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Sirtuin Antibody Sampler Kit

1 Kit (7 x 20 microliters)

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-SirT1 (Ser47) Antibody	2314	20 µl	120 kDa	Rabbit
SirT1 (D1D7) Rabbit mAb	9475	20 µl	120 kDa	Rabbit IgG
SirT2 (D4O5O) Rabbit mAb	12650	20 µl	39, 43 kDa	Rabbit IgG
SirT3 (D22A3) Rabbit mAb	5490	20 µl	28 kDa	Rabbit IgG
SirT5 (D8C3) Rabbit mAb	8782	20 µl	30 kDa	Rabbit IgG
SirT6 (D8D12) Rabbit mAb	12486	20 µl	42, 36 kDa	Rabbit IgG
SirT7 (D3K5A) Rabbit mAb	5360	20 µl	45 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Sirtuin Antibody Sampler Kit provides an economical means of evaluating total levels of sirtuin proteins. The kit includes enough antibody to perform at least two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Background

The Silent Information Regulator (SIR2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as Class III histone deacetylases. The best characterized of these genes is *Saccharomyces cerevisiae* Sir2, which is involved in silencing of mating type loci, telomere maintenance, DNA damage response and cell aging (1). SirT1, the mammalian ortholog of Sir2, is a nuclear protein implicated in the regulation of apoptosis, cellular senescence, endocrine signaling, glucose homeostasis, aging, and longevity. SirT2, one of several mammalian Sir2 homologs, deacetylates α-tubulin on Lys40 and histone H4 on Lys16, and is implicated in cytoskeletal regulation and progression through mitosis (2,3). SirT2 protein is mainly cytoplasmic and is associated with microtubules and the HDAC6 tubulin deacetylase (2).

SirT3 exists in human cells in two forms, including a full-length, nuclear (44 kDa) protein and a processed (28 kDa) protein found exclusively in the mitochondria (4-6). Full-length SirT3 protein is processed in the mitochondrial matrix by mitochondrial matrix processing peptidase (MMP) (5). Both full-length and processed SirT3 are active enzymes that deacetylate histone H3 at Lys9 and histone H4 at Lys16 *in vitro* (4). SirT3 also deacetylates Lys642 of acetyl-CoA synthetase 2 (AceCS2) and activates AceCS2 activity in the mitochondria (7).

SirT5 is localized to the mitochondria and has been implicated in the regulation of cell metabolism (8,9). Nuclear SirT6 is a chromatin-associated protein that promotes normal maintenance of genome integrity as mediated by the base excision repair (BER) pathway (10-12). Mammalian SirT7 is localized to the nucleolus and is prominently expressed in hematopoietic cells, especially myeloid progenitor cells (13). SirT7 is recruited to chromatin by sequence-specific DNA binding transcription factors such as Elk-4, where it facilitates transcriptional repression through deacetylation of histone H3 at Lys18 (14).

Background References

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