



ZIKA LABORATORY TESTING GUIDANCE

Appropriate Clinical Specimens for Laboratory Testing of Suspected Cases For Symptomatic Suspect Cases or Asymptomatic Pregnant Women

Test Type	Serum	Whole Blood [§] (EDTA)	CSF	Urine [§]	Other [¶]
RT-PCR [§]	YES	YES	YES	YES	YES
Serology: IgM with PRNT confirmation [†]	YES	NO	YES	NO	NO

[¶] CDC will consider testing other specimen types (e.g., saliva, placental tissue, umbilical cord, fetal and other tissues) on a case by case basis.

[§] RT-PCR is the preferred method. Urine and whole blood have been shown to be preferred specimens for confirming an acute case.

[†] PRNT (plaque-reduction neutralization test) may confirm cross-reactive IgM tests by measuring virus-specific neutralizing antibodies.

Recommended Diagnostic Testing

CDPH guidance and a Zika Screening Algorithm summarizing the evaluation and testing of patients with possible Zika virus infection can be found at the [Zika Information For Health Professionals Webpage](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/ZikaInformationForHealthProfessionals.aspx) at:

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/ZikaInformationForHealthProfessionals.aspx>

CDPH provides diagnostic testing (PCR, IgM and PRNT serology) for Zika virus as well as dengue and chikungunya viruses. Zika virus testing performed at VRDL is described below.

Health care providers wishing to arrange testing for Zika virus must contact your local public health department for consultation and approval.

- For any suspect cases of Zika virus infection, testing should be considered for the following viruses:
 - Zika
 - Chikungunya
 - Dengue

RT-PCR Testing: VRDL is currently using the Trioplex Real-time RT-PCR assay which is validated for serum, whole blood, CSF, urine and amniotic fluid. Whole blood, CSF, urine or amniotic fluid **must** be accompanied by a serum.

- **Serum, whole blood or CSF:** PCR can detect Zika, chikungunya, and dengue viruses.
 - Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
 - For CSF or whole blood (EDTA required), at least 1 ml is required.
- **Urine or Amniotic fluid:** PCR can detect Zika virus only.
 - Amniotic fluid: collect if amniocentesis is performed.
 - Collect **at least 2 mls** of fluid.
 - Urine: Specimen cups leak and are not recommended for shipping. To avoid leakage of the urine sample, transfer to a small (3-5 ml) sterile screw-cap tube and use parafilm to seal. Place the tube in a Ziploc bag with absorbent material. It is not necessary to spin or process the urine.

Serology: IgM and PRNT testing: VRDL currently uses the InBios ZIKV Detect™ IgM Capture ELISA which is validated for the presumptive detection of Zika virus IgM antibodies in human serum.

- Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.

- Optimal collection of an acute serum is 2-12 weeks after illness onset or last known exposure. **NOTE:** If serum is collected <2 weeks from onset of illness and IgM to Zika virus is not detected, a convalescent-phase serum specimen collected <12 weeks from illness onset should be considered for further testing.
- IgM antibodies against Zika virus, dengue viruses, and other flaviviruses (e.g., yellow fever virus, West Nile virus) can cross-react possibly generating false positive results in serological tests; therefore, all IgM positive samples will be reflexed to RT-PCR and/or PRNT to discriminate among these viruses.

Other tissues: *Consult with VRDL prior to collecting other tissues.*

Specimen storage and shipping: Store all specimens at 4°C. Ship on cold packs within 24 to 72 hours.

Specimen shipment: Complete the [VRDL General Purpose Specimen Submittal Form](#) found at <http://tinyurl.com/VRDL-All-Forms>.

Specimens should be shipped as directed by the local public health laboratory. For those jurisdictions without a local Public Health Laboratory, specimens can be shipped and directed to the VRDL using the following address:

**Specimen Receiving
CDPH VRDL
850 Marina Bay Parkway
Richmond, CA 94804**

Questions about specimen collection, submittal, or shipping: Please contact the VRDL Medical and Epidemiology Liaison Section, (510) 307-8585, or email VRDL.submittal@cdph.ca.gov.

Other resources:
[CDC Zika Virus Webpage](#) at:
<https://www.cdc.gov/zika/index.html>

[Viral and Rickettsial Disease Laboratory](#)

850 Marina Bay Parkway, Richmond, CA 94804

Tel (510) 307-8585; FAX (510) 307-8599

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VRDL.aspx> Updated 03/14/2018