

SIRT4 / Sirtuin 4 Antibody (C-Terminus)
Goat Polyclonal Antibody
Catalog # ALS12285**Specification****SIRT4 / Sirtuin 4 Antibody (C-Terminus) - Product Information**

Application	IHC
Primary Accession	O9Y6E7
Reactivity	Human
Host	Goat
Clonality	Polyclonal
Calculated MW	35kDa KDa

SIRT4 / Sirtuin 4 Antibody (C-Terminus) - Additional Information**Gene ID** 23409**Other Names**

NAD-dependent protein deacetylase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 3.5.1.- {ECO:0000255|HAMAP-Rule:MF_03161}, NAD-dependent ADP-ribosyltransferase sirtuin-4 {ECO:0000255|HAMAP-Rule:MF_03161}, 2.4.2.- {ECO:0000255|HAMAP-Rule:MF_03161}, 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}, SIR2L4

Target/Specificity

Human SIRT4.

Reconstitution & Storage

Store at -20°C. Minimize freezing and thawing.

Precautions

SIRT4 / Sirtuin 4 Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

SIRT4 / Sirtuin 4 Antibody (C-Terminus) - 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

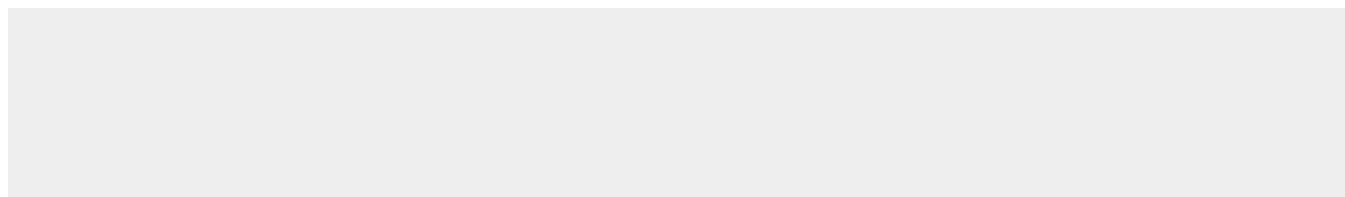
Detected in vascular smooth muscle and striated muscle. Detected in insulin-producing beta-cells in pancreas islets of Langerhans (at protein level). Widely expressed. Weakly expressed in leukocytes and fetal thymus.

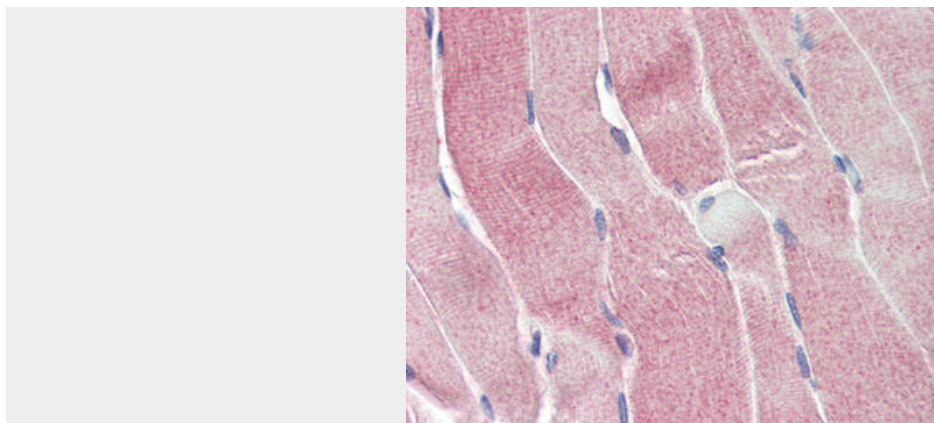
SIRT4 / Sirtuin 4 Antibody (C-Terminus) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

SIRT4 / Sirtuin 4 Antibody (C-Terminus) - Images





Anti-SIRT4 antibody IHC of human skeletal muscle.

SIRT4 / Sirtuin 4 Antibody (C-Terminus) - Background

Acts both as NAD-dependent protein ADP-ribosyl transferase and NAD-dependent protein deacetylase. Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1, inhibiting GLUD1 enzyme activity. 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. In response to mTORC1 signal, SIRT4 expression is repressed, promoting anaplerosis and cell proliferation. Acts as a tumor suppressor. 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. Down-regulates insulin secretion.

SIRT4 / Sirtuin 4 Antibody (C-Terminus) - References

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Scherer S.E.,et al.Nature 440:346-351(2006).
Haigis M.C.,et al.Cell 126:941-954(2006).
Ahuja N.,et al.J. Biol. Chem. 282:33583-33592(2007).
Michishita E.,et al.Mol. Biol. Cell 16:4623-4635(2005).