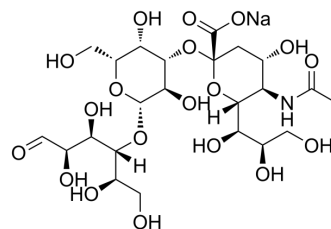


3'-Sialyllactose sodium

Cat. No.:	HY-108065A
CAS No.:	128596-80-5
Molecular Formula:	C ₂₃ H ₃₈ NNaO ₁₉
Molecular Weight:	655.53
Target:	NF-κB
Pathway:	NF-κB
Storage:	-20°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H₂O : 250 mg/mL (381.37 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	1.5255 mL	7.6274 mL	15.2548 mL
5 mM	0.3051 mL	1.5255 mL	3.0510 mL
10 mM	0.1525 mL	0.7627 mL	1.5255 mL

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

BIOLOGICAL ACTIVITY

Description

3'-Sialyllactose (3'-SL) sodium is a prebiotic, maintains immune homeostasis and exerts anti-inflammatory and anti-arthritis effects. 3'-Sialyllactose sodium is an ordinary carbohydrate with the lowest toxicity rating, it can be used for the research of inflammation^{[1][2][3]}.

In Vitro

3'-Sialyllactose sodium (0-250 μM; 24-36 h) promotes and restores Col2a1 synthesis and accumulates extracellular sulphated proteoglycan, and inhibits the effect of inflammatory cytokines^[1].
 3'-Sialyllactose sodium (0-250 μM; 24 h) activates the expression of Sox9 and inhibits NF-κB activation in chondrocytes^[1].
 3'-Sialyllactose sodium (0-5000 μg/plate) shows no mutagenic effect with no evident growth inhibition and deposition in all strains in the presence or absence of metabolic activation^[3].
 3'-Sialyllactose sodium (1250 μg/mL) induces no chromosomal aberrations and shows non-clastogenic effect in either the presence or absence of metabolic activation^[3].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.
 Western Blot Analysis^[1]

Cell Line:	Chondrocytes
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	Concentration:	0, 50, 100 and 250 μ M
	Incubation Time:	24-36 hours
	Result:	Dose-dependently increased Col2a1 transcript and protein levels, and restored Col2a1 expression in IL-1 β -treated chondrocytes. Dose-dependently inhibited IL-1 β -induced Mmp3, Mmp13 and Cox2 expression in chondrocytes. Reduced expression of Mmp3, Mmp13 and Cox2 induced by IL-6, IL-17 and TNF- α in chondrocytes.
In Vivo	3'-Sialyllactose sodium (10-100 mg/kg; p.o. three times a week for 6 weeks) protects mice against cartilage destruction from osteoarthritis ^[1] .	
	3'-Sialyllactose sodium (500, 1000 and 2000 mg/kg; oral administration; once) induces no micronuclei in the bone marrow cells of mice ^[3] .	
	3'-Sialyllactose sodium (oral administration; (500 to 1000 to 2000 mg/kg) every dose at 4-day intervals) shows the maximum tolerance dose (MTD) is greater than 2000 mg/kg in male and female beagle dogs ^[3] .	
	3'-Sialyllactose sodium shows a lethal dose (LD ₅₀) above 20 g/kg bw, the highest dose tested ^[3] .	
	MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	8-week-old male C57BL/6 mice with medial meniscus surgery ^[1]
	Dosage:	10, 50 and 100 mg/kg
	Administration:	Oral gavage; 10-100 mg/kg three times a week; for 6 weeks
	Result:	Effectively protected osteoarthritis mice against cartilage destruction by catabolic factor expression.

REFERENCES

- [1]. Jeon J, et al. 3'-Sialyllactose protects against osteoarthritic development by facilitating cartilage homeostasis. *J Cell Mol Med.* 2018 Jan;22(1):57-66.
- [2]. Kang LJ, et al. 3'-Sialyllactose prebiotics prevents skin inflammation via regulatory T cell differentiation in atopic dermatitis mouse models. *Sci Rep.* 2020 Mar 27;10(1):5603.
- [3]. Kim D, et al. Toxicological evaluation of 3'-sialyllactose sodium salt. *Regul Toxicol Pharmacol.* 2018 Apr;94:83-90.

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

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