SANTA CRUZ BIOTECHNOLOGY, INC.

Oct-3/4 (N-19): sc-8628

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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; Pou5f1 (mouse) mapping to 17 B1.

SOURCE

Oct-3/4 (N-19) 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 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8628 X, 100 µg/0.1 ml.

Blocking peptide available for competition studies, sc-8628 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Oct-3/4 (N-19) is recommended for detection of Oct-3/4 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)], 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 B.

Oct-3/4 (N-19) is also recommended for detection of Oct-3/4 in additional species, including equine and porcine.

Suitable for use as control antibody for Oct-3/4 siRNA (h): sc-36123, Oct-3/4 siRNA (m): sc-36124, Oct-3/4 shRNA Plasmid (h): sc-36123-SH, Oct-3/4 shRNA Plasmid (m): sc-36124-SH, Oct-3/4 shRNA (h) Lentiviral Particles: sc-36123-V and Oct-3/4 shRNA (m) Lentiviral Particles: sc-36124-V.

Oct-3/4 (N-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

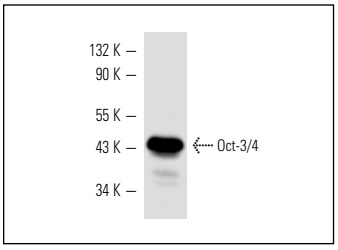
Molecular Weight of Oct-3/4B isoform: 45 kDa.

Positive Controls: F9 cell lysate: sc-2245 or mouse kidney extract: sc-2255.

STORAGE

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

DATA



Oct-3/4 (N-19): sc-8628. Western blot analysis of Oct-3/4 expression in F9 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Stead, E., et al. 2002. Pluripotent cell division cycles are driven by ectopic Cdk2, cyclin A/E and E2F activities. Oncogene 21: 8320-8333.
2. McDonel, P., et al. 2012. Sin3a is essential for the genome integrity and viability of pluripotent cells. Dev. Biol. 363: 62-73.
3. Yi, F., et al. 2012. Establishment of hepatic and neural differentiation platforms of Wilson's disease specific induced pluripotent stem cells. Protein Cell 3: 855-863.
4. Santostefano, K.E., et al. 2012. Fibroblast growth factor receptor 2 homodimerization rapidly reduces transcription of the pluripotency gene Nanog without dissociation of activating transcription factors. J. Biol. Chem. 287: 30507-30517.
5. Hutchins, A.P., et al. 2013. Co-motif discovery identifies an Esrrb-Sox2-DNA ternary complex as a mediator of transcriptional differences between mouse embryonic and epiblast stem cells. Stem Cells 31: 269-281.
6. Pratheesh, M.D., et al. 2013. Isolation, culture and characterization of caprine mesenchymal stem cells derived from amniotic fluid. Res. Vet. Sci. 94: 313-319.
7. Blakeley, P., et al. 2015. Defining the three cell lineages of the human blastocyst by single-cell RNA-seq. Development 142: 3151-3165.
8. Respuela, P., et al. 2016. Foxd3 promotes exit from naive pluripotency through enhancer decommissioning and inhibits germline specification. Cell Stem Cell 18: 118-133.

RESEARCH USE

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