Native Bovine Trypsin

Cat. No. NATE-0721

Lot. No. (See product label)

Introduction

Description

Trypsin (EC 3.4.21.4) is a serine protease from the PA clan superfamily, found in the digestive system of many vertebrates, where it hydrolyses proteins. Trypsin is produced in the pancreas as the inactive protease trypsinogen. Trypsin cleaves peptide chains mainly at the carboxyl side of the amino acids lysine or arginine, except when either is followed by proline. It is used for numerous biotechnological processes. The process is commonly referred to as trypsin proteolysis or trypsinisation, and proteins that have been digested/treated with trypsin are said to have been trypsinized.

Applications

For trypsin digestion of peptides, use a ratio of about 1:100 to 1:20 for trypsin:peptide. The typical use for this product is in removing adherent cells from a culture surface. The concentration of trypsin necessary to dislodge cells from their substrate is dependent primarily on the cell type and the age of the culture. Trypsins have also been used for the re-suspension of cells during cell culture, in proteomics research for digestion of proteins and in various in-gel digestions. Additional applications include assessing crystallization by membrane-based techniques and in a study to determine that protein folding rates and yields can be limited by the presence of kinetic traps. Trypsin can be used to release adherent cells from tissue culture plates for passaging. Trypsin has been used in a study to assess the effects of macromolecular crowding on the structural stability of human α-lactalbumin. Trypsin has also been used in a study to investigate BN-PAGE analysis of Trichoderma harzianum secretome.

Synonyms

α-trypsin; β-trypsin; cocoonase; parenzyme; parenzymol; tryptar; trypure; pseudotrypsin; tryptase; tripcellim; sperm receptor hydrolase; Alpha-trypsin; Beta-trypsin; EC 3.4.21.4; Trypsin

Product Information

Species

Bovine

Source

Bovine pancreas

Form

lyophilized powder

EC Number

EC 3.4.21.4

CAS No.

9002-07-7

Molecular Weight

23.8 kDa

Activity

~10 ,000 BAEE units/mg protein; TPCK Treated, essentially salt-free, lyophilized powder, > 10 ,000 BAEE units/mg protein; > 2,500 USP units/mg solid; > 6 ,000 BAEE units/mg protein; essentially salt-free, lyophilized powder, > 9 ,000 BAEE units/mg protein

Buffer

Solubilizing trypsin should be done with a buffered salt solution containing no Ca2+ or Mg2+. This product is from pancreas sourced from New Zealand. It is soluble in 1 mM HCl at 1 mg/mL.

Pathway

Cell surface interactions at the vascular wall, organism-specific biosystem (from

Pathway	Cell surface interactions at the vascular wall, organism-specific biosystem (from REACTOME) Class A/1 (Rhodopsin-like receptors), organism-specific biosystem (from REACTOME) Common Pathway, organism-specific biosystem (from REACTOME) Complement and Coagulation Cascades, organism-specific biosystem (from WikiPathways) Complement and coagulation cascades, organism-specific biosystem (from KEGG) Complement and coagulation cascades, conserved biosystem (from KEGG)
Function	the weaker rapid interaction between prothrombin and membranes is the most important in vivo when considering the activation of prothrombin at the cell surface. novel pyranosic sulfated arabinan Ab1 exerts its anticoagulant activity on thrombin by a mechanism different from those found previously for other sulfated polysaccharides and glycosaminoglycans Exogenous delivery of thrombin enhances microvascular collateral development in response to ischemic insult, and accelerates tissue reperfusion.
Unit Definition	One BAEE unit will produce a ΔA253 of 0.001 per minute at pH 7.6 at 25°C using BAEE as a substrate. One BTEE unit = 320 ATEE units

Storage and Shipping Information

Storage	Solutions in 1 mM HCl are stable for 1 year in aliquots and stored at-20°C. The presence of Ca2+ will also diminish the self-autolysis of trypsin and maintain its stability in solution. Trypsin will also retain most of its activity in 2.0 M urea, 2.0 M guanidine HCl, or 0.1% (w/v) SDS.