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Changes: § 5
Deletions: §

LIAISON® HSV-1 Type Specific IgG (REF 310830)

1. INTENDED USE

The DiaSorin LIAISON® HSV-1 Type Specific IgG assay is a chemiluminescent immunoassay (CLIA) to be used with the LIAISON® `Analyzer for the qualitative determination of specific IgG antibodies to Herpes simplex virus Type 1 (HSV-1) in human serum. The test has to be performed on the LIAISON® Analyzer family*.

2. SUMMARY AND EXPLANATION OF THE TEST

HSV Type 1 (HSV-1) generally infects the mucous membrane of the eye, mouth and mucocutaneous junctions of the face, and is also one of the most common causes of severe sporadic encephalitis in adults. HSV Type 2 (HSV-2) is usually associated with mucocutaneous genital lesions. Recently, an increasing number of genital herpes infections has been shown to be due to HSV-1. HSV-1 causes primary episodes indistinguishable from HSV-2, but with lower recurrence [1].

Most cases of genital herpes are undiagnosed because the infection is either asymptomatic or unrecognized. This contributes to the spread of genital herpes, which is of particular concern because it is connected to an increased risk of HIV acquisition [2].

Pregnant women who develop genital herpes near the time of delivery are at high risk for transmission to the neonate. Active virus excretion in genital secretions may result in severe neonatal HSV infection contracted when the infant passes through an infected genital tract. Transmission of HSV infection to neonates is associated with high morbidity and mortality rates if untreated [3].

Since HSV-1 and HSV-2 share common antigenic determinants, antibody directed against one viral type may cross-react with the other viral type. Truly type-specific antibody tests are based on glycoprotein G1 (from HSV-1) and glycoprotein G2 (from HSV-2), as these proteins exhibit very limited homology. The CDC recommends the use of type-specific glycoprotein G based assays when serology is perfomed [4].

Rapid and accurate diagnosis of HSV infection is necessary to ensure early implementation of selective antiviral chemotherapy and to minimize spread of infection. Detection of IgG allows assessment of the patient's immune status and provides serological evidence of prior exposure to HSV. Type-specific HSV serology could help in cases of culture negative results in recurrent genital infections, to confirm a clinical diagnosis and to provide appropriate counselling to asymptomatic partners of individuals with genital herpes [4].

3. PRINCIPLE OF THE PROCEDURE

The method for qualitative determination of specific IgG to HSV-1 is an indirect chemiluminescence immunoassay (CLIA). HSV-1 gG1 recombinant antigen is used for coating magnetic particles (solid phase) and a mouse monoclonal antibody is linked to an isoluminol derivative (isoluminol-antibody conjugate). During the first incubation, HSV-1 antibodies present in calibrators, samples or controls bind to the solid phase. During the second incubation, the antibody conjugate reacts with HSV-1 IgG already bound to the solid phase. After each incubation the unbound material is removed with a wash cycle. Subsequently, the starter reagents are added and a flash chemiluminescence reaction is thus induced. The light signal, and hence the amount of isoluminol-antibody conjugate, is measured by a photomultiplier as relative light units (RLU) and is indicative of HSV-1 IgG concentration present in calibrators, samples or controls.

*(LIAISON®, LIAISON® XL and LIAISON® XS)

4. MATERIALS PROVIDED

Reagent Integral

Magnetic Particles (2.4 mL)	SORB	Magnetic particles coated with HSV-1 gG1 recombinant antigen, BSA, phosphate buffer, < 0.1% sodium azide.
Calibrator 1 (4.4 mL)	CAL 1	Human serum/defibrinated plasma containing low HSV-1 IgG levels, BSA, phosphate buffer, 0.2% ProClin® 300, an inert yellow dye.
Calibrator 2 (4.4 mL)	CAL 2	Human serum/defibrinated plasma containing high HSV-1 IgG levels, BSA, phosphate buffer, 0.2% ProClin® 300, an inert blue dye.
Specimen Diluent (28 mL)	DIL SPE	BSA, phosphate buffer,0.2% ProClin® 300, an inert yellow dye.
Conjugate (23 mL)	CONJ	Mouse monoclonal antibodies to human IgG conjugated to an isoluminol derivative, BSA, phosphate buffer, 0.2% ProClin® 300.
Number of tests		100

ProClin is a trademark of the Dow Chemical Company (Dow) or an affiliated company of Dow.

All reagents are supplied ready to use. The order of reagents reflects the layout of containers in the reagent integral.

Standardization:The calibrator concentrations are referenced to an in-house standard preparation.

Materials required but not provided (system related)

LIAISON® XL Analyzer	**LIAISON® Analyzer**	**LIAISON® XS Analyzer**
LIAISON® Wash/System Liquid (REF 319100)	LIAISON® Wash/System Liquid (REF 319100)	LIAISON® EASY Wash Buffer (REF 319301)
-	-	LIAISON® EASY System Liquid (REF 319302)
LIAISON® XL Waste Bags (REF X0025)	LIAISON® Waste Bags (REF 450003)	LIAISON® EASY Waste (REF X0054)
LIAISON® XL Cuvettes (REF X0016)	LIAISON® Module (REF 319130)	LIAISON® Cuvettes on Tray (REF X0053)
LIAISON® XL Starter Kit REF 319200) or	LIAISON® Starter Kit (REF 319102) or	LIAISON® EASY Starter Kit (REF 319300)
LIAISON® EASY Starter Kit (REF 319300)	LIAISON® XL Starter Kit (REF 319200) or	LIAISON® Disposable Tips (REF X0055)
LIAISON® XL Disposable Tips (REF X0015) or	LIAISON® EASY Starter Kit (REF 319300)	LIAISON® EASY Cleaning Tool (REF 310996)
LIAISON® Disposable Tips (REF X0055)	LIAISON® Cleaning Kit (REF 310990)	
	LIAISON® Light Check 12 (REF 319150)	

Additional required materials

LIAISON® Control HSV-1 IgG (REF 310831)

5. WARNINGS AND PRECAUTIONS

FOR *IN VITRO* DIAGNOSTIC USE – Not for internal or external use in humans or animals.

GENERAL SAFETY:

- All specimens, biological reagents and materials used in the assay must be considered potentially able to transmit infectious agents. Avoid contact with skin, eyes or mucous membranes. Follow good industrial hygiene practices during testing.
- Do not eat, drink, smoke or apply cosmetics in the assay laboratory.
- Do not pipet solutions by mouth.
- Avoid direct contact with all potentially infectious materials by wearing lab coat, protective eye/face wear and disposable gloves.
- Wash hands thoroughly at the end of each assay.
- Avoid splashing or forming aerosols when handling, diluting or transferring specimens or reagents. Any reagent spill should be decontaminated with 10% bleach solution (containing 0.5% sodium hypochlorite) and disposed of as though potentially infectious.
- Waste materials should be disposed of in accordance with the prevailing regulations and guidelines of the agencies holding jurisdiction over the laboratory, and the regulations of each country.
- Do not use kits or components beyond the expiration date given on the label.

CHEMICAL HAZARD AND SAFETY INFORMATION: Reagents in this kit are classified in accordance with US OSHA Hazard Communication Standard; individual US State Right-to-Know laws; Canadian Centre for Occupational Health and Safety Controlled Products Regulations; and applicable European Union directives (see Material Safety Data Sheet for additional information).

REAGENTS CONTAINING HUMAN SOURCE MATERIAL: Warning – Treat as potentially infectious. Each serum/plasma donor unit used in the preparation of this product has been tested by an U.S. FDA approved method and found non-reactive for the presence of the antibody to Human Immunodeficiency Virus 1 and 2 (HIV 1/2), the Hepatitis B surface antigen (HBsAg), and the antibody to Hepatitis C (HCV). While these methods are highly accurate, they do not guarantee that all infected units will be detected. This product may also contain other human source diseases for which there is no approved test. Because no known test method can offer complete assurance that HIV, Hepatitis B Virus (HBV) and HCV or other infectious agents are absent, all products containing human source material should be handled following universal precautions; and as applicable in accordance with good laboratory practices as described in the Centers for Disease Control and the National Institutes of Health current manual, Biosafety in Microbiological and Biomedical Laboratories (BMBL); or the World Health Organization current edition, Laboratory Biosafety Manual.

GHS/CLP:

	ProClin®	Sodium Azide
CAS No.:	55965-84-9	26628-22-8
Reagents:	CONJ CAL 1 CAL 2 DIL SPE	SORB
Classification:	Skin sensitization, Category 1 Aquatic Chronic, Category 3	None required
Signal Word:	Warning	None required
Pictogram:	 GHS07 – Exclamation mark	None required
Hazard Statements:	H317 – May cause an allergic skin reaction. H412 – Harmful to aquatic life with long lasting effects.	None required
Precautionary Statements:	P261 – Avoid breathing mist or spray. P272 – Contaminated work clothing should not be allowed out of the workplace. P273 – Avoid release to the environment. P280 – Wear protective gloves and clothing, and eye protection.	None required

REAGENTS CONTAINING SODIUM AZIDE: Sodium azide may react with lead or copper plumbing to form highly explosive metal azides. On disposal, flush with a large volume of water to prevent azide build-up. For further information, refer to "Decontamination of Laboratory Sink Drains to Remove Azide Salts," in the Manual Guide-Safety Management No. CDC-22 issued by the Centers for Disease Control and Prevention, Atlanta, GA, 1976.

6. PREPARATION OF THE REAGENT INTEGRAL

Please note the following important reagent handling precautions:

6.1 Resuspension of magnetic particles

Magnetic particles must be completely resuspended before the integral is placed on the instrument. Follow the steps below to ensure complete suspension:

- Before the seal is removed, rotate the small wheel at the magnetic particle compartment until the colour of the suspension has changed to brown. Gentle and careful side-to-side mixing may assist in the suspension of the magnetic particles (avoid foam formation). Visually check the bottom of the magnetic particle vial to confirm that all settled magnetic particles have resuspended.
- Repeat as necessary until the magnetic particles are completely resuspended.
- After removal of the seal carefully wipe the surface of each septum to remove residual liquid if necessary.

6.2 Foaming of reagents

In order to ensure optimal performance of the integral, foaming of reagents should be avoided. Adhere to the recommendation below to prevent this occurrence:

- Visually inspect the reagents to ensure there is no foaming present before using the integral. If foam is present after re-suspension of the magnetic particles, place the integral on the instrument and allow the foam to dissipate. The integral is ready to use once the foam has dissipated and the integral has remained onboard and mixing.

6.3 Loading of integral into the reagent area

LIAISON® Analyzer

- Place the integral into the reagent area of the analyzer with the bar code label facing left and let it stand for 30 minutes before using. The analyzer automatically stirs and completely resuspends the magnetic particles.
- Follow the analyzer operator's manual to load the specimens and start the run.

LIAISON® XL and LIAISON® XS Analyzer

- LIAISON® XL Analyzer and LIAISON® XS Analyzer is equipped with a built-in solid-state magnetic device which aids in the dispersal of microparticles prior to placement of a reagent integral into the reagent area of the analyzer. Refer to the analyzer operator's manual for details.
    a) Insert the reagent integral into the dedicated slot.
    b) Allow the reagent integral to remain in the solid-state magnetic device for at least 30 seconds (up to several minutes). Repeat as necessary.
- Place the integral into the reagent area of the analyzer with the label facing left and let it stand for 15 minutes before using. The analyzer automatically stirs and completely resuspends the magnetic particles.
- Follow the analyzer operator's manual to load the specimens and start the run.

7. STORAGE AND STABILITY OF THE REAGENT INTEGRAL

Upon receipt, the Reagent Integral must be stored in an upright position to facilitate re-suspension of magnetic particles. When the Reagent Integral is stored unopened the reagents are stable at 2-8°C up to the expiry date. Do not freeze. The Reagent Integral should not be used past the expiry date indicated on the kit and Reagent Integral labels. After use, the Reagent Integral should be stored on the LIAISON® Analyzer or returned to storage at 2-8°C. Opened integral is stable for 4 weeks on the LIAISON® Analyzer or for 8 weeks when stored at 2-8°C.

8. SPECIMEN COLLECTION AND PREPARATION

This assay is for use with human serum. Blood should be collected aseptically by venipuncture, allowed to clot, and the serum separated from the clot as soon as possible. Samples having particulate matter, turbidity, lipaemia, or erythrocyte debris may require clarification by filtration or centrifugation before testing. Grossly haemolyzed or lipaemic samples as well as samples containing particulate matter or exhibiting obvious microbial contamination should not be tested. Check for and remove air bubbles before assaying. If the assay is performed within 7 days of sample collection, the samples may be kept at 2-8°C; otherwise they should be aliquoted and stored deep-frozen (–20°C or below). If samples are stored frozen, mix thawed samples well before testing. 10 samples with different reactivity were stored for 7 days at 2-8°C and underwent 5 freeze-thaw cycles. The results showed no significant differences.

The minimum volume required is 160 µL specimen (10 µL specimen + 150 µL dead volume).

9. CALIBRATION

Assay of calibrators contained in the reagent integral allows the analyzer to recalibrate the stored master curve, as indicated via the bar codes on the Reagent Integral label. Test of assay specific calibrators allows the detected relative light units (RLU) values to adjust the assigned master curve. Each calibration solution allows 5 calibrations to be performed. Recalibration in triplicate is mandatory whenever at least 1 of the following conditions occurs:

- A new lot of reagent integral or of Starter Kit is used.
- The previous calibration was performed more than 4 weeks before.
- The analyzer has been serviced.
- Control values lie outside the expected ranges.

10. ASSAY PROCEDURE

To ensure proper test performance, strictly adhere to the operating instructions of the LIAISON® Analyzer.

LIAISON® Analyzer: Each test parameter is identified via bar codes on the reagent integral label. In the event that the barcode label cannot be read by the analyzer, the integral cannot be used. Do not discard the reagent integral; contact your local DiaSorin Technical Support for instruction.

LIAISON® XL and LIAISON® XS Analyzer: Each test parameter is identified via information encoded in the reagent integral Radio Frequency IDentification transponder (RFID Tag). In the event that the RFID Tag cannot be read by the analyzer, the integral cannot be used. Do not discard the reagent integral; contact your local DiaSorin Technical Support for instruction.

The analyzer operations are as follows:

LIAISON® Analyzer:
1. Dispense calibrators, controls or specimens into the reaction module.
2. Dispense coated magnetic particles.
3. Dispense specimen diluent.
4. Incubate.
5. Wash with Wash/System liquid.
6. Dispense conjugate into the reaction module.
7. Incubate.
8. Wash with Wash/System liquid.
9. Add the Starter Kit and measure the light emitted

LIAISON® XL and LIAISON® XS Analyzer:
1. Dispense coated magnetic particles.
2. Dispense specimen diluent.
3. Dispense calibrators, controls or specimens into the reaction module.
4. Incubate.
5. Wash with Wash/System liquid.
6. Dispense conjugate into the reaction module.
7. Incubate.
8. Wash with Wash/System liquid.
9. Add the Starter Kit and measure the light emitted

11. QUALITY CONTROL

Quality control is required to be performed once per day of use, or according to the guidelines or requirements of local regulations or accredited organizations. It is recommended that the user refer to CLSI C24-A3, and 42 CFR 493.1256 (c) for guidance on appropriate quality control practices.

The LIAISON® Control HSV-1 IgG control set (REF 310831) is available for internal quality control. Whenever controls lie outside the expected ranges, calibration should be repeated and controls retested.

LIAISON® Control HSV-1 IgG controls are intended to monitor for substantial reagent failure. LIAISON® controls should be run in singlicate to monitor the assay performance. If control values lie within the expected ranges provided on the certificate of analysis, the test is valid. If control values lie outside the expected ranges, the test is invalid and patient results cannot be reported. Assay calibration should be performed if a control failure is observed and controls and patient specimens must be repeated.

The performance of other controls should be evaluated for compatibility with this assay before they are used. Appropriate value ranges should be established for all quality control materials used.

The range of concentrations of each control is reported on the certificate of analysis and indicates the limits established by DiaSorin for control values that can be obtained in reliable assay runs.

12. INTERPRETATION OF RESULTS

The LIAISON® Analyzer automatically calculates HSV-1 IgG levels expressed as Index value and grades the results. For details, refer to the analyzer operator's manual.

The cut-off value discriminating between the presence and the absence of HSV-1 IgG has an Index value of 1.0.

Patient results should be interpreted as follows:
Samples with HSV-1 IgG levels below an index value of 0.9 should be graded *negative.*

Samples with HSV-1 IgG levels ranging between an index value of 0.9 and 1.10 should be graded *equivocal. Equivocal samples must be retested in order to confirm the initial result. Samples which are positive at the second test should be considered positive. Samples which are negative at the second test should be considered negative. A second sample should be collected and tested no less than **1 week** later when the result is repeatedly equivocal.*

Samples with HSV-1 IgG levels equal to or above an index value of 1.10 should be graded *positive.*
A negative result generally indicates that the patient has not been infected, but does not always rule out acute HSV infection. If clinical exposure to HSV is suspected despite a negative finding, a second sample should be collected and tested no less than **1 week later**.

Seroconversion from a negative sample to a positive sample is evidence of either a recent infection or an acute infection.

A positive result generally indicates exposure to the pathogen, or administration of HSV immunoglobulin.

Test results are reported qualitatively as positive or negative for the presence of HSV-1 IgG. The results of this assay are not by themselves diagnostic, but should be determined in conjunction with clinical findings and other diagnostic procedures as well as in association with medical judgement.

The magnitude of the reported Index is not indicative of the amount of antibody present in the patient sample.

Calibrators and controls may give different RLU or dose results on LIAISON®, LIAISON® XL and LIAISON® XS, but patient results are equivalent.

13. LIMITATIONS OF THE PROCEDURE

1. A skillful technique and strict adherence to the instructions are necessary to obtain reliable results.
2. Bacterial contamination of samples may affect the test results. Assay results should be utilized in conjunction with other clinical and laboratory data to assist the clinician in making individual patient management decisions.
3. Test should be performed on serum only. The use of whole blood or plasma specimens has not been established.
4. Grossly hemolyzed, icteric or lipemic samples as well as samples containing particulate matter or exhibiting obvious microbial contamination are not recommended and should not be tested.
5. Do not heat inactivate serum.

Integrals may not be exchanged between analyzer types (LIAISON®, LIAISON® XL and LIAISON® XS). Once an integral has been introduced to a particular analyzer type, it must always be used on that analyzer until it has been exhausted. Due to traceability issues resulting from the above statement, patient follow-ups may not be concluded between analyzer types. These must be accomplished on one particular analyzer type (either LIAISON®, and LIAISON® XL or LIAISON® XS).

14. EXPECTED VALUES

The prevalence may vary depending upon geographical location, age, gender, type of test employed, specimen collection and handling procedures as well as clinical history of the patient.

15. SPECIFIC PERFORMANCE CHARACTERISTICS

15.1 Method Comparison

Studies were conducted which compared the LIAISON® HSV-1 Type Specific IgG assay to an FDA cleared Immunoblot. The studies were conducted on 951 samples collected in the United States. The samples were classified as 430 samples from pregnant women, 401 at risk samples (defined as from patients being seen at a Sexually Transmitted Disease (STD) clinic) and 120 low risk samples (defined as from patients seen at the clinic for anything other than an STD). The studies were conducted at a laboratory in the United States and at a laboratory in France. The results are expressed as Positive, Negative and Overall agreement with Exact 95% confidence intervals.

430 samples obtained from pregnant women from the State of New York were tested with the LIAISON® HSV-1 Type Specific IgG assay and the HSV-1 Reference method Immunoblot.

		Reference Immunoblot			
		Positive	Equivocal	Negative	Total
LIAISON HSV-1	Positive	235	0	9	244
	Equivocal	1	0	0	1
	Negative	3	0	182	185
	Total	239	0	191	430

	Percent Agreement		Exact 95% confidence interval
Positive	98.3%	(235/239)	95.8 to 99.3%
Negative	95.3%	(182/191)	91.3 to 97.5%
Overall	97.0%	(417/430)	94.9 to 98.2%

401 “At risk” samples were obtained from patients who were seen at STD clinics in the State of New York were tested with the LIAISON® HSV-1 Type Specific IgG assay and the HSV-1 Reference method Immunoblot.

		Reference Immunoblot			
		Positive	Equivocal	Negative	Total
LIAISON HSV-1	Positive	222	1	9	232
	Equivocal	0	0	1	1
	Negative	7	0	161	168
	Total	229	1	171	401

	Percent Agreement		Exact 95% confidence interval
Positive	96.9%	(222/229)	93.8 to 98.5%
Negative	93.6%	(161/172)	88.9 to 96.4%
Overall	95.5%	(383/401)	93.0 to 97.1%

120 “Low risk” samples were obtained from patients who were seen at clinics (not for STD) in the State of New York were tested with the LIAISON® HSV-1 Type Specific IgG assay and the HSV-1 Reference method Immunoblot.

		Reference Immunoblot			
		Positive	Equivocal	Negative	Total
LIAISON HSV-1	Positive	60	0	1	61
	Equivocal	0	0	0	0
	Negative	2	0	57	59
	Total	62	0	58	120

	Percent Agreement		Exact 95% confidence interval
Positive	96.8%	(60/62)	89.0 to 99.1%
Negative	98.3%	(57/58)	90.9 to 99.7%
Overall	97.5%	(117/120)	92.9 to 99.1%

15.2 Precision with LIAISON® Analyzer:

Assay precision performance was established at DiaSorin for the LIAISON® HSV-1 Type Specific IgG assay following CLSI EP5-A2. 8 serum samples, the HSV-1 negative control, positive control and 2 commercial controls (neg and Pos) were assayed in duplicate, 2 runs per day, over 20 operating days, to determine the repeatability and reproducibility of the assay (i.e. within- and between-assay variability). The 8 panel members were selected to represent negative to high-positive analyte levels.

Panel ID	N	mean Index	Within run SD	Within run %CV	between day SD	between day %CV	between run SD	between run %CV	Overall Index SD	overall Index %CV
NC	80	0.12	0.008	6.40	0.007	6.05	0.001	1.23	0.011	9.25
PC	80	1.86	0.039	2.11	0.102	5.47	0.014	0.73	0.109	5.89
Torch NC	80	273	28.4	8.56	44	15.91	37.10	13.58	70.874	25.95
Torch PC	80	26.19	1.09	4.18	1.278	4.87	0.18	0.68	1.583	6.04
HSV1A	80	1.60	0.04	2.38	0.087	5.47	0.022	1.35	0.099	6.21
HSV1B	80	1.12	0.05	4.47	0.071	6.32	0.004	0.37	0.083	7.41
HSV1C	80	0.95	0.04	4.45	0.037	3.90	0.004	0.39	0.052	5.45
HSV1D	80	53.55	1.06	2.01	2.555	4.77	0.260	0.49	2.788	5.21
HSV1E	80	0.72	0.02	2.42	0.039	5.45	0.013	1.86	0.043	6.00
HSV1F	80	0.74	0.04	4.85	0.045	6.03	0.001	0.08	0.054	7.32
HSV1G	80	0.98	0.02	1.72	0.046	4.63	0.002	0.23	0.048	4.88
HSV1H	80	1.17	0.05	4.66	0.112	9.68	0.033	2.80	0.146	12.48

15.3 Precision with LIAISON® XL Analyzer:

Assay precision performance was established at DiaSorin for the LIAISON® HSV-1 Type Specific IgG assay following CLSI EP5-A2. 8 serum samples, the HSV-1 negative control, positive control and 2 commercial controls (neg and Pos) were assayed in duplicate, 2 runs per day, over 20 operating days, to determine the repeatability and reproducibility of the assay (i.e. within- and between-assay variability). The 8 panel members were selected to represent negative to high-positive analyte levels.

Panel ID	N	mean Index	within run SD	within run %CV	between day SD	between day %CV	between run SD	between run %CV	overall Index SD	overall Index %CV
NC	80	0.12	0.01	6.56	0.00	0.00	0.01	6.80	0.01	8.30
PC	80	1.67	0.05	2.82	0.08	4.51	0.04	2.68	0.10	5.96
BioRAD-Neg	80	784.5	31.97	4.08	26.42	3.37	53.38	6.80	67.60	8.62
BioRad-Pos	80	22.85	0.56	2.47	1.13	4.93	0.35	1.53	1.31	5.72
HSV1-A1	80	1.32	0.03	2.21	0.07	4.93	0.02	1.81	0.08	5.70
HSV1-B1	80	0.93	0.02	2.62	0.04	4.66	0.02	2.46	0.05	5.89
HSV1-C1	80	1.00	0.02	2.39	0.05	4.52	0.03	3.38	0.06	6.13
HSV1-D1	80	56.22	0.83	1.47	2.26	4.01	1.19	2.11	2.68	4.77
HSV1-E2	80	0.63	0.02	3.30	0.03	5.49	0.02	2.66	0.04	6.94
HSV1-F2	80	0.62	0.02	2.83	0.03	5.03	0.02	3.02	0.04	6.51
HSV1-G1	80	0.84	0.03	2.98	0.06	7.54	0.02	2.27	0.07	8.42
HSV1-H1	80	1.10	0.02	2.05	0.06	5.14	0.03	2.34	0.07	6.00

15.4 Precision with LIAISON® XS Analyzer:

A 5 day precision study was conducted at DiaSorin Inc. A panel of 6 human serum samples and the negative and positive kit controls were tested on 3 LIAISON® XS Analyzers in 6 replicates in a single run each day using 1 lot of LIAISON® HSV-1 reagent. CLSI document EP15-A3 was consulted in the preparation of the testing protocol.

Sample ID	Mean Index	Intra-Run		Total Within-Site	
		SD	%CV	SD	%CV
NC*	342.1	19.73	5.8%	18.37	5.4%
PC	2.70	0.035	1.3%	0.093	3.4%
Sample 1	0.095	0.005	5.2%	0.006	6.5%
Sample 2	0.78	0.015	1.9%	0.040	5.1%
Sample 3	0.91	0.017	1.9%	0.051	5.5%
Sample 4	1.34	0.023	1.7%	0.062	4.6%
Sample 5	5.79	0.089	1.5%	0.150	2.6%
Sample 6	41.577	0.466	1.1%	0.664	1.6%

- NC based on RLUs as Index value was below the measuring range of the assay

15.5 Cross-Reactivity: Cross reactivity studies for the HSV-1 Type Specific IgG assay were designed to evaluate potential interference directed against closely related members of the Herpes virus family (EBV, CMV, VZV) and other conditions that may mimic an HSV infection.

Organism/Condition	N	Reference Immunoblot	LIAISON Positive	LIAISON Negative	LIAISON Equivocal
Epstein Barr Virus (IgG)	10	Positive	7	0	0
		Negative	0	3	0
Epstein Barr Virus (IgM)	10	Positive	10	0	0
		Negative	0	0	0
Cytomegalovirus (IgG)	10	Positive	8	0	0
		Negative	0	1	0
		Equivocal	0	1	0
Cytomegalovirus (IgM)	10	Positive	10	0	0
		Negative	0	0	0
Toxoplasmosis (IgG)	10	Positive	10	0	0
		Negative	0	0	0
Toxoplasmosis (IgM)	10	Positive	10	0	0
		Negative	0	0	0
VZV	10	Positive	9	0	0
		Negative	0	1	0
Rubella	10	Positive	8	0	0
		Negative	0	2	0
Treponema Pallidum	10	Positive	9	0	0
		Negative	1	0	0
Gardnerella vaginalis	10	Positive	6	0	0
		Negative	0	3	0
		Equivocal	1	0	0
Candida albicans	10	Positive	7	0	0
		Negative	1	2	0
Neisseria Gonorrhea	7	Positive	7	0	0
		Negative	0	0	0
Human Papilloma Virus	10	Positive	6	0	0
		Negative	0	4	0
Chlamydia trachomatis	10	Positive	8	0	0
		Negative	0	2	0
HAMA Samples	9	Positive	5	0	0
		Negative	0	3	0
		Equivocal	0	0	1

15.6 Interfering substances:
Controlled studies of potentially interfering substances showed that the assay performance was not affected by hemolysis (at 200 mg/dL Hemoglobin), lipemia (at 3000 mg/dL triglycerides), icterus (at 20 mg/dL of bilirubin), cholesterol (at 500 mg/dL) serum albumin (at 10,000 mg/dL).

16. References

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