Test Definition: GD65C

Glutamic Acid Decarboxylase (GAD65)
Antibody Assay, Spinal Fluid

Overview

Useful For
Possible use in evaluating patients with autoimmune encephalitis, stiff-person syndrome, autoimmune ataxia, autoimmune epilepsy, and other acquired central nervous system disorders affecting gabaminergic neurotransmission

Method Name
Radioimmunoassay (RIA)

NY State Available
Yes

Specimen

Specimen Type
CSF

Ordering Guidance
This test should not be requested in patients who have recently received radioisotopes, therapeutically or diagnostically, because of potential assay interference. The specific waiting period before specimen collection will depend on the isotope administered, the dose given, and the clearance rate in the individual patient. Specimens will be screened for radioactivity prior to analysis. Radioactive specimens received in the laboratory will be held one week and assayed if sufficiently decayed or canceled if radioactivity remains.

Specimen Required
Container/Tube: Sterile vial
Specimen Volume: 1.5 mL
Collection Instructions: Submit specimen from collection vial 2.

Forms
If not ordering electronically, complete, print, and send a Neurology Specialty Testing Client Test Request (T732) with the specimen.

Specimen Minimum Volume
1 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject

Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	28 days	
	Ambient	72 hours	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information
Glutamic acid decarboxylase (GAD) is a neuronal enzyme involved in the synthesis of the neurotransmitter gamma-aminobutyric acid (GABA). Serum antibodies directed against the 65-kDa isoform of GAD (GAD65) are detected in heightened frequency in a variety of autoimmune neurologic disorders, including autoimmune encephalitis, stiff-person (Moersch-Woltman) syndrome, autoimmune ataxia, and autoimmune epilepsy.

Reference Values
< or =0.02 nmol/L
Reference values apply to all ages.

Interpretation
Intrathecal synthesis of glutamic acid decarboxylase 65 (GAD65) antibody has been demonstrated in patients with stiff-man syndrome, but cerebrospinal fluid (CSF) values are log orders lower than serum. We have not determined the frequency of GAD65 antibodies in CSF of patients with various diagnoses.

Cautions
Clinical utility of this test remains to be determined.

Clinical Reference
1. McKeon A, Tracy JA. GAD65 neurological autoimmunity. Muscle Nerve. 2017;56(1):15-27. doi:10.1002/mus.25565
2. Pittock SJ, Yoshikawa H, Ahlskog JE, et al. Glutamic acid decarboxylase autoimmunity with brainstem, extrapyramidal and spinal cord dysfunction. Mayo Clin Proc. 2006;81(9):1207-1214
3. McKeon A, Robinson MT, McEvoy KM, et al. Stiff-man syndrome and variants: clinical course, treatments, and outcomes. Arch Neurol. 2012;69(2):230-238
4. Steriade C, Britton J, Dale RC, et al. Acute symptomatic seizures secondary to autoimmune encephalitis and autoimmune-associated epilepsy: Conceptual definitions. Epilepsia. 2020;61(7):1341-1351
5. Bingley PJ. Clinical applications of diabetes antibody testing. J Clin Endocrinol Metab. 2010;95(1):25-33

Performance

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Method Description

(125)I-labeled recombinant human glutamic acid decarboxylase 65 (GAD65) is incubated with the patient sample. Anti-human IgG is then added to form an immunoprecipitate. After washing the immunoprecipitate, the amount of (125)I-labeled antigen in the immunoprecipitate is measured using a gamma-counter. The amount of gamma emission in the precipitate is proportional to the amount of GAD65-IgG in the sample. Results are reported as units of precipitated antigen (nMol) per L of patient sample.(Walikonis JE, Lennon VA. Radioimmunoassay for glutamic acid decarboxylase [GAD65] autoantibodies as a diagnostic aid for stiff-man syndrome and a correlate of susceptibility to type 1 diabetes mellitus. Mayo Clin Proc. 1998;73[12]:1161-1166; Horta ES, Lennon VA, Lachance DH, et al. Neural autoantibody clusters aid diagnosis of cancer. Clin Cancer Res. 2014;20[14]:3862-9386)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

3 to 6 days

Specimen Retention Time

2 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86341

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
GD65C	GAD65 Ab Assay, CSF	94359-7

MAYO CLINIC LABORATORIES

Test Definition: GD65C

Glutamic Acid Decarboxylase (GAD65)
Antibody Assay, Spinal Fluid

Result ID	Test Result Name	Result LOINC® Value
21702	GAD65 Ab Assay, CSF	94359-7