10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SIRT3 Rabbit pAb

Catalog # AP99273

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q9NTG7
Other Accession	Q9NTG7
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	43573
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human SIRT3
Epitope Specificity	300-399/399
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the sirtuin family. Contains 1 deacetylase sirtuin-type domain.
SUBUNIT	Interacts with NDUFA9, ACSS1, IDH2 and GDH.
Post-translational modifications	Processed by mitochondrial processing peptidase (MPP) to give a 28 kDa product. Such processing is probably essential for its enzymatic activity.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	SIRT3 encodes a member of the sirtuin family of class III histone deacetylases, homologs to the yeast Sir2 protein. The encoded protein is found exclusively in mitochondria, where it can eliminate reactive oxygen species, inhibit apoptosis, and prevent the formation of cancer cells. SIRT3 has far-reaching effects on nuclear gene expression, cancer, cardiovascular disease, neuroprotection, aging, and metabolic control. [provided by RefSeq, May 2019]

Additional Information

Gene ID	23410
Other Names	SIR2L3; 2310003L23Rik; SIR3_HUMAN; SIRT3; hSIRT3; NAD-dependent protein delactylase sirtuin-3; Regulatory protein SIR2 homolog 3; SIR2-like protein 3; 2.3.1.286; SIR3_MOUSE; SIR2-like protein 3 (mSIR2L3); sirtuin 3; sirtuin (silent mating type information regulation 2, S.cerevisiae, homolog) 3; sirtuin (silent mating type information regulation 2 homolog) 3 (S. cerevisiae)
Dilution	IHC-P=1:50-200,IHC-F=1:50-200,IF=1:50-200
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	SIRT3 {ECO:0000303|PubMed:12186850, ECO:0000312|HGNC:HGNC:14931}
Function	NAD-dependent protein deacetylase (PubMed: 12186850, PubMed:12374852, PubMed:16788062, PubMed:18680753, PubMed:18794531, PubMed:19535340, PubMed:23283301, PubMed:24121500, PubMed:24252090). Activates or deactivates mitochondrial target proteins by deacetylating key lysine residues (PubMed:12186850, PubMed:12374852, PubMed:16788062, PubMed:18680753, PubMed:18794531, PubMed:23283301, PubMed:24121500, PubMed:24252090, PubMed:38146092). Known targets include ACSS1, IDH, GDH, SOD2, PDHA1, LCAD, SDHA, MRPL12 and the ATP synthase subunit ATP5PO (PubMed:16788062, PubMed:18680753, PubMed:19535340, PubMed:24121500, PubMed:24252090, PubMed:38146092). Contributes to the regulation of the cellular energy metabolism (PubMed:24252090). Important for regulating tissue-specific ATP levels (PubMed:18794531). 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 (By similarity). Regulates hepatic lipogenesis (By similarity). Uses NAD(+) substrate imported by SLC25A47, triggering downstream activation of PRKAA1/AMPK- alpha signaling cascade that ultimately down-regulates sterol regulatory element-binding protein (SREBP) transcriptional activities and ATP-consuming lipogenesis to restore cellular energy balance (By similarity). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase by recognizing other acyl groups, such as benzoyl and lactoyl, leading to protein debenzoylation and delactylation, respectively (PubMed:39524354, PubMed:36896611, PubMed:37720100). Catalyzes debenzoylation of PPIF and ACLY (PubMed:37720100). Mediates delactylation of CCNE2 and 'Lys-16' of histone H4 (H4K16la) (PubMed:36896611, PubMed:37720100).
Cellular Location	Mitochondrion matrix
Tissue Location	Widely expressed.

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