

Heparan Sulfate

Catalog No: tcsc6915



Available Sizes

Size: 1mg

Size: 5mg

Size: 10mg

Size: 25mg



Specifications

CAS No:

9050-30-0

Formula:

$C_{12}H_{19}NO_{20}S_3$ (monomer)

Pathway:

Stem Cell/Wnt;Protein Tyrosine Kinase/RTK;Metabolic Enzyme/Protease

Target:

Wnt;FGFR;Endogenous Metabolite

Purity / Grade:

>98%

Solubility:

H2O : 47.1 mg/mL (Need ultrasonic and warming)

Observed Molecular Weight:

1000

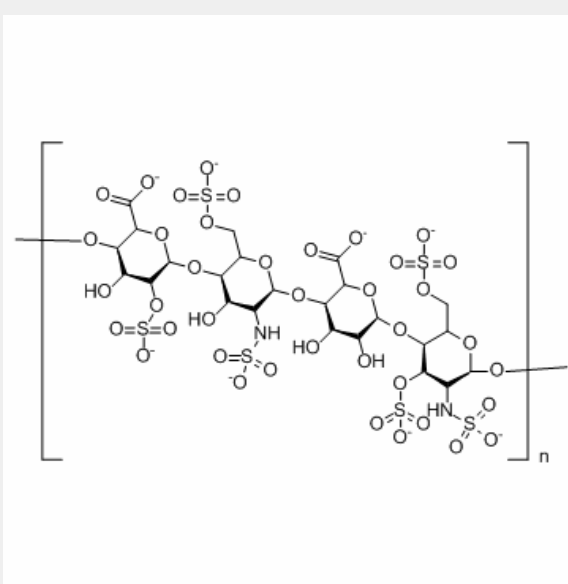
Product Description

Heparan sulfate, a complex and linear polysaccharide, exists as part of glycoproteins named heparan sulfate proteoglycans, which

are expressed abundantly on the cell surface and in the extracellular matrix.

In Vitro: Heparan sulfate is a linear polysaccharide and belongs to the family of glycosaminoglycans. Heparan sulfate is composed of glucuronic acid (GlcA) and iduronic acid (IdoA) residues as well as N-acetyl glucosamines (GlcNAc) with various sulfation modifications, and is typically 50-200 disaccharides in length. Heparan sulfate interacts with numerous proteins, including growth factors, morphogens, and adhesion molecules, and thereby regulates important developmental processes in invertebrates and vertebrates. Heparan sulfate chains regulate developmental signaling by acting as co-factors through a variety of mechanisms that include but are not limited to maintenance of morphogen gradients and co-receptor functions^[1]. Heparan sulfate proteoglycans can act as receptors for proteases and protease inhibitors regulating their spatial distribution and activity. Membrane Heparan sulfate proteoglycans act as coreceptors for various tyrosine kinase-type growth factor receptors, lowering their activation threshold or changing the duration of signaling reactions^[2]. Heparan sulfate influences the binding affinity of intestinal epithelium cells to Wnt, thereby promoting activation of canonical Wnt signaling and facilitating regeneration of small intestinal crypts after epithelial injury^[3].

In Vivo: Digestion of heparan sulfate impairs context discrimination in a fear conditioning paradigm and oscillatory network activity in the low theta band after fear conditioning. Thus, heparan sulfate maintains neuronal excitability and, as a consequence, support synaptic plasticity and learning^[4]. FGF-2/FGFR system is involved in the regulation of astrocytic reactivity and/or proliferation in the brain and its action is potentiated by heparan sulfate^[5].



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