Specification

Bacitracin *BioChemica* A0623

Physical Description:	Solid
Product Code:	A0623
Product Name:	Bacitracin *BioChemica*
Specifications:	Activity: min. 60 IU/mg Solubility (1 %; H_2O): clear, yellow pH (1 %; H_2O; 20°C): 6.0 - 7.0 Loss on drying: max. 5 %
WGK:	1
Storage:	2-8°C
Origin:	from *Bacillus licheniformis*
Molecular Formula:	$C_{66}H_{103}N_{17}O_{16}S$
M:	1422.72 g/mol
CAS:	1405-87-4
EINECS:	215-786-2
CS:	29419000

Comment

Antibiotic\: The antibiotic bacitracin from *Bacillus licheniformis* is composed of several peptides (A, B, C, D, E, F_{1-3}). Bacitracin A is a cyclic dodecapeptide and with 70 % the most important component of bacitracin. For its bactericidal action, it requires divalent cations (e. g. zinc), forming stable complexes (1). It inhibits, like vancomycin, the biosynthesis of the cell wall, preferentially gram positive bacteria and cocci, by binding to bactoprenyl pyrophosphate.*Protease inhibitor*\: Bacitracin is employed as a protease inhibitor, too. The insulin-degrading activity of the glutathione-insulin transdehydrogenase is inhibited by 90 µM bacitracin by 50 % (2). The proline endopeptidase is inhibited by a concentration of 0.1 mM (3), the bacterial metalloendopeptidase pitrilysin by 0.5 - 0.7 mM (5). It was part of the protease inhibitor cocktail for the preparation of wheat germ extracts in a concentration of 100 µg/ml and in a reduced concentration of 10 µg/ml in the following purification steps (4).**Stability**\: Bacitracin is very stable as a dry substance at room temperature (moisture < 1 %) or at 37°C for at least 15 months. At higher temperatures (> 55°C) it is unstable. Bacitracin is readily soluble in water or alcohols (1 mg/ml) and forms stable salts with zinc. In aqueous solutions, it is quite stable at pH 4 - 5, but will be inactivated quite fast at pH 5 - 8 at 25°C. Above pH 8, it is completely unstable. A 10 % loss of activity in solutions is observed after approx. two months.

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