

Active Recombinant Human Noggin

Cat. No. NOG-2745H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human Noggin is a 23.1 kDa non-disulfide-linked homodimer consisting of a total of 206 amino acid residues. It was expressed in <i>Nicotiana benthamiana</i> . Recombinant human noggin is purified by chromatography (FPLC). It contains no animal –derived components or impurities.
Species	Human
Source	Nicotiana Benthamiana
Description	Noggin is a secreted homodimeric glycoprotein that 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. Noggin has a complex pattern of expression during embryogenesis, and is expressed in the central nervous system, as well as in several peripheral tissues such as lung, skeletal muscle, and skin in adult. It plays a crucial role in bone development, by regulating the functions of BMP's. 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. During the morphogenesis of organs such as the lungs, teeth and hair follicles, noggin helps to produce Lef1. 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.
Molecular Formula	C1059H1649N313O293S13.

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Extinction Coefficient	E0.1% = 1.71 (A280 nm).
Molecular Weight	23.8 kDa, 211 amino acids per chain.
P.I	9.1.
Purity Assay	>95% by SDS-PAGE gel.
Endotoxin Level	< 0.04 EU/ g protein (LAL method).
Formulation	Lyophilized from a buffer of Tris HCl 0.05M pH 7.4.
Activity	Determined by its ability to inhibit 5 ng/ml of BMP-4 induced alkaline phosphatase production by ATDC5 chondrogenic cells.
Storage	This lyophilized preparation is stable at 2-8°C, but should be kept at –20°C for long term storage. The product, as supplied is stable for at least 2 years. Diluted solutions are less stable than concentrated ones. Repeated freezing and thawing is not recommended.

GENE INFORMATION

Gene Name	NOG noggin [Homo sapiens]
Synonyms	noggin; SYM1; SYNS1; NOG; symphalangism 1 (proximal); synostoses (multiple) syndrome 1
Gene ID	9241
mRNA Refseq	NM_005450

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Protein Refseq	NP_005441
MIM	602991
UniProt ID	Q13253
Chromosome Location	17q21-q22
Pathway	TGF-beta signaling pathway; Signaling by BMP
Function	protein homodimerization activity; cytokine binding
PDB rendering based on 1m4u.	