

Product Data Sheet

Product Name: Chitoheptaose

Cat. No.: GB57664

Chemical Properties

Cas. No. 68232-35-9

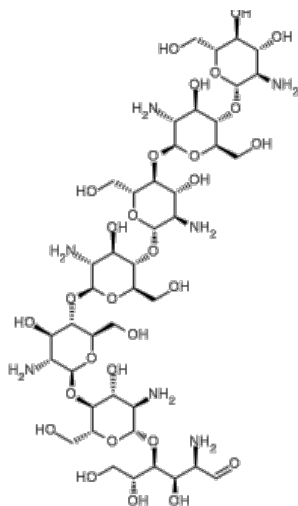
Formula $C_{42}H_{79}N_7O_{29}$ M.Wt 1146.11

Solubility Storage 2-8°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines RAW 264.7 macrophages

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

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Preparation Method	RAW 264.7 macrophages were plated in 96-well plates at a density of 5×10^5 cells per well and incubated for 24h. Then, 100μL of Chitoheptaose at varying concentrations (0-400μM) was added to the cells and incubated for an additional 24h.
Reaction Conditions	0-400μM; 24h
Applications	Chitoheptaose did not inhibit cell viability at concentrations up to 400μM.

References:

[1] Zhao M, Pang S, Gao Y, Li T, Jiang H. Effect of Chitooligosaccharides on TLR2/NF-κB Signaling in LPS-Stimulated RAW 264.7 Macrophages. *Molecules*. 2025;30(10):2226.

Background

Chitoheptaose is a chitosan oligosaccharide monomer with a degree of polymerization of 7. Chitoheptaose exhibits anti-inflammatory and antioxidant activities^[1].

In vitro, Chitoheptaose (0-400μM; 24h) exhibited no significant cytotoxicity in RAW 264.7 macrophages^[1]. Chitoheptaose (200μM; 30-48h) significantly inhibited LPS-induced NO production, reduced IL-6 and TNF-α secretion, and suppressed the overexpression of p-IκBα in RAW 264.7 macrophages^[1]. Chitoheptaose (200-800μg/mL; 24h) showed no significant cytotoxicity in HaCaT human keratinocytes, but exhibited certain toxicity at 1000μg/mL^[2].

References:

[1] Zhao M, Pang S, Gao Y, Li T, Jiang H. Effect of Chitooligosaccharides on TLR2/NF-κB Signaling in LPS-Stimulated RAW 264.7 Macrophages. *Molecules*. 2025;30(10):2226.

[2] Zhang J, Wang W, Mao X. Chitopentaose protects HaCaT cells against H₂O₂-induced oxidative damage through modulating MAPKs and Nrf2/ARE signaling pathways. *J Funct Foods*. 2020;72:104086.

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