
Lab Dept: Serology

Test Name: WEST NILE VIRUS IGG/IGM ANTIBODY

General Information

Lab Order Codes: WNV

Synonyms: Arbovirus Ab; Flavivirus Ab; Viral Encephalitis; WNV Ab

CPT Codes: 86788 - West Nile Virus, IgM
86789 - West Nile Virus, IgG

Test Includes: West Nile Virus IgG Antibody and West Nile Virus IgM Antibody

Logistics

Test Indications: Laboratory diagnosis of acute phase infection with West Nile Virus.

Lab Testing Sections: Serology - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: WNS)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 – 4 days, test setup Monday – Friday (June through October) and Monday, Wednesday, Friday (November through May)

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Red top tube

Draw Volume: 1.5 mL (Minimum: 1.2 mL) blood

Processed Volume: 0.5 mL (Minimum: 0.4 mL) serum

Collection: Routine venipuncture

Special Processing:	Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Warm specimens; gross hemolysis; gross lipemia

Interpretive

Reference Range: IgG: Negative

Interpretation: Presence of specific IgG class antibodies in a serum specimen indicates infection with West Nile Virus (WNV) at some time in the past. By 3 weeks post-infection, virtually all infected persons should have developed IgG antibodies to WNV. If acute-phase infection is suspected, serum specimens drawn within approximately 7 days post-infection should be compared with a specimen drawn approximately 14-21 days after infection to demonstrate rising IgG antibody levels between the 2 serum specimens.

IgM: Negative

Interpretation: Presence of specific IgM class antibodies in a serum specimen is consistent with acute-phase infection with WNV. By the 8th day of illness, most infected persons will have detectable serum IgM antibody to WNV; in most cases it will be detectable for at least 1 to 2 months after onset of illness, in some cases it will be detectable for 12 months or longer.

Absence of IgM class antibodies to WNV is consistent with lack of acute-phase infection with this virus. Specimens drawn too early in the acute phase (eg, before 8 days post-infection) may be negative for IgM-specific antibodies to WNV. If WNV infection is suspected, a second specimen drawn approximately 14 days post-infection should be tested.

In the very early stages of acute WNV infection, IgM may be detectable in cerebrospinal fluid before it becomes detectable in serum.

Critical Values: N/A

Limitations: Test results should be used in conjunction with a clinical evaluation and other available diagnostic procedures. The significance of negative test results in immunosuppressed patients is uncertain. Positive test results may not be valid in persons who have received blood transfusions or other blood products within the past several months.

False-negative results due to competition by high levels of IgG, while theoretically possible, have not been observed.

False-positive results may occur with persons vaccinated for flaviviruses (e.g., yellow fever, Japanese encephalitis, dengue), with persons infected with other flaviviruses, and with persons previously infected with West Nile

Virus. Because closely related arboviruses exhibit serologic cross-reactivity, it sometimes may be epidemiologically important to attempt to pinpoint the infecting virus by conducting cross-neutralization tests using an appropriate battery of closely related viruses.

WNV antibody results for CSF should be interpreted with caution. Complicating factors include low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps.

Cross-reactivity has been noted with some specimens containing IgM antibody enteroviruses.

Methodology: Enzyme Immunoassay (EIA)

References: [Mayo Medical Laboratories Web Page](#) November 2015

Updates:
10/11/2004: CPT change from 86318 to 86790.
1/12/2007: CPT 2007 updates
11/19/2015: Method update, previously ELISA