

## Product Information

### $\alpha$ -Amylase from porcine pancreas

PMSF treated, Type I-A

Catalog Number **A6255**

Storage Temperature 2–8 °C

CAS RN 9000-90-2

EC 3.2.1.1

Synonym:  $\beta$ -N-acetylglucosaminidase

### Product Description

$\alpha$ -Amylase isolated from porcine pancreas is a glycoprotein.<sup>1</sup> It is a single polypeptide chain of ~475 residues, containing 2 SH groups and four disulfide bridges and a tightly bound  $\text{Ca}^{2+}$  necessary for activity.<sup>2,3</sup> Chloride ions are necessary for activity and stability.<sup>4</sup> The pH range for activity is 5.5 to 8.0, with the pH optimum at 7.<sup>5</sup>

Molecular mass:<sup>6</sup> 51–54 kDa

$\alpha$ -Amylase from porcine pancreas exists as two equally active forms, I and II, comparable in molecular mass and amino acid composition, but with distinct isoelectric point values:<sup>7</sup>

- form I: pI of 5.95
- form II: pI of 5.25

The crystal structure of form I of  $\alpha$ -amylase from porcine pancreas has been reported.<sup>7</sup>

$\alpha$ -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. The natural substrates starch or glycogen can be replaced by low molecular mass compounds, to a limited extent.<sup>8</sup>

This product has been treated with Phenylmethane-sulfonyl fluoride (PMSF), and is offered as a suspension in 2.9 M NaCl containing 3 mM  $\text{CaCl}_2$ .

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

### Storage/Stability

Store the product at 2–8 °C. In general, solutions of  $\alpha$ -amylase in 25 mM Trizma<sup>®</sup> 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  $\text{CaCl}_2$  may be stored at –15 °C.<sup>9</sup>

### 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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5. Cozzone, P. *et al.*, *Biochim. Biophys. Acta*, **207(3)**, 490-504 (1970).
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9. *Enzyme Handbook*, Vol. 4, Schomburg, D., and Salzmann, M., Springer-Verlag (Berlin-Heidelberg, Germany), EC 3.2.1.1, p. 7 (1991).

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