

Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20



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Antibodies

Mouse monoclonal IgG2b antibody
against human OCT4 (OCT3),
unconjugated

Catalog #60093
#60093.1

100 µg 0.5 mg/mL
25 µg 0.5 mg/mL

Product Description

The 3A2A20 antibody reacts with human OCT4 (octamer-binding transcription factor 4; also known as OCT3 and OCT3/4), an ~40 kDa homeodomain transcription factor belonging to the POU family, which is expressed in undifferentiated human embryonic stem (ES), induced pluripotent stem (iPS), embryonal carcinoma (EC) and embryonic germ (EG) cells. OCT4 binds to the octamer motif (5'-ATTTCAT-3') and plays a key role in maintaining cells in a pluripotent state by interacting with other transcription factors such as SOX2 to regulate the expression of several genes, including FBX15, FGF-4, REX1, SOX2 and osteopontin. Levels of OCT4 are down-regulated during differentiation and it has thus emerged as a useful marker of pluripotency in stem cells, as well as a marker for certain human malignant germ cell tumours. Expression of OCT4 together with other transcription factors has been used to reprogram somatic cells into iPS cells. Multiple isoforms of OCT4 have been observed and in humans at least two are functionally active.

Target Antigen Name:	OCT4 (OCT3)
Alternative Names:	OCT-3, OCT3, OCT-4, octamer-binding transcription factor 4, POU domain class 5 transcription factor 1, POU5F1
Gene ID:	5460
Species Reactivity:	Human
Host Species:	Mouse
Clonality:	Monoclonal
Clone:	3A2A20
Isotype:	IgG2b, kappa
Immunogen:	Recombinant partial human OCT4 protein (amino acids 1 - 141)
Conjugate:	Unconjugated

Applications

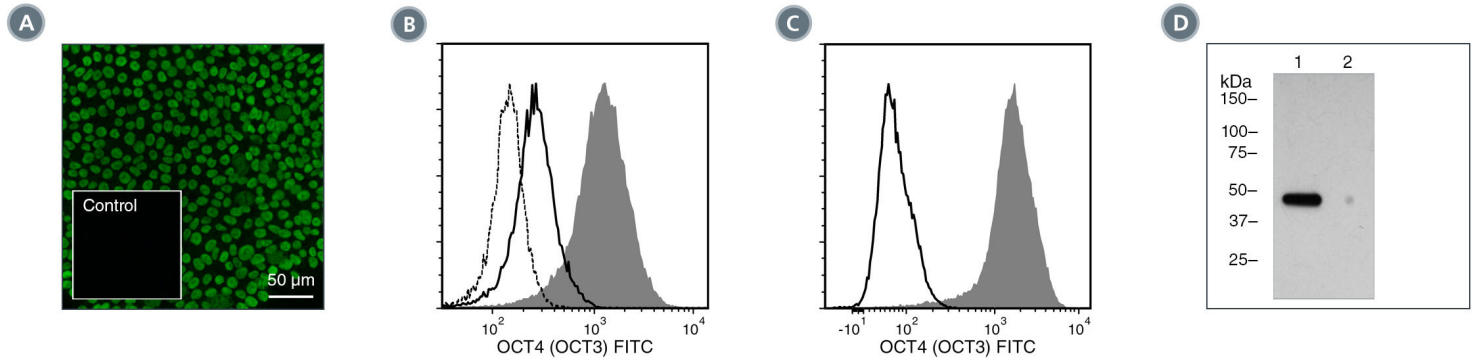
Verified:	FC, ICC, IF, WB
Reported:	ICC, IF, WB
Special Applications:	This antibody clone has been verified for labeling human ES and iPS cells grown in TeSR™-E8™ (Catalog #05940), mTeSR™1 (Catalog #05850) and TeSR™2 (Catalog #05860).

Abbreviations: CellSep: Cell separation; ChIP: Chromatin immunoprecipitation; FA: Functional assay; FACS: Fluorescence activated cell sorting; FC: Flow cytometry; ICC: Immunocytochemistry; IF: Immunofluorescence microscopy; IHC: Immunohistochemistry; IP: Immunoprecipitation; RIA: Radioimmunoassay; WB: Western blotting

Properties

Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.05% sodium azide
Purification:	The antibody was purified by affinity chromatography.
Stability and Storage:	Product stable at 2 - 8°C when stored undiluted. Do not freeze. For product expiry date, please contact techsupport@stemcell.com.
Directions for Use:	The suggested use of this antibody is: FC, ≤ 0.1 µg per 1 × 10 ⁶ cells in 100 µL volume; ICC/IF, ≤ 2.5 µg/mL; WB, ≤ 1 µg/mL. It is recommended that the antibody be titrated for optimal performance for each application.

Data



(A) Human iPS cells were cultured with TeSR™-E8™ on glass coverslips coated with Vitronectin XF™ (Catalog #07180), then fixed and stained with Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20, followed by goat anti-mouse IgG, FITC. Inset shows cells labeled with Mouse IgG2b, kappa Isotype Control Antibody, Clone MPC-11 (Catalog #60072), followed by goat anti-mouse IgG, FITC.

(B) Flow cytometry analysis of human ES cells cultured with mTeSR™1 on Corning® Matrigel®-coated glass coverslips. The ES cells (filled histogram) or HT1080 fibrosarcoma cells (negative control; dashed line histogram) were fixed and labeled with Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20, followed by Goat Anti-Mouse IgG (H+L) Antibody, Polyclonal, FITC (Catalog #60138FI). Labeling of the ES cells with Mouse IgG2b, kappa Isotype Control Antibody, Clone MPC-11, followed by Goat Anti-Mouse IgG (H+L) Antibody, Polyclonal, FITC is shown (solid line histogram).

(C) Flow cytometry analysis of human iPS cells cultured with TeSR™-E8™ on Vitronectin XF™. The cells were fixed and labeled with Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20, followed by Goat Anti-Mouse IgG (H+L) Antibody, Polyclonal, FITC (filled histogram), or Mouse IgG2b, kappa Isotype Control Antibody, Clone MPC-11, followed by Goat Anti-Mouse IgG (H+L) Antibody, Polyclonal, FITC (solid line histogram).

(D) Western blot analysis of denatured/reduced cell lysates from human ES cells cultured with mTeSR™1 on Corning® Matrigel® (lane 1), or mouse E13.5 neural progenitor cells cultured with NeuroCult™ Proliferation Kit (Mouse; Catalog #05702) (negative control, lane 2) with Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20.

Related Products

For a complete list of antibodies, including other conjugates, sizes and clones, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/antibodies or contact us at techsupport@stemcell.com.

References

1. Malchenko S et al. (2014) Onset of rosette formation during spontaneous neural differentiation of hESC and hiPSC colonies. *Gene* 534(2): 400–7. (ICC, IF)
2. Pirozhkova I et al. (2013) Differences in transcription patterns between induced pluripotent stem cells produced from the same germ layer are erased upon differentiation. *PLoS One* 8(1): e53033. (ICC, IF)
3. Rijlaarsdam MA 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(6): 854–63. (IHC)
4. McGuckin C et al. (2008) Culture of embryonic-like stem cells from human umbilical cord blood and onward differentiation to neural cells in vitro. *Nat Protoc* 3(6): 1046–55. (ICC, IF)
5. Takahashi K et al. (2007) Induction of pluripotent stem cells from adult human fibroblasts by defined factors. *Cell* 131(5): 861–72. (WB)
6. Wernig M et al. (2007) In vitro reprogramming of fibroblasts into a pluripotent ES-cell-like state. *Nature* 448(7151): 318–24. (IHC, WB)
7. Loh Y-H et al. (2006) The Oct4 and Nanog transcription network regulates pluripotency in mouse embryonic stem cells. *Nat Genet* 38(4): 431–40.
8. Niwa H et al. (2000) Quantitative expression of Oct-3/4 defines differentiation, dedifferentiation or self-renewal of ES cells. *Nat Genet* 24(4): 372–6. (WB)
9. Reubinoff BE et al. (2000) Embryonic stem cell lines from human blastocysts: somatic differentiation in vitro. *Nat Biotechnol* 18(4): 399–404.
10. Nichols J et al. (1998) Formation of pluripotent stem cells in the mammalian embryo depends on the POU transcription factor Oct4. *Cell* 95(3): 379–91. (ICC, IF)
11. Rosner MH et al. (1990) A POU-domain transcription factor in early stem cells and germ cells of the mammalian embryo. *Nature* 345(6277): 686–92.

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