

## TS 263 G – $\beta$ LACTAMASE MIXTURE SUPPLEMENT (STERILE) W/ (>500 B I UNITS/VIAL ) & (>50 B II UNITS/VIAL)

### INTENDED USE

For inactivation of Penicillins and Cephalosporins of first, second, third, fourth generation and Carbapenems.

### PRODUCT EXPLANATION AND SUMMARY

$\beta$  Lactamase Mixture Supplement is a mixture of Penicillinases ( $\beta$  Lactamase I) and cephalosporinases ( $\beta$  Lactamase II) from *Bacillus cereus* 569/H9. The enzyme is presented as a freeze-dried powder containing buffer and zinc salt. Penicillinases and cephalosporinases are defined as a group of enzymes with varying specificity for hydrolysis of  $\beta$ -lactam compounds. The use of  $\beta$ -lactamase is specified by the US Pharmacopoeia (USP) in chapter 71 for monitoring of cephalosporin manufacturing facilities and sterility testing of bulk cephalosporins. USP has been harmonized with the European and Japanese pharmacopoeias.

There are four major uses of this preparation of enzymes.

#### 1. Testing sterility of blood culture:

$\beta$  Lactamase enzymes helps in inactivation of beta-lactam antibiotics in blood or other tissue samples prior to microbiological estimate of aminoglycosides or other non-lactam antibiotics and routine microbiological examination.

#### 2. Environmental monitoring of antibiotic manufacturing areas:

In manufacturing facilities where antibiotics are produced,  $\beta$ -lactamase enzymes such as penicillinase (penase) and cephalosporinase (Cephase) are contained in the monitoring media to inactivate  $\beta$ -Lactam antibiotics. Produced antibiotics must also be inactivated prior to sterility testing to allow for the detection of potential contaminants which are sensitive to the antibiotic. Also, help in Assessment of the susceptibility of new beta-lactam antibiotics to inactivation by lactamase.

#### 3. Testing for contamination of drugs by antibiotics:

$\beta$ -lactamase enzymes help to check contamination of drugs by antibiotic such non penicillin drug shall be tested for the presence of penicillin.

#### 4. Sterility Testing of Bulk Antibiotics:

US Pharmacopoeia (USP) Chapter 71 and EP Section 2.6 describes sterility testing of bulk antibiotic, which should be free from microbial contamination.

$\beta$ -Lactamase mixture supplement is the broad spectrum  $\beta$ -Lactamase which has been demonstrated to inactivate the following;

**Penicillins:** Amdinocillin, Amoxicillin, Ampicillin, Azlocillin, Benzylpenicillin, Carbenicillin, Cloxacillin, Flucloxacillin, Methicillin, Mezlocillin, Nafcillin, Oxacillin, Piperacillin, Ticarcillin.

**Cephalosporins:** Cefaclor, Cefadroxyl, Cefalexin, Cefaloridine, Cefalothin, Cefamandole, Cefazolin, Cefdinir, Cefixime, Cefonicid, Cefoperazone, Cefotaxime, Cefpodoxime, Cefprozil, Cefsulodin, Ceftazidime, Ceftiofur, Ceftizoxime, Ceftriaxone, Cefuroxime.

The  $\beta$ -Lactamase mixture supplement has also been demonstrated to inactivate Carbapenems.

### COMPOSITION

Ingredients	Concentration
Penicillinase ( $\beta$ Lactamase I)	> 500 IU activity
Cephalosporinase ( $\beta$ Lactamase II)	> 50 IU activity



(\*1 IU is defined as the amount of enzyme needed to hydrolyze 1 $\mu$ mole of Penicillin G (Penicillinase) or 1 $\mu$ mole of Cephalosporin C (Cephalosporinase) per minute at 25°C and pH 7.0. 1 IU of Penicillinase corresponds to 600 Levy Units or 75 Pollock Units or 91200 kersey Kinetic Units.)

### INSTRUCTION FOR USE

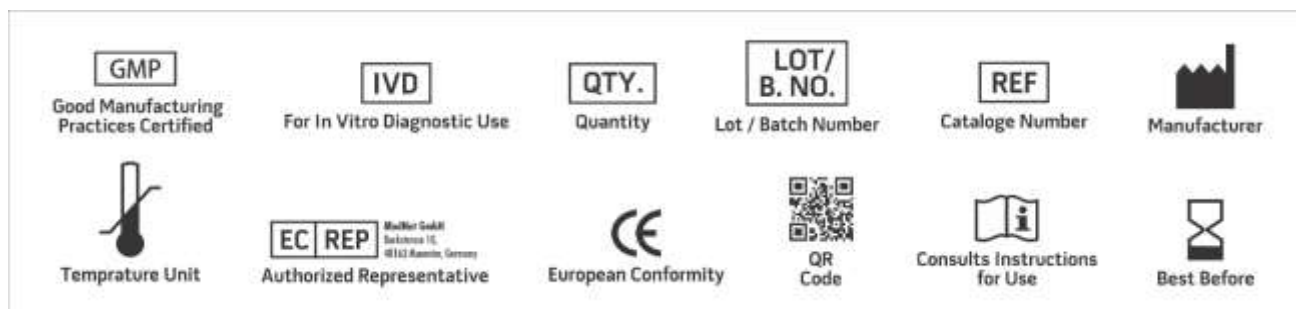
- Rehydrate the contents of 1 vial with 5 ml of sterile distilled water.
- After reconstitution, filter sterilize the solution with 0.2 micron syringe filter.
- Add appropriate amount of solution depending upon the specific application.
- Remaining solution can be stored at 2-8° C for 4 weeks.

### PHYSICAL CHARACTERISICS

The  $\beta$ -Lactamase vials are sterilized by gamma-irradiation. No detectable growth in Tryptone Soya broth at 20°C to 25°C or Thioglycollate at 30°C to 35°C for fourteen days.

### STORAGE

Store the supplement vials at 2-8°C in its original packaging. If opened and not completely utilized, be certain that aseptic dispensing procedures are followed to maintain sterility of the solution.  $\beta$ -lactamase vials are stable for 4 weeks at 2-8°C after reconstitution in water. Repeated freezing and thawing should be avoided. However, it is not advisable to store solution for long period and to keep container tightly closed to protect from contamination.



**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**  
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