Recombinant Human NOG Protein

Cat. No. NOG-27H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human noggin protein without tag was expressed in E. coli. Animal-free (AOF) and carrier protein-free. Mass spectrometry: single species with expected mass. Analytical reversed-phase: single sharp peak. Recovery from stock vial: >95%
Species	Human
Source	E.coli
Description	The secreted polypeptide, encoded by this gene, binds and inactivates members of the transforming growth factor-beta (TGF-beta) superfamily signaling proteins, such as bone morphogenetic protein-4 (BMP4). 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

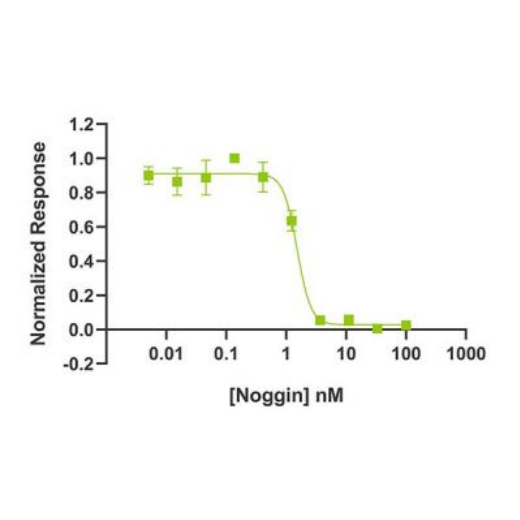
Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

	acid residues. The amino acid sequence of this human gene is highly homologous to that of Xenopus, rat and mouse.
Molecular Mass	46 kDa (dimer)
Endotoxin	<0.005 EU/μg protein (below level of detection)
Applications	Propagation of ES cells in feeder or feeder-free Chemically defined culture syStems; human LIF can be used in the maintenance of murine ESCs
Storage	Resuspend in 10mM HCl at >100 μg/mL, prepare single use aliquots, add carrier protein if desired and store frozen at -20 or -80 centigrade
Storage Buffer	Lyophilized from acetonitrile, TFA

GENE INFORMATION

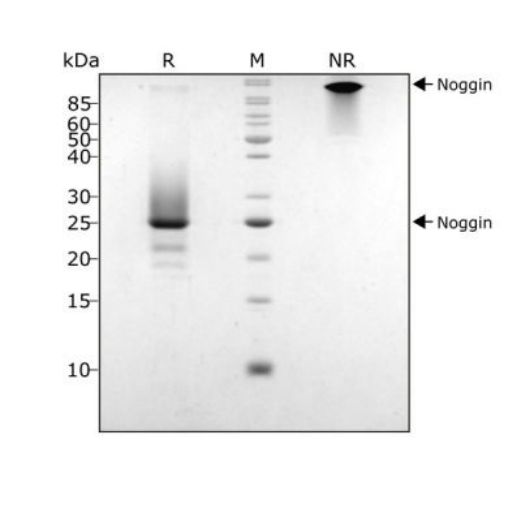
Gene Name	NOG noggin [Homo sapiens (human)]
Official Symbol	NOG
Synonyms	NOG; noggin; SYM1; SYNS1; SYNS1A; noggin; symphalangism 1 (proximal)
Gene ID	9241
mRNA Refseq	NM_005450
Protein Refseq	NP_005441
MIM	602991

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

UniProt ID	Q13253
Bioactivity	 Noggin is a BMP inhibitor and its activity is determined by inhibition of BMP2 activity in a BMP-2 responsive firefly luciferase reporter assay. HEK293T cells are treatedwith a serial dilution of Noggin and standard concentration of BMP2 for 6 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC50 = 72.8 ng/mL (1.57 nM).

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Purity



Noggin proteinhas an unusual migration in non-reducedSDS-PAGE due to the non-covalent dimer which is the active protein. Similar migration in SDS-PAGE is seen for Gremlin-1, a related BMP antagonist. The identity of the purified dimeric protein was confirmed using mass spectrometry. Upon reduction, the protein monomer migrates at 23 kDa. Purified recombinant human Noggin protein was resolved using 15% w/v SDS-PAGE in reducedand non-reduced conditionsand stained with Coomassie Brilliant Blue R250.

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA