

## Specification

### Aprotinin *BioChemica*

**A2132**

<b>Physical Description:</b>	Solid
<b>Product Code:</b>	A2132
<b>Product Name:</b>	Aprotinin <i>BioChemica</i>
<b>Headline Comment:</b>	® registered trademark of Bayer AG
<b>Specifications:</b>	Assay (protein): min. 90 % Activity (KIU/mg): min. 5500 pH (1 %; H <sub>2</sub> O): 5.0 - 7.5 Water (K.F.): max. 6 %
<b>WGK:</b>	1
<b>Storage:</b>	2-8°C
<b>Origin:</b>	from bovine lung
<b>Molecular Formula:</b>	C <sub>284</sub> H <sub>432</sub> N <sub>84</sub> O <sub>79</sub> S <sub>7</sub>
<b>M:</b>	6511.52 g/mol
<b>CAS:</b>	9087-70-1
<b>CS:</b>	35040090
<b>Comment</b>	<p>Aprotinin was isolated independently from two laboratories and originally named <i>Bovine Pancreatic Trypsin Inhibitor</i> (BPTI) and <i>Trypsin-kallikrein Inhibitor</i> (TKI). It is a strongly basic protein (58 amino acids; ref. 1, 2). Aprotinin inhibits trypsin, chymotrypsin, kallikrein from different sources and plasmin. Its recommended working concentration is 2 - 10 µg/ml (approx. 1 µM). The working concentration given in ref. 3 (500 KIU/ml; approx. 10 µM) seems to be very high. <b>Stability:</b> Aprotinin may be stored indefinite at +4°C in lyophilized form. Dissolved in saline or buffer solutions (e. g. 10 mg/ml) at pH 5 - 8, it may be stored aliquoted at +4°C at least for one month or frozen at -20°C for several years. Thawed aliquots of the stock solutions should not be frozen again, because repeated freeze-thawing will lead to aggregation of the polypeptide aprotinin. Solutions with a pH value below 4 or above 9 should be used immediately. Protect from direct sunlight, UV light and reducing agents. It is stable in water, 70 % methanol, 70 % ethanol or 50 % acetone, too (2, 3). <b>Unit-Definition:</b> One Trypsin Inhibitor Unit (TIU) will decrease the activity of 2 trypsin units by 50 %, where one trypsin unit will hydrolyze 1.0 µmole Nα-benzoyl-DL-arginine p-nitroanilide (BAPNA) per minute at pH 7.8 and 25°C. 1 TIU (Trypsin Inhibitor Unit) corresponds to approx. 1300 KIU (Kallikrein Inhibitor Units) and 1 TIU corresponds to one Ph. Eur. Unit.</p>

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### **Bibliography**

(1) Kassell, B. & Laskowski, Sr., M. (1965) *Biochem. Biophys. Res. Com.* **20**, 463-468. The basic Trypsin inhibitor of bovine pancreas: V. The disulfide linkages. (2) Kassell, B. (1970) *Methods Enzymol.* **19**, 844-852 Bovine Trypsin-Kallikrein inhibitor (Kunitz Inhibitor, Basic Pancreatic Trypsin Inhibitor, Polyvalent Inhibitor from Bovine Organs). (3) Fritz, H. & Wunderer, G. (1983) *Drug Res.* **33**, 479-494 Biochemistry and application of Aprotinin, the Kallikrein inhibitor from bovine organs.