

Zika virus lab test Information for ELR

CDC Vocabulary Team, May 17, 2016

PCR for Zika virus

During the first week of illness, Zika virus RNA can be identified in CSF, serum, urine, and amniotic fluid. Because viremia decreases over time, a negative RT-PCR collected 5-7 days after symptom onset does not exclude Zika virus infection and serologic testing should be performed.

LOINC codes for Zika virus PCR CDC's Trioplex PCR for Zika, Dengue, and Chikungunya

LOINC	Shortname	Long common name	Comment
CDC's Trioplex PCR for Zika, Dengue, and Chikungunya			
81154-7	DENV + CHIKV + ZIKV PnI Patient PCR	Dengue and Chikungunya and Zika virus panel by Probe and target amplification method	Order code
80825-3	Zika E gene Ser QI PCR	Zika virus envelope (E) gene [Presence] in Serum by Probe and target amplification method	
80826-1	Zika E gene CSF QI PCR	Zika virus envelope (E) gene [Presence] in Cerebral spinal fluid by Probe and target amplification method	
81148-9	Zika E gene Ur QI PCR	Zika virus envelope (E) gene [Presence] in Urine by Probe and target amplification method	
81149-7	Zika E gene Amn QI PCR	Zika virus envelope (E) gene [Presence] in Amniotic fluid by Probe and target amplification method	
81150-5	DENV 1+2+3+4 5' UTR RNA Ser QI PCR	Dengue virus 1+2+3+4 5' UTR RNA [Presence] in Serum by Probe and target amplification method	
81151-3	DENV 1+2+3+4 5' UTR RNA CSF QI PCR	Dengue virus 1+2+3+4 5' UTR RNA [Presence] in Cerebral spinal fluid by Probe and target amplification method	
81152-1	CHIKV nsP1 RNA Ser QI PCR	Chikungunya virus non-structural protein 1 (nsP1) RNA [Presence] in Serum by Probe and target amplification method	
81153-9	CHIKV nsP1 RNA CSF QI PCR	Chikungunya virus non-structural protein 1 (nsP1) RNA [Presence] in Cerebral spinal fluid by Probe and target amplification method	
LOINC for other Zika virus PCR			
79190-5	ZIKV RNA XXX QI PCR	Zika virus RNA [Presence] in Unspecified specimen by Probe and target amplification method	

Serologic testing for Zika virus

IgM antibodies

Virus-specific IgM antibodies may be detectable >4 days after onset of illness. However, serum collected within 7 days of illness onset may not have detectable virus-specific IgM antibodies. IgM antibodies against Zika virus and other flaviviruses have strong cross-reactivity, which may generate false positive results in serological tests.

Confirmation by plaque-reduction neutralization (PRNT)

Due to serological cross-reactivity between flaviviruses, current IgM antibody assays cannot reliably distinguish between Zika and dengue virus infections. Plaque-reduction neutralization tests (PRNT) can be performed to confirm a positive test for IgM antibodies to Zika virus. *Note: In patients who have received yellow fever or Japanese encephalitis vaccination, or who have been infected with another flavivirus in the past, cross-reactive antibodies in both the IgM and neutralizing antibody assays may make it difficult to identify which flavivirus is causing the patient's current illness.*

LOINC	Shortname	Long common name
Zika virus IgM		
80618-2	ZIKV IgM CSF EIA-aCnc	Zika virus IgM Ab [Units/volume] in Cerebral spinal fluid by Immunoassay
80619-0	ZIKV IgM Ser EIA-aCnc	Zika virus IgM Ab [Units/volume] in Serum by Immunoassay
80823-8	ZIKV IgM CSF QI EIA	Zika virus IgM Ab [Presence] in Cerebral spinal fluid by Immunoassay
80824-6	ZIKV IgM Ser QI EIA	Zika virus IgM Ab [Presence] in Serum by Immunoassay
Zika virus neutralizing antibodies		
80620-8	ZIKV NAb Titr Ser Nt	Zika virus neutralizing antibody [Titer] in Serum by Neutralization test
80621-6	ZIKV NAb Titr CSF Nt	Zika virus neutralizing antibody [Titer] in Cerebral spinal fluid by Neutralization test
80821-2	ZIKV NAb CSF QI Nt	Zika virus neutralizing antibody [Presence] in Cerebral spinal fluid by Neutralization test
80822-0	ZIKV NAb Ser QI Nt	Zika virus neutralizing antibody [Presence] in Serum by Neutralization test
80622-4	ZIKV NAb sp1 Titr Ser Nt	Zika virus neutralizing antibody [Titer] in Serum by Neutralization test --1st specimen
80623-2	ZIKV NAb sp2 Titr Ser Nt	Zika virus neutralizing antibody [Titer] in Serum by Neutralization test --2nd specimen
80624-0	ZIKV NAb sp1 Titr CSF Nt	Zika virus neutralizing antibody [Titer] in Cerebral spinal fluid by Neutralization test --1st specimen
80625-7	ZIKV NAb sp2 Titr CSF Nt	Zika virus neutralizing antibody [Titer] in Cerebral spinal fluid by Neutralization test --2nd specimen

Zika virus test resulting

Zika virus IgM ELISA results

For CDC's Zika virus IgM ELISA, the result is a number without units. A result <2 is Negative; 2-3 is Equivocal (or presumed false positive); >3 is Positive. Example results: 1.3, 8.5, 23.2, etc.

Zika virus PRNT results

Units and reference range: A titer < 1:10 is normal (negative test).

Results can be expressed either as ratios (<1:10, 1:80, 1:320, 1:2560, etc.) or just the dilution factor (<10, 80, 320, 2560, etc.).

Some SNOMED codes for Zika virus results

The table below contains the SNOMED code for Zika virus and some qualitative result codes that can be used for the Zika virus tests.

Code	Concept Name	Preferred Name	Code System
Zika virus			
50471002	Zika virus (organism)	Zika virus	SCT
Some example qualitative results			
260373001	Detected (qualifier value)	Detected	SCT
10828004	Positive (qualifier value)	Positive	SCT
42425007	Equivocal (qualifier value)	Equivocal	SCT
82334004	Indeterminate (qualifier value)	Indeterminate	SCT
419984006	Inconclusive (qualifier value)	Inconclusive	SCT
260385009	Negative (qualifier value)	Negative	SCT
260415000	Not detected (qualifier value)	Not detected	SCT

For more information

CDC Zika virus home page: <http://www.cdc.gov/zika/index.html>

CDC Zika virus page for state public health labs: <http://www.cdc.gov/zika/state-labs/index.html>