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ProductInformation

α-Chymotrypsin
from bovine pancreas

Product Number **C 6423**
Storage Temperature 2-8 °C

Product Description

Enzyme Commission Number (EC): 3.4.21.1
CAS Number: 9004-07-3
Molecular Weight: 25 kDa[1]
pI: 8.75[2]

α-Chymotrypsin from bovine pancreas selectively catalyzes the hydrolysis of peptide bonds on the C-terminal side of tyrosine, phenylalanine, tryptophan, and leucine. A secondary hydrolysis will also occur on the C-terminal side of methionine, isoleucine, serine, threonine, valine, histidine, glycine, and alanine.[1]

This product is HPLC purified and has been tested for suitability in protein sequencing and peptide mapping. The suitability of the product is demonstrated by a 3 hour digestion of melittin (100 µg of melittin was digested with 10 µg of chymotrypsin for 3 hours at 30 °C in 0.11 ml containing 100 mM Tris HCl and 10 mM $CaCl_2$ at pH 7.8). During the digestion only the expected peptides are generated with no indication of any other major proteolytic activity.

α-Chymotrypsin is both activated and stabilized by Ca^{2+}. The enzyme is active in the presence of 0.1% SDS and 2 M guanidine hydrochloride. It is a serine protease and is inhibited by diisopropyl fluorophosphate (DFP), phenylmethanesulfonyl fluoride (PMSF), N-p-tosyl-L-phenylalanine chloromethyl ketone (TPCK), chymostatin, aprotinin, α_1-antitrypsin, and α_2-macroglobulin. α-Chymotrypsin is also completely inhibited by 10 mM Cu^{2+} and Hg^{2+}.[1]

Precautions and Disclaimer

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

Storage/Stability

Reconstitute the lyophilized product in 0.05 ml of 1 mM HCl with 2 mM $CaCl_2$ and store at -20 °C. Frozen aliquots are stable for approximately 1 week.

Procedure

For peptide digestion, use a ratio (w/w) of approximately 1:60 for chymotrypsin:peptide. Perform peptide digests in 100 mM Tris HCl containing 10 mM $CaCl_2$, pH 7.8, at 30 °C. Self digestion may occur if temperatures above 37 °C are used. A known peptide such as melittin should be used as a control for all experiments.

References

1. Enzymes of Molecular Biology, Vol. 16, Burrell, M. M., ed., Humana Press (Totowa, NJ: 1993), pp. 277-281.
2. Ui, N., Isoelectric points and conformation of proteins. II. Isoelectric focusing of alpha-chymotrypsin and its inactive derivative. Biochim. Biophys. Acta, **229(3)**, 582-589 (1971).

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