

Fucokinase (F-9): sc-377371

BACKGROUND

Blood group antigen recognition, metastasis and inflammation utilize fucose, a sugar found in glycoproteins and glycolipids. Fucokinase, also designated L-fucose kinase or FUK, is a 1,084 amino acid enzyme that plays a role in the salvage pathway of fucose reutilization. A member of the GHMP kinase family, Fucokinase exists as two alternative splice variants and catalyzes L-fucose phosphorylation to form β -L-fucose 1-phosphate. The gene encoding Fucokinase maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

- Baraitser, M. and Preece, M.A. 1983. The Rubinstein-Taybi syndrome: occurrence in two sets of identical twins. *Clin. Genet.* 23: 318-320.
- Breuning, M.H., et al. 1993. Rubinstein-Taybi syndrome caused by submicroscopic deletions within 16p13.3. *Am. J. Hum. Genet.* 52: 249-254.
- Bomont, P., et al. 2000. The gene encoding gigaxonin, a new member of the cytoskeletal BTB/Kelch repeat family, is mutated in giant axonal neuropathy. *Nat. Genet.* 26: 370-374.

CHROMOSOMAL LOCATION

Genetic locus: FUK (human) mapping to 16q22.1; Fuk (mouse) mapping to 8 E1.

SOURCE

Fucokinase (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 433-465 within an internal region of Fucokinase of human origin.

PRODUCT

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

Fucokinase (F-9) is available conjugated to agarose (sc-377371 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377371 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377371 PE), fluorescein (sc-377371 FITC), Alexa Fluor® 488 (sc-377371 AF488), Alexa Fluor® 546 (sc-377371 AF546), Alexa Fluor® 594 (sc-377371 AF594) or Alexa Fluor® 647 (sc-377371 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377371 AF680) or Alexa Fluor® 790 (sc-377371 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377371 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Fucokinase (F-9) is recommended for detection of Fucokinase isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 Fucokinase siRNA (h): sc-93356, Fucokinase siRNA (m): sc-145269, Fucokinase shRNA Plasmid (h): sc-93356-SH, Fucokinase shRNA Plasmid (m): sc-145269-SH, Fucokinase shRNA (h) Lentiviral Particles: sc-93356-V and Fucokinase shRNA (m) Lentiviral Particles: sc-145269-V.

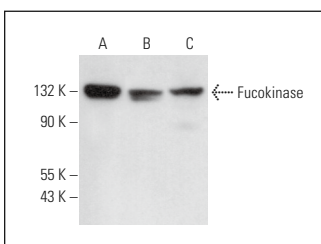
Molecular Weight of Fucokinase: 118 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, PC-12 cell lysate: sc-2250 or MCF7 whole cell lysate: sc-2206.

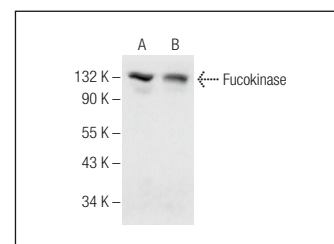
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Fucokinase (F-9): sc-377371. Western blot analysis of Fucokinase expression in MCF7 (A), NIH/3T3 (B) and Neuro-2A (C) whole cell lysates.



Fucokinase (F-9): sc-377371. Western blot analysis of Fucokinase expression in MCF7 (A) and PC-12 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Fazelzadeh Haghighi, M., et al. 2024. Novel insight into FCSK-congenital disorder of glycosylation through a CRISPR-generated cell model. *Mol. Genet. Genomic Med.* 12: e2445.

RESEARCH USE

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

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