

November 2007

Epstein-Barr Virus Serological Testing - Revised Test Menu and Interpretive Guidelines

To Health Care Providers:

Epstein-Barr Virus (EBV) is one of the most common human viruses, having infected 95% of individuals in developed countries by age 40. Symptoms of primary EBV infection range from asymptomatic to symptoms of infectious mononucleosis.

The Ontario Public Health Laboratory (OPHL) has changed test methodology for EBV serology and the following information is provided to assist in test interpretation.

In patients with suspected primary EBV infection, the Monospot (heterophile antibody) test should be performed. This test is available through many community and hospital laboratories. The Monospot test is not offered at the OPHL.

If the Monospot test is negative and EBV infection is still suspected then EBV serology can be performed. Interpretation of EBV serological tests is complicated and is best conducted in conjunction with the clinical findings.

Revised Test Menu

For EBV serology, the OPHL has changed methodologies from indirect fluorescent antibody (IFA) and anticomplement immunofluorescence (ACIF) to ELISA.

Specimens received for EBV Serology will be tested for:

- 1) EBV Viral Capsid Antigen IgG (VCA IgG),
- 2) EBV Early Antigen IgG (EA),
- 3) EBV Nuclear Antigen IgG (EBNA).

Additional testing for EBV Viral Capsid Antigen IgM will be conducted under the following circumstances:

- 1) Transplant patients where the clinician has requested EBV VCA IgM
- 2) Children under 5 years of age

Interpretation Guidelines

Marker	Result	Interpretation
VCA IgG EA EBNA	R R R	Compatible with EBV infection, possibly reactivation or past infection The results should be interpreted in the context of the clinical signs and symptoms
VCA IgG EA EBNA	R NR NR	Compatible with possible recent EBV infection The results should be interpreted in the context of the clinical signs and symptoms
VCA IgG EA EBNA	NR NR R	Compatible with possible EBV infection The results should be interpreted in the context of the clinical signs and symptoms
VCA IgG EA EBNA	R NR R	Compatible with past EBV infection The results should be interpreted in the context of the clinical signs and symptoms
VCA IgG EA EBNA	NR R NR	Compatible with possible EBV infection The results should be interpreted in the context of the clinical signs and symptoms
VCA IgG EA EBNA	NR NR NR	No laboratory evidence of recent/past EBV infection

Sensitivity and Specificity

Listed below are the analytical sensitivities and specificities of the ELISA tests when compared to the previously used IFA and ACIF tests.

	Sensitivity*	Specificity*
EBV Viral Capsid Antigen IgG (VCA IgG)	97.0%	98.0%
EBV Early Antigen IgG (EA) - (primary infection)	97.8%	96.5%
EBV Nuclear Antigen IgG (EBNA)	92.0%	99.0%

* provided by the manufacturer

For Further Information:

- Contact the Immunodiagnostics Lab at **416-235-5994**