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# SIRT3 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2179a

## Product Information

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| **Application** | WB, IHC, FC, ICC, E |
| **Primary Accession** | Q9NTG7 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 6B2A1 |
| **Isotype** | IgG1 |
| **Calculated MW** | 43573 |
| **Description** | 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 I of the sirtuin family. Two alternatively spliced transcript variants that encode different proteins have been described for this gene. |
| **Immunogen** | Purified recombinant fragment of human SIRT3 (AA: 155-290) expressed in E. Coli. |
| **Formulation** | Purified antibody in PBS with 0.05% sodium azide |

## Additional Information

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| **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 |
| **Dilution** | WB~~1/500 - 1/2000 IHC~~1:100~500 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000 |
| **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** | SIRT3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | SIRT3 {ECO:0000303\|PubMed:12186850, ECO:0000312\|HGNC:HGNC:14931} |
| **Function** | NAD-dependent protein deacetylase (PubMed: 12186850, PubMed:12374852, PubMed:16788062, PubMed:18680753, PubMed:18794531, PubMed:19535340, PubMed:23283301, PubMed:24121500, PubMed:24252090). 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, PubMed:38146092). Known targets include ACSS1, IDH, GDH, SOD2, PDHA1, LCAD, SDHA, MRPL12 and the ATP synthase subunit ATP5PO (PubMed:16788062, PubMed:18680753, PubMed:19535340, PubMed:24121500, PubMed:24252090, PubMed:38146092). 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 (By similarity). Uses NAD(+) substrate imported by SLC25A47, triggering downstream activation of PRKAA1/AMPK- alpha signaling cascade that ultimately down-regulates 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 recognizing other acyl groups, such as benzoyl and lactoyl, leading to protein debenzoylation and delactylation, respectively (PubMed:39524354, PubMed:36896611, PubMed:37720100). Catalyzes debenzoylation of PPIF and ACLY (PubMed:37720100). Mediates delactylation of CCNE2 and 'Lys-16' of histone H4 (H4K16la) (PubMed:36896611, PubMed:37720100). |
| **Cellular Location** | Mitochondrion matrix |
| **Tissue Location** | Widely expressed. |

## References

1.Biomed Res Int. 2014;2014:871263.2.Med Oncol. 2014 Aug;31(8):103.

## Images

