

## GMP Recombinant Human Noggin (carrier-free)

<b>Catalog# / Size</b>	795908 / 25 µg 795910 / 100 µg
<b>Other Names</b>	Nog, SYNS1A, SYNS1, SYM1
<b>Description</b>	<p>Noggin is an embryonic inducer that can sequester TGF-β cytokines of the BMP family with extremely high affinity. Noggin was originally identified as a BMP-4 antagonist whose action is critical for proper formation of the head and other dorsal structures. Noggin also has been shown to modulate the activities of other BMPs including BMP-2, -7, -13, and -14. It is expressed in defined areas of the adult central nervous system and peripheral tissues such as lung, skeletal muscle, and skin. During culture of human embryonic stem cells or neural stem cells under certain conditions, addition of Noggin to antagonize BMP activity may allow stem cells to proliferate while maintaining their undifferentiated state, or alternatively, to differentiate into dopaminergic neurons. Noggin also appears to maintain adult stem cell populations <i>in vivo</i>. For example, it maintains neural stem cells within the hippocampus. Targeted deletion of Noggin in mice results in prenatal death and recessive phenotype displaying a severely malformed skeletal system. Conversely, transgenic mice over-expressing Noggin in mature osteoblasts display impaired osteoblastic differentiation, reduced bone formation, and severe osteoporosis.</p>

### Product Details

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<b>Source</b>	Human Noggin, amino acid (Gln28-Cys232) (Accession: # Q13253) was expressed in <i>E. coli</i> .
<b>Molecular Mass</b>	The 206 amino acid recombinant protein has a predicted molecular mass of approximately 23.17 kD. The DTT-reduced and non-reduced protein migrates at approximately 28 and 70 kD by SDS-PAGE, respectively. The predicted N-terminal amino acid is Gln.
<b>Purity</b>	> 95%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	0.1 µm filtered protein solution is in 10 mM citric acid pH 3.0
<b>Endotoxin Level</b>	Less than 0.1 EU per µg of protein as determined by the LAL method.
<b>Concentration</b>	25 µg and 100 µg sizes are bottled at 0.5 mg/mL
<b>Storage &amp; Handling</b>	<p>Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin the vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% endotoxin-free BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week or stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b></p>
<b>Activity</b>	Recombinant human Noggin inhibits alkaline phosphatase production induced by recombinant human BMP-4 in the chondrogenic cell line ATDC5. The ED <sub>50</sub> for this effect is 0.04 – 0.20 µg/mL.
<b>Application</b>	<a href="#">Bioassay</a>
<b>Application Notes</b>	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are validated in-house to maintain activity after shipping on blue ice and are backed by our <a href="#">100% satisfaction guarantee</a> . If you have any concerns, contact us at <a href="mailto:tech@biolegend.com">tech@biolegend.com</a> .
<b>Disclaimer</b>	<p><b>GMP Recombinant Proteins.</b> BioLegend GMP recombinant proteins are manufactured in a dedicated GMP facility and compliant with ISO 13485:2016. For research or <i>ex vivo</i> cell processing use. Not for use in diagnostic or therapeutic procedures. Our processes include:</p> <ul style="list-style-type: none"><li>• Batch-to-batch consistency</li><li>• Material traceability</li><li>• Documented procedures</li><li>• Documented employee training</li><li>• Equipment maintenance and monitoring records</li><li>• Lot-specific certificates of analysis</li></ul>

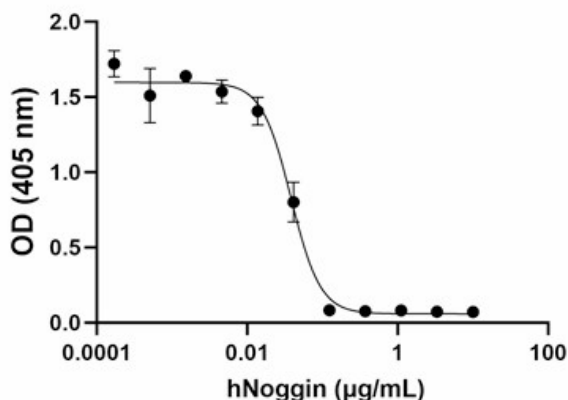
- Quality audits per ISO 13485:2016
- QA review of released products

BioLegend GMP recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12.

## Antigen Details

<b>Structure</b>	Dimer
<b>Ligand/Receptor</b>	BMP-2, BMP-4, BMP-5, BMP-6, BMP-7, BMP-13, and BMP-14
<b>Bioactivity</b>	Human Noggin inhibits the production of alkaline phosphatase induced by human BMP-4 in ATDC5 cells.
<b>Cell Sources</b>	Preadiposites, skeletal muscle, lung, neuron, skin, adipose tissue, osteoblasts.
<b>Cell Targets</b>	Mesenchymal stem cells, embryonic stem cells
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. Valenzuela DM, <i>et al.</i> 1995. <i>J. Neurosci.</i> 15:6077.</li> <li>2. McMahon JA, <i>et al.</i> 1998. <i>Genes Dev.</i> 12:1438.</li> <li>3. Yuasa S, <i>et al.</i> 2005. <i>Nat. Biotechnol.</i> 23:607.</li> <li>4. Gong Y, <i>et al.</i> 1999. <i>Nat. Genet.</i> 21:302.</li> <li>5. Chiba S, <i>et al.</i> 2008. <i>Stem Cells.</i> 26:2810.</li> <li>6. Bonaguidi MA, <i>et al.</i> 2008. <i>J. Neurosci.</i> 28:9194.</li> <li>7. Hu X, <i>et al.</i> 2012. <i>J Dent Res.</i> 91:394.</li> <li>8. Blázquez-Medela AM, <i>et al.</i> 2019. <i>Mol Met.</i> 25: 50.</li> <li>9. Blázquez-Medela AM, <i>et al.</i> 2019. <i>Obes Rev.</i> 20:648.</li> </ol>
<b>Regulation</b>	Regulates mainly the function of BMP-2, BMP-4, and BMP-7. Controls the development of bone, muscle, and nerve tissue among others. Modulate adipose tissue and obesity <i>in vivo</i> .
<b>Gene ID</b>	<a href="#">9241</a>

## Product Data



Recombinant human Noggin inhibits alkaline phosphatase production induced by recombinant human BMP-4 in the chondrogenic cell line ATDC5. The ED<sub>50</sub> for this effect is 0.04 – 0.20 µg/mL.

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