MAYO CLINIC LABORATORIES

Test Definition: MMPM

Mumps Virus Antibody, IgM, Serum

Overview

Useful For
Laboratory diagnosis of mumps virus infection

Method Name
Enzyme Immunoassay (EIA)

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: 1 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: 0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	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

The mumps virus is a member of the Paramyxoviridae family of viruses, which include parainfluenza virus serotypes 1-4, measles, respiratory syncytial virus, and metapneumovirus. Mumps is highly infectious among unvaccinated individuals and is typically transmitted through inhalation of infected respiratory droplets or secretions. Following an approximately 2-week incubation period, symptom onset is typically acute with a prodrome of low-grade fever, headache, and malaise.(1,2) Painful enlargement of the salivary glands, the hallmark of mumps, occurs in approximately 60% to 70% of infections and in 95% of patients with symptoms. Testicular pain (orchitis) occurs in approximately 15% to 30% of postpubertal men and abdominal pain (oophoritis) is found in 5% of postpubertal women.(1) Other complications include mumps-associated pancreatitis (<5% of cases) and central nervous system disease (meningitis <10% and encephalitis <1%).

Widespread routine immunization of infants with attenuated mumps virus has dramatically decreased the number of reported mumps cases in the United States. However, outbreaks continue to occur, indicating persistence of the virus in the general population.

Laboratory diagnosis of mumps is typically accomplished by detection of IgM- and IgG-class antibodies to the mumps virus. However, due to the widespread mumps vaccination program, in clinically suspected cases of acute mumps infection, serologic testing should be supplemented with virus isolation in culture or detection of viral nucleic acid by polymerase chain reaction testing in throat, saliva, or urine specimens.

Reference Values

Negative: Index value 0.00-0.79
Reference value applies to all ages.

Interpretation

Positive:
Results suggest recent infection or vaccination. False positive results may occur in patients with recent parvovirus B19, cytomegalovirus or Epstein-Barr virus infection.

Equivocal:
Recommend follow-up testing in 10 to14 days if clinically indicated.

Negative:
Absence of IgM-class antibodies to mumps virus suggests lack of acute phase infection with mumps virus. However, serology may be negative in early disease, and results should be interpreted in the context of clinical findings.

Cautions

Results must always be interpreted together with other clinical and laboratory findings.

Serum specimens drawn during the acute phase of infection may be negative by serological tests.

All positive results must be interpreted with care, as some false-positive results or heterotypical responses of the IgM have been seen in the serum of pregnant women or in patients with an acute infection caused by cytomegalovirus, herpes simplex virus, measles, rubella, and parvovirus.

Clinical Reference

1. Hviid A, Rubin S, Muhlemann K. Mumps. Lancet. 2008;371(9616):932-944
2. Hodinka RL, Moshal KL. Childhood infections. In: Storch GA, ed. Essentials of Diagnostic Virology. Churchill Livingstone; 2000:168-178
3. Harmsen T, Jongerius MC, van der Zwan CW, Plantinga AD, Kraaijeveld CA, Berbers GA. Comparison of a neutralization enzyme immunoassay and an enzyme-linked immunosorbent assay for evaluation of immune status of children vaccinated for mumps. J Clin Microbiol. 1992;30(8):2139-2144
4. Litman N, Baum SG. Mumps virus. In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:2087-2092

Performance

Method Description

The ASI Mumps IgM EIA (enzyme immunoassay) is based on the principle of the capture of serum immunoglobulins by anti-human IgM monoclonal antibodies found on the solid phase. A subsequent incubation with mumps antigen in a complex with monoclonal antibodies conjugated to horse radish peroxidase selects the IgM antibodies specific for the antigen. Peroxidase substrate is added and the enzymatic reaction is stopped by the addition of a sulfuric acid solution which results in a yellow color change. The intensity of the yellow color is proportional to the amount of specific antibodies present in the sample and is read in an enzyme-linked immunosorbent assay microplate reader.(Package insert: ASI Mumps IgM EIA test. Arlington Scientific Inc; 860096AM Rev; 03/14/2025)

PDF Report

No

Day(s) Performed

Tuesday

Report Available

1 to 7 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

86735

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
MMPM	Mumps Ab, IgM, S	6478-2

Result ID	Test Result Name	Result LOINC® Value
MUMP1	Mumps Ab, IgM, S	6478-2