

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human Glucokinase/GCK in ELISAs. In direct ELISAs, no cross-reactivity with recombinant human PRF-1 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 849520
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Glucokinase/GCK Val16-Gln465 Accession # P35557
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 (1), GCK has much lower affinity for glucose and is not inhibited by the product (2, 3). Consequently, GCK has a Km for glucose of approximately 7 mM (4), 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 (5). 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 (6, 7), maturity-onset diabetes of the young type 2 (8), and hyperinsulinemia of infancy (9). The enzyme activity was measured using a phosphatase coupled kinase assay (4).

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