

Oct-3/4 (N-20): sc-8630

BACKGROUND

POU5F1 (POU domain, class 5, transcription factor 1), also known as octamer-binding transcription factor-3 (Oct-3, Otf-3), octamer-binding transcription factor-4 (Oct-4, Otf-4) and Oct-3/4, modulates embryonic stem (ES) cell populations by influencing lineage commitment. Oct-3/4 sustains stem-cell self-renewal and differentiation pathways. Transcription factors containing the POU homeodomain regulate tissue-specific gene expression in lymphoid and pituitary differentiation and in early mammalian development. Oct-3/4 is capable of inducing rapid proliferation and tumorigenic properties of ES cells through activation of the UTF1 gene. In humans, two Oct-3/4 isoforms contribute to influencing the undifferentiated phenotype of ES cells. Oct-3/4 pseudogenes localizing to human chromosomes 10 and 8 are reported to be transcribed in certain cancer cell lines and tissues.

CHROMOSOMAL LOCATION

Genetic locus: POU5F1 (human) mapping to 6p21.33.

SOURCE

Oct-3/4 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Oct-3/4 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-8630 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8630 X, 200 µg/0.1 ml.

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.

APPLICATIONS

Oct-3/4 (N-20) is recommended for detection of Oct-3/4 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); non cross-reactive with Oct-3/4 isoform A.

Suitable for use as control antibody for Oct-3/4 siRNA (h): sc-36123, Oct-3/4 shRNA Plasmid (h): sc-36123-SH and Oct-3/4 shRNA (h) Lentiviral Particles: sc-36123-V.

Oct-3/4 (N-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Oct-3/4A isoform: 52 kDa.

Molecular Weight of Oct-3/4B isoform: 45 kDa.

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. Cauffman, G., et al. 2006. POU5F1 isoforms show different expression patterns in human embryonic stem cells and preimplantation embryos. *Stem Cells* 24: 2685-2691.
2. Liedtke, S., et al. 2008. Oct4 expression revisited: potential pitfalls for data misinterpretation in stem cell research. *Biol. Chem.* 389: 845-850.
3. Wang, L., et al. 2009. Characterization of stem cell attributes in human osteosarcoma cell lines. *Cancer Biol. Ther.* 8: 543-552.
4. Chen, S.F., et al. 2012. Nonadhesive culture system as a model of rapid sphere formation with cancer stem cell properties. *PLoS ONE* 7: e31864.
5. Ferro, F., et al. 2012. Dental pulp stem cells differentiation reveals new insights in Oct4A dynamics. *PLoS ONE* 7: e41774.
6. Chen, S.F., et al. 2012. Quercetin suppresses drug-resistant spheres via the p38^{MAPK-Hsp27} apoptotic pathway in oral cancer cells. *PLoS ONE* 7: e49275.
7. Martí, M., et al. 2013. Characterization of pluripotent stem cells. *Nat. Protoc.* 8: 223-253.
8. 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.

PROTOCOLS

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



Try **Oct-3/4 (C-10): sc-5279** or **Oct-3/4 (F-7): sc-514295**, our highly recommended monoclonal alternatives to Oct-3/4 (N-20). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Oct-3/4 (C-10): sc-5279**.