

User Guide

Pepstatin, Water Soluble

Semisynthetic, >=95% Pure

SAE0216

Synonyms: Gly-Lys-Lys-pepstatyl, GKK pepstatyl, Pepsin inhibitor

Storage Temperature -20 °C

CAS 83487-84-7

Product Description

Pepstatin water soluble is a novel product that has the same protease inhibition activity as Pepstatin A, but with increased solubility in water and in physiological media. The increased water solubility provides new options for using this inhibitor in aqueous solutions. Pepstatin water soluble was first described by Austen *et al*¹. The published K_i for inhibition of Pepsin activity is the same as Pepstatin A. While Pepstatin A is only sparingly soluble in water or PBS, the water soluble Pepstatin product is soluble in PBS at concentration of 60 mg/mL¹.

Both Pepstatin A and Water soluble Pepstatin are potent inhibitors of aspartyl proteases. Both of them contain the unusual amino acid statine.

Pepstatin A is an inhibitor of acid proteases (aspartyl peptidases). It forms a 1:1 complex with proteases such as pepsin^{2,3}, renin^{2,3}, cathepsin D^{2,3}, bovine chymosin³, and protease B (*Aspergillus Niger*)⁴. Solubilized γ -secretase⁶ and retroviral protease⁷ are also inhibited by Pepstatin A.

Specifications

Appearance	White powder
Molecular formula	PepstatinA-Gly-Lys-Lys-OH
Molecular weight	999.29
Structure	^{1,2} Isovalery-Val-Val-Sta-Ala-Sta where Sta = statine = (3S,4S)-4-amino-3-hydroxy-6-methylheptanoic acid-Gly-Lys-Lys-OH

Reagent

Pepstatin water soluble is a semisynthetic product derived from microbial Pepstatin A by the addition of the tri-peptide Gly-Lys-Lys-OH.

Storage/Stability

Store this product at -20 °C (range of -25 °C to -10 °C). The product retains activity for at least 2 years when stored lyophilized at -20 °C.

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Solution of water soluble pepstatin can be prepared by reconstitution of the lyophilized material either in water or PBS.

The resuspended protein solution is stable for 1 week at 2-8 °C. For longer storage, aliquot the protein solution and store at -20 °C.

References

1. Austen, B.M., et al., *Bioscience Reports*, **2**, 427-432 (1982).
2. Umezawa, H., *Methods in Enzymology*, **45**, 678-695 (1976).
3. Marciniszyn, J., et al., *Adv. Exp. Med. Biol.*, **95**, 199 (1977).
4. Takahashi, K., and Chang, W. J., *J. Biochem. (Tokyo)*, **80 (3)**, 497-506 (1976).
5. Dunn, B.M., in *Proteolytic Enzymes: A Practical Approach*, R.J. Beynon and J.S. Bond, eds. (IRL Press, 1989), p. 63.
6. Li, Y.-M., et al., *Proc. Natl. Acad. Sci USA*, **97 (11)**, 6138-6143 (2000).
7. Katoh, I., et al., *Nature*, **329**, 654-565 (1987)

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