

# PRODUCT INFORMATION



## Pepstatin A

Item No. 9000469

CAS Registry No.: 26305-03-3

Formal Name: N-(3-methyl-1-oxobutyl)-L-valyl-L-valyl-(3S,4S)-4-amino-3-hydroxy-6-methylheptanoyl-N-[(1S)-1-[(1S)-2-carboxy-1-hydroxyethyl]-3-methylbutyl]-L-alaninamide

Synonyms: NSC 272671, Pepsin Inhibitor S 735A

MF:  $C_{34}H_{63}N_5O_9$

FW: 685.9

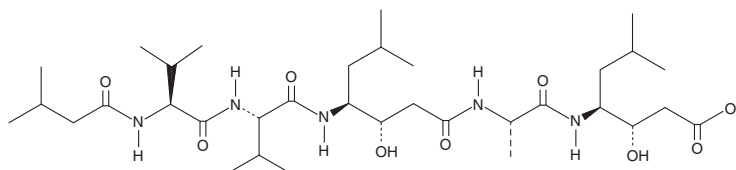
Purity:  $\geq 98\%$

Supplied as: A crystalline solid

Storage:  $-20^\circ\text{C}$

Stability:  $\geq 4$  years

Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Pepstatin A is supplied as a crystalline solid. A stock solution may be made by dissolving the pepstatin A in the solvent of choice. Pepstatin A is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of pepstatin A in these solvents is approximately 12.5 and 3.3 mg/ml, respectively.

### Description

Pepstatin A is a bacteria-derived pentapeptide inhibitor of aspartic proteases.<sup>1-3</sup> It inhibits pepsin, cathepsin D, and HIV protease ( $IC_{50}$ s =  $<0.005$ ,  $<0.04$ , and  $2 \mu\text{M}$ , respectively).<sup>2</sup> Pepstatin A is also an inhibitor of renin ( $IC_{50}$ s =  $0.32$  and  $15 \mu\text{M}$  for the porcine and human enzymes, respectively).<sup>3</sup> It inhibits HIV replication in infected H9 cells when used at a concentration of  $100 \mu\text{M}$  and inhibits autophagy in PC12 cells.<sup>3,4</sup> Pepstatin A ( $10$  and  $50 \text{ mg/kg}$ ) decreases gastric acid levels and completely prevents pylorus ulceration in pylorus-ligated rats.<sup>1</sup>

### References

1. Umezawa, H., Aoyagi, T., Morishima, H., *et al.* Pepstatin, a new pepsin inhibitor produced by actinomycetes. *J. Antibiot. (Tokyo)* **23(5)**, 259-262 (1970).
2. Sarubbi, E., Seneci, P.F., Angelastro, M.R., *et al.* Peptide aldehydes as inhibitors of HIV protease. *FEBS Lett.* **319(3)**, 253-256 (1993).
3. Eid, M., Evin, G., Castro, B., *et al.* New renin inhibitors homologous with pepstatin. *Biochem. J.* **197(2)**, 465-471 (1981).
4. Isahara, K., Ohsawa, Y., Kanamori, S., *et al.* Regulation of a novel pathway for cell death by lysosomal aspartic and cysteine proteinases. *Neuroscience* **91(1)**, 233-249 (1999).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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