Spectral Data - Bacitracin A®
Bacitracin A, EvoPure®
PRODUCT DATA SHEET

issue date 01/06/2020

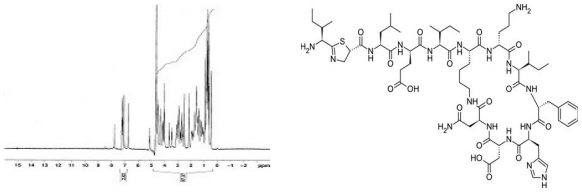
Product Name:	Bacitracin A, EvoPure®
Product Number:	B015
CAS Number:	22601-59-8
Molecular Formula:	$C_{66}H_{103}N_{17}O_{16}S$
Molecular Weight:	1422.71
Form:	EvoPure® Powder
Appearance:	White or off-white powder
Source:	*Bacillus subtilus*
Storage Conditions:	-20 °C
Description:	Bacitracin A, EvoPure® is a highly purified form of Bacitracin A. Bacitracin A is the most active and potent Bacitracin fraction. The EvoPure line of Bacitracins are bioactive, non-toxic congeners that have not shown toxicity to cell lines in eukaryotic cell culture. Bacitracin A, EvoPure can be used to study properties and characteristics of Bacitracin A separately from other Bacitracin compounds found in standard grade bacitracin. Bacitracin A, EvoPure can also be used as an analytical standard. For all Bacitracin products, click here.
Mechanism of Action:	Bacitracin prevents phosphorylation of bactoprenol, a transport protein which carries peptidoglycan components outside the cell membrane. Without the active phosphorylated bactoprenol, peptidoglycan synthesis cannot be completed and the cell lyses. Resistance to Bacitracin is understood to involve two mechanisms: A protein transporter (BcrABC) which pumps bacitracin out of the cell after it has entered, and via another protein (BacA) which provides the active phosphorylated bactoprenol from a different synthetic pathway.
Spectrum:	Bacitracin primarily targets the cell wall in members of the Gram-positive bacteria including *Streptococcus pyogenes* and *Staphylococcus aureus*.
Microbiology Applications	Bacitracin is a useful tool to differentiate between ß-hemolytic, group A Streptococci (*Streptococcus pyogenes*) and ß-hemolytic Streptococococci of other groups. Bacitracin can be used as a supplement in chocolate agar to facilitate the isolation of *Haemophilus influenzae*. Bacitracin can be used to study the regulatory network in *B. subtilis*. By systematically analyzing the Bacitracin stimulon, authors can pinpoint the loci induced by Bacitracin (Mascher et al 2003).

Plant Biology Applications

Tobacco hairy roots and cell suspensions were used in plant transformation studies to produce full length murine IgG1 monoclonal antibody. Bacitracin has been shown to prevent degradation of peptides and hormones in plant systems. Treatment with Bacitracin was not sufficient to prevent loss of antibody from the cultures, but improved the growth rates by up to 53%. (Sharp and Doran, 1999).

Technical Data:

HNMR Spectra



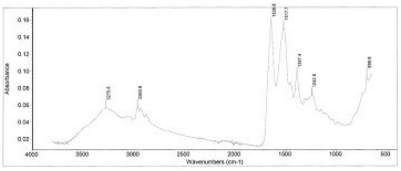
Click here to enlarge

Concentration: 3.6 mg in ca. 0.75 mL D_2O

Instrument: AV-500

Frequency: 500 MHz

FTIR Spectra



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Position: 698.8 Intensity: 0.0946

Position: 1242.8 Intensity: 0.0713

Position: 1387.4 Intensity: 0.0951

Position: 1517.7 Intensity: 0.150

Position: 1638.8 Intensity: 0.154

Position: 2960.8 Intensity: 0.0575

Position: 3270.8 Intensity 0.0570

References:

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