

Oct-3/4 (C-20): sc-8629



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 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Oct-3/4 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8629 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8629 X, 200 µg/0.1 ml.

APPLICATIONS

Oct-3/4 (C-20) is recommended for detection of Oct-3/4 and OTF3C 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Oct-3/4 (C-20) is also recommended for detection of Oct-3/4 and OTF3C in additional species, including equine, canine, bovine and porcine.

Oct-3/4 (C-20) 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 or mouse kidney extract: sc-2255.

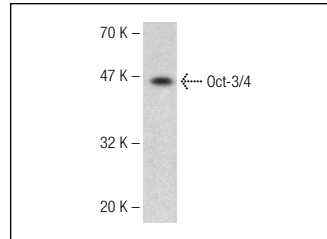
RESEARCH USE

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

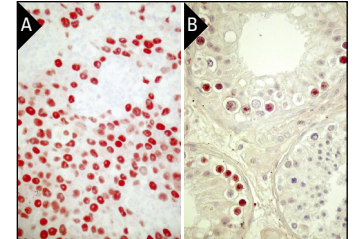
STORAGE

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

DATA



Oct-3/4 (C-20): sc-8629. Western blot analysis of Oct-3/4 expression in F9 whole cell lysate.



Oct-3/4 (C-20): sc-8629. Immunoperoxidase staining of formalin-fixed, paraffin-embedded testicular seminoma showing nuclear staining. Kindly provided by Dr. Rajpert-De Meyts at University Hospital of Copenhagen, Denmark (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded testicular premalignant carcinoma in situ showing nuclear staining. Kindly provided by Dr. Rajpert-De Meyts at University Hospital of Copenhagen, Denmark (B).

SELECT PRODUCT CITATIONS

- Looijenga, L.H., et al. 2003. POU5F1 (OCT3/4) identifies cells with pluripotent potential in human germ cell tumors. *Cancer Res.* 63: 2244-2250.
- Koster, R., et al. 2010. Cytoplasmic p21 expression levels determine cisplatin resistance in human testicular cancer. *J. Clin. Invest.* 120: 3594-3605.
- Kastler, S., et al. 2010. POU5F1P1, a putative cancer susceptibility gene, is overexpressed in prostatic carcinoma. *Prostate* 70: 666-674.
- Matsuoka, J., et al. 2010. Role of the stemness factors sox2, oct3/4, and nanog in gastric carcinoma. *J. Surg. Res.* 174: 130-135.
- Wang, X., et al. 2010. Concise review: isoforms of OCT4 contribute to the confusing diversity in stem cell biology. *Stem Cells* 28: 885-893.
- Hogg, K., et al. 2011. Prenatal androgen exposure leads to alterations in gene and protein expression in the ovine fetal ovary. *Endocrinology* 152: 2048-2059.
- Rijlaarsdam, M.A., et al. 2011. Specific detection of OCT3/4 isoform A/B/B1 expression in solid (germ cell) tumours and cell lines: confirmation of OCT3/4 specificity for germ cell tumours. *Br. J. Cancer* 105: 854-863.
- Shalom-Feuerstein, R., et al. 2012. Pluripotent stem cell model reveals essential roles for miR-450b-5p and miR-184 in embryonic corneal lineage specification. *Stem Cells* 30: 898-909.



Try **Oct-3/4 (C-10): sc-5279** or **Oct-3/4 (F-7): sc-514295**, our highly recommended monoclonal alternatives to Oct-3/4 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Oct-3/4 (C-10): sc-5279**.