

# Serology

## I. Hours of Operation

7:00 AM - 3:30 PM; Monday-Friday

7:00 AM – 11:00 AM; Saturday

## II. Contact Section

449-4956

## III. Scope of Testing

Serologic testing for evidence of current or past infection by a variety of microorganisms and for autoimmune diseases is available.

## IV. Specimens

- A. Specimens for serologic diagnosis of infectious and autoimmune diseases should be collected in red top Vacutainers (clot tubes) or serum separation tubes (SST). See the alphabetical list in this manual for specific collection requirements.
- B. For the majority of infectious diseases, isolation of the etiologic agent in culture is the preferred method for diagnosis. Serology should always be the method of last resort.
- C. In general, for the serologic diagnosis of most infectious diseases, acute and convalescent serum specimens should be collected. Acute serum specimens should be collected as early in the course of illness as possible, and the convalescent specimens collected at least two weeks later (3-4 weeks for mycoplasma and fungal serologies).
- D. For some agents, both immune status tests and diagnostic tests are available. Immune status tests should be ordered whenever prior infection with an organism or immunity due to vaccination needs to be determined. Diagnostic tests should be ordered when a patient is ill (or has convalesced), and diagnosis of a recent infection is needed. Immune status tests should NOT be ordered when diagnosis of a current or recent illness is needed.
- E. For some infectious diseases, specific IgM tests can be performed. In general, as stated above in (B), isolation of the organism is the preferred method for diagnosis of the illness. IgM tests are available in-house for the diagnosis of recent hepatitis A. Others are available through our reference laboratories. Consult the Serology laboratory for the availability or usefulness of IgM test for other infectious diseases.

## V. Interpretation Of Test Results

- A. When acute and convalescent sera are processed together, any greater than or equal to four-fold rise in titer is suggestive of infection with the particular agent tested for. To interpret these results correctly, it is essential that the paired serum samples be tested

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together in the same run. It should be noted that for many infectious disease serologies performed by EIA methods, results are not reported as a titer, but as arbitrary units. Although seroconversion from “negative” to “positive” is good evidence for a recent infection, comparison of arbitrary EIA units from acute and convalescent sera to determine a significant rise in titer may be problematic.

- B. Interpretation of results from a single serum specimen is usually difficult. A negative result does not rule out infection if the specimen is collected early in the course of the illness. A positive result indicates infection at some time in the past, but is not specific for recent illness. In some instances, a very high titer of antibody to a particular agent is consistent with recent infection, but not conclusive. The presence of specific IgM antibody from a single serum specimen often indicates an acute infection with the organism in question. See the alphabetical listing for the interpretation of individual serologic tests.
- C. A series of tables for the interpretation of serologic tests for the diagnosis of viral hepatitis (Hepatitis A, B, and C) are shown below. Please consult the Serology Laboratory with questions concerning hepatitis interpretations or appropriate testing.
- D. Information concerning HIV testing is listed in the alphabetical section of the manual and this section.
- E. Consult the Serology Laboratory for tests not listed in this manual, or for information concerning tests available for diagnosis of infection diseases.

### Processing

- A. Serum specimens for serologic testing are processed between 0700-1530, Monday through Friday and 0700-1100 on Saturday. See the alphabetical listing in this manual for turnaround time.
- B. If an acute serum specimen is to be held pending collection of the convalescent serum specimen, please specify this on the order.

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### Interpretation/Guidelines for Serologic Testing for Viral Hepatitis

#### A. Interpretation of Hepatitis A Virus Serologic Results

Interpretation	HAV IgM <sup>1</sup>	HAV Total Ab <sup>2</sup>
No infection or exposure	-	-
Acute infection	+	+
Past infection or immunization	-	+

<sup>1</sup> Primary test – required or highly recommended

<sup>2</sup> Secondary test – not required; may be desirable for assessment of past exposure or immunization

#### B. Interpretation of Hepatitis B Virus Serologic Results

Interpretation	HBsAg <sup>1</sup>	HBeAg <sup>2</sup>	HBcIgM <sup>2</sup>	HBcTotal <sub>1</sub>	HBeAb <sup>2</sup>	HBsAb <sup>1</sup>
No infection or exposure	-	-	-	-	-	-
Acute infection	+	+	+	+	+/-	+/-
“Window” phase	-	-	+	+	-	-
Chronic infection	+	+	-	+	-	-
Past infection	-	-	-	+	+	+
Immunization	-	-	-	-	-	+

<sup>1</sup> Primary tests – required or highly recommended

<sup>2</sup> Secondary tests – not required; may be desirable for assessment of infectivity (HBeAg) staging (HBcIgM and/or HBeAb), and/or early assessment of seroconversion (HBeAb)

#### C. Interpretation of Hepatitis C Virus Serologic Results

Interpretation	HCV Ab <sup>1</sup>
No infection or exposure	-
Recent or Past infection <sup>2</sup>	+

<sup>1</sup> Results reported as signal/cutoff (s/c) ratio. Negative s/c ≤ 1.0; Weakly positive s/c > 1.0 but < 3.8 (may require confirmatory testing to rule out a false positive); Positive s/c ≥ 3.8

<sup>2</sup> Qualitative and/or Quantitative (Viral Load) HCV PCR may be required to determine presence of active infection.