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SIRT4 Antibody
Catalog # ASC11137

Specification

SIRT4 Antibody - Product Information

Application	**WB, E**
Primary Accession	Q9Y6E7
Other Accession	EAW98182, 23409
Reactivity	**Human, Mouse, Rat**
Host	**Chicken**
Clonality	**Polyclonal**
Isotype	**IgY**
Application Notes	**SIRT4 antibody can be used for detection of SIRT4 by Western blot at 1 - 2 µg/mL.**

SIRT4 Antibody - Additional Information

Gene ID **23409**

Target/Specificity
SIRT4 antibody was raised against a 17 amino acid synthetic peptide near the amino terminus of human SIRT4.

The immunogen is located within amino acids 80 - 130 of SIRT4.

Reconstitution & Storage
SIRT4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
SIRT4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

SIRT4 Antibody - 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 Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SIRT4 Antibody - Images

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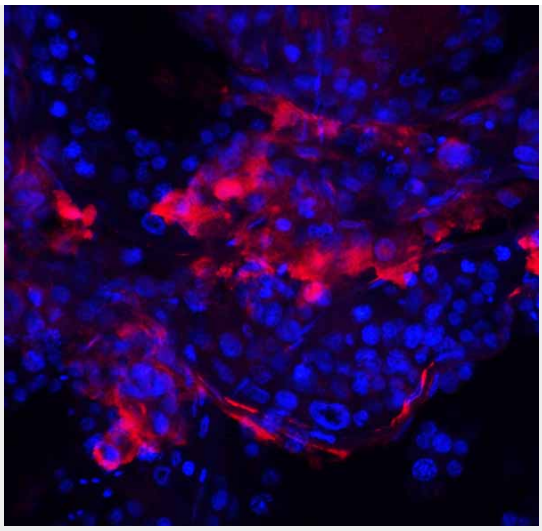

Immunofluorescence of IQCF2 in human testis tissue with IQCF2 antibody at 20 µg/ml.

SIRT4 Antibody - Background

SIRT4 Antibody: The Silent Information Regulator (SIR2) family of genes are highly conserved from prokaryotes to eukaryotes and have important functions in the regulation of metabolism, growth and differentiation, inflammation, cellular survival, as well as in senescence and lifespan extension. Sirtuins, including SIRT1-7, are human homologs of yeast Sir2p. Sirtuins are NAD+-dependent histone/protein deacetylases (HDAC) which regulate cellular metabolism, e.g. energy metabolism, and thereby are associated with aging and several age-related diseases. SIRT4 localizes to mitochondria, inhibits glutamate dehydrogenase, and is thought to be involved in the regulation of insulin secretion.

SIRT4 Antibody - References

Salminen A. SIRT1: regulation of longevity via autophagy. Cell Signal2009; 21:1356-60.
Afshar G and Murnane JP. Characterization of a human gene with sequence homology to Saccharomyces cerevisiae Sir 2. Gene1999; 234:161-8.
Guarente L. Sirtuins as potential targets for metabolic syndrome. Nature2006; 444:868-74.
Vaziri H, Dessain SK, Ng Eaton E, et al. hSIR2 (SIRT1) functions as an NAD-dependent p53 deacetylase. Cell2001; 107:149-59.