

## Anti-SIRT3 Picoband Antibody

Catalog # ABO11858

#### Specification

## **Anti-SIRT3 Picoband Antibody - Product Information**

ApplicationWBPrimary AccessionO9NTG7HostRabbitReactivityHuman, RatClonalityPolyclonalFormatLyophilizedDescriptionRabbit IgG polyclonal antibody for NAD-dependent protein deacetylase sirtuin-3, mitochondrial(SIRT3) detection. Tested with WB in Human;Rat.

**Reconstitution** Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

### **Anti-SIRT3 Picoband Antibody - Additional Information**

Gene ID 23410

**Other Names** NAD-dependent protein deacetylase sirtuin-3, mitochondrial, hSIRT3, 3.5.1.-, Regulatory protein SIR2 homolog 3, SIR2-like protein 3, SIRT3, SIR2L3

Calculated MW 43573 MW KDa

**Application Details** Western blot, 0.1-0.5 μg/ml, Human, Rat<br>

**Subcellular Localization** Mitochondrion matrix .

**Tissue Specificity** Widely expressed.

Protein Name NAD-dependent protein deacetylase sirtuin-3, mitochondrial

Contents Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen E.coli-derived human SIRT3 recombinant protein (Position: P66-K399). Human SIRT3 shares 86% amino acid (aa) sequence identity with mouse SIRT3.

Purification



Immunogen affinity purified.

**Cross Reactivity** No cross reactivity with other proteins

Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities Belongs to the sirtuin family. Class I subfamily.

# Anti-SIRT3 Picoband Antibody - Protein Information

Name SIRT3 {ECO:0000303|PubMed:12186850, ECO:0000312|HGNC:HGNC:14931}

Function

NAD-dependent protein deacetylase (PubMed:<a href="http://www.upiprot.org/citations/12186850" target

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href="http://www.uniprot.org/citations/12374852" target=" blank">12374852, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/16788062" target=" blank">16788062, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/18680753" target=" blank">18680753, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/18794531" target=" blank">18794531, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/19535340" target=" blank">19535340, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/23283301" target=" blank">23283301, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/24121500" target=" blank">24121500, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/24252090" target=" blank">24252090). Activates or
deactivates mitochondrial target proteins by deacetylating key lysine residues (PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/12186850" target="_blank">12186850, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/12374852" target="_blank">12374852, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/16788062" target="_blank">16788062, PubMed: <a< td=""></a<>
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href="http://www.uniprot.org/citations/18794531" target="_blank">18794531, PubMed: <a< td=""></a<>
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href="http://www.uniprot.org/citations/24252090" target="_blank">24252090, PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/38146092" target="_blank">38146092). Known
targets include ACSS1, IDH, GDH, SOD2, PDHA1, LCAD, SDHA, MRPL12 and the ATP synthase
subunit ATP5PO (PubMed: <a <="" href="http://www.uniprot.org/citations/16788062" td=""></a>
target="_blank">16788062, PubMed: <a <="" href="http://www.uniprot.org/citations/18680753" td=""></a>
target="_blank">18680753, PubMed: <a <="" href="http://www.uniprot.org/citations/19535340" td=""></a>
target="_blank">19535340, PubMed: <a <="" href="http://www.uniprot.org/citations/24121500" td=""></a>
target="_blank">24121500, PubMed: <a <="" href="http://www.uniprot.org/citations/24252090" td=""></a>
target="_blank">24252090, PubMed: <a <="" href="http://www.uniprot.org/citations/38146092" td=""></a>
target="_blank">38146092). Contributes to the regulation of the cellular energy metabolism
(PubMed: <a href="http://www.uniprot.org/citations/24252090" target="_blank">24252090</a> ).
Important for regulating tissue-specific ATP levels (PubMed: <a< td=""></a<>
href="http://www.uniprot.org/citations/18794531" target="_blank">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: <a< td=""></a<>
href="http://www.uniprot.org/citations/23283301" target="_blank">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 (By similarity). 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 (By similarity). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase by mediating delactylation of proteins, such as CCNE2 and 'Lys-16' of histone H4 (H4K16la) (PubMed:<a href="http://www.uniprot.org/citations/36896611" target="\_blank">36896611</a>, PubMed:<a href="http://www.uniprot.org/citations/37720100" target="\_blank">37720100</a>).

**Cellular Location** Mitochondrion matrix

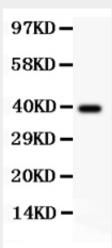
Tissue Location Widely expressed.

## **Anti-SIRT3 Picoband Antibody - Protocols**

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

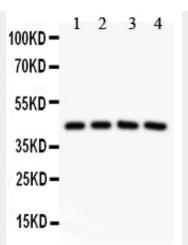
- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

Anti-SIRT3 Picoband Antibody - Images



Anti-SIRT3 Picoband antibody, ABO11858-1.jpgAll lanes: Anti SIRT3 (ABO11858) at 0.5ug/mIWB: Recombinant Human SIRT3 Protein 0.5ngPredicted bind size: 39KDObserved bind size: 39KD





Anti-SIRT3 Picoband antibody, ABO11858-2.jpgAll lanes: Anti SIRT3 (ABO11858) at 0.5ug/mlLane 1: Rat Spleen Tissue Lysate at 50ugLane 2: Human Placenta Tissue Lysate at 50ugLane 3: HELA Whole Cell Lysate at 40ugLane 4: COLO320 Whole Cell Lysate at 40ugPredicted bind size: 44KD Observed bind size: 44KD

## Anti-SIRT3 Picoband Antibody - Background

NAD-dependent deacetylase sirtuin-3, mitochondrial also known as SIRT3 is a protein that in humans is encoded by the SIRT3 gene. SIRT3 is member of the mammalian sirtuin family of proteins, which are homologs to the yeast Sir2 protein. It is mapped to 11p15.5. Endogenous SIRT3 is a soluble protein located in the mitochondrial matrix. Overexpression of SIRT3 in cultured cells increases respiration and decreases the production of reactive oxygen species. SIRT3 can function as a mitochondrial deacetylase. In addition to it, human sirtuins may function as intracellular regulatory proteins with mono-ADP-ribosyltransferase activity.