HLF1-11

Cat. No.:	HY-106228
CAS No.:	183623-03-2
Molecular Formula:	$C_{56}H_{95}N_{25}O_{14}S$
Molecular Weight:	1374.58
Sequence Shortening:	GRRRRSVQWCA
Target:	Fungal; Bacterial; Glutathione Peroxidase
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	Sealed storage, away from moisture and light, under nitrogen Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

GRRRRSVQWCA

SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (72.75 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.7275 mL	3.6375 mL	7.2750 mL
	5 mM	0.1455 mL	0.7275 mL	1.4550 mL
	10 mM	0.0727 mL	0.3637 mL	0.7275 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

HLF1-11, a human lactoferrin-derived peptide, is a broad spectrum antimicrobial agent. HLF1-11 inhibits human MPO activity. HLF1-11 also directs GM-CSF-driven monocyte differentiation toward macrophages, and enhances immune responses[1][2].

In Vitro

hLF1-11 (1, 10, and 100 μg/mL) directs differentiation of monocytes toward a macrophage subset during granulocyte-macrophage colony-stimulating factor (GM-CSF)-driven monocytes differentiation[2].
hLF1-11 (0.5-250 μg/mL) inhibits human MPO activity[3].
hLF1-11 (100 μg/mL, 90 min) inhibits ROS induction induced by LPS in monocytes[3].
hLF1-11 (8-34 μM, 2 h) is active against fluconazole-resistant C. albicans[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

hLF1-11 (20 mg/kg, injected into the debrided tibial cavity) shows ability against MRSA osteomyelitis in rabbits[4].

hLF1-11 (40 μg/kg, i.v.) is active against C. albicans-infected mice[6].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rabbits inoculated with CFU MRSA[4]
Dosage:	20 mg/kg
Administration:	Injected into the debrided tibial cavity
Result:	Reduced bacterial load compared to controls, and reduced the radiological and histopathological score.

Animal Model:	Neutropenic mice challenged i.v. with C. albicans
Dosage:	40 μg/kg
Administration:	Intravenous injection (i.v)
Result:	Reduced serum TNFα and IL-6 in infected mice.

REFERENCES

[1]. Marty Wulferink, et al. The Peptide hLF1-11 as Broad Spectrum Antmicrobial Prophylaxis in HSCT Patients. Blood (2005) 106 (11): 3241.

[2]. van der Does AM, et al. Antimicrobial peptide hLF1-11 directs granulocyte-macrophage colony-stimulating factor-driven monocyte differentiation toward macrophages with enhanced recognition and clearance of pathogens. Antimicrob Agents Chemother. 2010 Feb;54(2):811-6.

[3]. van der Does AM, et al. The human lactoferrin-derived peptide hLF1-11 exerts immunomodulatory effects by specific inhibition of myeloperoxidase activity. J Immunol. 2012 May 15;188(10):5012-9.

[4]. Faber C, et al. Comparable efficacies of the antimicrobial peptide human lactoferrin 1-11 and gentamicin in a chronic methicillin-resistant Staphylococcus aureus osteomyelitis model. Antimicrob Agents Chemother. 2005 Jun;49(6):2438-44.

[5]. Lupetti A, et al. Candidacidal activities of human lactoferrin peptides derived from the N terminus. Antimicrob Agents Chemother. 2000 Dec;44(12):3257-63.

[6]. upetti A, et al. Human lactoferrin-derived peptide's antifungal activities against disseminated Candida albicans infection. J Infect Dis. 2007 Nov 1;196(9):1416-24.

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

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