10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SOX2 Antibody

Catalog # ASC11056

Product Information

Application	WB, IF, ICC, E
Primary Accession	P48431
Other Accession	NP_003097, 28195386
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	34310
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SOX2 antibody can be used for detection of SOX2 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	6657
Other Names	Transcription factor SOX-2, SOX2
Target/Specificity	SOX2;
Reconstitution & Storage	SOX2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	SOX2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SOX2
Function	Transcription factor that forms a trimeric complex with OCT4 on DNA and controls the expression of a number of genes involved in embryonic development such as YES1, FGF4, UTF1 and ZFP206 (By similarity). Binds to the proximal enhancer region of NANOG (By similarity). Critical for early embryogenesis and for embryonic stem cell pluripotency (PubMed:18035408). Downstream SRRT target that mediates the promotion of neural stem cell self-renewal (By similarity). Keeps neural cells undifferentiated by counteracting the activity of proneural proteins and suppresses neuronal differentiation (By similarity). May function as a switch in neuronal development (By similarity).

Cellular Location	Nucleus speckle {ECO:0000250|UniProtKB:Q05066}. Cytoplasm {ECO:0000250|UniProtKB:Q05738}. Nucleus {ECO:0000250|UniProtKB:Q05738}. Note=Acetylation contributes to its nuclear localization and deacetylation by HDAC3 induces a cytoplasmic delocalization (By similarity). Colocalizes in the nucleus with ZNF208 isoform KRAB-O and tyrosine hydroxylase (TH) (By similarity) Colocalizes with SOX6 in speckles. Colocalizes with CAML in the nucleus (By similarity). Nuclear import is facilitated by XPO4, a protein that usually acts as a nuclear export signal receptor (By similarity) {ECO:0000250|UniProtKB:Q05066, ECO:0000250|UniProtKB:Q05738}

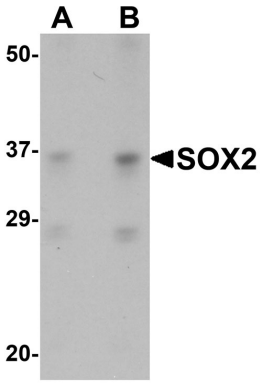
Background

SOX2 Antibody: SOX2 is a member of the SRY-related HMG-box (SOX) family of transcription factors involved in the regulation of embryonic development and in the determination of cell fate. SOX2 is required for stem-cell maintenance in the central nervous system, and also regulates gene expression in the stomach. Mutations in this gene have been associated with optic nerve hypoplasia and with syndromic microphthalmia, a severe form of structural eye malformation. The role of SOX2 in embryonic development suggested that it might be useful in the creation of stem cells that might be useful in cell replacement therapies in the treatment of degenerative diseases. Artificial stem cells, termed induced pluripotent stem (iPS) cells, can be created by expressing SOX2 and the transcription factors POU5F1, Klf4 and Lin28 along with c-Myc in mouse fibroblasts. Other experiments have shown that iPS cells could be generated using expression plasmids expressing POU5F1, SOX2, KlfF4 and c-Myc, eliminating the need for virus introduction.

References

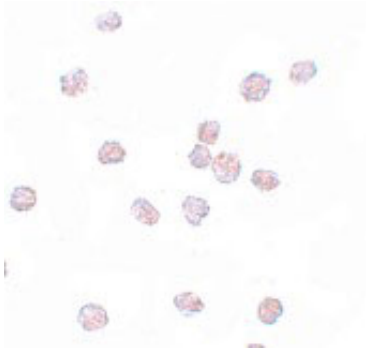
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Carpenter MK, Rosler E, and Rao MS. Characterization and differentiation of human embryonic stem cells. Cloning Stem Cells2003; 5:79-88.
Takahashi K and Yamanaka S. Induction of pluripotent stem cells from mouse embryonic and adult fibroblast cultures by defined factors. Cell2006; 1263:663-76.
Okita K, Nakagawa M, Hyenjong H, et al. Generation of mouse induced pluripotent stem cells without viral vectors. Science2008; 322:949-53.

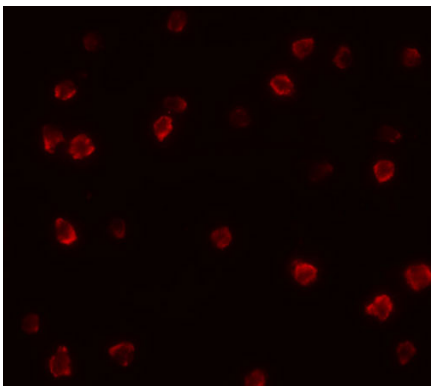
Images



Western blot analysis of SOX2 in 3T3 cell lysate with SOX2 antibody at (A) 1 and (B) 2 µg/mL.

Immunocytochemistry of SOX2 in 3T3 cells with SOX2 antibody at 5 µg/mL.





Immunofluorescence of SOX2 in 3T3 cells with SOX2 antibody at 20 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.