Sox2 Phospho-/Methyl-Specific

Antibody Sampler Kit

Cat. # SK6710
Size Kit

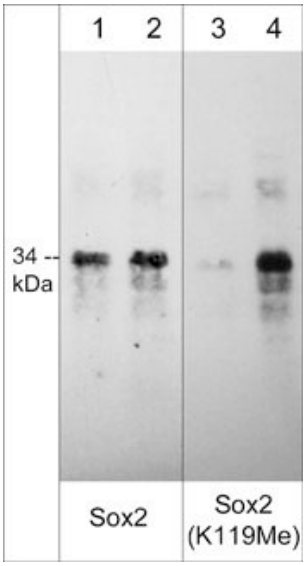
Kit Summary

The Sox2 Phospho-/Methyl-Specific Antibody Sampler Kit can be used to detect phosphorylation of Thr-118 and Thr-128, as well as methylation of Lys-119 relative to total Sox2 expression levels. The kit includes rabbit polyclonal antibodies to phospho-Thr-118, phospho-Thr-128, and methyl-Lys-119, as well as a Sox2 mouse monoclonal antibody. The kit also includes anti-Rabbit Ig Light-Chain Specific:HRP and anti-Mouse Ig:HRP secondary reagents for detection of antibodies in Western blot, ELISA, or immunocytochemistry.

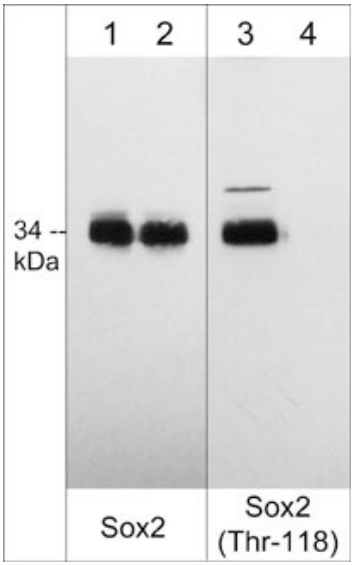
Kit Components

Cat. #	Description	Product Type	Size	Applications	Species Reactivity	WB Dilution
SM5511	Sox2	Mouse mAb	50 µl	WB, E, ICC	Hu, Rt, Ms, Ck, F	1:500
SP5521	Sox2 (Thr-118), phospho-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms, Ck, F	1:1000
SP5531	Sox2 (Lys-119), methyl-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms, Ck, F	1:1000
SP0381	Sox2 (Thr-128), phospho-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms, Ck, F	1:1000
MS3001	Anti-Mouse Ig:HRP	Donkey pAb	100 µl	WB, E, ICC, IHC	Ms	1:5000
RS3251	Anti-Rabbit Ig Light-Chain Specific:HRP	Mouse mAb	100 µl	WB, E, ICC, IHC	Rb	1:5000

Applications: WB = Western blot, E = ELISA, ICC = Immunocytochemistry, IP = Immunoprecipitation, IHC = Immunohistochemistry, FC = Flow Cytometry
Species: H = Human, R = Rat, Ms = Mouse, C = Chicken, F = Fish, Fr = Frog, Rb = Rabbit



Western blot image of human Sox2 recombinant protein untreated (lanes 1 & 3) or treated with Set7 methyltransferase to methylate Lys -119 (lanes 2 & 4). The blot was probed with mouse monoclonal Sox2 (lanes 1 & 2) and rabbit polyclonal anti-Sox2 (Lys-119) methyl-specific antibody (lanes 3 & 4).



Western blot image of mouse F9 stem cells treated with with calyculin A (100 nM, 30 min.) (lanes 1-4) then Sox2 was dephosphorylated with lambda phosphatase (lanes 2 & 4). The blot was probed with mouse monoclonal Sox2 (lanes 1 & 2) and rabbit polyclonal anti-Sox2 (Thr -118) phospho-specific antibody (lanes 3 & 4).

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Background

Embryonic stem cells can maintain a pluripotent state that is controlled by a set of transcription factors that include Oct-4, Sox2, and Nanog. 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. siRNA knockdown of either Sox2 or Oct-4 results in loss of pluripotency, while overexpression of Oct-4 and Sox2, along with additional transcription factors Klf4 and c-Myc, can reprogram somatic cells to a pluripotent state. Sox2 also regulates adult multipotent progenitors in various epithelial tissues, and may be important for survival and regeneration of these tissues. The activity of Sox2 may be regulated by phosphorylation and methylation. Akt1 phosphorylates Thr-118 and enhances Sox2 transcriptional activity, while Set7 can monomethylate Lys-119 leading to inhibition of Sox2 transcriptional activity, as well as Sox2 ubiquination and degradation. In addition, Sox2 Thr-128 is constituitively phoshorylated in the F9 mouse stem cell line.

Background References

Boyer, L.A. et al. (2005) Cell. 122:947.

Fang, L.. et al. (2014) Mol Cell. 55(4):537.

Buffer and Storage

Primary antibodies are supplied in phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. The secondary reagents are supplied in the same buffer without azide. Store all at –20°C. Stable for 1 year.

Product Citations

Cat. #	Citation & Application
SP5521	Mir S. et al. (2017) Sci Rep. 7(1):3283. (WB & ICC: mouse hippocampal stem cells)
SP5521	Mir S. et al. (2017) J Biol Chem. 292(6):2054. (ICC: mouse hippocampal stem cells)
MS3001	Estrada-Bernal, A. et al. (2011) J Neurooncol. 102:353. (Western blot: MDCK epithelial, A549, and HEK293
RS3251	Kawasaki, H. et al. (2013) World J Gastroenter. 19(17):2629. (WB, ICC: mouse intestinal myofibroblasts and
RS3251	Estrada-Bernal, A. et al. (2011) J Neurooncol. 102:353. (Western blot)