

Lactoferrin

Cat. No.:	HY-P3161
CAS No.:	936541-36-5
Target:	HSV
Pathway:	Anti-infection
Storage:	Sealed storage, away from moisture
	Powder -80°C 2 years
	-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

Lactoferrin

SOLVENT & SOLUBILITY

In Vitro	H ₂ O : ≥ 50 mg/mL * "≥" means soluble, but saturation unknown.
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BIOLOGICAL ACTIVITY

Description	Lactoferrin is a substance released by neutrophils. Lactoferrin is an orally active multifunctional iron binding glycoprotein. Lactoferrin prevents cell adhesion, growth and spreading of cell colonies. Lactoferrin also has antiviral activity and inhibits microbial and viral adhesion and entry into host cells. Besides, Lactoferrin has anti-inflammatory, immunomodulatory, and anti-cancer activities ^{[1][2][3]} .
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In Vitro	Lactoferrin (0-1 000 µg/mL, 7 days) inhibits epithelial cell (HaCaT) growth in a dose-dependent manner ^[1] . Lactoferrin (500 µg/mL, 12 days) inhibits the spreading and growth of HaCaT cell colonies ^[1] . Lactoferrin (1.41 µM and 0.12 µM for human and bovine Lactoferrins) inhibits HSV-1 infection in vero cells by 50% ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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In Vivo	Lactoferrin (recombinant human lactoferrin) (1,000 mg/kg, oral gavage, twice daily for 8 days) inhibits the growth of squamous cell carcinoma (O12) tumors in T cell-immunocompromised nu/nu mice by 80% ^[5] . Lactoferrin (Bovine lactoferrin) (100 and 200 mg/kg, oral gavage, for 30 consecutive days) shows protective effects in a rat model of sepsis-induced acute lung injury ^[6] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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Animal Model:	Squamous cell carcinoma model (O12 cell injected into the left flank of nu/numice) ^[5]
Dosage:	1,000 mg/kg
Administration:	oral gavage, twice daily for 8 days
Result:	Inhibited the tumor growth by 80%.

Animal Model:	Sepsis-induced acute lung injury rat model ^[6]
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Dosage:	100 and 200 mg/kg
Administration:	oral gavage, for 30 consecutive days
Result:	Reduced the wet/dry ratio of lung tissue by 30.7% and 61.3%, and lipid peroxidation by 22.3% and 67%, at concentrations of 100 and 200mg/kg. Reduced Inflammatory markers, neutrophils, lymphocytes and total cell count. Reduced MPO activity.

REFERENCES

- [1]. Pöllänen MT, et al. Lactoferrin impedes epithelial cell adhesion in vitro. J Periodontal Res. 1998 Jan;33(1):8-16.
- [2]. Berlutti F, et al. Antiviral properties of lactoferrin--a natural immunity molecule. Molecules. 2011 Aug 16;16(8):6992-7018.
- [3]. Cutone A, et al. Lactoferrin's Anti-Cancer Properties: Safety, Selectivity, and Wide Range of Action. Biomolecules. 2020 Mar 15;10(3):456.
- [4]. Marchetti M, et al. Lactoferrin inhibits herpes simplex virus type 1 adsorption to Vero cells. Antiviral Res. 1996 Mar;29(2-3):221-31.
- [5]. Varadhachary A, et al. Oral lactoferrin inhibits growth of established tumors and potentiates conventional chemotherapy. Int J Cancer. 2004 Sep 1;111(3):398-403.
- [6]. Han N, et al. Effect of bovine lactoferrin as a novel therapeutic agent in a rat model of sepsis-induced acute lung injury. AMB Express. 2019 Oct 31;9(1):177.
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Caution: Product has not been fully validated for medical applications. For research use only.

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