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SIRT3 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6242a

Specification

SIRT3 Antibody (C-term) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	Q9NTG7
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 ACSS1, 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 Cytomety
- Cell Culture

SIRT3 Antibody (C-term) - Images

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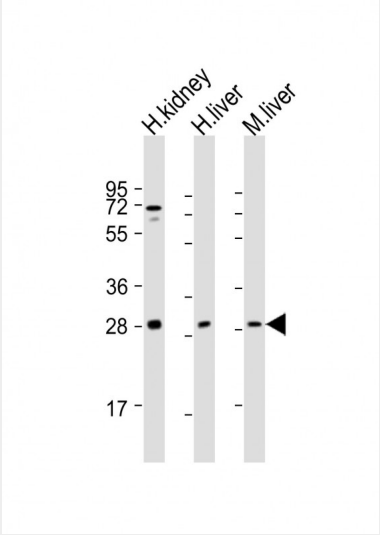
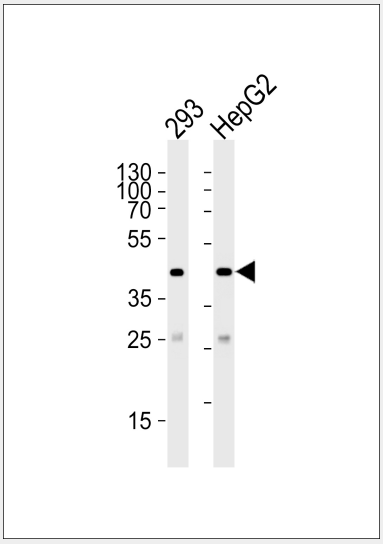


All lanes : Anti-SIRT3 Antibody (C-term) at 1:2000 dilution Lane 1: human kidney lysate Lane 2: human liver lysate Lane 3: mouse liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 44 kDa Blocking/Dilution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

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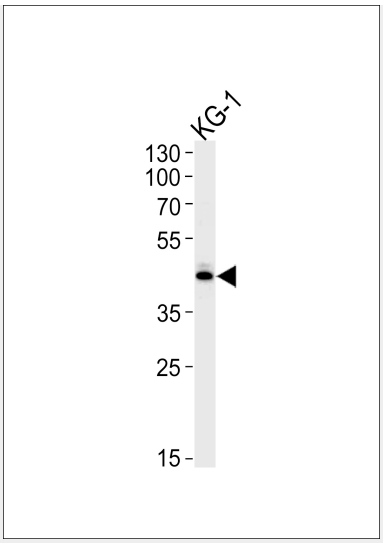
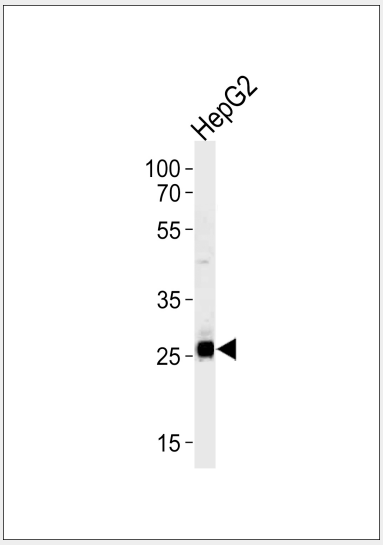


SIRT3 Antibody (C-term) (Cat.# AP6242a) western blot analysis in KG-1 cell line lysates (35ug/lane).This demonstrates the SIRT3 antibody detected the SIRT3 protein (arrow).



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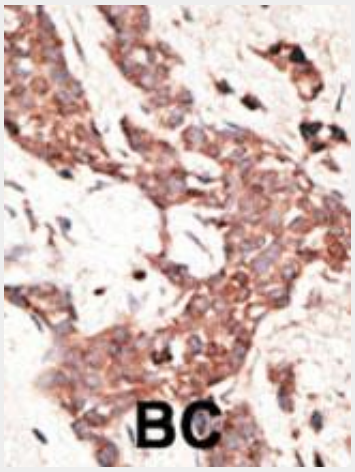

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody,

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 β-catenin, sirtuin, and FOXO signaling protects from mutant huntingtin toxicity.
- PPARÎ±-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.