

Rabbit Polyclonal Anti-SIRT1 antibody

Catalog Number: SIR1-101AP

Lot Number:

General Information

Product	SIRT1 Antibody
Description	NAD-dependent protein deacetylase sirtuin-1 isoform 1 Antibody
Accession #	Uniprot: Q923E4 NCBI: NP_062786.1
Verified Applications	ELISA, WB
Species Cross Reactivity	Chicken, Human, Monkey, Mouse, Rat
Host	Rabbit
Immunogen	Synthetic peptide taken within amino acid 25-75 on rat Sirtuin 1 protein.
Alternative Nomenclature	HST2, <i>S. cerevisiae</i> , homolog of antibody, NAD dependent deacetylase sirtuin 1 antibody, Regulatory protein SIR2 homolog 1 antibody, SIR2L1 antibody, Sirt1 antibody

Physical Properties

Quantity	100 µg
Volume	200 µl
Form	Affinity Purified Immunoglobulins
Immunoglobulin & Concentration	0.69-0.75 mg/ml IgG in antibody stabilization buffer
Storage	Store at -20°C for long term storage.

Recommended Dilutions

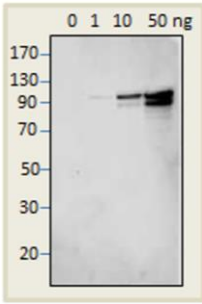
DOT Blot	1:10,000
ELISA	1:10,000
Western Blot	1:500

Related Products

Catalog

BIOTIN-Conjugated	SIR1-BIOTIN
FITC-Conjugated	SIR1-FITC
Antigenic Blocking Peptide	P-SIR1
Western Blot Positive Control	PC-SIR1

Application Verification:



WB of SIR1-101AP with PC-SIR1. 1:500 antibody, dilution in DiluObuffer. Apparent MW is 91 kDa. (left)

Dilutions are for reference only. Applications not listed above are not necessarily precluded from working with this antibody. Investigators intending to use an application that has not been verified can request a complimentary sample.

Overview:

Silent information regulators (SIR) or atypical class III HDACs (NAD-dependent deacetylase proteins) are a member of the SIR family of NAD⁺-dependent protein deacetylases involved in caloric restriction-dependent life span extension in diverse organisms but their role in humans have not been elucidated fully. The cell survival is partly controlled by activity of NFκB and SIRT1 controls the transcriptional activity of NFκB. SIRT1 is a mammalian homolog of yeast SIRT2 and is a member of a larger family of Sirtuin proteins (SIRT1 through SIRT7) which are implicated in modulating transcriptional silencing and cell survival. SIRT1 interacts with RelA/p65 subunit of NF-κB and inhibits transcription by de-acetylating RelA/p65 at lysine 310 (1). SIRT1 plays an active role in inhibiting transcription by interacting with the basic helix–loop–helix proteins HES1, HEY2, and with the COUP-TF interacting protein 2 (CTIP2, 2). SIRT1 also deacetylates non-histone protein substrate, including TAFI68, PCAF, p300, MyoD, p53, and Ku 70. SIRT1 regulates cell fate, in part, by deacetylating the p53 protein at lysine 382 and inactivating p53-mediated transcription and apoptosis. Recently, SIRT1 was shown to control Bax-induced apoptosis by deacetylating Ku70, and to inhibit forkhead-mediated cell death (3). While SIRT1 is capable of protecting cells from p53-induced apoptosis, our work provides evidence that SIRT1 activity augments apoptosis in response to TNFα by the ability of the deacetylase to inhibit the transactivation potential of the RelA/p65 protein.

Evidence suggests that histone deacetylase, SIRT1, is a mediator of life span extension by calorie restriction. However, in some cases the HDAC activity is necessary for the maintenance and survival and growth advantage in some types of cancer. SIRT1 may paradoxically increase the risk of cancer and acts as tumor promoter, it should be considered as a therapeutic target for the treatment of cancers (4). SIRT1 protein has 737 amino acids that is significantly elevated in human and mouse prostate cancer (5). SIRT1 represses Forkhead transcriptional factor (FOX3) and also acts a corepressor of androgen receptor and suggest a new molecular pathway relevant to prostate cancer growth and approaches to therapy.

The Anti-SIRT1-selective antibodies are generated against conserved sequence (AA 33-55 rat sequence) that is unique to SIRT1 protein and is common in human, mouse, cat, bovine and several other species. The SIRT1-selective antibodies are affinity purified against immobilized antigen based affinity chromatography which yielded epitope-specific antibodies. The SIRT1 antibody label an 85-92 kDa and some smaller bands in SIRT1 Western blot positive control samples (PC-SIR1). Anti-SIRT1-selective antibodies can be conjugated with secondary enzymes or coupled to fluorophores at a nominal cost. Antigenic blocking peptide for SIRT1 (P-SIR1) are also available.

References:

1. Fan Yeung, Jamie E Hoberg, Catherine S Ramsey, Michael D Keller, David R Jones, Roy A Frye, and Marty W Mayo. Modulation of NF-κB-dependent transcription and cell survival by the SIRT1 deacetylase. *EMBO J.* 2004 June 16; 23(12): 2369–2380. *EMBOJ* 2004 May 20. 10.1038.
2. Motta MC, Divecha N, Lemieux M, Kamel C, Chen D, Gu W, Bultsma Y, McBurney M, Guarente L. Mammalian SIRT1 represses forkhead transcription factors. *Cell* 116: 551–563; 2004.
3. Cohen HY, Lavu S, Bitterman KJ, Hekking B, Imahiyerobo TA, Miller C, Frye R, Ploegh H, Kessler BM, Sinclair DA (2004) Acetylation of the C terminus of Ku70 by CBP and PCAF controls Bax-mediated apoptosis. *Mol Cell* 13: 627–638.
4. Huffman,D.M., Grizzle,W.E., Bamman,M.M., Kim,J.S., Eltoum,I.A., Elgavish,A. and Nagy,T.R. SIRT1 is significantly elevated in mouse and human prostate cancer. *Cancer Res.* 67 (14), 6612-6618 (2007)
5. Huffman,D.M., Grizzle,W.E., Bamman,M.M., Kim,J.S., Eltoum,I.A., Elgavish,A. and Nagy,T.R. SIRT1 is significantly elevated in mouse and human prostate cancer. *Cancer Res.* 67 (14), 6612-6618 (2007)

* For users who may require large amounts of Sir1-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.