SANTA CRUZ BIOTECHNOLOGY, INC.

GAD-67 (H-101): sc-5602

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: GAD1 (human) mapping to 2q31.1; Gad1 (mouse) mapping to 2 C2.

SOURCE

GAD-67 (H-101) is a rabbit polyclonal antibody raised against amino acids 1-101 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.

APPLICATIONS

GAD-67 (H-101) is recommended for detection of 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-67 (H-101) is also recommended for detection of GAD-67 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GAD-67 siRNA (h): sc-35435, GAD-67 siRNA (m): sc-35436, GAD-67 siRNA (r): sc-61889, GAD-67 shRNA Plasmid (h): sc-35435-SH, GAD-67 shRNA Plasmid (m): sc-35436-SH, GAD-67 shRNA Plasmid (r): sc-61889-SH, GAD-67 shRNA (h) Lentiviral Particles: sc-35435-V, GAD-67 shRNA (m) Lentiviral Particles: sc-35436-V and GAD-67 shRNA (r) Lentiviral Particles: sc-61889-V.

Molecular Weight of GAD-67: 67 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, mouse brain extract: sc-2253 or T98G cell lysate: sc-2294.

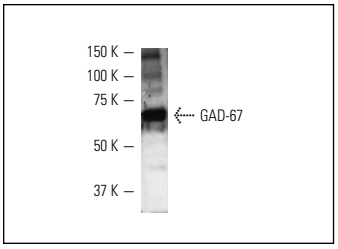
STORAGE

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.

DATA



GAD-67 (H-101): sc-5602. Western blot analysis of GAD-67 expression in U-87 MG whole cell lysate.

SELECT PRODUCT CITATIONS

1. Bubar, M.J., et al. 2007. Distribution of serotonin 5-HT2C receptors in the ventral tegmental area. Neuroscience 146: 286-297.
2. Liu, S., et al. 2007. Serotonin2C receptor localization in GABA neurons of the rat medial prefrontal cortex: implications for understanding the neurobiology of addiction. Neuroscience 146: 1677-1688.
3. Shank, E.J., et al. 2007. Selective ablation of GABA neurons in the ventral tegmental area increases spontaneous locomotor activity. Behav. Neurosci. 121: 1224-1233.
4. Hou, S.W., et al. 2008. Functional integration of newly generated neurons into striatum after cerebral ischemia in the adult rat brain. Stroke 39: 2837-2844.
5. Pillai, A., et al. 2008. Increased truncated TrkB receptor expression and decreased BDNF/TrkB signaling in the frontal cortex of reeler mouse model of schizophrenia. Schizophr. Res. 100: 325-333.
6. Bubar, M.J., et al. 2011. 5-HT(2C) receptors localize to dopamine and GABA neurons in the rat mesoaccumbens pathway. PLoS ONE 6: e20508.
7. Kutiyanawalla, A., et al. 2012. Cysteamine treatment ameliorates alterations in GAD67 expression and spatial memory in heterozygous reeler mice. Int. J. Neuropsychopharmacol. 15: 1073-1086.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS Satisfaction Guaranteed

Try **GAD-67 (F-6): sc-28376** or **GAD-67 (A-4): sc-390383**, our highly recommended monoclonal alternatives to GAD-67 (H-101). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **GAD-67 (F-6): sc-28376**.