

# Aconitase Assay Kit ab83459

[15 References](#) [4 Images](#)

### Overview

<b>Product name</b>	Aconitase Assay Kit
<b>Detection method</b>	Colorimetric
<b>Sample type</b>	Cell Lysate, Tissue Lysate
<b>Assay type</b>	Enzyme activity
<b>Assay time</b>	0h 40m
<b>Product overview</b>	Aconitase Assay Kit ab83459 is a highly sensitive, simple, direct and HTS-ready colorimetric assay for measuring Aconitase activity in biological samples.

In the aconitase assay protocol, citrate is converted by aconitase into isocitrate, which is further processed resulting in a product that converts a nearly colorless probe into an intensely colored form with a max absorbance at 450nm.

Aconitase assay protocol summary:

- activate aconitase in samples by adding cysteine HCl and  $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2$
- add samples and standards to wells
- add reaction mix and incubate for 30-60 min
- analyze with a microplate reader

**Notes** This product is manufactured by BioVision, an Abcam company and was previously called K716 Aconitase Activity Colorimetric Assay Kit. K716-100 is the same size as the 100 test size of ab83459.

Aconitase (aconitate hydratase; EC 4.2.1.3) is an iron-sulfur protein containing an  $[\text{Fe}_4\text{S}_4]^{2+}$  cluster that catalyzes the stereospecific isomerization of citrate to isocitrate via cis-aconitate in the tricarboxylic acid cycle, a non-redox-active process.

**Platform** Microplate reader

### Properties

**Storage instructions** Store at +4°C. Please refer to protocols.

Components	100 tests
Ferrous Ammonium Sulfate	1 vial
Assay Buffer VII	1 x 25ml
Cysteine Standard	1 vial
Developer Solution II	1 vial
Enzyme Mix VII	1 x 600µl
Isocitrate Standard	1 x 100µl
Substrate XI	1 vial

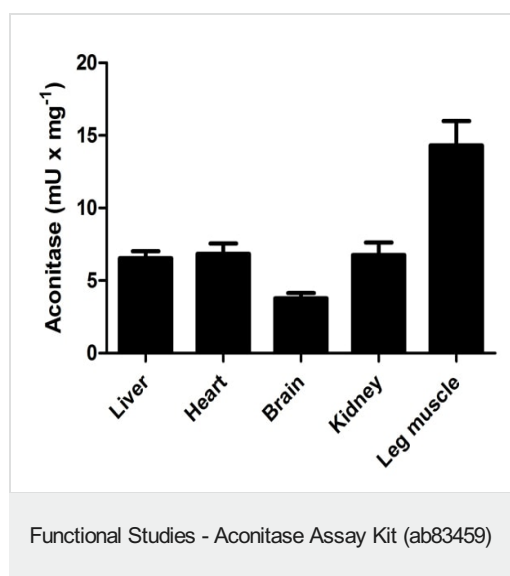
## Relevance

Aconitase (aconitate hydratase; EC 4.2.1.3) is an iron-sulfur protein containing an  $[\text{Fe}_4\text{S}_4]^{2+}$  cluster that catalyzes the stereospecific isomerization of citrate to isocitrate via cis-aconitate in the tricarboxylic acid cycle, a non-redox-active process. Tissue contains two aconitases, a mitochondrial (m-) and a cytosolic (c-) aconitase. They are related, but distinctly different enzymes and are coded for on different chromosomes. Loss of aconitase activity in cells or other biological samples treated with prooxidants has been interpreted as a measure of oxidative damage.

## Cellular localization

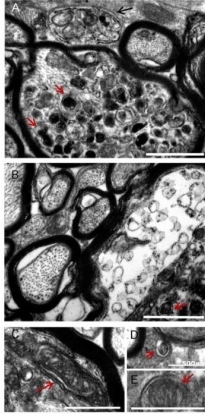
ACO1: Cytoplasmic ACO2: Mitochondrial

## Images



Aconitase measured in mouse tissue lysates showing quantity (mU) per mg of tested sample.

Protein concentration for samples varied from 1.5 mg/mL to 10 mg/mL. Samples were diluted 1-27 fold.

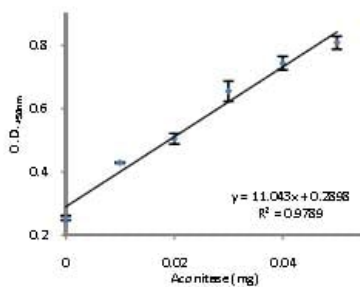


Cummins, Nadia et al.  
BMC neuroscience vol. 14 98.  
(2013)

Mitochondrial autophagic profiles in ON vulnerable to secondary degeneration +/- R/NIR-IT. Accumulations of mitochondrial autophagic profiles (red arrows) were seen especially at day 1 after PT (A, B). Occasionally, larger features reminiscent of autophagosomes were observed (A, black arrow) and parts of the nerve appeared highly abnormal (\*, B).

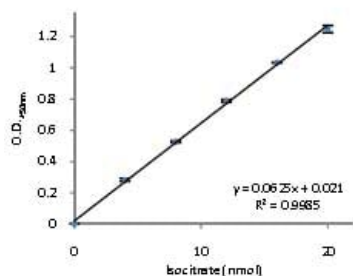
#### Functional Studies - Aconitase Assay Kit (ab83459)

Cummins, Nadia et al., BMC neuroscience?vol. 14 98.,  
Fig 6, doi:10.1186/1471-2202-14-98



30 minute Aconitase sample test using ab83459.

#### Functional Studies - Aconitase Assay Kit (ab83459)



Isocitrate standard curve using ab83459.

#### Functional Studies - Aconitase Assay Kit (ab83459)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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