

# GCK (W-24): sc-130765

## BACKGROUND

Glucokinase (also designated hexokinase IV, HKIV or GCK) plays a key role in the regulation of glucose-induced Insulin secretion. GCK is expressed in pancreatic  $\beta$  cells where it functions as the major glucose sensor of the body, determining the "set point" for Insulin secretion. GCK is also expressed in the liver, where it catalyzes the first committed step in the disposal of glucose. Phosphorylation of glucose by GCK appears to be the rate-limiting step for glucose catabolism. A lack of GCK activity leads to reduced Insulin secretion and hyperglycemia, and has been implicated as a cause for maturity onset diabetes of the youth (MODY). In fact, heterozygous point mutations in the gene encoding GCK have been detected in individuals suffering from MODY.

## REFERENCES

1. De Vos, A., et al. 1995. Human and rat  $\beta$  cells differ in glucose transporter but not in glucokinase gene expression. *J. Clin. Invest.* 96: 2489-2495.
2. Hosokawa, H., et al. 1995. Upregulated hexokinase activity in isolated islets from diabetic 90% pancreatectomized rats. *Diabetes* 44: 1328-1333.
3. Grupe, A., et al. 1995. Transgenic knockouts reveal a critical requirement for pancreatic  $\beta$  cell glucokinase in maintaining glucose homeostasis. *Cell* 83: 69-78.
4. Liang, Y., et al. 1995. Variable effects of maturity-onset-diabetes-of-youth (MODY)-associated glucokinase mutations on substrate interactions and stability of the enzyme. *Biochem. J.* 309: 167-173.

## CHROMOSOMAL LOCATION

Genetic locus: GCK (human) mapping to 7p13; Gck (mouse) mapping to 11 A1.

## SOURCE

GCK (W-24) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of GCK of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GCK (W-24) is recommended for detection of GCK of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

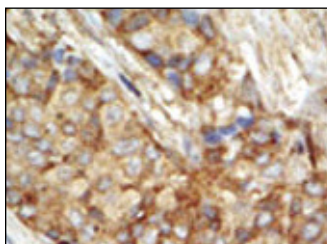
Suitable for use as control antibody for GCK siRNA (h): sc-35458, GCK siRNA (m): sc-35459, GCK shRNA Plasmid (h): sc-35458-SH, GCK shRNA Plasmid (m): sc-35459-SH, GCK shRNA (h) Lentiviral Particles: sc-35458-V and GCK shRNA (m) Lentiviral Particles: sc-35459-V.

Molecular Weight of GCK: 50 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



GCK (W-24): sc-130765. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic and membrane localization.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **GCK (G-6): sc-17819** or **GCK (G-5): sc-55496**, our highly recommended monoclonal alternatives to GCK (W-24).