SANTA CRUZ BIOTECHNOLOGY, INC.

Oct-3/4 (A-9): sc-365509

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.

REFERENCES

1. Takeda, J., et al. 1992. Human Oct3 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 mammalian embryo depends on the POU transcription factor Oct4. Cell 95: 379-391.

CHROMOSOMAL LOCATION

Genetic locus: POU5F1 (human) mapping to 6p21.33; Pou5f1 (mouse) mapping to 17 B1.

SOURCE

Oct-3/4 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 16-45 near the N-terminus of Oct-3/4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda light chain 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-365509 X, 200 µg/0.1 ml.

Oct-3/4 (A-9) is available conjugated to agarose (sc-365509 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365509 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365509 PE), fluorescein (sc-365509 FITC), Alexa Fluor® 488 (sc-365509 AF488), Alexa Fluor® 546 (sc-365509 AF546), Alexa Fluor® 594 (sc-365509 AF594) or Alexa Fluor® 647 (sc-365509 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365509 AF680) or Alexa Fluor® 790 (sc-365509 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365509 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Oct-3/4 (A-9) 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).

Oct-3/4 (A-9) 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.

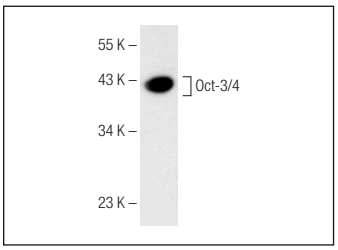
Oct-3/4 (A-9) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

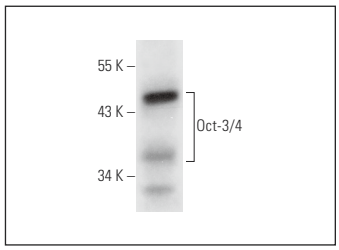
Molecular Weight of Oct-3/4B isoform: 45 kDa.

Positive Controls: F9 cell lysate: sc-2245, NTERA-2 cl.D1 whole cell lysate: sc-364181 or mouse kidney extract: sc-2255.

DATA



Oct-3/4 (A-9): sc-365509. Western blot analysis of Oct-3/4 expression in F9 whole cell lysate.



Oct-3/4 (A-9): sc-365509. Western blot analysis of Oct-3/4 expression in NTERA-2 cl.D1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Ishii, T., et al. 2007. Transplantation of embryonic stem cell-derived endodermal cells into mice with induced lethal liver damage. Stem Cells 25: 3252-3260.
2. Vijaya Chandra, S.H., et al. 2016. Conservative site-specific and single-copy transgenesis in human LINE-1 elements. Nucleic Acids Res. 44: e55.
3. Zhai, L., et al. 2017. RBM46 regulates mouse embryonic stem cell differentiation by targeting β-catenin mRNA for degradation. PLoS ONE 12: e0172420.
4. Zhang, S., et al. 2019. Shrimp miRNA suppresses the stemness of human cancer stem cells via the PIN1 pathway. FASEB J. 33: 10767-10779.

RESEARCH USE

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