

Product datasheet

Aconitase Assay Kit ab83459

9 References 4 Images

Overview

Product name	Aconitase Assay Kit
Detection method	Colorimetric
Sample type	Cell Lysate, Tissue Lysate
Assay type	Enzyme activity
Assay time	0h 40m
Product overview	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 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.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.

It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform Microplate reader

Properties

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

Components	Identifier	100 tests
(NH ₄) ₂ Fe(SO ₄) ₂ (Lyophilised)	Brown/NM	1 vial
Assay Buffer	WM	1 x 25ml
Cysteine (Lyophilised)	Red	1 vial
Developer (Lyophilised)	Purple	1 vial
Enzyme Mix	Green	1 x 600µl
Isocitrate Standard (100 mM)	Yellow	1 x 100µl
Substrate (lyophilized)	Blue	1 vial

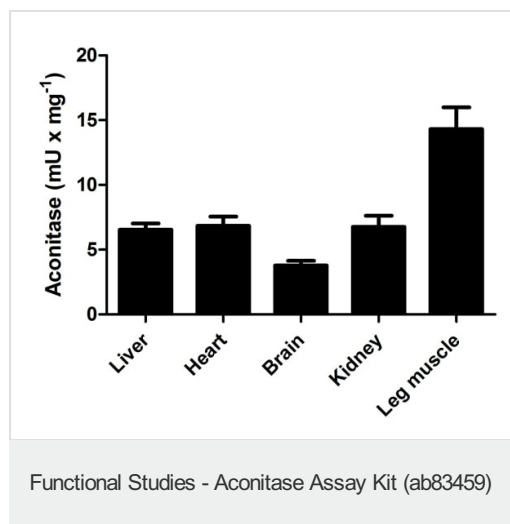
Relevance

Aconitase (aconitate hydratase; EC 4.2.1.3) is an iron-sulfur protein containing an [Fe₄S₄]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

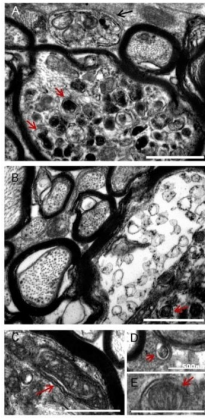
ACO1: Cytoplasmic ACO2: Mitochondrial

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.

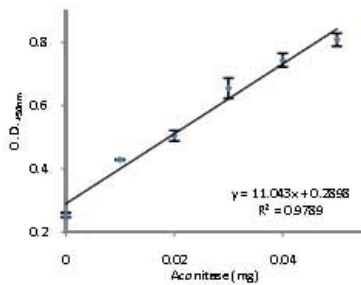


Cummins, Nadia et al.
BMC neuroscience vol. 14 98.
(2013)

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).

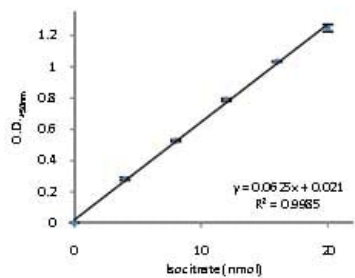
Functional Studies - Aconitase Assay Kit (ab83459)

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)

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours

- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors