

Nodal (WS65): sc-81953

BACKGROUND

The transforming growth factor β (TGF β) superfamily is composed of numerous growth and differentiation factors, including TGF β 1-3, 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 TGF β 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., et al. 1987. Multiple type- β transforming growth factors and their receptors. *J. Cell. Physiol. Suppl.* 5: 43-47.

CHROMOSOMAL LOCATION

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

SOURCE

Nodal (WS65) is a mouse monoclonal antibody raised against recombinant Nodal of human origin.

PRODUCT

Each vial contains 100 μ g IgG γ_1 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.

APPLICATIONS

Nodal (WS65) is recommended for detection of Nodal 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)], 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).

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.

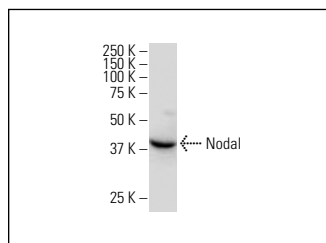
Molecular Weight of Nodal: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

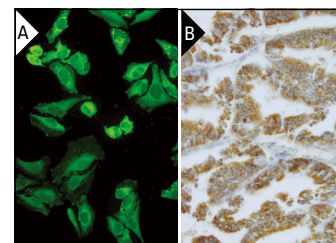
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Nodal (WS65): sc-81953. Western blot analysis of Nodal expression in HeLa whole cell lysate.



Nodal (WS65): sc-81953. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human endometrium cancer tissue showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Law, J., et al. 2014. Nodal signals via β -Arrestins and RalGTPases to regulate trophoblast invasion. *Cell. Signal.* 26: 1935-1942.
2. Wang, X.F., et al. 2014. Nodal promotes the generation of M2-like macrophages and downregulates the expression of IL-12. *Eur. J. Immunol.* 44: 173-183.
3. Hendrix, M.J., et al. 2017. Targeting melanoma with front-line therapy does not abrogate Nodal-expressing tumor cells. *Lab. Invest.* 97: 176-186.
4. Daraghma, H., et al. 2021. The role of Nodal and Cripto-1 in human oral squamous cell carcinoma. *Oral Dis.* 27: 1137-1147.
5. Zhu, X., et al. 2021. Nodal is involved in chemoresistance of renal cell carcinoma cells via regulation of ABCB1. *J. Cancer* 12: 2041-2049.
6. Untiveros, G., et al. 2021. Normal skin cells increase aggressiveness of cutaneous melanoma by promoting epithelial-to-mesenchymal transition via nodal and Wnt activity. *Int. J. Mol. Sci.* 22: 11719.
7. Sivaccumar, J.P., et al. 2023. Production in bacteria and characterization of engineered humanized Fab fragment against the Nodal protein. *Pharmaceuticals* 16: 1130.

RESEARCH USE

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