SANTA CRUZ BIOTECHNOLOGY, INC.

Gl Syn (C-20): sc-6640

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 (C-20) is available as either goat (sc-6640) or rabbit (sc-6640-R) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of Gl Syn of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6640 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-6640 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Gl Syn (C-20) is recommended for detection of glutamine synthetase (GL Syn) of mouse, rat and 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)], 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 (C-20) is also recommended for detection of glutamine synthetase (GL Syn) in additional species, including equine, canine, bovine, porcine and avian.

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.

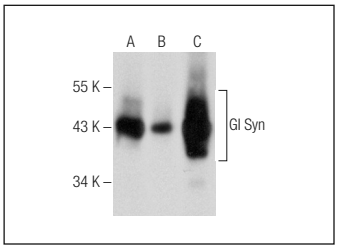
Molecular Weight of Gl Syn: 42 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, Jurkat whole cell lysate: sc-2204 or mouse liver extract: sc-2256.

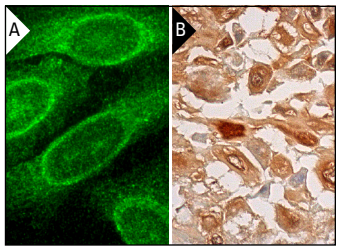
STORAGE

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

DATA



Gl Syn (C-20)-R: sc-6640-R. Western blot analysis of Gl Syn expression in KNRK (**A**) and Jurkat (**B**) whole cell lysates and mouse liver tissue extract (**C**).



Gl Syn (C-20): sc-6640. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of decidual cells (**B**).

SELECT PRODUCT CITATIONS

1. McGrath-Morrow, S.A., et al. 2002. Inhibition of glutamine synthetase in A549 cells during hyperoxia. Am. J. Respir. Cell Mol. Biol. 27: 99-106.
2. Wu, Y., et al. 2005. Age related changes of various markers of astrocytes in senescence-accelerated mice hippocampus. Neurochem. Int. 46: 565-574.
3. Allodi, S., et al. 2006. Regionally specific distribution of the binding of anti-glutamine synthetase and anti-S-100 antibodies and of *Datura stramonium* lectin in glial domains of the optic lobe of the giant prawn. Glia 53: 612-620.
4. Bastone, A., et al. 2009. Proteomic profiling of cervical and lumbar spinal cord reveals potential protective mechanisms in the wobbler mouse, a model of motor neuron degeneration. J. Proteome Res. 8: 5229-5240.
5. Yu, H., et al. 2011. Lentiviral gene transfer into the dorsal root ganglion of adult rats. Mol. Pain 7: 63.
6. Mohammad, G., et al. 2013. Poly (ADP-ribose) polymerase mediates diabetes-induced retinal neuropathy. Mediators Inflamm. 2013: 510451.
7. Bangaru, M.L., et al. 2015. Differential expression of CaMKII isoforms and overall kinase activity in rat dorsal root ganglia after injury. Neuroscience 300: 116-127.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **Gl Syn (E-4): sc-74430** or **Gl Syn (D-6): sc-376767**, our highly recommended monoclonal alternatives to Gl Syn (C-20).