

TEST: MUMPS IgG IN HUMAN SERUM BY EIA (enzyme immunoassay)

PRINCIPLE

Mumps virus is a member of the Paramyxoviridae family of viruses. The disease is usually an acute, self-limited systemic illness most frequently occurring in children aged 5-19 years. The most commonly recognized feature of the illness is the swelling of the parotid salivary glands on either or both sides of the face. Fever, headache, and fatigue usually accompany the parotitis. A significant increase in titer of mumps-reactive IgG by EIA is found in over 90% of paired acute (4-5 days after onset of symptoms) and convalescent (2-3 weeks after onset) mumps sera in which mumps-reactive IgM antibodies can also be detected. In the assay, diluted patient serum samples are incubated with purified native Mumps antigen bound to the solid surface of a microwell. If IgG antibodies against Mumps are present in the sample they will bind to the antigen forming antigen-antibody complexes. Conjugate is added and will bind to these complexes. Unbound conjugate is removed by aspiration and washing. Substrate is then added and incubated. In the presence of bound enzyme the substrate is converted to an end product. The absorbance of this end product can be read spectrophotometrically at 450 nm (reference wave length 600-630 nm.). The absorbance measured is directly proportional to the concentration of IgG antibodies to Mumps antigen present in the serum sample.

SPECIMEN COLLECTION

2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Separated serum should not be at room temperature no longer than 8 hours. If assays are not completed within 8 hours, the serum should be refrigerated (2°-8° C). If assays are not completed beyond 48 hours, samples are to be frozen at -20° C.

METHOD: ELISA

REFERENCES

King GE, Markowitz LE, Heath J, Redd SC, Coleman S, Bellini WJ and Sievert A.
Antibody response to measles-mumps-rubella vaccine of children with mild illness at the time of vaccination.
JAMA. 1996 Mar 6;275(9):704-7.

Williams WW, Sosis DM, Kaplan KM, Hersh BS and Preblud SR.
Vaccine-preventable diseases on college campuses: the emergence of mumps.
J Am Coll Health. 1989 Mar;37(5):197-203.

NORMAL RANGE:

Index Value	Interpretation
< 0.90	No detectable Mumps IgG antibody; result does not exclude Mumps infection. An additional sample should be tested within 4-6 weeks if early infection is suspected
0.90-1.09	Equivocal for IgG antibodies to Mumps. Sample should be retested. If retest results are equivocal, the sample should be reported as equivocal, tested by another method, or a new sample should be tested
≥ 1.10	Mumps IgG antibody detected. Indicative of current or past infection

Turnaround time: One Week