Noggin (NOG) Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	Noggin (NOG), Polyclonal Antibody
Full Product Name	PE-Linked Polyclonal Antibody to Noggin (NOG)
Product Gene Name	anti-NOG antibody
Product Synonym Names	SYM1; SYNS1; Synostoses (Multiple)Syndrome 1; Symphalangism 1 (Proximal)
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Rat
Concentration	>=100ug/ml (lot specific)
Matching Pairs	Unconjugated Antibody: NOG (MBS2003659) PE Conjugated Antibody: NOG (MBS2063480)
Matching Pairs	PE Conjugated Antibody: NOG (MBS2063480) Immunogen: NOG (MBS2011409)
Molecular Weight	25,774 Da
OMIM	U31202 Genomic DNA
3D Structure	ModBase 3D Structure for Q13253
Supply Chain Verification	Manufactured in a lab with traceable raw materials. Bulk orders can typically be prepared to the customer's specifications, please inquire.
Immunogen	NOG (Met28~Cys144)
Conjugation	PE
Cross Reactivity	Rat
Unconjugated Antibody	The unconjugated antibody version of this item is also available as catalog #MBS2003659
ISO Certification	Manufactured in an ISO 9001:2015 and ISO 13485:2016 Certified Laboratory.
Applications Tested/Suitable for anti-NOG antibody	Western Blot (WB), Immunocytochemistry (ICC), Immunohistochemistry (IHC) Formalin/Paraffin, ELISA (ELISA)
Related Product Information for anti-NOG antibody	MBS2063480 is an antibody targeting NOG. Also known as PE-Linked Polyclonal Antibody to Noggin (NOG). Reactive in Rat. Host: Rabbit.
Other Notes	Small volumes of anti-NOG antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for NOG. It may not necessarily be applicable to this product.

NCBI GI #	4885523
NCBI GeneID	9241
NCBI Accession #	NP_005441.1

UniProt Primary Accession #	Q13253
UniProt Related Accession #	Q13253
GenBank Nucleotide #	NM_005450.4
NCBI Official Full Name	noggin
NCBI Official Synonym Full Names	noggin
NCBI Official Symbol	NOG
NCBI Official Synonym Symbols	SYM1; SYNS1; SYNS1A
UniProt Protein Name	Noggin
Protein Family	Noggin
UniProt Gene Name	NOG
NCBI Protein Information	noggin
NCBI Summary for NOG	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. [provided by RefSeq, Jul 2008]

UniProt Comments for NOG	NOG: Essential for cartilage morphogenesis and joint formation. Inhibitor of bone morphogenetic proteins (BMP) signaling which is required for growth and patterning of the neural tube and somite. Defects in NOG are a cause of symphalangism proximal syndrome (SYM1). SYM1 is characterized by the hereditary absence of the proximal interphalangeal (PIP) joints (Cushing symphalangism). Severity of PIP joint involvement diminishes towards the radial side. Distal interphalangeal joints are less frequently involved and metacarpophalangeal joints are rarely affected whereas carpal bone malformation and fusion are common. In the lower extremities, tarsal bone coalition is common. Conducive hearing loss is seen and is due to fusion of the stapes to the petrous part of the temporal bone. Defects in NOG are the cause of multiple synostoses syndrome type 1 (SYNS1); also known as synostoses, multiple, with brachydactyly/symphalangism-brachydactyly syndrome. SYNS1 is characterized by tubular-shaped (hemicylindrical) nose with lack of alar flare, otosclerotic deafness, and multiple progressive joint fusions commencing in the hand. The joint fusions are progressive, commencing in the fifth proximal interphalangeal joint in early childhood (or at birth in some individuals) and progressing in an ulnar-to-radial and proximal- to-distal direction. With increasing age, ankylosis of other joints, including the cervical vertebrae, hips, and humeroradial joints, develop. Defects in NOG are the cause of tarsal-carpal coalition syndrome (TCC). TCC is an autosomal dominant disorder characterized by fusion of the carpals, tarsals and phalanges, short first metacarpals causing brachydactyly, and humeroradial fusion. TCC is allelic to SYM1, and different mutations in NOG can result in either TCC or SYM1 in different families. Defects in NOG are a cause of stapes ankylosis with broad thumb and toes (SABTS); also known as Teunissen- Cremers syndrome. SABTS is a congenital autosomal dominant disorder that includes hyperopia, a hemicylindrical nose, broad thumbs, great toes, and other minor skeletal anomalies but lacked carpal and tarsal fusion and symphalangism. Defects in NOG are the cause of brachydactyly type B2 (BDB2). BDB2 is a subtype of brachydactyly characterized by hypoplasia/aplasia of distal phalanges in combination with distal symphalangism, fusion of carpal/tarsal bones, and partial cutaneous syndactyly. Belongs to the noggin family. Protein type: Secreted; Secreted, signal peptide Chromosomal Location of Human Ortholog: 17q22 Cellular Component: extracellular region; extracellular space Molecular Function: cytokine binding; protein binding; protein homodimerization activity Biological Process: atrial cardiac muscle morphogenesis; BMP signaling pathway; cell differentiation in hindbrain; dorsal/ventral pattern formation; embryonic digit morphogenesis; embryonic skeletal development; epithelial to mesenchymal transition; limb development; middle ear morphogenesis; negative regulation of astrocyte differentiation; negative regulation of BMP signaling pathway; negative regulation of cardiac muscle cell proliferation; negative regulation of cell migration; negative regulation of osteoblast differentiation; negative regulation of transcription from RNA polymerase II promoter; nervous system development; osteoblast differentiation; skeletal development; somatic stem cell maintenance; wound healing Disease: Brachydactyly, Type B2; Multiple Synostoses Syndrome 1; Stapes Ankylosis With Broad Thumb And Toes; Symphalangism, Proximal, 1a; Tarsal-carpal Coalition Syndrome
Research Articles on NOG	**1.** A New Subtype of Multiple Synostoses Syndrome Is Caused by a Mutation in GDF6 That Decreases Its Sensitivity to Noggin and Enhances Its Potency as a BMP Signal.
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