

Product Information

α -Amylase from porcine pancreas

Catalog Number **A3176**
Storage Temperature 2–8 °C

CAS RN 9000-90-2
EC 3.2.1.1
Synonym: 4- α -D-glucan-glucanohydrolase

Product Description

α -Amylase isolated from porcine pancreas is a glycoprotein.¹ It is a single polypeptide chain of ~475 residues, containing 2 SH groups and four disulfide bridges and a tightly bound Ca²⁺ necessary for stability.^{2,3} Chloride ions are necessary for activity and stability.⁴ The pH range for activity is 5.5 to 8.0, with the pH optimum at 7.⁵

α -Amylase hydrolyzes the $\alpha(1\rightarrow4)$ glucan linkages in polysaccharides of three or more $\alpha(1\rightarrow4)$ linked D-glucose units. The $\alpha(1\rightarrow6)$ bond is not hydrolyzed. To a limited extent, low molecular weight polysaccharides can be substituted for the natural substrates, starch or glycogen.⁶

Molecular mass:⁷ 51–54 kDa

The crystal structure of α -amylase from porcine pancreas has been published.⁸

Unit Definition: One unit will liberate 1.0 mg of maltose from starch in 3 minutes at pH 6.9 at 20 °C.

Components

This product contains ~90% lactose by weight.

Preparation Instructions

Sigma-Aldrich does not run a separate solubility test for this product. One publication reports preparation of solutions of this product at 0.5 mg/mL in phosphate-buffered saline (20 mM sodium phosphate, pH 6.9, plus 6 mM NaCl).⁹

Storage/Stability

Store the product at 2–8 °C. Solutions of α -amylase in 25 mM Trizma®-HCl, pH 7.5, with 100 mM KCl are stable at 0 °C or –20 °C for at least 9 days. Solutions in 1 mM phosphate, pH 7.3, with 30 mM CaCl₂ may be stored at –15 °C.¹⁰

Precautions and Disclaimer

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

References

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