

Recombinant Human Glucokinase/GCK Protein

Catalog Number: PKSH030374

Note: Centrifuge before opening to ensure complete recovery of vial contents.

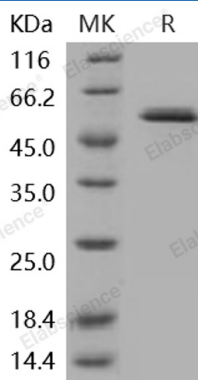
Description

Species	Human
Source	E.coli-derived Human Glucokinase/GCK protein Leu 2-Gln 465
Calculated MW	52.2 kDa
Observed MW	52.2 kDa
Accession	NP_000153.1
Bio-activity	Not validated for activity

Properties

Purity	> 95 % as determined by reducing SDS-PAGE.
Concentration	Subject to label value.
Endotoxin	Please contact us for more information.
Storage	Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.
Shipping	This product is provided as liquid. It is shipped at frozen temperature with blue ice/ gel packs. Upon receipt, store it immediately at < - 20°C.
Formulation	Supplied as sterile solution of 20mM Tris, 10% Glycerol, pH 8.0

Data



> 95 % as determined by reducing SDS-PAGE.

Background

Glucokinase belongs to the bacterial glucokinase family. Hexokinases phosphorylate glucose to produce glucose-6-phosphate, the first step in most glucose metabolism pathways. Alternative splicing of this gene results in three tissue-specific forms of glucokinase, one found in pancreatic islet beta cells and two found in liver. The protein localizes to the outer membrane of mitochondria. In contrast to other forms of hexokinase, this enzyme is not inhibited by its product glucose-6-phosphate but remains active while glucose is abundant. Mutations in this gene have been associated with non-insulin dependent diabetes mellitus (NIDDM), maturity onset diabetes of the young, type 2 (MODY2) and persistent hyperinsulinemic hypoglycemia of infancy (PHHI). It can Catalyzes the initial step in utilization of glucose by the beta-cell and liver at physiological glucose concentration. Glucokinase has a high Km for glucose, and so it is effective only when glucose is abundant. The role of GCK is to provide G6P for the synthesis of glycogen. Pancreatic glucokinase plays an important role in modulating insulin secretion. Hepatic glucokinase helps to facilitate the uptake and conversion of glucose by acting as an insulin-sensitive determinant of hepatic glucose usage. It has a pivotal role as glucose sensor of the pancreatic beta-cells. Glucokinase of the beta-cell is induced or activated by glucose in contrast to liver glucokinase, which is regulated by insulin. Tissue-specific regulation corresponds with observations that liver and pancreatic beta-cell glucokinase are structurally distinct.

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