Test Definition: SCOC

Coccidioides Ab, S

Overview

Useful For

Diagnosing coccidioidomycosis in serum specimens

Method Name

ComplementFixation(CF)UsingCoccidioidin:IgG
Immunodiffusion:IgGandIgM

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 1.8 mL

Forms

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

Specimen Minimum Volume

1.2 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject

Specimen Stability Information

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

Clinical and Interpretive

Clinical Information

Coccidioidomycosis (Valley fever, San Joaquin Valley fever) is a fungal infection found in the southwestern United States, Central America, and South America. It is acquired by inhalation of arthroconidia of *Coccidioides immitis*. Usually, it is a mild, self-limiting pulmonary infection, often leaving a coin-like lesion. Less commonly, chronic pneumonia may persist or progress to fibronodular, cavitary disease. A rash often develops within a day or 2, followed by erythema nodosum or multiforme and accompanying arthralgias. About 2 weeks after exposure, symptomatic patients develop fever, cough, malaise, and anorexia; chest pain is often severe. Coccidioidomycosis may disseminate beyond the lungs to involve multiple organs including the meninges.

IgG antibody is detected by the complement-fixation tests. Precipitating antibodies (IgM and IgG) are detected by immunodiffusion. They are rarely found in cerebrospinal fluid; however, their presence is associated with meningitis. Chronic coccidioidal pulmonary cavities are often accompanied by IgG and IgM precipitating antibodies.

Serologic testing for coccidioidomycosis should be considered when patients exhibit symptoms of pulmonary or meningeal infection and have lived or traveled in areas where *Coccidioides immitis* is endemic. Any history of exposure to the organism or travel cannot be overemphasized when a diagnosis of coccidioidomycosis is being considered.

Reference Values

COMPLEMENT FIXATION

Negative

If positive, results are titered.

IMMUNODIFFUSION

Negative

Results are reported as positive, negative, or equivocal.

Interpretation

Complement Fixation (CF):

Titers of 1:2 or higher may suggest active disease; however, titers may persist for months after infection has resolved. Increasing CF titers in serial specimens are diagnostic of active disease.

Immunodiffusion (ID):

The presence of IgM antibody may be detectable within 2 weeks after the onset of symptoms; however, antibody may be detected longer than 6 months after infection.

The presence of IgG antibody parallels the CF antibody and may suggest an active or a recent asymptomatic infection with *Coccidioides immitis;* however, antibody may persist after the infection has resolved.

An equivocal result (a band of nonidentity) cannot be interpreted as significant for a specific diagnosis. However, this may be an indication that a patient should be followed serologically.

Over 90% of primary symptomatic cases will be detected by combined ID and CF testing.

Cautions

Antibodies (both IgM and IgG) may be present after the infection has resolved.

Clinical Reference

Larone D, Mitchell T, Walsh T: Histoplasma, blastomyces, coccidioides, and other dimorphic fungi causing systemic mycoses. In Manual of Clinical Microbiology. Seventh edition. Edited by PR Murray, EJ Baron, MA Pfaller, et al: Washington, DC, ASM Press, 1999, pp 1260-1261

Performance

Method Description

Complement Fixation (CF):

Antibody to coccidioidin in the patient's serum is quantitated by CF. The CF test is a 2-stage test based on the ability of antigen-antibody complexes to bind complement (C'). In the first stage, antigen and antibody combine and fix C'. The second stage is an indicator system in which sheep erythrocytes, sensitized by rabbit anti-sheep red cell antibody (hemolysin), are used to demonstrate the presence of unfixed C'. If the patient's serum contains C'-fixing antibody that reacts with the specific antigen (a positive reaction), C' will be fixed and excess C' will not be available to react with and lyse the sensitized sheep erythrocytes. If no antigen-antibody reaction occurs (a negative reaction), C' will be available to lyse the sheep erythrocytes. The CF titer is determined by the greatest dilution of serum (antibody) in which the sheep erythrocytes are not lysed.(Kaufman L, Kovacs JA, Reiss E: Immunomycology. In Manual of Clinical Laboratory Immunology. Fifth edition. Edited by NR Rose, ED de Macario, JD Folds, et al. Washington, DC, ASM Press, 1997 pp 591-592; Pappagianis D, Zimmer BL: Serology of coccidioidomycosis. Clin Microbiol Rev 1990;3:247-268)

Immunodiffusion (ID):

ID is a qualitative test employed for the detection of precipitating antibodies present in the serum. Soluble antigens of the fungus are placed in wells of an agarose gel filled Petri dish and the patient's serum and a control (positive) serum are placed in adjoining wells. If present, specific precipitate antibody will form precipitin lines between the wells. Their comparison to the control serum establishes the results. When performing the ID test, only precipitin bands of identity with the reference bands are significant.(Kaufman L, Kovacs JA, Reiss E: Immunomycology. In Manual of Clinical Laboratory Immunology. Fifth edition. Edited by NR Rose,EC de Macario, JD Folds, et al. Washington, DC, ASM Press, 1997, pp 591-593; Pappagianis D, Zimmer BL: Serology of coccidioidomycosis. Clin Microbiol Rev 1990;3:247-268)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday; 6 a.m.

Tuesday through Friday; 9:30 a.m.

Analytic Time

4 days

Maximum Laboratory Time

7 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 uses a standard method. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information

86635 x 3

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
SCOC	Coccidioides Ab, S	87435-4

Result ID	Test Result Name	Result LOINC Value
8295	Cocci Complement F	5096-3
21649	Cocci Immunodiffusion-IgG	22209-1
21648	Cocci Immunodiffusion-IgM	22210-9