

## Noggin Protein, Human (HEK293)

Cat. No.:	HY-P70558
Synonyms:	Noggin; NOG
Species:	Human
Source:	HEK293
Accession:	Q13253 (Q28-C232)
Gene ID:	9241
Molecular Weight:	Approximately 28-32 kDa due to the glycosylation

### PROPERTIES

AA Sequence	<p>           Q H Y L H I R P A P    S D N L P L V D L I    E H P D P I F D P K    E K D L N E T L L R            S L L G G H Y D P G    F M A T S P P E D R    P G G G G G A A G G    A E D L A E L D Q L            L R Q R P S G A M P    S E I K G L E F S E    G L A Q G K K Q R L    S K K L R R K L Q M            W L W S Q T F C P V    L Y A W N D L G S R    F W P R Y V K V G S    C F S K R S C S V P            E G M V C K P S K S    V H L T V L R W R C    Q R R G G Q R C G W    I P I Q Y P I I S E            C K C S C         </p>
Biological Activity	<p>           1. Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The <math>IC_{50}</math> is <math>&lt; 1.97</math> ng/mL, corresponding to a specific activity of <math>&gt; 5.08 \times 10^5</math> units/mg.            2. Measured by its ability to inhibit BMP-2-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The <math>ED_{50}</math> for this effect is <math>&lt; 2</math> <math>\mu</math>g/mL in the presence of 2000 ng/mL of Recombinant Human BMP-2.            3. Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The <math>ED_{50}</math> for this effect is <math>&lt; 2</math> ng/mL in the presence of 50 ng/mL of Recombinant Human BMP-4.            4. Measured by its ability to inhibit BMP-4-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The <math>ED_{50}</math> for this effect is 3.0 ng/mL in the presence of 30 ng/mL of Recombinant Human BMP-4, corresponding to a specific activity is <math>3.33 \times 10^5</math> units/mg.         </p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 $\mu$ m filtered solution of 20 mM PB, 500 mM NaCl, 2 mM EDTA, pH 7.4 or PBS, pH 7.4.
Endotoxin Level	$< 1$ EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at $-20^{\circ}\text{C}$ for 2 years. After reconstitution, it is stable at $4^{\circ}\text{C}$ for 1 week or $-20^{\circ}\text{C}$ for longer (with carrier protein). It is recommended to freeze aliquots at $-20^{\circ}\text{C}$ or $-80^{\circ}\text{C}$ for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

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## DESCRIPTION

### Background

Noggin is a glycosylated cysteine-knot chemokine protein, which functions as an extracellular negative regulator of transforming growth factor (TGF) $\beta$  superfamily members. Alongside several other antagonists, Noggin blocks pluripotent bone morphogenetic protein (BMP) signaling that acts locally on target cells, affecting cell survival, proliferation, and differentiation. Noggin inhibits BMPs as a result of forming a neutralizing complex that prevents BMPs from binding to BMP receptor<sup>[1]</sup>.

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## REFERENCES

[1]. Kang HW, et al. In vitro and In vivo imaging of antivascuogenesis induced by Noggin protein expression in human venous endothelial cells. FASEB J. 2009;23(12):4126-4134.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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