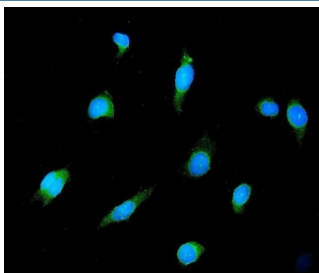


GAD2 Antibody Mouse Monoclonal 7G2 / GAD65 [clone 7G2] (RQ5856)

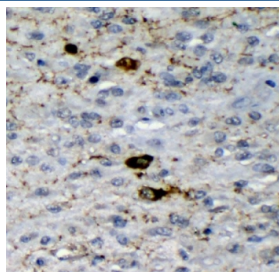
Catalog No.	Formulation	Size
RQ5856	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

[Bulk quote request](#)

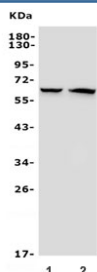
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2a
Clone Name	7G2
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q05329
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry : 1-2ug/ml Immunofluorescence : 2-4ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This GAD2 antibody is available for research use only.



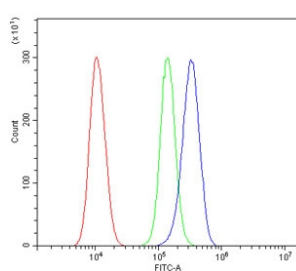
Immunofluorescence of GAD2 Antibody Mouse Monoclonal 7G2 in human HeLa cells. Formalin-fixed, paraffin-embedded HeLa cells demonstrate cytoplasmic fluorescence consistent with Glutamate decarboxylase 2 / GAD65 expression (green). Nuclei are counterstained with DAPI (blue). Heat-induced epitope retrieval was performed by steaming sections in pH 6 citrate buffer for 20 min prior to antibody incubation.



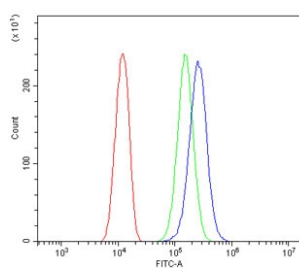
IHC staining of FFPE human glioma with mouse monoclonal GAD2 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot testing of 1) rat brain and 2) mouse brain lysate with GAD2 antibody mouse monoclonal 7G2. Predicted molecular weight ~65 kDa.



Flow cytometry testing of human 293T cells with GAD2 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= GAD2 antibody.



Flow cytometry testing of human U-2 OS cells with GAD2 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= GAD2 antibody.

Description

Glutamate decarboxylase 2 is a pyridoxal phosphate-dependent enzyme encoded by the GAD2 gene and widely known as GAD65. The GAD2 Antibody Mouse Monoclonal 7G2 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. Unlike the related GAD67 isoform 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. In tissue-based studies, 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.

In addition to its central nervous system localization, GAD2 expression is also present in pancreatic islet beta cells, where it contributes to local GABA signaling and functions as a well-characterized autoantigen in type 1 diabetes. Tissue-based

detection of GAD2 supports identification of neuroendocrine cell subsets and mapping of inhibitory neuronal populations in research examining excitatory-inhibitory balance. Altered GAD2 expression has been studied in epilepsy, neurodevelopmental disorders, and neurodegenerative conditions associated with disrupted inhibitory signaling.

As a central enzyme in GABA biosynthesis, GAD2 plays an essential role in maintaining inhibitory tone and neural circuit stability. Clone 7G2 is a mouse 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.

Application Notes

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

Immunogen

Amino acids KVIDFHYPNELLQEYNWELADQPQNLEEILMHCQ from the human protein were used as the immunogen for the GAD2 antibody mouse monoclonal 7G2.

Storage

After reconstitution, the GAD2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.