SANTA CRUZ BIOTECHNOLOGY, INC.

Oct-3/4 (H-65): sc-25401

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, OTF3), 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.

REFERENCES

1. Takeda, J., et al. 1992. Human Oct-3 gene family: cDNA sequences, alternative splicing, gene organization, chromosomal location, and expression at low levels in adult tissues. Nucleic Acids Res. 20: 4613-4620.
2. Nichols, J., et al. 1998. Formation of pluripotent stem cells in the mamalian embryo depends on the POU transcription factor Oct-4. Cell 95: 379-391.
3. Niwa, H., et al. 2000. Quantitative expression of Oct-3/4 defines differ-entiation, dedifferentiation or self-renewal of ES cells. Nat. Genet. 24: 372-376.
4. Nishimoto, M., et al. 2005. Oct-3/4 maintains the proliferative embryonic stem cell state via specific binding to a variant octamer sequence in the regulatory region of the UTF1 locus. Mol. Cell. Biol. 25: 5084-5094.
5. Yang, H.M., et al. 2005. Characterization of putative *cis*-regulatory elements that control the transcriptional activity of the human Oct4 promoter. J. Cell. Biochem. 96: 821-830.

CHROMOSOMAL LOCATION

Genetic locus: POU5F1 (human) mapping to 6p21.33, POU5F1B (human) mapping to 8q24.21; Pou5f1 (mouse) mapping to 17 B1.

SOURCE

Oct-3/4 (H-65) is a rabbit polyclonal antibody raised against amino acids 1-65 mapping at the N-terminus of Oct-3B 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.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-25401 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 (H-65) is recommended for detection of Oct-3B, OTF3C and, to a lesser extent, Oct-3A (Oct-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).

Oct-3/4 (H-65) is also recommended for detection of Oct-3B, OTF3C and, to a lesser extent, Oct-3A (Oct-4) in additional species, including equine, bovine 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.

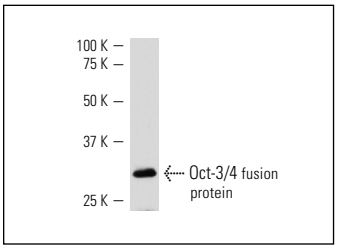
Oct-3/4 (H-65) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

Molecular Weight of Oct-3/4B isoform: 33 kDa.

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

DATA



Oct-3/4 (H-65): sc-25401. Western blot analysis of human recombinant Oct-3/4 fusion protein.

SELECT PRODUCT CITATIONS

1. Cho, H.J., et al. 2010. Induction of pluripotent stem cells from adult somatic cells by protein-based reprogramming without genetic manipulation. Blood 116: 386-395.
2. Kalbermatten, D.F., et al. 2011. Neurotrophic activity of human adipose stem cells isolated from deep and superficial layers of abdominal fat. Cell Tissue Res. 344: 251-260.