

# 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 IgG<sub>1</sub> 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).

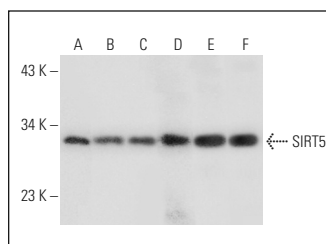
Suitable for use as control antibody for SIRT5 siRNA (h): sc-63026, SIRT5 siRNA (m): sc-63027, SIRT5 shRNA Plasmid (h): sc-63026-SH, SIRT5 shRNA Plasmid (m): sc-63027-SH, SIRT5 shRNA (h) Lentiviral Particles: sc-63026-V and SIRT5 shRNA (m) Lentiviral Particles: sc-63027-V.

Molecular Weight of SIRT5 isoform 1: 34 kDa.

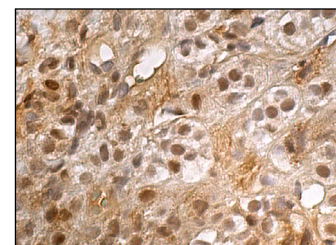
Molecular Weight of SIRT5 isoform 2: 33 kDa.

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. 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<sup>-/-</sup> mice. *Int. J. Mol. Sci.* 20: 5239.
4. Nowak, G. and Megyesi, J. 2020. Protein kinase Cα mediates recovery of renal and mitochondrial functions following acute injury. *FEBS J.* 287: 1830-1849.
5. Yeo, D., et al. 2020. Aging alters acetylation status in skeletal and cardiac muscles. *Geroscience* 42: 963-976.

## STORAGE

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