

# Recombinant Human Noggin/NOG Protein (aa 1-232, Fc Tag)



Catalog Number:PKSH031721

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

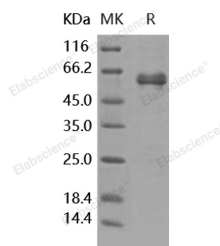
## Description

<b>Synonyms</b>	Noggin;SYM1;SYNS1
<b>Species</b>	Human
<b>Expression Host</b>	HEK293 Cells
<b>Sequence</b>	Met 1-Cys 232
<b>Accession</b>	NP_005441.1
<b>Calculated Molecular Weight</b>	49.8 kDa
<b>Observed molecular weight</b>	58-62 kDa
<b>Tag</b>	C-hFc
<b>Bioactivity</b>	1. Measured by its ability to inhibit BMP2-induced alkaline phosphatase production by MC3T3-E1 cells. The ED50 for this effect is typically 1.5-2.0 µg/mL in the presence of 0.25-0.5 µg/mL of BMP-2. 2. Measured by its ability to inhibit BMP4-induced alkaline phosphatase production by MC3T3-E1 cells. The ED50 for this effect is typically 0.1-0.6 µg/mL in the presence of 50 ng/mL of hBMP4.

## Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 100mM Glycine, 10mM NaCl, 50mM Tris, pH 7.5 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.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Data



> 95 % as determined by reducing SDS-PAGE.

## 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

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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- $\beta$  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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