

SIRT4 (95.1): sc-135797

BACKGROUND

Sirtuins (SIRT1-7) are human homologs of the yeast Sir2 (silent information regulator 2) protein and are divided into four main classes: SIRT1-3 are class I, SIRT4 is class II, SIRT5 is class III and SIRT6-7 are class IV. In *S. cerevisiae*, Sir2 deacetylates histones in an NAD-dependent manner, which regulates silencing at the telomeric, rDNA (ribosomal DNA) and silent mating-type loci. The human SIRT proteins are NAD-dependent deacetylases that act as intracellular regulators and are thought to have ribosyltransferase activity. SIRT4 (Sir2-like protein 4), also known as SIR2L4 or sirtuin 4, belongs to the class II family of sirtuins and localizes to the mitochondrial matrix. Expressed throughout the body, SIRT4 interacts with Insulin-degrading enzymes and, through its ADP-ribosyltransferase activity, functions to negatively regulate Insulin secretion from pancreatic β cells. SIRT4 contains one deacetylase sirtuin-type domain and can bind zinc as a catalytic cofactor.

CHROMOSOMAL LOCATION

Genetic locus: SIRT4 (human) mapping to 12q24.31.

SOURCE

SIRT4 (95.1) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 241-255 of SIRT4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SIRT4 (95.1) is available conjugated to agarose (sc-135797 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-135797 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

SIRT4 (95.1) is recommended for detection of SIRT4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SIRT4 siRNA (h): sc-63024, SIRT4 shRNA Plasmid (h): sc-63024-SH and SIRT4 shRNA (h) Lentiviral Particles: sc-63024-V.

Molecular Weight of SIRT4: 35 kDa.

Positive Controls: human SIRT4 transfected HEK293T whole cell lysate.

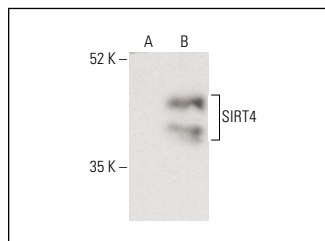
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SIRT4 (95.1): sc-135797. Western blot analysis of SIRT4 expression in untransfected HEK293T (A) and human SIRT4 transfected HEK293T (B) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.

SELECT PRODUCT CITATIONS

- Inuzuka, H., et al. 2012. Acetylation-dependent regulation of Skp2 function. *Cell* 150: 179-193.
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- Barjaktarovic, Z., et al. 2019. Hyperacetylation of cardiac mitochondrial proteins is associated with metabolic impairment and sirtuin downregulation after chronic total body irradiation of ApoE^{-/-} mice. *Int. J. Mol. Sci.* 20: 5239.
- Wang, C., et al. 2020. Mammalian SIRT4 is a tumor suppressor of clear cell renal cell carcinoma by inhibiting cancer proliferation, migration and invasion. *Cancer Biomark.* 29: 453-462.
- Zhang, S., et al. 2021. Effects of Shenfu Qiangxin drink on H₂O₂-induced oxidative stress, inflammation and apoptosis in neonatal rat cardiomyocytes and possible underlying mechanisms. *Exp. Ther. Med.* 21: 553.
- Lee, Y.T., et al. 2022. Sex-divergent expression of cytochrome P450 and SIRTUIN 1-7 proteins in toxicity evaluation of a benzimidazole-derived epigenetic modulator in mice. *Toxicol. Appl. Pharmacol.* 445: 116039.
- Zhao, L., et al. 2022. mTORC1-c-Myc pathway rewires methionine metabolism for HCC progression through suppressing SIRT4 mediated ADP ribosylation of MAT2A. *Cell Biosci.* 12: 183.
- Ji, M.L., et al. 2022. Sirt6 attenuates chondrocyte senescence and osteoarthritis progression. *Nat. Commun.* 13: 7658.
- Lee, Y.T., et al. 2023. BZD9L1 differentially regulates sirtuins in liver-derived cells by inducing reactive oxygen species. *Biomedicines* 11: 3059.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.