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ProductInformation

α-Mannosidase from Canavalia ensiformis (Jack bean)

Product Number **M 7257**
Storage Temperature 2-8 °C

Product Description

Enzyme Commission (EC) Number: 3.2.1.24
CAS Number: 9025-42-7
Molecular Weight: 220 kDa[1]
pI: 6.2[2]
Synonym: α-D-mannoside mannohydrolase

α-Mannosidase is an acid hydrolase which is located in plant vacuoles and is thought to be involved with the turnover of N-linked glycoproteins. The enzyme is a tetramer consisting of two subunits each of molecular weight 66 kDa and 44 kDa, and is a glycoprotein of the high mannose type and xylose containing complex type N-glycans.[1]

α-Mannosidase hydrolyzes terminal non-reducing a-D-mannose residues in α-D-mannosides. The K_m for the substrate p-nitrophenyl-α-D-mannoside is 2.5 mM, and the optimal pH with this substrate is 4.5. The following compounds also act as substrates: methyl-, benzyl-, and p-nitrophenyl α-mannosides, α-(1→2)-mannobiose, α-(1→2)-mannotriose, α-(1→2)-mannotetraose, α-(1→6)-mannobiose, mannosylrhamnose, glycoproteins, and glycolipids.[3,4]

The enzyme is inhibited by Ag^{+}, Hg^{2+}, mannono-(1→4)- and (1→5)-lactones.[4]

α Mannosidase may be used to determine the linkage of mannose in glycoproteins. It has been shown to cleave mannose from ovomucoid, orosomucoid, ovalbumin, and other glycoproteins.[5,6]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This enzyme is soluble in water (1 mg/ml), yielding a clear and colorless solution.

References

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3. Li, Y.T., Studies on the glycosidases in jack bean meal. I. Isolation and properties of α-mannosidase. J. Biol. Chem., **242(23)**, 5474-5480 (1967).
4. Li, Y.T., and Li, S.C., α-Mannosidase , β-N-acetylhexosaminidase, and β-galactosidase from jack bean meal. Meth. Enzymol., **XXVIII**, 699-702 (1972).
5. Watanabe, K., and Yasunobu, K.T., Carbohydrate content of bovine plasma amine oxidase and isolation of carbohydrate containing fragment attached to asparagine. J. Biol. Chem., **245**, 4612-4617 (1970).
6. Li, Y.T., Presence of α-D-mannosidic linkage in glycoproteins. J. Biol. Cem., **241**, 1010-1012 (1966).

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