SANTA CRUZ BIOTECHNOLOGY, INC.

GAD-65/67 (C-20): sc-7513

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, GAD1 (human) mapping to 2q31.1; Gad2 (mouse) mapping to 2 A3, Gad1 (mouse) mapping to 2 C2.

SOURCE

GAD-65/67 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GAD-67 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-7513 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

GAD-65/67 (C-20) is recommended for detection of GAD-65 and GAD-67 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GAD-65/67 (C-20) is also recommended for detection of GAD-65 and GAD-67 in additional species, including equine, canine, bovine, porcine, avian and feline.

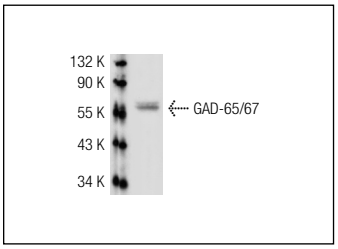
Molecular Weight of GAD-65/67: 65/67 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

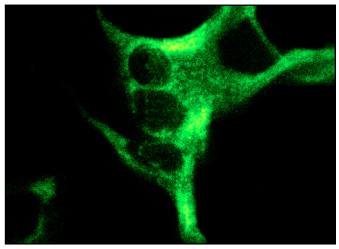
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GAD-65/67 (C-20): sc-7513. Western blot analysis of GAD-65/67 expression in mouse brain tissue extract.



GAD-65/67 (C-20): sc-7513. Immunofluorescence staining of methanol-fixed U-87 MG cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Rubio-Aliaga, I., et al. 2004. The proton/amino acid cotransporter PAT2 is expressed in neurons with a different subcellular localization than its paralog PAT1. J. Biol. Chem. 279: 2754-2760.
2. Brask, J., et al. 2004. Exposure to interferon-γ during synaptogenesis increases inhibitory activity after a latent period in cultured rat hippocampal neurons. Eur. J. Neurosci. 19: 3193-3201.
3. Barrett, L.E., et al. 2006. Elk-1 associates with the mitochondrial permeability transition pore complex in neurons. Proc. Natl. Acad. Sci. USA 103: 5155-5160.
4. Papay, R., et al. 2006. Localization of the mouse α1A-adrenergic receptor (AR) in the brain: α1AAR is expressed in neurons, GABAergic interneurons, and NG2 oligodendrocyte progenitors. J. Comp. Neurol. 497: 209-222.
5. Li, Q., et al. 2008. Rapid decrease of GAD-67 content before the convulsion induced by hyperbaric oxygen exposure. Neurochem. Res. 33: 185-193.