Lactoferrin (17-41) (acetate)

Cat. No.: HY-P1791B

Molecular Formula: $C_{143}H_{226}N_{46}O_{33}S_3$

Molecular Weight: 3183.82

Sequence: Phe-Lys-Cys-Arg-Arg-Trp-Gln-Trp-Arg-Met-Lys-Lys-Leu-Gly-Ala-Pro-Ser-Ile-Thr-Cys-Val-Arg-Arg-Ala-Phe (Disulfide bridge: Cys3-Cys20)

FKCRRWQWRMKKLGAPSITCVRRAF
(Disulfide bridge: Cys3-Cys20) (acetate salt)

Sequence Shortening: FKCRRWQWRMKKLGAPSITCVRRAF (Disulfide bridge: Cys3-Cys20)

Target: Fungal; Bacterial; Apoptosis

Pathway: Anti-infection; Apoptosis

Storage: Sealed storage, away from moisture and light

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)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 20 mg/mL (6.28 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.3141 mL	1.5704 mL	3.1409 mL
	5 mM	0.0628 mL	0.3141 mL	0.6282 mL
	10 mM	---	---	---

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2 mg/mL (0.63 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2 mg/mL (0.63 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2 mg/mL (0.63 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lactoferrin 17-41 (Lactoferricin B) acetate, a peptide corresponding to residues 17-41 of bovine lactoferrin, has antimicrobial activity against a wide range of microorganisms, including Gram-positive and Gramnegative bacteria, viruses, protozoa, and fungi. Lactoferrin 17-41 acetate has antitumor activities[1][2].

In Vitro

Lactoferrin 17-41 (Lactoferricin B) acetate has an MIC of 30 μg/ml against E. coli ATCC 25922[1].
Lactoferrin 17-41 acetate significantly stimulates apoptosis of HT-29 cells and displays cytotoxic activity on HT-29 cells[2].
Lactoferrin 17-41 acetate variously regulats transcription of genes involved in the p53 signaling pathway, such as PMAIP-1, TP5313, and SFN[2].
Lactoferrin 17-41 acetate can bind LPS from Gram-negative bacteria and that it can inhibit LPS induced cytokine response in human monocytic cells[1][3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HT-29 cells
Concentration:	50, 100, 200, 400, 800 or 1000 μg/mL
Incubation Time:	4, 12, 24 or 48 hours
Result:	More effective at inducing apoptosis at 400 μg/mL. Higher toxicity is shown at 800 μg/mL.

REFERENCES

[1]. Samuelsen Ø, et al. Anti-complement effects of lactoferrin-derived peptides. FEMS Immunol Med Microbiol. 2004 Jun 1;41(2):141-8.

[2]. Jiang R, et al. Bovine lactoferrin and lactoferricin exert antitumor activities on human colorectal cancer cells(HT-29) by activating various signaling pathways. Biochem Cell Biol. 2017 Feb;95(1):99-109.

[3]. Latorre D, et al. Reciprocal interactions between lactoferrin and bacterial endotoxins and their role in the regulation of the immune response. Toxins (Basel). 2010;2(1):54-68.

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