

Oct-3/4 (C-10): sc-5279

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 (C-10) is a mouse monoclonal antibody raised against amino acids 1-134 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-5279 X, 200 µg/0.1 ml.

Oct-3/4 (C-10) is available conjugated to agarose (sc-5279 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5279 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5279 PE), fluorescein (sc-5279 FITC), Alexa Fluor[®] 488 (sc-5279 AF488), Alexa Fluor[®] 546 (sc-5279 AF546), Alexa Fluor[®] 594 (sc-5279 AF594) or Alexa Fluor[®] 647 (sc-5279 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-5279 AF680) or Alexa Fluor[®] 790 (sc-5279 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Oct-3/4 (C-10) is available conjugated to biotin (sc-5279 B), 200 µg/ml, for WB, IHC(P) and ELISA.

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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 (C-10) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Oct-3/4 isoform B.

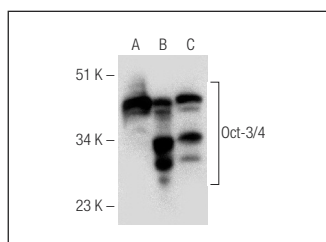
Suitable for use as control antibody for Oct-3/4 siRNA (h): sc-36123, Oct-3/4 siRNA (m): sc-36124, Oct-3/4 shRNA Plasmid (h): sc-36123-SH, Oct-3/4 shRNA Plasmid (m): sc-36124-SH, Oct-3/4 shRNA (h) Lentiviral Particles: sc-36123-V and Oct-3/4 shRNA (m) Lentiviral Particles: sc-36124-V.

Oct-3/4 (C-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

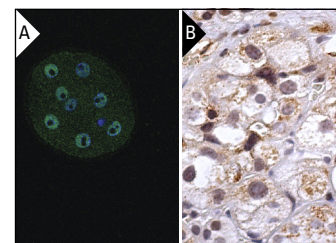
Molecular Weight of Oct-3/4A/B isoforms: 52/45 kDa.

Positive Controls: F9 cell lysate: sc-2245, NTERA-2 cl.D1 whole cell lysate: sc-364181 or ES-D3 whole cell lysate: sc-364776.

DATA



Oct-3/4 (C-10): sc-5279. Western blot analysis of Oct-3/4 expression in F9 (A), ES-D3 (B) and NTERA-2 cl.D1 (C) whole cell lysates.



Oct-3/4 (C-10): sc-5279. Immunofluorescence staining of paraformaldehyde fixed multicell mouse embryo showing nuclear localization. Kindly provided by Dr. Kira Foygel, Stanford University (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Drocourt, L., et al. 2002. Expression of CYP3A4, CYP2B6, and CYP2C9 is regulated by the vitamin D receptor pathway in primary human hepatocytes. *J. Biol. Chem.* 277: 25125-25132.
2. Genovese, N.J., et al. 2017. Enhanced development of skeletal myotubes from porcine induced pluripotent stem cells. *Sci. Rep.* 7: 41833.
3. Huang, Y., et al. 2017. A light-colored region of caudal fin: a niche of melanocyte progenitors in crucian carp (*Cyprinus carpio L.*). *Cell Biol. Int.* 41: 42-50.
4. Nair, R., et al. 2017. Haploid parthenotes express differential response to *in vitro* exposure of ammonia compared to normally fertilized embryos. *Biochem. Biophys. Res. Commun.* 486: 88-93.

RESEARCH USE

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