abcam

Product datasheet

α-Ketoglutarate Dehydrogenase Activity Assay Kit (Colorimetric) ab185440

13 References 3 Images

Overview

Product name	a-Ketoglutarate Dehydrogenase Activity Assay Kit (Colorimetric)
Detection method	Colorimetric
Sample type	Tissue, Adherent cells, Suspension cells
Assay type	Semi-quantitative
Sensitivity	< 100 µU
Product overview	Abcam's α-Ketoglutarate Dehydrogenase Activity Assay kit (Colorimetric) (ab185440) provides a quick and easy way for monitoring α-KGDH activity in various samples. In the assay, α-KGDH converts α-ketoglutarate into an intermediate which reduces the probe to a colored product with strong absorbance at 450 nm. The assay is simple, sensitive and can detect α-ketoglutarate dehydrogenase activity lower than 0.1 mU in a variety of samples.
Notes	This product is manufactured by BioVision, an Abcam company and was previously called K678 Alpha-Ketoglutarate Dehydrogenase Activity Colorimetric Assay Kit. K678-100 is the same size as the 100 test size of ab185440. α-Ketoglutarate Dehydrogenase (α-KGDH) (EC 1.2.4.2) is a key enzyme in the citric acid cycle. It forms an enzyme complex with dihydrolipoamide succinyl transferase (E2) and dihydrolipoamide dehydrogenase (E3). α-KGDH converts α-ketoglutarate into succinylCoA in the presence of NAD and CoA. It is highly regulated by intracellular ATP/ADP and NADH/NAD ratios and calcium. In humans, decreased KGDH activity can lead to neurodegenerative diseases such as Alzheimer's disease. Recent studies show that α-KGDH is a target of oxidative stress; reactive oxygen species (ROS) inhibit KGDH activity which diminishes its critical function and can cause a bioenergetic deficit.
Platform	Microplate reader

Properties

Storage instructions	Store at -20°C. Please refer to protocols.

Components	100 tests
Assay Buffer IX	1 x 25ml

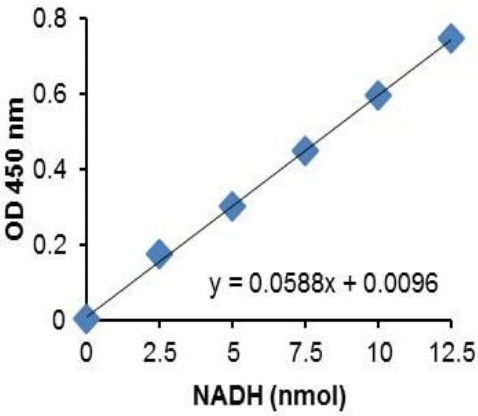
Components	100 tests
Developer Solution III	1 vial
KGDH Positive Control	1 x 50µl
KGDH Substrate Mix	1 vial
NADH Standard I	1 vial

Function The 2-oxoglutarate dehydrogenase complex catalyzes the overall conversion of 2-oxoglutarate to succinyl-CoA and CO(2). It contains multiple copies of three enzymatic components: 2-oxoglutarate dehydrogenase (E1), dihydrolipoamide succinyltransferase (E2) and lipoamide dehydrogenase (E3).

Sequence similarities Belongs to the alpha-ketoglutarate dehydrogenase family.

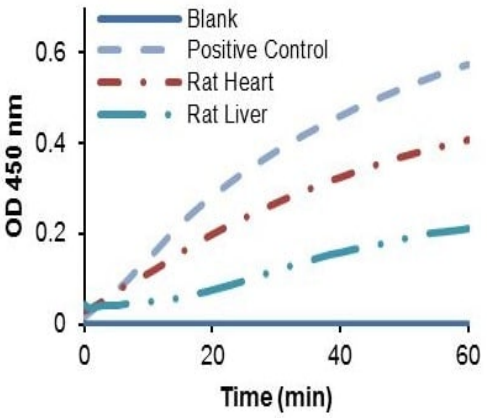
Cellular localization Mitochondrion matrix.

Images



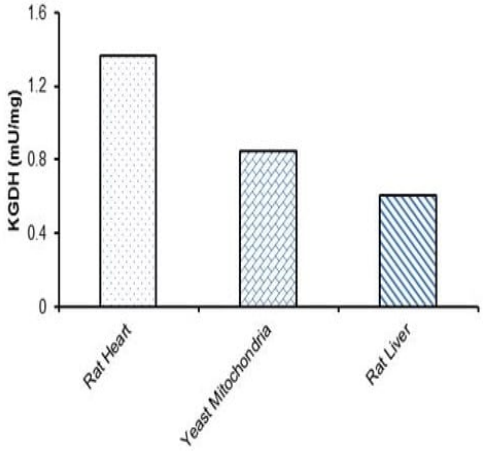
NADH Standard Curve

This is example data only.



alpha-Ketoglutarate Dehydrogenase activity in various samples

α-Ketoglutarate Dehydrogenase activity in rat heart (75 µg) and liver lysates (100 µg). Assays were performed following the kit protocol. This is example data only.



alpha-Ketoglutarate Dehydrogenase specific activity in various samples

α-Ketoglutarate Dehydrogenase specific activity was calculated in rat heart lysate (75 µg), yeast mitochondria prepared from S. Cerevisiae(10 µg) and in rat liver lysate (100 µg). Assays were performed following the kit protocol. This is example data only.

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