

Recombinant Human Noggin/NOG Protein

Catalog No.: RP01237

Sequence Information

Species Gene ID

Human 9241

Swiss Prot Tags

Q13253 C-His

Synonyms

NOG,SYM1,SYNS1,SYNS1A,noggin

Product Information

Source Purification

HEK293 cells ≥ 95 % as determined by SDS-PAGE.

Calculated MWObserved MW

23.89 kDa 35–38 kDa

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-β 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.

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 1.88×10⁴–7.53×10⁴ units/mg.

Shipping

Lyophilized proteins are shipped at ambient temperature.
Liquid proteins are shipped at frozen temperature with dry ice.
Upon receipt, store it immediately at the temperature recommended below.

Storage

Store at –20°C

Operational Notes

For your safety and health, please wear a lab coat and disposable gloves for handling.

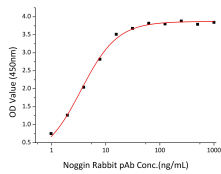
Contact

☎ | 400-999-6126

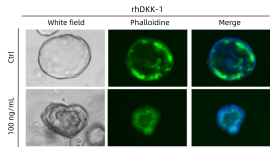
✉ | cn.market@abclonal.com.cn

🌐 | www.abclonal.com.cn

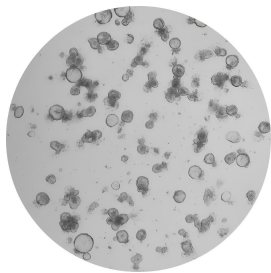
Validation Data



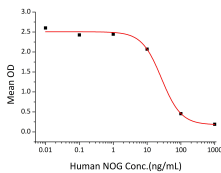
Immobilized Human Noggin at 1 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) can bind Noggin Rabbit pAb with a linear range of 1–3.5 ng/mL.



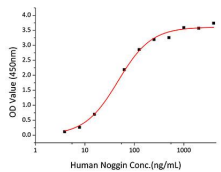
Human kidney organoids were cultured with EGF(Cat. RP03287), FGF2(Cat. RP01042), FGF7(Cat. RP01717), FGF9(Cat. RP01710), FGF10(Cat. RP01140), IGF-(Cat. RP00996), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ). And further, DKK-1(RP01343) was used to induce the establishment of cell polarity.



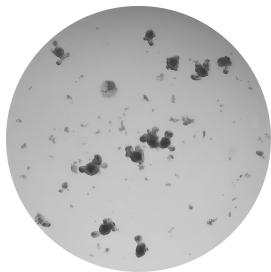
Mouse large intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ)



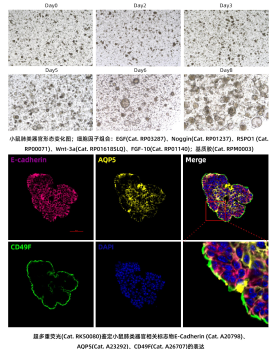
Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is 13.28–53.12 ng/mL in the presence of 50 ng/mL of recombinant human BMP-4, corresponding to a specific activity of 1.88×10^4 – 7.53×10^4 units/mg.



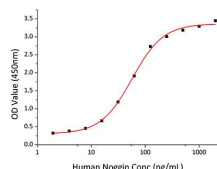
Immobilized recombinant Human BMP4 at 0.5 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) can bind Noggin with a linear range of 4–47 ng/mL.



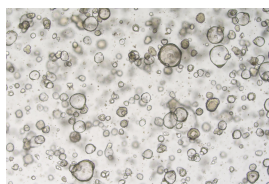
Mouse small intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSPO1(Cat. RP00071).



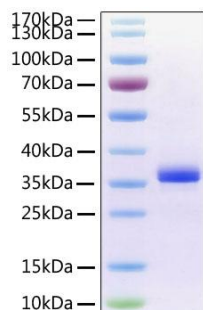
Mouse lung organoids were cultured in Matrigel (Cat. RPM0003) with medium supplemented with EGF (Cat. RP03287), Noggin (Cat. RP01237), RSPO1 (Cat. RP00071), Wnt-3a (Cat. RP01618SLQ), and FGF-10 (Cat. RP01140). After 8 days of culture, the expression of lineage markers, including E-Cadherin (Cat. A20798), AQP5 (Cat. A23292), and CD49F (Cat. A26707), was assessed by ultra-plex immunofluorescence staining.



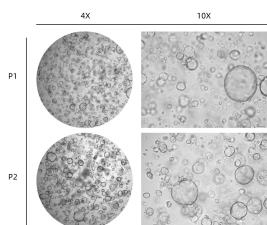
Immobilized recombinant Human BMP2 at 1 µg/mL (100 µL/well) can bind Noggin with a linear range of 2-57 ng/mL.



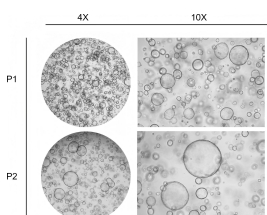
Human colorectal cancer organoid were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), FGF10(Cat. RP01140), RSPO1(Cat. RP00071), HGF(Cat. RP01602), A83-01(Cat. RPM0008), SB202190(Cat. RPM0010), Y-27632 dihydrochloride(Cat. RPM0007), Acetylcysteine/NAC(Cat. RPM0017), Nicotinamide (Cat. RPM0016), Gastrin I(Cat. RPM0011), AB-27 Supplement(Cat. RPM0047LQ).



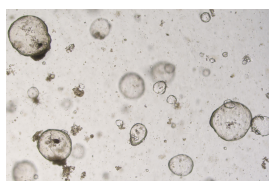
Recombinant Human Noggin/NOG Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



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



Human gastric cancer organoid were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), FGF10(Cat. RP01140), RSPO1(Cat. RP00071), Wnt-3a Surrogate(Cat. RP01618SLQ), A83-01(Cat. RPM0008), Y-27632 dihydrochloride(Cat. RPM0007), Gastrin I(Cat. RPM0011), AB-27 Supplement(Cat. RPM0047LQ), N-2 Supplement (Cat. RPM0046LQ).