



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

PRODUCT INFORMATION



SIRT3 (human, recombinant)

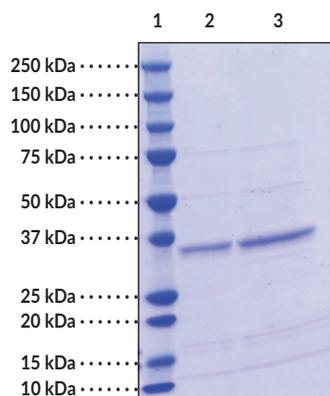
Item No. 10011194

Overview and Properties

Synonyms:	Mitochondrial Nicotinamide Adenine Dinuclear-dependent Deacetylase, NAD-dependent Deacetylase 3, Silent Information Regulator 3, SIR2L3, SIR2-like Protein 3, Sirtuin 3
Source:	Active recombinant N-terminal hexahistidine-tagged enzyme amino acids 101-399, purified from <i>E. coli</i>
Amino Acids:	101-399
Uniprot No.:	Q9NTG7
Molecular Weight:	37.0 kDa (theoretical); 33.5 kDa (observed). The identity of SIRT3 protein was confirmed by mass spectrometry.
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	batch specific (≥60% estimated by SDS-PAGE)
Supplied in:	50 mM sodium phosphate, pH 7.2, containing 100 mM sodium chloride and 20% glycerol
Protein Concentration:	batch specific mg/ml
Activity:	batch specific U/ml
Specific Activity:	batch specific U/mg
Unit Definition:	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(e-acetyl)-AMC), and 6 mM NAD ⁺

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

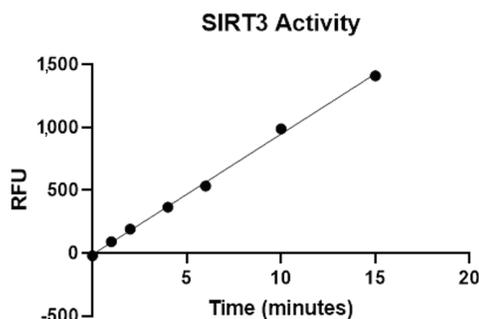
Images



Lane 1: MW Markers
Lane 2: SIRT3 (2 μg)
Lane 3: SIRT3 (4 μg)

SDS-PAGE Analysis of SIRT3.

Representative gel image shown; actual purity may vary between each batch.



SIRT3 activity was determined using Cayman's SIRT3 Direct Fluorescent Screening Assay Kit (Item No. 10011566).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 08/03/2021

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

The sirtuins (SIRT3) 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 SIRT3s, 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-1 α , UCP1, and other genes involved in mitochondrial functions, indicating that SIRT3 modulates adaptive thermogenesis in BAT.⁸

References

1. Imai, S.-I., Armstrong, C.M., Kaeberlein, M., *et al.* Transcriptional silencing and longevity protein Sir2 is an NAD-dependent histone deacetylase. *Nature* **403**, 795-800 (2000).
2. Tanner, K.G., Landry, J., Sternglanz, R., *et al.* Silent information regulator 2 family of NAD-dependent histone/protein deacetylases generates a unique product, 1-O-acetyl-ADP-ribose. *Proc. Natl. Acad. Sci. USA* **97(26)**, 14178-14182 (2000).
3. Tanny, J.C. and Moazed, D. Coupling of histone deacetylation to NAD breakdown by the yeast silencing protein Sir2: Evidence for acetyl transfer from substrate to an NAD breakdown product. *Proc. Natl. Acad. Sci. USA* **98(2)**, 415-420 (2001).
4. Frye, R.A. Phylogenetic classification of prokaryotic and eukaryotic Sir2-like proteins. *Biochem. Biophys. Res. Commun.* **273**, 793-798 (2000).
5. Onyango, P., Celic, I., McCaffery, J.M., *et al.* SIRT3, a human SIR2 homologue, is an NAD-dependent deacetylase localized to mitochondria. *Proc. Natl. Acad. Sci. USA* **99(21)**, 13653-13658 (2002).
6. Schwer, B., North, B.J., Frye, R.A., *et al.* The human silent information regulator (Sir)2 homologue hSIRT3 is a mitochondrial nicotinamide adenine dinucleotide-dependent deacetylase. *J. Cell Biol.* **158(4)**, 647-657 (2002).
7. Scher, M.B., Vaquero, A., and Reinberg, D. SirT3 is a nuclear NAD⁺-dependent histone deacetylase that translocates to the mitochondria upon cellular stress. *Genes Dev.* **21**, 920-928 (2007).
8. Shi, T., Wang, F., Stieren, E., *et al.* SIRT3, a mitochondrial sirtuin deacetylase, regulates mitochondrial function and thermogenesis in brown adipocytes. *J. Biol. Chem.* **280(14)**, 13560-13567 (2005).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM