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Technical Datasheet

Ampicillin Solution

With 10mg/ml Ampicillin sodium salt in sterile tissue culture grade water

Product Code: A022

Product Description:

Molecular Weight: 371.39
Molecular Formula: $C_{16}H_{18}N_3NaO_4S$
CAS No: 69-52-3
Synonym: D(-) α-Aminobenzylpenicillin.Na

Ampicillin belongs to the penicillin group of b-lactam antibiotics. It differs from penicillin by the presence of an amino group. It inhibits bacterial cell-wall synthesis (peptidoglycan cross-linking) by inactivating transpeptidases on the inner surface of the bacterial cell membrane. This broad spectrum antibiotic is effective against Gram-positive and Gram-negative bacteria.

In cell culture, ampicillin is used as an antibacterial agent and as a selection agent to select transformed bacteria. Many common vectors carry genes encoding resistance to ampicillin and are identified by the ability of the host bacteria to grow in the presence of this antibiotic. Resistance is mediated by cleavage of β-lactam ring of ampicillin by β-lactamase.

In cell culture applications ampicillin sodium salt is generally used at a concentration of 100mg/L for antibacterial use. In ampicillin resistance studies, it is used at a concentration of 20-125µg/ml.

A022 is sterile filtered solution formulated to contain 10mg ampicillin per ml.

Directions:

Recommended use concentration is 10ml/L (for antibacterial applications) and 2 - 12.5ml/L (for resistance studies). Sensitive cell lines may react differently to this product. Hence it is recommended to determine optimum usage dose empirically for individual cell line.

Quality Control:

Appearance
Clear colorless solution.

pH
8.00 - 9.50

Osmolality in mOsm/Kg H_2O
40 - 80

Ampicillin conc
10 mg/ml

Antibiotic Sensitivity Test
Passes

Cultural Response

No toxicity to cells
Antibiotic Suscpetibility Test

Sterility
No bacterial or fungal growth is observed after 14 days of incubation, as per USP specifications.

Endotoxin Content
NMT 0.5EU/ml

Escherichia coli (as such)
zone of inhibition >20mm

Escherichia coli (10ml/L)
zone of inhibition >10mm

Staphylococcus aureus (as such)
zone of inhibition >30mm

Staphylococcus aureus (10ml/L)
zone of inhibition >20mm

Storage and Shelf Life:

Store at -30°C to -10°C. Repeated freezing and thawing should be avoided. Once thawed, remaining portion can be aseptically dispensed into sterile container for future use.
Shelf life of the product is 18 months.
Use before expiry date given on the product label.

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