Creative Enzymes®

Native Zymomonas mobilis Glucokinase

Cat. No. NATE-1903

Lot. No. (See product label)

Introduction

Description	Glucokinase (EC 2.7.1.2) is an enzyme that facilitates phosphorylation of glucose to glucose-6-phosphate. Glucokinase occurs in cells in the liver, pancreas, gut, and brain of humans and most other vertebrates. In each of these organs it plays an important role in the regulation of carbohydrate metabolism by acting as a glucose sensor, triggering shifts in metabolism or cell function in response to rising or falling levels of glucose, such as occur after a meal or when fasting. Mutations of the gene for this enzyme can cause unusual forms of diabetes or hypoglycemia.
Applications	The enzyme is useful for diagnostic reagent, for example, glucose determination or CK determination, and for the specific determination of glucose. Tris-HCI buffer is not suitable for the practical use of ZM-GCK
Synonyms	EC 2.7.1.2; glucokinase; glucokinase (phosphorylating); 9001-36-9; GCK; FGQTL3; GK; GLK; HHF3; HK4; HKIV; HXKP; LGLK; MODY2

Product Information

Source	Zymomonas mobilis
Appearance	Lyophilized
EC Number	EC 2.7.1.2
CAS No.	9001-36-9
Molecular Weight	ca. 66,000; Subunit molecular weight : ca. 33,000.
Specific Activity	more than 150 U/mg protein
Contaminants	(as ZM-GCK activity = 100 %) Glucose-6-phosphate dehydrogenase: < 0.02 %; Phosphoglucomutase: < 0.01 %; 6-Phosphogluconate dehydrogenase: < 0.01 %; Hexose-6-phosphate isomerase: < 0.01 %; Glutathione reductase: < 0.01 %.
pH Stability	6.0 - 8.0
Optimum pH	7.0 - 8.0
Thermal stability	No detectable decrease in activity up to 40 °C.
Michaelis Constant	(60mM Phosphate buffer, pH 7.0, at 30 °C) Glucose: 0.10 mM; ATP: 0.65 mM.
Unit Definition	One unit of activity is defined as the amount of ZM-GlcK that forms 1 µmol of glucose 6-phosphate per minute at 30 °C.
Reaction	ATP + D-Glucose ⟷ ADP + D-Glucose 6-phosphate

Storage and Shipping Information

Storage	Stable at -20 °C for at least one year.