

## Active Recombinant Human NOG protein

Cat. No. NOG-204H Lot. No. (See product label)

### SPECIFICATION

**Product Overview** Recombinant Human NOG protein (Met1-Cys232) was expressed in HEK293 cells.

**Species** Human

**Source** HEK293

**ProteinLength** 205

#### 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 type 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, 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.

**Predicted N Terminal** Gln 28

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<b>Form</b>	Lyophilized from sterile PBS, pH 7.4.
<b>Bio-activity</b>	Measured by its ability to inhibit BMP4-induced alkaline phosphatase production by MC3T3E1 mouse preosteoblast cells. The ED50 for this effect is 10-80 ng/mL.
<b>Molecular Mass</b>	The recombinant human NOG consists of 205 amino acids and predicts a molecular mass of 23.1 kDa.
<b>Endotoxin</b>	<1.0 EU per µg protein as determined by the LAL method.
<b>Purity</b>	>95% as determined by SDS-PAGE.
<b>Stability</b>	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
<b>Storage</b>	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

## GENE INFORMATION

<b>Gene Name</b>	NOG
<b>Official Symbol</b>	NOG
<b>Synonyms</b>	SYM1; SYNS1; SYNS1A; Noggin

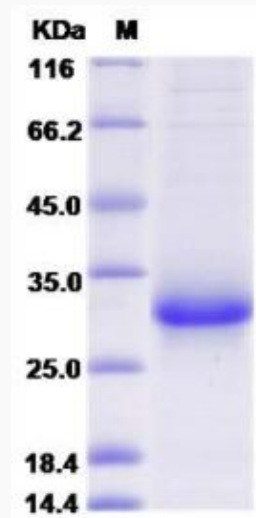
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Gene ID	9241
mRNA Refseq	NM_005450.6
Protein Refseq	NP_005441.1
MIM	602991
UniProt ID	Q13253

SDS-PAGE of NOG-204H

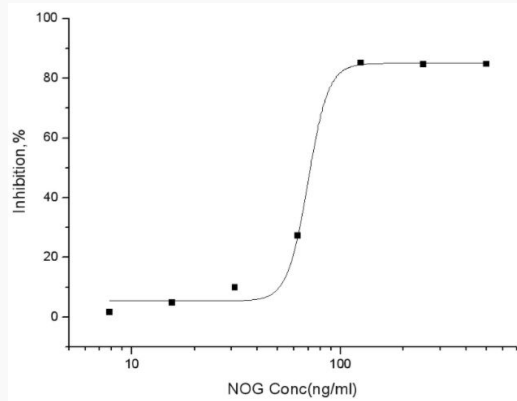


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### Activity of NOG-204H



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