GAD 1 / GAD 67
Cat.No. 198 013; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/Storage

|                | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. For reconstitution add 50 µl H2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. |

Applications

<table>
<thead>
<tr>
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<th>WB: not recommended</th>
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<tbody>
<tr>
<td>IP:</td>
<td>not tested yet</td>
</tr>
<tr>
<td>ICC:</td>
<td>1 : 500</td>
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<tr>
<td>IHC:</td>
<td>1 : 200 up to 1 : 500</td>
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<tr>
<td>IHC-P/FFPE:</td>
<td>1 : 1000</td>
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Immunogen

|                | Recombinant protein corresponding to AA 3 to 101 from mouse GAD1 (UniProt Id: P48318) |

Reactivity

|                | Reacts with: human (Q99259), rat (P18088), mouse (P48318). Other species not tested yet. |

Specificity

|                | Specific for GAD 1 / GAD 67. |

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

The glutamic acid decarboxylases GAD 1, also referred to as GAD 67, and GAD 2 / GAD 65 synthesize γ-aminobutyric acid (GABA), the major inhibitory neurotransmitter in the central nervous system. The hydrophilic GAD 1 can heterodimerize with the membrane anchored GAD 2 and part of GAD 1 is targeted to inhibitory nerve terminals by this mechanisms. Although both proteins exhibit significant differences in their N-terminus they share high homology in the rest of the molecule. GADs are widely used markers for the GABAergic system. In type 1 diabetes GAD 1 has been identified as a major autoantigen.

Selected References SYSY Antibodies

Abolished perineuronal nets and altered parvalbumin-immunoreactivity in the nucleus reticularis thalami of wildtype and 3xTg mice after experimental stroke.
Härtig W, Appel S, Suttokus A, Grosshe J, Michalski D
Neuroscience (2016) 337: 66-87. . . . IHC

Directing astroglia from the cerebral cortex into subtype specific functional neurons.

NETO1 Regulates Postsynaptic Kainate Receptors in CA3 Interneurons During Circuit Maturation.
Orav E, Dowawic I, Husupponen J, Tara T, Laurl SE
Molecular neurobiology (2019) . . . . IHC; tested species: mouse

Deletion of the Fractalkine Receptor, CX3CR1, Improves Endogenous Repair, Axon Sprouting, and Synaptogenesis after Spinal Cord Injury in Mice.
Fereria CM, Hall JC, Wei P, Guan Z, McTigue DM, Popovich PG

Short-term plasticity and modulation of synaptic transmission at mammalian inhibitory cholineric olivocochlear synapses.
Katz E, Elgoeyhen AB
Frontiers in systems neuroscience (2014) 8: 224. . . . IHC; tested species: mouse

Activation of presynaptic GABA(B)(1a,2) receptors inhibits synaptic transmission at mammalian inhibitory cholineric olivocochlear-hair cell synapses.

Selected General References

A specific role for NR2A-containing NMDA receptors in the maintenance of parvalbumin and GAD67 immunoreactivity in cultured interneurons.
Kinney JW, Davis CN, Tabarean I, Conti B, Bartfai T, Behrens MM

Green fluorescent protein expression and colocalization with calretinin, parvalbumin, and somatostatin in the GAD67-GFP knock-in mouse.
Tamamaki N, Yanagawa Y, Tomioka R, Miyazaki J, Obata K, Kaneko T

The hydrophilic isoform of glutamate decarboxylase, GAD67, is targeted to membranes and nerve terminals independent of dimerization with the hydrophobic membrane-anchored isoform, GAD65.
Kanaani J, Lissin D, Kash SF, Baekkeskov S

Differential expression of GAD65 and GAD67 in human, rat, and mouse pancreatic islets.

Glutamate decarboxylases in nonneural cells of rat testis and oviduct: differential expression of GAD65 and GAD67.
Tillakaratne NJ, Erlander MG, Collard MW, Greif KF, Tobin AJ