SANTA CRUZ BIOTECHNOLOGY, INC.

Nodal (A-9): sc-377508

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The transforming growth factor β (TGFβ) superfamily is composed of numerous growth and differentiation factors, including TGFβ1-3, Mullerian inhibiting substance (MIS), growth/differentiation factor (GDF) 1-9, bone morphogenic protein (BMP) 2-8, glial cell line-derived neurotrophic factor (GDNF), Inhibin α, β-A, β-B and β-C, Lefty and Nodal. Members of the TGFβ superfamily are involved in embryonic development and adult tissue homeostasis. Ectodermal cells through the primitive streak delaminate and differentiate into mesoderm during gastrulation. Nodal expression is detectable in the primitive streak at the time of mesoderm formation, indicating a potential role for Nodal in mesoderm formation. Nodal has also been shown to be involved in the direction of heart looping and embryonic turning.

REFERENCES

1. Bellairs, R. 1986. The primitive streak. Anat. Embryol. 174: 1-14.
2. Massague, J., Cheifetz, S., Ignotz, R.A. and Boyd, F.T. 1987. Multiple type-β transforming growth factors and their receptors. J. Cell. Physiol. Suppl. 5: 43-47.
3. Massague, J. 1990. The transforming growth factor-β family. Annu. Rev. Cell Biol. 6: 597-641.
4. Zhou, X., Sasaki, H., Lowe, L., Hogan, B.L. and Kuehn, M.R. 1993. Nodal is a novel TGF-β-like gene expressed in the mouse node during gastrulation. Nature 361: 543-547.
5. Collignon, J., Varlet, I. and Robertson, E.J. 1996. Relationship between asymmetric Nodal expression and the direction of embryonic turning. Nature 381: 155-158.
6. McPherron, A.C., Lawler, A.M. and Lee, S.J. 1997. Regulation of skeletal muscle mass in mice by a new TGF-β superfamily member. Nature 387: 83-90.

CHROMOSOMAL LOCATION

Genetic locus: NODAL (human) mapping to 10q22.1; Nodal (mouse) mapping to 10 B4.

SOURCE

Nodal (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 291-329 near the C-terminus of Nodal of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377508 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Nodal (A-9) is recommended for detection of precursor and mature Nodal of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Nodal (A-9) is also recommended for detection of precursor and mature Nodal in additional species, including equine and canine.

Suitable for use as control antibody for Nodal siRNA (h): sc-45478, Nodal siRNA (m): sc-39795, Nodal shRNA Plasmid (h): sc-45478-SH, Nodal shRNA Plasmid (m): sc-39795-SH, Nodal shRNA (h) Lentiviral Particles: sc-45478-V and Nodal shRNA (m) Lentiviral Particles: sc-39795-V.

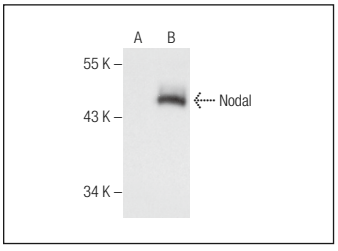
Molecular Weight of Nodal: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human Nodal transfected HEK293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nodal (A-9): sc-377508. Western blot analysis of Nodal expression in non-transfected (**A**) and human Nodal transfected (**B**) HEK293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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