

Nanos1 (5F12): sc-293352

BACKGROUND

Nanos1, also known as NOS1, is a 292 amino acid protein that localizes to the perinuclear region of the cytoplasm and contains one Nanos-type zinc finger. Expressed at high levels in spermatogonia and present at lower levels in fetal ovaries, Nanos1 forms a complex with Pumilio 2 and functions to regulate the translation of select mRNAs, specifically via association with the 3'-UTR of its mRNA targets. Additionally, Nanos1 is required for the establishment and maintenance of germline stem cells, as it prevents their premature entry into oogenesis. The gene encoding Nanos1 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

1. Husi, H., Ward, M.A., Choudhary, J.S., Blackstock, W.P. and Grant, S.G. 2000. Proteomic analysis of NMDA receptor-adhesion protein signaling complexes. *Nat. Neurosci.* 3: 661-669.
2. Jaruzelska, J., Kotecki, M., Kusz, K., Spik, A., Firpo, M. and Reijo Pera, R.A. 2003. Conservation of a Pumilio-Nanos complex from *Drosophila* germ plasm to human germ cells. *Dev. Genes Evol.* 213: 120-126.
3. Wang, Z. and Lin, H. 2004. Nanos maintains germline stem cell self-renewal by preventing differentiation. *Science* 303: 2016-2019.
4. Strumane, K., Bonnomet, A., Stove, C., Vandenbroucke, R., Nawrocki-Raby, B., Bruyneel, E., Mareel, M., Birembaut, P., Berx, G. and van Roy, F. 2006. E-cadherin regulates human Nanos1, which interacts with p120^{Ctn} and induces tumor cell migration and invasion. *Cancer Res.* 66: 10007-10015.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 608226. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Bonnomet, A., Polette, M., Strumane, K., Gilles, C., Dalstein, V., Kileztky, C., Berx, G., van Roy, F., Birembaut, P. and Nawrocki-Raby, B. 2008. The E-cadherin-repressed hNanos1 gene induces tumor cell invasion by upregulating MT1-MMP expression. *Oncogene* 27: 3692-3699.
7. Ginter-Matuszewska, B., Spik, A., Rembiszewska, A., Koyias, C., Kupryjanczyk, J. and Jaruzelska, J. 2009. The SNARE-associated component Snapin binds Pumilio 2 and Nanos1 proteins in human male germ cells. *Mol. Hum. Reprod.* 15: 173-179.

CHROMOSOMAL LOCATION

Genetic locus: NANOS1 (human) mapping to 10q26.11; Nanos1 (mouse) mapping to 19 D3.

SOURCE

Nanos1 (5F12) is a mouse monoclonal antibody raised against amino acids 206-270 of Nanos1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Nanos1 (5F12) is recommended for detection of Nanos1 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

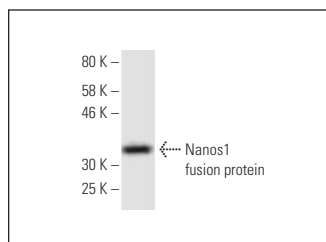
Suitable for use as control antibody for Nanos1 siRNA (h): sc-75864, Nanos1 siRNA (m): sc-75865, Nanos1 shRNA Plasmid (h): sc-75864-SH, Nanos1 shRNA Plasmid (m): sc-75865-SH, Nanos1 shRNA (h) Lentiviral Particles: sc-75864-V and Nanos1 shRNA (m) Lentiviral Particles: sc-75865-V.

Molecular Weight of Nanos1: 32 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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



Nanos1 (5F12): sc-293352. Western blot analysis of human recombinant Nanos1 fusion protein.

STORAGE

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

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.