

Gl Syn (D-6): sc-376767

BACKGROUND

Glutamine synthetase (Gl Syn) forms a homo-octamer that serves as a catalyst for the amination of glutamic acid to form glutamine. This enzyme is a marker for astrocytes, which serve as the primary site of conversion of glutamic acid to glutamine in the brain. Induction of glutamine synthetase is seen upon astrocyte cell contact with neurons. Elevated expression of glutamine synthetase in glial cells has been shown to protect neurons from degeneration due to excess glutamate. Glutamine synthetase is also present in the liver and is involved in nitrogen homeostasis. Overexpression of glutamine synthetase has been shown in primary liver cancers, indicating a potential role for glutamine synthetase in hepatocyte transformation.

CHROMOSOMAL LOCATION

Genetic locus: GLUL (human) mapping to 1q25.3; Glul (mouse) mapping to 1 G3.

SOURCE

Gl Syn (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 61-101 near the N-terminus of Gl Syn of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376767 P, (100 µg 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

Gl Syn (D-6) is recommended for detection of Gl Syn 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), 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).

Gl Syn (D-6) is also recommended for detection of Gl Syn in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Gl Syn siRNA (h): sc-35481, Gl Syn siRNA (m): sc-35482, Gl Syn shRNA Plasmid (h): sc-35481-SH, Gl Syn shRNA Plasmid (m): sc-35482-SH, Gl Syn shRNA (h) Lentiviral Particles: sc-35481-V and Gl Syn shRNA (m) Lentiviral Particles: sc-35482-V.

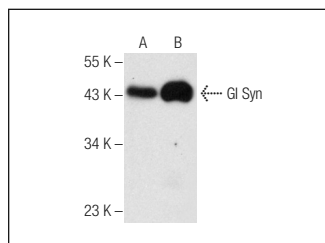
Molecular Weight of Gl Syn: 42 kDa.

Positive Controls: human liver extract: sc-363766, mouse brain extract: sc-2253 or KNRK whole cell lysate: sc-2214.

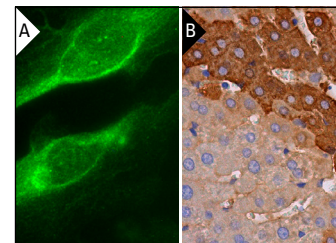
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Gl Syn (D-6): sc-376767. Western blot analysis of Gl Syn expression in human liver (A) and mouse brain (B) tissue extracts.



Gl Syn (D-6): sc-376767. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

SELECT PRODUCT CITATIONS

- Dolfini, D., et al. 2020. NF-YA overexpression protects from glutamine deprivation. *Biochim. Biophys. Acta Mol. Cell Res.* 1867: 118571.
- Peric, I., et al. 2021. Tianeptine modulates synaptic vesicle dynamics and favors synaptic mitochondria processes in socially isolated rats. *Sci. Rep.* 11: 17747.
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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.