Revision 1

SirT1 Antibody

Store at -20C

#2028

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	M	Endogenous	120	Rabbit	#Q923E4	93759

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

SirT1 Antibody detects endogenous levels of total SirT1 protein. This antibody does not cross-react with other sirtuin proteins.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of mouse SirT1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The Silent Information Regulator (SIR2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as class III histone deacetylases. The first discovered and best characterized of these genes is *Saccharomyces cerevisiae SIR2*, which is involved in silencing of mating type loci, telomere maintenance, DNA damage response, and cell aging (1). SirT1, the mammalian ortholog of Sir2, is a nuclear protein implicated in the regulation of many cellular processes, including apoptosis, cellular senescence, endocrine signaling, glucose homeostasis, aging, and longevity. Targets of SirT1 include acetylated p53 (2,3), p300 (4), Ku70 (5), forkhead (FoxO) transcription factors (5,6), PPARγ (7), and the PPARγ coactivator-1α (PGC-1α) protein (8). Deacetylation of p53 and FoxO transcription factors represses apoptosis and increases cell survival (2,3,5,6). Deacetylation of PPARγ and PGC-1α regulates the gluconeogenic/glycolytic pathways in the liver and fat mobilization in white adipocytes in response to fasting (7,8). SirT1 deacetylase activity is inhibited by nicotinamide and activated by resveratrol. In addition, SirT1 activity may be regulated by phosphorylation, as it is phosphorylated at Ser27 and Ser47 *in vivo*; however, the function of these phosphorylation sites has not yet been determined (9).

Background References

1. Guarente, L. (1999) *Nat. Genet.* 23, 281-285.
2. Vaziri, H. et al. (2001) *Cell* 107, 149-159.
3. Luo, J. et al. (2001) *Cell* 107, 137-148.
4. Bouras, T. et al. (2005) *J. Biol. Chem.* 280, 10264-10276.
5. Brunet, A. et al. (2004) *Science* 303, 2011-2015.
6. Motta, M.C. et al. (2004) *Cell* 116, 551-563.
7. Picard, F. et al. (2004) *Nature* 429, 771-776.
8. Rodgers, J.T. et al. (2005) *Nature* 434, 113-118.
9. Beausoleil, S.A. et al. (2004) *Proc. Natl. Acad. Sci. USA* 101, 12130-12135.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

M: Mouse

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Limited Uses

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