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

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