

SIRT3 Activity Assay Kit (Fluorometric) ab156067

★★★★★ [1 Abreviews](#) [14 References](#) [2 Images](#)

Overview

Product name	SIRT3 Activity Assay Kit (Fluorometric)
Detection method	Fluorescent
Sample type	Cell culture extracts, Tissue Extracts
Assay type	Enzyme activity
Assay time	0h 40m
Species reactivity	Reacts with: Human
Product overview	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⁺-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	100 tests
Developer	1 x 500µl	1 x 500µl
Fluoro-Deacetylated Peptide (0.2 mM)	1 x 100µl	1 x 100µl
Fluoro-Substrate Peptide (0.2 mM)	1 x 500µl	1 x 500µl
NAD (2 mM)	1 x 500µl	1 x 500µl
Recombinant SIRT3	1 x 500µl	1 x 500µl
SIRT Assay Buffer	2 x 1ml	2 x 1ml
Stop Solution	2 x 1ml	2 x 1ml

Function

NAD-dependent protein deacetylase. Activates or deactivates mitochondrial target proteins by deacetylating key lysine residues. Known targets include ACSS1, IDH, GDH, SOD2, PDHA1, LCAD, SDHA and the ATP synthase subunit ATP5O. Contributes to the regulation of the cellular energy metabolism. Important for regulating tissue-specific ATP levels.

Tissue specificity

Widely expressed.

Sequence similarities

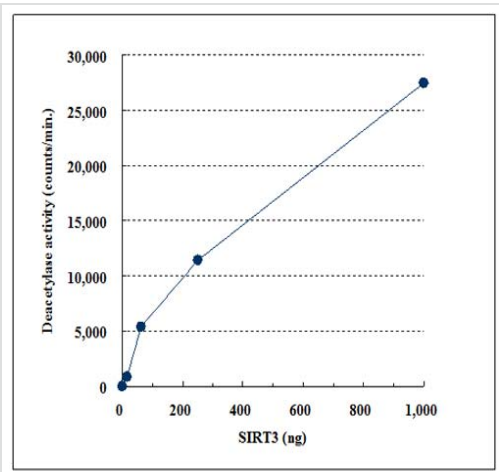
Belongs to the sirtuin family. Class I subfamily.
Contains 1 deacetylase sirtuin-type domain.

Post-translational modifications

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

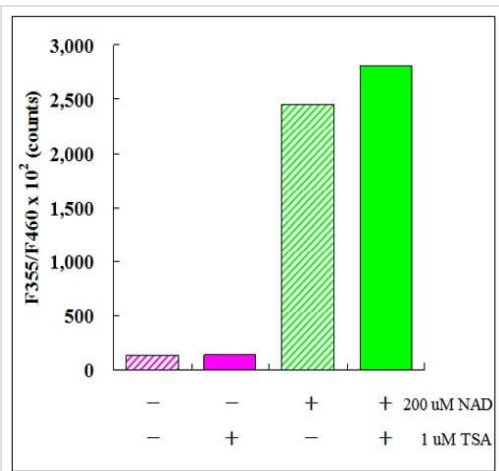
Cellular localizationMitochondrion matrix.

Images



Dose dependency curve of recombinant SIRT3 activity

ab156067 - SIRT3 Activity Assay Kit (Fluorometric)



Effect of Trichostatin A and NAD on recombinant SIRT3 activity

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