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Product Information

Anti-Sirt2
produced in rabbit, affinity isolated antibody

Catalog Number **S8447**

Product Description

Anti-Sirt2 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 341-352 of mouse Sirt2 (GeneID: 64383), conjugated to KLH. The corresponding sequence is identical in rat and differs by one amino acid in human Sirt2. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Sirt2 recognizes mouse, rat (37/43 kDa), and human (43 kDa) Sirt2. The antibodies may be used in several applications including immunoblotting, immunoprecipitation, and immunofluorescence. Detection of the Sirt2 bands by immunoblotting is specifically inhibited with the immunizing peptide.

Eukaryotic genomes are organized as functional domains that facilitate the fundamental processes of transcription, replication, and DNA repair. Inactivation of large domains of DNA by packaging them into a specialized inaccessible chromatin structure leads to gene silencing. This type of inactivation is involved in the regulation of gene expression and is also associated with the chromosomal structure required for chromosome maintenance and inheritance.[1] Genetic and biochemical studies in budding yeast have identified the main regulatory sites and proteins that collaborate to assemble silenced DNA.[2] Sir2, one of the silent information regulator genes in yeast, is a nicotinamide adenine dinucleotide (NAD)-dependent deacetylase that modulates gene silencing, aging and energy metabolism.[3] Sir2 maintains the heterochromatic state at the mating-type loci, telomers, and rRNA-encoding DNA repeats.[4] Sir2 controls the activity of acetyl-coenzyme A synthetase (AceCS), a metabolic evolutionary conserved enzyme that converts acetate to acetyl-CoA, and mediates the effect of caloric restriction on life span extension.[3, 5, 6]
Sir2 belongs to a family of proteins that is found in organisms ranging from bacteria to complex eukaryotes. Members of this family contain a 250 amino acid core domain that shares about 25-60% sequence identity.[7] The mammalian Sir2 gene family is comprised of seven members which are designated Sirt1-7.[8]

Sirt2 is an NAD^+-dependent tubulin deacetylase.[9] Two Sirt2 isoforms exist as the result of alternative splicing. Sirt2 is overexpressed during mitosis and is multiply phosphorylated at the G_2/M transition of the cell cycle, indicating that it plays a role in the control of mitotic exit in the cell cycle.[10] Although Sirt2 resides predominantly in the cytoplasm, it becomes enriched in the nucleus during the cell cycle where it is associated with mitotic structures.[11] Sirt2 was found to be an oligodendroglial protein that affects cell differentiation through deacetylating α-tubulin.[12]

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as preservative.

Antibody concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using whole extracts of mouse and rat brain.

Immunoprecipitation: a working amount of 2-5 µg is recommended using an extract of COS7 or 293 cells expressing recombinant human SIRT2 protein.

Immunofluorescence: a working concentration of 5-10 µg/mL is recommended using human HeLa cells.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working concentration by titration test.

References

1. Karpen, G.H., *Curr. Opin. Genet. Dev*., **4**, 281-291(1994).
2. Gartenberg, M.R., *Curr. Opin. Microbiol.*, **3,** 132-137 (2000).
3. Hallows, W.C., et al., *Proc. Natl. Acad. Sci. USA*, **103**, 10230-10235 (2006).
4. Onyango, P., et al., *Proc. Natl. Acad. Sci. USA*, **99**, 13653-13658 (2002).
5. Schwer, B., et al., *Proc. Natl. Acad. Sci. USA*, **103**, 10224-10229 (2006).
6. Shi, T., et al., *J. Biol. Chem*., **280**, 13560-13567 (2005).
7. Brachmann, C.B., et al., *Genes Dev*., **9**, 2888-2902 (1995).
8. Schwer, B., et al., *J. Cell Biol*., **158**, 647-657 (2002).
9. North, B.J., et al., *Mol. Cell*, **11**, 437-444 (2003).
10. Dryden, S.C., et al., *Mol. Cell. Biol*., **23**, 3173-3185 (2003).
11. North, B.J. and Verdin, E., *PLoS ONE*, **2**, e784 (2007).
12. Li, W., et al., *J. Neurosci.*, **27**, 2606-2616 (2007).

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