Purdue Bioscience

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Certificate of Analysis

Catalog Number	BP22543
Product Name	Aprotinin

Physical and Chemical Properties

CAS No.	9087-70-1
Chemical Formula	C284H432N84O79S7
Molecular Weight	6511.44
Solubility	H2O: 100 mg/mL (15.36 mM, Need ultrasonic)
Storage	Powder: -20°C for 2 years In solvent: -80°C for 1 year
Chemical Structure OR Tested Image	

Product Information

Description	Aprotinin is a bovine pancreatic trypsin inhibitor (BPTI) inhibitor which inhibits trypsin and chymotrypsin with Kis of 0.06 pM and 9 nM, respectively.

In vitro	Aprotinin, a serine protease inhibitor isolated from bovine lung, is a complex protease inhibitor that is an antifibrinolytic, inhibits contact activation, and decreases the inflammatory response to cardiopulmonary bypass. Aprotinin inhibits trypsin (bovine, Ki= 0.06 pM), chymotrypsin (bovine, Ki= 9 nM), plasmin (human, 0.23 nM). Aprotinin is also a competitive protein inhibitor of NOS activity. It inhibits NOS-I and NOS-II with Ki values of 50 μM and 78 μM, respectively. Aprotinin significantly inhibits fibrinolysis with an IC50 of 0.16±0.05 μM.
In vivo	High dose aprotinin can reduce blood loss and transfusion requirements associated with primary cardiac procedures such as coronary artery bypass graft (CABG) or heart valve replacement surgery. Aprotinin inhibits thrombus formation in a dose-dependent manner. Aprotinin at a dose of 1.5 mg kg-1 (bolus) and 3 mg kg-1h-1 infusion (maintenance infusion) causes a tendency towards a reduction in bleeding time. Aprotinin significantly reduces the bleeding time starting at a dose of 3 mg kg-1 bolus plus 6 mg kg-1 h-1 showing a reduction of approximately 84%±2.9%. At the highest dose of 5 mg kg-1 and 10 mg kg-1 h-1, the strongest effects are observed. Aprotinin may affect tumor necrosis factor-alpha (TNF) levels. Soluble TNFRI levels are significantly increased following I/R in the aprotinin treated wild type mice and not detected in all TNFRInull mice.

Analytical Data

HPLC	Shows Min >99% purity
H-NMR	Consistent with structure
Stability and Solubility Advice	Information on product stability, especially in solution, has rarely been reported and in most cases we can only provide a general guideline. We recommend that once the stock solution has been prepared, it be stored in equal quantities in sealed vials and used within 1 month. Avoid repeated freezing and thawing cycles. Storage conditions for some special products should be referred to their storage details.

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