

Oct-3/4 (1): sc-101534

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.

CHROMOSOMAL LOCATION

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

SOURCE

Oct-3/4 (1) is a mouse monoclonal antibody raised against a recombinant protein representing full length Oct-3/4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Oct-3/4 (1) 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)] 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.

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

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

Positive Controls: HeLa nuclear extract: sc-2120 or F9 cell lysate: sc-2245.

STORAGE

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

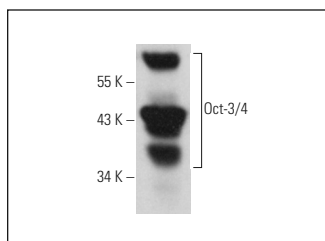
PROTOCOLS

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

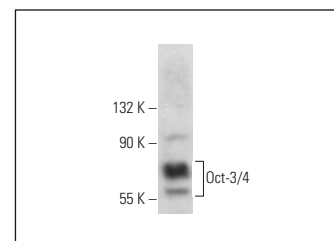
RESEARCH USE

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

DATA



Oct-3/4 (1): sc-101534. Western blot analysis of Oct-3/4 expression in F9 whole cell lysate.



Oct-3/4 (1): sc-101534. Western blot analysis of Oct-3/4 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

- Sheridan, S.D., et al. 2011. Epigenetic characterization of the FMR1 gene and aberrant neurodevelopment in human induced pluripotent stem cell models of fragile X syndrome. *PLoS ONE* 6: e26203.
- Denham, M., et al. 2012. Neurons derived from human embryonic stem cells extend long-distance axonal projections through growth along host white matter tracts after intra-cerebral transplantation. *Front. Cell. Neurosci.* 6: 11.
- Sutiwisesak, R., et al. 2014. Induced pluripotency enables differentiation of human nullipotent embryonal carcinoma cells N2102Ep. *Biochim. Biophys. Acta* 1843: 2611-2619.
- Gong, P., et al. 2017. TAT-mediated si-hWAPL inhibits the invasion and metastasis of cervical cancer stem cells. *Exp. Ther. Med.* 14: 5452-5458.
- Shao, Y., et al. 2018. EGFR-TKI resistance and MAP17 are associated with cancer stem cell like properties. *Oncol. Lett.* 15: 6655-6665.
- Favia, A., et al. 2019. The protein arginine methyltransferases 1 and 5 affect Myc properties in glioblastoma stem cells. *Sci. Rep.* 9: 15925.
- An, C., et al. 2020. Overcoming autocrine FGF signaling-induced heterogeneity in naive human ESCs enables modeling of random X chromosome inactivation. *Cell Stem Cell* 27: 482-497.e4.
- Tan, Y., et al. 2020. miR-148a regulates the stem cell-like side populations distribution by affecting the expression of ACVR1 in esophageal squamous cell carcinoma. *Onco Targets Ther.* 13: 8079-8094.
- Huang, Y., et al. 2021. Generation of an EFN2-2A-mCherry reporter human embryonic stem cell line using CRISPR/Cas9-mediated site-specific homologous recombination. *Stem Cell Res.* 52: 102241.
- Ye, L., et al. 2021. Establishment and characterization of a human embryonic stem cell line carrying a heterozygous GATA4^{T280M} mutation. *Stem Cell Res.* 53: 102393.

CONJUGATES

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.