

6-Phosphofructokinase Activity Assay Kit

Cat. No. Kit-0678 **Lot. No.** (See product label)

SPECIFICATION

Product Overview

6-Phosphofructokinase Activity Assay kit, PFK (phosphofructokinase) converts fructose-6-phosphate and ATP to fructose-diphosphate and ADP. The ADP in the presence of substrate and enzyme mix is converted to AMP and NADH, which reduces a colorless probe to a colored product with strong absorbance at 450 nm. PFK activity assay is simple, robust, and rapid and can detect phosphofructokinase activity less than 1 mU.

Description

Phosphofructokinase (PFK) is a key glycolytic enzyme and plays a major regulatory role during glycolysis. This enzyme is present in bacteria, plants and animals. There are 2 types of PFKs-PFK1 and PFK2. In the presence of ATP, PFK1 & PFK2 catalyzes the conversion of fructose-6-phosphate to fructose-1,6-diphosphate and fructose-2,6-diphosphate respectively and ADP. PFK has 3 major isoforms in mammals: PFK-M (muscle), PFK-L (liver) and PFK-P (platelet). In humans, PFK deficiency causes glycogen storage disease, also called Tarui's disease, which is characterized by exercise-induced muscle weakness and cramps. On the other hand, increased PFK activity contributes to cancer cell proliferation and tumorigenicity. Early detection of abnormal phosphofructokinase activity is crucial for diagnosis, prediction and therapeutic strategy.

Applications

Functional Studies

Target Species

Reacts with: Mouse, Rat, Human Predicted to work with: all Mammals

Storage

Store the kit at -20°C and protect from light. Please read the entire protocol before

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performing the assay. Avoid repeated freeze/thaw cycles. Warm all Buffers to room temperature before use. Briefly centrifuge all small vials prior to opening.

Kit Components

ATP Orange 1 vial
NADH Standard Yellow 1 vial
PFK Assay Buffer WM 1 x 27ml
PFK Developer Red 1 vial
PFK Enzyme Mix Green 1 vial
PFK Positive Control Purple 1 vial
PFK Substrate Blue 1 vial

Compatible Sample Types

Adherent cells, Suspension cells, Tissue Homogenate

Assay time

1h 30m

Sensitivity

< 1 mU/well

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