

Noggin (2C10): sc-293439

BACKGROUND

Genetic differentiation of the vertebrate somite necessitates a balance of inductive signals and antagonists. Noggin is a secreted protein that binds and inactivates members of the transforming growth factor- β (TGF β) superfamily of signaling proteins, such as bone morphogenetic proteins-2, 4, 7 (BMP2, BMP4, BMP7). Inhibition of BMP signaling by axially secreted Noggin mediates normal vertebrate skeletogenesis and patterning of the neural tube and somite. Spatially, Noggin may effectively antagonize BMP activity by efficiently diffusing through extracellular matrices, thereby creating morphogenic gradients. Mice embryos that are homozygous null for Noggin, a lethal genotype, display stubby, continuous limbs with lack of joints in the paws and an array of other developmental defects.

REFERENCES

- Valenzuela, D.M., et al. 1995. Identification of mammalian Noggin and its expression in the adult nervous system. *J. Neurosci.* 15: 6077-6084.
- Zimmerman, L.B., et al. 1996. The Spemann organizer signal Noggin binds and inactivates bone morphogenetic protein 4. *Cell* 86: 599-606.
- McMahon, J.A., et al. 1998. Noggin-mediated antagonism of BMP signaling is required for growth and patterning of the neural tube and somite. *Genes Dev.* 12: 1438-1452.
- Gong, Y., et al. 1999. Heterozygous mutations in the gene encoding Noggin affect human joint morphogenesis. *Nat. Genet.* 21: 302-334.
- Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 602991. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- LocusLink Report (LocusID: 9241). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: NOG (human) mapping to 17q22; Nog (mouse) mapping to 11 C.

SOURCE

Noggin (2C10) is a mouse monoclonal antibody raised against a recombinant protein mapping within amino acids 27-145 partial length Noggin of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Noggin (2C10) is recommended for detection of Noggin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Noggin siRNA (h): sc-42138, Noggin siRNA (m): sc-42139, Noggin shRNA Plasmid (h): sc-42138-SH, Noggin shRNA Plasmid (m): sc-42139-SH, Noggin shRNA (h) Lentiviral Particles: sc-42138-V and Noggin shRNA (m) Lentiviral Particles: sc-42139-V.

Molecular Weight of Noggin monomer: 32 kDa.

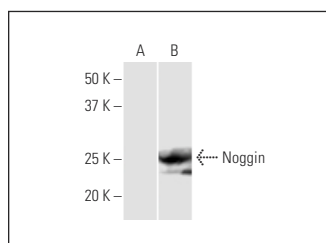
Molecular Weight of Noggin dimer: 64 kDa.

Positive Controls: Noggin transfected 293T whole cell lysate.

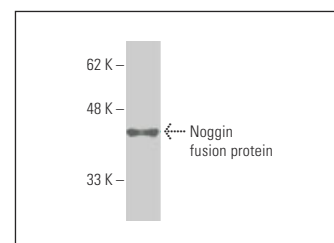
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Noggin (2C10): sc-293439. Western blot analysis of Noggin expression in non-transfected (A) and Noggin transfected (B) 293T whole cell lysates.



Noggin (2C10): sc-293439. Western blot analysis of human recombinant Noggin fusion protein.

SELECT PRODUCT CITATIONS

- Tan, J.J.Y., et al. 2018. Impact of substrate stiffness on dermal papilla aggregates in microgels. *Biomater. Sci.* 6: 1347-1357.
- Luo, H., et al. 2022. Stage-specific requirement for METTL3-dependent m⁶A modification during dental pulp stem cell differentiation. *J. Transl. Med.* 20: 605.
- Lee, J.E., et al. 2023. Noggin contributes to brain metastatic colonization of lung cancer cells. *Cancer Cell Int.* 23: 299.
- Di Stefano, A., et al. 2023. Bone morphogenic proteins and their antagonists in the lower airways of stable COPD patients. *Biology* 12: 1304.

RESEARCH USE

For research use only, not for use in diagnostic procedures.