



# Recombinant Mouse NOGGIN

20201119BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no.:</b>	<b>M10-124</b>
<b>Size:</b>	20 µg
<b>Lot. No.:</b>	According to product label

## Scientific Background

<b>Gene-ID (NCBI):</b>	18121
<b>Synonyms:</b>	Nog

Noggin belongs to a group of diffusible proteins which bind to ligands of the TGF- $\beta$  family and regulate their activity by inhibiting their access to signaling receptors. The interplay between TGF- $\beta$  ligands and their natural antagonists has major biological significance during development processes, in which cellular response can vary considerably depending upon the local concentration of the signaling molecule. Noggin was originally identified as a BMP-4 antagonist whose action is critical for proper formation of the head and other dorsal structures. Consequently, Noggin has been shown to modulate the activities of other BMPs including BMP-2,-7,-13, and -14. Targeted deletion of Noggin in mice results in prenatal death and recessive phenotype displaying a severely malformed skeletal system. Conversely, transgenic mice over-expressing Noggin in mature osteoblasts display impaired osteoblastic differentiation, reduced bone formation, and severe osteoporosis. Recombinant murine Noggin is a 46.4 kDa disulfide-linked homodimer consisting of two 206 amino acid polypeptide chains.

## Sequence

```
MQHYLHIRFA PSDNLPLVDL IEHPDPIFDP KEKDLNETLL  
RSLLGGHYDP GFMATSPED RPGGGGGPAG GAEDLAELDQ  
LLRQRPSGAM PSEIKGLEFS EGLAQGKKQR LSKKLRRLQ  
MWLWSQTFCP VLYAWNDLGS REWPRYVKVG SCFSKRSCSV  
PEGMVCKPSK SVHLTVLRWR CQRRGGQRCG WIPIQYPIIS ECKCSC
```

## Database References

<b>Protein RefSeq:</b>	NP_032737
<b>Uniprot ID:</b>	P97466
<b>mRNA RefSeq:</b>	NM_008711

## Product Specifications

<b>Expressed in</b>	E. coli
<b>Purity</b>	> 98% by SDS-PAGE & HPLC analyses
<b>Structural Information</b>	disulphide-linked homodimer
<b>Endotoxin level</b>	< 0.1 ng /µg of protein (<1EU/µg).
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	206
<b>MW:</b>	46.4 kDa

**Stability:** The lyophilized protein is stable at room temperature for 1 month and at 4°C for 6 months. Reconstituted working aliquots are stable for 1 week at 2°C to 8°C and for 12 months at -20°C to -80°C.

**Reconstitution:** Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. **Note:** Due to solubility reasons the protein should be kept at low pH. *Do not vortex.* This solution can be stored at 2-8°C for up to 1 week. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.



**AVOID REPEATED FREEZE AND THAW CYCLES!**

**Biological Activity:** Determined by its ability to inhibit 5 ng/ml of BMP-4 induced alkaline phosphatase production by ATDC5 chondrogenic cells. The expected ED<sub>50</sub> for this effect is 1 - 2 ng/ml of Noggin.