MAYO CLINIC LABORATORIES

Test Definition: HSVG

HSV Types 1 and 2 Ab, IgG, S

Overview

Useful For

Determining whether a patient has been previously exposed to herpes simplex virus (HSV) types 1 and 2

Distinguishing between infection caused by HSV types 1 and 2, especially in patients with subclinical or unrecognized HSV infection

This test should **not be used** to diagnose active or recent infection

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
HS1G	HSV Type 1 Ab, IgG, S	No	Yes
HS2G	HSV Type 2 Ab, IgG, S	No	Yes

Method Name

Multiplex Flow Immunoassay (MFI)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.6 mL

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:

-General Request (T239)

-Microbiology Test Request (T244)

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Minimum Volume

0.4 mL

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Herpes simplex virus (HSV) types 1 and 2 are members of the *Herpesviridae* family and produce infections that may range from mild stomatitis to disseminated and fatal disease. Clinical conditions associated with HSV infection include gingivostomatitis, keratitis, encephalitis, vesicular skin eruptions, aseptic meningitis, neonatal herpes, genital tract infections, and disseminated primary infection.

Infections with HSV types 1 and 2 can differ significantly in their clinical manifestations and severity. HSV type 2 primarily causes urogenital infections and is found almost exclusively in adults. HSV type 1 is closely associated with orolabial infection, although genital infection with this virus can be common in certain populations.

The diagnosis of HSV infections is routinely made based on clinical findings and supported by laboratory testing, primarily using polymerase chain reaction (PCR) to detect viral DNA. However, in instances of subclinical or unrecognized HSV infection, serologic testing for IgG-class antibodies to type-specific HSV glycoprotein G (gG) may be useful. There are several circumstances in which it may be important to distinguish between infection caused by HSV types 1 and 2 (eg, risk of reactivation). In addition, the results of HSV type-specific IgG testing is sometimes used during pregnancy to identify risks of congenital HSV disease and allow for focused counseling prior to delivery.

Reference Values

Negative (reported as positive, negative, or equivocal)

Interpretation

This assay detects IgG-class antibodies to type-specific herpes simplex virus (HSV) glycoprotein G (gG) and may allow for the differentiation of infection caused by HSV types 1 and 2. The presence of IgG-class antibodies to HSV types 1 or 2 indicates previous exposure and does not necessarily indicate that HSV is the causative agent of an acute illness.

Cautions

Detection of IgG-class antibodies to herpes simplex virus (HSV) should not be used routinely as the primary means of diagnosing HSV infection. For patients presenting with presumed acute infection with HSV, a clinical specimen (eg, oral, dermal, or genital lesion) should be sampled and submitted for detection of HSV types 1 and 2 by polymerase chain reaction (PCR).

Serum specimens collected too early in the course of infection may not have detectable levels of HSV IgG. In cases of suspected early disease, a repeat serum specimen should be collected 14 to 21 days later and submitted for testing.

The presence of IgG-class antibodies to either HSV type 1 or 2 does not differentiate between remote infection or acute disease.

HSV serology cannot distinguish genital from nongenital infections.

The predictive value of positive or negative results depends on the prevalence of disease and the pretest likelihood of HSV-1 and HSV-2.

False-positive results may occur. Repeat testing, or testing by a different method, may be indicated in some settings (eg,

patients with low likelihood of HSV infection).

Supportive Data

HSV-1 by BioPlex		HSV-1 by HerpeSelect EIA	Positive
Negative	Equivocal	Total	Positive
254	5a	0	259
Negative	2b	240	1
243	Equivocal	0	3
0	3	Total	256
248	1	505	HSV-2 by BioPlex
	HSV-2 by HerpeSelect	Positive	Negative
Equivocal	Total	Positive	115
9a	2	126	Negative
1b	376	0	377
Equivocal	1	1	0

Clinical Reference

1. Ashley RL, Wald A: Genital herpes: review of the epidemic and potential use of type-specific serology. Clin Microbiol Rev. 1999;12:1-8

2. Ashley RL, Wu L, Pickering JW, et al: Premarket evaluation of a commercial glycoprotein G-based enzyme immunoassay for herpes simplex virus type-specific antibodies. J Clin Microbiol. 1998;36:294-295

3. Brown ZA, Selke S, Zeh J, et al: The acquisition of herpes simplex virus during pregnancy. N Engl J Med. 1997;337:509-515

4. Lafferty WE, Coombs RW, Benedetti J, et al: Recurrences after oral and genital herpes simplex infection. N Engl J Med. 1987;316:1444-1449

5. Binnicker MJ, Jespersen DJ, Harring JA: Evaluation of three multiplex flow immunoassays to enzyme immunoassay for the detection and differentiation of IgG-class antibodies to herpes simplex virus types 1 and 2. Clin Vac Immunol. 2010 Feb;17(2):253-257

Performance

Method Description

BioPlex 2200 Herpes Simplex Virus (HSV)-1 and HSV-2 Kit uses multiplex flow immunoassay technology. Two different populations of dyed beads are each coated with glycoprotein G (gG)-based antigens associated with HSV types 1 or 2. Patient sample is combined with sample diluent and bead set reagent in a reaction vessel. The mixture is incubated at 37 degrees C. After a wash cycle, antihuman IgG antibody, conjugated to phycoerythrin (PE), is added to the mixture and incubated at 37 degrees C. Excess conjugate is removed in another wash cycle and the beads are resuspended in wash buffer. The bead mixture then passes through a detector where the identity of the dyed beads is determined by the fluorescence of the dyes, and the amount of antibody captured by the antigen is determined by the fluorescence of the attached PE. Raw data is calculated in relative fluorescence intensity. Three additional dyed beads, an internal standard

bead, a serum verification bead, and a reagent blank bead are present in each reaction mixture to verify detector response, the addition of serum to the reaction vessel and the absence of significant nonspecific binding in serum.(Package insert: BioPlex 2200 System HSV-1 and HSV-2 IgG, Version 665-0533C_EN. Bio-Rad Laboratories; 11/2012)

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
86695-Herpes simplex, type 1

86696-Herpes simplex, type 2