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M Sirt3 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6242B

Product Information

Application	WB, IHC-P, E
Primary Accession	Q8R104
Other Accession	NP_071878.2
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	36615
Antigen Region	304-334

Additional Information

Gene ID	64384
Other Names	NAD-dependent protein deacetylase sirtuin-3, 351-, Regulatory protein SIR2 homolog 3, SIR2-like protein 3, mSIR2L3, Sirt3, Sir2l3
Target/Specificity	This Sirt3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 304-334 amino acids from the C-terminal region of Mouse Sirt3.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	M Sirt3 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Sirt3 {ECO:0000303|PubMed:19333382, ECO:0000312|MGI:MGI:1927665}
Function	NAD-dependent protein deacetylase (PubMed: 17923681, PubMed:18794531, PubMed:21172655, PubMed:23835326, PubMed:26620563). Activates or deactivates mitochondrial target proteins by deacetylating key lysine residues (PubMed:17923681, PubMed:18794531,

PubMed:21172655, PubMed:23835326). Known targets include ACSS1, IDH, GDH, PDHA1, SOD2, LCAD, SDHA, MRPL12 and the ATP synthase subunit ATP5PO (PubMed:16790548, PubMed:18794531, PubMed:21172655). Contributes to the regulation of the cellular energy metabolism (PubMed:23835326, PubMed:36804859). Important for regulating tissue-specific ATP levels (PubMed:18794531, PubMed:24252090). In response to metabolic stress, deacetylates transcription factor FOXO3 and recruits FOXO3 and mitochondrial RNA polymerase POLRMT to mtDNA to promote mtDNA transcription (PubMed:23283301). Acts as a regulator of ceramide metabolism by mediating deacetylation of ceramide synthases CERS1, CERS2 and CERS6, thereby increasing their activity and promoting mitochondrial ceramide accumulation (PubMed:26620563). Regulates hepatic lipogenesis (PubMed:36804859). Uses NAD(+) substrate imported by SLC25A47, triggering downstream activation of PRKAA1/AMPK-alpha signaling cascade that ultimately downregulates sterol regulatory element-binding protein (SREBP) transcriptional activities and ATP- consuming lipogenesis to restore cellular energy balance (PubMed:36804859). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase by mediating delactylation of proteins, such as CCNE2 and 'Lys-16' of histone H4 (H4K16la) (By similarity).

Cellular Location

[Isoform L]: Mitochondrion matrix

Tissue Location

Expressed in cardiomyocytes (at protein level) (PubMed:11056054, PubMed:35959657). Expressed in the brain, liver, kidney and testes (PubMed:11056054). Expressed in skeletal muscles (at protein level) (PubMed:23283301, PubMed:23835326)

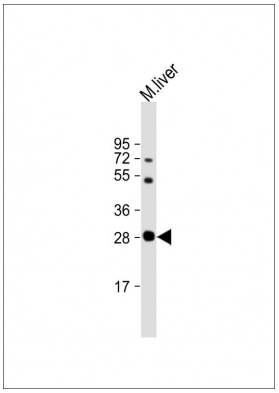
Background

SIRT3 is a member of the sirtuin family of proteins, homologs to the yeast Sir2 protein. Members of the sirtuin family are characterized by a sirtuin core domain and grouped into four classes. The functions of human sirtuins have not yet been determined; however, yeast sirtuin proteins are known to regulate epigenetic gene silencing and suppress recombination of rDNA. Studies suggest that the human sirtuins may function as intracellular regulatory proteins with mono-ADP-ribosyltransferase activity. The SIRT3 is included in class I of the sirtuin family.

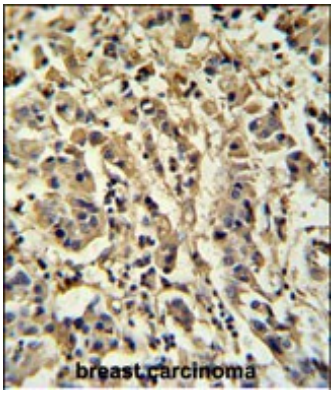
References

Hirschey, M.D., et al. Nature 464(7285):121-125(2010)
Pillai, V.B., et al. J. Biol. Chem. 285(5):3133-3144(2010)
Kim, H.S., et al. Cancer Cell 17(1):41-52(2010)

Images



Anti-Sirt3 Antibody (C-term) at 1:64000 dilution + mouse liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 37 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Sirt3 Antibody (C-term) (Cat. #AP6242b) IHC analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the Sirt3 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- Mouse SIRT3 attenuates hypertrophy-related lipid accumulation in the heart through the deacetylation of LCAD.
- Sirt3 protects in vitro-fertilized mouse preimplantation embryos against oxidative stress-induced p53-mediated developmental arrest.