Data Sheet (Cat.No.TSW-00856)

TargetMol

β-1,3-Glucan

Chemical Properties

CAS No. : 9051-97-2

Formula:

Molecular Weight:

Storage: 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	β-1,3-Glucan is a major constituent of all characterized fungal cell walls, comprising 30% to 80% of wall mass, and β-1,3-Glucan exists as a branched polymer in the cell wall, with branches connected via β-1,6 linkages, enabling investigation into fungal structural biology, cell wall assembly, immunomodulation, and antifungal therapeutic targeting.
Targets(IC50)	Others
In vitro	β-1,3-Glucan (0.5-5 mg/mL, 3 days) significantly promotes the proliferation of L-929 fibroblast cells [2].
In vivo	Adding 0.09% β-1,3-Glucan to feed and administering it orally twice daily for 8 consecutive weeks can effectively promote the growth and development of Larimichthys crocea, enhance its innate immune function, and improve its resistance to Vibrio harveyi infection [1]. Administering β-1,3-Glucan either orally (20 mg/kg/day for 14 consecutive days) or via subcutaneous injection (2 mg/kg/day for 3 consecutive days) can promote blood pressure recovery in a rat endotoxemia model, alleviate liver and kidney function damage in the model animals, and regulate cytokine levels in vivo [3]. For a rat sepsis model induced by cecal ligation and puncture (CLP), intramuscular injection of 2 mg/kg β-1,3-Glucan immediately after surgery and again 4 hours post-surgery can significantly improve the survival rate of the model rats, alleviate acute lung injury symptoms, and inhibit the release of pro-inflammatory cytokines [4]. Administering 150 mg/kg β-1,3-glucan orally once daily for 7 consecutive days to adult male Balb/c mice can reverse the immunosuppressive state induced by Aflatoxin B1, increase the proportion of lymphocyte subsets, and elevate the expression levels of multiple cytokines [6].

Solubility Information

Solubility	DMSO: 4 mg/mL,Sonication and heating are recommended. H2O: 30 mg/mL,when pH is adjusted to 12 with 1M NaOH. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

Ai Q, et al. Effects of dietary beta-1, 3 glucan on innate immune response of large yellow croaker, Pseudosciaena crocea. Fish Shellfish Immunol. 2007 Apr;22(4):394-402.
Son H J, et al. Effects of β-glucan on proliferation and migration of fibroblasts. Current Applied Physics, 2005, 5(5): 468-471.
Sandvik A, et al. Oral and systemic administration of beta-glucan protects against lipopolysaccharide-induced shock and organ injury in rats. Clin Exp Immunol. 2007 Apr;148(1):168-77.
Bedirli A, et al. Beta-glucan attenuates inflammatory cytokine release and prevents acute lung injury in an experimental model of sepsis. Shock. 2007 Apr;27(4):397-401.
Torello CO, et al. β-1,3-Glucan given orally modulates immunomyelopoietic activity and enhances the resistance of tumour-bearing mice. Clin Exp Pharmacol Physiol. 2012 Mar;39(3):209-17.
Bakheet SA, et al. β-1,3-Glucan reverses aflatoxin B1-mediated suppression of immune responses in mice. Life Sci. 2016 May 1;152:1-13.