Revision 1

Store at -20C

#77627

Phospho-Sox2 (Ser250/Ser251) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M	Endogenous	35	Rabbit	#P48431	6657

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-Sox2 (Ser250/Ser251) Antibody recognizes endogenous levels of Sox2 protein when dually or singly phosphorylated at Ser250 and Ser251.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser250/Ser251 of human Sox2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Embryonic stem cells (ESC) derived from the inner cell mass of the blastocyst are unique in their pluripotent capacity and potential for self-renewal (1). Research studies demonstrate that a set of transcription factors that includes Oct-4, Sox2, and Nanog forms a transcriptional network that maintains cells in a pluripotent state (2,3). Chromatin immunoprecipitation experiments show that Sox2 and Oct-4 bind to thousands of gene regulatory sites, many of which regulate cell pluripotency and early embryonic development (4,5). siRNA knockdown of either Sox2 or Oct-4 results in loss of pluripotency (6). Induced overexpression of Oct-4 and Sox2, along with additional transcription factors Klf4 and c-Myc, can reprogram both mouse and human somatic cells to a pluripotent state (7,8). Additional evidence demonstrates that Sox2 is also present in adult multipotent progenitors that give rise to some adult epithelial tissues, including several glands, the glandular stomach, testes, and cervix. Sox2 is thought to regulate target gene expression important for survival and regeneration of these tissues (9).
Phosphorylation on these and other sites on Sox2 have been observed in pluripotent cells as they undergo differentiation, although the mechanism and consequence of this potential regulation is not clear (10).

Background References

1. Conley, B.J. et al. (2004) *Int J Biochem Cell Biol* 36, 555-67.
2. Pesce, M. and Schöler, H.R. (2001) *Stem Cells* 19, 271-8.
3. Pan, G. and Thomson, J.A. (2007) *Cell Res* 17, 42-9.
4. Boyer, L.A. et al. (2005) *Cell* 122, 947-56.
5. Loh, Y.H. et al. (2006) *Nat Genet* 38, 431-40.
6. Matin, M.M. et al. (2004) *Stem Cells* 22, 659-68.
7. Takahashi, K. and Yamanaka, S. (2006) *Cell* 126, 663-76.
8. Okita, K. et al. (2007) *Nature* 448, 313-7.
9. Arnold, K. et al. (2011) *Cell Stem Cell* 9, 317-29.
10. Van Hoof, D. et al. (2009) *Cell Stem Cell* 5, 214-26.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse

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