SANTA CRUZ BIOTECHNOLOGY, INC.

GAD-65 (61/8F9): sc-130569

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

There are two forms of glutamic acid decarboxylases (GADs) that are found in the brain: GAD-65 (also known as GAD2) and GAD-67 (also known as GAD1, GAD or SCP). GAD-65 and GAD-67 are members of the group II decarboxylase family of proteins and are responsible for catalyzing the rate limiting step in the production of GABA (γ-aminobutyric acid) from L-glutamic acid. Although both GADs are found in the brain, GAD-65 localizes to synaptic vesicle membranes in nerve terminals, while GAD-67 is distributed throughout the cell. GAD-67 is responsible for the basal levels of GABA synthesis. In the case of a heightened demand for GABA in neurotransmission, GAD-65 will transiently activate to assist in GABA production. The loss of GAD-65 is detrimental and can impair GABA neurotransmission, however the loss of GAD-67 is lethal. Due to alternative splicing, two isoforms exist for GAD-67, the predominant GAD-67 form and the minor GAD-25 form. GAD-25 is not expressed in brain but can be found in a variety of endocrine tissues.

REFERENCES

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3. Kanter, I.C., et al. 2008. Cyclophosphamide for anti-GAD antibody-positive refractory status epilepticus. Epilepsia 49: 914-920.
4. Kanaani, J., et al. 2008. A palmitoylation cycle dynamically regulates partitioning of the GABA-synthesizing enzyme GAD-65 between ER-Golgi and post-Golgi membranes. J. Cell Sci. 121: 437-449.
5. Wei, J. and Wu, J.Y. 2008. Post-translational regulation of L-glutamic acid eecarboxylase in the brain. Neurochem. Res. 33: 1459-1465.
6. Hwang, I.K., et al. 2008. Comparison of glutamic acid decarboxylase 67 immunoreactive neurons in the hippocampal CA1 region at various age stages in dogs. Neurosci. Lett. 431: 251-255.
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8. Hamilton, K.A., et al. 2008. Sensory deafferentation transsynaptically alters neuronal GluR-1 expression in the external plexiform layer of the adult mouse main olfactory bulb. Chem. Senses 33: 201-210.
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CHROMOSOMAL LOCATION

Genetic locus: GAD2 (human) mapping to 10p12.1; Gad2 (mouse) mapping to 2 A3.

SOURCE

GAD-65 (61/8F9) is a mouse monoclonal antibody raised against full-length recombinant GAD-65 of human origin, with epitope mapping to amino acids 4-17.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GAD-65 (61/8F9) is recommended for detection of GAD-65 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with GAD-67.

Suitable for use as control antibody for GAD-65 siRNA (h): sc-41964, GAD-65 siRNA (m): sc-41965, GAD-65 siRNA (r): sc-61888, GAD-65 shRNA Plasmid (h): sc-41964-SH, GAD-65 shRNA Plasmid (m): sc-41965-SH, GAD-65 shRNA Plasmid (r): sc-61888-SH, GAD-65 shRNA (h) Lentiviral Particles: sc-41964-V, GAD-65 shRNA (m) Lentiviral Particles: sc-41965-V and GAD-65 shRNA (r) Lentiviral Particles: sc-61888-V.

Molecular Weight of GAD-65: 65 kDa.

STORAGE

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

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.

See **GAD-65 (A-3): sc-377145** for GAD-65 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.