

State Laboratory Institute Diagnostic Testing for Arboviruses in Humans

Serologic tests and viral culture are available for diagnostic testing for evidence of infection with West Nile virus (WNV), eastern equine encephalitis (EEE) virus and other arboviruses. PCR is also available for detection of WNV and EEE virus depending on sample type and volume. Multiple tests will be performed to identify viral infection and/or confirm exposure to virus. Testing may require that follow up (convalescent) specimens be submitted.

The following information is critical for accurate interpretation of test results:

Date of onset of disease symptoms

Date of specimen collection

Unusual immunological status of patient (e.g. immunosuppression)

Travel history (e.g., travel to flavivirus-endemic areas)

Vaccination history (e.g., vaccination against yellow fever, Japanese encephalitis or Central European encephalitis)

Disease history (e.g., previous history of viral encephalitis or dengue fever)

Brief clinical summary including suspected diagnosis (e.g., encephalitis or meningitis)

Specimen types and amounts

Acute serum ($\geq 3\text{ml}$) and CSF ($\geq 1\text{ml}$) should be collected within the first 14 days following onset of symptoms and sent immediately to the State Laboratory. IgM antibody in serum is present in the majority of infected individuals by day 8, but may be present earlier. By 3 weeks after onset (often earlier), virtually all infected individuals will have IgG antibody by enzyme immunoassay (EIA) and plaque reduction neutralization assay (PRNT). In general, convalescent specimens should be drawn approximately 10-14 days after acute phase specimens.

Serum should be submitted in a red or gold top tube. Serum/CSF samples should be submitted stored and shipped at 4°C with ice packs. CSF, brain and other tissues will be evaluated by EIA (CSF only), cell culture and, if a sufficient specimen is available, by PCR. Specimens submitted for viral isolation within 48 hrs should be stored and shipped at 4°C. If already frozen, specimens should be shipped on dry ice.

Clinical specimens should be submitted using the State Laboratory Institute's clinical specimen submission form (SS-SLI-1-13) (<http://www.mass.gov/eohhs/docs/dph/laboratory-sciences/general-submission-form.pdf>). Additional arboviral information can be found on the MDPH arbovirus website (www.mass.gov/dph/wnv).

State Laboratory Institute
Bureau of Laboratory Sciences
Division of Molecular Diagnostics and Virology
305 South Street
Boston, MA 02130
Virology Laboratories: (617) 983-6396 or 6382

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