SANTA CRUZ BIOTECHNOLOGY, INC.

# SIRT3 (F-10): sc-365175

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The silent information regulator (SIR2) family of genes are highly conserved from prokaryotes to eukaryotes and are involved in diverse processes, including transcriptional regulation, cell cycle progression, DNA-damage repair and aging. In *S. cerevisiae,* SIR2p deacetylates histones in an NAD-dependent manner, which regulates silencing at the telomeric, rDNA and silent mating-type loci. SIR2p is the founding member of a large family, designated sirtuins, which contain a conserved catalytic domain. The human homologues, which include SIRT1-7, are divided into four main branches: SIRT1-3 are class I, SIRT4 is class II, SIRT5 is class III and SIRT6-7 are class IV. SIRT3 is a NAD-dependent deacetylase that contains one deacetylase sirtuin-type domain. The SIRT3 protein is widely expressed and localizes to the mitochondira where it is processed by mitochondrial processing peptidase (MPP) to yield a final product. This processing is most-likely necessary for its enzymatic activity.

## CHROMOSOMAL LOCATION

Genetic locus: SIRT3 (human) mapping to 11p15.5; Sirt3 (mouse) mapping to 7 F5.

## SOURCE

SIRT3 (F-10) is a mouse monoclonal antibody raised against amino acids 251-290 mapping within an internal region of SIRT3 of human origin.

## PRODUCT

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

SIRT3 (F-10) is available conjugated to agarose (sc-365175 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365175 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365175 PE), fluorescein (sc-365175 FITC), Alexa Fluor® 488 (sc-365175 AF488), Alexa Fluor® 546 (sc-365175 AF546), Alexa Fluor® 594 (sc-365175 AF594) or Alexa Fluor® 647 (sc-365175 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365175 AF680) or Alexa Fluor® 790 (sc-365175 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

SIRT3 (F-10) is recommended for detection of SIRT3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SIRT3 siRNA (h): sc-61555, SIRT3 siRNA (m): sc-61556, SIRT3 shRNA Plasmid (h): sc-61555-SH, SIRT3 shRNA Plasmid (m): sc-61556-SH, SIRT3 shRNA (h) Lentiviral Particles: sc-61555-V and SIRT3 shRNA (m) Lentiviral Particles: sc-61556-V.

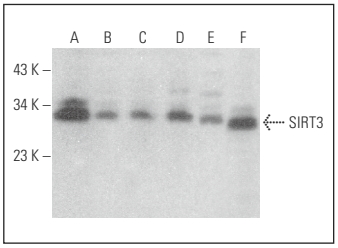
Molecular Weight of SIRT3: 28 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, Hep G2 cell lysate: sc-2227 or SW480 cell lysate: sc-2219.

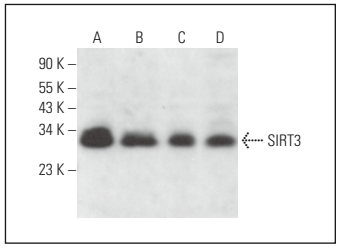
## STORAGE

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

## DATA




SIRT3 (F-10): sc-365175. Western blot analysis of SIRT3 expression in Hep G2 (**A**), SW480 (**B**), HEK293 (**C**), PANC-1 (**D**) and A549 (**E**) whole cell lysates and human fetal liver tissue extract (**F**).




SIRT3 (F-10): sc-365175. Western blot analysis of SIRT3 expression in Hep G2 (**A**), RPMI2650 (**B**), AN3 CA (**C**) and Sol8 (**D**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Zhang, B., et al. 2013. SIRT3 overexpression antagonizes high glucose accelerated cellular senescence in human diploid fibroblasts via the SIRT3-FOXO1 signaling pathway. Age 35: 2237-2253.
2. Kweon, K.H., et al. 2014. SIRT1 induction confers resistance to etoposide-induced genotoxic apoptosis in thyroid cancers. Int. J. Oncol. 45: 2065-2075.
3. Wawrzyniak, N.R., et al. 2016. Idiopathic chronic fatigue in older adults is linked to impaired mitochondrial content and biogenesis signaling in skeletal muscle. Oncotarget 7: 52695-52709.
4. Chen, G., et al. 2017. Suppression of SIRT1 sensitizes lung cancer cells to WEE1 inhibitor MK-1775-induced DNA damage and apoptosis. Oncogene 36: 6863-6872.
5. Qu, J., et al. 2018. SIRT3 confers protection against acrolein-induced oxidative stress in cochlear nucleus neurons. Neurochem. Int. 114: 1-9.
6. Wang, T., et al. 2019. SENP1-SIRT3 signaling controls mitochondrial protein acetylation and metabolism. Mol. Cell 75: 823-834.e5.
7. Leger, T., et al. 2019. Antioxidant and cardioprotective effects of EPA on early low-severity sepsis through UCP3 and SIRT3 upholding of the mitochondrial redox potential. Oxid. Med. Cell. Longev. 2019: 9710352.
8. Wu, J., et al. 2020. Polydatin protects against lipopolysaccharide-induced endothelial barrier disruption via SIRT3 activation. Lab. Invest. 100: 643-656.
9. Nowak, G. and Megyesi, J. 2020. Protein kinase Cα mediates recovery of renal and mitochondrial functions following acute injury. FEBS J. 287: 1830-1849.


## RESEARCH USE

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