

**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, Cow
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

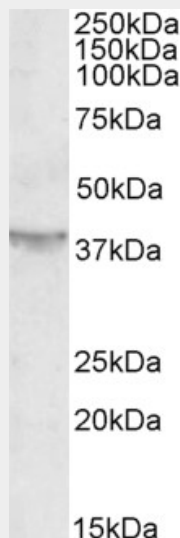
Detected in vascular smooth muscle and striated muscle. Detected in insulin-producing beta-cells in pancreas islets of Langerhans (at protein level). Widely expressed. Weakly expressed in leukocytes and fetal thymus.

## Goat Anti-SIRT4 Antibody - Protocols

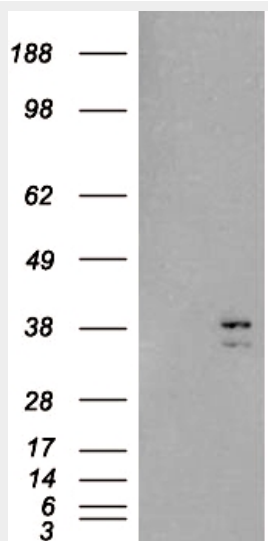
Provided below are standard protocols that you may find useful for product applications.

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

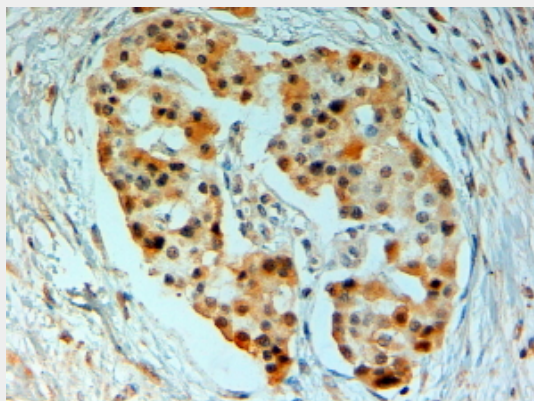
## Goat Anti-SIRT4 Antibody - Images



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.