

# PRODUCT INFORMATION



## SIRT7 (human, recombinant)

Item No. 10316 • Batch No. XXXX

### Overview and Properties

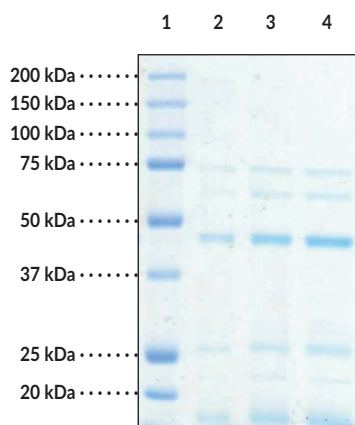
**Synonyms:** NAD-dependent deacetylase 7, Silent Information Regulator 7, Sirtuin 7, SIR2L7, SIR2-like protein 7  
**Source:** Recombinant human N-terminal hexahistidine-tagged enzyme expressed in *E. coli*  
**Amino Acids:** 2-400 (full length)  
**Uniprot No.:** Q9NRC8  
**Molecular Weight:** 49.3 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥1 year  
**Purity:** *batch specific* (≥35% estimated by SDS-PAGE)  
**Supplied in:** 50 mM NaPO<sub>4</sub>, pH 7.2, with 100 mM NaCl and 20% glycerol  
**Protein Concentration:** *batch specific*

### Additional

**Information:** This protein has not been tested for enzyme activity.

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

### Image



Lane 1: MW Markers  
Lane 2: SIRT7 (2 μg)  
Lane 3: SIRT7 (5 μg)  
Lane 4: SIRT7 (10 μg)

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

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.

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## Description

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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<sup>+</sup> and the abstracted acetyl group.<sup>1-3</sup> There are seven human sirtuins, which have been designated SIRT1-SIRT7.<sup>4</sup> SIRT7 has been shown to activate transcription by RNA polymerase I and deacetylate p53.<sup>5</sup> SIRT7 prevents progressive functional deterioration of the heart, and is suggested to play an important role in regulation of stress responses and cell death in the heart.<sup>6</sup>

## References

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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. Lavu, S., Boss, O., Elliot, P.J., *et al.* Sirtuins-novel therapeutic targets to treat age-associated diseases. *Nature Reviews Drug Discovery* **7**, 841-853 (2008).
6. Vakhrusheva, O., Smolka, C., Gajawada, P., *et al.* Sirt7 increases stress resistance of cardiomyocytes and prevents apoptosis and inflammatory cardiomyopathy in mice. *Circ. Res.* **102**, 703-710 (2008).

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