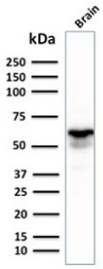
GAD67 Antibody / GABA Synthesis Enzyme Antibody [clone GAD1/2391] (V3854)

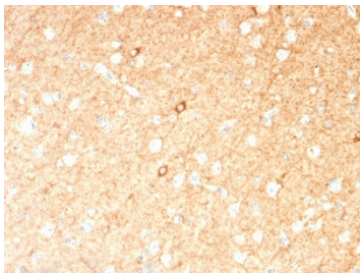
Catalog No.	Formulation	Size
V3854-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3854-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3854SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

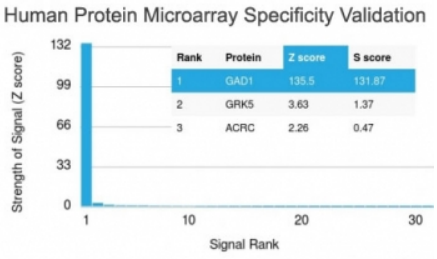
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	GAD1/2391
Purity	Protein G affinity chromatography
UniProt	Q99259
Localization	Cytoplasmic
Applications	ELISA (order BSA/sodium Azide-free Format For Coating) : Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This GAD67 Antibody / GABA Synthesis Enzyme Antibody is available for research use only.



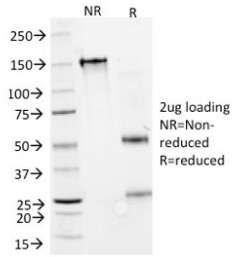
GAD67 Antibody Brain WB. Western blot analysis of human brain lysate using GAD67 Antibody detects a strong band at approximately 67 kDa, consistent with the expected molecular weight of Glutamate decarboxylase 67 / GAD1. This GABA synthesis enzyme antibody highlights abundant expression of inhibitory neurotransmitter-associated signaling machinery within neural tissue and supports characterization of GABAergic neuronal differentiation pathways.



GAD67 Antibody Brain IHC. Immunohistochemistry analysis of FFPE human brain tissue stained with GAD67 Antibody demonstrates diffuse cytoplasmic HRP-DAB brown staining throughout neural parenchyma with enhanced labeling of scattered neuronal cell bodies, consistent with Glutamate decarboxylase 67 / GAD1 expression in GABAergic neuronal populations. This GABA synthesis enzyme antibody highlights inhibitory neurotransmitter-associated signaling pathways and neuronal differentiation within central nervous system tissue. Required HIER: boil tissue sections in 10mM citrate buffer, pH 6, for 10-20 min.



GAD67 Antibody Protein Microarray Validation. Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using GAD67 Antibody demonstrates highly selective recognition of GAD67 / GAD1 with exceptionally strong separation from non-target proteins across the tested human proteome. These results demonstrate the foremost specificity of the GAD1/2391 mAb and support highly specific detection of inhibitory neurotransmitter-associated signaling pathways and GABAergic neuronal differentiation markers. The Z-score represents the strength of antibody binding signal relative to the overall array mean, while the S-score reflects target specificity relative to the next highest ranked protein signal. The markedly elevated S-score separation observed for GAD1 supports preferential target recognition with minimal off-target binding across the tested human proteome.



SDS-PAGE analysis of purified, BSA-free GAD67 antibody (clone GAD1/2391) as confirmation of integrity and purity.

Description

Glutamate decarboxylase 67 (GAD67), encoded by the GAD1 gene, is a pyridoxal phosphate-dependent enzyme responsible for conversion of glutamate to gamma-aminobutyric acid (GABA), the principal inhibitory neurotransmitter in the central nervous system. GAD67 is widely expressed in inhibitory interneurons and plays a central role in GABAergic neurotransmission, neuronal excitability regulation, synaptic inhibition, and neural circuit organization. GAD67 Antibody is useful for investigations involving inhibitory neurotransmitter biology, neuronal differentiation, GABAergic signaling pathways, and neurodevelopment-associated cellular regulation.

GAD67 antibody, also referred to as GAD1 antibody and Glutamate decarboxylase 67 antibody in the literature, recognizes a predominantly cytoplasmic neuronal enzyme encoded on chromosome 2q31. GAD67 localizes mainly within neuronal soma and presynaptic compartments where it supports constitutive GABA synthesis required for inhibitory neurotransmission. Expression of GAD67 is strongly associated with inhibitory interneurons throughout cortical, hippocampal, cerebellar, and subcortical neural networks. Altered GAD67 expression has been associated with epilepsy, schizophrenia, neurodevelopmental disorders, neurodegenerative disease, and tumor-associated neural differentiation pathways.

GAD67 Antibody / GABA Synthesis Enzyme Antibody (clone GAD1/2391) is uniquely positioned for studies involving inhibitory neuronal signaling and GABAergic pathway characterization. This mouse monoclonal antibody demonstrates strong western blot and immunohistochemical detection together with highly selective HuProt(TM) microarray specificity validation against more than 19,000 full-length human proteins. The combined validation profile supports use of clone GAD1/2391 in investigations involving inhibitory interneuron biology, neural differentiation pathways, and neurotransmitter-associated signaling regulation.

Analysis of HuProt(TM) microarrays containing more than 19,000 individually purified full-length human proteins demonstrated highly selective recognition of GAD67/GAD1 by clone GAD1/2391. In HuProt(TM) analysis, the Z-score represents the strength of antibody binding signal relative to the overall array mean, while the S-score reflects target specificity relative to the next highest ranked protein signal. Elevated S-score separation supports preferential target recognition and reduced off-target binding across the tested human proteome. The strong specificity profile of clone GAD1/2391 supports highly selective detection of inhibitory neurotransmitter-associated pathways in complex neural tissues.

GAD67 contributes directly to inhibitory synaptic regulation through sustained GABA production required for neuronal network balance and suppression of excitotoxic signaling. Because GAD67 expression is highly associated with inhibitory neuronal populations, it serves as an important marker for studies involving interneuron organization, cortical inhibitory circuitry, and GABAergic differentiation pathways. GAD67 additionally represents a widely utilized marker in investigations involving neural lineage-associated tumors and neurodevelopment-associated cellular regulation.

This GAD67 Antibody supports research involving GABA synthesis, inhibitory neurotransmitter signaling, interneuron differentiation, neural circuit organization, neurodevelopmental biology, synaptic inhibition pathways, and GABAergic neuronal regulation. Clone GAD1/2391 may be incorporated into western blot, immunohistochemistry, and tissue-based investigations examining inhibitory neural signaling pathways in normal and diseased tissues.

Explore additional neural signaling and neurotransmitter pathway markers on our Signal Transduction Antibodies page, including antibodies targeting inhibitory neuronal differentiation, synaptic signaling, and neurodevelopment-associated cellular regulation.

Application Notes

Optimal dilution of the GAD67 Antibody / GABA Synthesis Enzyme Antibody should be determined by the researcher.

Immunogen

A portion of amino acids 72-135 from the human protein were used as the immunogen for this GAD67 antibody.

Storage

Store the GAD67 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

GAD67 antibody, GAD1 antibody, Glutamate decarboxylase 67 antibody, Glutamate decarboxylase 1 antibody, GABA synthesis enzyme antibody