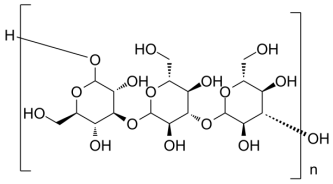
Laminaran

Cat. No.:	HY-119109		
CAS No.:	9008-22-4		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	H_2O : 100 mg/mL (Need ultrasonic) DMSO : 100 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Laminaran is an β-1-3-glucan and a typical ligand for Dectin-1 from Eisenia Bicyclis, has potent immunomodulating, radioprotective, and anticancer activities[1]. Laminaran is made up of β (1→3)-glucan with β (1→6)-branches and can be catalyzed by enzymes such as laminarinase (EC 3.2.1.6) that breaks the β (1→3) bonds[2]. Laminaran is a promising immune stimulatory molecule for use in cancer immunotherapy[3].
In Vitro	Laminaran (100-800 μg/mL; 24 hours) is not cytotoxic against normal epidermal cells JB6 Cl41 and human melanoma cells SK-MEL-28, the percentage of inhibition of living cells number is less than 15 % at concentrations range up to 800 μg/mL after 24 h of treatment[1]. Laminaran (200 μg/mL; 24-72 hours)does not cause any growth inhibition of SK-MEL-28 cells after 24 and 48 h of treatment, but decreases cells proliferation by 36 % after 72 h of treatment[1]. Laminaran (25-50 μg/mL; 24 hours) at low concentration does not influence the phosphorylation of c-Raf (Ser259), ERK1/2 (Tyr202/Tyr204), and MEK1/2 (Ser 221) kinases as well as total expression level of investigated proteins. But decreases p-MEK, p-ERK1/2 at 50 μg/mL[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Viability Assay[1]

Cell Line:	JB6 Cl41 and SK-MEL-28 cells
Concentration:	100, 200, 400, and 800 μg/mL
Incubation Time:	24 hours

Result:	Showed no cytotoxic against normal epidermal cells JB6 Cl41 and human melanoma cells SK-MEL-28.

Cell Proliferation Assay[1]

Cell Line:	SK-MEL-28 cells
Concentration:	200 μg/mL
Incubation Time:	24 hours
Result:	Decreased cell proliferation at 72 hours.

Western Blot Analysis[1]

Cell Line:	SK-MEL-28 cells
Concentration:	25 μg/mL; 50 μg/mL
Incubation Time:	24 hours
Result:	Inhibited phosphorylation of c-Raf, MEK1/2, and ERK1/2 kinases.

In Vivo

Laminaran (intravenous injection; 12.5, 25, and 50 mg/kg; 21 days) and OVA (50 μg) combination significanly decreases the tumor masses when it compares with the PBS-, OVA-, and laminarin-treated mice[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice injected s.c. with B16-OVA cells[3]
Dosage:	12.5, 25, and 50 mg/kg; 21 days
Administration:	Intravenous injection
Result:	Prevented B16-OVA tumor growth by inducing Ag-specific immune responses.

REFERENCES

[1]. Malyarenko OS, et al. Laminaran from brown alga Dictyota dichotoma and its sulfated derivative as radioprotectors and radiosensitizers in melanoma therapy.Carbohydr Polym. 2019 Feb 15;206:539-547.

[2]. Laminaran

[3]. Song K, et al. Laminarin promotes anti-cancer immunity by the maturation of dendritic cells.Oncotarget. 2017 Jun 13;8(24):38554-38567.

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