

# Mouse Noggin / NOG Protein (Fc Tag)



Sino Biological  
Biological Solution Specialist

Catalog Number: 50688-M02H

## General Information

### Gene Name Synonym:

NOG

### Protein Construction:

A DNA sequence encoding the mouse NOG (P97466) (Met1-Cys232) was fused with the Fc region of human IgG1 at the C-terminus.

**Source:** Mouse

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 85 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

**Predicted N terminal:** Gln 28

### Molecular Mass:

The recombinant mouse NOG/Fc comprises 454 amino acids and has a predicted molecular mass of 51 kDa. It migrates as approximately 60 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile PBS, pH7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## Bio Activity:

1. Measured by its ability to inhibit BMP4-induced alkaline phosphatase production by MC3T3-E1 cells. The ED50 for this effect is typically 0.1-0.6µg/mL.<br/>
2. Human intestinal cancer organoids were cultured with RSPO1(Cat#11083-HNAS), EGF(Cat#50482-MNCH), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.<br/>
3. Human colorectum organoids were cultured with RSPO1(Cat#11083-HNAS), EGF(Cat#50482-MNCH), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.<br/>
4. Human lung cancer organoids were cultured with FGF2(Cat#10014-HNAE), FGF4(Cat#16043-HNAE), FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
5. Human lung organoids were cultured with FGF2(Cat#10014-HNAE), FGF4(Cat#16043-HNAE), FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
6. Human cholangiocarcinomas organoids were cultured with FGF2(Cat#10014-HNAE), HGF(Cat#10463-HNAS), FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
7. Human liver cancer organoids were cultured with FGF2(Cat#10014-HNAE), HGF(Cat#10463-HNAS), FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), TGFβ1(Cat#10804-HNAC), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
8. Human kidney cancer organoids were cultured with FGF2(Cat#10014-HNAE), FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
9. Human kidney organoids were cultured with FGF7(Cat#10210-H07E), EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS), HGF(Cat#10463-HNAS), FGF4(Cat#16043-HNAE). (Routinely tested). Data provided by D1 Medical Technology.<br/>
10. Human gastric cancer organoids were cultured with EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
11. Human stomach organoids were cultured with EGF(Cat#50482-MNCH), FGF10(Cat#10573-HNAE), NOG(Cat#50688-M02H), RSPO1(Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.<br/>
12. Human breast cancer organoids were cultured with FGF7(Cat#10210-H07E), RSPO1(Cat#11083-HNAS), IGF1(Cat#10598-HNAE), EGF(Cat#50482-MNCH), NRG1 Beta 1(Cat#11609-H01H), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.<br/>
13. Human ovarian organoids were cultured with IGF1(Cat#10598-HNAE), NRG1 Beta 1(Cat#11609-H01H), RSPO1(Cat#11083-HNAS), EGF(Cat#50482-MNCH), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.<br/>
14. Human small intestinal organoids were cultured with IL22(Cat#13059-HNAE), FGF10(Cat#10573-HNAE), EGF(Cat#50482-MNCH), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.<br/>

# Mouse Noggin / NOG Protein (Fc Tag)

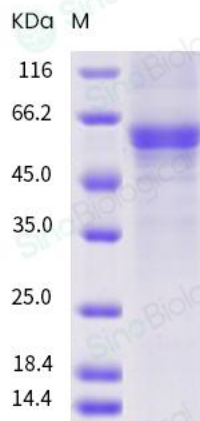


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## General Information

### SDS-PAGE:



## Protein Description

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 dorsal-ventral 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.

## References