

RP01237

Leader in Biomolecular Solutions for Life Science



Active Recombinant Human Noggin/NOG Protein

Catalog No.: RP01237

Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	9241	Q13253

Tags

C-His

Synonyms

NOG;SYM1;SYNS1;SYNS1A;noggin

Product Information

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

Endotoxin

< 0.1 EU/μg 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 stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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

Active 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 μg/mL (100 μL/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 μg/mL (100 μL/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 μg/mL (100 μL/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 ED₅₀ 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 1.88×10^4 - 7.53×10^4 units/mg.

Storage

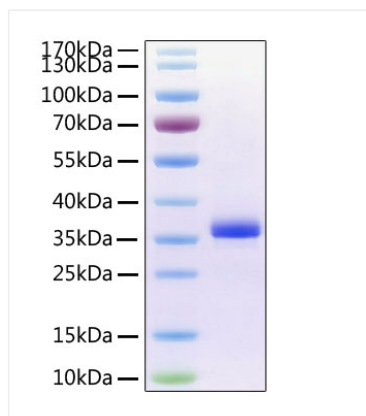
Store the lyophilized protein at -20°C to -80 °C for long term. After reconstitution, the protein solution is stable at -20 °C for 3 months, at 2-8 °C for up to 1 week. Avoid repeated freeze/thaw cycles.

Contact

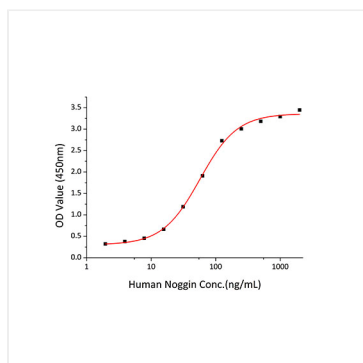


www.abclonal.com

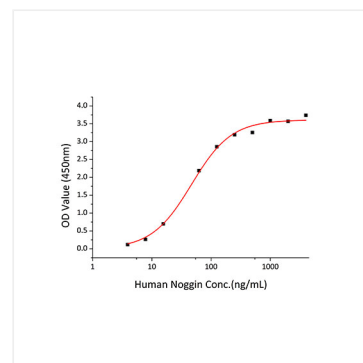
Validation Data



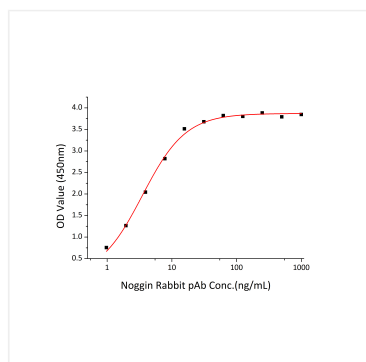
Active Recombinant Human Noggin/NOG Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 35-38 kDa.



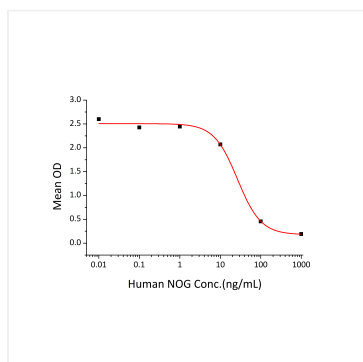
Immobilized recombinant Human BMP2 at 1 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) can bind Noggin with a linear range of 2-57 ng/mL.



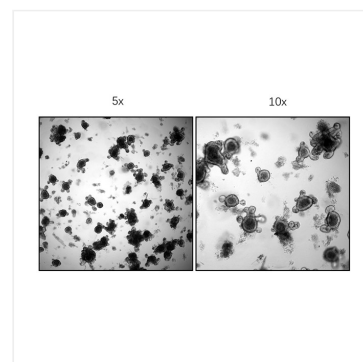
Immobilized recombinant Human BMP4 at 0.5 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) can bind Noggin with a linear range of 4-47 ng/mL.



Immobilized Human Noggin at 1 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) 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 1.88×10^4 - 7.53×10^4 units/mg.



The intestinal crypts of mice were cultured in organoid culture medium containing factor combinations (100 ng/mL Noggin, Cat. RP01237 + 500 ng/mL R-spindin-1, Cat. RP00071) derived from ABclonal for 144 hours, intestinal organoids were formed. (Customer Feedback Data)