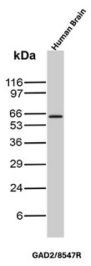
GAD2 Antibody Recombinant Rabbit MAb GAD2/8547R / GAD65 [clone GAD2/8547R] (V4078)

Catalog No.	Formulation	Size
V4078-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4078-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4078SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

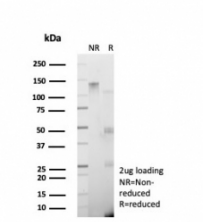
Recombinant RABBIT MONOCLONAL

Bulk quote request

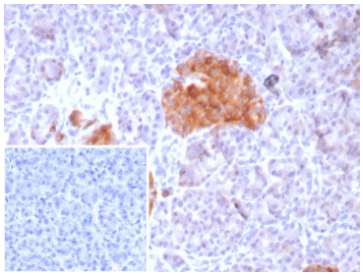
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	GAD2/8547R
Purity	Protein A/G affinity
UniProt	Q05329
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 minutes at RT Western blot: 2-4ug/ml
Limitations	This recombinant GAD2 antibody is available for research use only.



GAD2 Antibody Brain WB. Western blot analysis of human brain tissue lysate using GAD2 Antibody detects a strong band at approximately 65-67 kDa, consistent with the expected molecular weight of Glutamate decarboxylase 2 / GAD65. This Glutamate decarboxylase 2 antibody highlights abundant expression of inhibitory neurotransmitter-associated signaling machinery within neural tissue and supports characterization of GABAergic neuronal differentiation pathways.



SDS-PAGE analysis of purified, BSA-free recombinant GAD2 antibody (clone GAD2/8547) as confirmation of integrity and purity.



Immunohistochemistry of GAD2 Antibody Recombinant Rabbit MAb GAD2/8547R 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 / GAD65 expression in pancreatic neuroendocrine cells. Surrounding exocrine acinar tissue shows minimal staining. 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.

Description

Glutamate decarboxylase 2 is a pyridoxal phosphate-dependent enzyme encoded by the GAD2 gene and widely known as GAD65. The GAD2 Antibody Recombinant Rabbit MAb GAD2/8547R is developed to detect this key gamma-aminobutyric acid 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 primarily expressed in GABAergic neurons, where it localizes to the cytoplasm and associates with synaptic vesicle membranes. In contrast to the related GAD1 gene product GAD67, which supports basal GABA synthesis throughout the neuron, 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 cerebral cortex, hippocampus, cerebellum, and other regions enriched for inhibitory interneurons. Non-neuronal tissues generally show minimal staining, reflecting the restricted neuronal distribution of GAD65.

Beyond the central nervous system, GAD2 expression is also detected in pancreatic islet beta cells, where it participates in local GABA signaling and is recognized as a well-characterized autoantigen in type 1 diabetes. In neuropathology research, altered GAD2 expression has been examined in epilepsy, neurodevelopmental disorders, and neurodegenerative diseases associated with disrupted excitatory-inhibitory balance. Tissue-based detection of GAD2 supports spatial mapping of inhibitory neuronal populations and analysis of neuroendocrine cell subsets.

As a central enzyme in GABA biosynthesis, GAD2 plays a critical role in maintaining synaptic inhibition and neural network stability. Clone GAD2/8547R is a recombinant rabbit monoclonal antibody developed for specific detection of GAD65 in formalin-fixed, paraffin-embedded specimens and other protein expression studies focused on inhibitory neuron identification and neuroendocrine tissue analysis.

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 rabbit mAb GAD2/8547R.

Storage

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

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