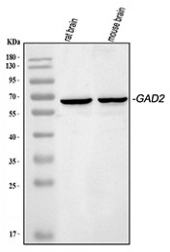
GAD65 Antibody for WB (R32760)

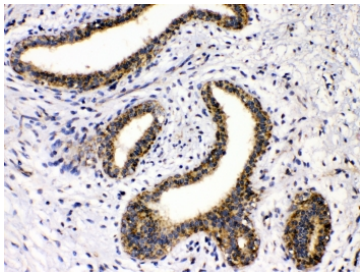
Catalog No.	Formulation	Size
R32760	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

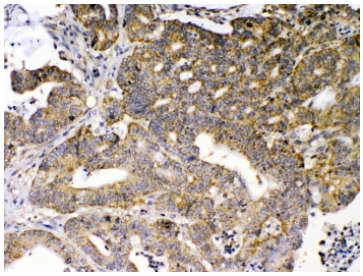
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA, 0.025% sodium azide
UniProt	Q05329
Localization	Cytoplasmic, membranous
Applications	Western Blot : 0.5-1ug/ml IHC (FFPE) : 1-2ug/ml
Limitations	This GAD65 antibody is available for research use only.



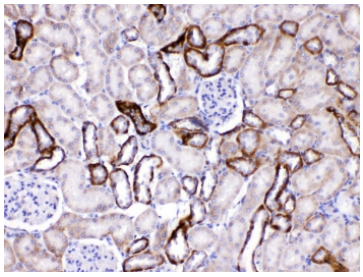
GAD65 Antibody for WB Mouse Rat Brain. Western blot analysis of GAD65 Antibody for WB in rat and mouse brain lysates. Lane 1: rat brain lysate, Lane 2: mouse brain lysate. A distinct band is detected at approximately 65 kDa in both lanes, consistent with the predicted molecular weight of Glutamate decarboxylase 2 (GAD65).



GAD65 Antibody Breast Cancer IHC. Immunohistochemistry testing of FFPE human breast cancer tissue with GAD65 antibody at 1ug/ml. Required HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.



GAD65 Antibody Intestine Cancer IHC. Immunohistochemistry testing of FFPE human intestinal cancer tissue with GAD65 antibody at 1ug/ml. Required HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.



GAD65 Antibody Rat Kidney IHC. Immunohistochemistry testing of FFPE rat kidney tissue with GAD65 antibody at 1ug/ml. Required HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to testing.

Description

Glutamate decarboxylase 2 is a pyridoxal phosphate-dependent enzyme encoded by the GAD2 gene and commonly referred to as GAD65. The GAD65 Antibody for WB is developed for detection of this key gamma-aminobutyric acid synthesizing enzyme in immunoblot-based protein expression studies. 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 central nervous system.

GAD65 is predominantly expressed in GABAergic neurons and is localized to the cytoplasmic face of synaptic vesicle membranes. In western blot applications, GAD65 is typically detected as a band near its predicted molecular weight of approximately 65 kDa. Signal intensity is commonly strongest in brain-derived lysates, particularly cortex, hippocampus, and cerebellum, reflecting the enrichment of inhibitory interneurons in these tissues. Non-neuronal tissues generally demonstrate minimal or absent signal, which supports interpretation of specificity in comparative immunoblot analyses.

Because GAD65 associates with membrane compartments, efficient extraction may depend on detergent composition and lysis conditions. In some preparations, minor band heterogeneity can be observed due to post-translational modifications or partial proteolysis, but the predominant immunoreactive species corresponds to the expected size of GAD2. Western blot detection is frequently used to compare neuronal versus non-neuronal samples, validate expression in engineered cell systems, or assess changes in inhibitory neuron-associated protein levels under experimental conditions.

In addition to its central nervous system enrichment, GAD2 is expressed in pancreatic islet beta cells, where it participates in local GABA signaling and functions as a major autoantigen in type 1 diabetes research. Immunoblot-based detection of GAD65 supports studies examining excitatory-inhibitory balance, synaptic protein regulation, and neuroendocrine cell characterization. Use of a GAD65 antibody for WB provides a reliable approach for confirming presence and relative abundance of this inhibitory neurotransmitter-synthesizing enzyme in brain and islet-derived samples.

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 GAD65 antibody for WB should be determined by the researcher.

Immunogen

Amino acids 131-164 (KVIDFHYPNELLQEYNWELADQPQNLEEILMHCQ) from the human protein were used as the immunogen for the GAD65 antibody.

Storage

After reconstitution, the GAD65 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.