
Product Data Sheet

Product Name: Histatin 5 (TFA)

Cat. No.: GC36230

Chemical Properties

Cas. No.

Formula $C_{135}H_{196}N_{51}F_3O_{35}$

M.Wt 3150.31

Solubility H_2O : 100 mg/mL (31.74 mM; Need ultrasonic)

Storage Store at $-20^{\circ}C$

General tips For obtaining a higher solubility , please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Histatin 5 TFA inhibits the activity of the host matrix metalloproteinases MMP-2 and MMP-9 with IC₅₀s of 0.57 and 0.25 μM , respectively. IC₅₀: 0.57 μM (MMP-2), 0.25 μM (MMP-9)

Histatin 5 is a member of a family of low-molecular-weight salivary proteins secreted by parotid, submandibular, and sublingual glands. Using biotinylated gelatin as a substrate, Histatin 5 is found to inhibit the activity of the host matrix metalloproteinases MMP-2 and MMP-9 with IC₅₀s of 0.57 and 0.25 μM , respectively. To localize the domain responsible for this inhibition, three peptides containing different regions of Histatin 5 are synthesized and tested as inhibitors of MMP-9. Peptides comprising residues 1 to 14 and residues 4 to 15 of Histatin 5 show much lower inhibitory activities (IC₅₀s, 21.4 and 20.5 μM , respectively), while a peptide comprising residues 9 to 22 showed identical activity to Histatin 5 against MMP-9. Kinetic analysis of the inhibition of the Arg-gingipain reveals that Histatin 5 is a competitive inhibitor, affecting only the K_m with a K_i of 15 μM [1]. Histatin 5 is an inhibitor of mitochondrial respiration. The human salivary antifungal peptide Histatin 5 is taken up by *Candida albicans* cells and associates intracellularly with mitochondria. Histatin 5 inhibits respiration of isolated *C. albicans* mitochondria as well as the respiration of intact blastoconidia in a dose and time-dependent manner.

Caution: Product has not been fully validated for medical applications. For research use only.

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Histatin 5 at a concentration of 33 uM inhibits state 2 respiration[2].

- [1]. Gusman H, et al. Salivary histatin 5 is an inhibitor of both host and bacterial enzymes implicated in periodontaldisease. Infect Immun. 2001 Mar;69(3):1402-8. [2]. Helmerhorst EJ, et al. The human salivary peptide histatin 5 exerts its antifungal activity through the formation of reactive oxygen species. Proc Natl Acad Sci U S A. 2001 Dec 4;98(25):14637-42.

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