

Aprotinin (AP) Active Protein | AP active protein

Active Aprotinin (AP)

CATALOG # AAA161810	HOST 293F cell	APPLICATIONS Activity Assay, Cell Culture
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PRODUCT SYNONYMS

Aprotinin (AP); Active Aprotinin (AP); Aprotinin; AP active protein (eukaryotic; 293F cell); Bovine; BPTI; Trasylol; Pancreatic Trypsin Inhibitor; Basic protease inhibitor4; AP active protein

PRODUCT SPECIFICATIONS

Host	293F cell
Purity/Purification	Greater than 95% by SDS-PAGE
Form/Format	Freeze-dried powder; PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
Sequence	Arg36~Ala93
Applicable Applications for AP active protein	Activity Assay, Cell Culture
Species	Bovine
Expression System	Eukaryotic expression
Tag	N-terminal His Tag and C-terminal Fc Region of Human IgG1
Endotoxin Level	<1.0EU per 1ug (determined by the LAL method)
Isoelectric Point	9.1
Research Area	Enzyme & Kinase, Cardiovascular biology, Human gene deletion, Hepatology
Preparation and Storage	Store at 2-8 degree C for one month, -80 degree C for 12 months

IMAGES

Calculation

$$\text{AP activity (U/mg)} = \frac{\frac{0.10 - \Delta A_{405}/\text{min}}{0.10} \times 100\%}{50\%} / M$$

Where:

0.10 = trypsin activity of $\Delta A_{405}\text{nm/min}$

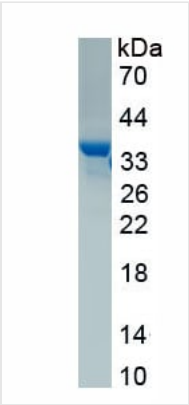
$\Delta A_{405}/\text{min}$ = inhibition of trypsin activity of AP

M = mass of enzyme

Bioactivity

Aprotinin (AP) is a competitive serine protease inhibitor. Reversibly binds to and blocks the enzymatic active site. Inhibits a range of serine proteases including trypsin, chymotrypsin, kallikrein and plasmin. Inhibits cytopathogenic effect of SARS-CoV-2 and double-stranded RNA formation in SARS-CoV-2-infected cells. The activity of recombinant bovine AP was measured by its ability to inhibit trypsin cleavage of a peptide substrate BAPNA in the assay buffer 200 mM Triethanolamine hydrochloride, 20 mM CaCl₂, pH 7.8. The reaction was performed in adding 20 ul 4 mg/mL trypsin diluted by 1mM HCl to 160 ul assay buffer and 20 ul 0.85% (w/v) NaCl and start the reaction by adding 100 ul of 1mg/ml BAPNA. Include a substrate blank containing 160 ul assay buffer, 20 ul 1mM HCl, 20 ul 0.85% (w/v) NaCl and 100 uL of 1mg/ml substrate. Rapidly mixing at 25 degree C, then read at 405 nm in kinetic mode for 5 minutes using a microplate reader controlling the $\Delta A_{405}\text{nm/min}$ =0.08-0.12. The 20 ul different concentrations of recombinant bovine AP was incubated with 20 ul 4 mg/mL trypsin in 160 ul assay buffer at 25 degree C for 10 minutes followed by adding 100 ul substrate, then read at 405 nm in kinetic mode for 5 minutes using a microplate reader. Under these conditions, the enzyme amount of 50% inhibition of trypsin activity per minute is defined as a unit. The specific activity of recombinant bovine AP is >2000 U/mg.

SDS-PAGE
Figure. SDS-PAGE



ADDITIONAL INFORMATION

Product Categories/Family for AP active protein	Active proteins
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NCBI AND UNIPROT INFORMATION

NCBI GI #	115114
UniProt Accession #	P00974
Molecular Weight	10,903 Da
NCBI Official Full Name	Pancreatic trypsin inhibitor
UniProt Protein Name	Pancreatic trypsin inhibitor
UniProt Gene Name	BPI
UniProt Synonym Gene Names	BPTI
UniProt Entry Name	BPT1_BOVIN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.