

## Product datasheet

# SIRT3 Activity Assay Kit (Fluorometric) ab156067

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### Overview

|                           |   |
|---------------------------|---|
| <b>Product name</b>       | SIRT3 Activity Assay Kit (Fluorometric)   |
| <b>Detection method</b>   | Fluorescent   |
| <b>Sample type</b>        | Cell culture extracts, Tissue Extracts  |
| <b>Assay type</b>         | Enzyme activity   |
| <b>Assay time</b>         | 0h 40m  |
| <b>Species reactivity</b> | <b>Reacts with:</b> Human   |
| <b>Product overview</b>   | Abcam's SIRT3 Activity Assay Kit (Fluorometric) (ab156067) detects SIRT3 activity in lysates. |

Primarily, the SIRT3 Activity Assay Kit (Fluorometric) is designed for the rapid and sensitive evaluation of SIRT3 inhibitors or activators using crude SIRT3 fraction or purified SIRT3.

Applications for this kit include:

1. Screening inhibitors or activators of SIRT3.
2. Detecting the effects of pharmacological agents on SIRT3.

SIRT3 assay protocol summary:

- add assay buffer, substrate peptide and NAD to wells
- add developer to wells
- add enzyme sample or recombinant SIRT3 to wells
- analyze with microplate reader for 30-60 min every 1-2 min

**Notes** Histone Deacetylases (HDACs) are a class of enzymes responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4), allowing the histones to wrap the DNA more tightly.

HDAC proteins occur in four groups (class I, class IIA, class IIB, class III, class IV) based on function and DNA sequence similarity.

Classes I, IIA and IIB are considered "classical" HDACs whose activities are inhibited by trichostatin A (TSA), whereas class III is a family of NAD<sup>+</sup>-dependent proteins (sirtuins) not affected by TSA. Class IV is considered an atypical class on its own, based solely on DNA sequence similarity to the others.

**Platform** Microplate reader

## Properties

**Storage instructions** Please refer to protocols.

| Components                           | 100 tests |
|--------------------------------------|-----------|
| Developer                            | 1 x 500µl |
| Fluoro-Deacetylated Peptide (0.2 mM) | 1 x 100µl |
| Fluoro-Substrate Peptide (0.2 mM)    | 1 x 500µl |
| NAD (2 mM)                           | 1 x 500µl |
| Recombinant SIRT3                    | 1 x 500µl |
| SIRT Assay Buffer                    | 2 x 1ml   |
| Stop Solution                        | 2 x 1ml   |

**Function** NAD-dependent protein deacetylase. Activates mitochondrial target proteins, including ACSS1, IDH2 and GDH by deacetylating key lysine residues. Contributes to the regulation of the cellular energy metabolism. Important for regulating tissue-specific ATP levels.

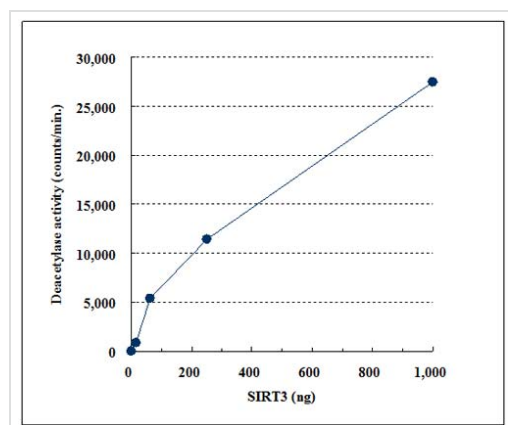
**Tissue specificity** Widely expressed.

**Sequence similarities** Belongs to the sirtuin family.  
Contains 1 deacetylase sirtuin-type domain.

**Post-translational modifications** Processed by mitochondrial processing peptidase (MPP) to give a 28 kDa product. Such processing is probably essential for its enzymatic activity.

**Cellular localization** Mitochondrion matrix.

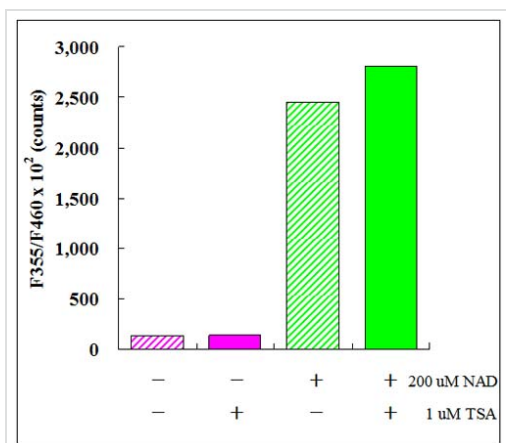
## Images



Dose dependency curve of recombinant SIRT3 activity

ab156067 - SIRT3 Activity Assay Kit (Fluorometric)

Effect of Trichostatin A and NAD on recombinant SIRT3 activity



ab156067 - SIRT3 Activity Assay Kit (Fluorometric)

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