ANTIBIOTICS

Products Description

Popular antibiotics, used in cell culture, as preservative in buffers in biochemistry and purification,...

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>CAS#</th>
<th>Product #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTINOMYCIN D</td>
<td>[50-76-0]</td>
<td>09086A</td>
</tr>
<tr>
<td>AMPHOTERICIN B</td>
<td>[1397-89-3]</td>
<td>550735</td>
</tr>
<tr>
<td>AMPHOTERICIN B, Solubilized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMPICILLIN, TriHydrate</td>
<td>[7177-48-2]</td>
<td>391961</td>
</tr>
<tr>
<td>BACITRACIN ZINC</td>
<td>[1405-89-6]</td>
<td>GS309</td>
</tr>
<tr>
<td>CARBENICILLIN, DiNa Salt</td>
<td>[4800-94-6]</td>
<td>383880</td>
</tr>
<tr>
<td>CEFOTAXIME, Na Salt</td>
<td>[64485-93-4]</td>
<td>NC7202</td>
</tr>
<tr>
<td>CHLORAMPHENICOL</td>
<td>[56-75-7]</td>
<td>091421</td>
</tr>
<tr>
<td>CHLORTETRACYCLINE HCl</td>
<td>[64-72-2]</td>
<td>19252A</td>
</tr>
<tr>
<td>HYGROMYCIN B</td>
<td>[31282049]</td>
<td>71946A</td>
</tr>
<tr>
<td>PENICILLIN G, Na salt</td>
<td>[69-57-8]</td>
<td>N12272</td>
</tr>
<tr>
<td>STREPTOMYCIN</td>
<td>[3810-74-0]</td>
<td>224968</td>
</tr>
<tr>
<td>VALINOMYCIN</td>
<td>[2001-95-8]</td>
<td>092464</td>
</tr>
</tbody>
</table>

Biotech grade powders

Antibiotics and antimycotics are used extensively in many laboratory applications, from selecting transformed bacteria to maintaining cell lines. They are also used in biochemistry to preserve buffers from bacterial / fungal contamination.

Technical and Scientific Information

<table>
<thead>
<tr>
<th>Name</th>
<th>ACTINOMYCIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog Number</td>
<td>09086A</td>
</tr>
<tr>
<td>Structure</td>
<td>syn: benzylpenicillin sodium salt, crystapen, novocillin, penilevel, Pen PCN CAS: [69-57-8]</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>MW= 356.38</td>
</tr>
<tr>
<td>Properties</td>
<td>Soluble in DMSO, EtOH, CH3OH, ( \lambda_{\text{exc}}\lambda_{\text{em}} ) (MeOH) = 441 nm/none</td>
</tr>
<tr>
<td>Storage</td>
<td>+4°C</td>
</tr>
</tbody>
</table>

**Actinomycin D** is a polypeptide antibiotic isolated from soil bacteria of the genus Streptomyces. It is a nonfluorescent DNA duplexes intercalator that exhibits high GC selectivity and causes distortion at its binding site. It interferes with the action of enzymes engaged in replication and transcription (Actinomycin D is one of the old chemotherapy drugs which Contact your local distributor Uptima, powered by uptima@interchim.com
have been used in therapy for many years). Binding of the nonfluorescent actinomycin D to nucleic acids changes the absorbance of the dye.

References

Name : VALINOMYCIN
Syn.: 3,6,9,15,18,21,27,30,33-Nonaisopropyl-12,24,36-trimethyl-1,7,13,19,25,31-hexaaza-4,10,16,22,28,34-hexaaza-cyclohexatriacontane-2,5,8,11,14,17,20,23,26,29,32,35-dodecaone
NSC122033
CAS : [2001-95-8]
Catalog Number : 092464.
Molecular Weight : MW= 1 111.3
Properties: Purity: >95%
Stable 2 years at –20°C
Soluble in DMSO, EtOH, CH3OH
Storage: -20°C (1)
Protect from light and moisture

Valinomycin is a cyclododecadepsipeptide potassium-selective ionophore antibiotic that is isolated from various strains of Streptomycetes. The hydrophilic interior is the right size to accommodate the potassium ion, but not other ions, while the hydrophobic exterior allows the complex to pass through the lipid bilayer. Valinomycin induces apoptosis in several cell types, including CHO cells, by stimulating potassium efflux. Apoptotic events produced by valinomycin include phosphatidylserine membrane translocation, caspase-3 activation, and mitochondrial membrane depolarization. Due to the ion-selective nature of valinomycin, it is used in ion-selective electrodes.

References

Name : PENICILLIN G, Sodium salt
Catalog Number : N12272
Structure : syn: benzylpenicillin sodium salt, crystapen, novocillin, penilevel, Pen PCN
CAS: [69-57-8]
Molecular Weight : MW= 356.38
Properties: pH(6% in water, 25°C): 1.5
Loss on drying: 1.5%
Activity: 1500-1750U/mg
Storage Room temperature

- Penicillins

Contact your local distributor Uptima, powered by
uptima@interchim.com
Penicillin, a group of antibiotics derived from Penicillium fungi, are β-lactam antibiotics and are used in the treatment of bacterial infections caused by susceptible, usually Gram-positive, organisms. This includes penicillin G, procaine penicillin, benzathine penicillin, and penicillin V. They are the first drugs found effective against many previously serious diseases such as syphilis and infections caused by staphylococci and streptococci. Still widely used today, many types of bacteria are now resistant. Analogs includes ampicillin, which has a broader spectrum of activity than either of the original penicillins, the carbenicillin, ticarcillin and piperacillin, useful for their activity against Gram-negative bacteria, and the β-lactamase-resistant penicillins like flucloxacillin, dicloxacillin, and methicillin.

**Antibiotic activity**

The β-lactam moiety of penicillin G binds to the DD-transpeptidase enzyme, preventing thus the binding of peptidoglycan molecules in bacteria, weakening the cell wall of the bacterium and finally causing cytolysis. In addition, the build-up of peptidoglycan precursors triggers the activation of bacterial cell wall hydrolases and autolysins, which further digest the bacteria's existing peptidoglycan. Penicillin molecule, thanks to its small size penetrate deeply into the cell wall, in contrast to the other major class of cell wall synthesis inhibiting antibiotics. Penicillins block not only the division of bacteria, including cyanobacteria, but also the division of cyanelles, the glaucophytes, and the division of chloroplasts of bryophytes. In contrast, they have no effect on the plastids of the highly developed vascular plants.

**Legals**

<table>
<thead>
<tr>
<th>Name</th>
<th>STREPTOMYCIN G Sulfate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog Number</td>
<td>224968, 100 g</td>
</tr>
<tr>
<td>Structure</td>
<td>CAS: [69-57-8]</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>MW= 1457.38 g.mol-1</td>
</tr>
<tr>
<td>Store</td>
<td>-4°C (L)</td>
</tr>
</tbody>
</table>

Streptomycin Sulfate Binds 30S subunit of ribosome. It uses in cell culture from Gram-Positive and Gram-Negative bacteria.

**Guidelines for use**

Most common vectors, whether plasmid or phage DNA, carry genes encoding resistance to antibiotics and are identified by the ability of the host bacteria to grow in the presence of the antibiotic. Antibiotic solutions are usually added to freshly autoclaved media (after it has cooled to about 50°C). These antibiotic solutions can also be plated directly on the surface of an agar plate and spread evenly. Liquid media or agar plates containing antibiotics should be stored at 4°C for no longer than 30 days to maintain the drug’s effectiveness. Below is a table of common antibiotics for the selection of bacteria harboring resistant plasmids. Unless otherwise stated, all antibiotic solutions should be prepared in sterile distilled water and then stored at -20°C.

- Stock concentration: 30 mg/ml
- Working concentration: 30 µg/ml

**References**

- Jordan M.A. *et al.*, Slamf1, the NKT Cell Control Gene Nkt1, *J. Immunol.*, 178: 1618 - 1627 (2007) [Article](#)

Contact your local distributor Uptima, powered by uptima@interchim.com
Puromycin is a broad spectrum antibiotic that inhibits protein synthesis in both procaryotic and eucaryotic organisms. It is widely used as a selection agent for cells carrying the Pac resistance gene encoding puromycin N-acetyl-transferase.

Puromycin Dihydrochloride

**Name:** PUROMYCIN Dihydrochloride  
**Catalog Number:** 090901, 25mg  090902, 100mg  090903, 500mg  090904, 1g  
**CAS:** [58-58-2];  
**Merck Index Merck Index:** 13.8044.2001  
**Molecular Weight:** MW=544.43  
**Properties:**  
**Solubility:** 50mg/mL in water  
**Appearance:** White or off-white powder  
**Purity:** >99.99% (water: 8-9%)  
**Melting Point:** 165 - 172 °C  
**Storage:** –20°C (M)

A cephalosporin antibiotic, acts as an in bacterial cell wall synthesis. Effective against Gram-negative and Gram-positive bacteria. Resistant to β-lactamase.

**Name:** CEFOTAXIME, Na Salt  
**Catalog Number:** NC7202, 1 g  
**Structure:** CAS: [64485-93-4]  
**Molecular Weight:** MW= 477.5 g.mol⁻¹  
**Soluble:** Water (50mg/ml)  
**Store:** −4°C (L)

**Related / associated products and documents**

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>CAS#</th>
<th>Product #</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAFILOMYCIN A1</td>
<td>CAS [88899-55-2]</td>
<td>973092</td>
</tr>
<tr>
<td>KANAMYCIN Sulfate</td>
<td>CAS [25389-94-0]</td>
<td>308664</td>
</tr>
<tr>
<td>AMPICILLIN, Na Salt</td>
<td>CAS [69-52-3]</td>
<td>391961</td>
</tr>
<tr>
<td>NEOMYCIN Sulfate</td>
<td>CAS [1405-10-3]</td>
<td>423688</td>
</tr>
<tr>
<td>G418 SULFATE (Geneticin)</td>
<td>CAS [108321-42-2]</td>
<td>652495</td>
</tr>
</tbody>
</table>

PBS tablets, UP307157

See Product highlights, BioSciences Innovations catalogue and e-search tool.

Contact your local distributor Uptima, powered by

uptima@interchim.com
Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com.
Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask: Uptima / Interchim; Hotline: +33(0)4 70 03 73 06

Disclaimer: Materials from Uptima are sold for research use only, and are not intended for food, drug, household, or cosmetic uses. Uptima is not liable for any damage resulting from handling or contact with this product.