Test Definition: BLAST

Blastomyces Ab, EIA, S

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, SBL / *Blastomyces* Antibody by Immunodiffusion, Serum will be ordered at an additional charge.

See Meningitis/Encephalitis Panel Algorithm in Special Instructions.

Special Instructions

- Meningitis/Encephalitis Panel Algorithm

Method Name

Enzyme Immunoassay (EIA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 1 mL

Forms

If not ordering electronically, complete, print, and send a Microbiology Test Request (T244) with the specimen.

Specimen Minimum Volume

0.8 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Other	Heat inactivated specimen

Specimen Stability Information

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

Clinical and Interpretive

Clinical Information

Blastomyces dermatitidis, an adimorphic fungus, is endemic throughout the midwestern, south-central, and southeastern Unites States, particularly in regions around the Ohio and Mississippi river valley, 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 disseminated through the bloodstream to other parts of the body. Recently, through phylogenetic analysis, *B. dermatitidis* has been separated into two 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 elderly patients, smokers and immunocompromised hosts, 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 non-specific, including 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 immunosuppressed patients.

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 drawn 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

Kaufman L, Kovacs JA, Reiss E: Clinical immunomycology. In Manual of Clinical and Laboratory Immunology. Edited by NR Rose, EC De Macario, JD Folds, et al. Washington DC, ASM Press, 1997, pp 588-589

Performance

Method Description

The Omega *Blastomyces* Total Antibody EIA assay uses microwells coated with purified *Blastomyces* yeast-phase antigen. Patient specimen is diluted in diluent buffer and incubated in the coated microwell. If present, IgG and/or IgM antibodies will 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, 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., 2700 Technology Place, Norman, OK; Revision 1/24/2018)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday, Sunday; 9 a.m.

Analytic Time

1 day

Maximum Laboratory Time

3 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. For assistance, contact Customer Service.

Test Classification

This test has been cleared, approved or is exempt by the U.S. 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

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