

Overview

Useful For

An adjunct in the diagnosis of ehrlichiosis

Seroepidemiological surveys of the prevalence of the infection in certain populations

Testing Algorithm

For more information see [Acute Tick-Borne Disease Testing Algorithm](#)

Special Instructions

- [Acute Tickborne Disease Testing Algorithm](#)

Method Name

Immunofluorescence Assay (IFA)

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: 0.5 mL

Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send [Infectious Disease Serology Test Request](#) (T916) with the specimen.

Specimen Minimum Volume

0.4 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject
Heat-inactivated specimen	Reject

Specimen Stability Information

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

Clinical & Interpretive
Clinical Information

Ehrlichia chaffeensis is an intracellular rickettsia-like bacterium that preferentially infects monocytes and is sequestered in parasitophorous vacuoles referred to as morulae. Infections with *E chaffeensis* are also referred to as human moncytotropic ehrlichiosis (HME). *E chaffeensis* is transmitted by *Amblyomma* species ticks, which are found throughout the Southeastern and South-central United States.

Many cases of HME are subclinical or mild, however, the infection can be severe and life-threatening, particularly in immunosuppressed individuals. Reported mortality rates range from 2% to 3%. Fever, fatigue, malaise, headache, and other "flu-like" symptoms occur most commonly. Leukopenia, thrombocytopenia, and elevated hepatic transaminases are frequent laboratory findings.

Reference Values

<1:64

Reference values apply to all ages.

Interpretation

A positive immunofluorescence assay result (titer > or =1:64) suggests current or previous infection. In general, the higher the titer, the more likely the patient has an active infection. Four-fold rises in titer also indicate active infection.

Previous episodes of ehrlichiosis may produce a positive serology result although antibody levels decline significantly during the year following infection.

Cautions

Serology results for IgG may be negative during the acute phase of infection (<7 days post-symptom onset), during which time detection using targeted nucleic acid amplification testing (eg, polymerase chain reaction) is recommended.

Detectable IgG-class antibodies typically appear within 7 to 10 days post-symptom onset.

IgG-class antibodies may remain detectable for months to years following prior infection. Therefore, a single time point-positive titer needs to be interpreted alongside other findings to differentiate recent versus past infection.

Other members of the *Ehrlichia* genus (eg, *Ehrlichia ewingii*) may not be detected by this assay.

Clinical Reference

Centers for Disease Control and Prevention (CDC): Tickborne Diseases of the United States: A Reference Manual for Healthcare Providers. 6th ed. US Department of Health and Human Services; 2022. Accessed September 5, 2024. Available at www.cdc.gov/ticks/tickbornediseases/TickborneDiseases-P.pdf

Performance

Method Description

The patient's serum is diluted and is placed in microscopic slide wells that have been coated with *Ehrlichia chaffeensis*-infected cells. After incubation, the slides are washed and a fluorescein-isothiocyanate conjugate is added to each well. The slides are then read using a fluorescence microscope and significant fluorescent staining of intracellular organisms constitutes a positive reaction.(Dumler JS, Asanovich KM, Bakken JS, Richter P, Kimsey R, Madigan JE. Serologic cross-reactions among *Ehrlichia equi*, *Ehrlichia phagocytophila*, and human granulocytic *Ehrlichia*. *J Clin Microbiol*. 1995;33[5]:1098-1103; Pancholi P, Kolbert CP, Mitchell PD, et al. *Ixodes dammini* as a potential vector of human granulocytic ehrlichiosis. *J Infect Dis*. 1995;172[4]:1007-1012; Dawson JE, Fishbein DB, Eng TR, Redus MA, Green NR. Diagnosis of human ehrlichiosis with the indirect fluorescent antibody test: kinetics and specificity. *J Infect Dis*. 1990;162[1]:91-95; package insert: *Ehrlichia chaffeensis* IFA IgG. DiaSorin Molecular; 08/2016)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

Same day/1 to 3 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 was developed using an analyte specific reagent. 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

86666

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
EHRC	Ehrlichia Chaffeensis (HME) Ab, IgG	47405-6

Result ID	Test Result Name	Result LOINC® Value
81478	Ehrlichia Chaffeensis (HME) Ab, IgG	47405-6