

Overview

Useful For

Aiding in the diagnosis of blastomycosis

Reflex Tests

| Test Id | Reporting Name | Available Separately | Always Performed |
|---------|---------------------------------------|----------------------|------------------|
| SBL | Blastomyces Ab, Immunodiffusion, S | Yes, (SBL) | No |

Testing Algorithm

If result is equivocal or positive, *Blastomyces* antibody by immunodiffusion will be performed at an additional charge.

For more information see [Meningitis/Encephalitis Panel Algorithm](#).

Special Instructions

- [Meningitis/Encephalitis Panel Algorithm](#)

Method Name

Enzyme Immunoassay (EIA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)

Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:

- [Kidney Transplant Test Request](#)
- [Infectious Disease Serology Test Request](#) (T916)

Specimen Minimum Volume

0.8 mL

Reject Due To

| | |
|---------------------------|--------|
| Gross hemolysis | Reject |
| Gross lipemia | Reject |
| Heat inactivated specimen | Reject |

Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---------------|--------------------------|---------|-------------------|
| Serum | Refrigerated (preferred) | 14 days | |
| | Frozen | 14 days | |

Clinical & Interpretive**Clinical Information**

Blastomyces dermatitidis, a dimorphic fungus, is endemic throughout the Midwestern, South-central, and Southeastern US, particularly in regions around the Ohio and Mississippi river valleys, the Great Lakes, and the Saint Lawrence River. It is also found in regions of Canada. *Blastomyces* is an environmental fungus, preferring moist soil and decomposing organic matter, which produces fungal spores that are released and inhaled by animals or humans. At body temperature, the spores mature into yeast, which can stay in the lungs or disseminate through the bloodstream to other parts of the body. Recently, through phylogenetic analysis, *B dermatitidis* has been separated into 2 distinct species; *B dermatitidis* and *Blastomyces gilchristii*, both able to cause blastomycosis in infected patients. Interestingly, *B dermatitidis* infections are associated more frequently with dissemination, particularly in older adults, individuals who smoke, and those who are immunocompromised, while *B gilchristii* has primarily been associated with pulmonary and constitutional symptoms.

Approximately 50% of patients infected with *Blastomyces* will develop symptoms, which are frequently nonspecific and include fever, cough, night sweats, myalgia or arthralgia, weight loss, chest pain and fatigue. Typically, symptoms appear anywhere from 3 weeks to 3 months following infection.

Diagnosis of blastomycosis relies on a combination of assays, including culture and molecular testing on appropriate specimens and serologic evaluation for both antibodies to and antigen released from *Blastomyces*. Although culture remains the gold standard method and is highly specific, the organism can take several days to weeks to grow, and

sensitivity is diminished in cases of acute or localized disease. Similarly, molecular testing offers high specificity and a rapid turnaround time, however, sensitivity is imperfect. Detection of an antibody response to *Blastomyces* offers high specificity, however, results may be falsely negative in acutely infected patients and in patients who are immunosuppressed.

Reference Values

Negative

Reference values apply to all ages.

Interpretation

A positive result indicates that IgG and/or IgM antibodies to *Blastomyces* were detected. The presence of antibodies is presumptive evidence that the patient was or is currently infected with (or was exposed to) *Blastomyces*.

A negative result indicates that antibodies to *Blastomyces* were not detected. The absence of antibodies is presumptive evidence that the patient was not infected with *Blastomyces*. However, the specimen may have been obtained before antibodies were detectable or the patient may be immunosuppressed. If infection is suspected, another specimen should be collected 7 to 14 days later and submitted for testing.

Specimens testing positive or equivocal will be submitted for further testing by another conventional serologic test (eg, SBL / *Blastomyces* Antibody by Immunodiffusion, Serum).

Cautions

A negative result does not rule out blastomycosis.

Cross-reactivity may occur with other fungal infections, such as *Aspergillus*, *Coccidioides*, or *Histoplasma*.

Clinical Reference

1. Kaufman L, Kovacs JA, Reiss E. Clinical immunomycology. In: Rose NR, De Macario EC, Folds JD, et al, eds. Manual of Clinical and Laboratory Immunology. ASM Press; 1997:588-589
2. O'Dowd TR, Mc Hugh JW, Theel ES, et al. Diagnostic methods and risk factors for severe disease and mortality in Blastomycosis: A retrospective cohort study. J Fungi (Basel). 2021;7(11):888. doi:10.3390/jof7110888

Performance

Method Description

The Omega *Blastomyces* Total Antibody EIA (enzyme immunoassay) uses microwells coated with purified *Blastomyces* yeast-phase antigen. Patient specimen is diluted in buffer and incubated in the coated microwell. If present, IgG and IgM antibodies bind to the antigen. The microwells are washed to remove unbound serum components. A secondary antibody, rabbit anti-human IgG and IgM antibody conjugated to horseradish peroxidase, is added to the microwell and incubated. The secondary antibody will bind to the antibody-antigen complexes. The microwells are washed to remove unbound conjugate. Substrate solution containing urea peroxide and tetramethylbenzidine is added to the microwells, causing a color change. After a final incubation period, a stop solution is added to the microwells, and the color change is quantified by measuring the optical density (OD). Specimen OD readings are compared to calibrator cutoff OD

readings to determine results.(Package insert: Omega *Blastomyces* Total Antibody EIA. Immuno-Mycologics, Inc; Revision 08/02/2021)

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**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

86612

86612 (if applicable)

LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|-----------|------------------------|---------------------|
| BLAST | Blastomyces Ab, EIA, S | 7816-2 |
| Result ID | Test Result Name | Result LOINC® Value |
| BLAST | Blastomyces Ab, EIA, S | 7816-2 |