

**YMC**

**CHIRAL  
ISOMERIC  
IMPURITIES**

**API  
IMPURITIES**

**CUSTOM  
SYNTHESIS**

**KEY  
INTERMEDIATES**

**PEPTIDE  
IMPURITIES**



## ACECLOFENAC

### CAS No.

Aceclofenac EP Impurity A	- 15307-86-5
Aceclofenac EP Impurity B	- 15307-78-5
Aceclofenac EP Impurity C	- 15307-77-4
Aceclofenac EP Impurity D	- 139272-66-5
Aceclofenac EP Impurity E	- 139272-67-6
Aceclofenac EP Impurity I	- 15362-40-0

## ACICLOVIR

### CAS No.

Aciclovir EP Impurity A	- 102728-64-3
Aciclovir EP Impurity B	- 73-40-5
Aciclovir EP Impurity F	- 110104-37-5
Aciclovir EP Impurity G	- 75128-73-3
Aciclovir EP Impurity L	- 3056-33-5
Aciclovir Impurity 2	- 19962-37-9

## ALBENDAZOLE

### CAS No.

Albendazole Impurity A	- NA
Albendazole Impurity B	- NA
Albendazole Impurity C	- NA
Albendazole Impurity D	- NA
Albendazole Impurity E	- NA
Albendazole Impurity F	- NA
Albendazole Impurity G	- NA

## ALLOPURINOL

### CAS No.

Allopurinol Impurity A	- NA
Allopurinol Impurity B	- NA
Allopurinol Impurity C	- NA
Allopurinol Impurity D	- NA
Allopurinol Impurity E	- NA
Allopurinol Impurity F	- NA
Allopurinol Impurity G	- NA

## API impurities

## ANASTROZOLE

### CAS No.

Anastrozole Monoamide	- 120512-03-0
Mononitrile Imp	
Anastrozole DiacidImp	- 1338800-81-9
Anastrozole Diamide Imp	- 120512-04-1

## APIXABAN

### CAS No.

Apixaban Methyl ester Impurity	- 1074365-84-7
ApixabanChloro Impurity	- 2029205-64-7
Apixaban USP Related Compound G	- 881386-12-5
Apixaban Impurity 9	- 503614-91-3

## AZILSARTAN

### CAS No.

Des ethyl Azilsartan Midoxomil	- 1417576-00-1
Azilsartan dimer-4	- NA
O-Des ethyl Azilsartan	- 1442400-68-1
Azilsartanmedoxomil Dimer Impurity	- 1604812-35-2
DesethylAzilsartan Medoxomil	- 1417576-00-1
AzilsartanMedoxomil	- 863031-21-4
Azilsartan impurity H	-1499167-72-4

## BEMPEDOIC ACID

### CAS No.

Bempedoic Acid Impurity 1	- 738606-43-4
Bempedoic Acid Impurity 2	- 738606-64-9
Bempedoic Acid Impurity 3	- 2570179-40-5
Bempedoic Acid Impurity 4	- 30313-67-8
Bempedoic Acid Impurity 9	- NA
Bempedoic Acid Impurity 11	- NA

## BEMPEDOIC ACID

	CAS No.
Bempedoic Acid Impurity 12	- 413624-71-2
Bempedoic Acid Impurity 17	- 123469-92-1
Bempedoic Acid Impurity 19	- NA
Bempedoic Acid Impurity 21	- 764-97-6
Bempedoic Keto Acid-D4	- 2408132-01-2
Bempedoic Acid Impurity 24	- 2511500-14-2
Bempedoic Acid Impurity 25	- NA
Bempedoic Acid Impurity 26	- NA
Bempedoic Acid Impurity 30	- 1529323-27-0
Bempedoic Acid Impurity 31	- 2374157-10-3

## CARBAMAZEPINE

	CAS No.
Carbamazepine EP Imp A	- 494-19-9
Carbamazepine Imp 7	- 28721-07-5

## CLOTRIMAZOLE

	CAS No.
Clotrimazole EP Impurity A	- 66774-02-5
Clotrimazole EP Impurity B	- 23593-71-7
Clotrimazole EP Impurity C	- 42074-68-0
Clotrimazole EP Impurity E	- 5162-03-8
Clotrimazole EP Impurity F	- 15469-97-3

## CYCLIZINE

	CAS No.
Cyclizine EP Impurity A	- 109-01-3
Cyclizine EP Impurity B	- 91-01-0

## DABIGATRAN

	CAS No.
Dabigatran Nitroso Impurity 1	- NA
Dabigatran Etexilate EP Impurity A	- 1408238-40-3
Dabigatran Etexilate EP Impurity B	- 429658-95-7
Dabigatran Etexilate EP Impurity C	- 1873316-01-8
Dabigatran Etexilate EP Impurity E	- 1415506-19-2
Dabigatran Etexilate EP Impurity G	- NA

## DEFERASIROX

	CAS No.
Deferasirox Impurity A	- 1972-71-0
Deferasirox Impurity B	- 1218-69-5
Deferasirox Impurity C	- 201530-78-1
Deferasirox Impurity D	- 2254105-61-6
Deferasirox Impurity E	- 201530-79-2
Deferasirox Impurity F	- 619-67-0

## DICLOFENAC

	CAS No.
Diclofenac EP Impurity A	- 15362-40-0
Diclofenac EP Impurity F	- 560075-65-2

## FAMOTIDINE

	CAS No.
Famotidine EP Impurity C	- 76824-17-4
Famotidine EP Impurity D	- 76824-16-3
Famotidine EP Impurity F	- 107880-74-0
Famotidine EP Impurity G	- 76823-97-7
Famotidine EP Impurity H	- 106649-96-1
Famotidine EP Impurity J	- 76824-14-1
Famotidine EP Impurity I	- NA
Famotidine Cyanoethyl Imp	- 76823-93-3
Famotidine Sulfoxide Impurity	- 90237-03-9

## GABAPENTIN

	CAS No.
Gabapentin EP Impurity A	- 64744-50-9
Gabapentin EP Impurity B	- 133481-09-1
Gabapentin EP Impurity E	- 67950-95-2
Gabapentin Acid Impurity	- 1281568-83-9
Gabapentin Allyl Impurity	- NA
Gabapentin Formyl Impurity	- NA
Gabapentine Impurity 5	- NA
Gabapentin Di-Lactom Impurity	- NA

## HYDROXYZINE

	CAS No.
Hydroxyzine EP Imp A	- 303-26-4
Hydroxyzine Impurity 2	- 346451-15-8
Hydroxyzine Impurity 5(2HCl)	- 109806-71-5

## OMEPRAZOLE

	CAS No.
Omeprazole EP Impurity A	- 37052-78-1
Omeprazole EP Impurity D (Omeprazole RC A)	- 88546-55-8
Omeprazole EP Impurity C	- 73590-85-9
Omeprazole EP Impurity E (Omeprazole RC E)	- 176219-04-8
Omeprazole EP Impurity H	- 863029-89-4
Omeprazole EP Impurity XI	- 86604-75-3
Omeprazole EP Impurity I (Omeprazole RC I)	- 158812-85-2
Omeprazole RC 10	- 848694-10-0
Omeprazole RC 11	- 142885-92-5

## PANTOPRAZOLE

	CAS No.
Pantoprazole EP Impurity A	- 127780-16-9
Pantoprazole EP Impurity C	- 97963-62-7
Pantoprazole EP Impurity B	- 102625-64-9
Pantoprazole Sulphone N-Oxide	- 953787-55-8
Pantoprazole Chloromethyl Impurity	- 72830-09-2
Pantoprazole EP Impurity D+F Mixture	

## PARACETAMOL

	CAS No.
Paracetamol EP Impurity A	- 614-80-2
Paracetamol EP Impurity B	- 1693-37-4
Paracetamol EP Impurity D	- 103-84-4
Paracetamol EP Impurity E	- 99-93-4
Paracetamol EP Impurity F	- 100-02-7
Paracetamol EP Impurity H	- 2623-33-8
Paracetamol EP Impurity I	- 118-93-4
Paracetamol EP Impurity J	- 539-03-7
Paracetamol EP Impurity K	- 123-30-8

## QUETIAPINE

	CAS No.
Quetiapine EP Imp A	- 844639-07-2
Quetiapine EP Imp B	- 111974-74-4
Quetiapine EP Imp D	- 945668-94-0
Quetiapine EP Imp G	- 3159-07-7
Quetiapine EP Imp Q	- NA

## REGORAFENIB

	CAS No.
Regorafenib Impurity 1	- 6144-78-1
Regorafenib Impurity 2	- 1379324-09-0

## SORAFENIB

	CAS No.
Sorafenib EP Impurity A	- 284462-37-9
Sorafenib EP Impurity B	- 2004659-84-9
Sorafenib EP Impurity C	- 320-51-4
Sorafenib EP Impurity D	- 2206827-14-5
Sorafenib EP Impurity E	- 284670-98-0
Sorafenib EP Impurity F	- 1285533-84-7
Sorafenib EP Impurity G	- 18585-06-3
Sorafenib EP Impurity H	- 1431697-81-2

## TROSPIUM

	CAS No.
Trospium chloride EP Impurity A	- 76-93-7
Trospium Chloride - Impurity C	- 3464-71-9

## VENETOCLAX

	CAS No.
Venetoclax impurity I (2,4-dimer)	- 2514648-06-5
Venetoclax Para indole / (methyl 4-((1H-pyrrolo[2,3-b]pyridin-5-yl)oxy)-2-fluorobenzoate)	- NA
VenetoclaxFluoro impurity	- 2573767-90-3
Venetoclaxpara isomer	- NA

## VONOPRAZAN

	CAS No.
VonoprazanNitroso Impurity	- 2932441-73-9
Vonoprazan Impurity 3	- 881732-90-7



## ATENOLOL

	CAS No.
Atenolol EP Impurity A	- 17194-82-0
Atenolol EP Impurity B	- 61698-76-8
Atenolol EP Impurity C	- 29122-69-8
Atenolol EP Impurity D	- 115538-83-5
Atenolol EP Impurity E	- 141650-31-9
Atenolol EP Impurity F	- 87619-83-8
Atenolol EP Impurity I	- 1797116-92-7
Atenolol EP Impurity J	- 81346-71-6

## ATORVASTATIN

	CAS No.
Atorvastatin EP Impurity D	- 148146-51-4
Atorvastatin EP Impurity G	- 887196-29-4
Atorvastatin USP Related Compound B	- 887196-25-0
Atorvastatin EP Impurity C	- 693793-53-2
Atorvastatin EP Impurity J	- 1105067-93-3

## BECLOMETASONE

	CAS No.
Beclometasone EP Imp A	- 69224-79-9
Beclometasone EP Imp B	- 5534-08-7
Beclometasone EP Imp C	- NA
Beclometasone EP Imp D	- 52092-14-5
Beclometasone EP Imp E	- 887130-68-9
Beclometasone EP Imp F	- 887130-69-0
Beclometasone EP Imp H	- 5534-18-9
Beclometasone EP Imp J	- 66917-44-0
Beclometasone EP Imp L	- 114371-33-4
Beclometasone EP Imp M	- NA
Beclometasone EP Imp N	- 1204582-47-7
Beclometasone EP Imp R	- 981-34-0
Beclometasone EP Imp S	- 1709825-83-1
Beclometasone EP Imp U	- 79578-39-5
Beclometasone EP Imp V	- 205105-83-5

## BRIVARACETAM

	CAS No.
Brivaracetam S,S-Isomer	- 357336-19-7
Brivaracetam R,S-Isomer	- 357336-99-3
Brivaracetam R,R-Isomer	- 357337-00-9

## Chiral Isomeric Impurities

### BETAMETHASONE

	CAS No.
Betamethasone EP Impurity A	- 50-02-2
Betamethasone EP Impurity E	- 981-34-0
Betamethasone Impurity	- 560-34-9
Betamethasone Acetate EP Impurity A	- 378-44-9
Betamethasone Acetate EP Impurity B	- 1177-87-3
Betamethasone Acetate EP Impurity C	- 330157-05-6
Betamethasone Acetate EP Impurity D	- 912-38-9
Betamethasone Dipropionate EP Impurity A	- 378-44-9
Betamethasone Dipropionate EP Impurity B	- 5534-13-4
Betamethasone Dipropionate EP Impurity C	- 75883-07-7
Betamethasone Dipropionate EP Impurity D	- 5514-81-8
Betamethasone Dipropionate EP Impurity E	- 5534-09-8
Betamethasone Dipropionate EP Impurity F	- 66917-44-0
Betamethasone Dipropionate EP Impurity G	- 118604833-8

### BISOPROLOL

	CAS No.
Bisoprolol Methyl Ester	- 33947-97-6
Bisoprolol Alcohol Impurity	- 623-05-2
Bisoprolol EP Impurity M	- 177034-57-0
Bisoprolol EP Impurity R	- 5790-46-5
Bisoprolol Impurity 1	- 1346603-05-1
Bisoprolol EP Impurity K	- 864544-37-6
Bisoprolol EP Impurity J	- 1797024-50-0
Bisoprolol Dimer – NA	

### BUPROPION

	CAS No.
Bupropion USP Related Compound B	- 1049718-43-5
3-Deschloro-2-Chloro Bupropion HCl	- 1049718-57-1
Bupropion Related Compound E	- 10557-17-2
Bupropion USP Related Compound C	- 152943-33-4
3-Bromopropiophenone	- 19829-31-3
3-Chloropropiophenone	- 34841-35-5
5-Chloro Bupropion	- 1193779-48-4
4-Chloro Bupropion	- 1193779-34-8

## CETRIZINE

	CAS No.
Cetirizine EP Impurity A	- 303-26-4
Cetirizine EP Impurity B (Na Salt)	- 113740-61-7
Cetirizine EP Impurity B Ethyl Ester	- 19178-83-7
Cetirizine EP Impurity D	- 346451-15-8
Cetirizine EP Impurity G	- 164726-80-1
Cetirizine 4-Chlorobenzophenone Impurity (USP)	- 134-85-0
Cetirizine 4-Chlorobenzhydrol Impurity (USP)	- 119-56-2
Cetirizine Methyl Ester (USP)	- 83881-48-5
Cetirizine USP RC A (USP)	- 2732277-01-7
Cetirizine USP RC C (USP)	- 83881-37-2
Cetirizine Impurity 7	- 1620-21-9

## CLOBETASOL

	CAS No.
Clobetasol Propionate EP Impurity A	- 5534-13-4
Clobetasol Propionate EP Impurity I	- 15423-80-0
Clobetasol Propionate EP Impurity K	- 75883-07-7

## DAPAGLIFLOZIN

	CAS No.
Dapagliflozin alpha isomer	- 1373321-04-0
Bromodapagliflozin	- 1807632-95-6
Dapagliflozin Ethyl impurity	- NA
DapagliflozinHydroxy impurity	- 960404-86-8
DapagliflozinMethoxy impurity	- 461432-24-6
1 Alpha MethoxyDapagliflozin	- 714269-57-5
DapagliflozinTetraacetyl alpha anomer	- NA

## DEXAMETHASONE

	CAS No.
Dexamethasone EP Impurity B	- 378-44-9
Dexamethasone EP Impurity C	- 426-17-5
Dexamethasone Impurity 2	- 37927-01-8
Dexamethasone 21 Acetate	- 1177-87-3
Dexamethasone 17-propionate	- 15423-89-9
Dexamethasone Acetate EP Impurity A	- 50-02-2

## DILTIAZEM

	CAS No.
Diltiazem Impurity B	- NA
Diltiazem Impurity C	- NA
Diltiazem Impurity D	- NA
Diltiazem Impurity E	- NA

## EMPAGLIFLOZIN

	CAS No.
EmpagliflozinInt reduction R isomer	- 2194590-02-6
Empagliflozin alpha isomer	- 1620758-33-9
Empagliflozin Impurity 5	- 1800196-46-6
Empagliflozin Impurity 2	- 915095-87-3
EmpagliflozinMethoxy impurity	- 1800196-48-8
Empagliflozin R-Furanose	- 1620758-31-7

## ESOMEPRAZOLE

	CAS No.
Esomeprazole EP Impurity A	- 37052-78-1
Esomeprazole EP Impurity C	- 73590-85-9
Esomeprazole EP Impurity D	- 88546-55-8
Esomeprazole EP Impurity E	- 176219-04-8

## FLUTICASONE

	CAS No.
Fluticasone EP Impurity A	- 65429-42-7
Fluticasone EP Impurity B	- 948566-12-9
Fluticasone EP Impurity C	- 80474-24-4
Fluticasone EP Impurity D	- 73205-13-7
Fluticasone EP Impurity E	- 105613-90-9
Fluticasone EP Impurity F	- 1219174-94-3
Fluticasone EP Impurity H	- 201812-64-8
Fluticasone EP Impurity I	- 960071-64-1
Fluticasone USP RC J	- 28416-82-2
Fluticasone Carbothioic Acid Impurity	- 80474-45-9
Fluticasone Thioacid	- 80473-92-3
Fluticasone Propionate Methyl Ester Analog	- 59860-80-9

## FORMOTEROL

	CAS No.
Formoterol EP Impurity A	- 150513-24-9
Formoterol EP Impurity H	- 2514947-17-0
Formoterol EP Impurity G	- 64-13-1
Formoterol Amine	- 43229-65-8
Formoterol Amine Hydrochloride	- 1049695-95-5
Formoterol Amine Hydrobromide	- 1184950-62-6
Formoterol Bromide	- 43229-01-2

## GRANISETRON

	CAS No.
Granisetron EP Impurity-4	- 106649-02-9
Granisetron EP Impurity-5	- 2973-50-4
Granisetron EP Impurity-D	- 50890-83-0

## HYOSCINE

	CAS No.
Hyoscine EP Impurity A	- 4684-28-0
Hyoscine EP Impurity C	- 552-63-6
HyoscineButylbromide EP Impurity A	- 6533-68-2
HyoscineButylbromide EP Impurity B	- 529-64-6
HyoscineButylbromide EP Impurity C	- 155-41-9
HyoscineButylbromide EP Impurity D	- NA
HyoscineButylbromide EP Impurity E	- NA
HyoscineButylbromide EP Impurity F	- NA
HyoscineButylbromide EP Impurity G	- 92714-23-3

## IBUPROFEN

	CAS No.
Ibuprofen EP Impurity B	- 3585-49-7
Ibuprofen EP Impurity C	- 59512-17-3
Ibuprofen EP Impurity D	- 938-94-3
Ibuprofen EP Impurity E	- 38861-78-8
Ibuprofen EP Impurity J	- 65813-55-0
Ibuprofen EP Impurity L	- 53949-53-4
Ibuprofen EP Impurity O	- 64451-76-9
Ibuprofen Impurity 12	- 40150-92-3
Ibuprofen Impurity N	- 3585-52-2

## ISAVUCONAZOLE

	CAS No.
Isavuconazole Imp 51	- 241479-74-3
Isavuconazole Imp 52	- NA

## LINAGLIPTIN

	CAS No.
LinagliptinRegio Isomer	- 1446263-38-2
Linagliptin S-Isomer	- 668270-12-9
Linagliptin N-Acetyl Impurity	- 1803079-49-3
Linagliptin Impurity S	- 1638744-06-5

## METOPROLOL

	CAS No.
MetoprololHydroxy Ester Impurity	- 17138-28-2
Metoprolol Acid Methyl Ester	- 29121-23-1
Metoprolol Acid Ethyl Ester	- 29112-40-1
Metoprolol EP Impurity O	- 154784-36-8
MetoprololBis Propranolol Impurity	- 230975-30-1
Metoprolol N-Desisopropyl Impurity	- 74027-60-4

## MEBEVERINE

	CAS No.
MebeverineNitroso Impurity 1	NA
MebeverineNitroso Impurity 2	NA

## NAPROXEN

	CAS No.
Naproxen EP Impurity E	- 26159-35-3
Naproxen EP Impurity F	- 31220-35-6
Naproxen EP Impurity L	- 3900-45-6
Naproxen EP Impurity K	- 77301-42-9

## PROGESTERONE

	CAS No.
Progesterone EP Impurity B	- 145-14-2
Progesterone EP Impurity C	- 145-15-3
Progesterone EP Impurity D	- 5035-09-6
Progesterone EP Impurity E	- 5062-62-4
Progesterone EP Impurity H	- 1162-56-7
Progesterone EP Impurity J	- 1162-54-5

## PHYTOANDIONE

	CAS No.
PhytonadioneCis Isomer	- 16033-41-3
Phytonadione Trans Isomer	- 84-80-0
Phytonadione Trans-I	- NA
Phytonadione Trans-II	- NA
Phytonadione Trans-III	- NA
Phytonadione Trans-IV	- NA
PhytonadioneCis -I	- NA
PhytonadioneCis -II	- NA
PhytonadioneCis -III	- NA
PhytonadioneCis-IV	- NA

## PROPRANOLOL

	CAS No.
Propranolol EP Impurity A	- 36112-95-5
Propranolol EP Impurity B	- 83314-78-7
Propranolol EP Impurity C	- 17216-10-3
Propranolol Impurity 1	- NA
Propranolol Impurity 2	- 2007-11-6
Propranolol N-Formyl Impurity	- 77252-87-0
N-Desisopropyl Propranolol	- 20862-11-7

## RIFAPENTINE

	CAS No.
Rifapentine N-Oxide Imp	- NA
Rifapentine 3-Formyl	- NA
Rifapentinequinone	- NA
Rifapentine 30-OH	- NA

## RIVAROXABAN

	CAS No.
Rivaroxaban Imp 58	- NA
Rivaroxaban Imp 65	- 482308-13-4
RivaroxabanNitroso Impurity 1	- 25413-76-7

## ROSUVASTATIN

	CAS No.
Rosuvastatin EP impurity A	- 1714147-50-8
Rosuvastatin impurity C	- 1422619-13-3
Rosuvastatin impurity D	- 503610-43-3

## ROTIGOTINE

	CAS No.
Rotigotine EP Impurity A	- 112835-48-0
Rotigotine EP Impurity B	- 101470-23-9
Rotigotine EP Impurity C	- 153409-14-4
Rotigotine EP Impurity D	- 1369625-04-6
Rotigotine EP Impurity F	- 835654-68-7
Rotigotine EP Impurity H	- 1148154-91-9

## SUGAMMADEX

	CAS No.
Sugammadex Disulfide Impurity	- 2412952-81-7
Sugammadex Monohydroxy Impurity	- 2376607-98-4

## VALSARTAN

	CAS No.
Valsartan Impurity 8	- NA
Valsartan Impurity 13	- 152708-24-2
Valsartan Impurity 20	- 124806-66-2
Valsartan Azide impurity	- 152708-24-2

## VARENICLINE

	CAS No.
Varenicline Impurity 10/ Dinitronitroso	- NA
Varenicline Impurity 15/ Diaminonitroso	- NA
Varenicline Impurity 17/	- NA
VareniclineNitroso Impurity 1	- 2755871-02-2

## VILDAGLIPTIN

	CAS No.
Vildagliptin Amide Impurity	- 565453-39-6
(R)-enantiomer of Vildagliptin	- 1036959-27-9

## VORICONAZOLE

	CAS No.
Voriconazole USP RC-B	- 137234-63-0
Voriconazole USP RC-C	- 86404-63-9
Voriconazole USP RC-D	- 182369-73-9
Voriconazole Impurity E	- 5872-08-2

## Peptide Impurities

S.No	SEMAGLUTIDE
1	Des-Gly(10)-Semaglutide - NA
2	Des-His(7)-Semaglutide - NA
3	Des-Thr(11)-Semaglutide - NA
4	Iso-Asp-Semaglutide - NA
5	Endo-Gly(10)-Semaglutid - NA
6	D-His(7)-Semaglutide - NA
7	Trp(4-hydroxybenzyl)25-Semaglutide - NA
8	D-Ser(14)-Semaglutide - NA
9	Me-His-Semaglutide - NA
10	D-Asp(9)-Semaglutide - NA
11	D-Iso-Asp (9)-Semaglutide - NA
12	D-Phe(6)-Semaglutide - NA
13	D-Val(10)-Semaglutide - NA
14	Des-Glu(3)-Semaglutide - NA
15	Des-Gly-31-Semaglutide - NA
16	Endo-Glu(3)-Semaglutide - NA
17	His-Cyclic-Semaglutide - NA
18	Linear Semaglutide - NA
19	Me-His-Semaglutide - NA
20	$\alpha$ -Glu(side chain)-Semagl - NAutide
21	Semaglutide +106 Impurity - NA
22	Endo-Gly(10)-Semaglutide - NA
23	His Cyclized Adduct (+12 Da) Impurity - NA
24	Acetaldehyde Impurity - NA
25	Semaglutide - Haib (Des-Haib) - NA
26	Des-RG (Sema-(RG) cleavage from C <sup>1</sup> -Terminus) - NA
27	Des-HAibEG Impurity - NA
28	Des-HAibEGTFTS Impurity - NA
29	Sema minus 11AAs - NA
30	D-All-Thr-11 Impurity - NA
31	D-Phe-12 Impurity - NA
32	Des HAibE Impurity - NA
33	Sema minus 13AAs - NA



## Peptide Impurities

S.No	TIRZEPATIDE
1	[D-Asp15]-Tirzepatide - NA
2	[D-Asp9]-Tirzepatide - NA
3	[D-Gln19]-Tirzepatide - NA
4	[D-Gln24]-Tirzepatide - NA
5	[D-Glu-3]-Tirzepatide - NA
6	[D-Leu14]-Tirzepatide - NA
7	[D-Phe22]-Tirzepatide - NA
8	[D-Phe6]-Tirzepatide - NA
9	[D-Ser11]-Tirzepatide - NA
10	[D-Ser8]-Tirzepatide - NA
11	[D-γ-Glu-Side chain]-Tirzepatide - NA
12	[des-AEEA4']-Tirzepatide - NA
13	[Des-Aib2]-Tirzepatide - NA
14	[Des-Ile-17]-Tirzepatide - NA
15	[β-Ala-35]-Tirzepatide - NA
16	[β-Ala18]-Tirzepatide - NA
17	[β-Ala21]-Tirzepatide - NA
18	[β-Ala28]-Tirzepatide - NA
19	[β-Asp15]-Tirzepatide - NA
20	[β-Asp9]-Tirzepatide - NA
21	D-Leu(26)-Tirzepatide - NA
22	D-Tyr(1)-Tirzepatide - NA
23	Des-Aib(13)-Tirzepatide - NA
24	Des-Gly(4)-Tirzepatide - NA
25	Des-Ile12 Tirzepatide - NA
26	Des-Tyr(1),Aib(2)-Tirzepatide - NA
27	Des-γ-GluTirzepatide - NA
28	Endo-AEEA-(4a)-Tirzepatide - NA
29	Endo-Ala(35)-Tirzepatide - NA
30	Endo-Gly(4a)-Tirzepatide - NA
31	Endo-Tyr(4a)-Tirzepatide - NA
32	Glu(19)-Tirzepatide - NA
33	Glu(24)-Tirzepatide - NA
34	Tirzepatide-Acid - NA
35	β-[Asp-9]-Tirzepatide- NA

## Nitroso Impurities

S.No	Nitroso Impurities
1	N-Nitroso cetirizine EP Imp A - 01-04-2005
2	N-Nitrosodiisopropyl amine/NDIPA - 601-77-4
3	N-Nitroso-N-ethylaniline - 612-64-6
4	N-Nitrosodibutylamine/NDBA - 924-16-3
5	N-Nitrosodiethanolamine/NDELA - 1116-54-7
6	N-Nitrosodiethylamine/NDEA - 55-18-5
7	N-Nitrosopiperidine - 100-75-4
8	N-Nitroso-N-methyl-4-aminobutyric Acid/NMBA - 61445-55-4
9	N-nitrosomorpholine - 59-89-2
10	N-Nitrosodimethylamine/NDMA - 62-75-9
11	N-Nitroso 1,3-Dimethyl-6-(3-Chloropropylamino)uracil - NA
12	N-Nitroso-2-pyrrolidone/1-Nitrosopyrrolidin-2-one - 54634-49-0
13	N-Nitroso-N-methylbenzylamine/NMBA - 937-40-6
14	N-methyl-N-nitroso-2-Propanamine - 30533-08-5
15	N-Nitroso-L-proline - 7519-36-0
16	N-Nitroso Benazepril - NA
17	N-Nitrosodiisopropanolamine - 53609-64-6
18	N-nitroso 1-(piperidin-2-yl) methanamine - 6332-00-9
19	Pramipexole N-Nitroso - NA
20	N-Nitrosometoprolol - 138768-62-4
21	N-Nitroso-Rasagiline - 2470278-90-9
22	N-Nitroso-Fluoxetine - 150494-06-7
23	N-Nitroso-Silodosin - NA
24	N-Nitroso Tamsulosin Impurity - NA
25	N-Nitroso Teneligliptin - NA
26	N-Nitroso Vildagliptin - NA
27	N-Nitroso Bisoprolol - NA
28	N-Nitroso Bupropion - NA
29	N-Nitroso Diclofenac - 66505-80-4
30	N-Nitroso-Duloxetine - NA
31	N-Nitroso Flupirtine - NA
32	N-Nitroso Hydrochlorothiazide - 63779-86-2
33	N-Nitroso Labetalol - NA
34	N-Nitroso-Maprotiline - 204268-61-1
35	N-Nitroso Moxifloxacin - NA

S.No	Nitroso Impurities
36	N-Nitroso Nebivolol - 1391051-68-5
37	N-Nitroso Enalapril - NA
38	N-Nitroso Amlodipine - NA
39	N-Nitroso Betahistine - 32635-81-7
40	N-Nitroso Cinacalcet - NA
41	N-Nitroso-Folic acid - 26360-21-4
42	N-Nitroso Lisinopril - 519175-80-5
43	N-Nitroso Maprotiline - 204268-61-1
44	N-Nitroso Mirabegron - NA
45	N-nitroso-ditertbutylamine - 63819-70-5
46	N-Nitroso propranolol - 84418-35-9
47	N-Nitroso Ramipril - NA
48	Trimetazidine N-Nitroso - 92432-50-3
49	N-nitroso Varenicline - NA
50	N-Nitroso Vortioxetine - NA
51	N-Nitroso Desloratadine - 1246819-22-6
52	N-Nitroso Teneligliptin - NA
53	N-Nitroso Elagolix - NA
54	N-Nitroso Nortriptyline - 55855-42-0
55	N-Nitroso Ambroxol - NA
56	N-Nitroso Atenolol - 134720-04-0
57	N-Nitroso Ciprofloxacin - 864443-44-7
58	N-Nitroso-Dorzolamide - NA
59	N-Nitroso-Meglumine - 10356-92-0
60	N-nitroso Iminostilbene - 38652-29-8
61	N-Nitroso Edoxaban Impurity 2 - NA
62	N-Nitroso Edoxaban Desmethyl Impurity - NA
63	N-Nitroso Edoxaban Impurity 3 - NA
64	N-Nitroso Edoxaban Impurity 5 - NA
65	N-Nitroso Edoxaban Impurity 4 - NA
66	N-Nitroso Edoxaban Impurity 1 - NA
67	N-Nitroso Linagliptin Impurity - NA
68	N-nitroso Prucalopride Impurity A - NA
69	Vildagliptin N-Nitroso-L-Prolinamide - 79108-51-3
70	Vildagliptin N-Nitroso-L-Proline Methyl Ester - 35909-01-4
71	N-Nitroso Piperazine - 5632-47-3
72	N-Nitroso Paroxetine - 2361294-43-9

S.No	Nitroso Impurities
73	N-Nitroso dihydrodibenzazepine - NA
74	N-Nitroso Brexpiprazole Impurity 1 - 877177-42-9
75	N-Nitroso Sitagliptin Impurity - 2892260-32-9
76	N-Nitroso Desvenlafaxine 1 / N-Nitroso O-Des-Venlaxazine - NA
77	N-Nitroso Quetiapine Impurity - 73486-81-4
78	N-Nitroso Duloxetine - 2680527-91-5
79	N-Nitroso Gliclazide EP Impurity B - 54786-86-6
80	N-Nitroso-Cinacalcet - NA
81	N-Nitroso Gatifloxacin - NA
82	N-Nitroso Tranexamic Acid EP Impurity A - NA
83	N-Nitroso Diazepam EP Impurity D - 51145-18-7
84	N-Nitroso Clopidogrel EP Impurity F - NA
85	N-Nitroso butylmethylamine - 7068-83-9
86	N-NITROSO ACECLOFENAC / AceclofenacNitroso Impurity - NA
87	N-Nitroso Sildenafil Impurity 2 - NA
88	N-Nitroso Fluvoxamine EP Impurity F - NA
89	N-Nitroso Fluvoxamine EP Impurity C - NA
90	N-Nitroso Metoprolol EP Impurity A - NA
91	N-Nitroso Metoprolol EP Impurity C - NA
92	N-Nitroso Rivastigmine - NA
93	N-Nitroso Rivastigmine Impurity - NA
94	N-Nitroso Dibigatran Impurity 1 - NA
95	N-Nitroso Olopatadine N-Desmethyl Impurity - NA
96	N-Nitroso Lidocaine EP Impurity E - NA
97	N-Nitroso Atenolol EP Impurity H - NA
98	N-Nitroso Atenolol EP Impurity I - NA
99	N-Nitroso Atenolol EP Impurity G - NA
100	N-Nitroso Donepezil EP Impurity A - NA
101	N-Nitroso Didecylamine - 69112-95-4
102	N-Nitroso Paliperidone USP Related Compound B - 2416230-38-9
103	N-Nitroso-N-Benzyl Anthranilic Acid - 1028-91-7
104	N-Nitroso Moxonidine Impurity 3 - NA
105	N-Nitroso Moxonidine Impurity 4 - NA
106	N-Nitroso Moxonidine Impurity 5 - NA
107	N-Nitroso DihexylAminoquatDibromide - NA
108	N-Nitroso-Amoxapine - NA
109	N-Nitroso Valsartan Impurity 1 - 2254485-68-0

## Important Pyrimidines Intermediates

S.No	Name of the pyrimidine compound	CASNo.
1	6,7-dihydrothieno[3,2-d]pyrimidine-2,4-diol	913581-92-7
2	2,4-dichloro-6,7-dihydrothieno[3,2-d]pyrimidine	74901-69-2
3	4,6-dichloro-2-methylpyrimidine	1780-26-3
4	5-bromo-4-chloro-6-cyclopropylpyrimidine	27192-21-8
5	2-Chloropyrimidine	1722-12-9
6	2-Hydroxypyrimidinehydrochloride	38353-09-2
7	2-Hydroxy-5-chloropyrimidine	54326-16-8
8	2,5-Dichloropyrimidine	22536-67-0
9	5-Chloro-2-iodopyrimidine	874676-81-0
10	2,4-dichloro-7H-pyrrolo[2,3-d]pyrimidine	90213-66-4
11	5-Bromopyrimidine	4595-59-9
12	2-Chloro5-nitropyrimidine	10320-42-0
13	2-Bromopyrimidine	4595-60-2
14	2-Aminopyrimidine	109-12-6
15	4-Chloro-6-methoxypyrimidine	26452-81-3
16	2,5-Dichloropyrimidine	22536-67-0
17	5-chloro-2-iodopyrimidine	874676-81-0
18	8-Chloro-2-(methylthio)pyrimido[5,4-d]pyrimidine	176637-10-8
19	5-Methyl-4-oxo-3H,4H-thieno[2,3-d]pyrimidine-6-carboxamide	691862-37-0
20	5-Bromo-2-(methylthio)pyrimidine-4-carboxylicacid	50593-92-5
21	5-amino-2-(methylthio)pyrimidine-4-carboxylicacid	100130-05-0
22	6-(methylthio)pyrimido[5,4-d]pyrimidin-4(3H)-one	98550-19-7
23	8-Chloro-2-(methylthio)pyrimido[5,4-d]pyrimidine	176637-10-8
24	5-bromo-6-cyclopropylpyrimidin-4-ol	27192-20-7
25	5-bromo-4-chloro-6-cyclopropylpyrimidine	27192-21-8
26	5-Bromo-4-cyclopropyl-6-methylpyrimidine	1434127-91-9
27	2,4-Dichloropyrimidine-5-caboxamide	1240390-28-6
28	5-Bromo-N,N-dimethylpyrimidine-2-carboxamide	915948-92-4
29	5-Bromopyrimidine-2-carbonitrile	38275-57-9
30	5-Bromopyrimidine-2-carboxylicacid	37131-87-6



## Important Indole Intermediates

S.No	Name of the pyrimidine compound	CASNo.
1	5-bromo-1H-indole-2-carboxylicacid	7254-19-5
2	4-Bromoindole	52488-36-5
3	5-Bromoindole	10075-50-0
4	6-Bromoindole	52415-29-9
5	5-Bromoindole-2-carboxylicacid	7254-19-5
6	5-Nitroindole	6146-52-7
7	4-Bromoindole-3-carboxaldehyde	98600-34-1
8	Ethyl5-hydroxy-1,2-dimethyl-1H-indole-3-carboxylate	15574-49-9
9	4-Hydroxyindole	2380-94-1
10	5-Hydroxyindole	1953-54-4
11	6-Chloro-7-deazapurine	3680-69-1
12	5-Chloroindole-2-carboxylicacid	10517-21-2
13	5-Chloroindole	17422-32-1
14	Ethyl5-bromoindole-2-carboxylate	16732-70-0
15	5-Bromoindole-2-carboxylicacid	7254-19-5
16	Indole-6-carboxylicacid	1670-82-2
17	5-Fluoroindole-2-carboxylicacid	399-76-8
18	6-Methoxyindole	3189-13-7
19	5-Methoxyindole-2-carboxylicacid	4382-54-1
20	5-Bromo-6-chloroindole	122531-09-3

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- Multistep organic synthesis
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