

Nanog (P-18): sc-30332

BACKGROUND

Nanog (from "Tir Na Nog", the mythologic Celtic land of the ever young) is a divergent homeodomain protein that directs pluripotency and differentiation of undifferentiated embryonic stem cells. Nanog mRNA is present in pluripotent mouse and human cell lines and absent from differentiated cells. Human Nanog protein shares 52% overall amino acid identity with the mouse protein and 85% identity in the homeodomain. Human Nanog maps to gene locus 12p13.31, whereas mouse Nanog maps to gene loci 6 F2. Murine embryonic Nanog expression is detected in the inner cell mass of the blastocyst. High levels of human Nanog expression have been detected by Northern analysis in the undifferentiated NTERA-2 cl.D1 embryonal carcinoma cell line.

REFERENCES

1. Chambers, I., et al. 2003. Functional expression cloning of Nanog, a pluripotency sustaining factor in embryonic stem cells. *Cell* 113: 643-655.
2. Pan, G.J., et al. 2003. Identification of two distinct transactivation domains in the pluripotency sustaining factor Nanog. *Cell Res.* 13: 499-502.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607937. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>.
4. Hart, A.H., et al. 2004. Identification, cloning and expression analysis of the pluripotency promoting Nanog genes in mouse and human. *Dev. Dyn.* 230: 187-198.
5. Clark, A.T., et al. 2004. Human STELLAR, NANOG and GDF3 genes are expressed in pluripotent cells and map to chromosome 12p13, a hotspot for teratocarcinoma. *Stem Cells* 22: 169-179.
6. Booth, H.A., et al. 2004. Eleven daughters of Nanog. *Genomics* 84: 229-238.
7. Deb-Rinker, P., et al. 2005. Sequential DNA methylation of the Nanog and Oct-4 upstream regions in human NT2 cells during neuronal differentiation. *J. Biol. Chem.* 280: 6257-6260.
8. Høei-Hansen, C.E., et al. 2005. Stem cell pluripotency factor Nanog is expressed in human fetal gonocytes, testicular carcinoma *in situ* and germ cell tumours. *Histopathology* 47: 48-56.

CHROMOSOMAL LOCATION

Genetic locus: NANOG/NANOGP1 (human) mapping to 12p13.31.

SOURCE

Nanog (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Nanog 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.

Blocking peptide available for competition studies, sc-30332 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nanog (P-18) is recommended for detection of Nanog of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); also recommended for detection of NanogP1.

Molecular Weight of Nanog: 40 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Lagadec, P., et al. 1987. Treatment with endotoxins of peritoneal carcinomatosis induced by colon tumor cells in the rat. *Invasion Metastasis* 7: 83-95.
2. Yew, T.L., et al. 2011. Knockdown of p21^{Cip1/Waf1} enhances proliferation, the expression of stemness markers, and osteogenic potential in human mesenchymal stem cells. *Aging Cell* 10: 349-361.
3. Park, S., et al. 2015. Establishment of a xeno-free culture system that preserves the characteristics of placenta mesenchymal stem cells. *Cytotechnology* 67: 851-860.

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 or our catalog for detailed protocols and support products.