

## Overview

### Useful For

Laboratory diagnosis of mumps virus infection

### Method Name

EnzymeImmunoassay(EIA)

### NY State Available

Yes

## Specimen

### Specimen Type

Serum

### Specimen Required

#### Container/Tube:

**Preferred:** Serum gel

**Acceptable:** Red top

**Specimen Volume:**1 mL

### Forms

If not ordering electronically, complete, print, and send a [Microbiology Test Request](#) (T244) with the specimen.

### Reject Due To

Gross hemolysis                      Reject

Gross lipemia                         Reject

Heat-inactivated specimen       Reject

### Specimen Minimum Volume

0.5 mL

### Specimen Stability Information

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

## Clinical & Interpretive

### Clinical Information

Mumps virus, parainfluenza types 1 through 4, respiratory syncytial virus, and measles virus are classified in the family

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Paramyxoviridae. Mumps is an acute infection that causes the painful enlargement of the salivary glands in approximately 70% to 90% of children (4-15 years of age) who develop clinical disease.<sup>(1)</sup> In 5% to 20% of postpubertal individuals, testicular pain (orchitis in males) and abdominal pain (oophoritis in females) can occur. Other complications include pancreatitis (<5% of cases) and central nervous system disease (meningitis/encephalitis), which occur rarely (about 1 in 6,000 cases of mumps). Widespread routine immunization of infants with attenuated mumps virus has changed the epidemiology of this virus infection. Since 1989, there has been a steady decline in reported mumps cases, with an average of 265 cases each year since 2001. However, a recent outbreak of mumps in 2006 reemphasized that this virus continues to persist in the population, and laboratory testing may be needed in clinically compatible situations. The laboratory diagnosis of mumps is typically accomplished by detection of antibody to mumps virus. However, due to the limitations of serology (eg, inadequate sensitivity and specificity), additional laboratory testing including virus isolation or detection of viral nucleic acid by polymerase chain reaction in throat, saliva, or urine specimens should be considered in clinically compatible situations.

**Reference Values**

Negative

Index value 0.00-0.79=negative

Reference values apply to all ages.

**Interpretation**

Positive:

Presence of IgM-class antibodies to mumps virus may support a clinical diagnosis of recent or acute phase infection with this virus.

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.

**Supportive Data**

SeraQuest mumps IgM test kit showed a sensitivity of 97.3% and a specificity of 96.6% when 160 specimens were tested in parallel with a reference method.

**Clinical Reference**

1. Hodinka RL, Moshal KL: Childhood infections. In: Storch GA, ed. *Essentials of Diagnostic Virology*. Churchill Livingstone; 2000:168-178
2. 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 Aug;30(8):2139-2144
3. 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

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**Performance****Method Description**

The SeraQuest mumps IgM is an enzyme capture method. Diluted samples are incubated in wells coated with antihuman-IgM monoclonal antibodies. If present, IgM antibodies are captured in the wells. Wells are washed, removing excess sample. Conjugate-antigen complex (mumps antigen in a complex with monoclonal antibodies conjugated to horseradish peroxidase) is added and wells are incubated. IgM antibodies specific for the antigen will bind the conjugate. Wells are washed, removing excess conjugate. Peroxidase substrate is added and wells are incubated. Stop solution is added converting the substrate to a yellow end product which is read photometrically. (Package insert: Mumps IgM. Quest International; version 6/2017)

**PDF Report**

No

**Specimen Retention Time**

14 days

**Performing Laboratory Location**

Rochester

**Fees & Codes****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