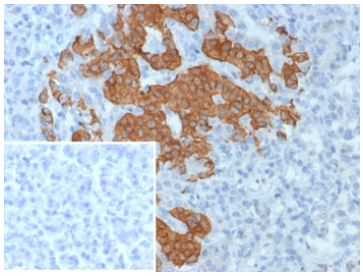
GAD2 Antibody Rabbit Monoclonal GAD2/8394R / GAD65 [clone GAD2/8394R] (V4077)

Catalog No.	Formulation	Size
V4077-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4077-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4077SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

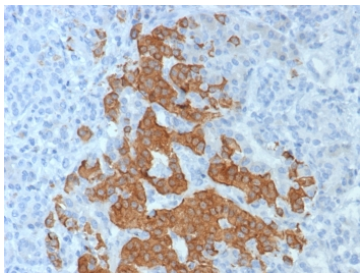
Recombinant RABBIT MONOCLONAL

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	GAD2/8394R
Purity	Protein A/G affinity
UniProt	Q05329
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 minutes at RT
Limitations	This GAD2 antibody is available for research use only.



GAD2 Antibody Human Pancreas Tissue IHC. Immunohistochemistry of GAD2 Antibody Rabbit Monoclonal GAD2/8394R 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. 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.



GAD2 Antibody Human Pancreas Tissue Immunohistochemistry. IHC staining of FFPE human pancreas tissue with rabbit monoclonal GAD2 antibody (clone GAD2/8394R). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.

Description

Glutamate decarboxylase 2 is a pyridoxal phosphate-dependent enzyme encoded by the GAD2 gene and commonly referred to as GAD65. The GAD2 Antibody Rabbit Monoclonal GAD2/8394R 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 predominantly expressed in GABAergic neurons, where it localizes to the cytoplasm and associates with synaptic vesicle membranes. In contrast to the related isoform GAD67 encoded by GAD1, which supports basal GABA production throughout neuronal compartments, GAD2 is more closely linked to activity-dependent neurotransmitter synthesis and regulated synaptic release. Immunohistochemical detection typically demonstrates cytoplasmic staining within neuronal cell bodies and proximal processes in cortex, hippocampus, cerebellum, and other regions enriched for inhibitory interneurons. Most non-neuronal tissues exhibit minimal staining, reflecting the restricted neuronal distribution of GAD65.

Beyond the central nervous system, GAD2 expression is also present in pancreatic islet beta cells, where it contributes to local GABA signaling and is recognized as a major autoantigen in type 1 diabetes. Detection of GAD2 in pancreatic tissue highlights neuroendocrine cell populations and supports studies examining endocrine-immune interactions. Altered GAD2 expression has been investigated in epilepsy, neurodevelopmental disorders, and neurodegenerative conditions characterized by disruption of excitatory-inhibitory balance.

As a central enzyme in GABA biosynthesis, GAD2 plays an essential role in maintaining inhibitory tone and neural network stability. Clone GAD2/8394R is a 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 characterization.

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 rabbit monoclonal GAD2/8394R.

Storage

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