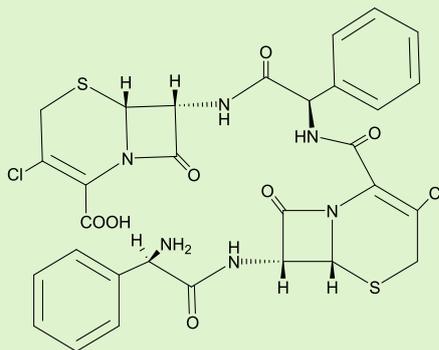
(6R,7R)-7-((R)-2-amino-2-phenylacetamido)-3-chloro-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{15}H_{14}ClN_3O_4S$

Exact Mass: 367.03935

Molecular Weight: 367.80400

PI0007006 **Cefaclor Dimer**



Chemical Formula: $C_{30}H_{26}Cl_2N_6O_7S_2$
 Exact Mass: 716.06814
 Molecular Weight: 717.59300

(S)-2-amino-N-(2-(6-oxo-5-phenyl-1,6-dihydropyrazin-2-yl)ethyl)-2-phenylacetamide

Chemical Formula:

$C_{30}H_{26}Cl_2N_6O_7S_2$

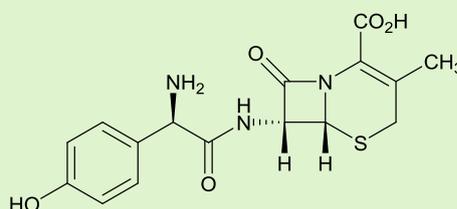
Exact Mass: 716.06814

Molecular Weight: 717.59300

[Return to the Index](#)

Cefadroxil

PI00031001 **Cefadroxil**



Chemical Formula: $C_{16}H_{17}N_3O_5S$
 Exact Mass: 363.08889
 Molecular Weight: 363.38800

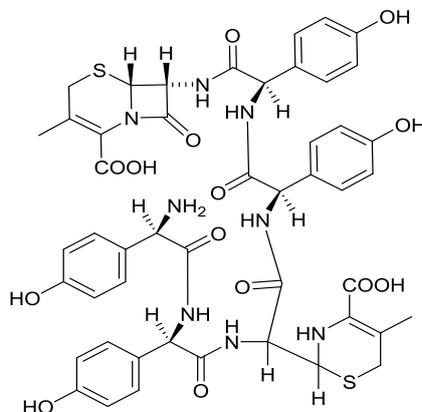
(6R,7R)-7-((R)-2-amino-2-(4-hydroxyphenyl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{16}H_{17}N_3O_5S$

Exact Mass: 363.08889

Molecular Weight: 363.38800

PI00031011 **Cefadroxil Dimer 1**



Chemical Formula: $C_{48}H_{48}N_8O_{14}S_2$
 Exact Mass: 1024.27314
 Molecular Weight: 1025.06992

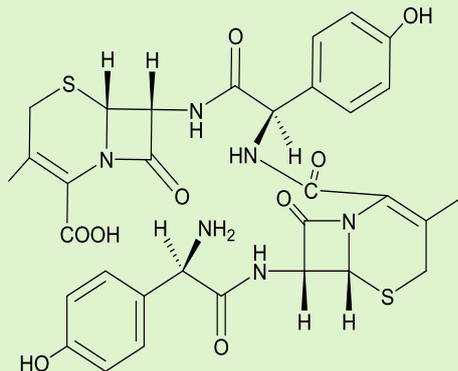
(6R,7R)-7-((2R,5R,11R,14R)-14-amino-8-(4-carboxy-5-methyl-3,6-dihydro-2H-1,3-thiazin-2-yl)-2,5,11,14-tetrakis(4-hydroxyphenyl)-4,7,10,13-tetraoxo-3,6,9,12-tetraazatetradecanamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{48}H_{48}N_8O_{14}S_2$

Exact Mass: 1024.27314

Molecular Weight: 1025.06992

PI00031012 **Cefadroxil Dimer**
 2



Chemical Formula: $C_{32}H_{32}N_6O_9S_2$
 Exact Mass: 708.16722
 Molecular Weight: 708.76100

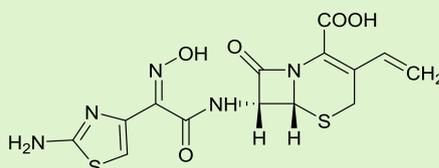
(6R,7R)-7-((R)-2-((6R,7R)-7-((R)-2-amino-2-(4-hydroxyphenyl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)-2-(4-hydroxyphenyl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $32H_{32}N_6O_9S_2$
 Exact Mass: 708.16722
 Molecular Weight: 708.76100

[Return to the Index](#)

Cefdinir

PI00004001 **Cefdinir**

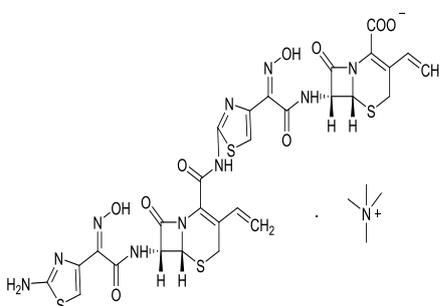


Chemical Formula: $C_{14}H_{13}N_5O_5S_2$
 Exact Mass: 395.03581
 Molecular Weight: 395.40800

(6R,7R)-7-((Z)-2-(2-(2-aminothiazol-4-yl)-2-(hydroxyimino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{14}H_{13}N_5O_5S_2$
 Exact Mass: 395.03581
 Molecular Weight: 395.40800

PI00004020 **Cefdinir Dimer**



Chemical Formula: $C_{32}H_{35}N_{11}O_9S_4$
 Exact Mass: 845.15020
 Molecular Weight: 845.94000

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(hydroxyimino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(hydroxyimino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

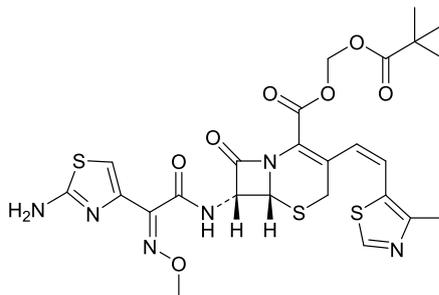
Chemical Formula: $C_{32}H_{35}N_{11}O_9S_4$
 Exact Mass: 845.15020
 Molecular Weight: 845.94000

[Return to the Index](#)

Cefditoren Pivoxil

PI00015001

Cefditoren
Pivoxil



Chemical Formula: $C_{25}H_{28}N_6O_7S_3$
 Exact Mass: 620.11816
 Molecular Weight: 620.71400

(pivaloyloxy)methyl (6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-((Z)-2-(4-methylthiazol-5-yl)vinyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate

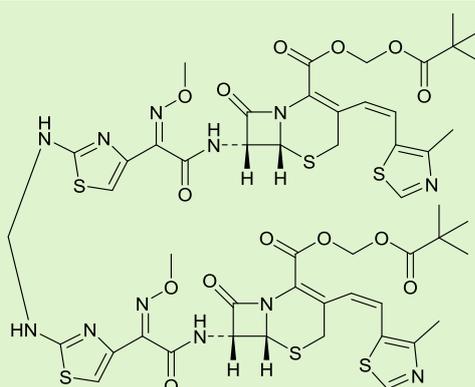
Chemical Formula: $C_{25}H_{28}N_6O_7S_3$

Exact Mass: 620.11816

Molecular Weight: 620.71400

PI00015006

Cefditoren
Pivoxil Dimer



Chemical Formula: $C_{51}H_{56}N_{12}O_{14}S_6$
 Exact Mass: 1252.23632
 Molecular Weight: 1253.43900

bis((pivaloyloxy)methyl) 7,7'-(((2Z,2'Z)-2,2'-((methylenebis(azanediyl))bis(thiazole-2,4-diyl))bis(2-(methoxyimino)acetyl))bis(azanediyl))((6R,6'R,7R,7'R)-bis(3-((Z)-2-(4-methylthiazol-5-yl)vinyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate)

Chemical Formula: $C_{51}H_{56}N_{12}O_{14}S_6$

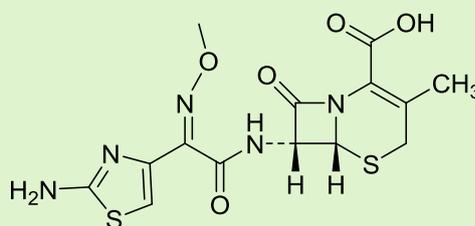
Exact Mass: 1252.23632

Molecular Weight: 1253.43900

Cefetamet

PI000420041

Cefetamet



Chemical Formula: $C_{14}H_{15}N_5O_5S_2$
 Exact Mass: 397.05146
 Molecular Weight: 397.42400

(6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

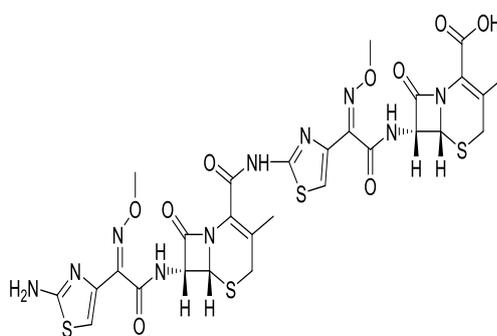
Chemical Formula: $C_{14}H_{15}N_5O_5S_2$

Exact Mass: 397.05146

Molecular Weight: 397.42400

PI00042008

Cefetamet Dimer
2



Chemical Formula: $C_{28}H_{28}N_{10}O_9S_4$
 Exact Mass: 776.09236
 Molecular Weight: 776.83300

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{28}H_{28}N_{10}O_9S_4$

Exact Mass: 776.09236

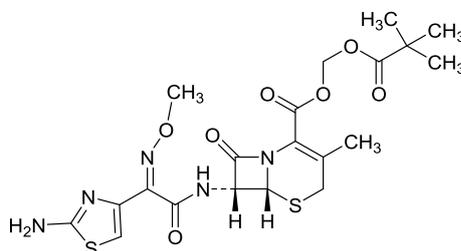
Molecular Weight: 776.83300

[Return to the](#)

[Index](#)

Cefetamet Pivoxil

PI00044001 **Cefetamet Pivoxil**



Chemical Formula: $C_{20}H_{25}N_5O_7S_2$

Exact Mass: 511.11954

Molecular Weight: 511.56800

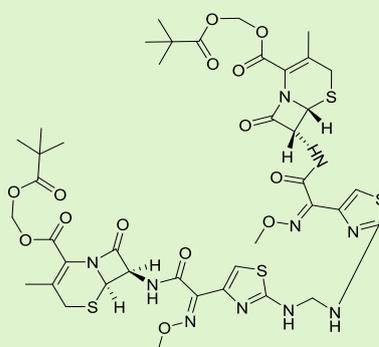
(pivaloyloxy)methyl (6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate

Chemical Formula: $C_{20}H_{25}N_5O_7S_2$

Exact Mass: 511.11954

Molecular Weight: 511.56800

PI00044012 **Cefetamet Pivoxil Impurity G (a dimer)**



Chemical Formula: $C_{41}H_{50}N_{10}O_{14}S_4$

Exact Mass: 1034.23908

Molecular Weight: 1035.14700

bis((pivaloyloxy)methyl) 7,7'-(((2Z,2'Z)-2,2'-(methylenebis(azanediyl))bis(thiazole-2,4-diyl))bis(2-(methoxyimino)acetyl))bis(azanediyl))(6R,6'R,7R,7'R)-bis(3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate)

Chemical Formula: $C_{41}H_{50}N_{10}O_{14}S_4$

Exact Mass: 1034.23908

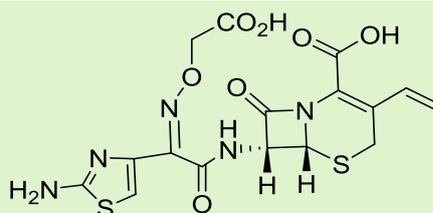
Molecular Weight: 1035.14700

[Return to the](#)

[Index](#)

Cefixime

PI00001001 **Cefixime**



Chemical Formula: $C_{16}H_{15}N_5O_7S_2$

Exact Mass: 453.04129

Molecular Weight: 453.44400

(6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

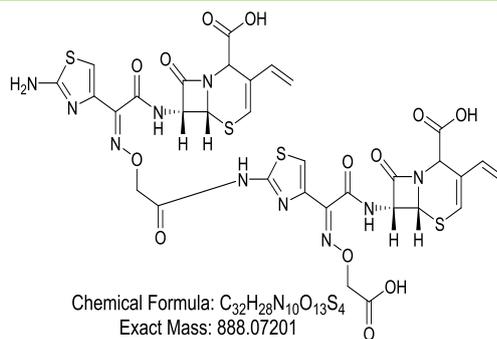
Chemical Formula: $C_{16}H_{15}N_5O_7S_2$

Exact Mass: 453.04129

Molecular Weight: 453.44400

PI00001025 **Cefixime Dimer**

A



(6R,7R)-7-((Z)-2-(2-(2-(((Z)-1-(2-aminothiazol-4-yl)-2-(((6R,7R)-2-carboxy-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-en-7-yl)amino)-2-oxoethylidene)amino)oxy)acetamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

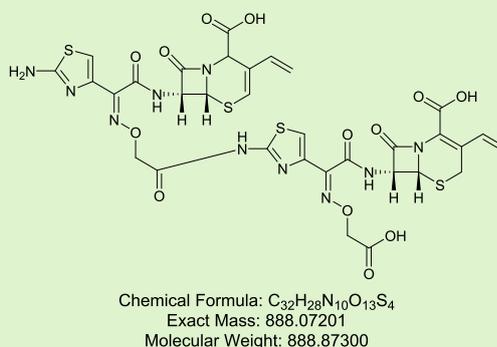
Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

Molecular Weight: 888.87300

PI00001026 **Cefixime Dimer**

B



(6R,7R)-7-((Z)-2-(2-(2-(((Z)-1-(2-aminothiazol-4-yl)-2-(((6R,7R)-2-carboxy-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-en-7-yl)amino)-2-oxoethylidene)amino)oxy)acetamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

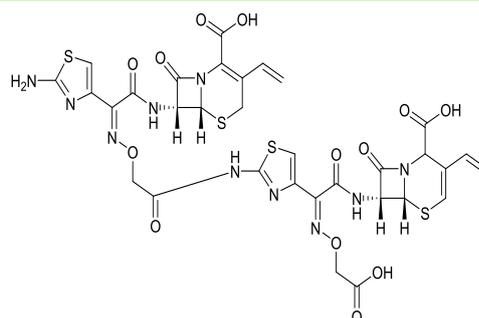
Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

Molecular Weight: 888.87300

PI00001027 **Cefixime Dimer**

C



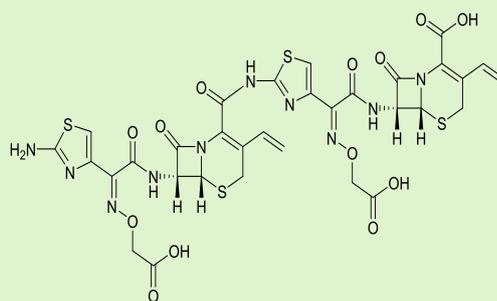
(6R,7R)-7-((Z)-2-(2-(2-(((Z)-1-(2-aminothiazol-4-yl)-2-(((6R,7R)-2-carboxy-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl)amino)-2-oxoethylidene)amino)oxy)acetamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

Molecular Weight: 888.87300

PI00001028 **Cefixime Dimer**
D



Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$
 Exact Mass: 888.07201
 Molecular Weight: 888.87300

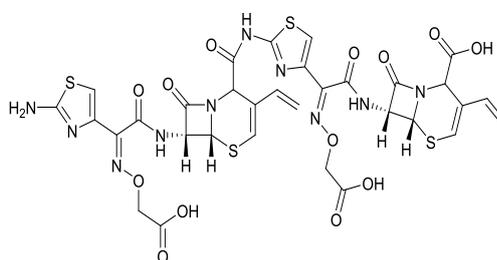
(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-zabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-zabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

Molecular Weight: 888.87300

PI00001029 **Cefixime Dimer**
E



Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$
 Exact Mass: 888.07201
 Molecular Weight: 888.87300

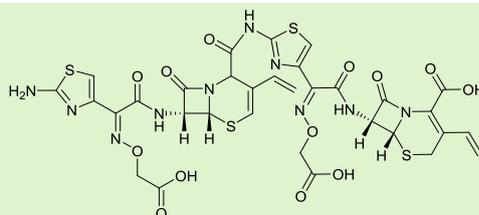
(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-zabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-zabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

Molecular Weight: 888.87300

PI00001030 **Cefixime Dimer F**



Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$
 Exact Mass: 888.07201
 Molecular Weight: 888.87300

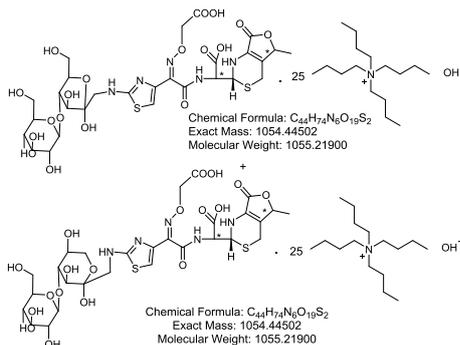
(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{28}N_{10}O_{13}S_4$

Exact Mass: 888.07201

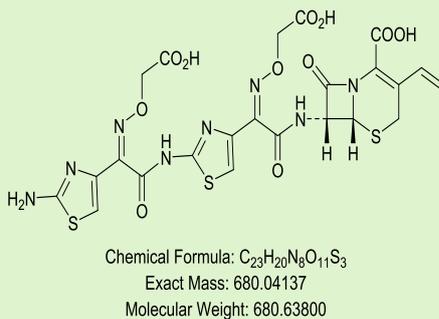
Molecular Weight: 888.87300

PI00001039 **Cefixime ring**
opening lactone
glycosyl polymer



Chemical Formula: C44H74N6O19S2
Exact Mass: 1054.44502
Molecular Weight: 1055.21900
Chemical Formula: C44H74N6O19S2
Exact Mass: 1054.44502
Molecular Weight: 1055.21900

PI00001040 **Cefixime**
Polymer Impurity
B

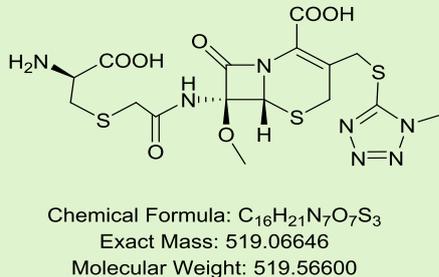


(6R,7R)-7-((Z)-2-(2-((Z)-2-(2-aminothiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)thiazol-4-yl)-2-((carboxymethoxy)imino)acetamido)-8-oxo-3-vinyl-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid
Chemical Formula: C23H20N8O11S3
Exact Mass: 680.04137
Molecular Weight: 680.63800

[Return to the Index](#)

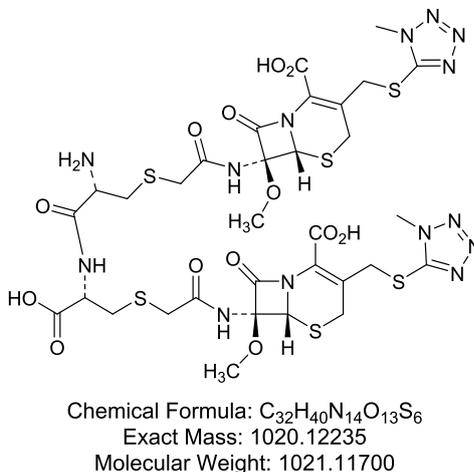
Cefminox Sodium

PI00038000 **Cefminox**



(6R,7S)-7-(2-(((S)-2-amino-2-carboxyethyl)thio)acetamido)-7-methoxy-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid
Chemical Formula: C16H21N7O7S3
Exact Mass: 519.06646
Molecular Weight: 519.56600id

PI00038003 **Cefminox Dimer**
1



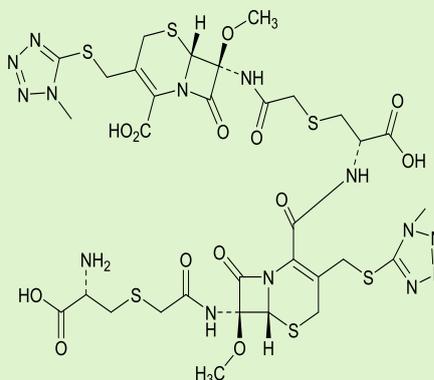
(6R,7S)-7-(2-(((S)-2-amino-3-(((S)-1-carboxy-2-((2-(((6R,7S)-2-carboxy-7-methoxy-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl)amino)-2-oxoethyl)thio)ethyl)amino)-3-oxopropyl)thio)acetamido)-7-methoxy-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: C₃₂H₄₀N₁₄O₁₃S₆

Exact Mass: 1020.12235

Molecular Weight: 1021.11700

PI00038004 **Cefminox Dimer**
2



Chemical Formula: C₃₂H₄₀N₁₄O₁₃S₆

Exact Mass: 1020.12235

Molecular Weight: 1021.11700

(6R,7S)-7-(2-(((S)-2-((6R,7S)-7-(2-(((S)-2-amino-2-carboxyethyl)thio)acetamido)-7-methoxy-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)-2-carboxyethyl)thio)acetamido)-7-methoxy-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: C₃₂H₄₀N₁₄O₁₃S₆

Exact Mass: 1020.12235

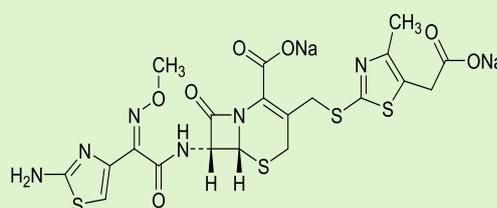
Molecular Weight: 1021.11700

[Return to the](#)

[Index](#)

Cefodizime Sodium

PI00022001 **Cefodizime Sodium**



Chemical Formula: C₂₀H₁₈N₆Na₂O₇S₄

Exact Mass: 627.99152

Molecular Weight: 628.61854

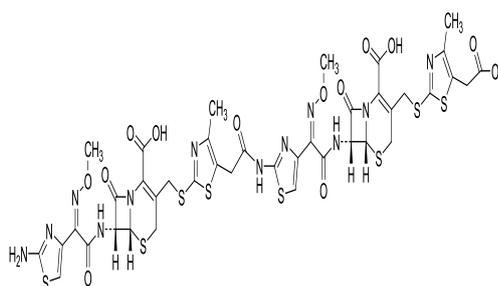
Chemical Formula:

C₂₀H₁₈N₆Na₂O₇S₄

Exact Mass: 627.99152

Molecular Weight: 628.61854

PI00022013 **Cefodizime Dimer**



Chemical Formula: C₄₀H₃₈N₁₂O₁₃S₈

Exact Mass: 1150.04469

Molecular Weight: 1151.29500

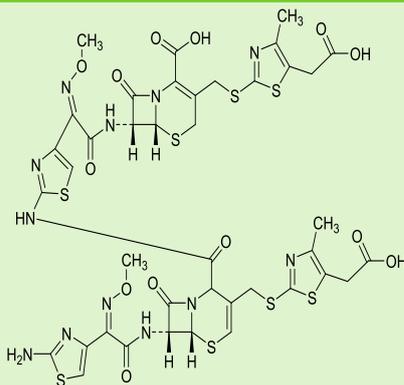
(6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((5-(2-((4-((Z)-2-(((6R,7R)-2-carboxy-3-(((5-(carboxymethyl)-4-methylthiazol-2-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl)amino)-1-(methoxyimino)-2-oxoethyl)thiazol-2-yl)amino)-2-oxoethyl)-4-methylthiazol-2-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: C₄₀H₃₈N₁₂O₁₃S₈

Exact Mass: 1150.04469

Molecular Weight: 1151.29500

PI00022014 **Cefodizime**
Dimer-Δ3



Chemical Formula: $C_{40}H_{38}N_{12}O_{13}S_8$
 Exact Mass: 1150.04469
 Molecular Weight: 1151.29500

6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((5-(carboxymethyl)-4-methylthiazol-2-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((5-(carboxymethyl)-4-methylthiazol-2-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{40}H_{38}N_{12}O_{13}S_8$

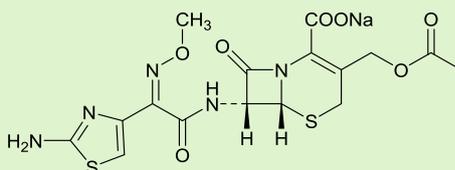
Exact Mass: 1150.04469

Molecular Weight: 1151.29500

[Return to the Index](#)

Cefotaxime Sodium

PI00010001 **Cefotaxime**
Sodium



Chemical Formula: $C_{16}H_{16}N_5NaO_7S_2$
 Exact Mass: 477.03888
 Molecular Weight: 477.44177

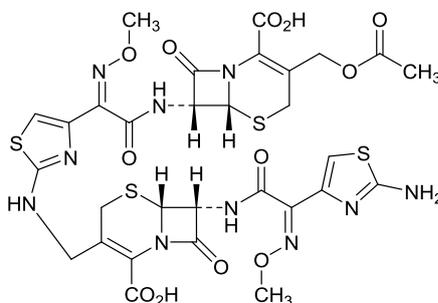
Chemical Formula:

$C_{16}H_{16}N_5NaO_7S_2$

Exact Mass: 477.03888

Molecular Weight: 477.44177

PI00010007 **Cefotaxime**
Impurity F (EP)
(a dimer)



Chemical Formula: $C_{30}H_{30}N_{10}O_{12}S_4$
 Exact Mass: 850.09275
 Molecular Weight: 850.86800

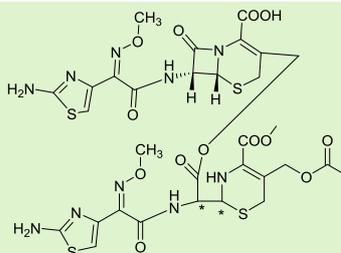
Chemical Formula:

$C_{30}H_{30}N_{10}O_{12}S_4$

Exact Mass: 850.09275

Molecular Weight: 850.86800

PI00010020 **Cefotaxime**
Dimer A



Chemical Formula: $C_{31}H_{34}N_{10}O_{13}S_4$
 Exact Mass: 882.11896
 Molecular Weight: 882.91000

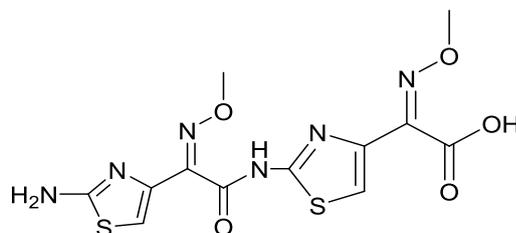
Chemical Formula:

$C_{31}H_{34}N_{10}O_{13}S_4$

Exact Mass: 882.11896

Molecular Weight: 882.91000

PI00010023 **ATMAA Dimer**



Chemical Formula: $C_{12}H_{12}N_6O_5S_2$
 Exact Mass: 384.03106
 Molecular Weight: 384.38500

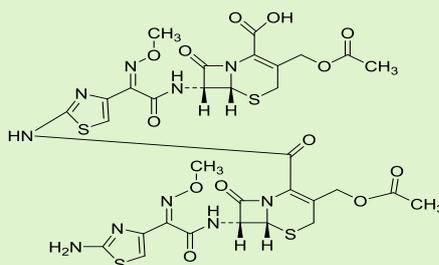
Chemical Formula: $C_{12}H_{12}N_6O_5S_2$

Exact Mass: 384.03106

Molecular Weight: 384.38500

13

PI00010024 **Cefotaxime Dimer B**



Chemical Formula: $C_{32}H_{32}N_{10}O_{13}S_4$
 Exact Mass: 892.10331
 Molecular Weight: 892.90500

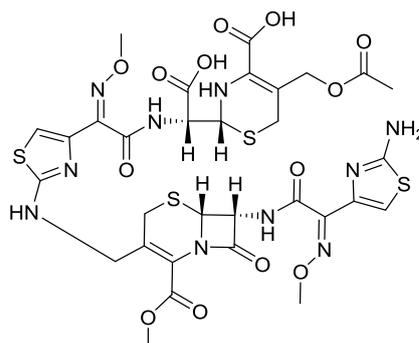
Chemical Formula:

$C_{32}H_{32}N_{10}O_{13}S_4$

Exact Mass: 892.10331

Molecular Weight: 892.90500

PI00010032 **Cefotaxime Dimer C**



Chemical Formula: $C_{31}H_{34}N_{10}O_{13}S_4$
 Exact Mass: 882.11896
 Molecular Weight: 882.91000

(R)-5-(acetoxymethyl)-2-((R)-((Z)-2-

2-(((6R,7R)-7-((Z)-2-(2-

aminothiazol-4-yl)-2-

(methoxyimino)acetamido)-2-

(methoxycarbonyl)-8-oxo-5-thia-1-

azabicyclo[4.2.0]oct-2-en-3-

yl)methyl)amino)thiazol-4-yl)-2-

(methoxyimino)acetamido)(carboxy

methyl)-3,6-dihydro-2H-1,3-thiazine-

4-carboxylic acid

Chemical Formula: $C_{31}H_{34}N_{10}O_{13}S_4$

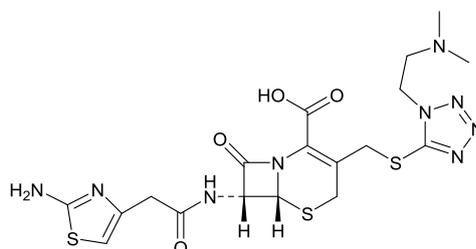
Exact Mass: 882.11896

Molecular Weight: 882.91000

[Return to the Index](#)

Cefotiam

PI00013001 **Cefotiam**



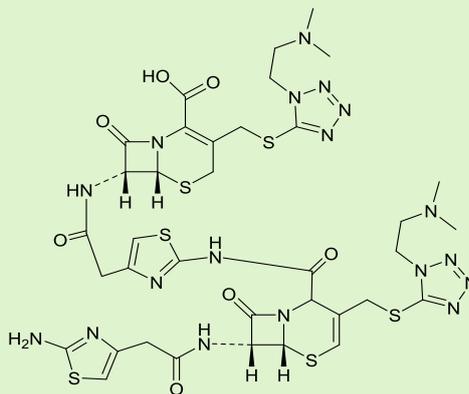
Chemical Formula: $C_{18}H_{23}N_9O_4S_3$
 Exact Mass: 525.10351
 Molecular Weight: 525.62100

Chemical Formula: $C_{18}H_{23}N_9O_4S_3$

Exact Mass: 525.10351

Molecular Weight: 525.62100

PI00013018 **Cefotiam Dimer**
P1

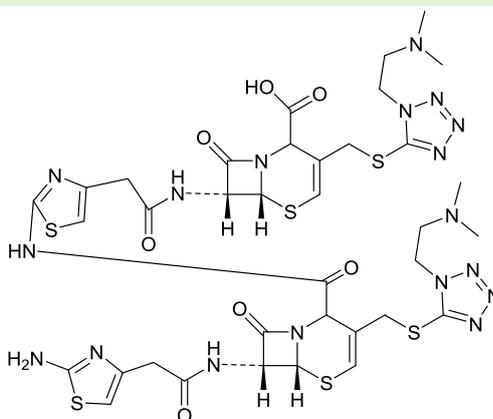


Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

(6R,7R)-7-(2-(2-((6R,7R)-7-(2-(2-aminothiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

PI00013019 **Cefotiam Dimer**
P3

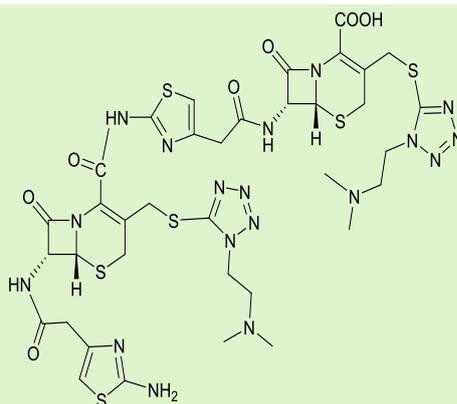


Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

(6R,7R)-7-(2-(2-((6R,7R)-7-(2-(2-aminothiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

PI00013025 **Cefotiam Dimer**



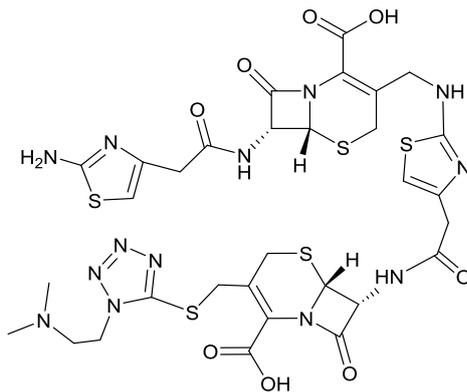
Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

(6R,7R)-7-(2-(2-((6R,7R)-7-(2-(2-aminothiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)acetamido)-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{36}H_{44}N_{18}O_7S_6$
 Exact Mass: 1032.19646
 Molecular Weight: 1033.22700

PI00013026 **Cefotiam Dimer**

B



Chemical Formula: $C_{31}H_{35}N_{13}O_8S_5$
 Exact Mass: 877.13351
 Molecular Weight: 878.00400

(6R,7R)-7-(2-(2-aminothiazol-4-yl)acetamido)-3-(((4-(2-(((6R,7R)-2-carboxy-3-(((1-(2-(dimethylamino)ethyl)-1H-tetrazol-5-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl)amino)-2-oxoethyl)thiazol-2-yl)amino)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{31}H_{35}N_{13}O_8S_5$

Exact Mass: 877.13351

Molecular Weight: 878.00400

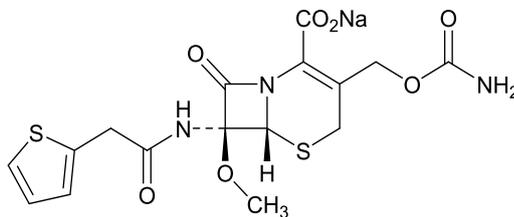
[Return to the](#)

[Index](#)

Cefoxitin

PI00016001

Cefoxitin



Chemical Formula: $C_{16}H_{16}N_3NaO_7S_2$
 Exact Mass: 449.03274
 Molecular Weight: 449.42777

Chemical Formula:

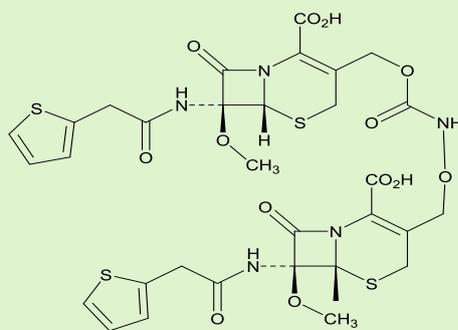
$C_{16}H_{16}N_3NaO_7S_2$

Exact Mass: 449.03274

Molecular Weight: 449.42777

PI00016008

**Cefoxitin
 Impurity G(EP)(a
 dimer)**



Chemical Formula: $C_{32}H_{33}N_5O_{13}S_4$
 Exact Mass: 823.09577
 Molecular Weight: 823.87800

Chemical Formula: $C_{32}H_{33}N_5O_{13}S_4$

Exact Mass: 823.09577

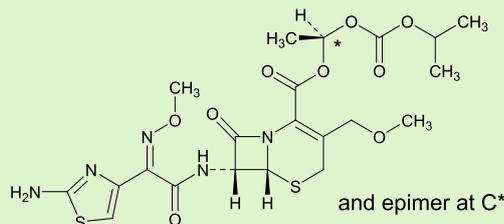
Molecular Weight: 823.87800

[Return to the](#)

[Index](#)

Cefpodoxime Proxetil

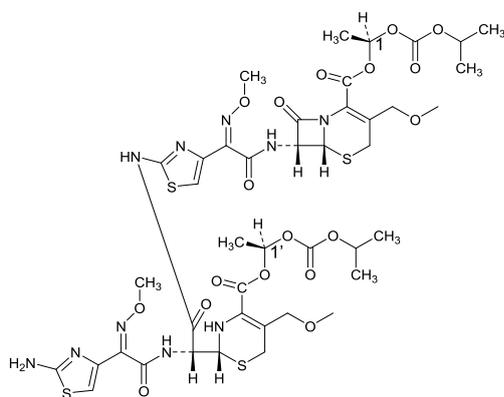
PI00032001 **Cefpodoxime**
Proxetil



Chemical Formula: $C_{21}H_{27}N_5O_9S_2$
 Exact Mass: 557.12502
 Molecular Weight: 557.59300

(R)-1-
 ((isopropoxycarbonyl)oxy)ethyl
 (6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate
 Chemical Formula: $C_{21}H_{27}N_5O_9S_2$
 Exact Mass: 557.12502
 Molecular Weight: 557.59300

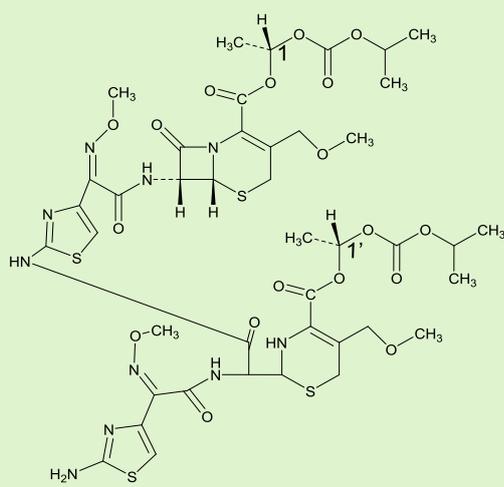
PI00032009 **Cefpodoxime**
Proxetil Impurity
H(cefpodoxime proxetil dimer)



Chemical Formula: $C_{42}H_{54}N_{10}O_{18}S_4$
 Exact Mass: 1114.25004
 Molecular Weight: 1115.18600

mixture of the diastereoisomers of
 (RS)-1-((isopropoxycarbonyl)oxy)ethyl (6R,7R)-7-((Z)-2-((R)-2-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-2-((R)-4-(((RS)-1-((isopropoxycarbonyl)oxy)ethoxy)carbonyl)-5-(methoxymethyl)-3,6-dihydro-2H-1,3-thiazin-2-yl)acetamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate
 Chemical Formula: $C_{42}H_{54}N_{10}O_{18}S_4$
 Exact Mass: 1114.25004
 Molecular Weight: 1115.18600

PI00032020 **Cefpodoxime**
Proxetil Impurity
H-A(a dimer)

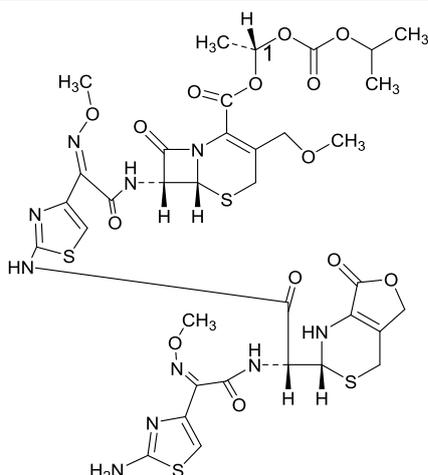


Chemical Formula: $C_{42}H_{54}N_{10}O_{18}S_4$
 Exact Mass: 1114.25004
 Molecular Weight: 1115.18600

mixture of the diastereoisomers of
 (RS)-1-((isopropoxycarbonyl)oxy)ethyl (6R,7R)-7-((Z)-2-(2-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-2-(4-(((RS)-1-((isopropoxycarbonyl)oxy)ethoxy)carbonyl)-5-(methoxymethyl)-3,6-dihydro-2H-1,3-thiazin-2-yl)acetamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate
 Chemical Formula: $C_{42}H_{54}N_{10}O_{18}S_4$
 Exact Mass: 1114.25004

Molecular Weight: 1115.18600

PI00032023 **Cefpodoxime**
Proxetil Impurity
N(a dimer)



and diastereoisomers at C1
 Chemical Formula: C₃₅H₄₀N₁₀O₁₄S₄
 Exact Mass: 952.16083
 Molecular Weight: 953.00100

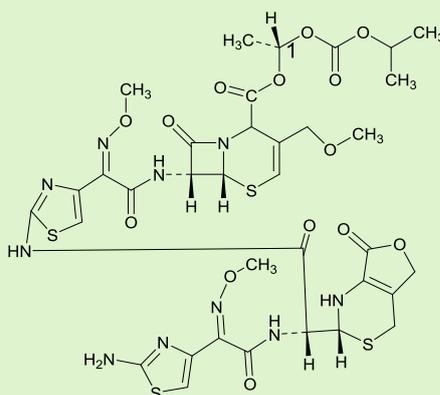
(R,S)-1-
 ((isopropoxycarbonyloxy)ethyl
 (6R,7R)-7-((Z)-2-(2-((R)-2-((Z)-2-(2-
 aminothiazol-4-yl)-2-
 (methoxyimino)acetamido)-2-((R)-7-
 oxo-1,2,5,7-tetrahydro-4H-furo[3,4-
 d][1,3]thiazin-2-yl)acetamido)thiazol-
 4-yl)-2-(methoxyimino)acetamido)-3-
 (methoxymethyl)-8-oxo-5-thia-1-
 azabicyclo[4.2.0]oct-2-ene-2-
 carboxylate

Chemical Formula: C₃₅H₄₀N₁₀O₁₄S₄

Exact Mass: 952.16083

Molecular Weight: 953.00100

PI00032024 **Cefpodoxime**
Proxetil Impurity
N-Δ3(a dimer)



and diastereoisomers at C1
 Chemical Formula: C₃₅H₄₀N₁₀O₁₄S₄
 Exact Mass: 952.16083
 Molecular Weight: 953.00100

(R,S)-1-
 ((isopropoxycarbonyloxy)ethyl
 (6R,7R)-7-((Z)-2-(2-((R)-2-((Z)-2-(2-
 aminothiazol-4-yl)-2-
 (methoxyimino)acetamido)-2-((R)-7-
 oxo-1,2,5,7-tetrahydro-4H-furo[3,4-
 d][1,3]thiazin-2-yl)acetamido)thiazol-
 4-yl)-2-(methoxyimino)acetamido)-3-
 (methoxymethyl)-8-oxo-5-thia-1-
 azabicyclo[4.2.0]oct-3-ene-2-
 carboxylate

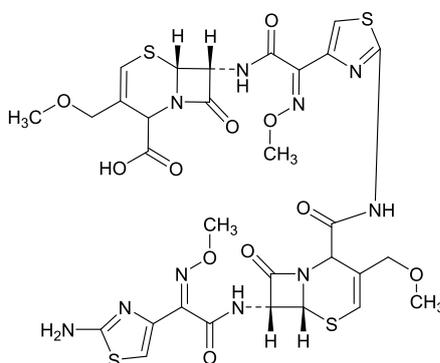
Chemical Formula:

C₃₅H₄₀N₁₀O₁₄S₄

Exact Mass: 952.16083

Molecular Weight: 953.00100

PI00032029 **Cefpodoxime**
Dimer 1



Chemical Formula: C₃₀H₃₂N₁₀O₁₁S₄
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-
 (2-aminothiazol-4-yl)-2-
 (methoxyimino)acetamido)-3-
 (methoxymethyl)-8-oxo-5-thia-1-
 azabicyclo[4.2.0]oct-3-ene-2-
 carboxamido)thiazol-4-yl)-2-
 (methoxyimino)acetamido)-3-
 (methoxymethyl)-8-oxo-5-thia-1-
 azabicyclo[4.2.0]oct-3-ene-2-
 carboxylic acid

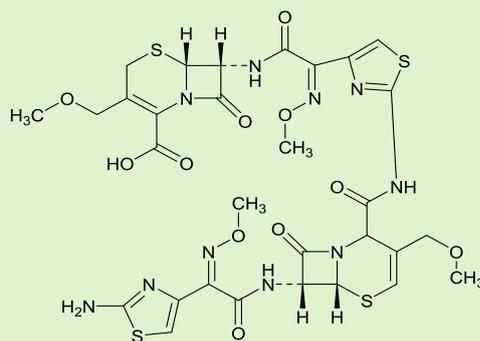
Chemical Formula: C₃₀H₃₂N₁₀O₁₁S₄

Exact Mass: 836.11348

Molecular Weight: 836.88500

PI00032030 **Cefpodoxime**

Dimer 2



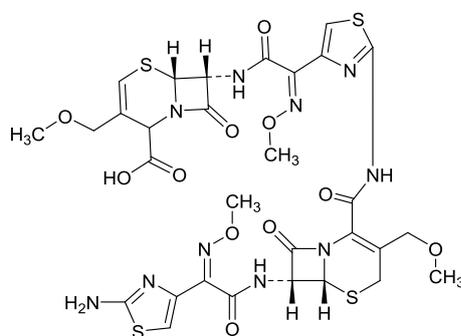
Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

PI00032031 **Cefpodoxime**

Dimer 3



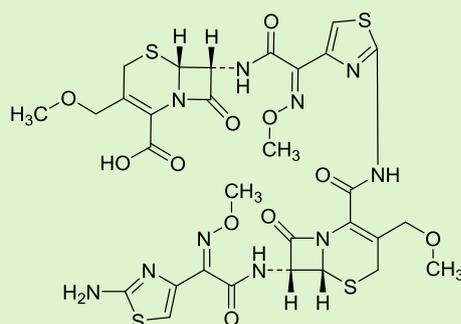
Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

PI00032032 **Cefpodoxime**

Dimer 4



Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(methoxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

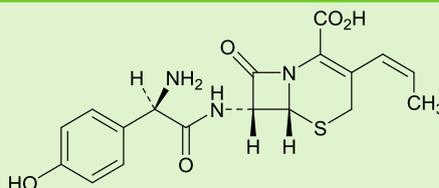
Chemical Formula: $C_{30}H_{32}N_{10}O_{11}S_4$
 Exact Mass: 836.11348
 Molecular Weight: 836.88500

[Return to the Index](#)

Cefprozil

PI00030001

Cefprozil



Chemical Formula: C₁₈H₁₉N₃O₅S
 Exact Mass: 389.10454
 Molecular Weight: 389.42600

(6R,7R)-7-((R)-2-amino-2-(4-hydroxyphenyl)acetamido)-8-oxo-3-((Z)-prop-1-en-1-yl)-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

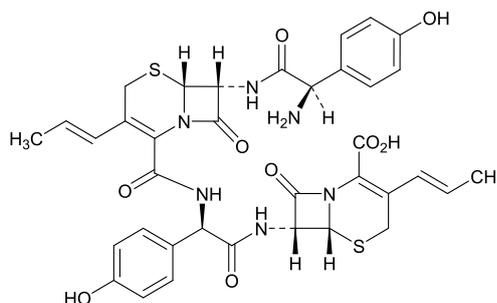
Chemical Formula: C₁₈H₁₉N₃O₅S

Exact Mass: 389.10454

Molecular Weight: 389.42600

PI00030021

Cefprozil Dimer 1 (Cefprozil USP Impurity I)



Chemical Formula: C₃₆H₃₆N₆O₉S₂
 Exact Mass: 760.19852
 Molecular Weight: 760.83700

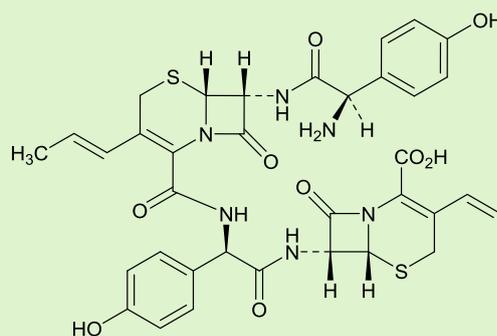
Chemical Formula: C₃₆H₃₆N₆O₉S₂

Exact Mass: 760.19852

Molecular Weight: 760.83700

PI00030022

Cefprozil Dimer 3



Chemical Formula: C₃₆H₃₆N₆O₉S₂
 Exact Mass: 760.19852
 Molecular Weight: 760.83700

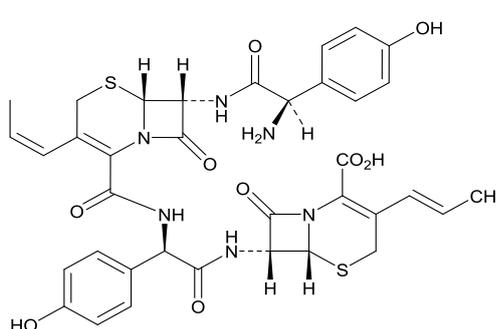
Chemical Formula: C₃₆H₃₆N₆O₉S₂

Exact Mass: 760.19852

Molecular Weight: 760.83700

PI00030023

Cefprozil Dimer 4



Chemical Formula: C₃₆H₃₆N₆O₉S₂
 Exact Mass: 760.19852
 Molecular Weight: 760.83700

Chemical Formula: C₃₆H₃₆N₆O₉S₂

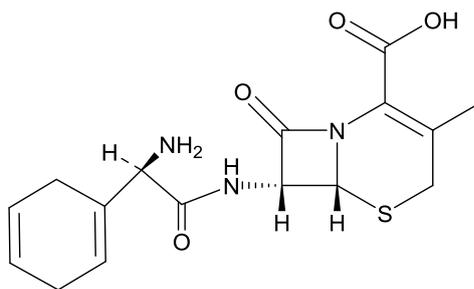
Exact Mass: 760.19852

Molecular Weight: 760.83700

[Return to the Index](#)

Cefradine

PI00008001 **Cefradine**



Chemical Formula: $C_{16}H_{19}N_3O_4S$
 Exact Mass: 349.10963
 Molecular Weight: 349.40500

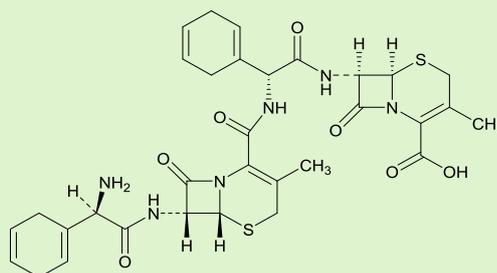
(6R,7R)-7-((R)-2-amino-2-(cyclohexa-1,4-dien-1-yl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{16}H_{19}N_3O_4S$

Exact Mass: 349.10963

Molecular Weight: 349.40500

PI00008010 **Cefradine Dimer**



Chemical Formula: $C_{32}H_{36}N_6O_7S_2$
 Exact Mass: 680.20869
 Molecular Weight: 680.79500

(6R)-7-((R)-2-((6R,7R)-7-((R)-2-amino-2-(cyclohexa-1,4-dien-1-yl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)-2-(cyclohexa-1,4-dien-1-yl)acetamido)-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{36}N_6O_7S_2$

Exact Mass: 680.20869

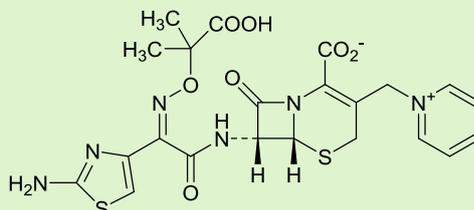
Molecular Weight: 680.79500

[Return to the](#)

[Index](#)

Ceftazidime

PI00011001 **Ceftazidime**



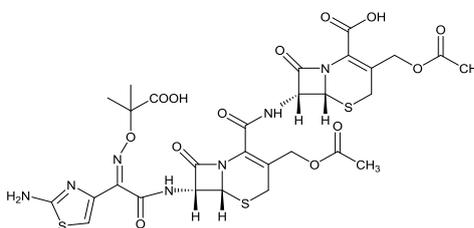
Chemical Formula: $C_{22}H_{22}N_6O_7S_2$
 Exact Mass: 546.10
 Molecular Weight: 546.57

Chemical Formula: $C_{22}H_{22}N_6O_7S_2$

Exact Mass: 546.10

Molecular Weight: 546.57

PI00011018 **Acetoxy
 Ceftazidime
 Dimer**



Chemical Formula: $C_{29}H_{31}N_7O_{13}S_3$
 Exact Mass: 781.11420
 Molecular Weight: 781.78300

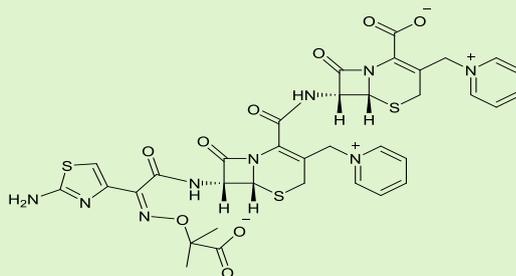
(6R,7R)-3-(acetoxyethyl)-7-((6R,7R)-3-(acetoxyethyl)-7-((Z)-2-(2-aminothiazol-4-yl)-2-((2-carboxypropan-2-yl)oxy)imino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{29}H_{31}N_7O_{13}S_3$

Exact Mass: 781.11420

Molecular Weight: 781.78300

PI00011019 **Acetoxy
 Ceftazidime
 Intermediate**



Chemical Formula: $C_{35}H_{33}N_9O_9S_3$
 Exact Mass: 819.15634
 Molecular Weight: 819.88300

(6R,7R)-3-(acetoxymethyl)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(((1-(tert-butoxy)-2-methyl-1-oxopropan-2-yl)oxy)imino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{35}H_{33}N_9O_9S_3$

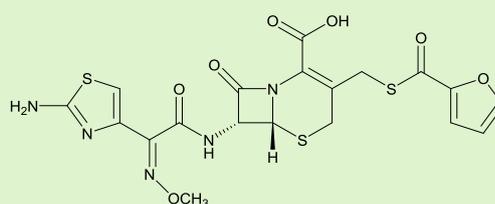
Exact Mass: 819.15634

Molecular Weight: 819.88300

[Return to the
 Index](#)

Ceftiofur

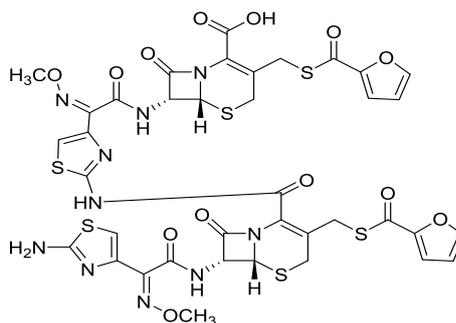
PI00054001 **Ceftiofur**



Chemical Formula: $C_{19}H_{17}N_5O_7S_3$
 Exact Mass: 523.02901
 Molecular Weight: 523.55300

(6R,7R)-7-((Z)-2-(2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((furan-2-carbonyl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

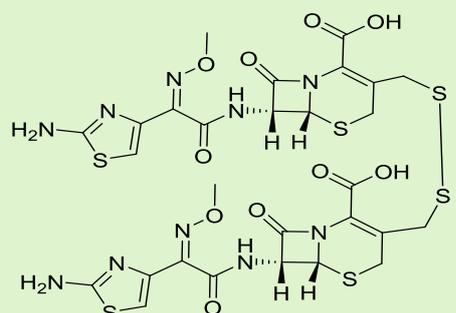
PI00054031 **Ceftiofur Dimer**



Chemical Formula: $C_{38}H_{32}N_{10}O_{13}S_6$
 Exact Mass: 1028.04746
 Molecular Weight: 1029.09100

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((furan-2-carbonyl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((furan-2-carbonyl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

PI00054036 **Ceftiofur Dimer 2**



Chemical Formula: $C_{28}H_{28}N_{10}O_{10}S_6$
 Exact Mass: 856.03141
 Molecular Weight: 856.95200

(6R,6'R,7R,7'R)-3,3'-(disulfanediylbis(methylene))bis(7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid)

Chemical Formula:

$C_{28}H_{28}N_{10}O_{10}S_6$

Exact Mass: 856.03141

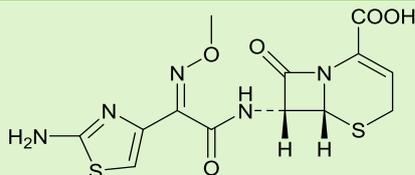
Molecular Weight: 856.95200

[Return to the
 Index](#)

Ceftizoxime

PI00020001

Ceftizoxime



Chemical Formula: $C_{13}H_{13}N_5O_5S_2$
 Exact Mass: 383.03581
 Molecular Weight: 383.39700

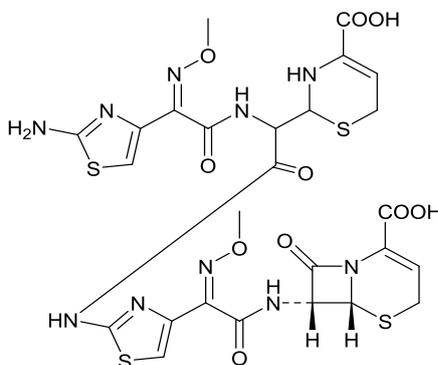
Chemical Formula: $C_{13}H_{13}N_5O_5S_2$

Exact Mass: 383.03581

Molecular Weight: 383.39700

PI00020015

**Ceftizoxime
Dimer**



Chemical Formula: $C_{26}H_{26}N_{10}O_{10}S_4$
 Exact Mass: 766.07162
 Molecular Weight: 766.79400

(6R,7R)-7-((Z)-2-(2-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-2(4-carboxy-3,6-dihydro-2H-1,3-thiazin-2-yl)-2(3-ethanamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

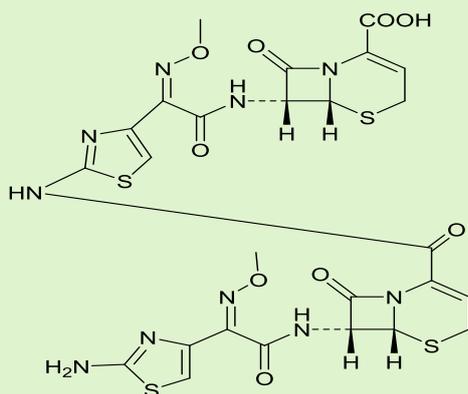
Chemical Formula: $C_{26}H_{26}N_{10}O_{10}S_4$

Exact Mass: 766.07162

Molecular Weight: 766.79400

PI00020020

**Ceftizoxime
Sodium Dimer B**



Chemical Formula: $C_{26}H_{24}N_{10}O_9S_4$
 Exact Mass: 748.06106
 Molecular Weight: 748.77900

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{26}H_{24}N_{10}O_9S_4$

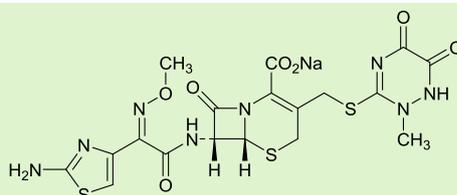
Exact Mass: 748.06106

Molecular Weight: 748.77900

[Return to the
Index](#)

Ceftriaxone Sodium

**Ceftriaxone
Sodium**



Chemical Formula: $C_{18}H_{17}N_8NaO_7S_3$
 Exact Mass: 576.02800
 Molecular Weight: 576.55277

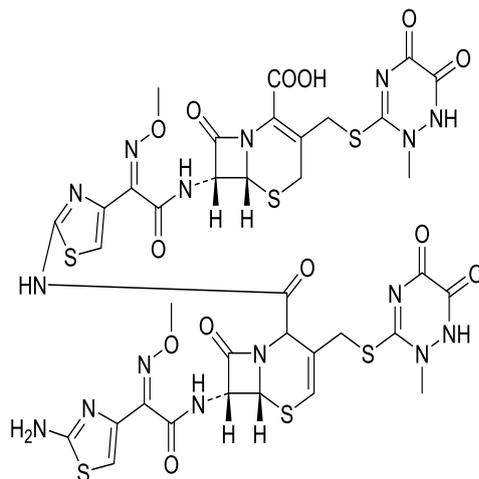
Chemical Formula:

$C_{18}H_{17}N_8NaO_7S_3$

Exact Mass: 576.02800

Molecular Weight: 576.55277

PI00009015 **Ceftriaxone**
Dimer A



Chemical Formula: $C_{36}H_{34}N_{16}O_{13}S_6$
 Exact Mass: 1090.08155
 Molecular Weight: 1091.12700

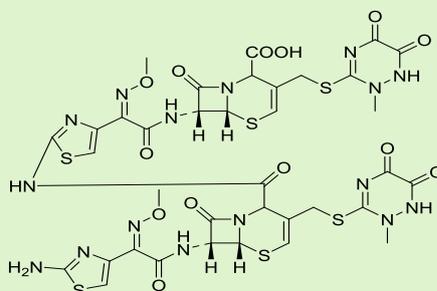
(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((2-methyl-5,6-dioxo-1,2,5,6-tetrahydro-1,2,4-triazin-3-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((2-methyl-5,6-dioxo-1,2,5,6-tetrahydro-1,2,4-triazin-3-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid

Chemical Formula: $C_{36}H_{34}N_{16}O_{13}S_6$

Exact Mass: 1090.08155

Molecular Weight: 1091.12700

PI00009016 **Ceftriaxone**
Dimer B



Chemical Formula: $C_{36}H_{34}N_{16}O_{13}S_6$
 Exact Mass: 1090.08155
 Molecular Weight: 1091.12700

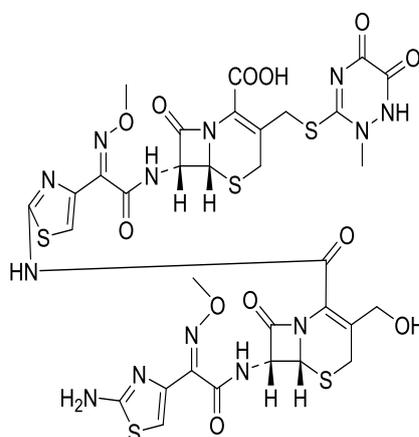
(6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((N-methylcarbamimidoyl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{36}H_{34}N_{16}O_{13}S_6$

Exact Mass: 1090.08155

Molecular Weight: 1091.12700

PI00009020 **Ceftriaxone**
Dimer C



Chemical Formula: $C_{32}H_{31}N_{13}O_{12}S_5$
 Exact Mass: 949.08187
 Molecular Weight: 949.97900

(6R,7R)-7-((Z)-2-(2-((6R,7R)-7-((Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetamido)-3-(hydroxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)thiazol-4-yl)-2-(methoxyimino)acetamido)-3-(((2-methyl-5,6-dioxo-1,2,5,6-tetrahydro-1,2,4-triazin-3-yl)thio)methyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{32}H_{31}N_{13}O_{12}S_5$

Exact Mass: 949.08187

Molecular Weight: 949.97900

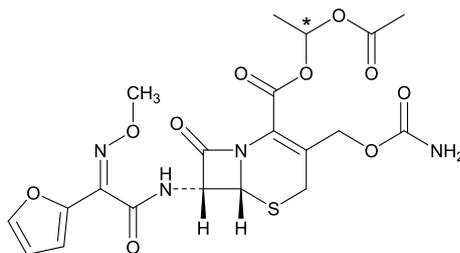
[Return to the Index](#)

Cefuroxime Axetil

PI00006001

Cefuroxime

Axetil



Chemical Formula: C₂₀H₂₂N₄O₁₀S

Exact Mass: 510.10566

Molecular Weight: 510.47400

Chemical Formula: C₂₀H₂₂N₄O₁₀S

Exact Mass: 510.10566

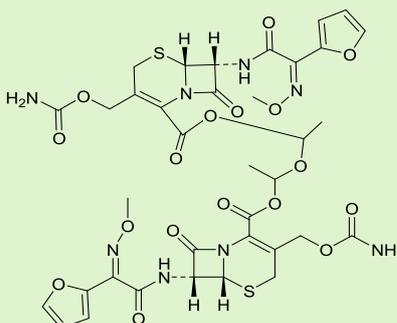
Molecular Weight: 510.47400

PI00006007

Cefuroxime

Axetil

Dimer (mixture of isomers)



Chemical Formula: C₃₆H₃₈N₈O₁₇S₂

Exact Mass: 918.17963

Molecular Weight: 918.85900

Chemical Formula: C₃₆H₃₈N₈O₁₇S₂

Exact Mass: 918.17963

Molecular Weight: 918.85900

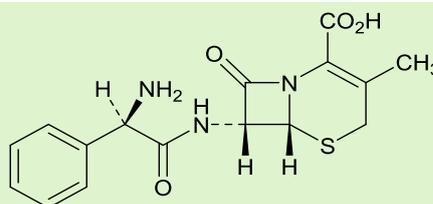
[Return to the](#)

[Index](#)

Cephalexin

PI00023001

Cephalexin



Chemical Formula: C₁₆H₁₇N₃O₄S

Exact Mass: 347.09398

Molecular Weight: 347.38900

Chemical Formula: C₁₆H₁₇N₃O₄S

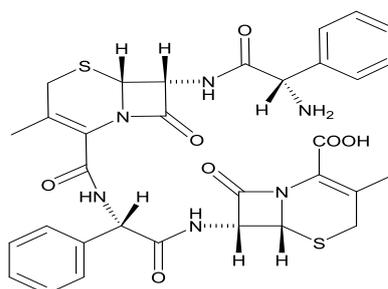
Exact Mass: 347.09398

Molecular Weight: 347.38900

PI00023011

Cephalexin

Dimer



Chemical Formula: C₃₂H₃₂N₆O₇S₂

Exact Mass: 676.17739

Molecular Weight: 676.76300

Chemical Formula: C₃₂H₃₂N₆O₇S₂

Exact Mass: 676.17739

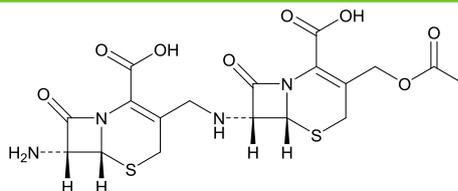
Molecular Weight: 676.76300

[Return to the](#)

[Index](#)

7-ACA

PI00034011 **7-ACA Dimer**



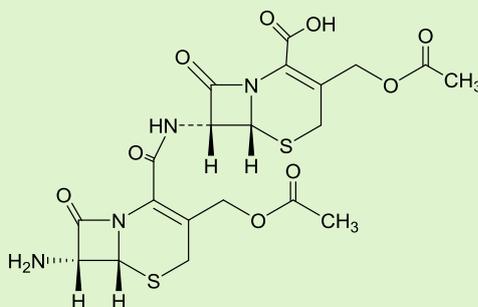
Chemical Formula: $C_{18}H_{20}N_4O_8S_2$
 Exact Mass: 484.07226
 Molecular Weight: 484.49800

Chemical Formula: $C_{18}H_{20}N_4O_8S_2$

Exact Mass: 484.07226

Molecular Weight: 484.49800

PI00034012 **7-ACA Dimer B**



Chemical Formula: $C_{20}H_{22}N_4O_9S_2$
 Exact Mass: 526.08282
 Molecular Weight: 526.53500

(6R,7R)-3-(acetoxymethyl)-7-

((6R,7R)-3-(acetoxymethyl)-7-amino-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxamido)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Chemical Formula: $C_{20}H_{22}N_4O_9S_2$

Exact Mass: 526.08282

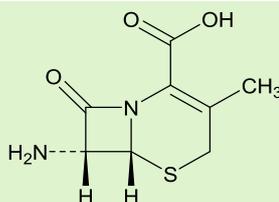
Molecular Weight: 526.53500

[Return to the](#)

[Index](#)

7-ADCA

PI00036001 **7-ADCA**



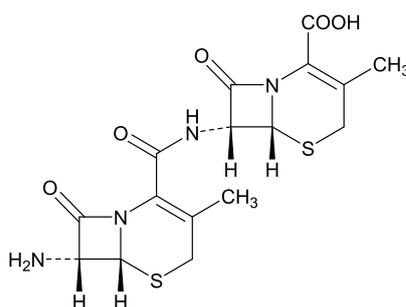
Chemical Formula: $C_8H_{10}N_2O_3S$
 Exact Mass: 214.04121
 Molecular Weight: 214.23900

Chemical Formula: $C_8H_{10}N_2O_3S$

Exact Mass: 214.04121

Molecular Weight: 214.23900

PI00036003 **7-ADCA Dimer**



Chemical Formula: $C_{16}H_{18}N_4O_5S_2$
 Exact Mass: 410.07186
 Molecular Weight: 410.46300

Chemical Formula: $C_{16}H_{18}N_4O_5S_2$

Exact Mass: 410.07186

Molecular Weight: 410.46300

Chemical Formula: $C_{16}H_{18}N_4O_5S_2$

Exact Mass: 410.07186

Molecular Weight: 410.46300

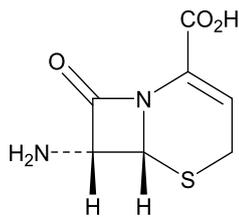
[Return to the](#)

[Index](#)

7-ANCA

PI00040001

7-ANCA



Chemical Formula: C₇H₈N₂O₃S

Exact Mass: 200.02556

Molecular Weight: 200.21200

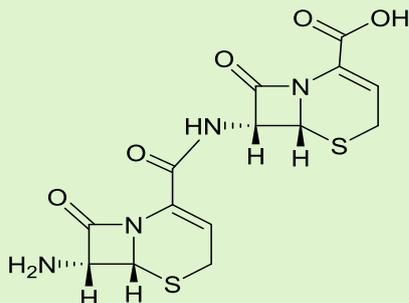
Chemical Formula: C₇H₈N₂O₃S

Exact Mass: 200.02556

Molecular Weight: 200.21200

PI00040003

7-ANCA Dimer



Chemical Formula: C₁₄H₁₄N₄O₅S₂

Exact Mass: 382.04056

Molecular Weight: 382.40900

Chemical Formula: C₁₄H₁₄N₄O₅S₂

Exact Mass: 382.04056

Molecular Weight: 382.40900

Chemical Formula: C₁₄H₁₄N₄O₅S₂

Exact Mass: 382.04056

Molecular Weight: 382.40900

Catalogue No.	Product name	Structure	Structure Information
---------------	--------------	-----------	-----------------------

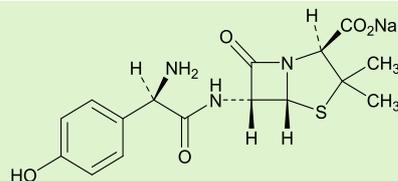
2. Penicillins

[Return to the Index](#)

Amoxicillin

PI04001001

Amoxicillin



Chemical Formula: C₁₆H₁₈N₃NaO₅S

Exact Mass: 387.08649

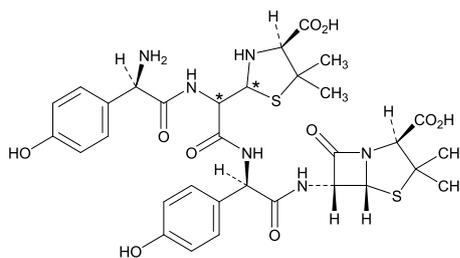
Molecular Weight: 387.38577

Chemical Formula: C₁₆H₁₈N₃NaO₅S

Exact Mass: 387.08649

Molecular Weight: 387.38577

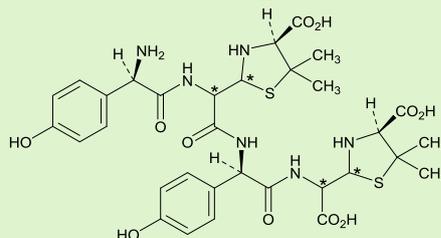
PI04001011 **Amoxicillin**
Impurity J(EP) (A
Dimer)



Chemical Formula: $C_{32}H_{38}N_6O_{10}S_2$
 Exact Mass: 730.20908
 Molecular Weight: 730.80800

Chemical Formula: $C_{32}H_{38}N_6O_{10}S_2$
 Exact Mass: 730.20908
 Molecular Weight: 730.80800

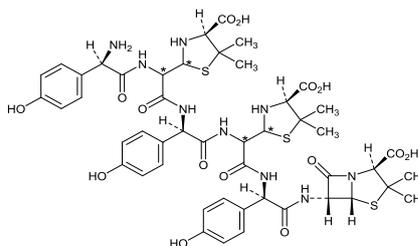
PI04001012 **Amoxicillin**
Impurity K (EP) (A
Dimer)



Chemical Formula: $C_{32}H_{40}N_6O_{11}S_2$
 Exact Mass: 748.21965
 Molecular Weight: 748.82300

Chemical Formula: $C_{32}H_{40}N_6O_{11}S_2$
 Exact Mass: 748.21965
 Molecular Weight: 748.82300

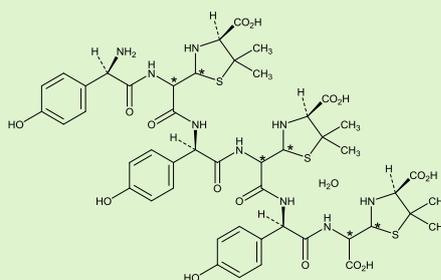
PI04001014 **Amoxicillin**
Impurity M (EP) (A
Trimer)



Chemical Formula: $C_{48}H_{57}N_9O_{15}S_3$
 Exact Mass: 1095.31362
 Molecular Weight: 1096.21200

Chemical Formula: $C_{48}H_{57}N_9O_{15}S_3$
 Exact Mass: 1095.31362
 Molecular Weight: 1096.21200

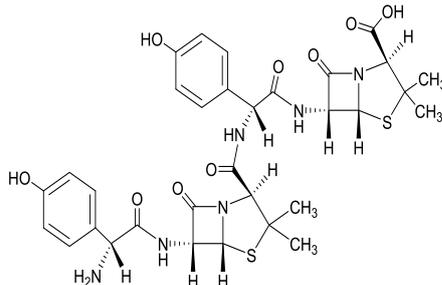
PI04001015 **Amoxicillin**
Impurity N (EP) (A
Trimer)



Chemical Formula: $C_{48}H_{59}N_9O_{16}S_3$
 Exact Mass: 1113.32419
 Molecular Weight: 1114.22700

Chemical Formula: $C_{48}H_{59}N_9O_{16}S_3$
 Exact Mass: 1113.32419
 Molecular Weight: 1114.22700

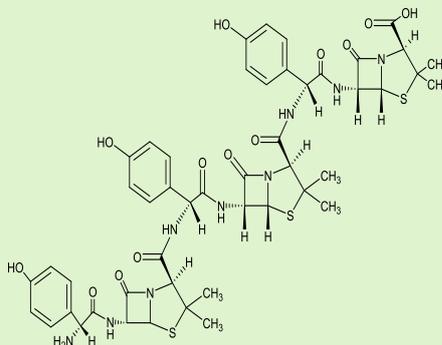
PI04001025 **Amoxicillin Dimer**



Chemical Formula: $C_{32}H_{36}N_6O_9S_2$
 Exact Mass: 712.19852
 Molecular Weight: 712.79300

(2S,5R,6R)-6-((R)-2-((2S,5R,6R)-6-((R)-2-amino-2-(4-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-(4-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
 Chemical Formula: $C_{32}H_{36}N_6O_9S_2$
 Exact Mass: 712.19852
 Molecular Weight: 712.79300

PI04001026 **Amoxicillin Trimer**



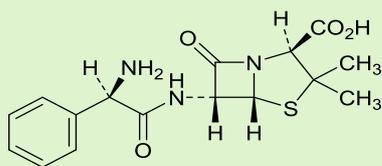
Chemical Formula: $C_{48}H_{53}N_9O_{13}S_3$
 Exact Mass: 1059.29249
 Molecular Weight: 1060.18200

(2S,5R,6R)-6-((2R)-2-((2S,5R,6R)-6-((2R)-2-((2S,6R)-6-((R)-2-amino-2-(4-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-(4-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-(4-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
 Chemical Formula: $C_{48}H_{53}N_9O_{13}S_3$
 Exact Mass: 1059.29249
 Molecular Weight: 1060.18200

[Return to the Index](#)

Ampicillin

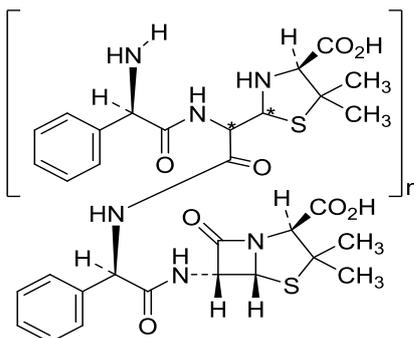
PI04003001 **Ampicillin**



Chemical Formula: $C_{16}H_{19}N_3O_4S$
 Exact Mass: 349.10963
 Molecular Weight: 349.40500

Chemical Formula: $C_{16}H_{19}N_3O_4S$
 Exact Mass: 349.10963
 Molecular Weight: 349.40500

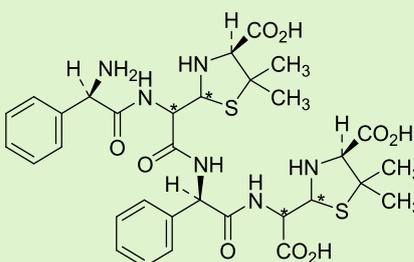
PI04003014 **Ampicillin Impurity**
M(EP) (a dimer)



Chemical Formula: $C_{32}H_{38}N_6O_8S_2$
 Exact Mass: 698.21925
 Molecular Weight: 698.81000

Chemical Formula: $C_{32}H_{38}N_6O_8S_2$
 Exact Mass: 698.21925
 Molecular Weight: 698.81000

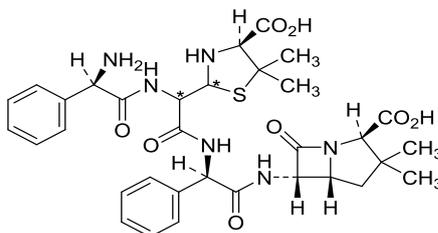
PI04003016 **Ampicillin Impurity**
O(EP) (a dimer)



Chemical Formula: $C_{32}H_{40}N_6O_9S_2$
 Exact Mass: 716.22982
 Molecular Weight: 716.82500

Chemical Formula: $C_{32}H_{40}N_6O_9S_2$
 Exact Mass: 716.22982
 Molecular Weight: 716.82500

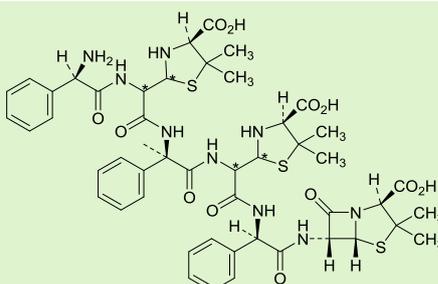
PI04003017 **Ampicillin Impurity**
P(EP) (a dimer)



Chemical Formula: $C_{33}H_{40}N_6O_8S$
 Exact Mass: 680.26283
 Molecular Weight: 680.77700

Chemical Formula: $C_{33}H_{40}N_6O_8S$
 Exact Mass: 680.26283
 Molecular Weight: 680.77700

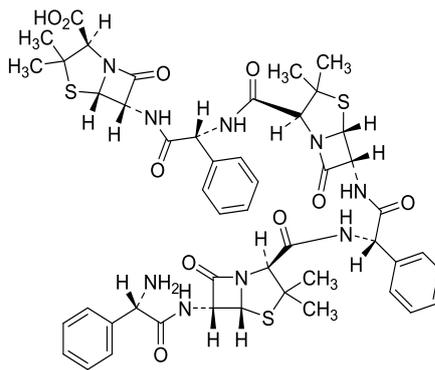
PI04003018 **Ampicillin Impurity**
Q(EP) (a trimer)



Chemical Formula: $C_{49}H_{59}N_9O_{12}S_3$
 Exact Mass: 1061.34453
 Molecular Weight: 1062.24200

Chemical Formula: $C_{49}H_{59}N_9O_{12}S_3$
 Exact Mass: 1061.34453
 Molecular Weight: 1062.24200

PI04003025 **Ampicillin Trimer 1**



Chemical Formula: C₄₈H₅₃N₉O₁₀S₃
 Exact Mass: 1011.30775
 Molecular Weight: 1012.18500

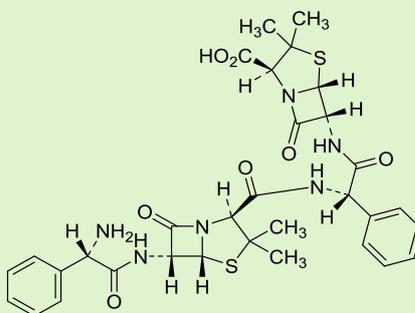
(2R,5S,6S)-6-(2-((2S,5R,6R)-6-((S)-2-((2S,5R,6R)-6-((S)-2-amino-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Chemical Formula: C₄₈H₅₃N₉O₁₀S₃

Exact Mass: 1011.30775

Molecular Weight: 1012.18500

PI04003026 **Ampicillin Dimer 1**



Chemical Formula: C₃₂H₃₆N₆O₇S₂
 Exact Mass: 680.20869
 Molecular Weight: 680.79500

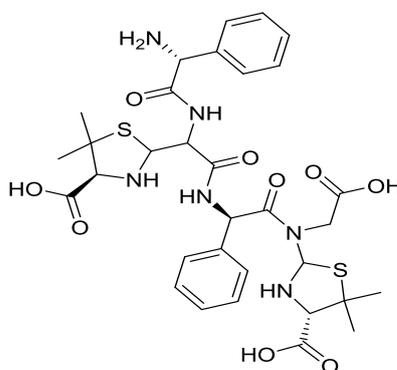
(2S,5R,6R)-6-((S)-2-((2S,5R,6R)-6-((S)-2-amino-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Chemical Formula: C₃₂H₃₆N₆O₇S₂

Exact Mass: 680.20869

Molecular Weight: 680.79500

PI04003034 **Ampicillin Impurity F(USP) (a dimer)**



Chemical Formula: C₃₂H₄₀N₆O₉S₂
 Exact Mass: 716.22982
 Molecular Weight: 716.82500

(4S)-2-(1-((R)-2-amino-2-phenylacetamido)-2-(((1R)-2-(((4S)-4-carboxy-5,5-dimethylthiazolidin-2-yl)(carboxymethyl)amino)-2-oxo-1-phenylethyl)amino)-2-oxoethyl)-5,5-dimethylthiazolidine-4-carboxylic acid

Chemical Formula: C₃₂H₄₀N₆O₉S₂

Exact Mass: 716.22982

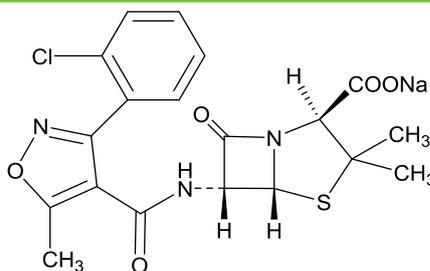
Molecular Weight: 716.82500

[Return to the Index](#)

Cloxacillin

PI04004001

Cloxacillin

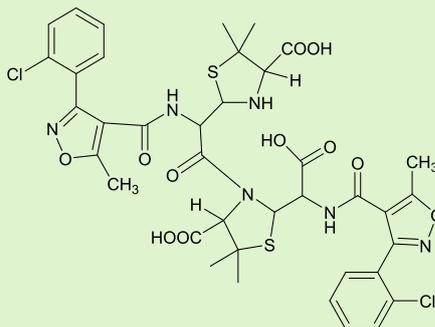


Chemical Formula: $C_{19}H_{17}ClN_3NaO_5S$
 Exact Mass: 457.04751
 Molecular Weight: 457.86077

sodium (2S,5R,6R)-6-(3-(2-chlorophenyl)-5-methylisoxazole-4-carboxamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate
 Chemical Formula: $C_{19}H_{17}ClN_3NaO_5S$
 Exact Mass: 457.04751
 Molecular Weight: 457.86077

PI04004017

Cloxacillin Open-Ring Dimer



Chemical Formula: $C_{38}H_{38}Cl_2N_6O_{11}S_2$
 Exact Mass: 888.14170
 Molecular Weight: 889.77300

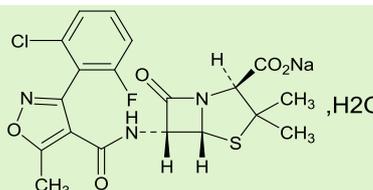
2-(carboxy(3-(2-chlorophenyl)-5-methylisoxazole-4-carboxamido)methyl)-3-(2-(4-carboxy-5,5-dimethylthiazolidin-2-yl)-2-(3-(2-chlorophenyl)-5-methylisoxazole-4-carboxamido)acetyl)-5,5-dimethylthiazolidine-4-carboxylic acid
 Chemical Formula: $C_{38}H_{38}Cl_2N_6O_{11}S_2$
 Exact Mass: 888.14170
 Molecular Weight: 889.77300

[Return to the Index](#)

Flucloxacillin Sodium

PI04006001

Flucloxacillin Sodium

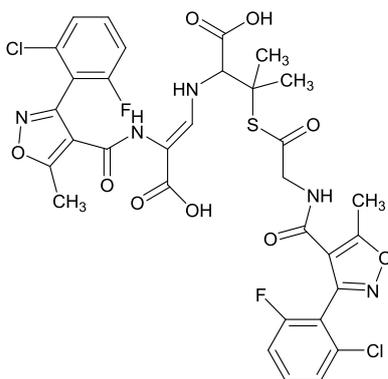


Chemical Formula: $C_{19}H_{16}ClF_3NaO_5S$
 Exact Mass: 475.03809
 Molecular Weight: 475.85117

Chemical Formula: $C_{19}H_{16}ClF_3NaO_5S$
 Exact Mass: 475.03809
 Molecular Weight: 475.85117

PI04006014

Flucloxacillin Dimer 1



Chemical Formula: $C_{32}H_{27}Cl_2F_2N_5O_9S$
 Exact Mass: 765.08746
 Molecular Weight: 766.55081

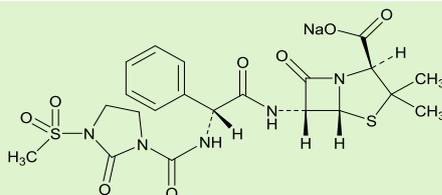
(Z)-2-((2-carboxy-2-(3-(2-chloro-6-fluorophenyl)-5-methylisoxazole-4-carboxamido)vinyl)amino)-3-(((3-(2-chloro-6-fluorophenyl)-5-methylisoxazole-4-carbonyl)glycyl)thio)-3-methylbutanoic acid
 Chemical Formula: $C_{32}H_{27}Cl_2F_2N_5O_9S$
 Exact Mass: 765.08746
 Molecular Weight: 766.55081

[Return to the Index](#)

Mezlocillin

PI04009001

Mezlocillin



Chemical Formula: $C_{21}H_{24}N_5NaO_8S_2$
 Exact Mass: 561.09640
 Molecular Weight: 561.55977

Chemical Formula: $C_{21}H_{24}N_5NaO_8S_2$

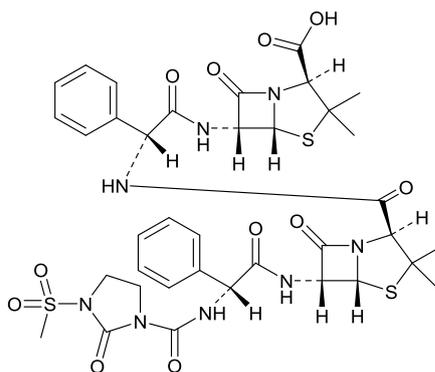
Exact Mass: 561.09640

Molecular Weight: 561.55977

PI04009010

Mezlocillin

Impurity MSM-D
 (A Dimer)



Chemical Formula: $C_{37}H_{42}N_8O_{11}S_3$
 Exact Mass: 870.21352
 Molecular Weight: 870.96800

(2S,5R,6R)-6-((R)-2-((2S,5R,6R)-3,3-dimethyl-6-((R)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Chemical Formula: $C_{37}H_{42}N_8O_{11}S_3$

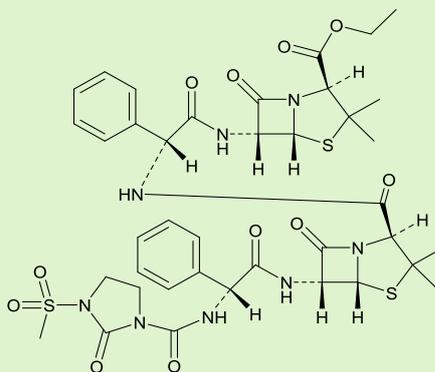
Exact Mass: 870.21352

Molecular Weight: 870.96800

PI04009012

Mezlocillin

Impurity MSM-M
 (A Dimer)



Chemical Formula: $C_{39}H_{46}N_8O_{11}S_3$
 Exact Mass: 898.24482
 Molecular Weight: 899.02200

(ethyl(2S,5R,6R)-6-((R)-2-((2S,5R,6R)-3,3-dimethyl-6-((R)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate

Chemical Formula: $C_{39}H_{46}N_8O_{11}S_3$

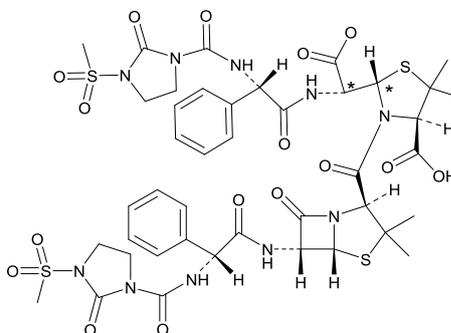
Exact Mass: 898.24482

Molecular Weight: 899.02200

PI04009016

Mezlocillin

Impurity MSM-P1
 (A Dimer)

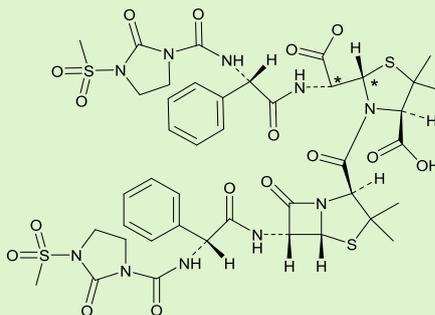


Chemical Formula: $C_{42}H_{49}N_{10}O_{16}S_4$
 Exact Mass: 1077.22108
 Molecular Weight: 1078.14800

(2S,4R)-2-((R)-carboxy((S)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)methyl)-3-((2S,5R,6R)-3,3-dimethyl-6-((R)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carbonyl)-5,5-dimethylthiazolidine-4-carboxylic acid

PI04009017

Mezlocillin
Impurity MSM-P2
 (A Dimer)



Chemical Formula: C₄₂H₄₉N₁₀O₁₆S₄
 Exact Mass: 1077.22108
 Molecular Weight: 1078.14800

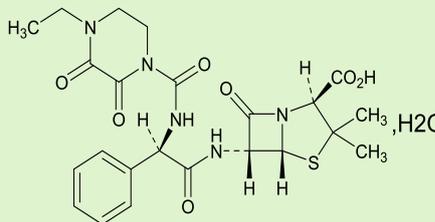
(2S,4R)-2-((R)-carboxy((S)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)methyl)-3-((2S,5R,6R)-3,3-dimethyl-6-((R)-2-(3-(methylsulfonyl)-2-oxoimidazolidine-1-carboxamido)-2-phenylacetamido)-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carbonyl)-5,5-dimethylthiazolidine-4-carboxylic acid
 Chemical Formula: C₄₂H₄₉N₁₀O₁₆S₄
 Exact Mass: 1077.22108
 Molecular Weight: 1078.14800

[Return to the Index](#)

Piperacillin

PI04011001

Piperacillin

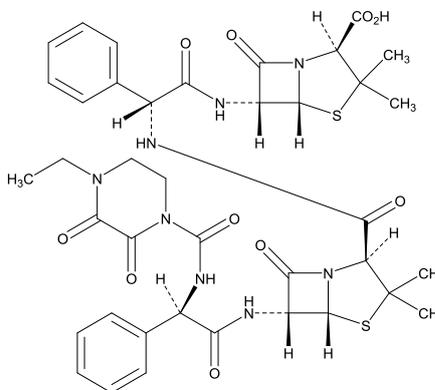


Chemical Formula: C₂₃H₂₇N₅O₇S
 Exact Mass: 517.16312
 Molecular Weight: 517.55700

(2S,5R,6R)-6-((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
 Chemical Formula: C₂₃H₂₇N₅O₇S
 Exact Mass: 517.16312
 Molecular Weight: 517.55700

PI04011005

Piperacillin
Impurity D (EP) (A Dimer)



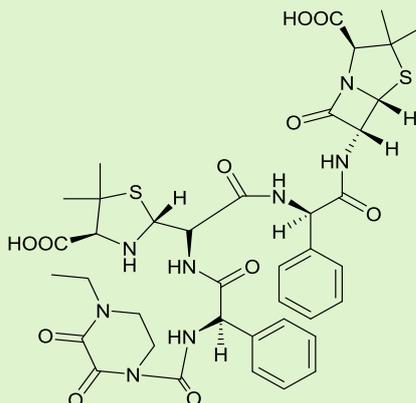
Chemical Formula: C₃₉H₄₄N₈O₁₀S₂
 Exact Mass: 848.26218
 Molecular Weight: 848.94700

(2S,5R,6R)-6-((R)-2-((2S,5R,6R)-6-((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
 Chemical Formula: C₃₉H₄₄N₈O₁₀S₂
 Exact Mass: 848.26218
 Molecular Weight: 848.94700

PI04011013

Piperacillin Dimer

1



Chemical Formula: $C_{39}H_{46}N_8O_{11}S_2$
 Exact Mass: 866.27275
 Molecular Weight: 866.96200

(2S,5R,6R)-6-((2R)-2-((2S)-2-((2R,4S)-4-carboxy-5,5-dimethylthiazolidin-2-yl)-2-(2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)acetamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Chemical Formula: $C_{39}H_{46}N_8O_{11}S_2$

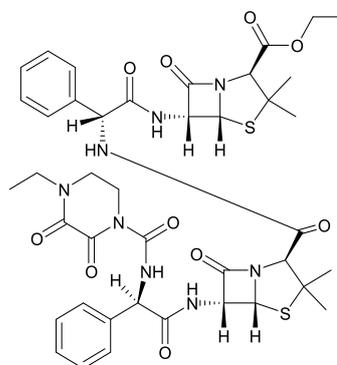
Exact Mass: 866.27275

Molecular Weight: 866.96200

PI04011014

Piperacillin Dimer

2



Chemical Formula: $C_{41}H_{48}N_8O_{10}S_2$
 Exact Mass: 876.29348
 Molecular Weight: 877.00100

ethyl(2S,5R,6R)-6-((R)-2-((2S,5R,6R)-6-((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate

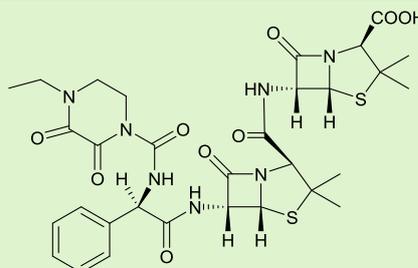
Chemical Formula: $C_{41}H_{48}N_8O_{10}S_2$

Exact Mass: 876.29348

Molecular Weight: 877.00100

PI04011016

Piperacillin Double Mother Nucleus



Chemical Formula: $C_{31}H_{37}N_7O_9S_2$
 Exact Mass: 715.20942
 Molecular Weight: 715.79700

(2S,5R,6R)-6-((2S,5R,6R)-6-((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid

Chemical Formula: $C_{31}H_{37}N_7O_9S_2$

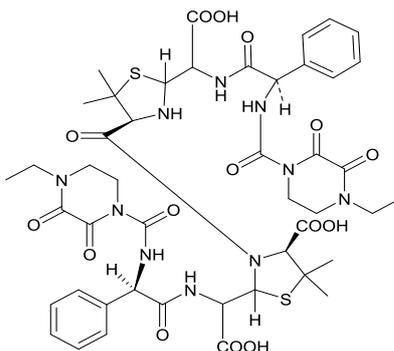
Exact Mass: 715.20942

Molecular Weight: 715.79700

PI04011019

Piperacillin Dimer

4



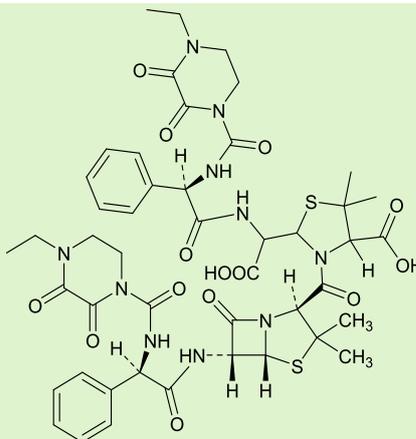
Chemical Formula: $C_{46}H_{56}N_{10}O_{15}S_2$
 Exact Mass: 1052.33680
 Molecular Weight: 1053.12900

(4S)-2-(carboxy((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)methyl)-3-((4S)-2-(carboxy((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)methyl)-5,5-dimethylthiazolidine-4-carbonyl)-5,5-dimethylthiazolidine-4-carboxylic acid
 Chemical Formula: $C_{46}H_{56}N_{10}O_{15}S_2$
 Exact Mass: 1052.33680
 Molecular Weight: 1053.12900

PI04011030

Piperacillin Open-Ring

Dimer



Chemical Formula: $C_{46}H_{54}N_{10}O_{14}S_2$
 Exact Mass: 1034.32624
 Molecular Weight: 1035.11400

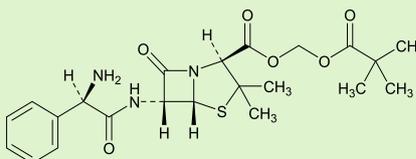
2-(carboxy((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)methyl)-3-((2S,5R,6R)-6-((R)-2-(4-ethyl-2,3-dioxopiperazine-1-carboxamido)-2-phenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carbonyl)-5,5-dimethylthiazolidine-4-carboxylic acid
 Chemical Formula: $C_{46}H_{54}N_{10}O_{14}S_2$
 Exact Mass: 1034.32624
 Molecular Weight: 1035.11400

[Return to the Index](#)

Pivampicillin

PI04012001

Pivampicillin

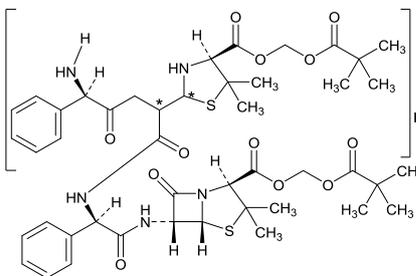


Chemical Formula: $C_{22}H_{29}N_3O_6S$
 Exact Mass: 463.17771
 Molecular Weight: 463.54900

Chemical Formula: $C_{22}H_{29}N_3O_6S$
 Exact Mass: 463.17771
 Molecular Weight: 463.54900

PI04012004

Pivampicillin Imp
 C (EP) (A Dimer)



Chemical Formula: $C_{45}H_{59}N_5O_{12}S_2$
 Exact Mass: 925.36016
 Molecular Weight: 926.11000

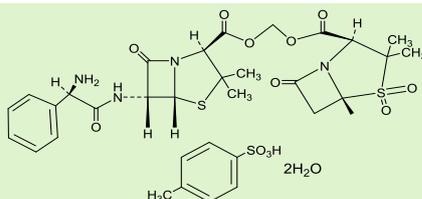
Chemical Formula: $C_{45}H_{59}N_5O_{12}S_2$
 Exact Mass: 925.36016
 Molecular Weight: 926.11000

[Return to the Index](#)

Sultamicillin Tosilate

PI04018001

**Sultamicillin
Tosilate**



Chemical Formula: C₂₆H₃₂N₄O₉S₂

Exact Mass: 608.16107

Molecular Weight: 608.68100

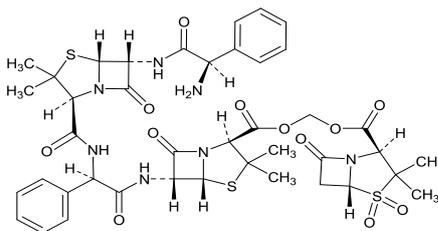
Chemical Formula: C₂₆H₃₂N₄O₉S₂

Exact Mass: 608.16107

Molecular Weight: 608.68100

PI04018004

**Sultamicillin
Tosilate Impurity
3(Sultamicillin
Impurity F (BP)
Sultamicillin Dimer
1)**



Chemical Formula: C₄₁H₄₇N₇O₁₂S₃

Exact Mass: 925.24448

Molecular Weight: 926.04400

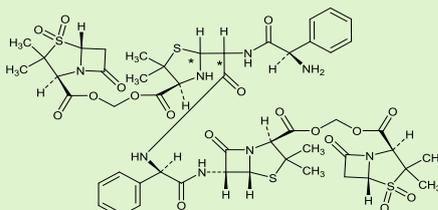
Chemical Formula: C₄₁H₄₇N₇O₁₂S₃

Exact Mass: 925.24448

Molecular Weight: 926.04400

PI04018005

**Sultamicillin
Tosilate Impurity
4[Sultamicillin
Impurity G (BP)
Sultamicillin Dimer
2]**



Chemical Formula: C₅₀H₆₀N₈O₁₈S₄

Exact Mass: 1188.29084

Molecular Weight: 1189.30800

Chemical Formula: C₅₀H₆₀N₈O₁₈S₄

Exact Mass: 1188.29084

Molecular Weight: 1189.30800

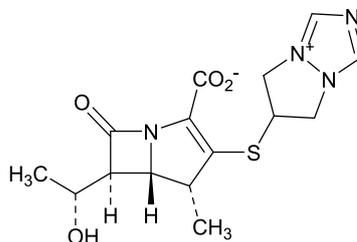
3.Carbapenems

[Back to Index](#)

Biapenem

PI03001001

Biapenem



Chemical Formula: C₁₅H₁₈N₄O₄S

Exact Mass: 350.10488

Molecular Weight: 350.39300

Chemical Formula: C₁₅H₁₈N₄O₄S

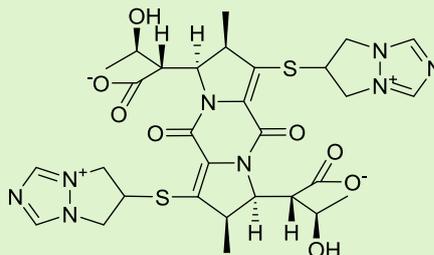
Exact Mass: 350.10488

Molecular Weight: 350.39300

PI03001007

Biapenem Impurity B

Dimer



Chemical Formula: $C_{30}H_{36}N_8O_8S_2$

Exact Mass: 700.20975

Molecular Weight: 700.78600

(2S,2'S,3R,3'R)-2,2'-((2R,3S,7R,8S)-1,6-bis((6,7-dihydro-5H-pyrazolo[1,2-a][1,2,4]triazol-4-ium-6-yl)thio)-2,7-dimethyl-5,10-dioxo-2,7,8,10-tetrahydro-3H,5H-dipyrrolo[1,2-a:1',2'-d]pyrazine-3,8-diyl)bis(3-hydroxybutanoate)

Chemical Formula: $C_{30}H_{36}N_8O_8S_2$

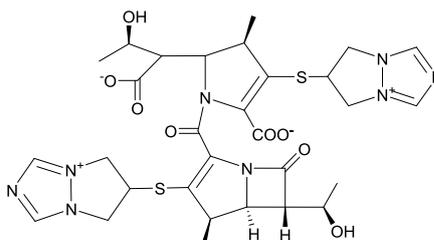
Exact Mass: 700.20975

Molecular Weight: 700.78600

PI03001008

Biapenem Impurity A

Dimer



Chemical Formula: $C_{30}H_{36}N_8O_8S_2$

Exact Mass: 700.20975

Molecular Weight: 700.78600

(4R)-5-((2R)-1-carboxylato-2-hydroxypropyl)-3-((6,7-dihydro-5H-pyrazolo[1,2-a][1,2,4]triazol-4-ium-6-yl)thio)-1-((4R,5S,6S)-3-((6,7-dihydro-5H-pyrazolo[1,2-a][1,2,4]triazol-4-ium-6-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carbonyl)-4-methyl-4,5-dihydro-1H-pyrrole-2-carboxylate

Chemical Formula: $C_{30}H_{36}N_8O_8S_2$

Exact Mass: 700.20975

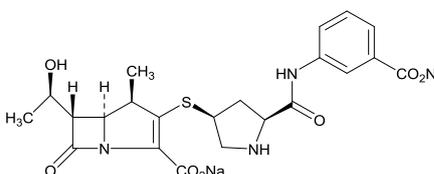
Molecular Weight: 700.78600

[Back to Index](#)

Ertapenem

PI03006000

Ertapenem Disodium



Chemical Formula: $C_{22}H_{23}N_3Na_2O_7S$

Exact Mass: 519.10521

Molecular Weight: 519.47954

sodium (4R,5S,6S)-3-(((3S,5S)-5-((3-carboxylatophenyl)carbamoyl)pyrrolidin-3-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate

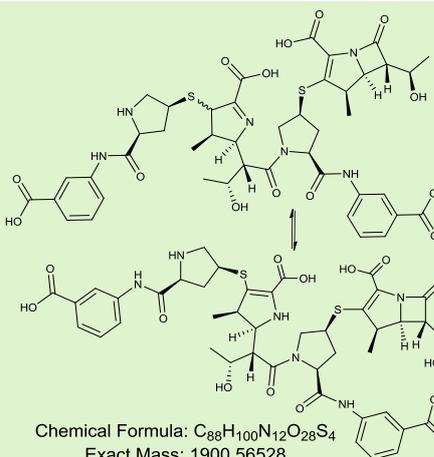
Chemical Formula: $C_{22}H_{23}N_3Na_2O_7S$

Exact Mass: 519.10521

Molecular Weight: 519.47954

PI03006001

Ertapenem Dimer I+II



Chemical Formula: $C_{88}H_{100}N_{12}O_{28}S_4$

Exact Mass: 1900.56528

Molecular Weight: 1902.06400

(4R,5S,6S)-3-(((3S,5S)-1-((2S,3R)-2-((2S,3R)-5-carboxy-4-(((3S,5S)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-3-methyl-2,3-dihydro-1H-pyrrol-2-yl)-3-hydroxybutanoyl)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid (4R,5S,6S)-3-(((3S,5S)-1-((2S,3R)-2-((2S,3R)-5-carboxy-4-(((3S,5S)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-3-methyl-3,4-dihydro-2H-pyrrol-2-yl)-3-hydroxybutanoyl)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid

Chemical Formula: C₈₈H₁₀₀N₁₂O₂₈S₄

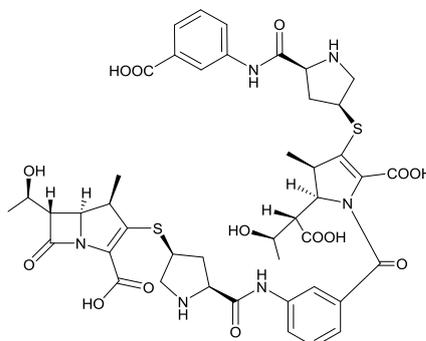
Exact Mass: 1900.56528 (2*950.03200)

Molecular Weight: 1902.06400

(2*950.28264)

PI03006003

Ertapenem Dimer III



Chemical Formula: C₄₄H₅₀N₆O₁₄S₂

Exact Mass: 950.28264

Molecular Weight: 951.03200

(4R,5S,6S)-3-(((3S,5S)-5-((3-((2S,3R)-5-carboxy-2-((2R)-1-carboxy-2-hydroxypropyl)-4-(((3S,5S)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-3-methyl-2,3-dihydro-1H-pyrrole-1-carbonyl)phenyl)carbamoyl)pyrrolidin-3-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid

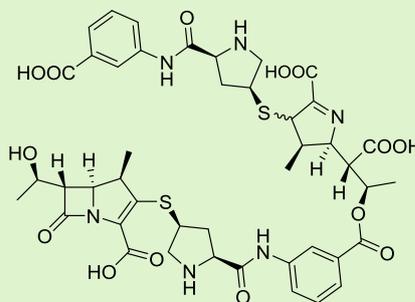
Chemical Formula: C₄₄H₅₀N₆O₁₄S₂

Exact Mass: 950.28264

Molecular Weight: 951.03200

PI03006005

Ertapenem Dimer V



Chemical Formula: C₄₄H₅₀N₆O₁₄S₂

Exact Mass: 950.28264

Molecular Weight: 951.03200

(4R,5S,6S)-3-(((3S,5S)-5-((3-(((2R)-1-carboxy-1-((2S,3R)-5-carboxy-4-(((3S,5S)-5-((3-carboxyphenyl)carbamoyl)pyrrolidin-3-yl)thio)-3-methyl-3,4-dihydro-2H-pyrrol-2-yl)propan-2-yl)oxy)carbonyl)phenyl)carbamoyl)pyrrolidin-3-yl)thio)-6-((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid

Chemical Formula: C₄₄H₅₀N₆O₁₄S₂

Exact Mass: 950.28264

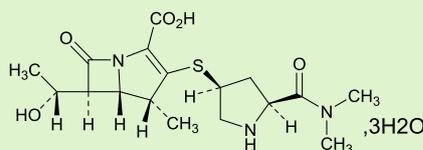
Molecular Weight: 951.03200

[Back to Index](#)

Meropenem

PI03004001

Meropenem



Chemical Formula: C₁₇H₂₅N₃O₅S

Exact Mass: 383.15149

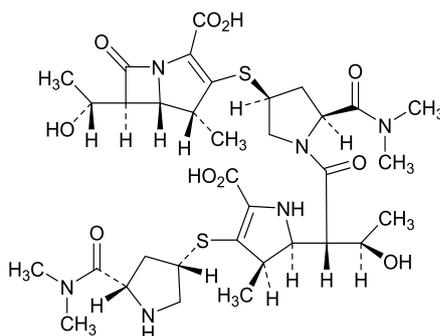
Molecular Weight: 383.46300

Chemical Formula: C₁₇H₂₅N₃O₅S

Exact Mass: 383.15149

Molecular Weight: 383.46300

PI03004004 Meropenem Impurity
 B (EP) (a dimer)



Chemical Formula: C₃₄H₅₀N₆O₁₀S₂

Exact Mass: 766.30298

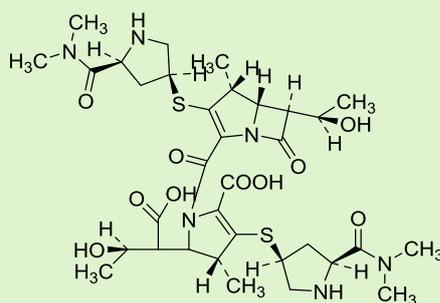
Molecular Weight: 766.92600

Chemical Formula: C₃₄H₅₀N₆O₁₀S₂

Exact Mass: 766.30298

Molecular Weight: 766.92600

PI03004009 Meropenem Open-
 Ring Dimer



(4R)-5-((2R)-1-carboxy-2-hydroxypropyl)-3-
 (((3S,5S)-5-(dimethylcarbamoyl)pyrrolidin-3-
 yl)thio)-1-((4R,5S,6S)-3-(((3S,5S)-5-
 (dimethylcarbamoyl)pyrrolidin-3-yl)thio)-6-
 ((R)-1-hydroxyethyl)-4-methyl-7-oxo-1-
 azabicyclo[3.2.0]hept-2-ene-2-carbonyl)-4-
 methyl-4,5-dihydro-1H-pyrrole-2-carboxylic
 acid

Chemical Formula: C₃₄H₅₀N₆O₁₀S₂

Exact Mass: 766.30298

Molecular Weight: 766.92600

4. Antiviral

[Return to the
 Index](#)

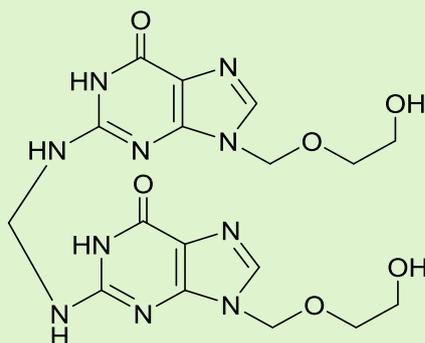
Acyclovir

Catalogue Product name Structure Structure Information

No.

PI06001012

Acyclovir Dimer
1



Chemical Formula: $C_{17}H_{22}N_{10}O_6$
 Exact Mass: 462.17238
 Molecular Weight: 462.42700

2,2'-(methylenebis(azanediyloxy))bis(9-((2-hydroxyethoxy)methyl)-1,9-dihydro-6H-purin-6-one)

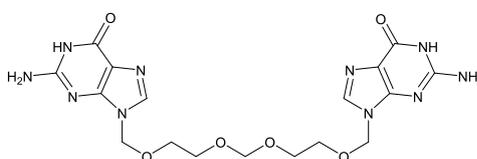
Chemical Formula: $C_{17}H_{22}N_{10}O_6$

Exact Mass: 462.17238

Molecular Weight: 462.42700

PI06001016

Acyclovir EP
Impurity R (a dimer)



Chemical Formula: $C_{17}H_{22}N_{10}O_6$
 Exact Mass: 462.17238
 Molecular Weight: 462.42700

9,9'-(2,5,7,10-tetraoxaundecane-1,11-diyloxy)bis(2-amino-1,9-dihydro-6H-purin-6-one)

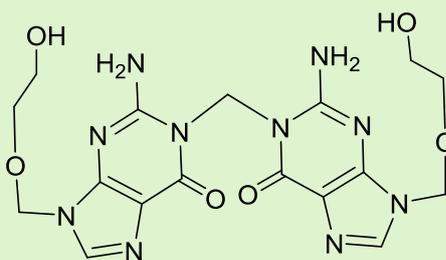
Chemical Formula: $C_{17}H_{22}N_{10}O_6$

Exact Mass: 462.17238

Molecular Weight: 462.42700

PI06001019

Acyclovir EP
Impurity R
Isomer



Chemical Formula: $C_{17}H_{22}N_{10}O_6$
 Exact Mass: 462.17238
 Molecular Weight: 462.42700

1,1'-methylenebis(2-amino-9-((2-hydroxyethoxy)methyl)-1,9-dihydro-6H-purin-6-one)

Chemical Formula: $C_{17}H_{22}N_{10}O_6$

Exact Mass: 462.17238

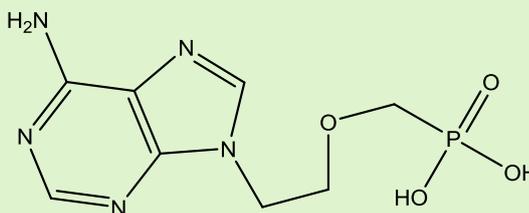
Molecular Weight: 462.42700

[Return to the Index](#)

Adefovir

PI06004001

Adefovir



Chemical Formula: $C_8H_{12}N_5O_4P$
 Exact Mass: 273.06269
 Molecular Weight: 273.18876

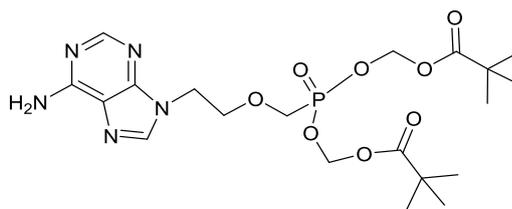
((2-(6-amino-9H-purin-9-yl)ethoxy)methyl)phosphonic acid

Chemical Formula: $C_8H_{12}N_5O_4P$

Exact Mass: 273.06269

Molecular Weight: 273.18876

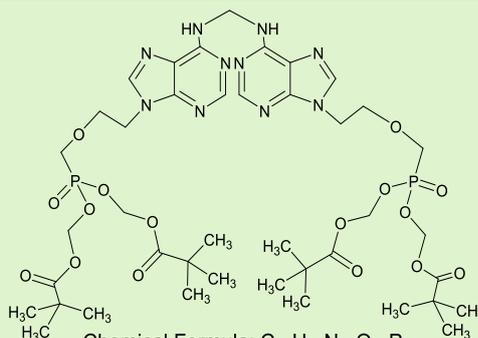
PI06004002 Adefovir
 Dipivoxil



Chemical Formula: $C_{20}H_{32}N_5O_8P$
 Exact Mass: 501.19885
 Molecular Weight: 501.47676

(((2-(6-amino-9H-purin-9-yl)ethoxy)methyl)phosphoryl)bis(oxy))bis(methylene) bis(2,2-dimethylpropanoate)
 Chemical Formula: $C_{20}H_{32}N_5O_8P$
 Exact Mass: 501.19885
 Molecular Weight: 501.47676

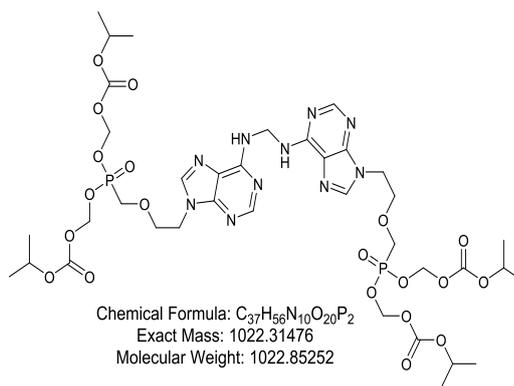
PI06004008 Adefovir
 Dipivoxil
 Impurity B (a dimer)



Chemical Formula: $C_{41}H_{64}N_{10}O_{16}P_2$
 Exact Mass: 1014.39770
 Molecular Weight: 1014.96452

((((((methylenebis(azanediyl))bis(9H-purine-6,9-diyl))bis(ethane-2,1-diyl))bis(oxy))bis(methylene))bis(oxo-I5-phosphanetriyl))tetrakis(oxy))tetrakis(methylene) tetrakis(2,2-dimethylpropanoate)
 Chemical Formula: $C_{41}H_{64}N_{10}O_{16}P_2$
 Exact Mass: 1014.39770
 Molecular Weight: 1014.96452

PI06004010 Adefovir
 Dipivoxil Dimer
 4



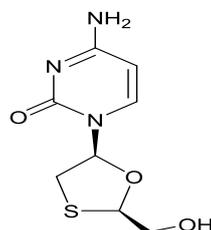
Chemical Formula: $C_{37}H_{56}N_{10}O_{20}P_2$
 Exact Mass: 1022.31476
 Molecular Weight: 1022.85252

tetraoisopropyl
 (((((((methylenebis(azanediyl))bis(9H-purine-6,9-diyl))bis(ethane-2,1-diyl))bis(oxy))bis(methylene))bis(oxo-I5-phosphanetriyl))tetrakis(oxy))tetrakis(methylene) tetracarbonate
 Chemical Formula: $C_{37}H_{56}N_{10}O_{20}P_2$
 Exact Mass: 1022.31476
 Molecular Weight: 1022.85252

[Return to the Index](#)

Lamivudine

PI06005001 Lamivudine

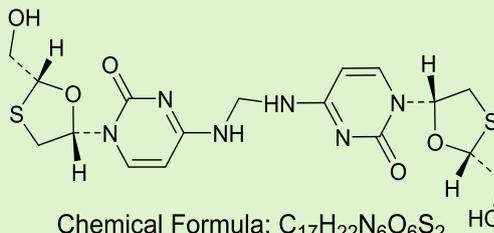


Chemical Formula: $C_8H_{11}N_3O_3S$
 Exact Mass: 229.05211
 Molecular Weight: 229.25400

4-amino-1-((2R,5S)-2-(hydroxymethyl)-1,3-oxathiolan-5-yl)pyrimidin-2(1H)-one
 Chemical Formula: $C_8H_{11}N_3O_3S$
 Exact Mass: 229.05211
 Molecular Weight: 229.25400

PI06005020

**Lamivudine
Dimer**

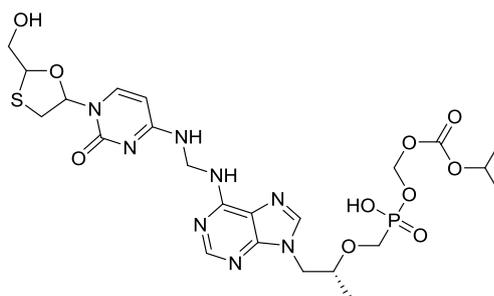


Chemical Formula: $C_{17}H_{22}N_6O_6S_2$
 Exact Mass: 470.10422
 Molecular Weight: 470.51900

4,4'-(methylenebis(azanediy))bis(1-
 ((2R,5S)-2-(hydroxymethyl)-1,3-
 oxathiolan-5-yl)pyrimidin-2(1H)-one)
 Chemical Formula: $C_{17}H_{22}N_6O_6S_2$
 Exact Mass: 470.10422
 Molecular Weight: 470.51900

PI06005022

**Lamivudine
Dimer 2**



Chemical Formula: $C_{23}H_{33}N_8O_{10}PS$
 Exact Mass: 644.17780
 Molecular Weight: 644.59676

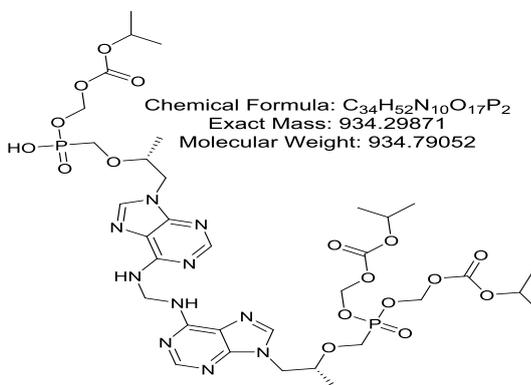
((hydroxy(((2R)-1-(6-(((1-(2-
 (hydroxymethyl)-1,3-oxathiolan-5-yl)-
 2-oxo-1,2-dihydropyrimidin-4-
 yl)amino)methyl)amino)-9H-purin-9-
 yl)propan-2-
 yl)oxy)methyl)phosphoryl)oxy)methyl
 isopropyl carbonate
 Chemical Formula: $C_{23}H_{33}N_8O_{10}PS$
 Exact Mass: 644.17780
 Molecular Weight: 644.59676

[Return to the
Index](#)

Tenofovir

PI06006009

**Tenofovir
Disoproxil
Impurity I(IP) (a
dimer)**

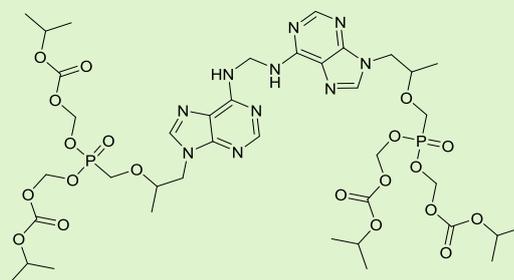


Chemical Formula: $C_{34}H_{52}N_{10}O_{17}P_2$
 Exact Mass: 934.29871
 Molecular Weight: 934.79052

(((2R)-1-(6-(((9-((2R)-2-
 ((hydroxy(((isopropoxycarbonyl)oxy)m
 ethoxy)phosphoryl)methoxy)propyl)-
 9H-purin-6-yl)amino)methyl)amino)-
 9H-purin-9-yl)propan-2-
 yl)oxy)methyl)phosphoryl)bis(oxy))bis(
 methylene) diisopropyl bis(carbonate)
 Chemical Formula: $C_{34}H_{52}N_{10}O_{17}P_2$
 Exact Mass: 934.29871
 Molecular Weight: 934.79052

PI06006010

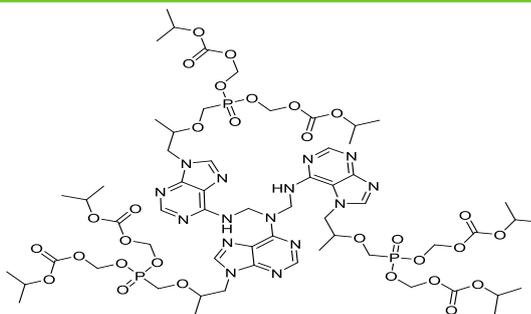
**Tenofovir
Disoproxil
Impurity J(IP),
(a polymer)**



Chemical Formula: $C_{39}H_{60}N_{10}O_{20}P_2$
 Exact Mass: 1050.34606
 Molecular Weight: 1050.90652

CAS No.:1093279-76-5
 tetraisopropyl
 (((((((methylenebis(azanediy))bis(9H-
 purine-6,9-diyl))bis(propane-1,2-
 diyl))bis(oxy))bis(methylene))bis(oxo-
 l5-
 phosphanetriyl))tetrakis(oxy))tetrakis(
 methylene)) tetracarbonate
 Chemical Formula: $C_{39}H_{60}N_{10}O_{20}P_2$
 Exact Mass: 1050.34606
 Molecular Weight: 1050.90652

PI06006029 **Tenofovir**
Disoproxil
Trimer 2



Chemical Formula: $C_{59}H_{90}N_{15}O_{30}P_3$
 Exact Mass: 1581.51909
 Molecular Weight: 1582.36529

Chemical Formula: $C_{59}H_{90}N_{15}O_{30}P_3$

Exact Mass: 1581.51909

Molecular Weight: 1582.36529

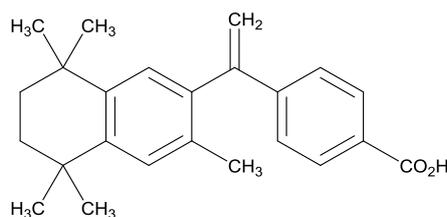
5. Anticancer

Catalog No.	Product name	Structure	Structure Information
-------------	--------------	-----------	-----------------------

[Return to the Index](#)

Bexarotene

PI20068000 Bexarotene



Chemical Formula: $C_{24}H_{28}O_2$
 Exact Mass: 348.20893
 Molecular Weight: 348.48600

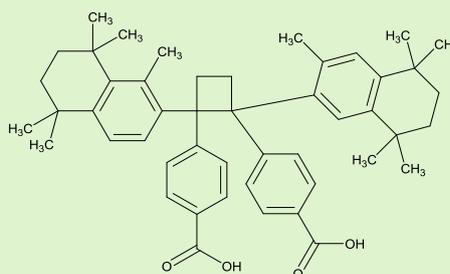
4-(1-(3,5,5,8,8-pentamethyl-5,6,7,8-tetrahydronaphthalen-2-yl)vinyl)benzoic acid

Chemical Formula: $C_{24}H_{28}O_2$

Exact Mass: 348.20893

Molecular Weight: 348.48600

PI20068001 Bexarotene Dimer



Chemical Formula: $C_{48}H_{56}O_4$
 Exact Mass: 696.41786
 Molecular Weight: 696.97200

4,4'-(1-(1,5,5,8,8-pentamethyl-5,6,7,8-tetrahydronaphthalen-2-yl)-2-(3,5,5,8,8-pentamethyl-5,6,7,8-tetrahydronaphthalen-2-yl)cyclobutane-1,2-diyl)dibenzoic acid

Chemical Formula: $C_{48}H_{56}O_4$

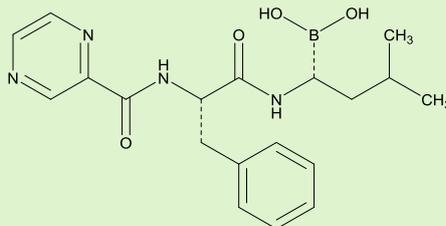
Exact Mass: 696.41786

Molecular Weight: 696.97200

[Return to the Index](#)

Bortezomib

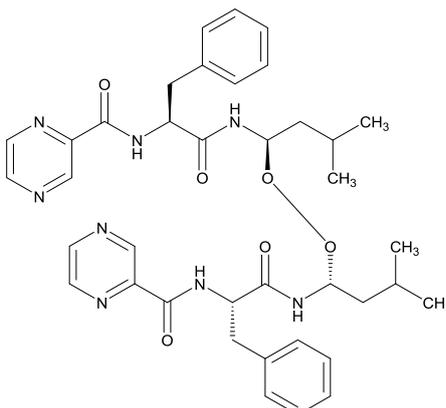
PI20066000 Bortezomib



((R)-3-methyl-1-((S)-3-phenyl-2-(pyrazine-2-carboxamido)propanamido)butyl)boronic acid
 Chemical Formula: C₁₉H₂₅BN₄O₄
 Exact Mass: 384.19689
 Molecular Weight: 384.24300

Chemical Formula: C₁₉H₂₅BN₄O₄
 Exact Mass: 384.19689
 Molecular Weight: 384.24300

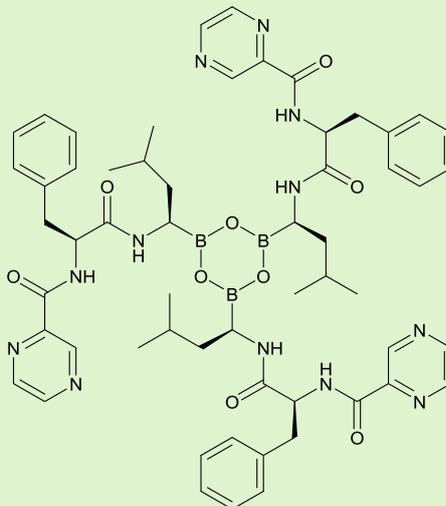
PI20066001 (R)-Hydroperoxy
 Des(boric Acid)
 Bortezomib Dimer



N,N'-((2S,2'S)-(((1R,1'R)-peroxybis(3-methylbutane-1,1-diyl))bis(azanediyl))bis(1-oxo-3-phenylpropane-1,2-diyl))bis(pyrazine-2-carboxamide)
 Chemical Formula: C₃₈H₄₆N₈O₆
 Exact Mass: 710.35403
 Molecular Weight: 710.83600

Chemical Formula: C₃₈H₄₆N₈O₆
 Exact Mass: 710.35403
 Molecular Weight: 710.83600

PI20066002 Bortezomib
 Trimer



N,N',N''-((2S,2'S,2''S)-(((1R,1'R,1''R)-1,3,5,2,4,6-trioxatriborinane-2,4,6-triyl))tris(3-methylbutane-1,1-diyl))tris(azanediyl))tris(1-oxo-3-phenylpropane-1,2-diyl))tris(pyrazine-2-carboxamide)
 Chemical Formula: C₅₇H₆₉B₃N₁₂O₉
 Exact Mass: 1098.55896
 Molecular Weight: 1098.68400

Chemical Formula: C₅₇H₆₉B₃N₁₂O₉
 Exact Mass: 1098.55896
 Molecular Weight: 1098.68400

6. Cardiovascular

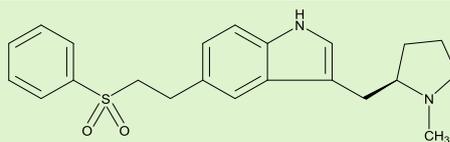
Catalogue No.	Product name	Structure	Structure Information
---------------	--------------	-----------	-----------------------

[Return to the](#)

[Index](#)

Eletriptan

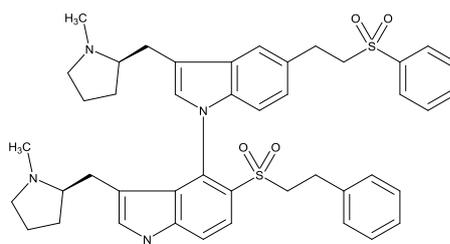
PI12002000 Eletriptan



Chemical Formula: $C_{22}H_{26}N_2O_2S$
 Exact Mass: 382.17150
 Molecular Weight: 382.52200

(R)-3-((1-methylpyrrolidin-2-yl)methyl)-5-(2-(phenylsulfonyl)ethyl)-1H-indole
 Chemical Formula: $C_{22}H_{26}N_2O_2S$
 Exact Mass: 382.17150
 Molecular Weight: 382.52200

PI12002021 Eletriptan Dimer



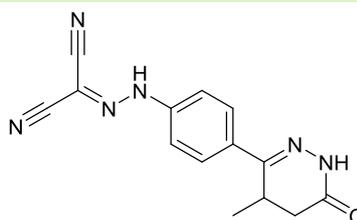
Chemical Formula: $C_{44}H_{50}N_4O_4S_2$
 Exact Mass: 762.32735
 Molecular Weight: 763.02800

3-[[[(2R)-1-Methyl-2-pyrrolidinyl]methyl]-1-[1-[[[(2R)-1-methyl-2-pyrrolidinyl]methyl]-1H-indol-5-yl]-2-(phenylsulfonyl)ethyl]-5-[2-(phenylsulfonyl)ethyl]-1H-indole
 Chemical Formula: $C_{44}H_{50}N_4O_4S_2$
 Exact Mass: 762.32735
 Molecular Weight: 763.02800

[Return to the Index](#)

Levosimendan

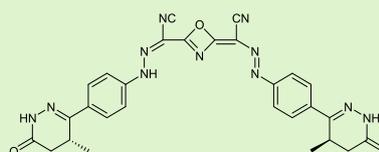
PI20006001 Levosimendan



Chemical Formula: $C_{14}H_{12}N_6O$
 Exact Mass: 280.10726
 Molecular Weight: 280.29100

N-(4-(4-methyl-6-oxo-1,4,5,6-tetrahydropyridazin-3-yl)phenyl)carbonohydrano-yl dicyanide
 Chemical Formula: $C_{14}H_{12}N_6O$
 Exact Mass: 280.10726
 Molecular Weight: 280.29100

PI20006002 Levosimendan Dimer



Chemical Formula: $C_{28}H_{23}N_{11}O_3$
 Exact Mass: 561.19853
 Molecular Weight: 561.56600

(E)-2-(4-((E)-isocyano(2-(4-((R)-4-methyl-6-oxo-1,4,5,6-tetrahydropyridazin-3-yl)phenyl)hydrazono)methyl)-2H-1,3-oxazet-2-ylidene)-2-((E)-4-((R)-4-methyl-6-oxo-1,4,5,6-tetrahydropyridazin-3-yl)phenyl)diazanyl)acetonitrile
 Chemical Formula: $C_{28}H_{23}N_{11}O_3$
 Exact Mass: 561.19853
 Molecular Weight: 561.56600

7. Digestive System Drugs

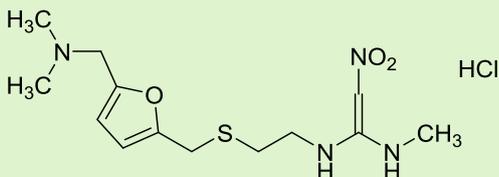
Catalogue No. Product name Structure Structure Information

[Return to the Index](#)

Ranitidine

PI10001000

Ranitidine Hydrochloride



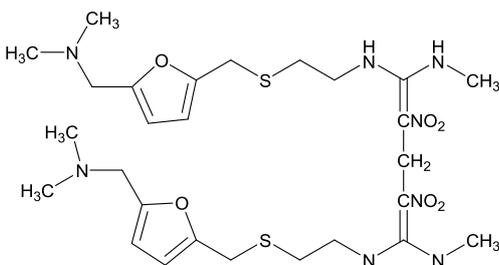
Chemical Formula: $C_{13}H_{23}ClN_4O_3S$
 Exact Mass: 350.11794
 Molecular Weight: 350.86200

N-[2-[[[5-
 [(Dimethylamino)methyl]furan-2-
 yl]methyl]sulfanyl]ethyl]-N'-methyl-2-
 nitroeth-1-ene-1,1-diamine
 hydrochloride

Chemical Formula: $C_{13}H_{23}ClN_4O_3S$
 Exact Mass: 350.11794
 Molecular Weight: 350.86200

PI10001009

Ranitidine Impurity I(EP) (a dimer)



Chemical Formula: $C_{27}H_{44}N_8O_6S_2$
 Exact Mass: 640.28252
 Molecular Weight: 640.81900

(1E,4E)-N1,N5-bis(2-(((5-
 ((dimethylamino)methyl)furan-2-
 yl)methyl)thio)ethyl)-N'1,N'5-
 dimethyl-2,4-dinitropenta-1,4-diene-
 1,1,5,5-tetraamine

Chemical Formula: $C_{27}H_{44}N_8O_6S_2$
 Exact Mass: 640.28252
 Molecular Weight: 640.81900

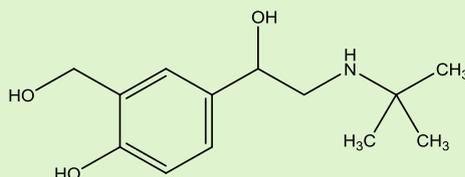
8. Hormones

[Return to the Index](#)

Salbutamol

PI11002000

Salbutamol

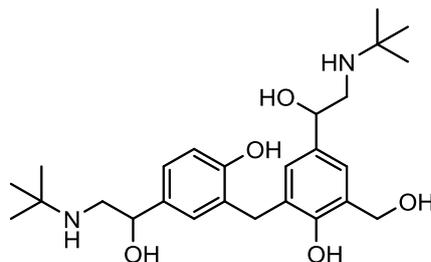


Chemical Formula: $C_{13}H_{21}NO_3$
 Exact Mass: 239.15214
 Molecular Weight: 239.31500

4-(2-(tert-butylamino)-1-hydroxyethyl)-2-
 (hydroxymethyl)phenol

Chemical Formula: $C_{13}H_{21}NO_3$
 Exact Mass: 239.15214
 Molecular Weight: 239.31500

PI11002021 **Salbutamol**
Dimer



Chemical Formula: $C_{26}H_{40}N_2O_5$
 Exact Mass: 460.29372
 Molecular Weight: 460.61500

4-(2-(tert-butylamino)-1-hydroxyethyl)-2-
 (5-(2-(tert-butylamino)-1-hydroxyethyl)-2-
 hydroxybenzyl)-6-(hydroxymethyl)phenol
 Chemical Formula: $C_{26}H_{40}N_2O_5$
 Exact Mass: 460.29372
 Molecular Weight: 460.61500

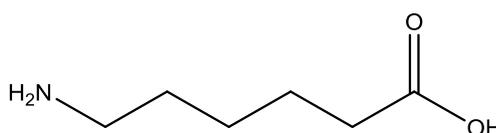
9.Others

Catalogue No. Product name Structure Structure Information

[Return to
 the Index](#)

Aminocaproic Acid

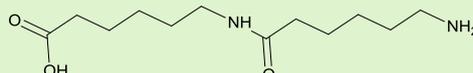
PI20064000 **Aminocaproic**
Acid



Chemical Formula: $C_6H_{13}NO_2$
 Exact Mass: 131.09463
 Molecular Weight: 131.17500

6-aminohexanoic acid
 Chemical Formula: $C_6H_{13}NO_2$
 Exact Mass: 131.09463
 Molecular Weight: 131.17500

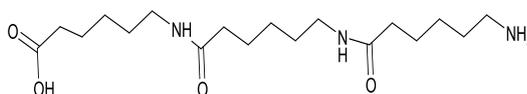
PI20064001 **Aminocaproic**
Acid Dimer



Chemical Formula: $C_{12}H_{24}N_2O_3$
 Exact Mass: 244.17869
 Molecular Weight: 244.33500

6-(6-aminohexanamido)hexanoic acid
 Chemical Formula: $C_{12}H_{24}N_2O_3$
 Exact Mass: 244.17869
 Molecular Weight: 244.33500

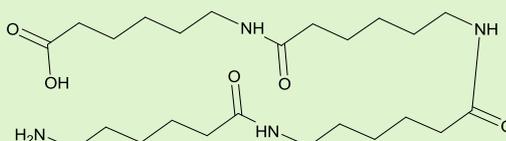
PI20064002 **Aminocaproic**
Acid Trimer



Chemical Formula: $C_{18}H_{35}N_3O_4$
 Exact Mass: 357.26276
 Molecular Weight: 357.49500

6-(6-(6-
 aminohexanamido)hexanamido)h
 exanoic acid
 Chemical Formula: $C_{18}H_{35}N_3O_4$
 Exact Mass: 357.26276
 Molecular Weight: 357.49500

PI20064003 **Aminocaproic**
Acid Tetramer



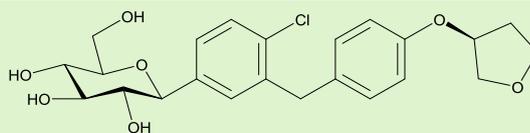
Chemical Formula: $C_{24}H_{46}N_4O_5$
 Exact Mass: 470.34682
 Molecular Weight: 470.65500

6-(6-(6-(6-
 aminohexanamido)hexanamido)h
 exanamido)hexanoic acid
 Chemical Formula: $C_{24}H_{46}N_4O_5$
 Exact Mass: 470.34682
 Molecular Weight: 470.65500

[Return to
the Inde](#)

Empagliflozin

PI20067000 Empagliflozin

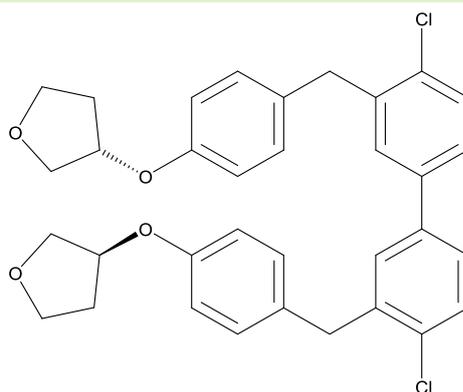


Chemical Formula: $C_{23}H_{27}ClO_7$
 Exact Mass: 450.14453
 Molecular Weight: 450.91200

(2S,3R,4R,5S,6R)-2-(4-chloro-3-(4-
 ((S)-tetrahydrofuran-3-
 yl)oxy)benzyl)phenyl)-6-
 (hydroxymethyl)tetrahydro-2H-
 pyran-3,4,5-triol

Chemical Formula: $C_{23}H_{27}ClO_7$
 Exact Mass: 450.14453
 Molecular Weight: 450.91200

PI20067030 Empagliflozin
 Dimer Impurity



Chemical Formula: $C_{34}H_{32}Cl_2O_4$
 Exact Mass: 574.16776
 Molecular Weight: 575.52600

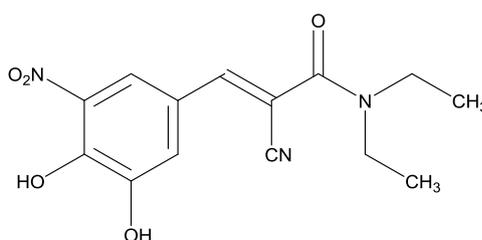
(3S,3'S)-3,3'-((((4,4'-dichloro-[1,1'-
 biphenyl]-3,3'-
 diyl)bis(methylene))bis(4,1-
 phenylene))bis(oxy))bis(tetrahydr
 ofuran)

Chemical Formula: $C_{34}H_{32}Cl_2O_4$
 Exact Mass: 574.16776
 Molecular Weight: 575.52600

[Return to
the Inde](#)

Entacapone

PI20070000 Entacapone

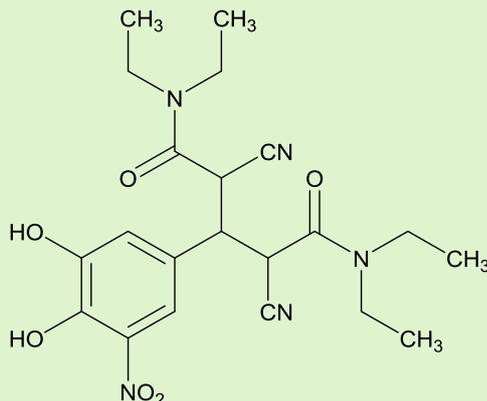


Chemical Formula: $C_{14}H_{15}N_3O_5$
 Exact Mass: 305.10117
 Molecular Weight: 305.29000

(E)-2-cyano-3-(3,4-dihydroxy-5-
 nitrophenyl)-N,N-diethylacrylamide
 Chemical Formula: $C_{14}H_{15}N_3O_5$
 Exact Mass: 305.10117
 Molecular Weight: 305.29000

PI20070001

Entacapone
 Dimer Impurity



2,4-dicyano-3-(3,4-dihydroxy-5-nitrophenyl)-N1,N1,N5,N5-tetraethylpentanediamide

Chemical Formula: C₂₁H₂₇N₅O₆

Exact Mass: 445.19613

Molecular Weight: 445.47600

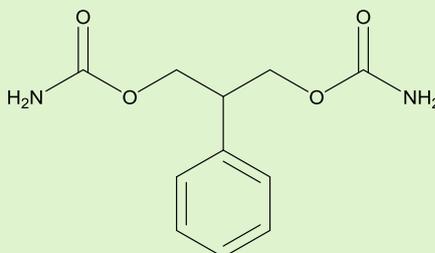
Chemical Formula: C₂₁H₂₇N₅O₆
 Exact Mass: 445.19613
 Molecular Weight: 445.47600

[Return to the Index](#)

Felbamate

PI20071000

Felbamate



2-phenylpropane-1,3-diol dicarbamate

Chemical Formula: C₁₁H₁₄N₂O₄

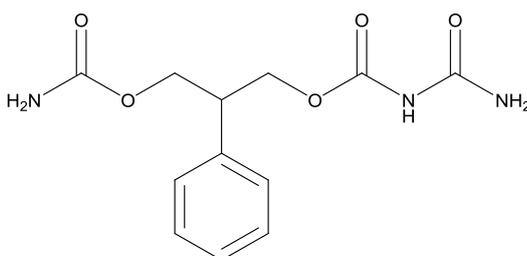
Exact Mass: 238.09536

Molecular Weight: 238.24300

Chemical Formula: C₁₁H₁₄N₂O₄
 Exact Mass: 238.09536
 Molecular Weight: 238.24300

PI20071001

Felbamate
 Dimer



A name could not be generated for this structure.

Chemical Formula: C₁₂H₁₅N₃O₅

Exact Mass: 281.10117

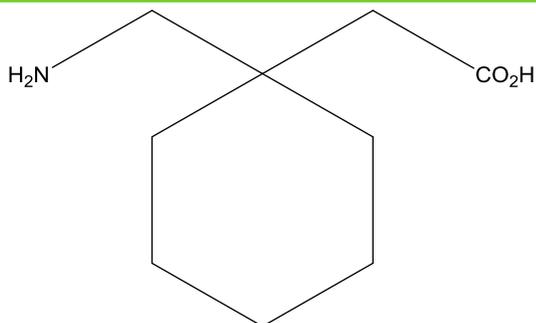
Molecular Weight: 281.26800

Chemical Formula: C₁₂H₁₅N₃O₅
 Exact Mass: 281.10117
 Molecular Weight: 281.26800

[Return to the Index](#)

Gabapentin

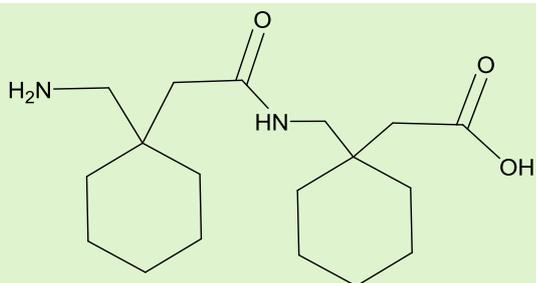
PI20036000 Gabapentin



2-(1-(aminomethyl)cyclohexyl)acetic acid
 Chemical Formula: C₉H₁₇NO₂
 Exact Mass: 171.12593
 Molecular Weight: 171.24000

Chemical Formula: C₉H₁₇NO₂
 Exact Mass: 171.12593
 Molecular Weight: 171.24000

PI20036021 Gabapentin Dimer



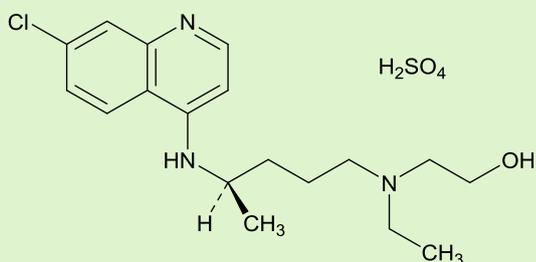
2-(1-((2-(1-(aminomethyl)cyclohexyl)acetamido)methyl)cyclohexyl)acetic acid
 Chemical Formula: C₁₈H₃₂N₂O₃
 Exact Mass: 324.24129
 Molecular Weight: 324.46500

Chemical Formula: C₁₈H₃₂N₂O₃
 Exact Mass: 324.24129
 Molecular Weight: 324.46500

[Return to the Inde](#)

Hydroxychloroquine

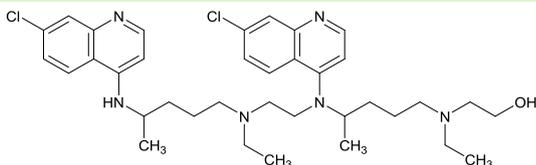
PI20069000 Hydroxychloroquine sulfate



(R)-2-((4-((7-chloroquinolin-4-yl)amino)pentyl)(ethyl)amino)ethan-1-ol sulfate
 Chemical Formula: C₁₈H₂₈ClN₃O₅S
 Exact Mass: 433.14382
 Molecular Weight: 433.94800

Chemical Formula: C₁₈H₂₈ClN₃O₅S
 Exact Mass: 433.14382
 Molecular Weight: 433.94800

PI20069001 Hydroxychloroquine Dimer



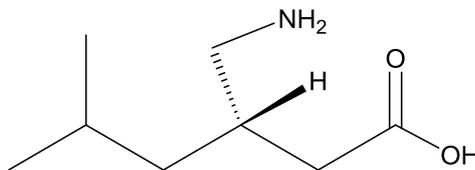
2-((4-((7-chloroquinolin-4-yl)(2-((4-((7-chloroquinolin-4-yl)amino)pentyl)(ethyl)amino)ethan-1-ol sulfate
 Chemical Formula: C₃₆H₅₀Cl₂N₆O
 Exact Mass: 652.34232
 Molecular Weight: 653.73700

Chemical Formula: C₃₆H₅₀Cl₂N₆O
 Exact Mass: 652.34232
 Molecular Weight: 653.73700

[Return to the Index](#)

Pregabalin

PI20031001 Pregabalin



Chemical Formula: $C_8H_{17}NO_2$
 Exact Mass: 159.12593
 Molecular Weight: 159.22900

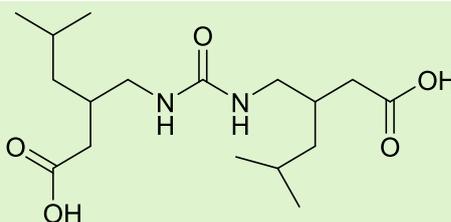
(S)-3-(aminomethyl)-5-methylhexanoic acid

Chemical Formula: $C_8H_{17}NO_2$

Exact Mass: 159.12593

Molecular Weight: 159.22900

PI20031007 Pregabalin Dimer A



Chemical Formula: $C_{17}H_{32}N_2O_5$
 Exact Mass: 344.23112
 Molecular Weight: 344.45200

3,3'-

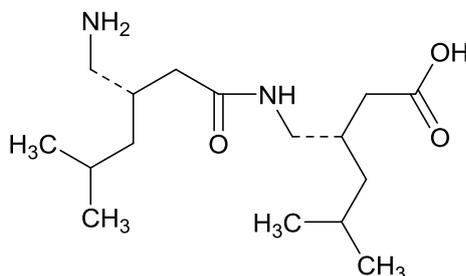
((carbonylbis(azanediyl))bis(methylene))bis(5-methylhexanoic acid)

Chemical Formula: $C_{17}H_{32}N_2O_5$

Exact Mass: 344.23112

Molecular Weight: 344.45200

PI20031008 Pregabalin Dimer B



Chemical Formula: $C_{16}H_{32}N_2O_3$
 Exact Mass: 300.24129
 Molecular Weight: 300.44300

3-((3-(aminomethyl)-5-

methylhexanamido)methyl)-5-methylhexanoic acid

Chemical Formula: $C_{16}H_{32}N_2O_3$

Exact Mass: 300.24129

Molecular Weight: 300.44300



WeChat Public Number



PI & PI Official Website

**Address: Suite 501, Bldg. 3, No.198 Kaiyuan Ave., Huangpu District,
Guangzhou, Guangdong, China**

Phone: 86-20-81716320

Fax: 86-20-81716319

E-mail: sales@pipitech.com

The End