

Product datasheet for **TA328121**

SIRT1 Mouse Monoclonal Antibody [Clone ID: 1089CT5.3.1]

Product data:

Product Type:	Primary Antibodies
Clone Name:	1089CT5.3.1
Applications:	WB
Recommended Dilution:	WB: 1:1000
Reactivity:	Human
Host:	Mouse
Isotype:	IgG3, kappa
Clonality:	Monoclonal
Immunogen:	This antibody is generated from a mice immunized with a recombinant protein between 1-180 amino acids from human.
Formulation:	PBS with 0.09% (W/V) sodium azide
Concentration:	lot specific
Purification:	This antibody is purified through a protein G column, followed by dialysis against PBS.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	sirtuin 1
Database Link:	NP_036370 Entrez Gene 23411 Human Q96EB6

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Background:

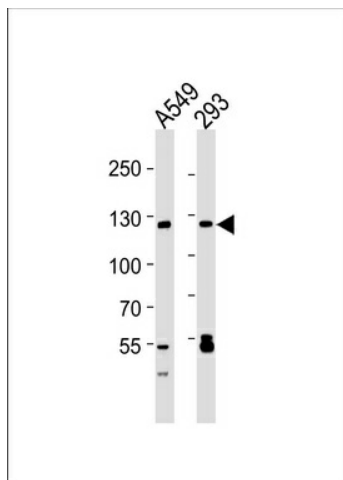
NAD-dependent protein deacetylase that links transcriptional regulation directly to intracellular energetics and participates in the coordination of several separated cellular functions such as cell cycle, response to DNA damage, metabolism, apoptosis and autophagy. Can modulate chromatin function through deacetylation of histones and can promote alterations in the methylation of histones and DNA, leading to transcriptional repression. Deacetylates a broad range of transcription factors and coregulators, thereby regulating target gene expression positively and negatively. Serves as a sensor of the cytosolic ratio of NAD(+)/NADH which is altered by glucose deprivation and metabolic changes associated with caloric restriction. Is essential in skeletal muscle cell differentiation and in response to low nutrients mediates the inhibitory effect on skeletal myoblast differentiation which also involves 5'-AMP-activated protein kinase (AMPK) and nicotinamide phosphoribosyltransferase (NAMPT). Component of the eNoSC (energy-dependent nucleolar silencing) complex, a complex that mediates silencing of rDNA in response to intracellular energy status and acts by recruiting histone-modifying enzymes. The eNoSC complex is able to sense the energy status of cell: upon glucose starvation, elevation of NAD(+)/NADP(+) ratio activates SIRT1, leading to histone H3 deacetylation followed by dimethylation of H3 at 'Lys-9' (H3K9me2) by SUV39H1 and the formation of silent chromatin in the rDNA locus. Deacetylates 'Lys-266' of SUV39H1, leading to its activation. Inhibits skeletal muscle differentiation by deacetylating PCAF and MYOD1. Deacetylates H2A and 'Lys-26' of HIST1H1E. Deacetylates 'Lys-16' of histone H4 (in vitro). Involved in NR0B2/SHP corepression function through chromatin remodeling: Recruited to LRH1 target gene promoters by NR0B2/SHP thereby stimulating histone H3 and H4 deacetylation leading to transcriptional repression. Proposed to contribute to genomic integrity via positive regulation of telomere length; however, reports on localization to pericentromeric heterochromatin are conflicting. Proposed to play a role in constitutive heterochromatin (CH) formation and/or maintenance through regulation of the available pool of nuclear SUV39H1. Upon oxidative/metabolic stress decreases SUV39H1 degradation by inhibiting SUV39H1 polyubiquitination by MDM2. This increase in SUV39H1 levels enhances SUV39H1 turnover in CH, which in turn seems to accelerate renewal of the heterochromatin which correlates with greater genomic integrity during stress response. Deacetylates 'Lys-382' of p53/TP53 and impairs its ability to induce transcription-dependent proapoptotic program and modulate cell senescence. Deacetylates TAF1B and thereby represses rDNA transcription by the RNA polymerase I. Deacetylates MYC, promotes the association of MYC with MAX and decreases MYC stability leading to compromised transformational capability. Deacetylates FOXO3 in response to oxidative stress.

Synonyms:

SIR2; SIR2alpha; SIR2L1

Protein Families:

Druggable Genome, Stem cell - Pluripotency, Transcription Factors

Product images:


Western blot analysis of lysates from A549, 293 cell line (from left to right), using RPS6KB2 Antibody (Cat. #TA328121). TA328121 was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L (HRP) at 1:3000 dilution was used as the secondary antibody. Lysates at 35ug per lane.