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SIRT4 Rabbit pAb

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Catalog # AP52344

Product Information

Application	WB
Primary Accession	Q9Y6E7
Reactivity	Mouse
Predicted	Rat, Pig, Human, Rabbit, Zebrafish, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	35188
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human SIRT4/SIR 2 like protein 4
Epitope Specificity	51-150/314
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Mitochondrion matrix.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	NAD-dependent protein ADP-ribosyl transferase. Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1. Inhibits GLUD1 enzyme activity. Down-regulates insulin secretion. Has no detectable protein deacetylase activity.

Additional Information

Gene ID	23409
Other Names	NAD-dependent protein lipoamidase sirtuin-4, mitochondrial {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000303|PubMed:25525879}, 2.3.1.- {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000269|PubMed:24052263, ECO:0000269|PubMed:25525879}, NAD-dependent ADP-ribosyltransferase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 2.4.2.- {ECO:0000255|HAMAP-Rule:MF_03161}, NAD-dependent protein biotinylase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 2.3.1.- {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000269|PubMed:25525879}, NAD-dependent protein deacetylase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 2.3.1.286 {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000255|PROSITE-ProRule:PRU00236}, Regulatory protein SIR2 homolog 4 {ECO:0000255|HAMAP-Rule:MF_03161}, SIR2-like protein 4 {ECO:0000255|HAMAP-Rule:MF_03161}, SIRT4

	{ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000312|HGNC:HGNC:14932}
Dilution	WB=1:500-2000
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	SIRT4 {ECO:0000255|HAMAP-Rule:MF_03161, ECO:0000312|HGNC:HGNC:14932}
Function	Acts as a NAD-dependent protein lipoamidase, biotinylase, deacetylase and ADP-ribosyl transferase (PubMed:16959573, PubMed:17715127, PubMed:24052263, PubMed:25525879). Catalyzes more efficiently removal of lipoyl- and biotinyl- than acetyl-lysine modifications (PubMed:24052263, PubMed:25525879). Inhibits the pyruvate dehydrogenase complex (PDH) activity via the enzymatic hydrolysis of the lipoamide cofactor from the E2 component, DLAT, in a phosphorylation-independent manner (PubMed:25525879). Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1, inhibiting GLUD1 enzyme activity (PubMed:16959573, PubMed:17715127). Acts as a negative regulator of mitochondrial glutamine metabolism by mediating mono ADP-ribosylation of GLUD1: expressed in response to DNA damage and negatively regulates anaplerosis by inhibiting GLUD1, leading to block metabolism of glutamine into tricarboxylic acid cycle and promoting cell cycle arrest (PubMed:16959573, PubMed:17715127). In response to mTORC1 signal, SIRT4 expression is repressed, promoting anaplerosis and cell proliferation (PubMed:23663782). Acts as a tumor suppressor (PubMed:23562301, PubMed:23663782). Also acts as a NAD-dependent protein deacetylase: mediates deacetylation of 'Lys-471' of MLYCD, inhibiting its activity, thereby acting as a regulator of lipid homeostasis (By similarity). Does not seem to deacetylate PC (PubMed:23438705). Controls fatty acid oxidation by inhibiting PPARA transcriptional activation (PubMed:24043310). Impairs SIRT1-PPARA interaction probably through the regulation of NAD(+) levels (PubMed:24043310). Down-regulates insulin secretion (PubMed:17715127).
Cellular Location	Mitochondrion matrix {ECO:0000255|HAMAP- Rule:MF_03161, ECO:0000269|PubMed:16079181, ECO:0000269|PubMed:16959573, ECO:0000269|PubMed:17715127}
Tissue Location	Detected in vascular smooth muscle and striated muscle. Detected in insulin-producing beta-cells in pancreas islets of Langerhans (at protein level). Widely expressed. Weakly expressed in leukocytes and fetal thymus.

Background

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References

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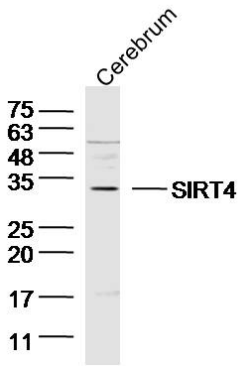
Ahuja N.,et al.J. Biol. Chem. 282:33583-33592(2007).
Michishita E.,et al.Mol. Biol. Cell 16:4623-4635(2005).

Images



Sample: Cerebrum (Mouse) Lysate at 40 ug
Primary: Anti-SIRT4 (AP52344) at 1/300 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 32 kD
Observed band size: 32 kD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.