SANTA CRUZ BIOTECHNOLOGY, INC.

GCK (N-19): sc-1980

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glucokinase (also designated hexokinase IV, HXKIV or GCK) plays a key role in the regulation of glucose-induced Insulin secretion. GCK is expressed in pancreatic β 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 glucokinase appears to be the rate-limiting step for glucose catabolism. A lack of glucokinase activity leads to reduced Insulin secretion, 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.

CHROMOSOMAL LOCATION

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

SOURCE

GCK (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of GCK of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1980 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

GCK (N-19) is recommended for detection of the pancreatic form of GCK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GCK (N-19) is also recommended for detection of the pancreatic form of GCK in additional species, including porcine.

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.

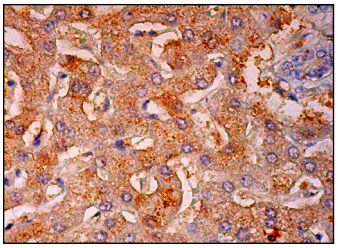
Molecular Weight of GCK: 50 kDa.

Positive Controls: mouse liver extract: sc-2256, Hep G2 cell lysate: sc-2227 or rat pancreas extract: sc-364806.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



GCK (N-19): sc-1980. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Maroni, P., et al. 2000. Cellular signalling after *in vivo* heat shock in the liver. Cell Biol. Int. 24: 145-152.
2. Stubbs, M., et al. 2000. Subcellular localization, mobility, and kinetic activity of glucokinase in glucose-responsive Insulin-secreting cells. Diabetes 49: 2048-2055.
3. O'Driscoll, L., et al. 2002. Engineering vero cells to secrete human Insulin. In Vitro Cell. Dev. Biol. Anim. 38: 146-153.
4. Gammell, P., et al. 2003. Characterisation of BHK-21 cells engineered to secrete human Insulin. Cytotechnology 41: 11-21.
5. Arden, C., et al. 2004. Glucokinase is an integral component of the Insulin granules in glucose-responsive Insulin secretory cells and does not translocate during glucose stimulation. Diabetes 53: 2346-2352.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.