SANTA CRUZ BIOTECHNOLOGY, INC.

GPI (1B7D7): sc-130067

BACKGROUND

Glucose-6-phosphate isomerase (GPI) has many other names, including phosphohexose isomerase (PHI), neuroleukin (NLK) and spermantigen-36 (SA-36). GPI is a cytoplasmic homodimer belonging to the GPI family. It is a neurotrophic factor for spinal and sensory neurons and is involved in glycolysis and gluconeogenesis. Defects or mutations in GPI can cause hereditary nonspherocytic hemolytic anemia (HA), hydrops fetalis, immediate neonatal death and neurological impairment.

REFERENCES

1. Beutler, E., et al. 1997. Glucosephosphate isomerase (GPI) deficiency mutations associated with hereditary nonspherocytic hemolytic anemia (HNSHA). Blood Cells Mol. Dis. 23: 402-409.
2. Kugler, W., et al. 1998. Molecular basis of neurological dysfunction coupled with haemolytic anemia in human glucose-6-phosphate isomerase (GPI) deficiency. Hum. Genet. 103: 450-454.
3. Schulz, L.C., et al. 2003. Glucose-6-phosphate isomerase is necessary for embryo implantation in the domestic ferret. Proc. Natl. Acad. Sci. USA 100: 8561-8566.
4. Muraki, Y., et al. 2004. Glucose-6-phosphate isomerase variants play a key role in the generation of anti-GPI antibodies: possible mechanism of autoantibody production. Biochem. Biophys. Res. Commun. 323: 518-522.
5. Graham Solomons, J.T., et al. 2004. The crystal structure of mouse phosphoglucose isomerase at 1.6A resolution and its complex with glucose-6-phosphate reveals the catalytic mechanism of sugar ring opening. J. Mol. Biol. 342: 847-860.
6. Schubert, D., et al. 2004. Immunization with glucose-6-phosphate isomerase induces T cell-dependent peripheral polyarthritis in genetically unaltered mice. J. Immunol. 172: 4503-4509.
7. SWISS-PROT/TrEMBL (P06744). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: GPI (human) mapping to 19q13.11.

SOURCE

GPI (1B7D7) is a mouse monoclonal antibody raised against recombinant full length GPI protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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

GPI (1B7D7) is recommended for detection of GPI 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GPI siRNA (h): sc-43810, GPI shRNA Plasmid (h): sc-43810-SH and GPI shRNA (h) Lentiviral Particles: sc-43810-V.

Molecular Weight (predicted) of GPI: 63 kDa.

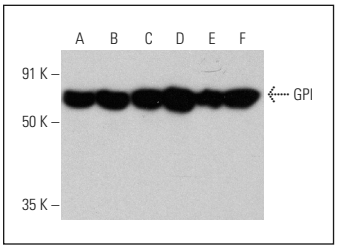
Molecular Weight (observed) of GPI: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or SMMC-7721 whole cell lysate.

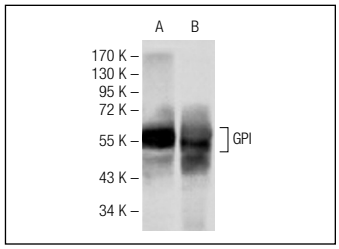
RECOMMENDED SUPPORT REAGENTS

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, 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).

DATA



GPI (1B7D7): sc-130067. Western blot analysis of GPI expression in HeLa (**A**), NCI-H292 (**B**), NIH: OVCAR-3 (**C**), ARPE-19 (**D**), Y79 (**E**) and HEL 92.1.7 (**F**) whole cell lysates.



GPI (1B7D7): sc-130067. Western blot analysis of GPI expression in Hep G2 (**A**) and SMMC-7721 (**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.