3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-Sirt7
produced in rabbit, affinity isolated antibody

Catalog Number **S5947**

Product Description

Anti-Sirt7 is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 35-51 of human Sirt7 (GeneID: 51547), conjugated to KLH via a C-terminal cysteine residue. The sequence is identical in mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti- Sirt7 recognizes human Sirt7 by immunoblotting (~45 kDa), immunoprecipitation, and immunofluorescence. Detection of the Sirt7 band by immunoblotting is specifically inhibited by 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 have identified the main regulatory sites and proteins that collaborate to assemble silenced DNA in budding yeasts.[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 evolutionarily 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]

Sirt7 is a widely expressed nucleolar protein that is associated with transcriptionally active rRNA genes (rDNA).[9, 10] Sirt7 interacts with RNA polymerase I (Pol I) and histones. Overexpression of Sirt7 increases Pol I-mediated transcription, whereas knockdown of Sirt7 or inhibition of its catalytic activity results in decreased association of Pol I with rDNA and reduces Pol I transcription. Depletion of Sirt7 stops cell proliferation and triggers apoptosis.[10] High levels of Sirt7 expression are associated with breast cancer.[11]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a 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, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions 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 HEK-293T cells expressing human Sirt7.

Immunoprecipitation: a working amount of 2-4 µg is recommended using extracts of HEK- 293T cells expressing human Sirt7.

Immunofluorescence: a working concentration of 2-4 µg/mL is recommended using human HEK-293T cells.

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

References

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