

Product Data Sheet

Product Name: Fucoidan

Cat. No.: GC16236

Chemical Properties

Cas. No. 9072-19-9

Chemical Name (2S,3S,4S,5S,6R)-4-hydroxy-5-methoxy-2,6-dimethyltetrahydro-2H-pyran-3-yl hydrogen sulfate

SMILES C[C@]1([H])[C@@H](OC)[C@H](O)[C@H](OS(O)(=O)=O)[C@H](C)O1

Formula $(C_6H_9O_3SO_3)_n$ M.Wt

Solubility Water: 4.8mg/ml Storage Store at RT

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



Background

Fucoidan, a type of complex carbohydrate called a polysaccharide, is found in many forms of brown seaweed. Fucoidan has a variety of biological activities, including anticancer, antiviral, neuroprotective, and immune-modulating effects. It has been reported that fucoidan enhances the activities of natural killer (NK) cells which play a vital role in anti-cancer activity.

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

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In vitro: Fucoidan triggered apoptosis of PC-3 cells, human prostate cancer cells, via evoking intrinsic and extrinsic signaling pathways in a dose-dependent fashion, which indicated that fucoidan could dose-dependently block the growth of PC-3 cells. The activation of apoptosis induced by fucoidan was involved in the inactivation of p38 MAPK and phosphatidylinositol 3-kinase (PI3K) /Akt, and the activation of extracellular signal-regulated kinase mitogen-activated protein kinase (ERK1/2 MAPK) [1].

In vivo: Female Balb/c mice bearing breast cancer were intraperitoneally injected with fucoidan at 10 mg/kg body weight every two days for 20 days. Fucoidan decreased the tumor volume and the tumor weight in Balb/c mice. Additionally, fucoidan triggered apoptosis, which indicated that fucoidan could exert a strong antitumor effect on breast cancer model. Compared with control group, fucoidan dampened angiogenesis in tumor tissue via inducing a remarkable decrease in intratumoral vascular endothelial growth factor expression and inhibited lung metastasis of breast cancer [2].

References:

- [1]. Boo, H., Hong, J., Kim, S., Kang, J., Kim, M., & Kim, E. et al. The Anticancer Effect of Fucoidan in PC-3 Prostate Cancer Cells. *Marine Drugs*. 2013; 11(8): 2982-2999.
- [2]. Xue, M., Ge, Y., Zhang, J., Wang, Q., Hou, L., & Liu, Y. et al. Anticancer Properties and Mechanisms of Fucoidan on Mouse Breast Cancer In Vitro and In Vivo. *Plos ONE*. 2012; 7(8). e43483.

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