

## Product datasheet for SC122718

### Noggin (NOG) (NM\_005450) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Noggin (NOG) (NM_005450) Human Untagged Clone
Tag:	Tag Free
Symbol:	Noggin
Synonyms:	SYM1; SYNS1; SYNS1A
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>SC122718 representing NM_005450. Blue=Insert sequence Red=Cloning site Green=Tag(s)

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CAGCGAGGAGCCGGCGCCTCCCGCGCCCGCGGTGCGCCTGGAGTAATTTTCGGATGCCAGCCGCGGCC
GCCTTCCCAAGTAGACCCGGGAGAGGAGTTGCGGCCAACTTGTGTGCCTTTCTTCCGCCCGGTGGGAG
CCGGCGTGCAGAAAGGCTCTCCCGCGGCTCATGCTGCGGCCCTGCGCCTGCCAGCCTCGGGTGA
GCCGCCTCCGGAGAGACGGGGGAGCGGGCGGCCCGCGGGCTCGGCGTCTCTCTCCGGGACGCGG
GACGAAGCAGCAGCCCCGGGCGCGCCAGAGGCATGGAGCGCTGCCCCAGCCTAGGGGTACCCTCTA
CGCCCTGGTGGTGGTCTGGGGTGCGGGCGACACCGGCCGGCGCCAGCACTATCTCCACATCCGCC
GGCACCAGCGACAACCTGCCCCGGTGGACCTCATCGAACCCAGACCCTATCTTTGACCCCAAGGA
AAAGGATCTGAACGAGACGCTGCTGCGCTCGCTGCTCGGGGGCCACTACGACCAGGCTTCATGGCCAC
CTCGCCCCCGAGACCGGCCCGGGGGCGGGGGTGCAGCTGGGGGCGCGGAGACCTGGCGGAGCT
GGACCAGCTGCTGCGGCAGCGGCCGTGCGGGGCCATGCCGAGCGAGATCAAAGGGCTAGAGTTCTCCGA
GGGCTTGGCCAGGGCAAGAAGCAGCGCCTAAGCAAGAAGCTGCGGAGGAAGTTACAGATGTGGCTGTG
GTCGCAGACATTTGCCCGTGTGTACGCGTGAACGACCTGGGAGCCGCTTTTGGCCGCGCTACGT
GAAGGTGGGACGCTGTTCAAGTAAAGCGCTCGTGTCCGTGCCGAGGGCATGGTGTGCAAGCCGTCAA
GTCCGTGACCTACGGTGTGCGGTGGCGTGTGAGCGCGCGGGGCCAGCGCTGCGGCTGGATTCC
CATCCAGTACCCATCATTTCCGAGTGAAGTGTGCTGCTAGAACTCGGGGGCCCCCTGCCCGACCC
GGACACTTGATCGATCCCACCGACGCCCTGCACCGCCTCAAACAGTCCACCACCTTAGCGGAG
GGTTTTCAATGAACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTCTGGGCTACAGAGACCTAGCTTTCTGGTTCC
TGTAATGCACTGTTAACTGTGTAGGAATGTATATGTGTGTATATACGGTCCCAGTTTTAATTTACT
TATTAAGGTGAGTATTATACGTTAAAAAAAAAAAAAAAAACCAAAAAAAAAAAAAAAAAAAAAAAAAA
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<b>5' Read Nucleotide Sequence:</b>	>OriGene 5' read for NM_005450 unedited NNGGTAAGGTCAGACTTTGTAACGAATCACTTAGGCGGCCGCTAACTCGCCATTACG GCCGGGGCAGCGAGGAGCCGGCGCCTCCCGCGCCCCGCGGTGCGCCTGGAGTAATTTGG ATGCCAGCCGCGCCGCTTCCCCAGTAGACCCGGGAGAGGAGTTGCGGCCAATTGTG TGCCTTTCTTCCGCCCGGTGGGAGCCGGCGTGCGCGAAGGGCTCTCCCGCGGCTCAT GCTGCCGGCCCTGCGCCTGCCAGCCTCGGGTGAGCCGCCTCCGGAGAGACGGGGAGCG CGGCGGCCCGCGGGCTCGGCGTCTCTCTCCGGGACGCGGGACGAAGCAGCAGCCCC GGGCGCGCGCAGAGGCATGGAGCGCTGCCAGCCTAGGGGTACCCCTTACGCCTGG TGGTGGTCTGGGGCTGCGGGCGACACCGGCCGCGGCCAGCACTATCTCCACATCCGCC CGGCACCCAGCGACAACCTGCCCTGGTGGACCTCATCGAACACCCAGACCCTATCTTTG ACCCCAAGGAAAAGGATCTGAACGAGACGCTGCTGCGCTCGTCTCGGGGGCCACTACG ACCCAGGTTTCATGGCCACTCGCCCCCGAGGACCGGCCGCGGGGGCGGGGTGCAG CTGGGGGCGGGAGGACCTGGCGGAGCTGGACCAGCTGCTGCGGCAGCGCCGTCGGGG CCATGCCGAGCGAGATCAAAGGGCTAGAGTTCTCCGAGGGCTTCCCCAGGCAGAAAGCA GCGCCTAAGCAAGAGCTGCGGAGGAAAGTACAGATGTGGCTGTGGTTCGAGACTTCTGCC CCGTGCTGTACGCTGGAACGACCTGGCAGCCCTTTGCCGCGCTACTTAAGGTGGGC AA
<b>Restriction Sites:</b>	EcoRI-XbaI
<b>ACCN:</b>	NM_005450
<b>Insert Size:</b>	1307 bp
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
<b>OTI Annotation:</b>	The ORF of this clone has been fully sequenced and found to be a perfect match to NM_005450.2.
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li> </ol>
<b>RefSeq:</b>	<u><a href="#">NM_005450.4</a></u>
<b>RefSeq Size:</b>	1892 bp
<b>RefSeq ORF:</b>	699 bp
<b>Locus ID:</b>	9241
<b>UniProt ID:</b>	<u><a href="#">Q13253</a></u>
<b>Cytogenetics:</b>	17q22

**Protein Families:** Druggable Genome, Secreted Protein

**Protein Pathways:** TGF-beta signaling pathway

**MW:** 45.9 kDa

**Gene Summary:** 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]