# 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

No

## 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: OMEGA Cocci AB EIA. Immy; Revision 2/16/2018)

### PDF Report
No

### Day(s) Performed
Monday, Wednesday, Friday

### Report Available
1 to 7 days

### Specimen Retention Time
14 days

### Performing Laboratory Location
Mayo Clinic Jacksonville Clinical Lab

## 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)

# Test Definition: COXIS

Coccidioides Antibody Screen with Reflex, Serum

## 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 |