



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

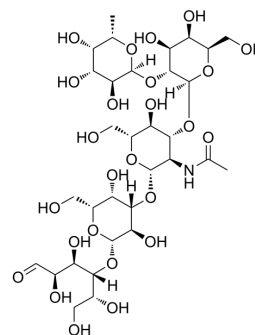
[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

## Lacto-N-fucopentaose I

<b>Cat. No.:</b>	HY-W019806
<b>CAS No.:</b>	7578-25-8
<b>Molecular Formula:</b>	C <sub>32</sub> H <sub>55</sub> NO <sub>25</sub>
<b>Molecular Weight:</b>	853.77
<b>Target:</b>	Endogenous Metabolite; CDK; Reactive Oxygen Species; Apoptosis; Enterovirus; Bacterial
<b>Pathway:</b>	Metabolic Enzyme/Protease; Cell Cycle/DNA Damage; Immunology/Inflammation; NF-κB; Apoptosis; Anti-infection
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### BIOLOGICAL ACTIVITY

<b>Description</b>	Lacto-N-fucopentaose I (LNFPI) is a human milk oligosaccharide (HMO), possessing antiviral and antibacterial activity. Lacto-N-fucopentaose I can reduce capsid protein VP1 to block virus adsorption, promote CDK2 and reduce cyclin E to recover cell cycle S phase block. Lacto-N-fucopentaose I inhibits ROS production and apoptosis in virus-infected cells. Lacto-N-fucopentaose I can also regulate intestinal microbiota to affect immune system development <sup>[1]</sup> .											
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite	CDK2/cyclinE										
<b>In Vitro</b>	<p>Lacto-N-fucopentaose I (25-3200 µg/mL; 48 h) exhibits certain cytotoxicity at 3200 µg/mL but no toxic reaction below 1600 µg/mL<sup>[1]</sup>.</p> <p>Lacto-N-fucopentaose I (25-1600 µg/mL; 14-18 h) can protect EV71-infected RD cells from death<sup>[1]</sup>.</p> <p>Lacto-N-fucopentaose I (100-400 µg/mL; 16 h) decreases markedly mRNA levels of VP1 and ROS production in EV71-infected RD cells at 400 µg/mL; leads to the recovery of EV71-induced S phase arrest in RD cells<sup>[1]</sup>.</p> <p>Lacto-N-fucopentaose I (100 and 200 µg/mL; 3 days) inhibits cell apoptosis in <i>Caenorhabditis elegans</i>; significantly decreases the levels of Egl-1, Ced-3 and Ced-4<sup>[1]</sup>.</p> <p>Lacto-N-fucopentaose I can reduce the abundance of <i>Sphingobacterium</i>, <i>Stenotrophomonas</i> and <i>Achromobacter</i>; can increase the abundance of <i>Micromonospora</i>, <i>Vibrio</i>, <i>Acidibacter</i>, <i>Gaiella</i>, <i>Devosia</i>, <i>Steroidobacter</i>, <i>Variibacter</i>, <i>Dactylosporangium</i>, <i>RB41</i>, <i>Pir4_lineage</i>, <i>Pirellula</i>, <i>Haliangium</i>, <i>Roseiflexus</i>, <i>Pedomicrobium</i>, and <i>Bradyrhizobium</i>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[1]</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>RD cells</td> </tr> <tr> <td>Concentration:</td> <td>25, 50, 100, 200, 400, 800, 1600 and 3200 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>48 h</td> </tr> <tr> <td>Result:</td> <td>Exhibited certain cytotoxicity at 3200 µg/mL but no toxic reaction below 1600 µg/mL.</td> </tr> </table> <p>RT-PCR<sup>[1]</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>RD cells (infected with EV71)</td> </tr> </table>		Cell Line:	RD cells	Concentration:	25, 50, 100, 200, 400, 800, 1600 and 3200 µg/mL	Incubation Time:	48 h	Result:	Exhibited certain cytotoxicity at 3200 µg/mL but no toxic reaction below 1600 µg/mL.	Cell Line:	RD cells (infected with EV71)
Cell Line:	RD cells											
Concentration:	25, 50, 100, 200, 400, 800, 1600 and 3200 µg/mL											
Incubation Time:	48 h											
Result:	Exhibited certain cytotoxicity at 3200 µg/mL but no toxic reaction below 1600 µg/mL.											
Cell Line:	RD cells (infected with EV71)											

Concentration:	100, 200 and 400 µg/mL
Incubation Time:	16 h
Result:	Decreased markedly mRNA levels of VP1 only at 400 µg/mL.
Apoptosis Analysis <sup>[1]</sup>	
Cell Line:	RD cells (infected with EV71)
Concentration:	100, 200 and 400 µg/mL
Incubation Time:	16 h
Result:	Decreased the rate of cells in early apoptosis to 10.9% ± 1.26% at 400 µg/mL, while the untreated EV71 group was 27.7% ± 2.13%. Significantly inhibited the activity of caspase-3, caspase-8 and caspase-9. Recovered the decreased mRNA expression of PAPR, NF-κB and Bcl-2 and properly regulated Bad and Fas into their normal levels.
Cell Cycle Analysis <sup>[1]</sup>	
Cell Line:	RD cells (infected with EV71)
Concentration:	100, 200 and 400 µg/mL
Incubation Time:	12 h
Result:	Rescued EV71-induced S phase arrest, which promoted the transition of the G1 phase to the S phase.

## REFERENCES

[1]. Gao X, et al. Fucosylated oligosaccharide Lacto-N-fucopentaose I ameliorates enterovirus 71 infection by inhibiting apoptosis. Food Chem X. 2022 Feb 4;13:100244.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA