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ProductInformation

Anti-Sirt3
produced in rabbit, affinity isolated antibody

Catalog Number **S4072**

Product Description

Anti-Sirt3 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 384-399 of human Sirt3 (GeneID: 23410), conjugated to KLH via an N-terminal cysteine residue. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Sirt3 recognizes human Sirt3 by immunoblotting (~28 kDa). Detection of the Sirt3 band 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 yeasts 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 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]

Sirt3 is an NAD-dependent deacetylase localized to the mitochondrial matrix. Although initially described as a mitochomdrial protein, recent studies suggest that SIRT3 is mainly a nuclear protein that transfers to the mitochondria during cellular stress.[9, 10] In humans, SIRT3 exists in two forms, a full length of approximately 44 kDa and a processed polypeptide lacking 142 amino acids at its N-terminus.[9] Sirt3 deacetylates and activates the mitochondrial enzyme AceCS2.[3, 5] Sirt3 is implicated in regulating mitochondrial function and thermogenesis in brown adipicytes.[6] Its levels have been shown to correlate with extended life span.[10] Increased levels of Sirt3 were associated with node-positive breast cancer.[11]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline 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, 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 2.5-5 µg/mL is recommended using whole extracts of human HepG2 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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