

GCK (H-88): sc-7908

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 (H-88) is a rabbit polyclonal antibody raised against amino acids 318-405 mapping near the C-terminus of GCK of human origin.

PRODUCT

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

APPLICATIONS

GCK (H-88) is recommended for detection of GCK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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 (H-88) is also recommended for detection of GCK in additional species, including equine, bovine and 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, GCK (m): 293T Lysate: sc-125374 or Hep G2 cell lysate: sc-2227.

STORAGE

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

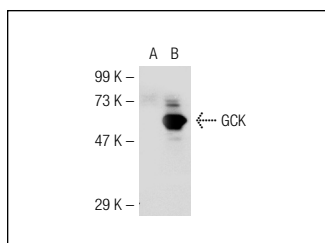
PROTOCOLS

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

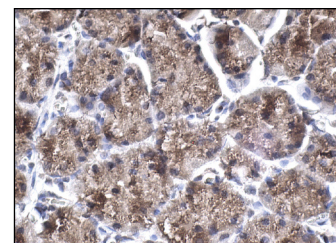
RESEARCH USE

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

DATA



GCK (H-88): sc-7908. Western blot analysis of GCK expression in non-transfected: sc-117752 (A) and mouse GCK transfected: sc-125374 (B) 293T whole cell lysates.



GCK (H-88): sc-7908. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Kajimoto, Y., et al. 1999. Induction of glycation suppresses glucokinase gene expression in HIT-T15 cells. *Diabetologia* 42: 1417-1424.
2. Nedungadi, T.P., et al. 2009. Sex differences in acclimation of hypothalamic arcuate glucokinase gene and protein expression to repeated intermediate Insulin administration. *Neuroendocrinology* 89: 377-386.
3. Tsukada, S., et al. 2009. Transcription factor AP-2 β inhibits glucose-induced Insulin secretion in cultured Insulin-secreting cell-line. *Diabetes Res. Clin. Pract.* 85: 279-285.
4. Roncero, I., et al. 2009. Glucokinase and glucokinase regulatory proteins are functionally coexpressed before birth in the rat brain. *J. Neuroendocrinol.* 21: 973-981.
5. Robert-Cooperman, C.E., et al. 2010. Targeted disruption of pancreatic-derived factor (PANDER, FAM3B) impairs pancreatic β -cell function. *Diabetes* 59: 2209-2218.
6. Watanabe, F. and Furuya, E. 2010. Quantitative image analysis reveals that phosphorylation of liver-type isozyme of fructose-6-phosphate 2-kinase/fructose-2,6-bisphosphatase does not affect nuclear translocation of glucokinase in rat primary hepatocytes. *J. Biochem.* 148: 713-719.
7. Sood, A. and Ismail-Beigi, F. 2010. Effect of dexamethasone on Insulin secretion: examination of underlying mechanisms. *Endocr. Pract.* 16: 763-769.
8. Dhanesha, N., et al. 2012. Exendin-4 reduces glycemia by increasing liver glucokinase activity: an Insulin independent effect. *Pharmacol. Rep.* 64: 140-149.

MONOS
Satisfaction
Guaranteed

Try **GCK (G-6): sc-17819** or **GCK (G-5): sc-55496**, our highly recommended monoclonal alternatives to GCK (H-88).