Data Sheet (Cat.No.TMAB-00732)

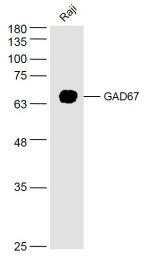
Anti-GAD67 Polyclonal Antibody

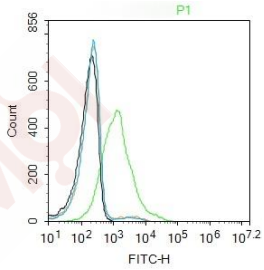
Product Details

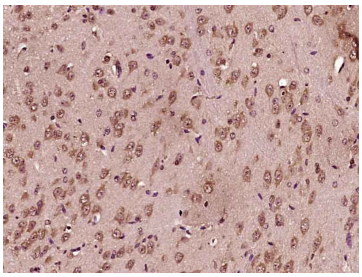
Ig Type:	IgG
Reactivity:	Human,Mouse (predicted:Rat)
Molecular Weight:	Theoretical: 67 kDa. Actual: 67 kDa.
Purification:	Protein A purified

Applications

Verified Activity:	1. Sample: Raji (Human) Cell Lysate at 40 µg Primary: Anti-GAD67 (TMAB-00732) at 1/300 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution Predicted band size: 67 kDa Observed band size: 67 kDa 2. Blank control: K562. Primary Antibody (green line): Rabbit Anti-GAD67 antibody (TMAB-00732) Dilution: 1 µg/10^6 cells; Isotype Control Antibody (orange line): Rabbit IgG. Secondary Antibody: Goat anti-rabbit IgG-FITC Dilution: 0.5 µg/test. Protocol The cells were incubated in 5% BSA to block non-specific protein-protein interactions for 30 min at room temperature. Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. 3. Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 min; Blocking buffer (normal goat serum) at 37°C for 30 min; Antibody incubation with (GAD67) Polyclonal Antibody, Unconjugated (TMAB-00732) at 1:400 overnight at 4°C, followed by operating according to SP Kit (Rabbit) instructionsand DAB staining.







Application:	FCM,IF,IHC-Fr,IHC-P,WB
Recommended	WB: 1:500-2000; IHC-P: 1:100-500; IHC-Fr: 1:100-500; IF: 1:100-500; FCM: 1ug/Test

Properties

Stability & Storage:	Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	KLH conjugated synthetic peptide: human GAD67
Antigen Species:	Human
Gene ID:	2571
Uniprot ID:	Q99259
Synonyms:	CPSQ1;GAD;SCP;glutamate decarboxylase 1 (brain, 67kDa)
Biology Area:	ChIP kits,Autoimmune,Amino acid metabolism,GABA,Amino Acids

Research Background

Glutamic Acid Decarboxylase (GAD) catalyzes the conversion of L glutamate to g-aminobutyric acid (GABA), the principal inhibitory neurotransmitter in the brain, and a putative paracrine signal molecule in pancreatic islets. GAD has a restricted tissue distribution. It is highly expressed in the cytoplasm of GABAergic neurons in the central nervous system (CNS) and pancreatic beta cells. It is also present in other non-neuronal tissues such as testis, oviduct and ovary. GAD is also transiently expressed in non-GABAergic cells of the embryonic and adult nervous system, suggesting its involvement in development and plasticity.
GAD exists as two isoforms, GAD65 and GAD67 (molecular masses of 65 and 67 kD, respectively) that are encoded by two different genes. GAD65 is an ampiphilic, membraneanchored protein, (585 amino acid residues) and is encoded on human chromosome 10. GAD67 is a cytoplasmic protein (594 amino acid residues) and is encoded on chromosome 2. There is 64% amino acid identity between the two isoforms, with the highest diversity located at the N terminus, which in GAD65 is required for targeting the enzyme to GABA-containing secretory vesicles. The two isoforms appear to have distinct intraneuronal distribution in the brain. GAD65 has been identified as an autoantigen in insulindependent diabetes mellitus (IDDM) and stiff-man syndrome (SMS), IDDM is an autoimmune disease that results from T cell mediated destruction of pancreatic insulin-secreting beta cells. Islet-reactive T cells and antibodies primarily to GAD65 (also named beta cell autoantigen) can be detected in peripheral blood of 80% of recent-onset IDD patients and in pre-diabetic high-risk subjects before onset of clinical symptoms. This suggests that GAD may be an important marker in the early stages of the disease. Also, autoantibodies to GAD65 and GAD67 are detected in animal models of IDDM, including the non-obese diabetes (NOD) mouse. In the NOD mouse, T cell reactivity is initially restricted to the C terminal regions of GAD65, but later spreads to other parts of GAD65. Stiff-man syndrome (SMS), a rare disorder of the CNS, is characterized by progressive rigidity of the body musculature with painful spasms, due to impairment of the GABAergic neurotransmission.

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