# Human/Mouse Glucokinase/GCK Antibody

Monoclonal Mouse $IgG_1$ Clone # 849520

Catalog Number: MAB7840

## 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** | *E. coli*-derived recombinant human Glucokinase/GCK<br>Val16-Gln465<br>Accession # P35557 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS. |

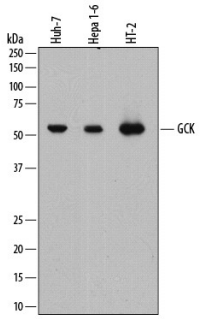
## APPLICATIONS

**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.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 1 µg/mL | See Below |

## DATA

**Western Blot**




**Detection of Human and Mouse Glucokinase/GCK by Western Blot.** Western blot shows lysates of Huh-7 human hepatoma cell line, Hepa 1-6 mouse hepatoma cell line, and HT-2 mouse T cell line. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human Glucokinase/GCK Monoclonal Antibody (Catalog # MAB7840) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Glucokinase/GCK at approximately 52 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

## PREPARATION AND STORAGE

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| **Reconstitution** | Sterile PBS to a final concentration of 0.5 mg/mL. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

## 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).

**References:**


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