Penicillinase

Cat. No.: P1523063 | Pack size: 1 EA / 10 × 1 EA | Storage: 2–8℃

Overview

Penicillinase, also known as Type I β-lactamase (EC 3.5.2.6), is capable of hydrolyzing the β-lactam ring of β-lactam antibiotics, thereby rendering them devoid of antimicrobial activity. This product is a recombinant penicillinase produced by genetic engineering technology. It is prepared by constructing a high-efficiency expression engineered strain for penicillinase, followed by fermentation and purification to obtain a product with high purity and high activity. The product features high substrate specificity. It can effectively hydrolyze β-lactam antibiotics, including Penicillin G, Ampicillin, Amoxicillin, Pivampicillin, Carbenicillin, Ticarcillin, Furbenicillin, Mezlocillin, etc.

Scope of Application

It is applicable to the sterility test and microbial limit test of raw materials and preparations of β-lactam antibiotics, namely the Sterility Test (General Principles of Volume IV, Chinese Pharmacopoeia 2025 Edition) and Microbial Limit Test (Appendices & General Principles of Volume IV, Chinese Pharmacopoeia 2025 Edition) as specified in the Chinese Pharmacopoeia. It can also be used as a reagent for sterility test specified in USP-NF General Chapters <71> Sterility Test (USP 29).

Method of Use

1. Membrane Filtration Method

(1) Dissolve one vial of the product in 1 mL of pre-cooled sterile water, then dilute to 1000 mL with sterile water to prepare the rinsing solution. Sterilize all required laboratory apparatus by appropriate methods and soak them in the rinsing solution for 10 minutes. Avoid vigorous shaking during dissolution and prevent the generation of excessive air bubbles.

(2) Take the specified amount of test sample, perform filtration in accordance with the specified procedure, and rinse the membrane filter with an appropriate volume of the rinsing solution prepared in step (1).

(3) Dilute another 1 mL of penicillinase with sterile water to 200 mL. Add 10 mL of this solution to each culture medium, and store the remaining solution at 2–8℃ for later use.

(4) Inoculate the membrane filter into the culture medium following the specified procedure.

2. Direct Inoculation Method

Take the specified amount of test sample (as stipulated by the Pharmacopoeia), mix well, add an appropriate volume of sterile penicillinase solution (as stipulated by the Pharmacopoeia), and

inoculate into each tube of culture medium. Alternatively, inoculate the test sample directly into the culture medium containing sterile penicillinase.

Specifications

Item	Specification
Product Name	Penicillinase, CAS No. 9001-74-5
Grade	ActiBioPure™, Bioactive, High Performance, Recombinant, Sterile, EnzymoPure™
Specifications & Purity	Bioactive, Recombinant, ActiBioPure™, High Performance, EnzymoPure™, sterile, ≥10 MU/EA; expressed in E. coli
Biochemical and Physiological Mechanisms	This protein is a beta-lactamase with substrate specificity for penicillins. The class A beta-lactamase family has a specific amino-acid numbering system, sometimes called Ambler or ABL numbering and often misspelt as Amber.
Bioactivity	≥10 MU/EA
Expression System	E. coli
Accession #	P00809
CAS	9001-74-5
Enzyme Commission Number	EC 3.5.2.6
Molecule Type	Enzyme
Concentration	≥10 MU/EA; expressed in E. coli
Storage	Store at 2–8°C
Shipped In	Wet ice
Stability and Storage	Store at 2–8°C long term (24 months). Upon receipt, it is recommended to aliquot.
Unit Definition	One activity unit is defined as the amount of enzyme required to hydrolyze 1 unit of penicillin G in 1 hour under conditions of pH 7.0 and 37°C.

Recommended Applications

Sterility testing and microbial limit testing of raw materials and preparations containing β-lactam antibiotics; hydrolysis and neutralization of penicillins during pharmacopoeial microbiological testing

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Limitations & Disclaimer

For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.

This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to verified businesses, institutions, and qualified professionals for research and development purposes.

Where the product or any component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for handling, storage, and disposal information.

Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the product for their specific application.

Aladdin product labels, SDS, COA, and approved specifications take precedence over this document. If product formulation, label, SDS, storage conditions, pack size, or quality specifications change, this document would be reviewed and reissued.