



**City of Long Beach Department of Health and Human Services
Public Health Laboratory**

2525 Grand Avenue, Room 260
Long Beach, California 90815
Phone: (562) 570-4080 | Fax: (562) 570-4070

Miriam Lachica, MA
Laboratory Services Officer

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ZIKA VIRUS (ZIKV) DIAGNOSTIC SPECIMEN TESTING GUIDELINES

Important Resources	<p>Please visit these websites for updates and the latest information on Zika virus:</p> <p>http://www.longbeach.gov/Health/Diseases-and-Condition/Resources-for-Providers/Guidelines-for-Zika-Virus/</p> <p>https://www.cdph.ca.gov/programs/vrdl/Pages/ZikaInfo.aspx</p> <p>http://www.cdc.gov/zika/hc-providers/diagnostic.html</p>
Description	<p>Available tests include IgM ELISA, PRNT (Plaque-reduction neutralization test), and Reverse Transcriptase PCR.</p>
Pre-Approval Required	<p>In the City of Long Beach, prior approval is required from the City of Long Beach Department of Health and Human Services (LBDHHS) Public Health Laboratory in consultation with the Epidemiology/Communicable Disease Control Program. The Long Beach Public Health Laboratory can be contacted at (562) 570-4080 Monday through Friday from 8:00 am to 5:00 pm.</p> <p>For outside jurisdictions, prior approval is also required. Please contact the local health department for ZIKV laboratory testing guidance and approval.</p>
Required Form(s), Reporting, and Supplemental Information	<p>The Long Beach Public Health Laboratory Test Request Form is available at: http://longbeach.gov/health/media-library/documents/services/clinics/public-health-laboratory/laboratory-test-request-form/</p> <p>The Long Beach Public Health Laboratory will complete the California Department of Public Health (CDPH) Viral and Rickettsial Disease Laboratory (VRDL) General Purpose Specimen Submittal Form (Lab 300) and the Centers for Disease Control and Prevention (CDC) DASH Form (CDC Form 50.34) based on the information provided in the Long Beach Public Health Laboratory Test Request Form.</p> <p>Test requests must be accompanied by the following clinical information gathered by the requesting physician:</p> <ol style="list-style-type: none">1. Patient’s clinical history, including a description of the clinical illness (e.g., fever, maculopapular rash, arthralgia, conjunctivitis), onset date, and <i>flavivirus</i> vaccination history (yellow fever and/or Japanese encephalitis virus [JEV] vaccination). Please see the Interferences & Limitations section below for more information.



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**Acceptable
Specimen Type(s)
and Minimum
Volumes**

1. Complete travel history. Specify all locations and include date(s) travel started and date(s) travel ended.
2. Pregnancy status.
3. Results of previous or concurrent relevant testing (e.g., TORCHS^a, chikungunya, dengue, West Nile virus, etc.).

^aTORCHS screen includes toxoplasmosis, rubella, cytomegalovirus (CMV), herpes, HIV, and syphilis.

**Suspected Zika infections should be reported to the LBDHHS Epidemiology/
Communicable Disease Control Program at:**

Phone: (562) 570-4302 or Fax: (562) 570-4374

Asymptomatic pregnant women: A blood sample should be collected between 2 and 12 weeks after return of travel from Zika-affected countries.

NOTE: A negative serology test obtained 2-12 weeks after travel does not definitively rule out Zika virus infection.

Symptomatic cases: Optimal collection of acute blood is >3 days after illness onset. Serum collected within 7 days of illness onset may be falsely negative.

If initial IgM test is negative and Zika is strongly suspected, a second convalescent serum should be collected and submitted for testing.

IgM antibodies against Zika virus, dengue viruses, and other *flaviviruses* (e.g., yellow fever virus, West Nile virus) have cross-reactivity thus possibly generating false positive results in serological tests. Therefore, **all** positive IgM samples will be reflexed to PRNT to discriminate among these viruses. Paired acute and convalescent blood samples are requested for serology. Acute and convalescent serum must be tested concurrently for optimal results. Collect specimens 2 to 3 weeks apart.

Blood: 5 mL red top or gold top serum separator vacutainer tube (plastic).

CSF: 1-2 mL in a sterile, leak-proof, screw cap plastic tube.

Other specimens:

Additional samples, such as amniotic fluid, cord blood, fetal specimens, tissue,



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or urine^b, may be accepted upon consultation with the Long Beach Public Health Laboratory. Please call Long Beach Public Health Laboratory at 562-570-4080 when submitting these samples.

^bAll urine samples MUST be accompanied by serum sample. Urine samples should be collected within 30 days of illness onset. *Please ensure that all urine containers are tightly capped to avoid leakage during transit. Leaky specimens will not be tested.

Storage/ Transportation Conditions

Store all samples at 4-8°C. Transport/ship on cold or ice pack within 24-72 hours of collection. If shipping or transporting after 72 hours of specimen collection, specimens must be frozen or sent in dry ice. If provider has the capability to process specimens prior to sending to the Long Beach Public Health Lab, specimens must be spun, separated, and aliquoted to a sterile, leak-proof, screw-cap plastic tube.

Specimen Labeling

The specimen must be labeled with the patient's full name (Last, First, Middle Initial), DOB, MRN, date collected, and time collected.

Shipping Instructions and Specimen Handling Requirements

Do not send specimens to the Long Beach Public Health Laboratory without prior consultation and approval from the Long Beach Public Health Laboratory. Samples without prior approval and complete paperwork will not be tested. Do not send specimens directly to the CDPH or CDC.

For questions related to sample requirements, please call the Long Beach Public Health Laboratory at (562) 570-4080.

Turnaround Time

The CDC's current turnaround time may vary from 1-3 weeks. Samples requiring serology confirmation by PRNT will take additional time to report.

Interferences & Limitations

ZIKV IgM antibodies may be detected after 3 days post-onset of symptoms but may not develop during the first 7 days of illness. A convalescent specimen may be required. ZIKV IgM may persist for months and may cross react with other arboviruses leading to false positive IgM ELISA serology results. Additional confirmatory testing by PRNT is required.

Immunization against yellow fever or Japanese Encephalitis viruses, as well as



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past infection with other arboviruses, such as West Nile virus or St. Louis Encephalitis virus, may complicate the interpretation of serology results, as ZIKV IgM ELISA and PRNT have extensive cross reactivity to these other *flaviviruses*.

Cases of Guillain-Barré syndrome (GBS) were reported among some persons with ZIKV in the 2013-2014 French Polynesia ZIKV outbreak, and an increase of GBS cases has been noted in some South American countries where ZIKV outbreaks are ongoing. Whether ZIKV infection and GBS are related is still not clear and is being investigated.

Reference Range

Not Detected