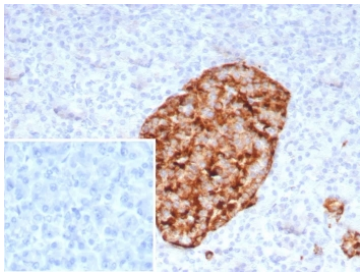
GAD2 Antibody Recombinant Mouse MAb / GAD65 [clone rGAD2/9382] (V5589)

Catalog No.	Formulation	Size
V5589-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5589-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5589SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

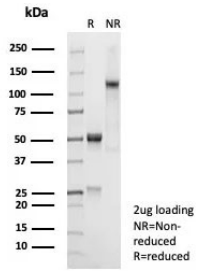
Recombinant MOUSE MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Mouse Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	rGAD2/9382
Purity	Protein A/G affinity
UniProt	Q05329
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This GAD2 antibody is available for research use only.



Immunohistochemistry of GAD2 Antibody Recombinant Mouse MAb rGAD2/9382 in human pancreas. Formalin-fixed, paraffin-embedded human pancreatic tissue demonstrates strong HRP-DAB brown cytoplasmic staining in islet cells, consistent with Glutamate decarboxylase 2 expression in pancreatic neuroendocrine cells. Surrounding exocrine acinar tissue shows minimal staining. The inset shows PBS used in place of the primary antibody as a negative control. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to antibody incubation.



SDS-PAGE analysis of purified, BSA-free recombinant GAD2 antibody (clone rGAD2/9382) as confirmation of integrity and purity.

Description

Glutamate decarboxylase 2 is a pyridoxal phosphate-dependent enzyme encoded by the GAD2 gene and commonly referred to as GAD65. The GAD2 Antibody Recombinant Mouse MAb clone rGAD2/9382 is developed to detect this key GABA-synthesizing enzyme in central nervous system and neuroendocrine research applications. GAD2 is located on chromosome 10p11.23 and encodes the 65 kDa isoform of glutamate decarboxylase responsible for catalyzing the conversion of glutamate to gamma-aminobutyric acid, the principal inhibitory neurotransmitter in the brain.

GAD65 is predominantly expressed in GABAergic neurons, where it localizes to the cytoplasm and associates with synaptic vesicle membranes. Unlike the related isoform GAD1, which produces GAD67 and contributes to basal GABA synthesis, GAD2 is more closely linked to activity-dependent neurotransmitter production and synaptic release. In tissue-based studies, immunohistochemical detection typically demonstrates cytoplasmic staining within neuronal cell bodies and proximal processes, particularly in cortex, hippocampus, cerebellum, and other regions enriched for inhibitory interneurons. Non-neuronal tissues generally show minimal staining, reflecting the restricted neuronal distribution of GAD65.

In neuropathology research, altered GAD2 expression has been examined in epilepsy, neurodevelopmental disorders, and neurodegenerative disease, where disruptions in excitatory-inhibitory balance are central to disease mechanisms. GAD65 is also a well-characterized autoantigen in type 1 diabetes and certain neurologic autoimmune syndromes, further supporting its importance in both neurologic and immunologic research contexts. Detection of GAD2 supports studies mapping inhibitory circuitry and analyzing changes in GABAergic neuron populations.

As a central enzyme in GABA biosynthesis, GAD2 plays a critical role in maintaining synaptic inhibition and neural network stability. Clone rGAD2/9382 is a recombinant mouse monoclonal antibody developed for specific detection of GAD65 in tissue sections and other protein expression studies, supporting research focused on inhibitory neuron identification and characterization of GABAergic pathways.

For highly specific detection of GAD65 in inhibitory synaptic signaling studies, see our GAD65 Antibody / Synaptic GABA Marker Antibody page featuring clone GAD2/2362 with strong HuProt(TM) microarray specificity validation data.

Application Notes

Optimal dilution of the GAD2 antibody should be determined by the researcher.

Immunogen

A recombinant human GAD2 /GAD65 protein fragment (within amino acids 1-200) was used as the immunogen for the GAD2 antibody recombinant mouse mAb rGAD2/9382.

Storage

Aliquot the GAD2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.