

# GK2 (C-19): sc-130145

## BACKGROUND

GK2 (glycerol kinase 2), also known as GKP2 or GKTA, is a 553 amino acid protein that belongs to the FGGY kinase family and is involved in the pathway of glycerol degradation. Localized to the outer membrane of the mitochondrion and expressed at high levels in testis, GK2 functions to catalyze the ATP-dependent conversion of glycerol to glycerol 3-phosphate. Via its catalytic activity, GK2 plays an essential role in the regulation of glycerol uptake and metabolism. The gene encoding GK2 maps to chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

## REFERENCES

1. Matsumoto, T., et al. 1988. Complex glycerol kinase deficiency: molecular-genetic, cytogenetic, and clinical studies of five Japanese patients. *Am. J. Med. Genet.* 31: 603-616.
2. Lee, R.T., et al. 1992. Cloning of a human galactokinase gene (GK2) on chromosome 15 by complementation in yeast. *Proc. Natl. Acad. Sci. USA* 89: 10887-10891.
3. 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.
4. Ai, Y., et al. 1995. Comparison of the enzymatic activities of human galactokinase GALK1 and a related human galactokinase protein GK2. *Biochem. Biophys. Res. Commun.* 212: 687-691.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600148. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Goldfrank, D., et al. 2003. Disease genes and chromosomes: disease maps of the human genome. *Chromosome 4. Genet. Test.* 7: 351-372.
7. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. *Nature* 434: 724-731.

## CHROMOSOMAL LOCATION

Genetic locus: GK2 (human) mapping to 4q21.21.

## SOURCE

GK2 (C-19) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of GK2 of human origin.

## PRODUCT

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

## STORAGE

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

## APPLICATIONS

GK2 (C-19) is recommended for detection of GK2 of human origin by Western Blotting (starting dilution 1:200, 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), 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 GK2 siRNA (h): sc-88924, GK2 shRNA Plasmid (h): sc-88924-SH and GK2 shRNA (h) Lentiviral Particles: sc-88924-V.

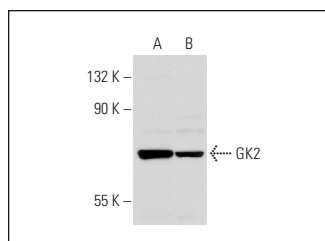
Molecular Weight of GK2: 61 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or HEK293 whole cell lysate: sc-45136.

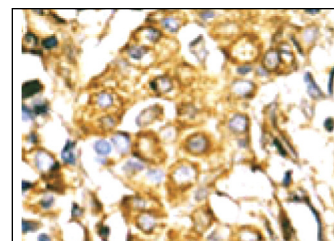
## RECOMMENDED SECONDARY REAGENTS

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<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz<sup>™</sup>: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



GK2 (C-19): sc-130145. Western blot analysis of GK2 expression in Hep G2 (A) and HEK293 (B) whole cell lysates.



GK2 (C-19): sc-130145. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

## 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.