



上海源叶生物科技有限公司
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产品名称: **Histatin 5**
CAS 号: **104339-66-4**
产品货号: **S80049**

生物活性:																			
Description	Histatin 5 抑制宿主基质金属蛋白酶 MMP-2 和 MMP-9 活性, IC50 分别为 0.57 和 0.25 μM.																		
IC50 & Target	IC50: 0.57 μM (MMP-2), 0.25 μM (MMP-9)[1]																		
In Vitro	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 Km with a Ki 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. Histatin 5 at a concentration of 33 μM inhibits state 2 respiration[2].																		
Solvent & Solubility	细胞实验: H2O Peptide Solubility and Storage Guidelines: - Calculate the length of the peptide. - Calculate the overall charge of the entire peptide according to the following table: <table><tr><th></th><th>Contents</th><th>Assign value</th></tr><tr><td>Acidic amino acid</td><td>Asp (D), Glu (E), and the C-terminal -COOH.</td><td>-1</td></tr><tr><td>Basic amino acid</td><td>Arg (R), Lys (K), His (H), and the N-terminal -NH₂</td><td>+1</td></tr><tr><td>Neutral amino acid</td><td>Gly (G), Ala (A), Leu (L), Ile (I), Val (V), Cys (C), Met (M), Thr (T), Ser (S), Phe (F), Tyr (Y), Trp (W), Pro (P), Asn (N), Gln (Q)</td><td>0</td></tr></table> - Recommended solution: <table><tr><th>Overall charge of peptide</th><th>Details</th></tr><tr><td>Negative (<0)</td><td> - Try to dissolve the peptide in water first. - If water fails, add NH₄OH (<50 μL). - If the peptide still does not dissolve, add DMSO (50-100 μL) to solubilize the peptide. </td></tr><tr><td>Positive (>0)</td><td> - Try to dissolve the peptide in water first. - If water fails, try dissolving the peptide in a 10%-30% acetic acid solution. - If the peptide still does not dissolve, try dissolving the peptide in a small amount of DMSO. </td></tr></table>		Contents	Assign value	Acidic amino acid	Asp (D), Glu (E), and the C-terminal -COOH.	-1	Basic amino acid	Arg (R), Lys (K), His (H), and the N-terminal -NH ₂	+1	Neutral amino acid	Gly (G), Ala (A), Leu (L), Ile (I), Val (V), Cys (C), Met (M), Thr (T), Ser (S), Phe (F), Tyr (Y), Trp (W), Pro (P), Asn (N), Gln (Q)	0	Overall charge of peptide	Details	Negative (<0)	- Try to dissolve the peptide in water first. - If water fails, add NH₄OH (<50 μL). - If the peptide still does not dissolve, add DMSO (50-100 μL) to solubilize the peptide.	Positive (>0)	- Try to dissolve the peptide in water first. - If water fails, try dissolving the peptide in a 10%-30% acetic acid solution. - If the peptide still does not dissolve, try dissolving the peptide in a small amount of DMSO.
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	Zero (=0)	1. Try to dissolve the peptide in organic solvent (acetonitrile, methanol, etc.) first. 2. For very hydrophobic peptides, try dissolving the peptide in a small amount of DMSO, and then dilute the solution with water to the desired concentration.
参考文献	[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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