Revision 1

#2314 Store at -20C

Phospho-SirT1 (Ser47) 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, IP, IF-IC, FC-FP	H	Endogenous	120	Rabbit	#Q96EB6	23411

Product Usage Information

Application	Dilution
Western Blotting	1:2000
Immunoprecipitation	1:25
Immunofluorescence (Immunocytochemistry)	1:100
Flow Cytometry (Fixed/Permeabilized)	1:100

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-SirT1 (Ser47) Antibody detects endogenous levels of SirT1 protein only when phosphoryated at serine 47. The antibody does not cross-react with other sirtuin proteins.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser47 of human 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

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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.
10. Kozako, T. et al. (2015) *Sci Rep* 5, 11345.

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 **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human

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