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Mouse/Rat Recombinant Noggin, ACF

Noggin

Catalog #100-2068 100 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 cultured in mouse embryonic fibroblast (MEF)-conditioned medium (Chaturvedi et al.) and promotes dopaminergic differentiation of embryonic stem cells and subsequent survival of dopamine neurons (Chiba et al.). Noggin is essential for development of ectodermal structures including neural tube, tooth, hair follicle, and eye, as well as patterning of mesodermal somites and skeletal structures. It also influences chondrogenesis, osteogenesis, and joint formation (Krause et al.). This product is animal component-free (ACF).

Product Information

Alternative Names:	NOG, SYM1, SYNS1
Accession Number:	P97466
Predicted Molecular Mass:	46 kDa (dimer)
Species:	Mouse, Rat
Product Formulation:	Lyophilized from a solution containing acetonitrile and trifluoroacetic acid.
Source:	E. coli
Purity:	≥ 98% by SDS-PAGE

Specifications

Activity:	The EC50 is approximately 2.1 nM, as determined by the BMP-2 responsive luciferase reporter assay in HEK293T cells.
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.1 EU/µg protein.

Preparation and Storage

Stability and Storage:	Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in 10 mM hydrochloric acid to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1 - 1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at -20 to -80°C for more than 12 months. Avoid repeated freeze-thaw cycles.

Data

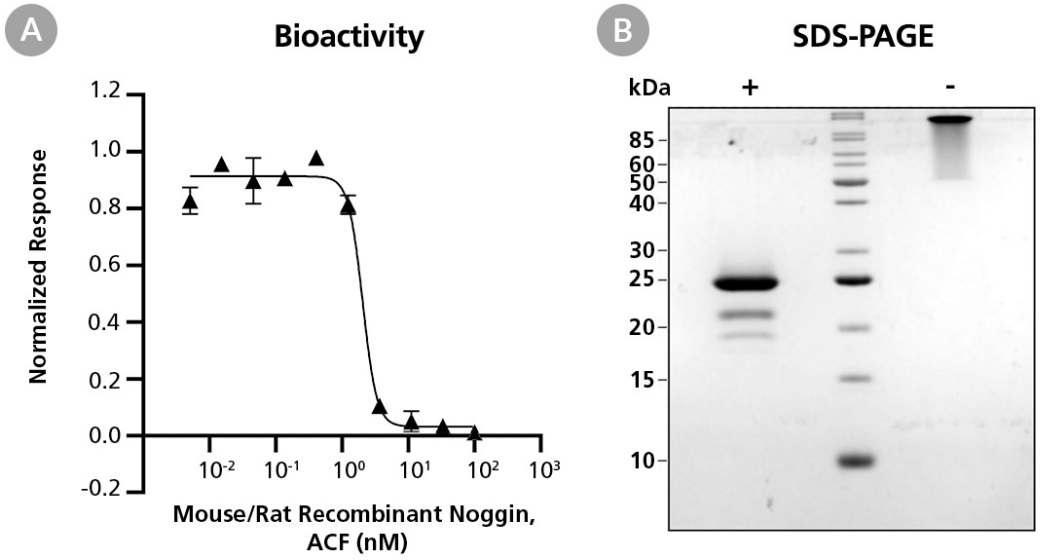

Figure 1. Biological Activity and Molecular Mass of Mouse/Rat Recombinant Noggin, ACF

(A) The biological activity of Mouse/Rat Recombinant Noggin, ACF was tested by its ability to inhibit BMP-2 activity in HEK293T cells using a luciferase reporter assay. Firefly luciferase activity was normalized to the control Renilla luciferase activity. The EC50 is defined as the effective concentration of the growth factor at which inhibition of BMP-2 activity is at 50% of maximum. The EC50 in the above example is 2.1 nM. (B) 3 µg of Mouse/Rat Recombinant Noggin, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse/Rat Recombinant Noggin, ACF has a predicted molecular mass of 46 kDa (dimer). Noggin has an unusual migration pattern under non-reducing conditions due to the non-covalent dimer which is the active protein.

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.