



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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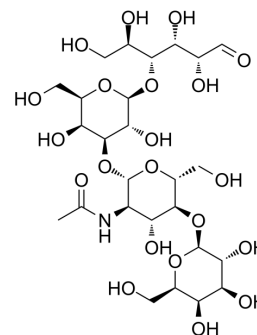
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## Lacto-N-neotetraose

<b>Cat. No.:</b>	HY-N9445
<b>CAS No.:</b>	13007-32-4
<b>Molecular Formula:</b>	C <sub>26</sub> H <sub>45</sub> NO <sub>21</sub>
<b>Molecular Weight:</b>	707.63
<b>Target:</b>	Endogenous Metabolite; TNF Receptor
<b>Pathway:</b>	Metabolic Enzyme/Protease; Apoptosis
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 125 mg/mL (176.65 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.4132 mL	7.0658 mL	14.1317 mL
	5 mM	0.2826 mL	1.4132 mL	2.8263 mL
	10 mM	0.1413 mL	0.7066 mL	1.4132 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Lacto-N-neotetraose (LNnT) is an endogenous metabolite. Lacto-N-neotetraose can inhibit TNF- $\alpha$  induced IL-8 secretion in immature epithelial cells. Lacto-N-neotetraose has anti-inflammatory activity, and can improve the wound closure<sup>[1][2][4]</sup>.

#### IC<sub>50</sub> & Target

Endogenous Metabolite<sup>[1]</sup>, TNFR1<sup>[2]</sup>.

#### In Vitro

Lacto-N-neotetraose (5 mg/mL, 24 h) induces IL-8 secretion in T84 cells<sup>[2]</sup>.  
 Lacto-N-neotetraose (5 mg/mL, 24 h) reduces TNF- $\alpha$  induced IL-8-secretion with 38% in FHs 74 Int cells<sup>[2]</sup>.  
 Lacto-N-neotetraose binds TNFR1 (Tumor necrosis factor receptor 1) with a K<sub>D</sub> value of 900  $\pm$  660 nM<sup>[2]</sup>.  
 Lacto-N-neotetraose (5 mg/mL, 24 h) attenuates TNF- $\alpha$  induced inflammation by TNFR1 ectodomain shedding in FHs 74 Int cells<sup>[2]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Lacto-N-neotetraose (100  $\mu$ M, intratracheal administration for 24 h) reduces the abundance of Streptococcus pneumonia in the lungs of pneumonia rabbits<sup>[3]</sup>.  
 Lacto-N-neotetraose (100/200  $\mu$ g, Intradermal injection, at 3, 7, 14, and 21 days post-surgery) increases the wound closure rate on day 7 post-wounding<sup>[4]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rabbit model of pneumonia <sup>[3]</sup>
Dosage:	100 µM
Administration:	Intratracheal administration for 24 h
Result:	Decreased by ~2 logs the bacterial load in the lung at 48 h after challenge. Eliminated the extensive, edematous right middle lobe lesion evident at 48 h in control animals.
Animal Model:	Mice with symmetric full-thickness wounds
Dosage:	100, 200 µg
Administration:	Intradermal injection, at 3, 7, 14, and 21 days post-surgery.
Result:	Exhibited better healing score, follicle formation, and lower epidermal thickness index (H&E staining).

## REFERENCES

- [1]. Xiaomin Dong, et al. CRISPRi-Guided Multiplexed Fine-Tuning of Metabolic Flux for Enhanced Lacto- N-neotetraose Production in *Bacillus subtilis*. *J Agric Food Chem*. 2020 Feb 26;68(8):2477-2484.
- [2]. Lianghui Cheng, et al. The Human Milk Oligosaccharides 3-FL, Lacto-N-Neotetraose, and LDFT Attenuate Tumor Necrosis Factor-α Induced Inflammation in Fetal Intestinal Epithelial Cells In Vitro through Shedding or Interacting with Tumor Necrosis Factor Receptor
- [3]. I Idänpään-Heikkilä, et al. Oligosaccharides interfere with the establishment and progression of experimental pneumococcal pneumonia. *J Infect Dis*. 1997 Sep;176(3):704-12.
- [4]. Behrouz Farhadhosseinabadi, et al. The in vivo effect of Lacto-N-neotetraose (LNnT) on the expression of type 2 immune response involved genes in the wound healing process. *Sci Rep*. 2020 Jan 22;10(1):997.

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

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