

Product Data Sheet

K2029 Citrate Synthase Activity Colorimetric Assay Kit

Kit Contents

Components	K2029-96 96 assays	Part Number
10X Blocking Buffer	1 x 6 mL	K2029-C-1
20X Buffer	1 x 20 mL	K2029-C-2
10X Reaction Reagent	1 x 1 Vial	K2029-C-4
CS Microplate	1 x 1 Unit	K2029-C-5
Extraction Buffer	1 x 15 mL	K2029-C-6
1X Base Buffer	1 x 25 mL	K2029-C-7

Introduction

Citrate Synthase is apace-making enzyme in the first step of the Citric Acid Cycle that catalyzes the conversion of acetyl-CoA and oxaloacetate into citrate and exists in all living organisms. Citrate synthase is localized in the mitochondrial matrix within eukaryotic cells and serves as a marker for intact mitochondria. The increase of mitochondrial citrate synthase activity is directly associated with endocrine and metabolic abnormalities such as obesity.

The Citrate Synthase Activity Colorimetric Assay Kit is used to determine mitochondrial citrate synthase (CS) activity in a sample.

Key facts

Detection method

Colorimetric

Sample types

Cell culture extracts, Tissue Extracts

Assay type

Enzyme activity

Reactive species

Cow, Human

Range

1.56 - 100 µg/mL

Assay time

3h 15m

Assay Platform

Microplate reader

Sensitivity

= 1.56 µg/mL

Storage

Shipped at conditions

Blue Ice

Appropriate long-term storage conditions

Multi

Storage information

Please refer to protocols

Notes

Citrate Synthase Activity Assay Kit is used to determine mitochondrial citrate synthase (CS) activity in a sample. The enzyme is immunocaptured within the wells of a microplate, and activity is determined by recording color development of TNB, which is generated in the reaction of citrate synthesis. The reaction product, TNB, absorb at OD = 412 nm.

This kit immunocaptures only native citrate synthase from the samples. Using the immunocapture method allows the measurement of citrate synthase activity with simple sample preparation and no need for mitochondrial isolation.

This kit can be used with whole cell extracts or tissue homogenates.

Citrate synthase assay protocol summary:

- add samples to wells
- incubate for 3 hrs to capture enzyme

- wash with wash buffer
- add activity solution
- analyze with microplate reader for 5-30 min at 20s intervals

Citrate synthase is the initial enzyme of the tricarboxylic acid (TCA) cycle. This enzyme is a 51.7 kDa enzyme that catalyzes the reaction of 2 carbon acetyl CoA with 4 carbon oxaloacetate to form the 6 carbon citrate. This enzyme is an exclusive marker of the mitochondrial matrix. Citrate synthase is found in nearly all cells capable of oxidative metabolism.

Storage: All components are shipped cold. 10X Reaction Reagent mixture is shipped lyophilized. Before use, rehydrate the reaction mixture by adding 1mL base buffer. Vortex the tube thoroughly to dissolve the lyophilized powder to prepare 10X Reaction solution. After hydration unused amounts of the 10X Reaction solution should be stored at -80°C for 6 months. Store all other components at 4°C. This kit is stable for 6 months from receipt.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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