Recombinant Human Noggin protein(Fc Tag)

Catalog Number:PKSH034199

Note: Centrifuge before opening to ensure complete recovery of vial contents.

Description

Synonyms	NOG;Noggin;SYM1;symphalangism 1 (proximal);synostoses (multiple) syndrome 1;SYNS1;SYNS1A
Species	Human
Expression Host	HEK293 Cells
Sequence	Gln 28-Cys 232
Accession	Q13253
Calculated Molecular Weight	49.1 kDa
Observed molecular weight	58 kDa
Tag	C-Fc
Bioactivity	Measure by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 cells. The ED_{50} for this effect is < 0.05 μg/mL in the presence of 50 ng/mL of recombinant human BMP-4.

Properties

Purity	> 98 % as determined by reducing SDS-PAGE.
Endotoxin	< 0.1 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Background

Noggin is a secreted protein involved at multiple stages of vertebrate embryonic development including neural induction and is known to exert its effects by inhibiting the bone morphogenetic protein (BMP)-signaling pathway. It binds several BMPs with very high (picomolar) affinities; with a marked preference for BMP2 and BMP4 over BMP7. By binding tightly to BMPs; Noggin prevents BMPs from binding their receptors. Noggin binds the bone morphogenetic proteins (BMP) such as BMP-4 and BMP-7; and inhibits BMP signaling by blocking the molecular interfaces of the binding epitopes for both type I and type II receptors. Interaction of BMP and its antagonist Noggin governs various developmental and cellular processes; including embryonic dorsal-ventral axis; induction of neural tissue; formation of joints in the skeletal system and neurogenesis in the adult brain. Noggin plays a key role in neural induction by inhibiting BMP4; along with other TGF-β signaling inhibitors such as chordin and follistatin. Mouse knockout experiments have demonstrated that noggin also plays a crucial role in bone development; joint formation; and neural tube fusion.

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