# **Recombinant Mouse Noggin/NOG Protein**

Catalog No.: RP01308 Recombinant

### Sequence Information

Species Gene ID Swiss Prot Mouse 18121 P97466

Tags C-His

Synonyms noggin;NOG

# **Product Information**

**Purification** Source HEK293 cells > 95% by SDS-PAGE.

### Endotoxin

∏1EU/µg

#### Formulation

Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4.

#### Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid votex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliguot the reconstituted protein solution to minimize free-thaw cycles.

## Contact

6	400-999-6126
$\bowtie$	cn.market@abclonal.com.cn
€	www.abclonal.com.cn

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 types I and type II receptors. Interaction of BMP and its antagonist Noggin governs various developmental and cellular processes, including embryonic dorsalventral axis, induction of neural tissue, the 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.

### **Basic Information**

#### Description

Recombinant Mouse Noggin/NOG Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Gln28-Cys232) of mouse Noggin (Accession #NP\_032737.1) fused with an 6×His tag at the C-terminus.

### **Bio-Activity**

1. Measured by its binding ability in a functional ELISA. Immobilized Human BMP4 at 0.5 μg/mL (100 μL/well) can bind Noggin with a linear range of 4-29 ng/mL.[2.Measured by its binding ability in a functional ELISA.Immobilized Human Noggin at 1 µg/mL (100 µL/well) can bind Noggin Rabbit pAb with a linear range of 1-4.95 ng/mL.|3.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 3.5-14 ng/mL in the presence of 50 ng/mL of Recombinant Human BMP-4.

#### Storage

Store the lyophilized protein at -20°C to -80°C for long term. After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.

Avoid repeated freeze/thaw cycles.





Recombinant Mouse Noggin/NOG Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 36 kDa.



Immobilized recombinant Human BMP4 at 0.5  $\mu$ g/mL (100  $\mu$ L/well) can bind Noggin with a linear range of 4-29 ng/mL.



Immobilized recombinant Human Noggin at 1  $\mu$ g/mL (100  $\mu$ L/well) can bind Noggin Rabbit pAb with a linear range of 1-4.95 ng/mL.



Recombinant human NOG inhibits BMP-4induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The  $ED_{so}$ for this effect is 3.5-14 ng/mL in the presence of 50 ng/mL of Recombinant Human BMP-4.