

Product Specification Sheet

**Human NOGGIN Protein Antibodies**

Cat. # NOGN13-S

Rabbit Anti-Human Noggin protein antiserum

**SIZE:** 100 ul

Cell-cell communication is mediated by secreted proteins such as Notch, Hedgehog, Wingless, Fibroblast Growth Factor (FGF), Epidermal Growth Factor (EGF) and Transforming Growth Factor-beta (TGF-beta) and their respective cell surface receptors. The TGF-beta superfamily includes TGF-beta, Activin, Nodal, Mullerian inhibiting substance (MIS), growth and differentiation factor (GDF) and bone morphogenetic proteins (BMPs). BMPs have been implicated in limb growth and patterning. The joints are formed after initial cartilage condensation followed by cell death and cavitation. The BMPs function by binding to a receptor complex that is found on all normal cells and is composed of type-I and –II receptors. BMP activities are modulated through gene expression, protein processing and by interaction with antagonists. The interplay between BMPs and their antagonists governs developmental and cellular processes as diverse as establishment of the embryonic dorsal-ventral axis, induction of neuronal tissue, formation of joints in the skeletal system and the neurogenesis in the adult brain. The BMP antagonists include the Differential screening-selected gene Aberrant in Neuroblastoma (DAN) family members (DAN, Cerberus, Gremlin), Chordin, Noggin and SOG. Noggin inhibits BMP signaling by blocking the molecular interfaces of the binding epitopes for both type-I and –II receptors.

Noggin is a homodimer (~32kDa) of two monomeric units linked together by a disulfide bond. The monomeric precursor (232aa, human and mouse) is encoded by NOG gene, mapped at human chromosome 17. The mature protein (28-232aa) is secreted as a glycosylated dimer which binds to BMPs including BMP-2, -4 and -7. The structure of Noggin is very similar to BMP-7. Mutation in Noggin gene leads to skeletal dysplasias characterized by joint fusions.

**Source of Antigen and Antibodies**

<b>Antigen</b>	Recombinant purified Human noggin protein ~23 kda (206 aa)
<b>Ab Host/type</b>	Rabbit, polyclonal, Unpurified antiserum (cat # NOGN13-S)
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

**Recommended Usage**

**Western Blotting** (1:1K-1:5K) using ECL technique) .

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

**Histochemistry & Immunofluorescence:** Not tested.

**Specificity & Cross-reactivity**

Antibody cross-reactivity in various species is not known. Recombinant purified noggin protein can be used as positive control.

**General References:**

(1) Groppe J et al (2002) Nature 420, 636; Wrana J (2002) Nature 420, 613; Zimmerman LB et al (1996) Cell 86, 599; Smith WC et al (1993) Nature 361, 547; Bachiller, D et al (2000) Nature 403, 658; Valenzuela, DM (1995) J Neurosci 15, 6077.

**Form & Storage of Antibodies/Peptide Control**

**Unpurified Antiserum**

100ul solution	50 ul lyophilized powder
contains 0.05% sodium azide	

**Reconstitute powder** in 50 ul or 100 ul PBS

**Storage**

**Short-term:** unopened, undiluted liquid vials for less than a week at 4oC.

**Long-term:** at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at –20oC or below.

**Shipping:** 4oC for solutions and room temp for powder.

*\*This product is for In vitro research use only.*

**Related material available from ADI**

Antibodies: NOGN11-A, CBFA 1,2 &3, Sclerostin.

NOGN13-S

60505A

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