SANTA CRUZ BIOTECHNOLOGY, INC.

Gl Syn (E-4): sc-74430

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glutamine synthetase (Gl Syn) forms a homooctamer 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 (E-4) is a mouse monoclonal antibody raised against amino acids 1-373 representing full length Gl Syn 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.

Gl Syn (E-4) is available conjugated to agarose (sc-74430 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74430 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74430 PE), fluorescein (sc-74430 FITC), Alexa Fluor® 488 (sc-74430 AF488), Alexa Fluor® 546 (sc-74430 AF546), Alexa Fluor® 594 (sc-74430 AF594) or Alexa Fluor® 647 (sc-74430 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74430 AF680) or Alexa Fluor® 790 (sc-74430 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Gl Syn (E-4) 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).

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.

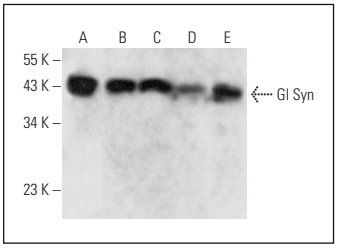
Molecular Weight of Gl Syn: 42 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, L8 cell lysate: sc-3807 or Jurkat whole cell lysate: sc-2204.

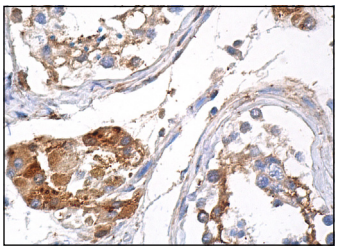
STORAGE

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

DATA



Gl Syn (E-4): sc-74430. Western blot analysis of Gl Syn expression in Jurkat (**A**), Neuro-2A (**B**), c4 (**C**), C6 (**D**) and L8 (**E**) whole cell lysates.



Gl Syn (E-4): sc-74430. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells.

SELECT PRODUCT CITATIONS

1. Jayakumar, A.R., et al. 2011. NFκB in the mechanism of brain edema in acute liver failure: studies in transgenic mice. Neurobiol. Dis. 41: 498-507.
2. Jayakumar, A.R., et al. 2014. Sulfonylurea receptor 1 contributes to the astrocyte swelling and brain edema in acute liver failure. Transl. Stroke Res. 5: 28-37.
3. Koeppen, A.H., et al. 2016. Dorsal root ganglia in Friedreich ataxia: satellite cell proliferation and inflammation. Acta Neuropathol. Commun. 4: 46.
4. Weng, Y.L., et al. 2017. An intrinsic epigenetic barrier for functional axon regeneration. Neuron 94: 337-346.
5. Zhan, N., et al. 2018. The effect of selective c-MET inhibitor on hepatocellular carcinoma in the MET-active, β-catenin-mutated mouse model. Gene Expr. 18: 135-147.
6. Min, Q., et al. 2019. β-catenin and yes-associated protein 1 cooperate in hepatoblastoma pathogenesis. Am. J. Pathol. 189: 1091-1104.
7. Zhang, R., et al. 2019. Elimination of Wnt secretion from stellate cells is dispensable for zonation and development of liver fibrosis following hepatobiliary injury. Gene Expr. 19: 121-136.
8. Huynh, H., et al. 2019. Sorafenib/MEK inhibitor combination inhibits tumor growth and the Wnt/β-catenin pathway in xenograft models of hepatocellular carcinoma. Int. J. Oncol. 54: 1123-1133.
9. Hassan, H.M., et al. 2020. Loss of thymine DNA glycosylase causes dysregulation of bile acid homeostasis and hepatocellular carcinoma. Cell Rep. 31: 107475.
10. Costanzo, M., et al. 2020. Proteomics reveals that methylmalonyl-CoA mutase modulates cell architecture and increases susceptibility to stress. Int. J. Mol. Sci. 21: 4998.

RESEARCH USE

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