SANTA CRUZ BIOTECHNOLOGY, INC.

GUK1 (F-3): sc-271385

The Power to Question

BACKGROUND

GUK1 (guanylate kinase 1), also known as GMK (GMP kinase), is a 197 amino acid protein that contains one guanylate kinase-like domain and belongs to the guanylate kinase family. Ubiquitously expressed, GUK1 exists as a monomer that catalyzes the ATP-dependent conversion of GMP to GDP, thereby playing an essential role in the recycling of GMP. Via its catalytic activity, GUK1 is thought to participate in regulating the supply of guanine nucleotides to signal transduction pathways. Overexpression of GUK1 is associated with pituitary adenocarcinomas, suggesting that GUK1 is involved in tumorigenesis.

REFERENCES

1. Meera Khan, P., Doppert, B.A., Hagemeijer, A. and Westerveld, A. 1974. Proceedings: the human loci for phosphopyruvate hydratase and guanylate kinase are syntenic with the PGD-PGM 1 linkage group in man-Chinese hamster somatic cell hybrids. Cytogenet. Cell Genet. 13: 130-131.
2. Dallapiccola, B., Lungarotti, M.S., Falorni, A., Magnani, M. and Dacha, M. 1980. Evidence for the assignment of GUK1 gene locus to 1q32 leads to q43 segment from gene dosage effect. Ann. Genet. 23: 83-85.
3. Fitzgibbon, J., Katsanis, N., Wells, D., Delhanty, J., Vallins, W. and Hunt, D.M. 1996. Human guanylate kinase (GUK1): cDNA sequence, expression and chromosomal localisation. FEBS Lett. 385: 185-188.
4. Brady, W.A., Kokoris, M.S., Fitzgibbon, M. and Black, M.E. 1996. Cloning, characterization, and modeling of mouse and human guanylate kinases. J. Biol. Chem. 271: 16734-16740.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 139270. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. da Rocha, A.A., Giorgi, R.R., de Sa, S.V., Correa-Giannella, M.L., Fortes, M.A., Cavaleiro, A.M., Machado, M.C., Cescato, V.A., Bronstein, M.D. and Giannella-Neto, D. 2006. Hepatocyte growth factor-regulated tyrosine kinase substrate (HGS) and guanylate kinase 1 (GUK1) are differentially expressed in GH-secreting adenomas. Pituitary 9: 83-92.

CHROMOSOMAL LOCATION

Genetic locus: GUK1 (human) mapping to 1q42.13; Guk1 (mouse) mapping to 11 B1.3.

SOURCE

GUK1 (F-3) is a mouse monoclonal antibody raised against amino acids 32-108 mapping within an internal region of GUK1 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.

STORAGE

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

APPLICATIONS

GUK1 (F-3) is recommended for detection of GUK1 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).

Suitable for use as control antibody for GUK1 siRNA (h): sc-78622, GUK1 siRNA (m): sc-145841, GUK1 shRNA Plasmid (h): sc-78622-SH, GUK1 shRNA Plasmid (m): sc-145841-SH, GUK1 shRNA (h) Lentiviral Particles: sc-78622-V and GUK1 shRNA (m) Lentiviral Particles: sc-145841-V.

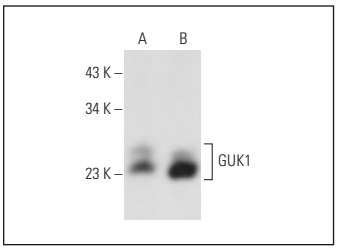
Molecular Weight of GUK1: 22 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Y79 cell lysate: sc-2240 or RPE-J cell lysate: sc-24771.

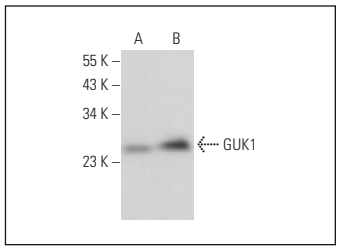
RECOMMENDED SUPPORT REAGENTS

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



GUK1 (F-3): sc-271385. Western blot analysis of GUK1 expression in RPE-J (**A**) and Y79 (**B**) whole cell lysates.



GUK1 (F-3): sc-271385. Western blot analysis of GUK1 expression in NIH/3T3 (**A**) and 3611-RF (**B**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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