

Product Information

Catalog #: UP158624 1g
Name: Soybean Trypsin Inhibitor
Other names: Kunitz Trypsin Inhibitor, Ti¹, STI, SBTI
CAS: [9035-81-8]; **MW: 20.1KDa**
Extinction Coefficient: EC_[280 nm, pH 7.6 buffer, 1%] = 9.94
pI: 4.5¹

Storage: +4°C (L)
Stable > 2 years. Protect from light and moisture

Uptima Soybean Trypsin Inhibitor (SBTI) is an inhibitor of the Trypsin enzyme, which is used in proteomics research, notably to digest proteins before analysis (Mass Spectrometry), and in cell culture applications. Other Trypsin Inhibitors are available on inquire (BPTI, SPTI).

Preparation Instructions

Trypsin inhibitor is soluble in water and phosphate buffers at 10 mg/ml, in balanced salt solutions (1 mg/ml) and in serum-free media.

Solutions at concentrations higher than 10 mg/ml may be hazy and have a yellow to amber color.

Storage/Stability

The product is stable as powder form for years. A 10 mg/ml sterile-filtered solution can be stored in suitable aliquots at 2-8 °C (no loss in trypsin inhibition activity shown in 3 years) or frozen aliquots at -20 °C (but freeze-thaw cycles should be avoided). This protein is reversibly denatured by short heating to 80 °C and irreversibly inhibited by heating to 90 °C³.

Procedure – cell culture (r)

After trypsinizing cells, resuspend cells in 1 ml trypsin inhibitor solution (1 mg/ml) for every ml of trypsin solution used for dissociation. Pellet the cells by centrifugation at 1000 rpm (200 x g) for 5 minutes. Remove as much of the supernatant as possible and resuspend the pellet in serum-free medium. Culture or analyse cells as desired.

Technical information

Soybean trypsin inhibitor (SBTI) was first isolated and crystallized by Kunitz². It is one of several such inhibitors found in soybeans¹⁴. It is a monomeric protein (or polypeptide) containing 181 amino acid residues in a single polypeptide chain crosslinked by two disulfide bridges^{4,5,6}. The molecular weight determined from the amino acid sequence is 20.1 kDa.

Soybean trypsin inhibitor inhibits trypsin, and to a lesser extent chymotrypsin⁸ and plasmin⁹. Soybean trypsin inhibitor will also inhibit proteases with mechanisms similar to trypsin. This product also inhibits plasma kallikrein and coagulation Factor Xa. However, this product does not inhibit metalloproteases, tissue-based kallikrein, acid proteases, or thio-proteases.

Soybean trypsin inhibitor forms a molar-molar complex with the protease active site. Upon formation of this complex, trypsin may cleave a single arginine-isoleucine bond on the inhibitor^{10,11}. Dissociation of this complex may yield a modified or native form of the inhibitor¹².

Inhibition is both reversible and pH dependent.

The optimal pH for trypsin binding is 8.0 with an association constant of greater than 10^9 at pH 8.0 and 1.5×10^3 to 2.6×10^4 at pH 3.6 to 4.4¹³.

Precautionary statement:

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

Related products – [Search](#), or [Inquire](#)

- Bovine Secretory Pancreatic Trypsin Inhibitor (SPTI, Kazal's TI).

The Kazal inhibitor is active on thrombin clotting activity but does not inhibit thrombin esterase activity nor does it act upon chymotrypsin, kallikrein, plasmin, urokinase or human trypsin.

- Bovine Basic Pancreatic Trypsin Inhibitor (BPTI)

BPTI is reported to be stable in acid or neutral milieu. Its isoelectric point is 10.5 (Trautschold et al. 1967).

- Ovomucoid

Ovomucoids are the glycoprotein protease-inhibitors of avian egg white. Inhibition specificities towards trypsin and Chymotrypsin have been reported with some differences.

- Lima Bean Trypsin Inhibitor (LBI)

LBI is an other reversible protease-inhibitor involving lys-ser peptide bond in Trypsin and leu-ser bond in Chymotrypsin.

Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : Uptima / Interchim; Hotline : +33(0)4 70 03 73 06

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