SIRT3 polyclonal antibody

Catalog: BS67754 Host: Rabbit Reactivity: Human, Mouse, Rat

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 first discovered and 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. SirT3, a mammalian homolog of Sir2, exists in human cells in two forms. The full-length 44 kDa protein localizes to the nucleus, while a processed 28 kDa protein lacking 142 amino terminal residues localizes exclusively to the mitochondria. The single murine form of SirT3 is equivalent to the processed human SirT3 protein. Full-length SirT3 protein is processed in the mitochondrial matrix by the mitochondrial matrix processing peptidase (MMP). Both full-length and processed forms of SirT3 are enzymatically active and de-acetylate histone H3 at Lys9 and histone H4 at Lys16 in vitro. SirT3 also de-acetylates Lys642 of acetyl-CoA synthetase 2 (AceCS2) and activates AceCS2 activity in the mitochondria. Restricted caloric intake, which is linked to increased lifespan in multiple organisms, increases SirT3 expression in white and brown adipocytes of obese mice, suggesting a role for SirT3 in aging. Two observations implicate SirT3 in the regulation of mitochondrial thermogenesis. First, exposure to cold temperatures increases SirT3 expression in brown adipocytes, while elevated temperatures reduce SirT3 expression. Second, over-expression of SirT3 results in increased levels of the mitochondrial uncoupling protein 1 (UCP1). SirT3 protein levels are also elevated in certain breast cancers.

Product:

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.

Molecular Weight:

~ 31 kDa

Swiss-Prot:

Q9NTG7

Purification&Purity:

The antibody was purified by immunogen affinity chromatography.

Applications:

WB (1/500 - 1/1000), IHC (1/50 - 1/200), IP (1/50 - 1/100)

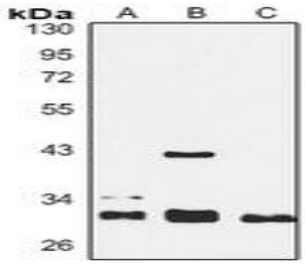
Storage&Stability:

Store at 4℃ short term. Aliquot and store at -20℃ long term. Avoid freeze-thaw cycles.

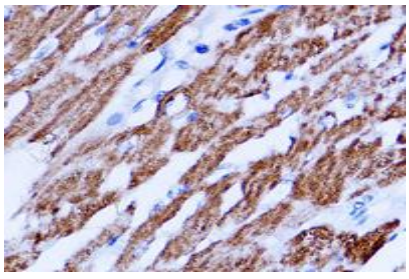
Specificity:

Recognizes endogenous levels of SIRT3 protein.

DATA:



Western blot analysis of SIRT3 expression in 22RV1 (A), SW620 (B), MCF7 (C) whole cell lysates.



Immunohistochemical analysis of SIRT3 staining in rat heart formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature

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and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Note:

For research use only, not for use in diagnostic procedure.

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