# **Recombinant Human Noggin/NOG Protein**

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Catalog No.: RP01237 Recombinant

# **Sequence Information**

Species Gene ID Swiss Prot Human 9241 013253

**Tags** C-His

**Synonyms** 

NOG;SYM1;SYNS1;SYNS1A;noggin

## **Product Information**

**Source** Purification HEK293 cells ≥ 95 % as

determined by SDS-

FAG

Calculated MW Observed MW

23.89 kDa 35-38 kDa

#### **Endotoxin**

< 0.1 EU/ $\mu$ g of the protein by LAL method.

#### Formulation

Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4.Contact us for customized product form or formulation.

#### Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex 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 aliquot the reconstituted protein solution to minimize free-thaw cycles.

# Contact

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## **Background**

By diffusing through extracellular matrices more efficiently than members of the TGF-beta superfamily, this protein may have a principal role in creating morphogenic gradients. The protein appears to have pleiotropic effect, both early in development as well as in later stages. It was originally isolated from Xenopus based on its ability to restore normal dorsal-ventral body axis in embryos that had been artificially ventralized by UV treatment. The results of the mouse knockout of the ortholog suggest that it is involved in numerous developmental processes, such as neural tube fusion and joint formation. Recently, several dominant human NOG mutations in unrelated families with proximal symphalangism (SYM1) and multiple synostoses syndrome (SYNS1) were identified; both SYM1 and SYNS1 have multiple joint fusion as their principal feature, and map to the same region (17q22) as this gene. All of these mutations altered evolutionarily conserved amino acid residues. The amino acid sequence of this human gene is highly homologous to that of Xenopus, rat and mouse.

## **Basic Information**

### Description

Recombinant Human Noggin/NOG Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Gln28-Cys232) of human Noggin (Accession #NP\_005441.1) fused with a 6×His tag at the C-terminus.

#### **Bio-Activity**

1.Measured by its binding ability in a functional ELISA. Immobilized Human BMP2 at 1  $\mu g/mL$  (100  $\mu L/well)$  can bind Noggin with a linear range of 2-57 ng/mL.|2. Measured by its binding ability in a functional ELISA.Immobilized Human BMP4 at 0.5  $\mu g/mL$  (100  $\mu L/well)$  can bind Noggin with a linear range of 4-47 ng/mL.|3.Measured by its binding ability in a functional ELISA. Immobilized Human Noggin at 1  $\mu g/mL$  (100  $\mu L/well)$  can bind Noggin Rabbit pAb with a linear range of 1-3.5 ng/mL.|4. Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED $_{50}$  for this effect is 13.28-53.12 ng/mL in the presence of 50 ng/mL of recombinant human BMP-4, corresponding to a specific activity of  $1.88\times10^4$ -7.53×10 $^4$  units/mg.

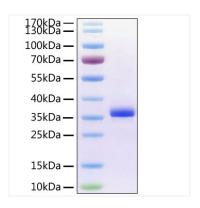
## **Storage**

Store at -20°C. Store the lyophilized protein at -20°C to -80 °C up to 1 year from the date of receipt.

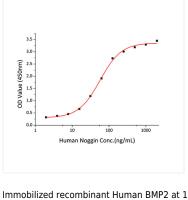
After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.

Avoid repeated freeze/thaw cycles.

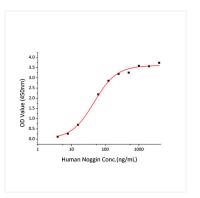
<sup>\*</sup> DODOODOODOODOODOO



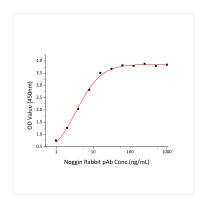
Recombinant Human Noggin/NOG Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



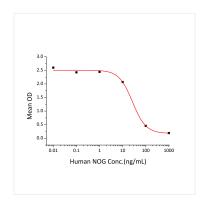
Immobilized recombinant Human BMP2 at 1  $\mu$ g/mL (100  $\mu$ L/well) can bind Noggin with a linear range of 2-57 ng/mL.



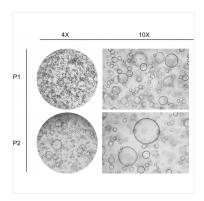
Immobilized recombinant Human BMP4 at 0.5  $\mu$ g/mL (100  $\mu$ L/well) can bind Noggin with a linear range of 4-47 ng/mL.



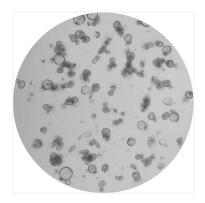
Immobilized Human Noggin at 1  $\mu$ g/mL (100  $\mu$ L/well) can bind Noggin Rabbit pAb with a linear range of 1-3.5 ng/mL.



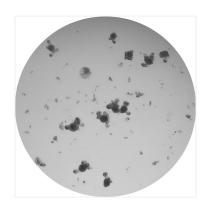
Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED $_{50}$  for this effect is 13.28-53.12 ng/mL in the presence of 50 ng/mL of recombinant human BMP-4, corresponding to a specific activity of  $1.88 \times 10^4$ - $7.53 \times 10^4$  units/mg.



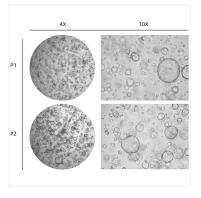
Human stomach organoids were cultured with EGF(Cat. RP03287), FGF10(Cat. RP01140), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ).



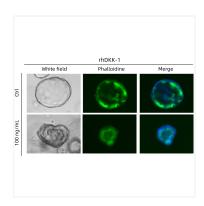
Mouse large intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSP01(Cat. RP00071), WNT-3a(Cat. RP01618SLQ)



Mouse small intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSP01(Cat. RP00071).



Human liver organoids were cultured with EGF(Cat. RP03287), HGF(Cat. RP01602), FGF2(Cat. RP01042), FGF10(Cat. RP01140), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ).



Human kidney organoids were cultured with EGF(Cat. RP03287), FGF2(Cat. RP01042), FGF7(Cat. RP01717), FGF9(Cat. RP01710), FGF10(Cat. RP01140), IGF-(Cat. RP00996), NOG(Cat. RP01237), RSP01(Cat. RP00071), WNT-3a(Cat. RP01618SLQ). And further, DKK-1(RP01343) was used to induce the establishment of cell polarity.