SANTA CRUZ BIOTECHNOLOGY, INC.

GK1 (E-4): sc-398385

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. GK1 is a 559 amino acid mitochondrial peripheral membrane protein that belongs to the FGGY kinase family and is a key enzyme involved in the regulation of glycerol uptake and metabolism. GK1 shows high expression in kidney, testis and liver and exists as three isoforms, which are produced as a result of alternative splicing events.

REFERENCES

1. Sargent, C.A., et al. 1994. The glycerol kinase gene family: structure of the Xp gene, and related intronless retroposons. Hum. Mol. Genet. 3: 1317-1324.
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.

CHROMOSOMAL LOCATION

Genetic locus: GK (human) mapping to Xp21.2; Gk (mouse) mapping to X C1.

SOURCE

GK1 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 13-31 near the N-terminus of GK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GK1 (E-4) is available conjugated to agarose (sc-398385 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398385 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398385 PE), fluorescein (sc-398385 FITC), Alexa Fluor® 488 (sc-398385 AF488), Alexa Fluor® 546 (sc-398385 AF546), Alexa Fluor® 594 (sc-398385 AF594) or Alexa Fluor® 647 (sc-398385 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398385 AF680) or Alexa Fluor® 790 (sc-398385 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398385 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

GK1 (E-4) is recommended for detection of GK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

GK1 (E-4) is also recommended for detection of GK1 in additional species, including equine and porcine.

Suitable for use as control antibody for GK1 siRNA (h): sc-91167, GK1 siRNA (m): sc-145410, GK1 shRNA Plasmid (h): sc-91167-SH, GK1 shRNA Plasmid (m): sc-145410-SH, GK1 shRNA (h) Lentiviral Particles: sc-91167-V and GK1 shRNA (m) Lentiviral Particles: sc-145410-V.

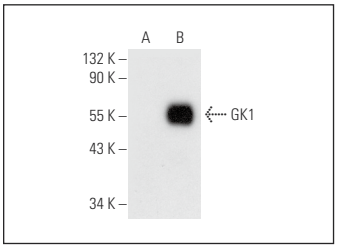
Molecular Weight of GK1: 61 kDa.

Positive Controls: GK1 (m): 293T Lysate: sc-120491, Hep G2 cell lysate: sc-2227 or human liver extract: sc-363766.

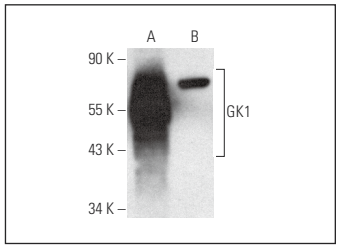
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GK1 (E-4): sc-398385. Western blot analysis of GK1 expression in non-transfected: sc-117752 (**A**) and mouse GK1 transfected: sc-120491 (**B**) 293T whole cell lysates.



GK1 (E-4): sc-398385. Western blot analysis of GK1 expression in Hep G2 whole cell lysate (**A**) and human liver tissue extract (**B**).

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.