

**Goat Anti-SIRT4 Antibody**  
Peptide-affinity purified goat antibody  
Catalog # AF1995a

## Specification

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### Goat Anti-SIRT4 Antibody - Product Information

Application	WB, IHC
Primary Accession	<a href="#">O9Y6E7</a>
Other Accession	<a href="#">NP_036372</a> , <a href="#">23409</a> , <a href="#">75387 (mouse)</a>
Reactivity	Human, Rat
Predicted	Mouse, Pig, Dog
Host	Goat
Clonality	Polyclonal
Concentration	100ug/200ul
Isotype	IgG
Calculated MW	35188

### Goat Anti-SIRT4 Antibody - 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

#### Format

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

#### Precautions

Goat Anti-SIRT4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Goat Anti-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:<a href="http://www.uniprot.org/citations/16959573">

target="\_blank">16959573</a>, PubMed:<a href="http://www.uniprot.org/citations/17715127" target="\_blank">17715127</a>, PubMed:<a href="http://www.uniprot.org/citations/24052263" target="\_blank">24052263</a>, PubMed:<a href="http://www.uniprot.org/citations/25525879" target="\_blank">25525879</a>). Catalyzes more efficiently removal of lipoyl- and biotinyl- than acetyl-lysine modifications (PubMed:<a href="http://www.uniprot.org/citations/24052263" target="\_blank">24052263</a>, PubMed:<a href="http://www.uniprot.org/citations/25525879" target="\_blank">25525879</a>). 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:<a href="http://www.uniprot.org/citations/25525879" target="\_blank">25525879</a>). Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1, inhibiting GLUD1 enzyme activity (PubMed:<a href="http://www.uniprot.org/citations/16959573" target="\_blank">16959573</a>, PubMed:<a href="http://www.uniprot.org/citations/17715127" target="\_blank">17715127</a>). 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:<a href="http://www.uniprot.org/citations/16959573" target="\_blank">16959573</a>, PubMed:<a href="http://www.uniprot.org/citations/17715127" target="\_blank">17715127</a>). In response to mTORC1 signal, SIRT4 expression is repressed, promoting anaplerosis and cell proliferation (PubMed:<a href="http://www.uniprot.org/citations/23663782" target="\_blank">23663782</a>). Acts as a tumor suppressor (PubMed:<a href="http://www.uniprot.org/citations/23562301" target="\_blank">23562301</a>, PubMed:<a href="http://www.uniprot.org/citations/23663782" target="\_blank">23663782</a>). 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:<a href="http://www.uniprot.org/citations/23438705" target="\_blank">23438705</a>). Controls fatty acid oxidation by inhibiting PPARA transcriptional activation (PubMed:<a href="http://www.uniprot.org/citations/24043310" target="\_blank">24043310</a>). Impairs SIRT1-PPARA interaction probably through the regulation of NAD(+) levels (PubMed:<a href="http://www.uniprot.org/citations/24043310" target="\_blank">24043310</a>). Down-regulates insulin secretion (PubMed:<a href="http://www.uniprot.org/citations/17715127" target="\_blank">17715127</a>).

### Cellular Location

Mitochondrion matrix {ECO:0000255|HAMAP- Rule:MF\_03161, ECO:0000269|PubMed:16079181, ECO:0000269|PubMed:16959573, ECO:0000269|PubMed:17715127}

### Tissue Location

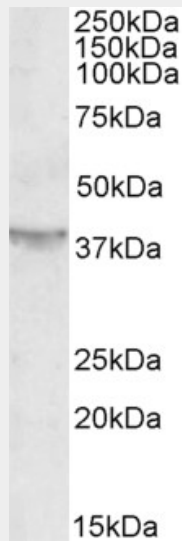
Detected in vascular smooth muscle and striated muscle. Detected in insulin-producing beta-cells in pancreas islets of Langerhans (at protein level). Widely expressed. Weakly expressed in leukocytes and fetal thymus.

## Goat Anti-SIRT4 Antibody - Protocols

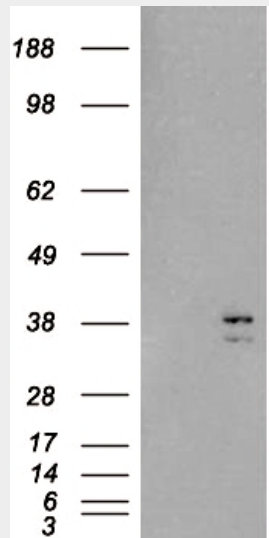
Provided below are standard protocols that you may find useful for product applications.

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

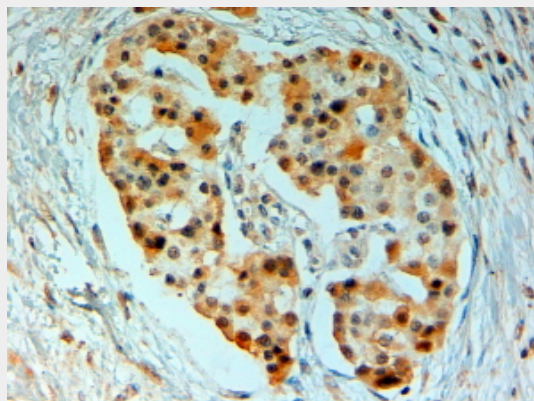
## Goat Anti-SIRT4 Antibody - Images



AF1995a (0.05ug/ml) staining of Human Kidney (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.chemiluminescence.



HEK293 overexpressing SIRT4 (RC212226) and probed with AF1361a (mock transfection in first lane), tested by Origene.



AF1995a (2 µg/ml) staining of paraffin embedded Human Pancreas. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.

### **Goat Anti-SIRT4 Antibody - Background**

This gene encodes a member of the sirtuin family of proteins, homologs to the yeast Sir2 protein. Members of the sirtuin family are characterized by a sirtuin core domain and grouped into four classes. The functions of human sirtuins have not yet been determined; however, yeast sirtuin proteins are known to regulate epigenetic gene silencing and suppress recombination of rDNA. Studies suggest that the human sirtuins may function as intracellular regulatory proteins with mono-ADP-ribosyltransferase activity. The protein encoded by this gene is included in class IV of the sirtuin family.

### **Goat Anti-SIRT4 Antibody - References**

Genetic association analysis of 13 nuclear-encoded mitochondrial candidate genes with type II diabetes mellitus: the DAMAGE study. Reiling E, et al. *Eur J Hum Genet*, 2009 Aug. PMID 19209188.

Regulation of insulin secretion by SIRT4, a mitochondrial ADP-ribosyltransferase. Ahuja N, et al. *J Biol Chem*, 2007 Nov 16. PMID 17715127.

Sirtuin functions in health and disease. Yamamoto H, et al. *Mol Endocrinol*, 2007 Aug. PMID 17456799.

SIRT4 inhibits glutamate dehydrogenase and opposes the effects of calorie restriction in pancreatic beta cells. Haigis MC, et al. *Cell*, 2006 Sep 8. PMID 16959573.

The finished DNA sequence of human chromosome 12. Scherer SE, et al. *Nature*, 2006 Mar 16. PMID 16541075.