SANTA CRUZ BIOTECHNOLOGY, INC.

GAD-65 (H-95): sc-5601

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.

CHROMOSOMAL LOCATION

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

SOURCE

GAD-65 (H-95) is a rabbit polyclonal antibody raised against amino acids 1-95 of GAD-65 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.

RESEARCH USE

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

APPLICATIONS

GAD-65 (H-95) 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)], 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).

GAD-65 (H-95) is also recommended for detection of GAD-65 in additional species, including equine, canine, bovine and porcine.

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.

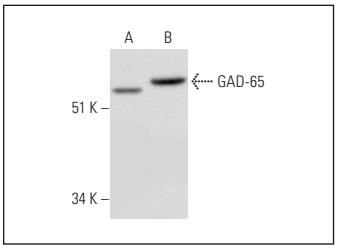
Molecular Weight of GAD-65: 65 kDa.

Positive Controls: mouse kidney extract: sc-2255, rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

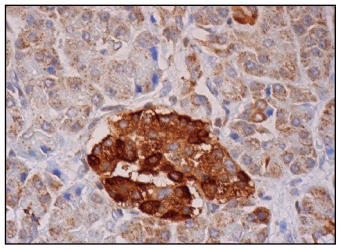
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



GAD-65 (H-95): sc-5601. Western blot analysis of GAD-65 expression in rat cerebellum (**A**) and mouse kidney (**B**) tissue extracts.



GAD-65 Antibody (H-95): sc-5601. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing weak cytoplasmic staining of exocrine glandular cells and cytoplasmic staining of Islets of Langerhans and pancreatic duct cells.

SELECT PRODUCT CITATIONS

1. Majak, K., et al. 2003. Activation of the amygdalo-entorhinal pathway in fear-conditioning in rat. Eur. J. Neurosci. 18: 1652-1659.
2. Nguyen, L., et al. 2003. Autocrine/paracrine activation of the $GABA_A$ receptor inhibits the proliferation of neurogenic polysialylated neural cell adhesion molecule-positive (PSA-NCAM$^+$) precursor cells from postnatal striatum. J. Neurosci. 23: 3278-3294.
3. Sun, C., et al. 2013. Cholinergic neuron-like cells derived from bone marrow stromal cells induced by tricyclodecane-9-yl-xanthogenate promote functional recovery and neural protection after spinal cord injury. Cell Transplant. 22: 961-975.

STORAGE

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