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Product Information

Monoclonal Anti-SIRT6, clone SIRT6-4
produced in mouse, purified immunoglobulin

Catalog Number **SAB4200254**

Product Description

Monoclonal Anti-SIRT6 (mouse IgG2b isotype) is derived from the hybridoma SIRT6-4 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to the N-terminal region of human Sirt6 (GeneID: 51548) conjugated to KLH. The corresponding sequence is identical in mouse and differs by one amino acid in rat. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO-2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-SIRT6 recognizes human SIRT6. The antibody may be used in several immunochemical techniques including immunoblotting (~40 kDa) and immunofluorescence. Detection of the SIRT6 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]

Sirt6 is a nuclear, chromatin-associated protein that plays a key role in DNA repair and maintenance of genomic stability in cells. It is broadly expressed with the highest levels in muscle, brain and heart. Sirt6 is enzymatically inactive as a NAD^+-dependent protein deacetylase, but displays auto-ADP-ribosyltransferase activity. Loss of Sirt6 leads to the development of an acute degenerative aging-like phenotype.[9,10]

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 at –20 °C 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 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 HEK-293T cells over-expressing human SIRT6.

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

References

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