Revision 7

Store at -20C

#9389

SP1 (D4C3) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, FC-FP, ChIP, ChIP-seq, C&R	H Mk	Endogenous	90	Rabbit IgG	#P08047	6667

Product Usage Information

For optimal ChIP and ChIP-seq results, use 5 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:1000 - 1:4000
Flow Cytometry (Fixed/Permeabilized)	1:400 - 1:1600
Chromatin IP	1:100
Chromatin IP-seq	1:100
CUT&RUN	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #84386.

Specificity/Sensitivity

SP1 (D4C3) Rabbit mAb recognizes endogenous levels of total SP1 protein. It is predicted to detect all three known isoforms.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro593 of human SP1 protein (Isoform 1).

Background

Specificity protein 1 (SP1) is a ubiquitously expressed transcription factor belonging to the family of C2H2-type zinc finger containing DNA-binding proteins. SP1 binds GC-rich motifs with high affinity and regulates the expression of numerous mammalian genes (1,2). It interacts with many other transcription factors, such as c-Myc, EGR1, and Stat1, and with basal transcription machinery components. SP1 interacts with chromatin-modifying factors, such as histone deacetylases (HDACs) and p300 in chromatin remodeling. Transcriptional activity and stability of SP1 are regulated by post-translational modification, including phosphorylation, acetylation, ubiquitination, and glycosylation (3). Glycosylation of SP1 following insulin treatment leads to increased nuclear localization, while glucagon treatment increases cytoplasmic SP1 levels (4-6). Investigators have found high levels of SP1 in patients with Alzheimer's disease (7).

Background References

1. Kadonaga, J.T. et al. (1987) *Cell* 51, 1079-90.
2. Song, J. et al. (2003) *Int J Mol Med* 11, 547-53.
3. Tan, N.Y. and Khachigian, L.M. (2009) *Mol Cell Biol* 29, 2483-8.
4. Majumdar, G. et al. (2003) *Am J Physiol Endocrinol Metab* 285, E584-91.
5. Majumdar, G. et al. (2006) *J Biol Chem* 281, 3642-50.
6. Solomon, S.S. et al. (2008) *Life Sci* 83, 305-12.
7. Citron, B.A. et al. (2008) *J Neurosci Res* 86, 2499-504.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **FC-FP:** Flow Cytometry (Fixed/Permeabilized) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **Mk:** Monkey

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