

# Recombinant Human GAD1

**Cat. No.** GAD1-26511TH    **Lot. No.** (See product label)

## SPECIFICATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>Product Overview</b>   | Recombinant full length Human GAD1 protein with a N terminal proprietary tag:<br>predicted molecular weight 91.08 kDa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Species</b>            | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Source</b>             | Wheat Germ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>ProteinLength</b>      | 594 amino acids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Description</b>        | <p>This gene encodes one of several forms of glutamic acid decarboxylase, identified as a major autoantigen in insulin-dependent diabetes. The enzyme encoded 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 autoantigen and an autoreactive T cell target in insulin-dependent diabetes. This gene may also play a role in the stiff man syndrome. Deficiency in this enzyme has been shown to lead to pyridoxine dependency with seizures. Alternative splicing of this gene results in two products, the predominant 67-kD form and a less-frequent 25-kD form.</p> |
| <b>Molecular Weight</b>   | 91.080kDa inclusive of tags                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Tissue specificity</b> | Isoform 3 is expressed in pancreatic islets, testis, adrenal cortex, and perhaps other endocrine tissues, but not in brain.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Form</b>               | Liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| <b>Purity</b>                   | Proprietary Purification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Storage buffer</b>           | pH: 8.00Constituents:0.3% Glutathione, 0.79% Tris HCl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Storage</b>                  | Shipped on dry ice. Upon delivery aliquot and store at -80oC. Avoid freeze / thaw cycles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sequences of amino acids</b> | <p>MASSTPSSSATSSNAGADPNTTNLRPTTYDTWCGVAHGCT RKLGLKICGFLQRTN</p> <p>SLEEKSRLLVSAFKERQSSKNLLSCE NSDRDARFRRTETDFSNFLFARDLLPAKNGEE</p> <p>QTVQFLLEV VDILLNYVRKTFDRSTKVLDFHHPHQLLEGMEGFNLELSD HPESLEQI</p> <p>LVDCRDTLKYGVRTGHPRFFNQLSTGLDIIGL AGEWLTSTANTNMFTYEIAPVFVLM</p> <p>EQITLKKMREIVGWS SKDGDGIFSPGGAISNMYSIMAARYKYFPEVKTKGMAAVP K</p> <p>LVLFTSEQSHYSIKKAGAALGFGTDNVILIKCNERGKII PADFEAKILEAKQKGYVPFY</p> <p>VNATAGTTVYGAFDPIQEIA DICEKYNLWLHVDAAWGGGLLMSRKHRLKLNIGIERA</p> <p>NSVT WNPHKMMGVLLQCSAILVKEKGILQGCNQMCAGYLFQPK QYDVSYDTGD</p> <p>KAIQCGRHVDIFKFWLMWKAKGTVGFENQI NKCLELAEYLYAKIKNREEFEMVFNG</p> <p>EPEHTNVCFWYIPQ SLRGVPDSPQRREKLHKVAPKIKALMMESGTTMVGYPQPG</p> <p>DKANFFRMVISNPAATQSDIDFLIEEIERLGQDL</p> |
| <b>Sequence Similarities</b>    | Belongs to the group II decarboxylase family.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>GENE INFORMATION</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Gene Name</b>                | <a href="#">GAD1</a> glutamate decarboxylase 1 (brain, 67kDa) [ <a href="#">Homo sapiens</a> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Official Symbol</b>          | <a href="#">GAD1</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Synonyms</b>                 | GAD1; glutamate decarboxylase 1 (brain, 67kDa); GAD, glutamate decarboxylase 1 (brain, 67kD); glutamate decarboxylase 1;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| <b>Gene ID</b>             | 2571                                                                                                                                                                                                                                                                                                                 |
| <b>mRNA Refseq</b>         | NM_000817                                                                                                                                                                                                                                                                                                            |
| <b>Protein Refseq</b>      | NP_000808                                                                                                                                                                                                                                                                                                            |
| <b>MIM</b>                 | 605363                                                                                                                                                                                                                                                                                                               |
| <b>Uniprot ID</b>          | Q99259                                                                                                                                                                                                                                                                                                               |
| <b>Chromosome Location</b> | 2q31                                                                                                                                                                                                                                                                                                                 |
| <b>Pathway</b>             | Alanine and aspartate metabolism, organism-specific biosystem; Alanine, aspartate and glutamate metabolism, organism-specific biosystem; Alanine, aspartate and glutamate metabolism, conserved biosystem; Biogenic Amine Synthesis, organism-specific biosystem; Butanoate metabolism, organism-specific biosystem; |
| <b>Function</b>            | carboxy-lyase activity; glutamate decarboxylase activity; lyase activity; protein binding; pyridoxal phosphate binding;                                                                                                                                                                                              |