Recombinant Rat GCK protein (His tag)

Catalog Number:PDER100032

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

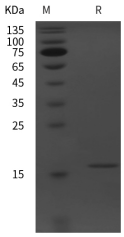
Description

Synonyms	GCK;Glucokinase;Hexokinase-4;Hexokinase 4
Species	Rat
Expression Host	E.coli
Sequence	Met 1-Gly 147
Accession	P17712
Calculated Molecular Weight	16.1 kDa
Observed molecular weight	16 kDa
Tag	N-His

Properties

Purity	> 95 % as determined by reducing SDS-PAGE.
Endotoxin	Please contact us for more information.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



> 95 % as determined by reducing SDS-PAGE.

Background

Hexokinases phosphorylate hexose to form hexose 6?phosphate, the first step for hexose metabolism. There are four mammalian hexokinases (I, II, III and IV) and hexokinase IV is commonly known as glucose kinase (GCK). Unlike hexokinase I, II and III, which have high affinity for glucose and are strongly inhibited by the product, glucose?6?phosphate, GCK has much lower affinity for glucose and is not inhibited by the product. Consequently, GCK has a Km for glucose of approximately 7 mM, which is 100 times higher than that of hexokinase I, II, and III. This unique enzymatic property of GCK allows it to respond to blood glucose levels and contribute to the maintenance of blood glucose levels within the normal physiological range of 4 mM to 6 mM. In the pancreatic islets, GCK serves as a glucose sensor to control insulin release in the beta cells, and to control glucagon release in the alpha cells. In hepatocytes, GCK

responds to changes of ambient glucose levels by increasing or reducing glycogen synthesis. Mutations in GCK have been associated with non?insulin?dependent diabetes mellitus, maturity?onset diabetes of the young type 2, and hyperinsulinemia of infancy. The enzyme activity was measured using a phosphatase coupled kinase assay.

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