

Overview

Useful For

Aiding in the diagnosis of *Histoplasma* meningitis

Detecting antibodies in patients with blastomycosis

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
CHIST	Histoplasma Ab, CSF	Yes	Yes
CBL	Blastomyces Ab Immunodiffusion, CSF	Yes	Yes

Testing Algorithm

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

Special Instructions

- [Meningitis/Encephalitis Panel Algorithm](#)

Method Name

CHIST: Complement Fixation (CF)/Immunodiffusion (ID)

CBL: Immunodiffusion (ID)

NY State Available

Yes

Specimen

Specimen Type

CSF

Specimen Required

Container/Tube: Sterile vial

Specimen Volume: 1.5 mL

Collection Instructions: Submit specimen from collection vial 2.

Specimen Minimum Volume

1 mL

Reject Due To

Gross hemolysis	OK
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Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Histoplasma

Histoplasma capsulatum is a soil saprophyte that grows well in soil enriched with bird droppings. The usual disease is self-limited, asymptomatic, and affects the lungs. Chronic cavitary pulmonary disease, disseminated disease, and meningitis may occur and can be fatal, especially in young children and immunosuppressed patients.

Blastomyces

The dimorphic fungus, *Blastomyces dermatitidis*, causes blastomycosis. When the organism is inhaled, it causes pulmonary disease: cough, pain, and hemoptysis, along with fever and night sweats. It commonly spreads to the skin, bone, or internal genitalia where suppuration and granulomas are typical. Occasionally, primary cutaneous lesions after trauma are encountered; however, this type of infection is uncommon. Central nervous system disease is uncommon.

Reference Values

HISTOPLASMA ANTIBODY

Mycelial by complement fixation: Negative

Yeast by complement fixation: Negative

Antibody by immunodiffusion: Negative

BLASTOMYCES ANTIBODY IMMUNODIFFUSION

Negative

Interpretation

Histoplasma:

- Any positive serologic result in spinal fluid is significant.
- Simultaneous appearance of the H and M precipitin bands indicates active histoplasmosis.
- The M band alone indicates active or chronic disease or a recent skin test for histoplasmosis.

Blastomyces:

A positive result is suggestive of infection, but the results cannot distinguish between active disease and prior exposure. Furthermore, detection of antibodies in cerebrospinal fluid (CSF) may reflect intrathecal antibody production or may occur due to passive transfer or introduction of antibodies from the blood during lumbar puncture.

Routine fungal culture of clinical specimens (eg, CSF) is recommended in cases of suspected blastomycosis involving the central nervous system.

Cautions

Histoplasma:

- Antibody levels may be low in spinal fluid in cases of *Histoplasma* meningitis.
- Histoplasmin skin tests yield specific antibodies in titratable quantity, and may cause difficulties in interpretation.
- Cross-reacting antibodies with coccidioidomycosis or blastomycosis may cause false-positive results for histoplasmosis.

Blastomyces:

- A negative result does not rule out blastomycosis.
- Patients with histoplasmosis may have low-titered cross reactions.

Clinical Reference

1. Kaufman L, Kovacs JA, Reiss E: Clinical immunomycology. In: Rose NL, Conway-de Macario E, Folds JD, [Lane HC](#), [Nakamura RM](#), eds. Manual of Clinical Laboratory Immunology. ASM Press; 1997:588-589
2. Gauthier GM, Klein BS: Blastomycosis. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:3177-3189
3. Deepe GS: *Histoplasma capsulatum* Histoplasmosis. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:3162-3176

Performance

Method Description

Histoplasma

Both immunodiffusion (ID) and complement fixation (CF) tests are used to detect antibodies to *Histoplasma capsulatum*. For ID, the antigen is a culture filtrate, histoplasmin. H and M precipitin bands are identified. For the CF test, the antigens are histoplasmin and a yeast form of *H capsulatum*; the latter is more sensitive. (Roberts GD: Fungi. In: Washington II JA, ed. Laboratory Procedures in Clinical Microbiology. 2nd ed. Springer-Verlag, 1985; In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020)

Blastomyces

The ID test is a qualitative test employed for the detection of precipitating antibodies present in the specimen. Soluble antigens of the fungus are placed in wells of an agarose gel-filled Petri dish, and the patient's specimen and a control (positive) are placed in adjoining wells. If present, specific precipitate antibody will form precipitin lines between the wells. Their comparison to the control establishes the results. When performing the ID test, only precipitin bands of identity with the reference bands are significant. (Kaufman L, McLaughlin DW, Clark MJ, Blumer S: Specific immunodiffusion test for blastomycosis. Appl Microbiol. 1973;26:244-247, Williams JE, Murphy R, Standard PG, Phan JP: Serologic response in blastomycosis: diagnostic value of double immunodiffusion assay. Am Res Resp Dis. 1981;123:209-212; Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

3 to 6 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

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

86698 x3
86612

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
HICBL	Histoplasma/Blastomyces Panel, CSF	91683-3

Result ID	Test Result Name	Result LOINC® Value
15134	Blastomyces Immunodiffusion (CSF)	51741-7
15118	Histoplasma Mycelial (CSF)	27220-3
15119	Histoplasma Yeast (CSF)	27209-6
15120	Histoplasma Immunodiffusion (CSF)	91682-5