CREATIVE BIOMART®
Assay Kit

CAMKK2 Assay Kit

Product Information

Cat.No. Kit-0147

Product Overview

CAMKK2 Assay Kit is used for the measurement of the activities of purified or recombinant CAMKK22. Additionally, any cultured primary cell, cell line, or tissue can be assayed for CAMKK2 activity with the CAMKK2 Assay Kit if the appropriate dose of CAMKK2 specific inhibitor e.g. STO-609 is used.

Description

The AMP-activated protein kinase (AMPK) is a critical regulator of energy homeostasis, and is a potential target for treatment of metabolic diseases as well as cancer. Activation of AMPK requires phosphorylation of threonine 172 within the T loop region of the catalytic a2 subunit by the tumor suppressor LKB1 or the Ca 2+ /calmodulin-dependent protein kinase kinase beta (CaMKKβ). CaMKKβ can form a complex with and activate AMPK, but CaMKKa cannot. In addition, it was shown that CaMKKβ and AMPK associate through their kinase domains, and CaMKKβ must be in an active conformation in order to bind AMPK but not to associate with an alternative substrate, Ca 2+ /calmodulin-dependent protein kinase IV. In contrast to LKB1, the activation of AMPK by CaMKKβ does not require an alteration of the ATP:AMP ratio, but rather occurs in response to an increase in intracellular Ca 2+ . The expression pattern of CaMKKβ in cells and tissues is more limited than that of LKB1 and is highest in multiple regions of the brain.

Applications

1. Screening activators or inhibitors of CaMKKβ.2. Evaluating the effects of pharmacological agents on CaMKKβ activity in vitro.3. Monitoring the purification of CaMKKβ activity.

Target Species

Human

Usage

For research use only (RUO)

Storage

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Store the kit at 4°C. Do not expose reagents to excessive light.

Kit Components

Non-coated Microplate: Ready to use for kinase reaction, in a clear, zip-lock bag. 96 (12 x 8) wellsAntibody-coated Microplate: Ready to use, in a foil, zip-lock bag with a desiccant pack.Wells are coated with anti-phospho-AMPKa1 T183/AMPKa2 T172 monoclonal antibody as a capture antibody. 96 (12 x 8) wells10X Wash Buffer: Containing10X buffer with 2% Tween-20 100 mLKinase Buffer: Containing 1X buffer, used for Reaction Buffer and sample dilution 20 mL20X ATP: Lyophilized ATP Na2 salt. 1 vial20X DTT: Lyophlizied BSA. 1 vial20X BSA: Lyophilized BSA. 1 vial100X Calmodulin: Lyophilized calmodulin, used for Reaction Buffer (Ca2+/CaM plus). 1 vial50X CaCl2: Containing 125 mM EGTA, used for Reaction Buffer (Ca2+/CaM minus) 0.4 mL10X AMPKa1 Substrate: Lyophilized recombinant GST-AMPKa1 (1-394). 37.5 ngEDTA Solution: Containing 0.5 M EDTA, pH 8.0. Ready to use. 2 mLHRP conjugated Detection Antibody: Containing HRP (horseradish peroxidase) conjugated anti-AMPKa1 antibody. Ready to use. 12 mLSubstrate Reagent: Containing the chromogenic substrate, tetra-methylbenzidine (TMB). Ready to use. 20 mLStop Solution: 1 N H2SO4. Ready to use. 20 mL

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