Data Sheet (Cat.No.TSW-01161)

TargetMol

Chitosan (MW 30000)

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Chitosan (MW 30000) (Deacetylated chitin (MW 30000)) is a cationic linear polysaccharide derived from chitin, with a molecular weight of 30000. Known for its non-toxic nature, low allergenicity, biocompatibility, and biodegradability, chitosan finds extensive applications. Additionally, it exhibits antitumor, antibacterial, antifungal, and antioxidant properties.
Targets(IC50)	Antibacterial,Antifungal
In vitro	Chitosan (2 mg/mL; 48 hours; SKMEL28 and RPMI7951 cells) treatment leads to reduced growth potential. In RPMI7951 cells, chitosan (2 mg/mL; 48 hours) demonstrates a strong pro-apoptotic effect through the mitochondrial pathway and induces upregulation of pro-apoptotic molecules such as Bax, while downregulating anti-apoptotic proteins like Bcl-2 and Bcl-XL. Low molecular weight chitosan can penetrate bacterial cell walls, bind to DNA, and inhibit DNA transcription and mRNA synthesis. In contrast, high molecular weight chitosan binds to negatively charged components of bacterial cell walls, forming a waterproof layer that alters cell permeability and blocks transport into the cell. Additionally, chitosan finds applications in water treatment, wound healing materials, pharmaceutical excipients or drug carriers, obesity research, and as scaffolds in tissue engineering.
In vivo	In a preventative trial lasting 2 weeks on ICR mice with chemically induced precancerous colon lesions, those fed a diet containing high molecular weight chitosan (HMWC) showed a notable reduction in aberrant crypt foci formation compared to the control diet group. Upon extending the treatment to 6 weeks, mice fed with both low molecular weight chitosan (LMWC) and HMWC had fewer aberrant crypt foci than the control group.

Solubility Information

Solubility	H2O: < 1?mg/mL?(insoluble) 0.1 M HCl: 4 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

Gibot L, et al. Anticancer properties of chitosan on human melanoma are cell line dependent. Int J Biol Macromol. 2015;72:370-379.

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