



Product Information

α -Amylase from barley malt

Product Number **A 2771**
Storage Temperature 2-8 °C

Product Description

Enzyme Commission (EC) Number: 3.2.1.1
CAS Number: 9000-90-2
Synonym: Diastase

α -Amylase isolated from barley has a molecular weight of 45 kDa (gel filtration).¹ A molecular weight of 41 kDa has also been reported.² Barley has two amylase isozymes, type B with pI 5.9-6.6 and type A with pI 4.6-5.2.³

The pH range for activity of α -amylase isolated from barley is 5.5 to 8.0, with the pH optimum between 5 and 6.¹ This amylase undergoes rapid irreversible inactivation below pH 5.¹

α -Amylase hydrolyzes the α -(1,4) glucan linkages in polysaccharides of three or more α -(1,4) linked D-glucose units. The α -(1,6) bond is not hydrolyzed. Starch or glycogen, the "natural" substrates, can be replaced to a limited extent by low molecular weight compounds.⁴

Precautions and Disclaimer

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

Preparation Instructions

The product is soluble in water (1 mg/ml), yielding a clear, colorless solution.

Storage/Stability

α -Amylase is stable in 25 mM Tris-HCl, pH 7.5, with 100 mM KCl at 0 °C or at -20 °C for at least 9 days.⁵ Another recommended storage condition is in 1 mM phosphate, pH 7.3, with 30 mM CaCl₂ at -15 °C.

References

1. Thoma, J. A., et al, in The Enzymes, 3rd. ed., Vol. 5, Boyer, P. D., ed., Academic Press (New York, NY: 1971), pp. 115-189.
2. Rogers, J. C. and Milliman, C., Isolation and sequence analysis of a barley alpha-amylase cDNA clone. J. Biol. Chem., **258(13)**, 8169-8174 (1983).
3. Rogers, J. C. Two barley alpha-amylase gene families are regulated differently in aleurone cells. J. Biol Chem., **260(6)**, 3731-3738 (1985).
4. Enzyme Handbook, Barman, T.E., Springer-Verlag (New York: 1969) Vol. II, EC 3.2.1.1, p. 560.
5. The Enzyme Handbook, Vol. 4, Schomburg, D., and Salzmann, M., Springer-Verlag (Berlin Heidelberg: 1991), EC 3.2.1.1, p. 7.

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