Test Definition: COXIS

Coccidioides Antibody Screen with Reflex, Serum

Overview

Useful For

Detecting antibodies to *Coccidioides immitis/posadasii*

This assay **should not be used** for monitoring response to therapy.

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
RSCOC	Coccidioides Ab, CompF/ImmDiff,S	Yes, (order SCOC)	No

Testing Algorithm

If result is reactive, then testing for *Coccidioides* antibodies by complement fixation and immunodiffusion will be performed at an additional charge.

For more information see Meningitis/Encephalitis Panel Algorithm.

Special Instructions

- Meningitis/Encephalitis Panel Algorithm

Highlights

Alongside other routine laboratory testing, including fungal culture, this test may be used as an aid for the diagnosis of infection with *Coccidioides* species.

Method Name

COXIS: Enzyme Immunoassay (EIA)
RSCOC: Complement Fixation (CF)/Immunodiffusion (ID)

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: 2 mL Serum
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

Serum: 0.6 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 & Interpretive

Clinical Information

Coccidioidomycosis (valley fever, San Joaquin Valley fever, desert rheumatism) is caused by the dimorphic fungus *Coccidioides immitis/posadasii*, which is found in the Southwestern US, regions in the Northwestern US, and in Central and South America. It is acquired by inhalation of airborne *Coccidioides* arthroconidia. The majority of infections are subclinical. Among symptomatic patients, the majority will present acute flu-like pulmonary symptoms approximately 7 to 28 days post exposure. Symptoms may include chest pain, cough, fever, malaise, and lymphadenopathy.(1) A rash often develops within a couple of days, followed by erythema nodosum or multiforme with accompanying arthralgia. A pulmonary lesion or nodule may develop months following infection and may be a source of infection if the patient becomes immunosuppressed in the future. Coccidioidomycosis may disseminate beyond the lungs to involve multiple organs including the meninges. Individuals at greater risk for dissemination include African Americans, patients of Filipino descent, pregnant women, and immunocompromised patients.(2)

Serologic testing for coccidioidomycosis should be considered when patients exhibit symptoms of pulmonary or meningeal infection and have lived or traveled in areas where *C immitis/posadasii* is endemic. Any history of exposure to

the organism or travel cannot be overemphasized when a diagnosis of coccidioidomycosis is being considered.

Reference Values

Negative

Reference value applies to all ages

Interpretation

Enzyme immunoassay results greater than or equal to 0.75 will be reported as Reactive: Confirmatory testing by complement fixation and immunodiffusion has been ordered.

A reactive result is presumptive evidence that the patient was previously or is currently infected with *Coccidioides immitis/posadasii*.

Enzyme immunoassay results less than 0.75 will be reported as Negative: Repeat testing on a new sample in 2 to 3 weeks if clinically indicated.

A negative result indicates the absence of antibodies to *C immitis/posadasii*. It is presumptive evidence that the patient has not been previously exposed to, and is not infected with, *Coccidioides*. However, a negative result does not preclude the diagnosis of coccidioidomycosis as the specimen may have been collected before antibody levels were detectable, due to early acute infection or immunosuppression.

This test is designed for the qualitative detection of both IgM- and IgG-class antibodies against antigens from *Coccidioides*. The report will not indicate which class of antibody is present.

Cautions

All results from this assay must be correlated with clinical history, epidemiologic data, and other laboratory evidence.

Reactive results from this assay are not indicative of acute infection. Antibodies may be present from previous infection with *Coccidioides immitis/posadasii*.

Negative results may occur in patients with acute coccidioidomycosis in whom antibody levels have not yet become detectable.

Rarely, cross reactivity of the *Coccidioides* antibody screen may occur in patients infected with other dimorphic fungal agents, including *Histoplasma* and *Blastomyces*. Therefore, all positive results must be confirmed by complement fixation and immunodiffusion.

Clinical Reference

1. Thompson GR 3rd. Pulmonary coccidioidomycosis. Semin Respir Crit Care Med. 2011;32(6):754-763
2. Ruddy BE, Mayer AP, Ko MG, et al. Coccidioidomycosis in African Americans. Mayo Clin Proc. 2011;86(1):63-69
3. Crum NF. Coccidioidomycosis: a contemporary review. Infect Dis Ther. 2022;11(2):713-742. doi:10.1007/s40121-022-00606-y

Performance

Method Description

Microwells are coated with recombinant *Coccidioides* complement fixing (CF) and tube precipitin (TP) antigens. Diluted serum specimens and controls are incubated in the wells, and if present, antibodies to TP and CF will bind to the adhered antigen. Nonspecific reactants are removed by washing; peroxidase-conjugated, secondary antihuman antibody is then applied to the wells and incubated. The conjugated secondary antibody will bind to the patient antibodies. Substrate solution is added to the wells, activating the peroxidase conjugate to develop a color reaction. Stop solution is added and the color change is quantified by measuring the optical density.(Package insert: clarus Cocci AB EIA. Immy; Revision 03/06/2020)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

1 to 7 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 modified from the manufacturer's instructions. 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 US Food and Drug Administration.

CPT Code Information

86635
86635 x3 (if appropriate)

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LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
COXIS	Coccidioides Ab Screen w/Reflex, S	40712-2

Result ID	Test Result Name	Result LOINC® Value
COXQ2	Coccidioides Ab Screen, S	40712-2