

SIRT5 (G-2): sc-271635

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. SIRT5 (NAD-dependent deacetylase sirtuin-5), also known as SIR2L5, is a 310 amino acid member of the class III sirtuins. Localized to mitochondria and expressed throughout the body, SIRT5 is an NAD-dependent deacetylase that may link metabolic aging processes in humans. SIRT5 contains one deacetylase-sirtuin-type domain and can be deactivated by suramin, a drug that blocks the binding of various growth factors. Two isoforms of SIRT5 exist due to alternative splicing events.

REFERENCES

1. Frye, R.A. 1999. Characterization of five human cDNAs with homology to the yeast Sir2 gene: Sir2-like proteins (sirtuins) metabolize NAD and may have protein ADP-ribosyltransferase activity. *Biochem. Biophys. Res. Commun.* 260: 273-279.
2. Frye, R.A. 2000. Phylogenetic classification of prokaryotic and eukaryotic Sir2-like proteins. *Biochem. Biophys. Res. Commun.* 273: 793-798.
3. Kyrylenko, S., et al. 2003. Differential regulation of the Sir2 histone deacetylase gene family by inhibitors of class I and II histone deacetylases. *Cell. Mol. Life Sci.* 60: 1990-1997.

CHROMOSOMAL LOCATION

Genetic locus: SIRT5 (human) mapping to 6p23; Sirt5 (mouse) mapping to 13 A4.

SOURCE

SIRT5 (G-2) is a mouse monoclonal antibody raised against amino acids 1-310 representing full length SIRT5 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SIRT5 (G-2) is available conjugated to agarose (sc-271635 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271635 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271635 PE), fluorescein (sc-271635 FITC), Alexa Fluor[®] 488 (sc-271635 AF488), Alexa Fluor[®] 546 (sc-271635 AF546), Alexa Fluor[®] 594 (sc-271635 AF594) or Alexa Fluor[®] 647 (sc-271635 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271635 AF680) or Alexa Fluor[®] 790 (sc-271635 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

SIRT5 (G-2) is recommended for detection of SIRT5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

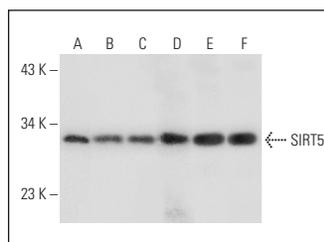
Suitable for use as control antibody for SIRT5 siRNA (h): sc-63026, SIRT5 siRNA (m): sc-63027, SIRT5 shRNA Plasmid (h): sc-63026-SH, SIRT5 shRNA Plasmid (m): sc-63027-SH, SIRT5 shRNA (h) Lentiviral Particles: sc-63026-V and SIRT5 shRNA (m) Lentiviral Particles: sc-63027-V.

Molecular Weight of SIRT5 isoform 1: 34 kDa.

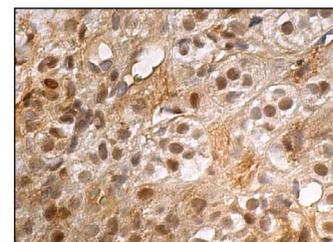
Molecular Weight of SIRT5 isoform 2: 33 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MOLT-4 cell lysate: sc-2233 or mouse kidney extract: sc-2255.

DATA



SIRT5 (G-2): sc-271635. Western blot analysis of SIRT5 expression in PC-12 (A), Jurkat (B) and MOLT-4 (C) whole cell lysates and human fetal liver (D), mouse kidney (E) and mouse brain (F) tissue extracts.



SIRT5 (G-2): sc-271635. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Guo, D., et al. 2018. Vimentin acetylation is involved in SIRT5-mediated hepatocellular carcinoma migration. *Am. J. Cancer Res.* 8: 2453-2466.
2. Amano, H., et al. 2019. Telomere dysfunction induces sirtuin repression that drives telomere-dependent disease. *Cell Metab.* 29: 1274-1290.e9.
3. Nowak, G. and Megyesi, J. 2020. Protein kinase C α mediates recovery of renal and mitochondrial functions following acute injury. *FEBS J.* 287: 1830-1849.
4. Yeo, D., et al. 2020. Aging alters acetylation status in skeletal and cardiac muscles. *Geroscience* 42: 963-976.
5. Gao, S., et al. 2022. Metformin alleviates HFD-induced oxidative stress in hepatocyte via activating SIRT6/PGC-1 α /ENDOG signaling. *Clin. Sci.* E-published.

STORAGE

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