

**SIRT3 Antibody (C-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP6242a****Specification**

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**SIRT3 Antibody (C-term) - Product Information**

Application	WB, IHC-P,E
Primary Accession	<a href="#">Q9NTG7</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	250-279

**SIRT3 Antibody (C-term) - Additional Information****Gene ID** 23410**Other Names**

NAD-dependent protein deacetylase sirtuin-3, mitochondrial, hSIRT3, 351-, Regulatory protein SIR2 homolog 3, SIR2-like protein 3, SIRT3, SIR2L3

**Target/Specificity**

This SIRT3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 250-279 amino acids from the C-terminal region of human SIRT3.

**Dilution**

WB~~1:1000  
IHC-P~~1:50~100

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**Storage**

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

**Precautions**

SIRT3 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**SIRT3 Antibody (C-term) - Protein Information****Name** SIRT3**Synonyms** SIR2L3

**Function** NAD-dependent protein deacetylase (PubMed:[12186850](#), PubMed:[12374852](#), PubMed:[16788062](#), PubMed:[18680753](#), PubMed:[18794531](#), PubMed:[23283301](#), PubMed:[24121500](#), PubMed:[24252090](#), PubMed:[19535340](#)). Activates or deactivates mitochondrial target proteins by deacetylating key lysine residues (PubMed:[12186850](#), PubMed:[12374852](#), PubMed:[16788062](#), PubMed:[18680753](#), PubMed:[18794531](#), PubMed:[23283301](#), PubMed:[24121500](#), PubMed:[24252090](#)). Known targets include ACS1, IDH, GDH, SOD2, PDHA1, LCAD, SDHA and the ATP synthase subunit ATP5PO (PubMed:[16788062](#), PubMed:[18680753](#), PubMed:[24121500](#), PubMed:[24252090](#), PubMed:[19535340](#)). Contributes to the regulation of the cellular energy metabolism (PubMed:[24252090](#)). Important for regulating tissue-specific ATP levels (PubMed:[18794531](#)). In response to metabolic stress, deacetylates transcription factor FOXO3 and recruits FOXO3 and mitochondrial RNA polymerase POLRMT to mtDNA to promote mtDNA transcription (PubMed:[23283301](#)). Acts as a regulator of ceramide metabolism by mediating deacetylation of ceramide synthases CERS1, CERS2 and CERS6, thereby increasing their activity and promoting mitochondrial ceramide accumulation (By similarity). Regulates hepatic lipogenesis. Uses NAD(+) substrate imported by SLC25A47, triggering downstream activation of PRKAA1/AMPK-alpha signaling cascade that ultimately downregulates sterol regulatory element-binding protein (SREBP) transcriptional activities and ATP-consuming lipogenesis to restore cellular energy balance.

**Cellular Location**

Mitochondrion matrix

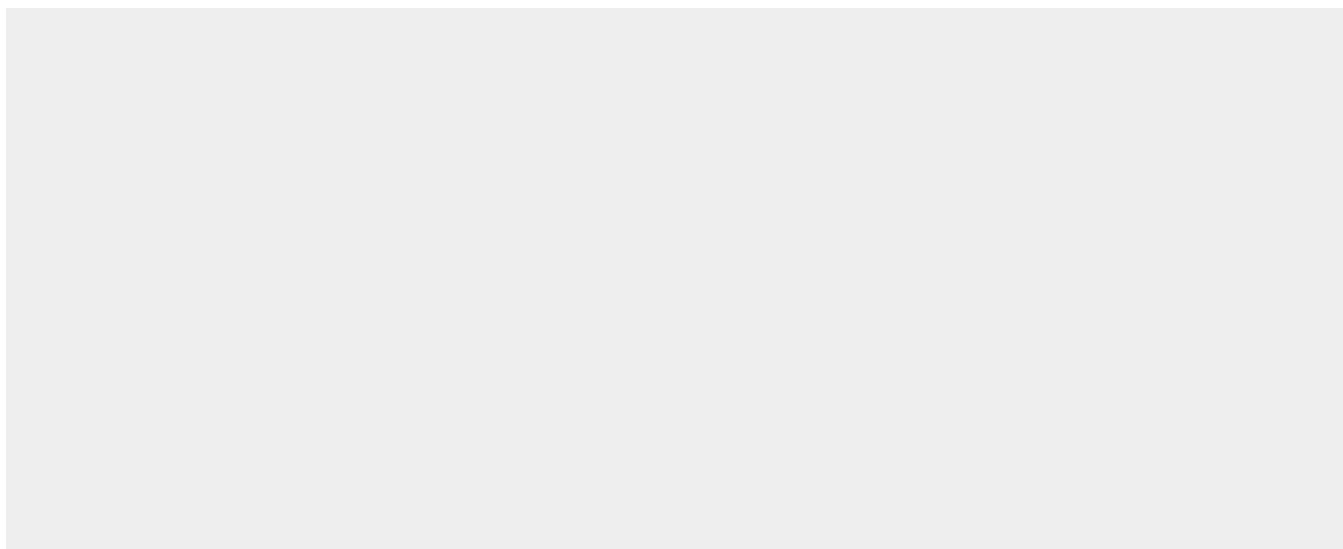
**Tissue Location**

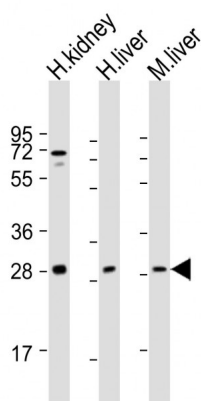
Widely expressed.

**SIRT3 Antibody (C-term) - Protocols**

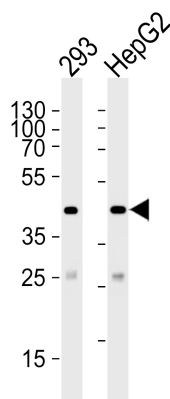
Provided below are standard protocols that you may find useful for product applications.

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

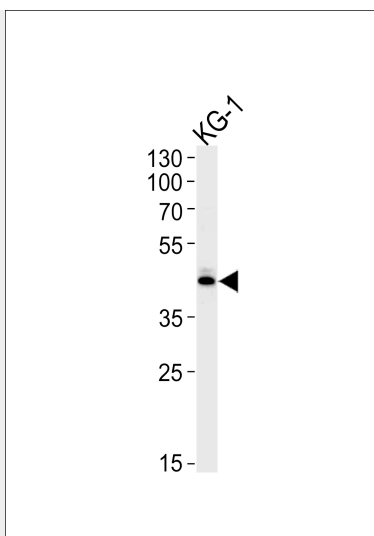
**SIRT3 Antibody (C-term) - Images**



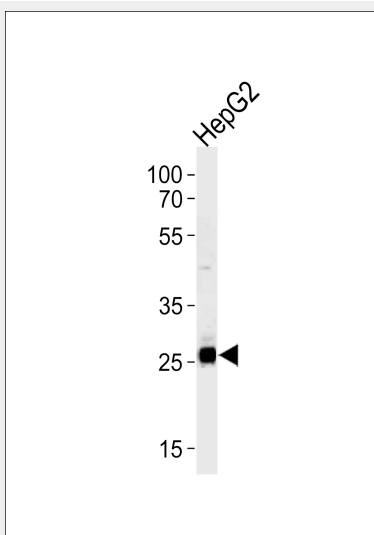
All lanes : Anti-SIRT3 Antibody (C-term) at 1:2000 dilution Lane 1: human kidney lysate Lane 2: human liver lysate Lane 3: mouse liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 44 kDa Blocking/Dilution buffer: 5% NFDN/TBST.



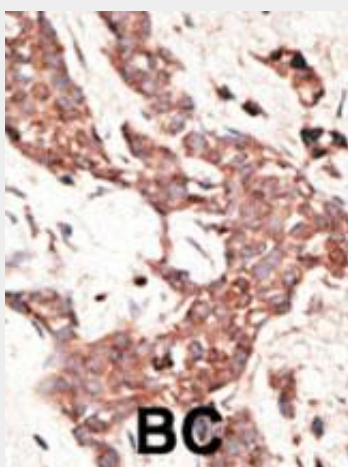
Western blot analysis of lysates from 293, HepG2 cell line (from left to right), using SIRT3 Antibody (C-term)(Cat. #AP6242a). AP6242a was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.



SIRT3 Antibody (C-term) (Cat.# AP6242a) western blot analysis in KG-1 cell line lysates (35ug/lane). This demonstrates the SIRT3 antibody detected the SIRT3 protein (arrow).



SIRT3 Antibody (C-term) (Cat.# AP6242a) western blot analysis in HepG2 cell line lysates (35ug/lane). This demonstrates the SIRT3 antibody detected the SIRT3 protein (arrow).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody,

which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

### **SIRT3 Antibody (C-term) - Background**

SIRT3 is 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 SIRT3 is included in class I of the sirtuin family.

### **SIRT3 Antibody (C-term) - References**

Hirschey, M.D., et al. Nature 464(7285):121-125(2010) Pillai, V.B., et al. J. Biol. Chem. 285(5):3133-3144(2010) Kim, H.S., et al. Cancer Cell 17(1):41-52(2010)

### **SIRT3 Antibody (C-term) - Citations**

- [SIRT3 consolidates heterochromatin and counteracts senescence](#)
- [Pancreatic Sirtuin 3 Deficiency Promotes Hepatic Steatosis by Enhancing 5-Hydroxytryptamine Synthesis in Mice With Diet-Induced Obesity](#)
- [SIRT3 protects endothelial cells from high glucose-induced senescence and dysfunction via the p53 pathway](#)
- [Both gain and loss of Nampt function promote pressure-overload-induced heart failure.](#)
- [Sirtuin3 protects aged human mesenchymal stem cells against oxidative stress and enhances efficacy of cell therapy for ischaemic heart diseases.](#)
- [Activation of AMPK-SIRT3 Signaling is Chondroprotective by Preserving Mitochondrial DNA Integrity and Function.](#)
- [Exercise in the Prevention and Management of Oxidative Stress-Linked Diseases.](#)
- [Short-Duration Swimming Exercise after Myocardial Infarction Attenuates Cardiac Dysfunction and Regulates Mitochondrial Quality Control in Aged Mice.](#)
- [Decreased Sirtuin Deacetylase Activity in LRRK2 G2019S iPSC-Derived Dopaminergic Neurons.](#)
- [Localization of sirtuins \(SIRT1-7\) in the aged mouse inner ear.](#)
- [Activation of the aryl hydrocarbon receptor sensitizes mice to nonalcoholic steatohepatitis by deactivating mitochondrial sirtuin deacetylase Sirt3.](#)
- [Receptor-interacting protein \(RIP\) and Sirtuin-3 \(SIRT3\) are on opposite sides of anoikis and tumorigenesis.](#)
- [Integration of  \$\beta\$ -catenin, sirtuin, and FOXO signaling protects from mutant huntingtin toxicity.](#)
- [PPAR \$\gamma\$ -LXR as a novel metabolostatic signalling axis in skeletal muscle that acts to optimize substrate selection in response to nutrient status.](#)
- [Sirtuin-3 \(SIRT3\), a novel potential therapeutic target for oral cancer.](#)
- [FoxO1 mediates an autofeedback loop regulating SIRT1 expression.](#)
- [Exogenous NAD blocks cardiac hypertrophic response via activation of the SIRT3-LKB1-AMP-activated kinase pathway.](#)
- [Sirt3 blocks the cardiac hypertrophic response by augmenting Foxo3a-dependent antioxidant defense mechanisms in mice.](#)
- [SIRT3 is a stress-responsive deacetylase in cardiomyocytes that protects cells from stress-mediated cell death by deacetylation of Ku70.](#)