

GAD67 Protein, Human, Recombinant (His)

General Information

Synonyms:	SCP;CPSQ1;glutamate decarboxylase 1 (brain, 67kDa);GAD
Protein Construction:	A DNA sequence encoding the human GAD1 (Q99259-1) (Met 1-Leu 594) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q99259-1
Molecular Weight:	68.3 kDa (predicted); 64 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:	> 75 % 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 20 mM Tris, 500 mM NaCl, 10% gly, pH 8.5. 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. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Glutamate decarboxylase 1, also known as 67 kDa glutamic acid decarboxylase, Glutamate decarboxylase 67 kDa isoform and GAD1, is a member of the group II decarboxylase family. GAD1 is expressed in benign and malignant prostatic tissue and may serve as a highly prostate-specific tissue biomarker. GAD1 isoform 3 is expressed in pancreatic islets, testis, adrenal cortex, and perhaps other endocrine tissues, but not in brain. Tissue-specific markers are useful for identification of tumour type in advanced cancers of unknown origin. In plants, as

in most eukaryotes, glutamate decarboxylase catalyses the synthesis of GABA. Root-specific calcium/calmodulin-regulated GAD1 plays a major role in GABA synthesis in plants under normal growth conditions and in response to stress. Defects in GAD1 are the cause of cerebral palsy spastic quadriplegic type 1 (CPSQ1) which is a non-progressive disorder of movement and/or posture resulting from defects in the developing central nervous system. Affected individuals manifest symmetrical, non-progressive spasticity and no adverse perinatal history or obvious underlying alternative diagnosis.

Reference

Bouché, N. et al., 2004, *Plant Mol Biol.* 55 (3):315-25.

Huang, H.S. et al., 2007, *PLoS One.* 2 (8):e809.

Fenalti G., et al., 2007, *Nat. Struct. Mol. Biol.* 14:280-286.

Jaraj, S.J. et al., 2011, *Scand J Urol Nephrol.* 45 (1):39-45.

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