LL-37, human

Cat. No.: HY-P1222

CAS No.: 154947-66-7

Molecular Formula: $C_{205}H_{340}N_{60}O_{53}$

Molecular Weight: 4493.26

Sequence: Leu-Leu-Gly-Asp-Phe-Phe-Arg-Lys-Ser-Lys-Glu-Lys-Ile-Gly-Lys-Glu-Phe-Lys-Arg-Ile-Val-Gln-Arg-Ile-Lys-Asp-Phe-Leu-Arg-Asn-Leu-Val-Pro-Arg-Thr-Glu-Ser

LLGDFFRKSK EKIGKEFKRI VQRIKDFLRN LVPRTES

Sequence Shortening: LLGDFFRKSKEKIGKEFKRIVQRIKDFLRNLVPRTES

Target: Bacterial

Pathway: Anti-infection

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)

SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (11.13 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.2226 mL	1.1128 mL	2.2256 mL
	5 mM	0.0445 mL	0.2226 mL	0.4451 mL
	10 mM	0.0223 mL	0.1113 mL	0.2226 mL

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

BIOLOGICAL ACTIVITY

Description

LL-37, human is a 37-residue, amphipathic, cathelicidin-derived antimicrobial peptide, which exhibits a broad spectrum of antimicrobial activity. LL-37, human could help protect the cornea from infection and modulates wound healing[1][2][3].

In Vitro

LL-37, human (1-20 μg/mL; 24 h) affects HCECs migration[2].

LL-37, human (0.0001-5 μg/mL;6-24 h) affects cytokine secretion in HCECs[2].

LL-37, human (1-100 μg/mL; 24 h) shows dose-dependently cytotoxic to HCECs at concentrations over 10 μg /mL[2].

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

Cell Migration Assay [2]

Cell Line:	Human corneal epithelial cell (HCEC)

Concentration:	1, 2.5, 5, 10 and 20 μg/mL
Incubation Time:	24 hours
Result:	Dose-dependently stimulated HCEC migration but showed no effect on cell proliferation.

Cell Viability Assay[2]

Cell Line:	Human corneal epithelial cell (HCEC)
Concentration:	0.0001, 0.001, 0.01, 0.1, 0.5, 1, and 5 μg/mL
Incubation Time:	6 and 24 hours
Result:	Dose-dependently increased IL-8, IL-6, IL-1β and TNF-α secretion at 6 and 24 hours in HCEC.

In Vivo

LL-37, human (0.4-2.0 mg/kg; intratracheal injection once) ameliorates MRSA-induced pneumonia of mice[3].

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

Animal Model:	6-8 week-old C57BL/6 mice with MRSA-induced pneumonia[3]
Dosage:	0.4, 0.8, 1.2, 1.6 and 2.0 mg/kg
Administration:	Intratracheal injection; 0.4-2.0 mg/kg once
Result:	Decreased IL-6 and TNF-α release to attenuated MRSA-induced pneumonia of testing mice.

CUSTOMER VALIDATION

- Commun Biol. 2022 Jun 8;5(1):559.

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REFERENCES

[1]. Hou M, et al. Antimicrobial peptide LL-37 and IDR-1 ameliorate MRSA pneumonia in vivo. Cell Physiol Biochem. 2013;32(3):614-23.

[2]. Dürr UH, et al. LL-37, the only human member of the cathelicidin family of antimicrobial peptides. Biochim Biophys Acta. 2006 Sep;1758(9):1408-25.

[3]. Huang LC, et al. Multifunctional roles of human cathelicidin (LL-37) at the ocular surface. Invest Ophthalmol Vis Sci. 2006 Jun;47(6):2369-80.

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