Revision 1

#12650 Store at -20C

SirT2 (D4O5O) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	39, 43	Rabbit IgG	#Q8IXJ6	22933

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, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

SirT2 (D4O5O) Rabbit mAb recognizes endogenous levels of total SirT2 protein. This antibody does not cross-react with other sirtuin proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro205 of human SirT2 protein.

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). SirT2, a mammalian homolog of Sir2, deacetylates α-tubulin at Lys40 and histone H4 at Lys16 and has been implicated in cytoskeletal regulation and progression through mitosis (2,3). SirT2 protein is mainly cytoplasmic and is associated with microtubules and HDAC6, another tubulin deacetylase (2). Deacetylation of α-tubulin decreases its stability and may be required for proper regulation of cell shape, intracellular transport, cell motility, and cell division (2,4). The abundance and phosphorylation state of SirT2 increase at the G2/M transition of the cell cycle, and SirT2 relocalizes to chromatin during mitosis when histone H4 Lys16 acetylation levels decrease (3,5). Overexpression of SirT2 prolongs mitosis, while overexpression of the CDC14B phosphatase results in both decreased phosphorylation and abundance of SirT2, allowing for proper mitotic exit (5). Thus, the deacetylation of both histone H4 and α-tubulin by SirT2 may be critical for proper chromatin and cytoskeletal dynamics required for completion of mitosis.

Background References

1. Guarente, L. (1999) *Nat. Genet.* 23, 281-285.
2. North, B.J. et al. (2003) *Mol. Cell* 11, 437-444.
3. Vaquero, A. et al. (2006) *Genes Dev.* 20, 1256-1261.
4. Nogales, E. (2000) *Annu. Rev. Biochem.* 69, 277-302.
5. Dryden, S.C. et al. (2003) *Mol. Cell Biol.* 23, 3173-3185.

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

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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