CREATIVE BIOMART®
Assay Kit

6-Phosphogluconic Acid Colorimetric Assay Kit

Product Information

Cat.No. Kit-2122

Product Overview

6-Phosphogluconate assay kit can be used with a variety of sample types. In this assay, 6-Phosphogluconate is converted to Ribulose-5-Phosphate by 6-Phosphogluconate Dehydrogenase in the presence of NAD, to form NADH, which reduces a probe and generates strong absorbance at 450 nm. This 6-Phosphogluconate Assay Kit is simple, sensitive & easy to use and can detect 6-Phosphogluconate levels lower than 20 µM.

Size

100 assays

Description

6-Phosphogluconate (6-PGA) is an intermediate of both Pentose Phosphate Pathway (PPP) and Entner-Doudoroff Pathway. It is produced by the hydrolysis of 6-Phosphogluconolactone, catalyzed by 6-Phosphogluconolactonase. In the Pentose Phosphate Pathway, 6-PGA is utilized by 6-Phosphogluconate Dehydrogenase to generate ribulose-5-Phosphate and NADPH. These products are important for nucleic acid synthesis and various anabolic processes. In Prokaryotes, 6-Phosphogluconate is the main metabolite of EntnerDoudoroff pathway, and is converted into Pyruvate using both 6-Phosphogluconate Dehydratase and 2-Keto-3-Deoxyphosphogluconate aldolase. Recent studies show that long-term exposure to glucose perturbs the Pentose Phosphate Pathway, causes significant accumulation of 6-Phosphogluconate and impairs beta cell function. Measurement of 6-Phosphogluconate levels therefore is important for evaluating Pentose Phosphate Pathway, developing therapeutic approaches for diabetes research, and analyzing the Entner-Doudoroff Pathway in bacteria.

Applications

Measurement of 6-Phosphogluconic Acid in various tissues/cells. Analysis of Pentose Phosphate Pathway and Entner-Doudoroff Pathway.

Target Species

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Mammalian

Storage

Store the kit at –20°C, protected from light. Warm all Buffers to room temperature before use. Briefly centrifuge all small vials prior to opening.

Kit Components

6-PGA Assay Buffer: 25 ml6-PGA Enzyme: 1 vial6-PGA Substrate Mix: 1 vial6-PGA Standard: 1 vial

Detection method Absorbance (OD= 450 nm)

Compatible Sample Types

• Tissues: e.g. Liver, Kidney, Heart• Adherent or Suspension Cells: e.g. HeLa, Jurkat cells

Features & Benefits

• Simple, fast and convenient assay• Can measure 6-PGA levels as low as 20 µM

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