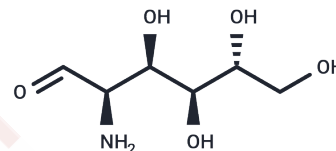


Glucosamine

Chemical Properties

CAS No. :	3416-24-8
Formula:	C ₆ H ₁₃ NO ₅
Molecular Weight:	179.17
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	Glucosamine (Chitosamine) is a natural product. Glucosamine is used as a dietary supplement. Glucosamine has pharmacological effects on cartilage and chondrocytes in osteoarthritis when used externally. Glucosamine regulates sugar metabolism. Glucosamine reduces the activity of glucoskinase in pancreatic islet homogenate.
Targets(IC50)	MMP,NF-κB,Reactive Oxygen Species,HIF/HIF Prolyl-Hydroxylase,Endogenous Metabolite,CFTR,Autophagy,ROS,TNF
In vitro	METHODS: YD-8 human tongue cancer cells were treated with Glucosamine (10 mM) for 4 hours, and the phosphorylation levels of related proteins were detected by western blot. RESULTS: Glucosamine inhibits HIF-1α and reduces the phosphorylation of p70S6K and S6 translation-related proteins. [1] METHODS: Renal cells were treated with Glucosamine (5 mM) for 12, 24 and 36 hours, and the expression level of target proteins was detected by western blot. RESULTS: Glucosamine significantly reduced the renal expressions of α-smooth muscle actin, collagen I and fibronectin in obstructive kidneys and renal cells treated with TGF-β1. [2]
In vivo	METHODS: To study the effect of Glucosamine on bone injury, Glucosamine (20 mg/kg/day) was orally administered to mice for 30 consecutive days. RESULTS: Glucosamine significantly reduces cartilage damage and osteophyte formation. [3]

Solubility Information

Solubility	H ₂ O: 200.9 mM,Sonication is recommended. DMSO: 58 mg/mL (323.71 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.5813 mL	27.9065 mL	55.8129 mL
5 mM	1.1163 mL	5.5813 mL	11.1626 mL
10 mM	0.5581 mL	2.7906 mL	5.5813 mL
50 mM	0.1116 mL	0.5581 mL	1.1163 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Jo JR, et al. Short-term treatment with glucosamine hydrochloride specifically downregulates hypoxia-inducible factor-1 α at the protein level in YD-8 human tongue cancer cells. *Int J Oncol.* 2014 May;44(5):1699-706.

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Park J, et al. Glucosamine hydrochloride exerts a protective effect against unilateral ureteral obstruction-induced renal fibrosis by attenuating TGF- β signaling. *J Mol Med (Berl).* 2013 Nov;91(11):1273-84.

Fernández-Martín S, et al. Glucosamine and Chondroitin Sulfate: Is There Any Scientific Evidence for Their Effectiveness as Disease-Modifying Drugs in Knee Osteoarthritis Preclinical Studies?-A Systematic Review from 2000 to 2021. *Animals (Basel).* 2021 May 29;11(6):1608.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481