Lab Dept:	**Serology**
Test Name:	**Q FEVER ANITBODY SCREEN WITH TITER REFLEX, SERUM**

General Information

Lab Order Codes:	QFEVR
Synonyms:	*Coxiella burnetii* serology; QFP
CPT Codes:	86638 – Antibody; *Coxiella burnetii* 86638 x4 – Antibody; *Coxiella burnetii* reflex (if applicable)
Test Includes:	If the Q fever serology result is reactive, then Q fever antibody confirmation by indirect immunofluorescence will be performed at an additional charge.

Logistics

Test indications:

Screening for exposure to *Coxiella burnetii*, the causative agent of Q fever. This test should not be used as a screening procedure for the general population.

Q fever, a rickettsial infection caused by *Coxiella burnetii*, has been recognized as a widely distributed zoonosis with the potential for causing both sporadic and epidemic disease. *C burnetii* is spread by the inhalation of infected material, largely from dried sheep and goat reproductive material; the organism is also shed in feces, milk, nasal discharge, placental tissue, and amniotic fluid from ruminant animals. During the course of the infection, the outer membrane of the organism undergoes changes in its lipopolysaccharide structure, called phase variation. Differences in the host antibody response between phase I and phase II antigens can help classify infections as either acute or chronic:

- In acute Q fever, the phase II antibody is generally higher than the phase I titer, often by 4-fold, even in early specimens. Although a rise in phase I as well as phase II titers may occur in later specimens, the phase II titer remains higher.
- In chronic Q fever, the reverse situation is generally seen. Serum specimens collected late in the illness from chronic Q fever patients demonstrate significantly higher phase I titers, sometimes much greater than 4-fold.
- In the case of chronic granulomatous hepatitis, IgG and IgM titers to phase I and phase II antigens are quite elevated, with phase II titers generally equal to or greater than phase I titers.
- Titers seen in Q fever endocarditis are similar in magnitude, although the phase I titers are quite often higher than the phase II titers.

Lab Testing Sections:	Serology - Sendouts
Referred to:	Mayo Clinic Laboratories (MML Test: QFEVR)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 - 5 days, test set up Sunday - Friday
Special Instructions:	Infectious Endocarditis Diagnostic Testing for Identification of Microbiological Etiology

Specimen

Specimen Type:	Blood
Container:	SST (Gold, marble or red) tube
Draw Volume:	2.0 mL (Minimum: 1.5 mL) blood
Processed Volume:	0.6 mL (Minimum: 0.5 mL) serum
Collection:	Routine blood collection
Special Processing:	Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly. Serum stable refrigerated (preferred) or frozen for 7 days.
Patient Preparation:	None
Sample Rejection:	Specimens other than serum; gross hemolysis, lipemia or icterus; heat inactivated specimens; mislabeled or unlabeled specimens

Interpretive

Reference Range:	Negative Interpretation: Negative- No antibodies to Q fever (*Coxiella burnetii*) detected. Repeat testing on a new sample collected in 2 to 3 weeks if acute Q fever is suspected. Reactive- Not diagnostic. Sample reflexed to the indirect immunofluorescence assay to determine Q fever (*Coxiella burnetii*) phase I and phase II IgM and IgG titers.
Critical Values:	N/A
Limitations:	Serologic responses are time dependent. Specimens collected too early in the disease may not have detectable antibody levels. A second specimen collected 2 to 3 weeks may be necessary to detect antibody. Cross-reactivity may occur with other closely related intracellular organisms (eg, *Rickettsia* spp).
Methodology:	Enzyme-Linked Immunosorbent Assay (ELISA)
References:	Mayo Clinic Laboratories August 2023
Updates:	08/17/2023: Initial entry. Replaces previous QFEV test code (Mayo: QFP) which is now only available as a reflex test in this battery.