SANTA CRUZ BIOTECHNOLOGY, INC.

GK5 (K-14): sc-102557

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

As the central structural component of the major classes of biological lipids, trigylcerides and phosphatidyl phospholipids, glycerol is an essential intermediate in carbohydrate and lipid metabolism. Glycerol kinases (GKs) function to catalyze the transfer of a phosphate group from ATP to glycerol, thereby forming glycerol phosphate. This intermediate can then be converted to dihydroxyacetone phosphate (DHAP), which is utilized in either glycolysis or gluconeogenesis. Mutations in the genes encoding GK family members can result in glycerol kinase deficiency, which is characterized by hyperglycerolemia, psycomotor retardation and osteoporosis. GK5 (glycerol kinase 5) is a 529 amino acid protein that belongs to the FGGY kinase family and is involved in the pathway of glycerol metabolism. There are three isoforms of GK5 that are produced as a result of alternative splicing events.

REFERENCES

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2. Walker, A.P., et al. 1996. Mutations and phenotype in isolated glycerol kinase deficiency. Am. J. Hum. Genet. 58: 1205-1211.
3. Gaudet, D., et al. 2000. Glycerol as a correlate of impaired glucose tolerance: dissection of a complex system by use of a simple genetic trait. Am. J. Hum. Genet. 66: 1558-1568.
4. Guo, X., et al. 2002. Research progress on the glycerol kinase. Wei Sheng Wu Xue Bao 42: 510-513.
5. Wang, S., et al. 2008. Lipolysis and the integrated physiology of lipid energy metabolism. Mol. Genet. Metab. 95: 117-126.
6. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 300474. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Rahib, L., et al. 2009. Transcriptomic and network component analysis of glycerol kinase in skeletal muscle using a mouse model of glycerol kinase deficiency. Mol. Genet. Metab. 96: 106-112.
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CHROMOSOMAL LOCATION

Genetic locus: GK5 (human) mapping to 3q23; Gk5 (mouse) mapping to 9 E3.3.

SOURCE

GK5 (K-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of GK5 of human origin.

STORAGE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-102557 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GK5 (K-14) is recommended for detection of GK5 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with family members GK3P, GK1 or GK2.

Suitable for use as control antibody for GK5 siRNA (h): sc-78543, GK5 siRNA (m): sc-145412, GK5 shRNA Plasmid (h): sc-78543-SH, GK5 shRNA Plasmid (m): sc-145412-SH, GK5 shRNA (h) Lentiviral Particles: sc-78543-V and GK5 shRNA (m) Lentiviral Particles: sc-145412-V.

Molecular Weight of GK5: 59 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) 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.

RESEARCH USE

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

PROTOCOLS

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