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

KD-Validated Anti-SIRT3 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI2266

Product Information

Application	WB
Primary Accession	Q9NTG7
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	25GB4480
Calculated MW	43573
Gene Name	SIRT3
Aliases	SIRT3; Sirtuin 3; SIR2L3; NAD-Dependent Protein Deacetylase Sirtuin-3, Mitochondrial; Regulatory Protein SIR2 Homolog 3; SIR2-Like Protein 3; Sirtuin (Silent Mating Type Information Regulation 2 Homolog) 3 (S. Cerevisiae); Sirtuin (Silent Mating Type Information Regulation 2, S.Cerevisiae, Homolog) 3; Mitochondrial Nicotinamide Adenine Dinucleotide-Dependent Deacetylase; Silent Mating Type Information Regulation 2, S.Cerevisiae, Homolog 3; NAD-Dependent Deacetylase Sirtuin-3, Mitochondrial; Sirtuin Type 3; EC 2.3.1.286; Sir2-Like 3; HSIRT3
Immunogen	A synthesized peptide derived from human SIRT3

Additional Information

Gene ID	23410
Other Names	NAD-dependent protein deacetylase sirtuin-3, mitochondrial, hSIRT3, 2.3.1.286 {ECO:0000255|PROSITE-ProRule:PRU00236, ECO:0000269|PubMed:12186850, ECO:0000269|PubMed:12374852, ECO:0000269|PubMed:16788062, ECO:0000269|PubMed:18680753, ECO:0000269|PubMed:18794531}, NAD-dependent protein delactylase sirtuin-3, 2.3.1.-, Regulatory protein SIR2 homolog 3, SIR2-like protein 3, SIRT3 {ECO:0000303|PubMed:12186850, ECO:0000312|HGNC:HGNC:14931}

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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