

Glucose-1-Phosphate Colorimetric Assay Kit

Cat. No. Kit-0347 **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Glucose-1-Phosphate Assay Kit (Colorimetric) is a quantitative colorimetric determination of glucose-1-phosphate at 450 nm.

Description

Glucose-1-phosphate (G1P) is an important carbohydrate intermediate in glucose metabolism and storage. In response to hormonal or neural signals, glycogenolysis occurs in liver and muscle tissues where Glucose-1-phosphate is released as the rate-limiting step in glycogen breakdown. Glucose-1-phosphate is subsequently converted to Glucose-6-phosphate by phosphoglucomutase and enters glycolysis. In glycogen synthesis, glucose is transferred to glycogen through the actions of Phosphoglucose isomerase ($G6P \rightarrow G1P$), UDPG-pyrophosphorylase ($G1P \rightarrow UDP\text{-glucose}$) and glycogen synthase ($UDP\text{-glucose} + \text{glycogen}[n] \rightarrow UDP + \text{glycogen}[n+1]$). Glucose-1-phosphate is found in virtually all organisms from bacteria to higher plants and animals. Measurement of intracellular G1P levels is crucial for analyzing the carbohydrate metabolic pathways and their kinetic properties. In Glucose-1-phosphate assay, G1P is converted to glucose-6-phosphate by phosphoglucomutase in the presence of Glucose 1,6-bisphosphate; glucose-6-phosphate is subsequently oxidized by glucose-6-phosphate dehydrogenase to form NADH which reduces a colorless probe to a colored product with strong absorbance at 450 nm. Glucose-1-Phosphate Assay Kit (Colorimetric) is rapid, sensitive & easy to use & can detect 1 μ M to 10 mM G1P. This G1P assay kit can be used for a variety of sample types.

Applications

Measurement of Glucose-1-Phosphate in various tissues/cells. Analysis of glucose metabolism and cell signaling in various cells. Screening anti-diabetic drugs.

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

Target Species	Mammals
Usage	For research use only (RUO)
Storage	Store 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	G1P Assay Buffer 27 mL G1P Enzyme Mix (Lyophilized) 1 vial G1P Developer (Lyophilized) 1 vial G1P Substrate Mix (Lyophilized) 1 vial G1P Standard (Lyophilized) 1 vial
Detection method	Colorimetric
Compatible Sample Types	Animal tissues: Liver, muscle and heart etc. Cell culture: Adherent or suspension cells.

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