

Oct-3/4 (F-7): sc-514295



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, POU5F1B (human) mapping to 8q24.21; Pou5f1 (mouse) mapping to 17 B1.

SOURCE

Oct-3/4 (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 331-360 at the C-terminus of Oct-3/4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa 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-514295 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-514295 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Oct-3/4 (F-7) is recommended for detection of Oct-3/4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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 (F-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

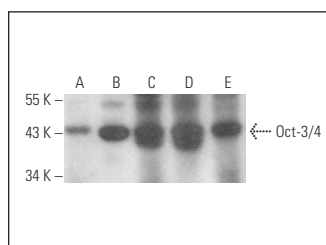
Molecular Weight of Oct-3/4B isoform: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or HEK293 whole cell lysate: sc-45136.

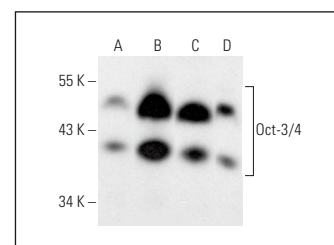
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Oct-3/4 (F-7): sc-514295. Western blot analysis of Oct-3/4 expression in RAT2 (A) and NIH/3T3 (B) whole cell lysates and mouse testis (C), mouse embryo (D) and mouse kidney (E) tissue extracts.



Oct-3/4 (F-7): sc-514295. Western blot analysis of Oct-3/4 expression in NTERA-2 cl.D1 (A), HeLa (B), Hep G2 (C) and HEK293 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Shams Najafabadi, H., et al. 2017. Isolation, characterization, and establishment of spontaneously immortalized cell line HRPE-2S with stem cell properties. *J. Cell. Physiol.* 232: 2626-2640.
- Peitz, M., et al. 2018. Blood-derived integration-free iPS cell line UKBi011-A from a diagnosed male Alzheimer's disease patient with APOE ε4/ε4 genotype. *Stem Cell Res.* 29: 250-253.
- Horák, P., et al. 2023. The Hedgehog/GLI signaling pathway activates transcription of Slug (Snail2) in melanoma cells. *Oncol. Rep.* 49: 75.

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 for detailed protocols and support products.



See **Oct-3/4 (C-10): sc-5279** for Oct-3/4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.