SANTA CRUZ BIOTECHNOLOGY, INC.

SIRT4 (P-20): sc-66270

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

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3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604482. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. 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.
5. Michishita, E., et al. 2005. Evolutionarily conserved and nonconserved cellular localizations and functions of human SIRT proteins. Mol. Biol. Cell 16: 4623-4635.
6. Bradbury, C.A., et al. 2005. Histone deacetylases in acute myeloid leukaemia show a distinctive pattern of expression that changes selectively in response to deacetylase inhibitors. Leukemia 19: 1751-1759.
7. Haigis, M.C., et al. 2006. SIRT4 inhibits glutamate dehydrogenase and opposes the effects of calorie restriction in pancreatic β cells. Cell 126: 941-954.
8. Ahuja, N., et al. 2007. Regulation of Insulin secretion by SIRT4, a mitochondrial ADP-ribosyltransferase. J. Biol. Chem. 282: 33583-33592.
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CHROMOSOMAL LOCATION

Genetic locus: SIRT4 (human) mapping to 12q24.31; Sirt4 (mouse) mapping to 5 F.

RESEARCH USE

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

SOURCE

SIRT4 (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SIRT4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-66270 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SIRT4 (P-20) is recommended for detection of SIRT4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SIRT4 (P-20) is also recommended for detection of SIRT4 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for SIRT4 siRNA (h): sc-63024, SIRT4 siRNA (m): sc-63025, SIRT4 shRNA Plasmid (h): sc-63024-SH, SIRT4 shRNA Plasmid (m): sc-63025-SH, SIRT4 shRNA (h) Lentiviral Particles: sc-63024-V and SIRT4 shRNA (m) Lentiviral Particles: sc-63025-V.

Molecular Weight of SIRT4: 35 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.