

Overview

Useful For

Diagnosis of chronic *Trypanosoma cruzi* infection (Chagas disease)

Method Name

Only orderable as part of a profile. For more information see CRUZI / *Trypanosoma cruzi* (Chagas) Antibody Panel, Serum.

Technical Interpretation

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Only orderable as part of a profile. For more information see CRUZI / *Trypanosoma cruzi* (Chagas) Antibody Panel, Serum.

Specimen Minimum Volume

See Specimen Required

Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---------------|-------------|---------|-------------------|
| Serum | Frozen | 14 days | |

Clinical & Interpretive

Clinical Information

Chagas disease (American trypanosomiasis) is caused by the protozoan hemoflagellate *Trypanosoma cruzi* and can lead to acute and chronic clinical manifestations of disease. *T. cruzi* is endemic in many areas of South and Central America. The parasite is usually transmitted by the bite of reduviid (or "kissing") bugs of the genus *Triatoma* but may also be transmitted by blood transfusion, organ transplantation, food ingestion, and vertically from mother to fetus. The acute febrile stage of disease is frequently undiagnosed and often resolves spontaneously. Diagnosis of acute *T. cruzi* infection is typically confirmed by microscopic identification of trypomastigotes in fresh preparations of anticoagulated blood or

buffy coat or by molecular detection. Parasitemia decreases and is undetectable within approximately 90 days of infection.

Chronic *T cruzi* infections are often asymptomatic but may progress to produce disabling and life-threatening cardiac (cardiomegaly, conduction defects) and gastrointestinal (megaesophagus and megacolon) disease. These damaged tissues contain the intracellular amastigote of *T cruzi*. The parasite is not seen in the blood during the chronic phase. Diagnosis of chronic *T cruzi* infection relies on serologic detection of antibodies to this organism. However, no single serologic assay is sensitive and specific enough to be relied upon alone. Therefore, per current expert guidelines and the Centers of Disease Control and Prevention, serologic confirmation of chronic *T cruzi* infection requires positivity on 2 tests utilizing two different methodologies and/or two different *T cruzi* antigen preparations. When results are discordant, testing by a third assay is recommended to resolve the initial results or, alternatively, repeat testing on a new sample may be required.

Reference Values

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An interpretive report will be provided.

Interpretation

| CHAGS result | CHAGL result | Interpretive comment |
|---------------|--------------|---|
| Positive | Positive | Antibodies to <i>Trypanosoma cruzi</i> (Chagas disease) detected by two separate methods, suggesting current or past infection. Results should be interpreted alongside clinical presentation and exposure history. |
| Positive | Negative | Antibodies to <i>Trypanosoma cruzi</i> (Chagas disease) detected by one of two assays. Discordant results can be resolved through submission of a new sample for testing or through additional testing at a public health laboratory. |
| Positive | Invalid | Submission of a new sample is recommended to resolve discordant results. |
| Indeterminate | Positive | Antibodies to <i>Trypanosoma cruzi</i> (Chagas disease) detected by one of two assays. Discordant results can be resolved through submission of a new sample for testing or through additional testing at a public health laboratory. |
| Indeterminate | Negative | Submission of a new sample is recommended to resolve discordant results. |
| Indeterminate | Invalid | Submission of a new sample is recommended to resolve discordant results. |
| Negative | Positive | Antibodies to <i>Trypanosoma cruzi</i> (Chagas disease) detected by one of two assays. Discordant results can be resolved through submission of a new sample for testing or through additional testing at a public health laboratory. |
| Negative | Negative | No antibodies to <i>Trypanosoma cruzi</i> (Chagas disease) detected. False negative results may occur in patients tested within 4 weeks of infection. |

| | | |
|----------|---------|--|
| Negative | Invalid | Submission of a new sample is recommended to resolve discordant results. |
|----------|---------|--|

Cautions

False-positive results may occur in patients infected with *Leishmania* or other *Trypanosoma* species, including *Trypanosoma rangeli*. Additionally, false-positive results with the *Trypanosoma cruzi* lateral flow assay have been detected in patients with hepatitis C, toxoplasmosis, or syphilis.

Diagnosis of chronic Chagas disease requires both clinical evaluation (including exposure history) and laboratory testing. Chagas disease should not be diagnosed based on a single serologic result alone.

A single negative result does not exclude the diagnosis of Chagas disease as antibodies to the pathogen may not yet be detectable. Sensitivity of the assay may be decreased in significantly immunosuppressed patients.

Clinical Reference

1. Bern C, Montgomery SP, Herwaldt BL, et al. Evaluation and treatment of Chagas disease in the United States: A Systematic Review. JAMA. 2007;298(18):2171-2181

2. Bern C, Messenger LA, Whitman JD, Maguire JH: Chagas disease in the United States: A public health approach. Clin Microbiol Rev. 2019;33(1):e00023-19. doi:10.1128/CMR.00023-19

3. Forsyth CJ, Manne-Goehler J, Bern C, et al. Recommendations for screening and diagnosis of Chagas disease in the United States. J Infect Dis. 2022;225(9):1601-1610. doi:10.1093/infdis/jiab513

Performance

Method Description

Automated interpretation of antibody test results for *Trypanosoma cruzi*.

PDF Report

No

Day(s) Performed

Monday

Report Available

Same day/1 to 8 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

Not Applicable

LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|---------|-------------------------|--------------------|
| CHAGI | T. cruzi Interpretation | No LOINC Needed |

| Result ID | Test Result Name | Result LOINC® Value |
|-----------|-------------------------|---------------------|
| CHAGI | T. cruzi Interpretation | 59464-8 |