MAYO CLINIC LABORATORIES

Test Definition: IGD

Immunoglobulin D (IgD), Serum

Overview

Useful For

Providing information on the humoral immune status

Identifying an IgD monoclonal gammopathy

Method Name

Turbidimetry

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

To distinguish between polyclonal and monoclonal IgD, order IFXED / Immunofixation Heavy Chain Type Delta and Epsilon, Serum.

Specimen Required

Patient Preparation:

Fasting: 8 hours, preferred but not required

Supplies: Sarstedt 5 mL Aliquot Tube (T914)

Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 1 mL serum

Collection Instructions: Centrifuge and aliquot serum into plastic vial.

Specimen Minimum Volume

Serum: 0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	Reject
Gross icterus	OK
Heat-activated	Reject

specimen	

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	28 days	
	Ambient	21 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Antibodies or immunoglobulins (Ig) are formed by plasma cells as a humoral immune response to antigens. The first antibodies formed after antigen stimulation are of the IgM class, followed later by IgG and IgA antibodies. IgD normally occurs in serum in trace amounts.

Increased serum immunoglobulin concentrations occur due to polyclonal or oligoclonal immunoglobulin proliferation in hepatic diseases (chronic hepatitis, liver cirrhosis), acute and chronic infections, autoimmune diseases, as well as in the cord blood of neonates with intrauterine and perinatal infections. Increases in serum immunoglobulin concentration are seen in monoclonal gammopathies such as multiple myeloma, Waldenstrom macroglobulinemia, primary amyloidosis, and monoclonal gammopathy of undetermined significance.

Decreased serum immunoglobulin concentrations occur in primary immunodeficiency conditions as well as in secondary immune insufficiencies including advanced monoclonal gammopathies, lymphatic leukemia, and advanced malignant tumors.

Changes in IgD concentration are used as a marker of changes in the size of the clone of monoclonal IgD plasma cells.

Reference Values

< or =10 mg/dL

Interpretation

The physiologic significance of serum immunoglobulin D (IgD) concentration is unclear and in many normal persons serum IgD is undetectable.

Increased concentrations may be due to polyclonal (reactive) or monoclonal plasma cell proliferative processes.

A monoclonal IgD protein is present in 1% of patients with myeloma. Monoclonal IgD proteins are often in low concentrations and do not have a quantifiable monoclonal protein on serum protein electrophoresis. However, the presence of an IgD monoclonal protein is almost always indicative of a malignant plasma cell disorder such as multiple myeloma or primary amyloidosis.

Cautions

An elevated immunoglobulin D (IgD) cannot be taken as evidence for a monoclonal IgD protein.

Undetected antigen excess is a rare event but cannot be excluded. Results should always be interpreted in conjunction with other laboratory tests and clinical evidence. IFXED / Immunofixation Heavy Chain Type Delta and Epsilon, Serum should be performed to distinguish between a polyclonal and monoclonal IgD.

Moderate to marked lipemia may interfere with the ability to perform testing.

Clinical Reference

1. Blade J, Lust JA, Kyle RA. Immunoglobulin D multiple myeloma: Presenting features, response to therapy, and survival in a series of 53 cases. J Clin Oncol. 1994;12(11):2398-2404. doi:10.1200/JCO.1994.12.11.2398
2. Kyle RA, Katzmann JA. Immunochemical characterization of immunoglobulins. In: Rose NR, de Macario EC, Folds JD, et al: eds. Manual of Clinical Laboratory Immunology. 5th ed. ASM Press; 1997:156-176
3. Rifai N, Horvath AR, Wittwer C. eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:1888

Performance

Method Description

The determination of the soluble antigen concentration by turbidimetric methods involves the reaction with specific anti-serum to form insoluble complexes. When light is passed through the suspension formed a portion of the light is transmitted and focused onto a photodiode by an optical lens system. The amount of transmitted light is indirectly proportional to the specific protein concentration in the test sample. Concentrations are automatically calculated by reference to a calibration curve stored within the instrument.(Package insert: Optilite IgD Kit. The Binding Site Group, Ltd; 03/2023)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

1 to 3 days

Specimen Retention Time

14 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

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Immunoglobulin D (IgD), Serum

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 has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

82784

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
IGD	Immunoglobulin D (IgD), S	2460-4

Result ID	Test Result Name	Result LOINC® Value
IGD	Immunoglobulin D (IgD), S	2460-4