Product Information

Chitosanase from *Streptomyces griseus*

Catalog Number C9830
Storage Temperature –20 °C

EC 3.2.1.132
CAS RN 51570-20-8
Synonym: Chitosan N-acetylglucosaminohydrolase

Product Description
Chitosanase is an enzyme used for the lysis of cell walls of fungi belonging to the group Mucorales and found in several types of microorganisms.¹

Purified chitosanases have been classified into two types:
1. Enzymes hydrolyzing only chitosan.
2. Enzymes hydrolyzing both chitosan and carboxymethyl cellulose.

Chitosan is a β(1→4) linked glucosamine polymer, which, unlike chitin, contains only low percentages (10–30%) of N-acetyl substitution. It produces chito-oligosaccharides with a degree of polymerization (DP) of 2 to 6. Chitosanase can also hydrolyze chitosan to give heterogeneous hydrolysis products containing both D-glucosamine and N-acetyl-D-glucosamine. *Streptomyces griseus* excretes chitosanase into the culture broth when grown on a minimal medium in the presence of chitosan,²³ and the isolated enzyme is classified as the second type.

Chitosanase activity (EC 3.2.1.132) is the endohydrolysis of β(1→4) linkages between N-acetyl-D-glucosamine and D-glucosamine residues in partially deacetylated chitosan. This is not to be confused with chitinase activity (EC 3.2.1.14), which is the random hydrolysis of N-acetyl-β-D-glucosaminide β(1→4) linkages in chitin and chitodextrins. The enzyme from a *Bacillus* sp. is reported to cleave GlcN→GlcN bonds where there are at least 3 adjacent GlcN residues.⁴ Both the reducing and non-reducing end residues of the product are GlcN.

The product is supplied as a lyophilized powder containing potassium phosphate buffer salts.

Specific Activity: ≥50 units/mg protein
Contaminant activity: Chitinase (≤1.0 unit/mg protein)

Unit definition: One unit will release 1 µmole of glucosamine from chitosan per minute at pH 5.0 at 37 °C as measured in the fluorimetric assay of Osswald, et al. (1992).

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Prepare a stock solution by reconstituting a 10 unit vial with 300 µl of water. For long term solution storage reconstitute vial with 50% glycerol solution.

Dilute to working concentrations with a 0.1% BSA solution.

Storage/Stability
Store the product desiccated at –20 °C.

References

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