# Glutamic Acid Decarboxylase (GAD65 and GAD67)Antibodies

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 GAB is entirely restricted to GABAergic neurons. GAD is also present in the β-cells of the pancreas and auto antibodies to various GAD polypeptides are detected in insulin-dependent diabetes mellitus. Cloning of GAD genes has identified two subtypes: GAD65 (65 kDa; human 585 AA chromosomes 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. ADI has produced antibodies to GAD65 and GAD67 using peptide sequences specific to each subtype.

**Antibody Ordering Information** (http://4adi.com/commerce/catalog/spcategory.jsp?category_id=2552)

Most Product data sheets are posted at the website. Contact ADI for information.

| Item | Antibody host | Peptide Antigen location | **expected Ab Cross reactivity | Antiserum Cat # | Affinity Pure IgG Cat # | Control peptide Cat # |
|---|---|---|---|---|---|---|
| **rGAD65** | m | r, 18 aa ~NT | r, m, h, mk | GAD65-AS | GAD65-A | GAD65-P |
| **rGAD67** | rb | r, 18 aa ~NT | r, m, h | GAD67-S | GAD67-A | GAD67-P |
| **rGAD6567** | rb | r, 16 aa ~CT | r, m, h | | GAD6567-A | GAD6567-P |

**Rb**=Rabbit; **Ch**=Chicken; **m**=mouse; **r**=rat; h=human; b=bovine; ~CT/NT=near C or N-terminus. ***Expected antibody cross reactivity** information is based upon high (>70%) sequence conservation of antigenic/control peptides in various species. t does not necessarily mean that ab-crossreactivity has been experimentally verified.
Significant antigenic similarity exist but antibody cross reactivity is questionable

**Control peptide** (#*******-P) is suitable for ELISA and Antibody neutralization to show antibody specificity in ELISA/Western/IHC etc. It is a small peptide of about 2-3 Kda and it cannot be used as protein to run on Western. **Protein controls**, if available, are listed as #*****-C. **Unpurified antiserum** (#******-S) can be used for ELISA/Western but the **affinity purified antibodies** (#********-A) will provide cleaner results in ELISA, Western, and IHC/IF.
Please consult the List of publication for the use of our antibodies, Species, and techiques (WB, IHC/IF, or ELISA etc)

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## List of Publication using GABA-B Antibodies_130814

This is a list of publications where ADI antibodies were referenced the peer reviewed journal. Cat# of the antibodies have been provided if given in the publication and what techniques the antibodies are were used (Western, IHC, IP etc). ADI may have some of the publication on file. If you have used our antibodies and not listed here, please contact ADI and perhaps get some discount on the purchase of the antibodies.

| ADI Product Used | Authors | Year | Journal | Western | IHC | IP | Comments |
|---|---|---|---|---|---|---|---|
| GAD65 Ab #GAD65-M | Han F | 2007 | Neuroscience, 151, Issue 3, 6 February 2008, Pages 671-679 | | IHC | | mouse brain |
| GAD67 Ab #GAD67-A | Sieber-Blum M | 2006 | Molecular and Cellular Neuroscience, 32, 67-81ss | | IHC | | mouse brain |
| GAD67 Ab #GAD67-A | Hacker J | 2006 | Neurosci. 137, 1389-1396 | | IHC | | mice brain 4%PF |
| GAD67 Ab #GAD67-A | Pouyatos B | 2004 | Hearing Res., 189, 83-91 | | | | |

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