

Product Information

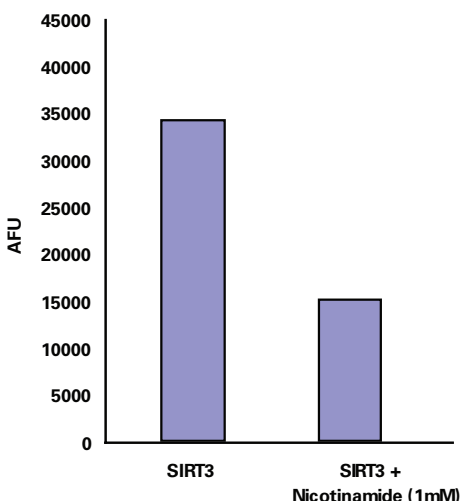


SIRT3 (human recombinant)

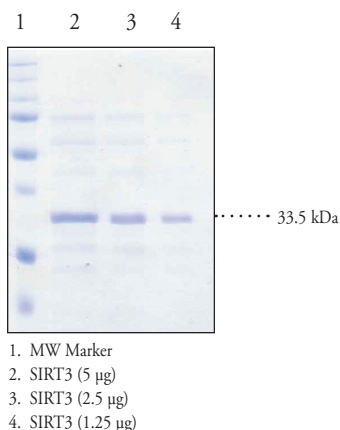
Catalog No. 10011194 • Lot No. XXXX

Synonym:	Silent Information Regulator 2, SIR2, Sirtuin 3
Source:	Recombinant N-terminal His-tag SIRT3 amino acids 101-399, purified from <i>E.coli</i>
M_r:	37.0 kDa
Purity:	≥90%
Stability:	≥9 months at -80°C
Supplied in:	50 mM sodium phosphate, pH 7.2, containing 100 mM sodium chloride and 20% glycerol
Protein Concentration:	XX mg/ml
Activity:	XX U/ml
Specific Activity:	XX nmoles/min/mg; one unit is defined as the amount of enzyme required to produce 1 nmole of 7-amino-4-methylcoumarin per minute at 25°C in 50 mM Tris-HCl, pH 8.0, containing 137 mM NaCl, 2.7 mM KCl, 1 mM MgCl ₂ , 125 μM p53 amino acids 317-320 (Gln-Pro-Lys-Lys(ε-acetyl)-AMC), and 6 mM NAD ⁺

The sirtuins represent a distinct class of trichostatin A-insensitive lysyl-deacetylases (class III HDACs) and have been shown to catalyze a reaction that couples lysine deacetylation to the formation of nicotinamide and O-acetyl-ADP-ribose from NAD⁺ and the abstracted acetyl group.¹⁻³ There are seven human sirtuins (SIRT3), which have been designated SIRT 1-7.⁴ SIRT3, is a mitochondrial protein, with its N-terminal 25 amino acid residues responsible for its localization.^{5,6} Synthesized as an enzymatically inactive protein, human SIRT3 is activated by a matrix-processing peptidase.⁶ Recently, it was demonstrated that SIRT3 is translocated to the mitochondria from the nucleus during cellular stress or by the overexpression of SIRT3 itself.⁷ In mice, caloric restriction up-regulates SIRT3 expression levels in white and brown adipose tissue (WAT & BAT). Cold exposure also induces SIRT3 in brown adipose tissue (BAT).⁸ The constitutive expression of SIRT3 promotes the expression of PGC-1α, UCP1, and other genes involved in mitochondrial functions, indicating that SIRT3 modulates adaptive thermogenesis in BAT.⁸



Inhibition of SIRT3 activity by Nicotinamide



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Product Information



References

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Related Products

SIRT1 Direct Fluorescent Screening Assay Kit - Cat. No. 10010401 • SIRT1 FRET-Based Screening Assay Kit - Cat. No. 10010991 • SIRT1 (human recombinant) - Cat. No. 10011190 • SIRT3 Direct Fluorescent Screening Assay Kit - Cat. No. 10011566

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