

SEROLOGICAL TESTS REFERRED TO THE CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) THROUGH TO DIVISION OF HEALTH AND ENVIRONMENTAL LABORATORIES

INTRODUCTION

Serological tests for antibody or antigen detection of many bacterial, fungal, parasitic, rickettsial, and viral agents not performed at this laboratory are available from CDC. Specimens must be submitted through the Division of Health and Environmental Laboratories, Virology and Serology Laboratory, in the same manner as any non-syphilis serology serum or cerebral spinal fluid specimen.

SPECIMEN COLLECTION AND IDENTIFICATION

All specimens submitted to the Division of Health and Environmental Laboratories to be forwarded to CDC must include a completed [CDC form 50.34](#). The CDC forms and instruction packet are available through our Sample and Data Management Office. For further information and additional forms, please call (785) 296-1620. The turn-around time for results from CDC is approximately at four weeks. Call the BEDP at 1-877-427-7318 before sending specimens to DHEL.

Properly collected paired acute and convalescent sera are required for most serological testing. However, CDC will accept single sera for testing of parasite and fungal diseases only, as elevated antibody titers can be diagnostic for some of these agents. For certain tests, CDC requires additional patient information before tests will be performed. These include:

- A. Epstein-Barr virus antibody testing can be of diagnostic value only under certain conditions due to the lifelong persistence of the antibodies. CDC will only test specimens for EBV if:
- Suspected IM with neurotropic involvement, or cases of unusual public health importance.
 - Serum specimens from possible outbreaks of IM or EBV infection.

All requests for EBV tests must be approved by prior consultation with the appropriate CDC laboratory before specimens are sent for testing. Paired sera and a complete patient history must accompany all specimens submitted. The history should include age and sex of the patient, date of onset, clinical diagnosis, associated illness, results of previous EBV and IM serology, and other appropriate clinical data.

- B. Malaria antibody testing is performed for:
- A patient with a febrile illness who is strongly suspected of having malaria and from whom blood slides are repeatedly negative for parasites.

- Donors to a patient who developed malaria following a blood transfusion.
- Standardizing control sera from laboratories that have, or are establishing, programs to test for malaria antibodies.
- Other special situations that are approved in advance by the chief or assistant chief of the Malaria Branch at CDC.

A properly collected, stained, and examined blood smear is the best way to diagnose acute malaria; therefore, a slide should be sent to CDC through the Division of Health and Environmental Laboratories when diagnosis is in doubt at both local and State levels.

Information on the CDC form 50.34 should include whether a blood slide was collected and examined for malaria parasites, the results, including species and parasitemia density if possible, and whether a transfusion was given or not.

Unacceptable specimens include:

- Routine testing of well persons having had possible malaria contact overseas.
- Routine screening of certain populations (refugees, immigrants, etc.) for evidence of previous exposure.
- Confirmation of the species of a parasite on a blood smear or otherwise suspected.
- Completion of a clinical record on a patient known already to have malaria and who has recovered.

C. Serological tests for schistosomiasis, toxoplasmosis, and amebiasis:

1. *Schistosoma sp.*

- Serum specimens must be from a patient with an illness compatible with urinary, intestinal, and/or ectopic schistosomiasis whose urine, stool, and/or tissues are negative for schistosomes after careful microscopic examination of one or more specimens by the primary laboratory or referring state laboratory.
- Cerebrospinal fluid specimen and, if possible, serum specimens should be obtained and forwarded from patients with known or suspected central nervous system schistosomiasis; prior arrangements are advised.

2. *Toxoplasma gondii*

- Screening is no longer provided because there are commercially available kits and reagents for this purpose.
- Serum specimens will be accepted when accompanied by a request for confirmation of previous data, testing for IgM antibodies, and testing known or suspected AIDS patients.

For each of the above, previous serologic testing data must be included in the CDC form 50.34.

3. *E. histolytica*

- Serology specimens from suspected intestinal amebiasis must indicate dates and results of laboratory and clinical examinations. In particular, the number, type (i.e., direct, concentration method) of stool examinations, and results of any other direct parasitologic examination (i.e., biopsy) must be stated.
- Serology specimens from suspected extraintestinal amebiasis must be accompanied by a summary of supporting clinical, radiographic, and laboratory data.

D. Pneumococcal antibody assays are limited to patients who have developed invasive pneumococcal infections following immunization with the pneumococcal vaccine.

E. Rabies serological testing is only available to persons vaccinated with DEV or those who are suspected of being immunocompromised (see Appendix C).

Neck biopsy and saliva specimens are accepted for human rabies diagnosis.

F. Arbovirus serological testing is available if acute and convalescent sera and CSF (collect during the first week after onset) can be provided. An ELISA antibody-capture method for detection of IgM and IgG antibodies is utilized to determine recent arbovirus exposures.

Brain biopsy and CSF (2-5 ml) are acceptable specimens for human cases of viral encephalitis.

G. Lyme disease serological testing is provided under unusual circumstances and requires a completed **Lyme Disease Report form (available from the Virology Laboratory)**, acute and convalescent serum specimens, and a completed CDC form 50.34. Testing is only provided for complicated cases such as for an immunocompromised patient.

H. Cat Scratch Disease (C.D.) *Bartonella henselae* and its association with bacillary angiomatosis (BA) is currently being investigated at CDC. A serum specimen (3-5 ml) is required along with a completed 50.34 form for forwarding to CDC. The study population should be limited to immunocompromised patients and to individuals with unusual symptoms.

I. Hantavirus IgM and IgG serological testing and analysis of follow-up sera and tissue specimens are performed at CDC. For suspected hantavirus infections

and to receive the Hantavirus Disease Report forms required by CDC, please call (785) 296-1620. The BEDP must be contacted at 1-877-427-7318 before sending specimens to DHEL.

- J. Serological testing for Brucella, Tularemia, and Leptospirosis are available at CDC for difficult or unusual cases. CDC must agree to any testing prior to submission of serum specimens to DHEL. Please call the Serology Laboratory at (785) 296-1620.