SANTA CRUZ BIOTECHNOLOGY, INC.

Noggin (FL-232): sc-25656

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (TGFβ) 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 morpho-genic 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

1. Valenzuela, D.M., et al. 1995. Identification of mammalian noggin and its expression in the adult nervous system. J. Neurosci. 15: 6077-6084.
2. Zimmerman, L.B., et al. 1996. The Spemann organizer signal noggin binds and inactivates bone morphogenetic protein 4. Cell 86: 599-606.

CHROMOSOMAL LOCATION

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

SOURCE

Noggin (FL-232) is a rabbit polyclonal antibody raised against amino acids 1-232 representing full length Noggin of human origin.

PRODUCT

Each vial contains 200 µg IgG 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.

APPLICATIONS

Noggin (FL-232) 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 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

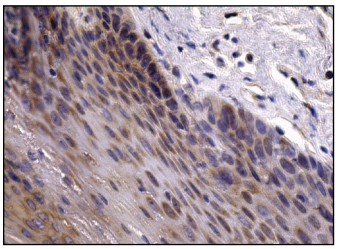
Noggin (FL-232) is also recommended for detection of Noggin in additional species, including canine, bovine and porcine.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Noggin (FL-232): sc-25656. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Lehmann, K., et al. 2007. A new subtype of brachydactyly type B caused by point mutations in the bone morphogenetic protein antagonist noggin. Am. J. Hum. Genet. 81: 388-396.
2. Kwong, F.N., et al. 2009. Altered relative expression of BMPs and BMP inhibitors in cartilaginous areas of human fractures progressing towards nonunion. J. Orthop. Res. 27: 752-757.
3. Cases, O., et al. 2013. Cubilin, a high affinity receptor for fibroblast growth factor 8, is required for cell survival in the developing vertebrate head. J. Biol. Chem. 288: 16655-16670.
4. Pang, X., et al. 2015. A novel missense mutation of NOG interferes with the dimerization of NOG and causes proximal symphalangism syndrome in a Chinese family. Ann. Otol. Rhinol. Laryngol. 124: 745-751.

RESEARCH USE

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