Data Sheet (Cat.No.TMPY-01590)

TargetMol

GAD2/GAD65 Protein, Mouse, Recombinant (His & GST)

General Information

Synonyms:	glutamate decarboxylase 2 (pancreatic islets and brain, 65kDa);GAD(65);Gad-2; 6330404F12Rik;GAD65
Protein Construction:	A DNA sequence encoding full length of mouse GAD2 (NP_032104.2) (Met 1-Leu 585) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met
Species:	Mouse
Expression Host:	Baculovirus Insect Cells
Accession:	P48320
Molecular Weight:	93 kDa (predicted); 80 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 92 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, 0.5 mM PMSF, 0.5 mM GSH, 3 mM DTT, 10% gly, pH 8.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Glutamate decarboxylase 2, also known as glutamate decarboxylase 65 kDa isoform, 65 kDa glutamic acid decarboxylase, GAD2 and GAD65, is a member of thegroup II decarboxylase family. GAD2 is identified as a major

autoantigen in insulin-dependent diabetes. GAD2 is responsible for catalyzing the production of gamma-aminobutyric acid from L-glutamic acid. A pathogenic role for this enzyme has been identified in the human pancreas since it has been identified as an autoantibody and an autoreactive T cell target in insulin-dependent diabetes. GAD2 may also play a role in the stiff man syndrome. GAD2 is implicated in the formation of the gamma-aminobutyric acid (GABA), a neurotransmitter involved in the regulation of food intake. GABA is synthesized in brain by two isoforms of glutamic acid decarboxylase (Gad), GAD1 and GAD2. GAD1 provides most of the GABA in brain, but GAD2 can be rapidly activated in times of high GABA demand. Mice lacking GAD2 are viable whereas deletion of GAD1 is lethal. Deletion of GAD2 increased ethanol palatability and intake and slightly reduced the severity of ethanol-induced withdrawal.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Karlsen A.E., et al.,(1991), Cloning and primary structure of a human islet isoform of glutamic acid decarboxylase from chromosome 10. Proc. Natl. Acad. Sci. U.S.A. 88:8337-8341.
Bu D.-F., et al., (1992), Two human glutamate decarboxylases, 65-kDa GAD and 67-kDa GAD, are each encoded by a single gene.Proc. Natl. Acad. Sci. U.S.A. 89:2115-2119.
Bu D.-F., et al.,(1994), The exon-intron organization of the genes (GAD1 and GAD2) encoding two human glutamate decarboxylases (GAD67 and GAD65) suggests that they derive from a common ancestral GAD.Genomics 21:222-228.

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