

Product Specification Sheet

Glutamate Decarboxylase 67 (GAD67/Gad1) Antibodies

Cat. GAD673-M	Monoclonal Anti-rat Glutamic acid decarboxylase (GAD67/GAD1) IgG	SIZE: 100 ul
Cat. GAD671-C	Recombinant mouse GAD67 protein control for WB	SIZE: 100 ul

γ -Aminobutyric acid (GABA) is the major known inhibitory neurotransmitter. The rate-limiting step in the synthesis of GABA is the decarboxylation of glutamate by glutamate decarboxylase (GAD; L-glutamate 1-carboxy-lyase, EC 4.1.115). In the CNS GAD is entirely restricted to GABAergic neurons. GAD is also present in the β -cells of the pancreas and autoantibodies to various GAD polypeptides are detected in insulin-dependent diabetes mellitus. Cloning of GAD genes have identified two subtypes: GAD65 (65 kDa; human 585 AA chromosome 10) and GAD67 (67 kDa; human 594 AA, chromosome 2) share approx. 65% amino acid homology. The N-terminus is the most divergent while the C-terminus is highly conserved. Although both GAD isoforms catalyzes the conversion of GABA but interact differently with the co-factor pyridoxal 5'-phosphate suggesting their activities are differentially regulated. GAD67 is cytosolic, while GAD65 is membrane associated. GAD65 is a major autoantigen in diabetes mellitus and stiff-man syndrome, a rare disease of the brain.

Source of Antigen and Antibodies

Antigen	Rat GAD67/Gad1 peptide (1); epitope location ~ N-terminus
Antibody host/type	Mouse, monoclonal IgG1 (Cat # GAD673-M);
Secondary Ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
Negative Control Ab	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Mouse **GAD67/GAD1** protein (full length; gene accession # BC027059) was expressed as fusion protein (His tag-GAD1) in E.coli and purified (>95% with major band at ~67kDa). For Western blot +ve control (**Cat # GAD671-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **GAD671-C** for good visibility with antibody Cat # **GAD67-A**. Store at -20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **GAD671-C** solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA and 0.05% azide

Storage

Short-term: unopened, undiluted liquid vials at -20oC and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:250-1:1000) using Chemiluminescence technique.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence. We recommend the use of affinity purified antibody at 2-10 ug/ml in formaldehyde fixed, paraffin-embedded tissues (1).

Specificity & Cross-reactivity

Antibodies react with rat GAD67 protein in the brain or the recombinant protein. Antibody also crossreact with mouse and human. Antibody crossreactivity in various other species has not been studied. Recombinant mouse (#GAD671-C) and human (#GAD672-C) GSD67 protein control for Western blots are also available.

General References: (1) Wyborski RJ et al (1990) Mol. Brain., Res. 8, 193-198; Julien JF et al (1990) J Neurochem. 54, 703; Katarove Z et al (1990) Eur. J. Neurosci. 2, 190; Michelson BK et al (1992) Diabetes 41, 1182; Faulkner-Jones BE (1993) Endocrinol. 133, 2962; (2) Dirxxx R et al (1995) JBC 270, 2241; Solimena M (unpublshed results on file).

(2) Citations of ADI's Antibodies (see web site for updated list)

Hacker J, 2006 Neurosci. In press, IHC mice brain

*This product is for in vitro research use only.

Related material available from ADI

Catalog#	ProdDescription
660-100-G65	Mouse Anti-Glutamic Acid Decarboxylase 65 (GAD65) Ig's ELISA Kit, 96 tests, Quantitative
660-110-G67	Mouse Anti-Glutamic Acid Decarboxylase 67(GAD67) Ig's ELISA Kit, 96 tests, Quantitative
GAD651-R-10	Recombinant purified Mouse Glutamic acid decarboxylase 65 (GAD65/GAD2) protein (His-tag)
GAD671-R-10	Recombinant purified Mouse Glutamic acid decarboxylase 67 (GAD67/GAD1) protein (His-tag)
GAD673-M	110120A

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