Test Definition: CAVPC

California Virus (La Crosse) Encephalitis Antibody Panel, IgG and IgM, Spinal Fluid

Overview

Useful For
Aiding in the diagnosis of California (La Crosse) encephalitis using spinal fluid specimens

Testing Algorithm
For more information see Mosquito-borne Disease Laboratory Testing.

Special Instructions
- Mosquito-borne Disease Laboratory Testing

Method Name
Immunofluorescence Assay (IFA)

NY State Available
No

Specimen

Specimen Type
CSF

Ordering Guidance
This assay detects California virus antibodies only. For a complete arbovirus panel, order ABOPC / Arbovirus Antibody Panel, IgG and IgM, Spinal Fluid.

New York State clients: This test is not offered for specimens originating in New York.

Specimen Required
Container/Tube: Sterile vial
Preferred: Vial number 1
Acceptable: Any vial
Specimen Volume: 0.8 mL

Forms
If not ordering electronically, complete, print, and send Infectious Disease Serology Test Request (T916) with the specimen.

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	14 days	
	Frozen	14 days	

Clinical & Interpretive

Clinical Information

California (La Crosse) virus is a member of the Bunyaviridae family, and it is one of the arthropod-borne encephalitides. It is transmitted by various *Aedes* and *Culex* mosquitoes and is found in such intermediate hosts as rabbits, squirrels, chipmunks, and field mice.

California meningoencephalitis is usually mild and occurs in late summer. Ninety percent of infections are seen in children and adolescents younger than 15 years, usually from rural areas. The incubation period is estimated to be 7 days, and acute illness lasts 10 days or less in most instances. Typically, the first symptoms are nonspecific, lasting 1 to 3 days, and are followed by the appearance of central nervous system (CNS) signs and symptoms, such as stiff neck, lethargy, and seizures, which usually abate within 1 week. Symptomatic infection is almost never recognized in those older than 18 years. The most important sequela of California virus encephalitis is epilepsy, which occurs in about 10% of children and almost always in patients who have had seizures during the acute illness. An estimated 2% of patients have persistent paresis. Learning disabilities or other objective cognitive deficits have been reported in a small proportion (<2%) of patients. Learning performance and behavior of most recovered patients are not distinguishable from comparison groups in these same areas.

Infections with arboviruses can occur at any age. The age distribution depends on the degree of exposure to the specific transmitting arthropod relating to age, sex, and occupational, vocational, and recreational habits of the individuals. Once humans have been infected, the severity of the host response may be influenced by age. Serious California (La Crosse) virus infections primarily involve children, especially boys. Men exposed to California viruses have high prevalence rates of antibody but usually show no serious illness. Infection among men is primarily due to working conditions and sports activities taking place where the vector is present.

Reference Values

IgG: <1:10
IgM: <1:10
Reference values apply to all ages.

Interpretation
A positive result indicates intrathecal synthesis of antibody and is indicative of neurological infection.

Cautions
All results must be correlated with clinical history and other data available to the attending physician.

False-positive results may be caused by breakdown of the blood-brain barrier, or by the introduction of blood into the cerebrospinal fluid at collection.

Clinical Reference
1. Dolin R. California encephalitis, hantavirus pulmonary syndrome, hantavirus hemorrhagic fever with renal syndrome, and bunyavirus hemorrhagic fevers. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:2169-2176
2. Piantadosi A, Kanjilal S. Diagnostic approach for arboviral infections in the United States. J Clin Microbiol. 2020;58(12):e01926-19. doi:10.1128/JCM.01926-19

Performance

Method Description
The indirect immunofluorescent antibody (IFA) assay is a 2-stage "sandwich" procedure. In the first stage, the patient cerebrospinal fluid (CSF) is diluted in Pretreatment Diluent for IgM and phosphate buffered saline (PBS) for IgG, added to appropriate slide wells in contact with the substrate, and incubated. Following incubation, the slide is washed in PBS, which removes unbound CSF antibodies. In the second stage, each antigen well is overlaid with fluorescein-labeled antibody to IgM and IgG. The slide is incubated allowing antigen-antibody complexes to react with the fluorescein-labeled anti-IgM and anti-IgG. After the slide is washed, dried, and mounted, it is examined using fluorescence microscopy. Positive reactions appear as cells exhibiting bright apple-green cytoplasmic fluorescence against a background of red negative control cells. Semi-quantitative endpoint titers are obtained by testing serial dilutions of positive specimens.(Package inserts: Arbovirus IFA IgM and Arbovirus IFA IgG Instructions for Use. Focus Diagnostics; Rev 03, 02/17/2023)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
Same day/1 to 4 days

Specimen Retention Time
2 weeks

MAYO CLINIC LABORATORIES

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Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86651 x 2

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CAVPC	Calif(LaCrosse) Encep Ab Panel, CSF	96498-1

Result ID	Test Result Name	Result LOINC® Value
26365	Calif(LaCrosse) Encep Ab, IgG,CSF	9539-8
26366	Calif(LaCrosse) Encep Ab, IgM,CSF	9540-6