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Human Recombinant Noggin (CHO-expressed)

Noggin

Catalog #78060.1	10 µg
Catalog #78060	50 µg
Catalog #78060.2	1000 µg

Product Description

Noggin binds to and antagonizes bone morphogenetic protein (BMP) ligands of the transforming growth factor beta (TGF-β) family. Noggin supports maintenance of undifferentiated human embryonic stem cells in vitro, and can be used to prevent spontaneous differentiation in the short term (Chaturvedi et al.). Noggin is essential for development of structures derived from ectoderm embryonic somite, skeletal patterning, and neurogenesis in vivo. It also influences chondrogenesis, osteogenesis, and joint formation (Krause et al.), and promotes dopaminergic differentiation of embryonic stem cells and subsequent survival of dopamine neurons (Chiba et al.).

Product Information

Alternative Names:	NOG, SYM1, SYNS1
Accession Number:	Q13253
Amino Acid Sequence:	QHYLHIRPAP SDNLPLVDLI EHPDPIFDPK EKDLNETLLR SLLGGHYDPG FMATSPPEDR PGGGGGAAGG AEDLAELDQL LRQRPSGAMP SEIKGLEFSE GLAQGKKQRL SKKLRRKLQM WLWSQTFCPV LYAWNDLGSR FWPRYVKVGS CFSKRSCSVP EGMVCKPSKS VHLTVLRWRC QRRGGQRCGW IPIQYPIISE CKCSC
Predicted Molecular Mass:	30 kDa
Species:	Human
Product Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	CHO
Purity:	≥ 95%

Specifications

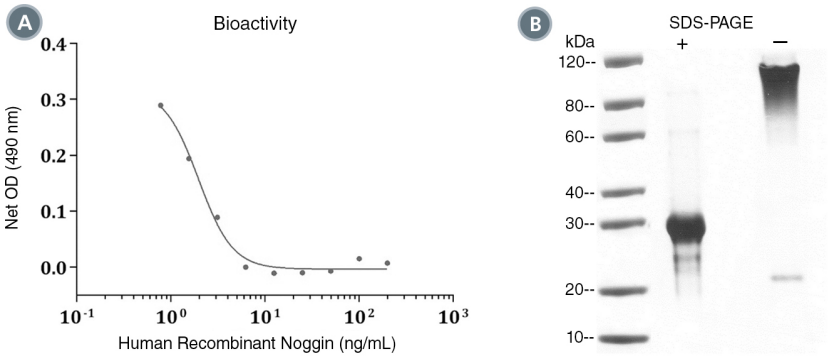
Activity:	The specific activity is ≥ 4 x 10^5 units/mg (EC50 ≤ 2.5 ng/mL), as determined by a bioassay using ATDC5 cells in the presence of 10 ng/mL human BMP-4.
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Stability and Storage: Store at -80°C. Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 week or at -20 to -80°C for up to 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Noggin was tested by its ability to inhibit BMP-4 induced alkaline phosphatase production of ATDC-5 cells. The EC50 is defined as the effective concentration of the growth factor at which inhibition of alkaline phosphatase production is at 50% of maximum. The EC50 in the above example is 1.9 ng/mL. (B) 2 µg of Human Recombinant Noggin was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant Noggin has a predicted molecular mass of 30 kDa.

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Chaturvedi G et al. (2009) Noggin maintains pluripotency of human embryonic stem cells grown on Matrigel. Cell Prolif 42(4): 425–33.

Chiba S et al. (2008) Noggin enhances dopamine neuron production from human embryonic stem cells and improves behavioral outcome after transplantation into Parkinsonian rats. Stem Cells 26(11): 2810–20.

Krause C et al. (2011) Noggin. Int J Biochem Cell Biol 43(4): 478–81.