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Product Information

α-Chymotrypsin
from bovine pancreas

Catalog Number **C7762**
Storage Temperature –20 °C

CAS RN 9004-07-3
EC 3.4.21.1

Product Description

Molecular mass:[1] 25 kDa
pI:[2] 8.75

α-Chymotrypsin is a protein consisting of 241 amino acid residues. The molecule has three peptide chains: an A chain of 13 residues, a B chain of 131 residues, and a C chain of 97 residues.[3] 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]

α-Chymotrypsin is both activated and stabilized by Ca^{2+} ions. The enzyme is active in the presence of 0.1% SDS and 2 M guanidine hydrochloride.

α-Chymotrypsin 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. It is also completely inhibited by 10 mM Cu^{2+} and Hg^{2+}.[1]

Specific activity: ≥40 units/mg protein

Unit definition: One unit will hydrolyze 1.0 μmole of BTEE per minute at pH 7.8 at 25 °C.

Precautions and Disclaimer

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

Preparation Instructions

This enzyme is soluble in 1 mM HCl (2 mg/ml), yielding a clear solution.

Storage/Stability

Reconstitute in 1 mM HCl containing 2 mM $CaCl_2$, aliquot, and store at –20 °C. Autolysis will occur when stored at a higher pH. The presence of calcium is also a stabilizer.[1] Frozen aliquots retain activity for ~1 week.

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 α-chymotrypsin and its inactive derivative. Biochim. Biophys. Acta, **229(3)**, 582-589 (1971).
3. Hess, G. P., in The Enzymes, 3rd ed., vol. 3, Boyer, P. D., ed., Academic Press (New York, NY: 1971), pp. 213-248.

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