

Fuoidan

Cat. No.:	HY-132179		
CAS No.:	9072-19-9		
Target:	Glucosidase		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month

Fuoidan

SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 5 mg/mL (ultrasonic and warming and heat to 60°C) DMSO : 2 mg/mL (ultrasonic and warming and heat to 60°C)
In Vivo	1. Add each solvent one by one: PBS Solubility: 5 mg/mL (Infinity mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description	Fuoidan, a biologically active polysaccharide, is an efficient inhibitor of α -amylase and α -glucosidase. Anticoagulant, antitumor, antioxidant and antisteatotic activities ^[1] .							
In Vitro	<p>Fuoidan is a biologically active polysaccharide found in great abundance in brown marine algae^[1]. Fuoidan extracted from <i>A. nodosum</i> is a more potent inhibitor of α-glucosidase, with an IC₅₀ ranging from 0.013 to 0.047 mg/mL, than the inhibition by Fuoidan extracted from <i>F. vesiculosus</i> (IC₅₀=0.049 mg/mL). Fuoidan extracted from <i>F. vesiculosus</i> does not inhibit α-amylase activity, while Fuoidan from <i>A. nodosum</i> decreases α-amylase activity by 7-100% at 5 mg/mL depending upon the algae harvest period. Fuoidan from <i>A. nodosum</i> inhibits α-amylase with an IC₅₀ of 0.12-4.64 mg/mL^[1].</p> <p>Fuoidan is a fucose-rich sulfated polysaccharide typically found in the cell wall of marine algae but also recently isolated from terrestrial sources. Fuoidan exhibits an attractive therapeutic potential against a wide array of metabolic diseases associated with oxidative stress^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>							
In Vivo	<p>Fuoidan (single injection of 25 mg/kg/body) does not inhibit tumor cell proliferation, while three-time injections of 10 mg/kg/body weight significantly reduces tumor growth and metastasis^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>Mice^[3]</td> </tr> <tr> <td>Dosage:</td> <td>10-400 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Intraperitoneal injection; followed by total-body irradiation</td> </tr> </table>		Animal Model:	Mice ^[3]	Dosage:	10-400 mg/kg	Administration:	Intraperitoneal injection; followed by total-body irradiation
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Result:

The mice injected with 100 mg/kg showed the best survival rate at 30 days post-irradiation.

CUSTOMER VALIDATION

- J Transl Med. 2024 Feb 15;22(1):155.

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REFERENCES

- [1]. Kyung-Tae Kim, et al. Alpha-amylase and alpha-glucosidase inhibition is differentially modulated by fucoidan obtained from *Fucus vesiculosus* and *Ascophyllum nodosum*. *Phytochemistry*. 2014 Feb;98:27-33.
- [2]. Zeinab El Rashed, et al. Antioxidant and Antisteatotic Activities of Fucoidan Fractions from Marine and Terrestrial Sources. *Molecules*. 2021 Jul 24;26(15):4467.
- [3]. Farzaneh Atashrazm, et al. Fucoidan and cancer: a multifunctional molecule with anti-tumor potential. *Mar Drugs*. 2015 Apr 14;13(4):2327-46.
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Caution: Product has not been fully validated for medical applications. For research use only.

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