

Histatin 5

Cat. No.:	HY-P0273
CAS No.:	115966-68-2
Molecular Formula:	C ₁₃₃ H ₁₉₅ N ₅₁ O ₃₃
Molecular Weight:	3036.29
Sequence:	Asp-Ser-His-Ala-Lys-Arg-His-His-Gly-Tyr-Lys-Arg-Lys-Phe-His-Glu-Lys-His-His-Ser-His-Arg-Gly-Tyr
Sequence Shortening:	DSHAKRHHGYKRKFHEKHSHRGY
Target:	MMP
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Histatin 5 inhibits the activity of the host matrix metalloproteinases MMP-2 and MMP-9 with IC ₅₀ s of 0.57 and 0.25 μM, respectively.
IC₅₀ & Target	IC ₅₀ : 0.57 μM (MMP-2), 0.25 μM (MMP-9) ^[1]
In Vitro	<p>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 inhibits 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 (IC₅₀, 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 <i>Candida albicans</i> cells and associates intracellularly with mitochondria. Histatin 5 inhibits respiration of isolated <i>C. albicans</i> mitochondria as well as the respiration of intact blastoconidia in a dose and time-dependent manner. Histatin 5 at a concentration of 33 μM inhibits state 2 respiration^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [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.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA