

Recombinant Human NOG

Cat. No. NOG-30339TH Lot. No. (See product label)

SPECIFICATION

Product Overview

Recombinant full length Human Noggin expressed in 293 cells; consisting of two 206 amino acid polypeptide chains, 46.2 kDa.

Species

Human

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 acid residues. The amino acid sequence of this human gene is highly homologous to that of *Xenopus*, rat and mouse.

Biological activity

Biological Activity :Determined by its ability to inhibit 5.0 ng/ml of BMP-4 induced alkaline phosphatase production by ATDC chondrogenic cells. The expected ED50

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	for this effect is 2.0-3.0 ng/ml of Noggin.
Form	Lyophilised:Reconstituted NOG-30339TH is stable for at least 3 months when stored in working aliquots with a carrier protein at -20°C. Avoid repeated freeze/thaw cycles.
Purity	>95% by SDS-PAGE
Storage	Store at -20°C. Stable for 12 months at -20°C
Sequences of amino acids	QHYLHIRPAP SDNLPLVDLI EHPDPIFDPK EKDLNETLLR SLLGGHYDPG FMATSPPEDR PGGGGGAAGG AEDLAELDQL LRQRPSGAMP SEIKGLEFSE GLAQGKKQRL SKKLRRKLQM WLWSQTFCPV LYAWNDLGSR FWPRYVKVGS CFSKRSCSVP EGMVCKPSKS VHLTVLRWRC QRRGGQRCGW IPIQYPIISE CKCSC
Sequence Similarities	Belongs to the noggin family.
Full Length	Full L.

GENE INFORMATION

Gene Name	NOG noggin [Homo sapiens]
Official Symbol	NOG
Synonyms	NOG; noggin; SYM1, symphalangism 1 (proximal) , synostoses (multiple) syndrome 1 , SYNS1;
Gene ID	9241

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mRNA Refseq	NM_005450
Protein Refseq	NP_005441
MIM	602991
Uniprot ID	Q13253
Chromosome Location	17q22
Pathway	BMP receptor signaling, organism-specific biosystem; Signal Transduction, organism-specific biosystem; Signaling by BMP, organism-specific biosystem; TGF Beta Signaling Pathway, organism-specific biosystem; TGF-beta signaling pathway, organism-specific biosystem;
Function	cytokine binding; protein complex binding; protein homodimerization activity;

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