# Test Definition: VZM

Varicella-Zoster Virus (VZV) Antibody, IgM, Serum

## Overview

### Useful For
Diagnosing acute-phase infection with varicella-zoster virus

### Method Name
Immunofluorescence Assay (IFA)

### NY State Available
Yes

## Specimen

### Specimen Type
Serum

### Specimen Required
**Supplies:** Sarstedt Aliquot Tube, 5 mL (T914)
**Collection Container/Tube:**
**Preferred:** Serum gel
**Acceptable:** Red top
**Submission Container/Tube:** Plastic vial
**Specimen Volume:** 0.5 mL Serum
**Collection Instructions**: Centrifuge and aliquot serum into a plastic vial.

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

### Specimen Minimum Volume
Serum: 0.2 mL

### Reject Due To

| | |
|---|---|
| Gross hemolysis | Reject |
| Gross lipemia | Reject |
| Gross icterus | Reject |
| Heat-inactivated specimen | Reject |

### Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---|---|---|---|
| Serum | Refrigerated (preferred) | 14 days | |
| | Frozen | 14 days | |

## Clinical & Interpretive

### Clinical Information

Varicella-zoster virus (VZV), a herpes virus, causes 2 distinct exanthematous (rash-associated) diseases: chickenpox (varicella) and herpes zoster (shingles). Chickenpox is a highly contagious, though typically benign, disease, usually contracted during childhood. Chickenpox is characterized by a dermal vesiculopustular rash that develops in successive crops approximately 10 to 21 days following exposure.(1) Although primary infection with VZV results in immunity and protection from subsequent infection, VZV remains latent within sensory dorsal root ganglia and upon reactivation, manifests as herpes zoster or shingles. During reactivation, the virus migrates along neural pathways to the skin, producing a unilateral rash, usually limited to a single dermatome. Shingles is an extremely painful condition typically occurring in older nonimmune adults or those with waning immunity to VZV and in patients with impaired cellular immunity.(2)

Several populations are at risk of suffering unusually severe reactions to VZV infections. The infection in women who are pregnant may spread through the placenta to the fetus causing congenital disease in the infant. Immunocompromised patients in hospitals may contract severe nosocomial infections from others who have active VZV infections and are at risk for developing severe VZV-related complications, which include cutaneous disseminated disease and visceral organ involvement.(2,3) Therefore, serologic screening of direct healthcare providers (physicians, allied healthcare personnel) and individuals in high-risk groups is necessary to avoid uncontrolled spread of infection.

While the clinical presentation of VZV infection is generally characteristic, serologic evaluation of patients with atypical and systemic infections is often required. For example, it is extremely important to serologically evaluate patients for the early detection of VZV infections in hospital settings. Nosocomial spread of VZV infection can be life-threatening to immunocompromised patients susceptible to infection.

### Reference Values

Negative
Reference values apply to all ages.

### Interpretation

A positive IgM result indicates a recent infection with varicella-zoster virus (VZV).

A negative result does not rule out the diagnosis of VZV infection. The specimen may have been drawn before the appearance of detectable antibodies. Negative results in suspected early VZV infection should be followed by testing a new specimen in 2 to 3 weeks.

### Cautions

The performance characteristics with individuals vaccinated with varicella-zoster virus (OKA strain) have not been established.

The test must be performed on serum. The use of whole blood, plasma, or cord blood has not been established.

Positive results from cord blood or neonates should be interpreted with caution.

Results from immunocompromised patients should be interpreted with caution.

### Clinical Reference

1. Yankowitz J, Grose C. Congenital infections. In: Storch GA, ed. Essentials of diagnostic virology. Churchill Livingstone; 2000:187-201
2. Gnann JW Jr, Whitley RJ. Clinical practice. Herpes zoster. N Engl J Med. 2002;347(5):340-346
3. Cvjetkovic D, Jovanovic J, Hrnjakovic-Cvjetkovic I, Brkic S, Bogdanovic M. Reaktivacija herpes zoster infekcije varicela-zoster virusom [Reactivation of herpes zoster infection by varicella-zoster virus]. Med Pregl. 1999;52(3-5):125-128
4. Flamholc L. Neurological complications in herpes zoster. Scand J Infect Dis. 1996;100:35-40
5. Whitely RJ. Chickenpox and Herpes Zoster (Varicella-Zoster virus). In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:1849-1856

## Performance

### Method Description

The presence or absence of IgM-class antibody to varicella-zoster virus (VZV) is determined by an indirect immunofluorescence assay. Serum is incubated with VZV antigen that is adhered to a glass microscope slide. Antibodies, if present, will bind to the antigen forming stable antigen-antibody complexes. If no antibodies are present, the complexes will not be formed, and the serum components will be washed away. Fluorescein-labeled antihuman-IgM antibody is added to the reaction side and binds to IgM antibodies if present. This results in a positive reaction of bright apple-green fluorescence when viewed with a fluorescence microscope.(Package insert: Bion Varicella Zoster Antigen Substrate Slide. Bion Enterprises; 11/2024)

### PDF Report

No

### Day(s) Performed

Monday through Friday

### Report Available

Same day/1 to 3 days

### Specimen Retention Time

14 days

### 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 has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

### CPT Code Information

86787

### LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|---|---|---|
| VZM | Varicella-Zoster Ab, IgM, S | 43588-3 |

| Result ID | Test Result Name | Result LOINC® Value |
|---|---|---|
| 80964 | Varicella-Zoster Ab, IgM, S | 43588-3 |