Revision 1

Store at -20C

#5305

GAD1 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	67	Rabbit	#Q99259	2571

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

GAD1 Antibody detects endogenous levels of total GAD1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro19 of human GAD1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The enzyme glutamate decarboxylase (GAD) is responsible for the synthesis of the essential neurotransmitter gamma-aminobutyric acid (GABA) from L-glutamic acid (1). GAD1 (GAD67) and GAD2 (GAD65) are expressed in nervous and endocrine systems (2) and are thought to be involved in synaptic transmission (3) and insulin secretion (4), respectively. Autoantibodies against GAD2 may serve as markers for type I diabetes (5). Many individuals suffering from an adult onset disorder known as Stiff Person Syndrome (SPS) also express autoantibodies to GAD2 (6).
Mutations in the *GAD1* gene can cause autosomal recessive spastic cerebral palsy, possibly attributable to altered glutamate/GABA ratios (7).

Background References

1. Kaufman, D.L. et al. (1991) *J Neurochem* 56, 720-3.
2. Feldblum, S. et al. (1993) *J Neurosci Res* 34, 689-706.
3. Gao, B. and Moore, R.Y. (1996) *J Biol Rhythms* 11, 172-9.
4. Rubi, B. et al. (2001) *J Biol Chem* 276, 36391-6.
5. Gilliam, L.K. et al. (2004) *Clin Exp Immunol* 138, 337-41.
6. Skorstad, G. et al. (2008) *Eur J Neurol* 15, 973-80.
7. Lynex, C.N. et al. (2004) *BMC Neurol* 4, 20.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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