CREATIVE BIOMART®
Assay Kit

Mit Complex I Activity Assay Kit

Product Information

Cat.No. Kit-0245

Product Overview

Complex I Activity Assay allows for the activity of complex I to be determined without the need to isolate mitochondria or pre-incubate with antibodies. The rate of NADH oxidation is measured by a decrease in absorbance at 340 nm and is proportional to the activity of complex I. For the use of this kit with other types of tissue mitochondria, please see Mitochondrial (Tissue) Isolation Kit.

Description

Complex I (NADH oxidase/Co-enzyme Q reductase) is one of the major sites of electron entry into the mitochondrial electron transport chain (ETC). Complex I catalyzes the 2 electron oxidation of NADH followed by the reduction of ubiquinone (Q) to form ubiquinol (QH2), and ultimately the reduction of the terminal electron acceptor, O2. During the passage of electrons from NADH to Q, the translocation of four protons (H+) from the mitochondrial matrix to the intermembrane space occurs, contributing to the chemiosmoticproton gradient, which is required for oxidative phosphorylation.1 Inhibition of complex I results in severe mitochondrial dysfunction and increased production of reactive oxygen species.2 Long-term inhibition of complex I has been linked to neurological disorders suchas Parkinson"s disease, Down"s syndrome, and Leigh"s syndrome, making it a useful indicator for neurological defects resulting from mitochondrial toxicity.3-5 This assay is designed so that direct inhibitory effects on complex I can be readily observed. Common inhibitors of complex I activity include rotenone and piericidin.

Usage

Please read these instructions carefully before beginning this assay. For research use only. Not for human or diagnostic use.NOTE: It is recommended that gloves be worn at all time when working with isolated mitochondria and mitochondrial inhibitors.

Storage

Stability: 1 year;Storage: -80°C;This kit will perform as specified if stored as directed in the Materials Supplied section and used before the expiration date indicated on the outside of the box.

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Kit Components

Kit will arrive packaged as a -80°C kit. For best results, remove components and store as stated below.Mitochondrial Complex I Activity Assay Buffer: 2 vials/10 ml, -20°C;Ubiquinone Assay Reagent: 1 vial/100 µl, -80°C;NADH Assay Reagent: 1 vial/500 µg, -20°C;Bovine Heart Mitochondria Assay Reagent: 1 vial/100 µl, -80°C;Fatty Acid Free-BSA Assay Reagent: 1 vial/250 µl, -20°C;Half Volume 96-Well Clear Plate: 1 plate, Room temperature.

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