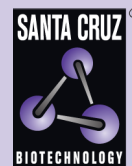


GLUD2 (3C2): sc-293459



The Power to Question

BACKGROUND

GLUD1 (glutamate dehydrogenase 1), also known as GDH, GDH1 or GLUD, and GLUD2 (glutamate dehydrogenase 2), also known as GDH2 or GLUDP1, are both mitochondrial matrix enzymes belonging to the Glu/Leu/Phe/Val dehydrogenases family. Existing as homohexamers, GLUD1 catalyzes the oxidative deamination of glutamate to α -ketoglutarate and ammonia while GLUD2 is involved in the recycling of glutamate during neurotransmission. GLUD1 is critical for regulating amino acid induced Insulin secretion and is allosterically activated by ADP and inhibited by GTP and ATP. Mutations in the gene encoding GLUD1 causes hyperinsulinism-hyperammonemia syndrome (HHS), which is an inherited condition characterized by high Insulin and ammonia levels in the blood. GLUD1 may also be involved in learning and memory reactions by increasing the turnover of the excitatory neurotransmitter glutamate. GLUD2 is expressed in testis and retina, with lower levels found in brain.

REFERENCES

1. Stanley, C.A., et al. 2000. Molecular basis and characterization of the hyperinsulinism/hyperammonemia syndrome: predominance of mutations in exons 11 and 12 of the glutamate dehydrogenase gene. *HL/HA Contributing Investigators. Diabetes* 49: 667-673.
2. Tanizawa, Y., et al. 2002. Unregulated elevation of glutamate dehydrogenase activity induces glutamine-stimulated Insulin secretion: identification and characterization of a GLUD1 gene mutation and Insulin secretion studies with MIN6 cells overexpressing the mutant glutamate dehydrogenase. *Diabetes* 51: 712-717.
3. Mastorodemos, V., et al. 2009. Human GLUD1 and GLUD2 glutamate dehydrogenase localize to mitochondria and endoplasmic reticulum. *Biochem. Cell Biol.* 87: 505-516.
4. Paji, T., et al. 2009. Glutamate dehydrogenase activity in lymphocytes of B-cell chronic lymphocytic leukaemia patients. *Clin. Biochem.* 42: 1677-1684.
5. Kapoor, R.R., et al. 2009. Hyperinsulinism-hyperammonemia (HI/HA) syndrome: novel mutations in the GLUD1 gene and genotype-phenotype correlations. *Eur. J. Endocrinol.* 161: 731-735.

CHROMOSOMAL LOCATION

Genetic locus: GLUD2 (human) mapping to Xq24.

SOURCE

GLUD2 (3C2) is a mouse monoclonal antibody raised against amino acids 1-264 representing full length GLUD2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} 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

GLUD2 (3C2) is recommended for detection of GLUD2 of human origin by Western Blotting (starting dilution 1:200, 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), 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 GLUD2 siRNA (h): sc-90970, GLUD2 shRNA Plasmid (h): sc-90970-SH and GLUD2 shRNA (h) Lentiviral Particles: sc-90970-V.

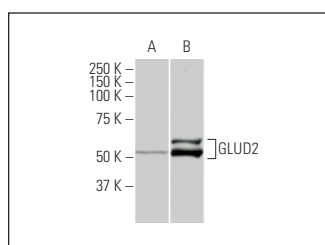
Molecular Weight (predicted) of GLUD2: 61 kDa.

Molecular Weight (observed) of GLUD2: 50-55 kDa.

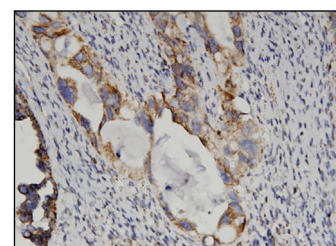
RECOMMENDED SUPPORT REAGENTS

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

DATA



GLUD2 (3C2): sc-293459. Western blot analysis of GLUD2 expression in non-transfected (A) and GLUD2 transfected (B) 293T whole cell lysates.



GLUD2 (3C2): sc-293459. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovarian cancer tissue showing cytoplasmic staining of tumor cells.

SELECT PRODUCT CITATIONS

1. Zhang, W., et al. 2020. Functional validation of a human GLUD2 variant in a murine model of Parkinson's disease. *Cell Death Dis.* 11: 897.
3. Drews, L., et al. 2020. Ammonia inhibits energy metabolism in astrocytes in a rapid and glutamate dehydrogenase 2-dependent manner. *Dis. Model. Mech.* 13: dmm047134.

RESEARCH USE

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