

# Aprotinin

## For biochemical and biotechnological use

**Description:** Aprotinin is a polyvalent reversible inhibitor of serine proteinases. Aprotinin is a polypeptide of 58 amino acids. Its active center is formed by 4 lysine groups, the tertiary structure shows a pear-shaped unit which fits exactly into the binding side of the serine proteinases.

## Biochemical and Biotechnological Application:

Aprotinin Pentapharm can be used for the isolation of proteins as well as for biopharmaceutical downstream purification to inhibit undesired proteolytic activity of serine proteases such as trypsin, plasmin, trypsinogen, urokinase, chymotrypsin, kallikrein, elastase and others. It can also be used during immunodiffusion, radioimmunoassay or enzyme-linked immuno assay procedures.

Aprotinin is used in chromogenic assays for the determination of antithrombin III, heparin,  $\alpha$ 2-macroglobulin, factor Xa and thrombin to inhibit disturbing kallikrein or plasmin activities.

**MW:** 6512

**K<sub>i</sub> constants:** The following table shows the inhibition of serine proteases:

Enzyme	K <sub>i</sub> [M]
Trypsin, bovine	$6.0 \cdot 10^{-14}$
Trypsinogen, bovine	$1.8 \cdot 10^{-6}$
Chymotrypsin, bovine	$9.0 \cdot 10^{-9}$
Plasmin, human	$2.3 \cdot 10^{-10}$
Kallikrein, pancreatic porcine	$1.0 \cdot 10^{-9}$
Kallikrein, urinary porcine	$1.7 \cdot 10^{-9}$
Kallikrein, urinary human	$0.9 \cdot 10^{-10}$
Kallikrein, plasma porcine	$3.0 \cdot 10^{-8}$
Elastase, leukocytes human	$3.5 \cdot 10^{-6}$
Urokinase, single chain	$27.0 \cdot 10^{-6}$
Urokinase, two chain	$25.0 \cdot 10^{-6}$

**Activity:** Aprotinin powder, lyophilized, approx. 6 Mio.KIU/g

**Storage:** May be used by the expiry date given on the label when stored unopened, protected from moisture, in the dark, 4 - 25°C. Avoid contamination of the reagents by micro-organisms. Shipment of product does not require cooling during the time of transportation.

**References:** Fritz H, Wunderer G. Biochemistry and applications of aprotinin, the kallikrein-inhibitor from bovine organs. *Arzneim Forsch./Drug. Res.* 1983; 33: 479-94.

Lottenberg R, Sjak SN, Fazleabs AT, Roberts RM. Aprotinin inhibits urokinase but not tissue-type plasminogen activator. *Thromb Res* 1988; 49: 549-56.

**Package size:** 1 g  
100 g

**Code:** 800277  
800348

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