

## Recombinant Human Noggin/NOG Protein

**Catalog Number: PKSH033576**

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

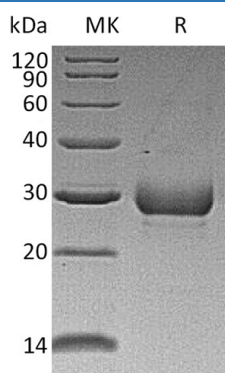
### Description

<b>Species</b>	Human
<b>Source</b>	HEK293 Cells-derived Human Noggin/NOG protein Gln28-Cys232
<b>Calculated MW</b>	23 kDa
<b>Observed MW</b>	25-33 kDa
<b>Accession</b>	Q13253
<b>Bio-activity</b>	Measured by its ability to inhibit BMP-4 induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED <sub>50</sub> for this effect is 10-100ng/mL in the presence of 200 ng/mL of Recombinant Human BMP- 4(#CR93).

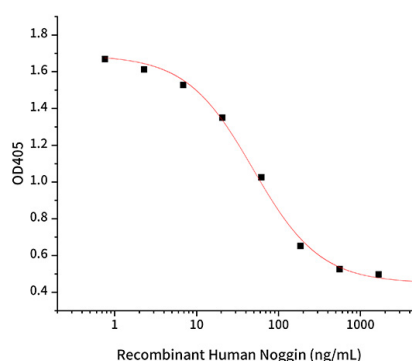
### Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 0.01 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 a 0.2 µm filtered solution of 20mM PB, 500mM NaCl, 2mM EDTA, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 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



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### Background

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Toll-free: 1-888-852-8623  
Web: [www.elabscience.com](http://www.elabscience.com)

Tel: 1-832-243-6086  
Email: [techsupport@elabscience.com](mailto:techsupport@elabscience.com)

Fax: 1-832-243-6017

Noggin is a secreted homodimeric glycoprotein that is an antagonist of bone morphogenetic proteins (BMPs). Mature Human Noggin contains an N-terminal acidic region; a central basic heparin-binding segment and a C-terminal cysteine-knot structure. Noggin is very highly conserved among vertebrates; such that mature human Noggin shares 99%; 99%; 98%; 97% and 89% aa sequence identity with mouse; rat bovine; equine and chicken Noggin; respectively. Secreted Noggin probably remains close to the cell surface due to its binding of heparin-containing proteoglycans. Noggin binds some BMPs such as BMP4 with high affinity and others such as BMP7 with lower affinity. It antagonizes BMP bioactivities by blocking epitopes on BMPs that are needed for binding to both type I and type II receptors. Noggin is expressed in defined areas of the adult central nervous system and peripheral tissues such as lung; skeletal muscle and skin. During culture of human embryonic stem cells (hESC) or neural stem cells under certain conditions; addition of Noggin to antagonize BMP activity may allow stem cells to proliferate while maintaining their undifferentiated state; or alternatively; to differentiate into dopaminergic neurons.

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