Antibodies

Anti-Human SOX2 Antibody, Clone 2E1

Rabbit monoclonal IgG antibody against human, mouse, rat SOX2, unconjugated

Catalog #100-1339

100 µL

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Product Description

This rabbit monoclonal antibody (clone 2E1) reacts with human, mouse, and rat sex determining region Y-box 2 (SOX2), part of the SOX transcription factor family. SOX2 plays a key role in maintaining the pluripotency of embryonic stem (ES) cells; if SOX2 level is not regulated, it will result in the loss of ES cell pluripotency. In addition, SOX2 is an integral part of embryonic development by playing a key role in the development of pluripotent cells by embryos. SOX transcription factors possess a common high-mobility group (HMG) DNA-binding protein that is common between all members of the family. SOX2 in particular is classified as part of the SOXB1 group that also includes SOX1 and SOX3. SOX transcription factors propagate their functions in cell differentiation and development via protein nuclear localization. This mechanism uses nuclear localization signals (NLS) that are situated on either extremity of the DNA-binding HMG-box domain. Mutations in these regions may result in cancers as well as a variety of developmental diseases.

Target Antigen Name:	SOX2
Alternative Names:	ANOP3, MCOPS3
Gene ID:	6657
Species Reactivity:	Human, Mouse, Rat
Host Species:	Rabbit
Clonality:	Monoclonal
Clone:	2E1
Isotype:	IgG
Immunogen:	Synthetic peptide of human SOX2
Conjugate:	Unconjugated

Applications

Verified:	ICC/IF
Special Applications:	This antibody clone has been verified for labeling SOX2-positive human pluripotent stem cell (hPSC)-derived neural stem and progenitor cells generated with STEMdiff™ SMADi Neural Induction Kit (Catalog #08581) and STEMdiff™ Neural Progenitor Medium (Catalog #05833) as well as hPSCs grown in mTeSR™ Plus (Catalog #100-0276).

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; IHC-P: Immunohistochemistry (paraffin-embedded); IP: Immunoprecipitation; RIA: Radioimmunoassay; WB: Western blotting

Properties

Formulation:	Phosphate buffered saline, pH 7.4, containing 150 mM NaCl, 0.02% sodium azide and 50% glycerol
Purification:	The antibody was purified by affinity chromatography.
Stability and Storage:	Product stable at -20°C when stored undiluted. Avoid repeated freeze-thaw cycles. Stable until expiry date (EXP) on label.
Directions for Use:	The suggested use for this antibody is: ICC/IF, 1 - 2 µg/mL. It is recommended that the antibody be titrated for optimal performance for each application. For antibody concentration, refer to the lot-specific Certificate of Analysis at www.stemcell.com/coa.

Data

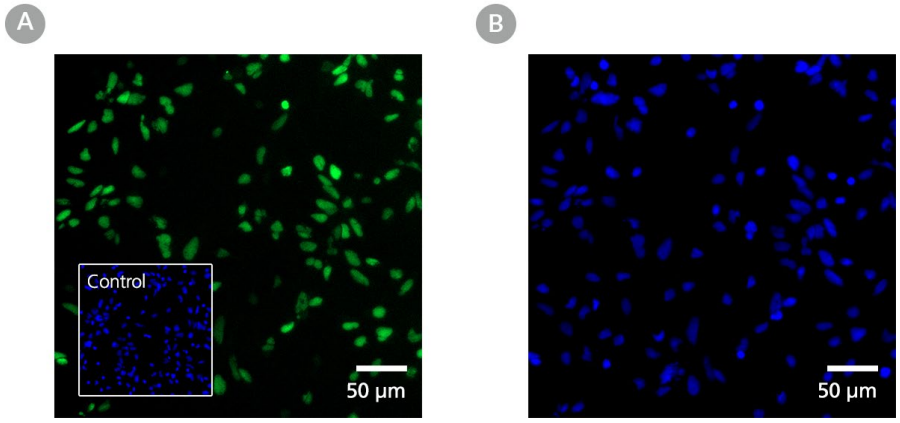

Figure 1. Human Neural Progenitor Cells Stained with Anti-Human SOX2 Antibody, Polyclonal

(A) Human neural progenitor cells (NPCs) were generated from induced pluripotent stem (iPS) cells using STEMdiff™ SMADi Neural Induction Kit and STEMdiff™ Neural Progenitor Medium and cultured on Corning® Matrigel®, then fixed and labeled with Anti-Human SOX2 Antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (green) (Catalog #100-1082). Inset shows NPCs labeled with a rabbit IgG isotype control antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (with DAPI staining).
(B) DAPI (blue) counterstaining of the cells shown in figure (A); nuclear localization of SOX2 is evident.

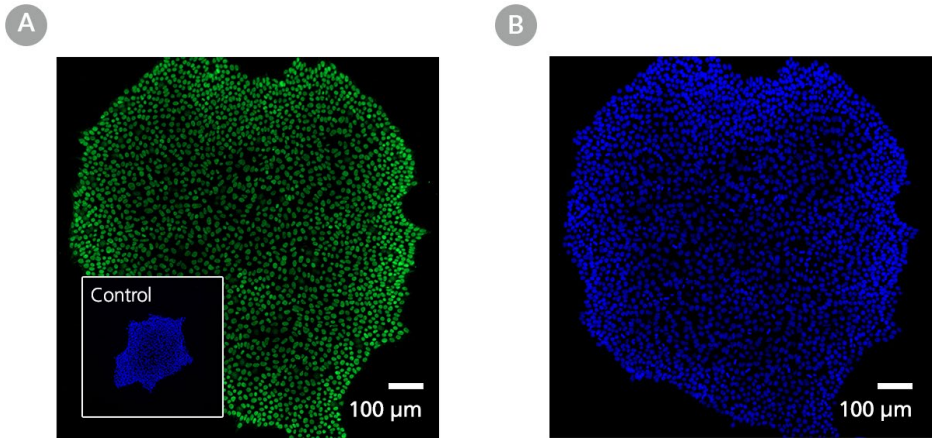

Figure 2. Human IPS Cells Stained with Anti-Human SOX2 Antibody, Polyclonal

(A) Human iPS cells were cultured in mTeSR™ Plus on Corning® Matrigel®, then fixed and labeled with Anti-Human SOX2 Antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (green) (Catalog #100-1082). Inset shows iPS cells labeled with a rabbit IgG isotype control antibody, followed by Goat Anti-Rabbit IgG (H+L) Antibody, Polyclonal, iFluor™ 488 (with DAPI staining).
(B) DAPI (blue) counterstaining of the cells shown in figure (A); nuclear localization of SOX2 is evident.

Related Products

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

References

1. Shuchen Z & Cui W. (2014) Sox2, a key factor in the regulation of pluripotency and neural differentiation. World Journal of Stem Cells 6(3): 305–11.

2. Jagga B et al. (2021) Structural basis for nuclear import selectivity of pioneer transcription factor SOX2. Nat Commun 12(28).

3. Atakan S et al. (2014) Autologous anti-SOX2 antibody responses reflect intensity but not frequency of antigen expression in small cell lung cancer. BMC Clinical Pathology.14(24).

4. Dittmer A & Dittmer J. (2020) Carcinoma-associated fibroblasts promote growth of sox2-expressing breast cancer cells. Cancers 12(11): 3435.