Antipain dihydrochloride

Catalog Number A 6191
Storage Temperature –20 °C

CAS RN: 37682-72-7

Synonyms: [1-carboxy-2-phenylethyl]-carbamoyl-L-arginyl-L-valyl-arginal dihydrochloride; N2-[[1-carboxy-2-phenylethyl]amino[carbonyl]-L-arginyl-N-[4-[(aminoiminomethyl)amino]-1-formylbutyl]-L-valinamide dihydrochloride
Molecular formula: C_{27}H_{44}N_{10}O_{6} • 2 HCl
Molecular weight: 677.62

Product Description
Antipain is isolated from a microbial source (various Streptomyces and Actinomycetes species). It is a reversible inhibitor of serine and cysteine proteases, including some trypsin-like serine proteases. Its action resembles leupeptin, but it inhibits plasmin less and cathepsin A more than does leupeptin. IC_{50} values (µg/mL):
- Papain: 0.16
- Trypsin: 0.26
- Cathepsin A: 1.19
- Cathepsin B: 0.59
- Cathepsin D: 125
- Plasmin: >93
- Chymotrypsin and pepsin: >250

It has also been reported to inhibit porcine Calpain I with K_i = 1.4 µM. Antipain has been used in studies demonstrating the role of proteases in the process of cell transformation. It became a common bioactive peptide used in the study of cellular signaling and in identifying newly purified proteases.

Preparation Instructions
Soluble in water (50 mg/ml), yielding a clear to slightly hazy, yellow solution. It is reportedly soluble in methanol, water or DMSO; less soluble in ethanol, butanol, or propanol; insoluble in benzene, hexane or chloroform.

Storage/Stability
Store at –20 °C. The product as supplied is stable for at least three years. Stock solutions in water or buffer are stable for 1 week at 2-8 °C and approximately one month at –20 °C. Avoid repeated freeze-thaw cycles. Dilute solutions should be stored on ice and kept for only one day. Because of the aldehyde group, solutions are subject to oxidation and racemization.

References