

GlcNAc kinase (G-5): sc-390499

BACKGROUND

GlcNAc kinase, also known as GNK or NAGK (N-acetylglucosamine kinase), is a 344 amino acid homodimeric protein that is ubiquitously expressed. Belonging to the sugar kinase/Hsp70/actin superfamily and the eukaryotic-type N-acetylglucosamine kinase family, GlcNAc kinase converts endogenous N-acetylglucosamine (GlcNAc), a major component of complex carbohydrates, from lysosomal degradation or nutritional sources into GlcNAc 6-phosphate. GlcNAc kinase is considered a salvage enzyme of amino sugar metabolism in mammals and predominately produces the beta anomer of phosphorylated sugars. It is suggested that GlcNAc kinase has ManNAc kinase activity.

REFERENCES

- Mattia, E., et al. 1982. Induction of germ tube formation by N-acetyl-D-glucosamine in *Candida albicans*: uptake of inducer and germinative response. *J. Bacteriol.* 152: 555-562.
- Meglasson, M.D., et al. 1983. Chromatographic resolution and kinetic characterization of glucokinase from islets of Langerhans. *Proc. Natl. Acad. Sci. USA* 80: 85-89.
- Hinderlich, S., et al. 1998. Purification and characterization of N-acetylglucosamine kinase from rat liver—comparison with UDP-N-acetylglucosamine 2-epimerase/N-acetylmannosamine kinase. *Eur. J. Biochem.* 252: 133-139.
- Hinderlich, S., et al. 2000. Molecular cloning and characterization of murine and human N-acetylglucosamine kinase. *Eur. J. Biochem.* 267: 3301-3308.
- Yamada-Okabe, T., et al. 2001. Identification and characterization of the genes for N-acetylglucosamine kinase and N-acetylglucosamine-phosphate deacetylase in the pathogenic fungus *Candida albicans*. *Eur. J. Biochem.* 268: 2498-2505.

CHROMOSOMAL LOCATION

Genetic locus: NAGK (human) mapping to 2p13.3.

SOURCE

GlcNAc kinase (G-5) is a mouse monoclonal antibody raised against amino acids 91-390 mapping at the C-terminus of GlcNAc kinase of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GlcNAc kinase (G-5) is available conjugated to agarose (sc-390499 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390499 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390499 PE), fluorescein (sc-390499 FITC), Alexa Fluor[®] 488 (sc-390499 AF488), Alexa Fluor[®] 546 (sc-390499 AF546), Alexa Fluor[®] 594 (sc-390499 AF594) or Alexa Fluor[®] 647 (sc-390499 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390499 AF680) or Alexa Fluor[®] 790 (sc-390499 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

GlcNAc kinase (G-5) is recommended for detection of GlcNAc kinase of 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 GlcNAc kinase siRNA (h): sc-75136, GlcNAc kinase shRNA Plasmid (h): sc-75136-SH and GlcNAc kinase shRNA (h) Lentiviral Particles: sc-75136-V.

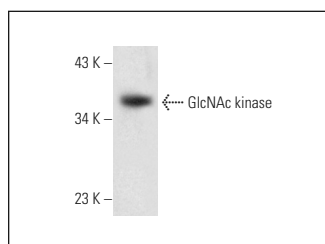
Molecular Weight of GlcNAc kinase: 37 kDa.

Positive Controls: T98G cell lysate: sc-2294 or SK-N-MC cell lysate: sc-2237.

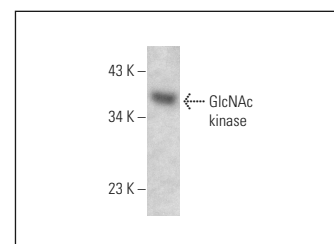
RECOMMENDED SUPPORT REAGENTS

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



GlcNAc kinase (G-5): sc-390499. Western blot analysis of GlcNAc kinase expression in T98G whole cell lysate.



GlcNAc kinase (G-5): sc-390499. Western blot analysis of GlcNAc kinase expression in SK-N-MC whole cell lysate.

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.

PROTOCOLS

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