SIEMENS Healthineers

Syphilis (Syph)

Current Revision and Date[a]	Rev. 02, 2017-09	
Product Name	Atellica IM Syphilis (Syph)	REF 10995675
Abbreviated Product Name	Atellica IM Syph	
Test Name/ID	SYPH	
Systems	Atellica IM Analyzer	
Materials Required but Not Provided	Atellica IM APW1	REF 10995458
Optional Materials	Atellica IM Syph QC	REF 10995676
Specimen Types	Serum, EDTA plasma, lithium heparin plasma, sodium heparin plasma, citrate plasma	
Sample Volume	100 µL	

[a] A vertical bar in the page margin indicates technical content that differs from the previous version.

WARNING

The Atellica IM Syph assay is not intended for blood and tissue donor screening.

Intended Use

The Atellica™ IM Syphilis (Syph) assay is for *in vitro* diagnostic use in the qualitative determination of antibodies to *Treponema pallidum* in human serum and plasma (EDTA, lithium heparin, sodium heparin, and citrate) using the Atellica™ IM Analyzer as an aid in the diagnosis of syphilis.

Summary and Explanation

The Atellica IM Syph assay is a direct sandwich immunoassay used for the detection of *Treponema pallidum* antibodies in human serum or plasma.

Syphilis is primarily transmitted via sexual contact, but can also be transmitted from mother to fetus. Syphilis is caused by the spirochete *T. pallidum*, which has never been successfully cultured in artificial media. Syphilis infections are classified into early (infectious) and late (non-infectious) stages. Early syphilis may be further divided into primary, secondary, and early latent syphilis. The signs and symptoms of syphilis are numerous; before the advent of serological testing, precise diagnosis was very difficult. In fact, the disease was often confused with other diseases, particularly in its tertiary stage. If not treated, syphilis can cause serious effects such as damage to the heart, aorta, brain, eyes, and bones. In some cases these effects can be fatal. Therefore, the serological diagnosis of syphilis is very important.[1,2]

The serological diagnosis of syphilis is classified into 2 groups: nontreponemal tests and treponemal tests. Nontreponemal tests, which include venereal disease research laboratory (VDRL) and rapid plasma reagin (RPR) tests, detect antibodies formed by the host in response to lipid material released from damaged host cells as well as to lipoprotein-like material released from the spirochete. Treponemal tests detect specific treponemal antibodies, and the techniques used include agglutination (*T. pallidum* hemagglutination [TPHA], *T. pallidum* particle agglutination [TPPA]), immunoassay (enzyme immunoassay [EIA] or chemiluminescent immunoassay [CLIA]), immunofluorescence (fluorescent treponemal antibody absorption [FTA-ABS]), and immunoblotting. Nontreponemal tests have poor sensitivity and specificity, and recombinant antigen-based treponemal tests have higher sensitivity and specificity than native antigen-based treponemal tests.[3-5]

Principles of the Procedure

The Atellica IM Syph assay is intended to be a fully automated, antigen sandwich assay, using direct chemiluminescent technology. The ancillary pack reagent containing acridinium-ester-labeled *T. pallidum* recombinant antigens is added to the sample. These *T. pallidum* recombinant antigens form complexes with the antibodies in the sample. The Solid Phase Reagent, containing biotinylated *T. pallidum* recombinant antigens preformed to streptavidin-coated magnetic latex particles, is then added to the sample. Antibody-antigen complexes will form if syphilis antibodies are present in the sample. The particles capture the *T. pallidum* recombinant antigen-antibody complexes.

A direct relationship exists between the level of antibodies to *T. pallidum* present in the patient sample and the amount of relative light units (RLUs) detected by the system. A result of reactive, nonreactive, or equivocal is determined according to the Index Value established with the calibrators. Refer to *Interpretation of Results*.

Reagents

Material Description	Storage	Stability[a]
Atellica IM Syph ReadyPack® primary reagent pack **Solid Phase** 20.0 mL/reagent pack Streptavidin-coated paramagnetic microparticles preformed with biotinylated recombinant Tp15 antigen (~1.35 µg/mL) and biotinylated recombinant Tp17 antigen (~1.65 µg/mL) in buffer; surfactant; bovine gamma globulin; goat serum; preservative	Unopened at 2–8°C Onboard	Until expiration date on product 60 days
Atellica IM Syph ReadyPack ancillary reagent pack **Ancillary Reagent** 8.0 mL/reagent pack Recombinant Tp15 antigen (~0.1 µg/mL) and recombinant Tp17 antigen (~0.15 µg/mL) labeled with acridinium esters in buffer; surfactant; goat serum; preservative	Unopened at 2–8°C Onboard	Until expiration date on product 60 days
Atellica IM Syph CAL 2.0 mL/vial Human plasma positive for *Treponema pallidum* antibodies; phosphate buffer; sodium azide (< 0.1%)	At 2–8°C At room temperature Atellica™ Sample Handler[b]	Until expiration date on product 8 hours

Material Description	Storage	Stability[a]
Atellica IM APW1 ReadyPack ancillary reagent pack[c] 25.0 mL/pack 0.4 N sodium hydroxide	Unopened at 2–8°C	Until expiration date on product
	Onboard	14 days

[a] Refer to*Storage and Stability*.

[b] Refer to the supplementary document "Atellica Sample Handler Calibrator and QC Storage and Stability" for information about storage and stability of materials in the Cal-QC tube storage area.

[c] Refer to *Materials Required but Not Provided*.

Warnings and Precautions

For *in vitro* diagnostic use.

For Professional Use.

CAUTION

Federal (USA) law restricts this device to sale by or on the order of a licensed healthcare professional.

Safety data sheets (SDS) available on siemens.com/healthineers.

H290, H319, H315
P280, P264,
P305+P351+P338,
P310, P390, P501

Warning!
May be corrosive to metals. Causes serious eye irritation. Causes skin irritation.
Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Absorb spillage to prevent material damage. Dispose of contents and container in accordance with all local, regional, and national regulations.
Contains: sodium hydroxide (in Atellica IM APW1)

CAUTION POTENTIAL BIOHAZARD

Contains human source material. Each donation of human blood or blood component was tested by FDA-approved methods for the presence of antibodies to human immunodeficiency virus type 1 (HIV-1) and type 2 (HIV-2), as well as for hepatitis B surface antigen (HBsAg) and antibody to hepatitis C virus (HCV). The test results were negative (not repeatedly reactive). No test offers complete assurance that these or other infectious agents are absent; this material should be handled using good laboratory practices and universal precautions.[6-8]

The calibrators contain human plasma that is reactive for antibody to *T. pallidum*. The units were treated with a BPL-UV inactivation procedure[9]; however, all products manufactured using human source material should be handled as potentially infectious.

CAUTION

This device contains material of animal origin and should be handled as a potential carrier and transmitter of disease.

Contains sodium azide as a preservative. Sodium azide can react with copper or lead plumbing to form explosive metal azides. On disposal, flush reagents with a large volume of water to prevent buildup of azides. Disposal into drain systems must be in compliance with prevailing regulatory requirements.

Dispose of hazardous or biologically contaminated materials according to the practices of your institution. Discard all materials in a safe and acceptable manner and in compliance with prevailing regulatory requirements.

Note For information about reagent preparation, refer to *Preparing the Reagents* in the *Procedure* section.

Note For information about calibrator preparation, refer to *Preparing the Calibrators*.

Storage and Stability

Store reagents in an upright position. Protect the product from heat and light sources. Unopened reagents are stable until the expiration date on the product when stored at 2–8°C.

Store calibrators in an upright position. Calibrators are stable until the expiration date on the product when stored at 2–8°C. Calibrators are stable for 8 hours at room temperature.

Store Atellica IM APW1 in an upright position. Atellica IM APW1 is stable until the expiration date on the product when stored at 2–8°C.

Do not use products beyond the expiration date printed on the product labeling.

Onboard Stability

Reagents are stable onboard the system for 60 days. Discard reagents at the end of the onboard stability interval.

Note Refer to the supplementary document "Atellica Sample Handler Calibrator and QC Storage and Stability" for information about storage and stability of materials in the Cal-QC tube storage area.

Atellica IM APW1 is stable onboard the system for 14 days.

Do not use products beyond the expiration date printed on the product labeling.

Specimen Collection and Handling

Serum and plasma (EDTA, lithium heparin, sodium heparin, and citrate) are the recommended sample types for this assay.

Collecting the Specimen

- Observe universal precautions when collecting specimens. Handle all specimens as if they are capable of transmitting disease.[8]
- Follow recommended procedures for collection of diagnostic blood specimens by venipuncture.[10]
- Follow the instructions provided with your specimen collection device for use and processing.[11]
- Allow blood specimens to clot completely before centrifugation.[7]
- Keep tubes capped at all times.[7]
- Samples are processed by centrifugation, typically followed by physical separation of the serum or plasma from the red cells. The centrifugation step may occur up to 24 hours post-draw. When testing 10 samples where the centrifugation step was varied up to 24 hours post-draw, no clinically significant differences were observed.
- Test samples as soon as possible after collecting.

Storing the Specimen

- Store samples at 2–8°C if not tested immediately.
- Store primary tube samples at 2–8°C for up to 7 days. Keep samples capped at all times. Primary tube samples include serum stored on the clot, plasma stored on packed red cells, and samples processed and stored in gel barrier blood collection tubes. When 10 samples in these primary tubes were tested for up to 7 days, no clinically significant differences were observed.
- Freeze samples, devoid of red blood cells, at ≤ -20°C for longer storage. Do not store in a frost-free freezer. Thoroughly mix thawed samples and centrifuge before using. When 10 samples were subjected to 6 freeze/thaw cycles, no clinically significant differences were observed.

The handling and storage information provided here is based on data or references maintained by the manufacturer. It is the responsibility of the individual laboratory to use all available references and/or its own studies when establishing alternate stability criteria to meet specific needs.

Transporting the Specimen

Package and label specimens for shipment in compliance with applicable federal and international regulations covering the transport of clinical specimens and etiological agents.

Store samples capped at 2–8°C upon arrival. If shipment is expected to exceed 7 days, ship specimens frozen. Samples maintained at room temperature for up to 7 days or refrigerated for up to 7 days demonstrated no qualitative differences.

Preparing the Samples

This assay requires 100 µL of sample for a single determination. This volume does not include the unusable volume in the sample container or the additional volume required when performing duplicates or other tests on the same sample. For information about determining the minimum required volume, refer to the online help.

Note Do not use specimens with apparent contamination.

Before placing samples on the system, ensure that samples are free of:

- Bubbles or foam.
- Fibrin or other particulate matter.

Note Remove particulates by centrifugation according to CLSI guidance and the collection device manufacturer's recommendations.[7]

Note For a complete list of appropriate sample containers, refer to the online help.

Procedure

Materials Provided

The following materials are provided:

REF	Contents	Number of Tests
10995675	1 ReadyPack primary reagent pack containing Atellica IM Syph Solid Phase 1 ReadyPack ancillary reagent pack containing Atellica IM Syph Ancillary Reagent ANC Atellica IM Syph master curve and test definition MC TDEF 2 vials Atellica IM Syph CAL low calibrator CAL L 2 vials Atellica IM Syph CAL high calibrator CAL H Atellica IM Syph CAL calibrator lot-specific value sheet CAL LOT VAL	200

Materials Required but Not Provided

The following materials are required to perform this assay, but are not provided:

REF	Description	
	Atellica IM Analyzer[a]	
10995458	Atellica IM APW1 (probe wash)	2 ReadyPack ancillary reagent packs containing 25.0 mL/pack WASH

[a] Additional system fluids are required to operate the system: Atellica IM Wash, Atellica IM Acid, Atellica IM Base, and Atellica IM Cleaner. For system fluid instructions for use, refer to the Document Library.

Optional Materials

The following materials may be used to perform this assay, but are not provided:

REF	Description	
10995676	Atellica IM Syph QC (quality control material)	2 x 7.0 mL negative quality control CONTROL – 2 x 7.0 mL positive quality control CONTROL + Quality control lot-specific value sheet CONTROL LOT VAL

Assay Procedure

The system automatically performs the following steps:

1. Dispenses 100 µL of sample into a cuvette.
2. Dispenses 40 µL of Ancillary Reagent, then incubates for 6 minutes at 37°C.
3. Dispenses 100 µL of Solid Phase, then incubates the mixture for 21 minutes at 37°C.
4. Separates, aspirates, then washes the cuvette with Atellica IM Wash.
5. Dispenses 300 µL each of Atellica IM Acid and Atellica IM Base to initiate the chemiluminescent reaction.
6. Reports results.

Preparing the Reagents

All reagents are liquid and ready to use. Before loading primary reagent packs onto the system, mix them by hand and visually inspect the bottom of the reagent pack to ensure that all particles are resuspended. For information about preparing the reagents for use, refer to the online help.

Note The Ancillary Reagent provided in this kit is matched to the Solid Phase. Do not mix Ancillary Reagent lots with different lots of Solid Phase.

Preparing the System

Ensure that the system has sufficient reagent packs loaded in the reagent compartment. The system automatically mixes reagent packs to maintain homogeneous suspension of the reagents. For information about loading reagent packs, refer to the online help.

Master Curve Definition

Before initiating calibration on each new lot of reagent, load the assay master curve and test definition values by scanning the MC TDEF 2D barcodes. For loading instructions, refer to the online help.

Performing Calibration

For calibration of the Atellica IM Syph assay, use the calibrators provided with each kit.

Calibration Frequency

Perform a calibration if one or more of the following conditions exist:

- When changing lot numbers of primary reagent packs.
- At the end of the lot calibration interval, for a specified lot of calibrated reagent on the system.
- At the end of the pack calibration interval, for calibrated reagent packs on the system.
- When indicated by quality control results.
- After major maintenance or service, if indicated by quality control results.

At the end of the onboard stability interval, replace the reagent pack on the system with a new reagent pack. Recalibration is not required, unless the lot calibration interval is exceeded.

Stability Interval	Days
Lot Calibration	37
Pack Calibration	21
Reagent Onboard Stability	60

For information about lot calibration and pack calibration intervals, refer to the online help.

Follow government regulations or accreditation requirements for calibration frequency. Individual laboratory quality control programs and procedures may require more frequent calibration.

Preparing the Calibrators

Calibrators are liquid and ready to use. Gently mix and invert the vials to ensure homogeneity of the material.

Note Use calibrators within the stability limits specified in *Storage and Stability* and discard any remaining material.

Calibration Procedure

The calibrators are provided in dropper vials. Each dispensed drop is approximately 50 µL.

The required sample volume for testing depends on several factors. For information about sample volume requirements, refer to the online help.

Use the following lot-specific materials to perform calibration:

- For the master curve and assay test definitions, refer to the lot-specific master curve and test definition sheet MC TDEF provided with the assay reagents.
- Calibrators provided in an assay kit must only be used with reagents from that assay kit lot. Do not use calibrators from one assay kit with reagents from a different assay kit lot.
- For the calibrator definitions, refer to the lot-specific value sheet CAL LOT VAL provided with the calibrator materials.
- Generate lot-specific barcode labels to use with the calibrator samples.

For instructions about how to perform the calibration procedure, refer to the online help.

Performing Quality Control

For quality control of the Atellica IM Syph assay, use the Atellica IM Syph QC or an equivalent product with at least 2 levels (low and high) of *T. pallidum* at least once during each day that samples are analyzed. Use the quality control material in accordance with the quality control instructions for use.

For the assigned values, refer to the lot-specific value sheet CONTROL LOT VAL provided. A satisfactory level of performance is achieved when the analyte values obtained are within the expected control interval for the system or within your interval, as determined by an appropriate internal laboratory quality control scheme. Follow your laboratory's quality control procedures if the results obtained do not fall within the acceptable limits. For information about entering quality control definitions, refer to the online help.

Follow government regulations or accreditation requirements for quality control frequency. Individual laboratory quality control programs and procedures may require more frequent quality control testing.

Test quality control samples after a successful calibration.

Taking Corrective Action

If the quality control results do not fall within the assigned values, do not report results. Perform corrective actions in accordance with established laboratory protocol. For suggested protocol, refer to the online help.

Results

Calculation of Results

The system determines the result using the calculation scheme described in the online help. Refer to *Interpretation of Results*.

Interpretation of Results

The system reports Atellica IM Syph assay results in Index Values and as Nonreactive, Reactive, or Equivocal:

- **Nonreactive:** Samples with a value < 0.90 Index are considered nonreactive for syphilis *T. pallidum* antibodies.
- **Reactive:** Samples with a value ≥ 1.10 Index are considered reactive for syphilis *T. pallidum* antibodies.
- **Equivocal:** Samples with a value ≥ 0.90 Index and < 1.10 Index are considered equivocal.

Retest Zone: Samples with equivocal values should be retested in duplicate.

If at least 2 of the 3 results are < 0.90 Index, the sample is considered nonreactive.

If at least 2 of the 3 results are ≥ 1.10 Index, the sample is considered reactive.

If at least 2 of the 3 results remain equivocal, supplemental testing of the sample is recommended.

The cut-off value for the Atellica IM Syph assay was verified based on the receiver operating characteristic (ROC) curve results.[12]

Note If the controls are out of range, the sample results are invalid. Do not report results.

Results of this assay should always be interpreted in conjunction with the patient's medical history, clinical presentation, and other findings.

Limitations

The following information pertains to limitations of the assay:

- The Atellica IM Syph assay is limited to the detection of antibodies to *T. pallidum* in human serum or plasma (EDTA, lithium or sodium heparinized plasma, citrated plasma).
- A nonreactive test result does not exclude the possibility of exposure to or infection with syphilis. *T. pallidum* antibodies may be undetectable in some stages of the infection and in some clinical conditions.
- Assay performance characteristics have not been established when the Atellica IM Syph assay is used in conjunction with other manufacturers' assays for specific syphilis serological markers.
- The performance of the Atellica IM Syph assay has not been established with neonatal specimens, cadaver specimens, heat-inactivated specimens, or body fluids other than serum or plasma, such as saliva, urine, amniotic, or pleural fluids.
- Assay interference due to possible circulating antibodies against pinta, yaws, and leptospirosis has not been evaluated.
- As with any chemical reaction, you must be alert to the possible effect on results of unknown interferences from medications or endogenous substances. The laboratory and physician must evaluate all patient results in light of the total clinical status of the patient.

Expected Values

The reagent formulations used on the Atellica IM Analyzer are the same as those used on the ADVIA Centaur® system. Expected values were established using the ADVIA Centaur system and confirmed by assay comparison. Refer to *Performance Characteristics on the Atellica IM Analyzer*.

A population of 806 apparently healthy male and female subjects (including pregnant [332], pediatric [75], and adult/not pregnant [399]) were tested in accordance with CLSI Document C28-A2.[13] Of these samples, 5 (0.6%) were reactive, 0 (0.0%) were equivocal, and 801 (99.4%) were nonreactive.

Assay results obtained at individual laboratories may vary from the data presented. Consider this information as guidance only.

Performance Characteristics

The reagent formulations used on the Atellica IM Analyzer are the same as those used on the ADVIA Centaur system. Some performance characteristics for the Atellica IM assay were established using the ADVIA Centaur system.

Performance Characteristics on the ADVIA Centaur System

Specificity

The assay was evaluated for potential cross-reactivity with other viral infections, disease-state specimens, and other populations. The reactive syphilis status of each specimen was verified using a syphilis comparative assay. The following results were obtained using the ADVIA Centaur system:

		Number of Reactive Anti-Syphilis Results	
Clinical Category	**Number Tested**	**ADVIA Centaur Assay**	**Comparative Assay**
Lyme disease	10	1	1
Anti-nuclear antibody (ANA)	10	0	0
Rheumatoid factor	10	0	0
HAMA	10	2	2
Hepatitis A infection (HAV) Total	20	10	10
Hepatitis A infection (HAV) IgM	5	0	0
Hepatitis B infection (HBV)	10	0	0
Hepatitis C infection (HCV)	10	0	0
Human immunodeficiency virus (HIV)	11	0	0
Cytomegalovirus (CMV) IgG	10	0	0
Cytomegalovirus (CMV) IgM	5	0	0
Epstein-Barr virus (EBV) IgG	10	0	0
Herpes simplex virus (HSV) IgG	10	5	5
Rubella IgG	10	0	0
Rubella IgM	10	0	0
Toxoplasma IgG	10	1	1
Toxoplasma IgM	10	0	0
Varicella zoster virus (VZV) IgG	10	2	2
Systemic lupus erythematosus (SLE)	10	0	0
Drug users	20	3	3
Flu vaccine recipients	26	0	0
Cord blood	18	1	1

		Number of Reactive Anti-Syphilis Results	
Clinical Category	**Number Tested**	**ADVIA Centaur Assay**	**Comparative Assay**
Pregnancy (1st, 2nd, and 3rd trimesters)	74	2	2
Pediatrics	48	0	0
Hospitalized	51	2	2
Transplant patients	20	0	0
High IgG	5	0	0
High IgM	10	0	0
Myeloma patients	13	0	1
Total Samples Tested	**476**	**29**	**30**

All samples that demonstrated a positive result (with the exception of 2 HAV-positive samples) were also confirmed positive by other tests (TPPA or RRP), indicating reactivity to Syphilis (*T. pallidum* antibodies) rather than cross-reactivity.

Assay results obtained at individual laboratories may vary from the data presented.

Percent Agreement

Percent agreement was determined by comparing the performance of the ADVIA Centaur SYPH assay to commercially available syphilis assays. A total of 2108 samples were tested on the ADVIA Centaur system, split between 2 different test lots, including the following specimens:

- 474 apparently healthy subjects (including pediatrics)
- 285 medically diagnosed syphilis samples
- 124 samples reactive by previous laboratory testing (treponemal and nontreponemal methods)
- 370 samples sent for routine syphilis testing
- 339 samples from pregnant subjects
- 516 HIV-positive samples

Equivocal samples were repeated in singlicate on the instrument that gave the equivocal results. If a sample reported an equivocal result upon retesting, the sample result was reported as equivocal; otherwise, the sample was retested a third time in singlicate to assign a 2-out-of-3-rule outcome.

For purposes of percent agreement calculations, equivocal results obtained on the ADVIA Centaur system (n = 4) were assigned the opposite clinical interpretation of the comparative assay result. Equivocal results obtained on the comparative system (n = 2) were removed from the analysis.

Percent Agreement: Total Study Population

The negative percent agreement of the ADVIA Centaur SYPH assay compared to the comparative assay was 99.4% (1382/1391) with a 95% confidence interval (CI) of 98.8%–99.7%.

The positive percent agreement of the ADVIA Centaur SYPH assay compared to the comparative assay was 97.9% (700/715) with a 95% confidence interval (CI) of 96.6%–98.8%.

	Comparative Assay			
ADVIA Centaur System	**Reactive**	**Indeterminate**	**Nonreactive**	**Total**
Reactive	700	1	6	707
Equivocal	1	0	3	4
Nonreactive	14	1	1382	1397
Total	**715**	**2**	**1391**	**2108**

Percent Agreement: Apparently Healthy Population

A population of 806 apparently healthy subjects was tested using the ADVIA Centaur SYPH assay and a commercially available syphilis assay. The performance of the ADVIA Centaur SYPH assay is shown in the following table:

Apparently Healthy Subjects	Reactive	Equivocal	Nonreactive	Total	Negative Percent Agreement
Pregnant	1 (0.3%)	0 (0.0%)	331 (99.7%)	332	100% (329/329)
Pediatric	1 (1.3%)	0 (0.0%)	74 (98.7%)	75	100% (73/73)
Other[a]	3 (0.8%)	0 (0.0%)	396 (99.2%)	399	100% (389/389)
Total	**5 (0.6%)**	**0 (0.0%)**	**801 (99.4%)**	**806**	**100% (791/791)**

[a] Other refers to samples from apparently healthy adults who are not pregnant.

Percent Agreement: Expected Positive Population

Samples from patient populations expected to test positive for syphilis were tested on the ADVIA Centaur and on a commercially available syphilis assay. These samples were from subjects found reactive by previous laboratory testing, and subjects who had been medically diagnosed with syphilis.

The positive percent agreement of the ADVIA Centaur SYPH assay compared to the comparative assay was 99.4% (535/538) with a 95% confidence interval (CI) of 98.4%–99.9%.

Expected Positive Subjects	Reactive	Equivocal	Nonreactive	Total	Positive Percent Agreement
TPPA/RPR-Reactive	**271** (98.2%)	1 (0.4%)	4 (1.4%)	276	99.6% (271/272)
Medically Diagnosed	264 (92.6%)	0 (0.0%)	21 (7.4%)	285	99.2% (264/266)
Total	**535 (95.4%)**	**1 (0.2%)**	**25 (4.5%)**	**561**	**99.4% (535/538)**

Percent Agreement: Intended Use Population

Samples from patient populations expected to receive routine testing for syphilis (samples sent for routine testing and HIV-positive samples) were tested on the ADVIA Centaur and on a commercially available syphilis assay.

The negative percent agreement of the ADVIA Centaur SYPH assay compared to the comparative assay was 98.4% (568/577) with a 95% confidence interval (CI) of 97.1%–99.3%.

The positive percent agreement of the ADVIA Centaur SYPH assay compared to the comparative assay was 98.2% (160/163) with a 95% confidence interval (CI) of 94.7%–99.6%.

	Comparative Assay			
ADVIA Centaur System	**Reactive**	**Indeterminate**	**Nonreactive**	**Total**
Reactive	160	1	6	167
Equivocal	0	0	3	3
Nonreactive	3	0	568	571
Total	**163**	**1**	**577**	**741**

Interferences

Interference testing was performed in accordance with CLSI Document EP07-A2.[14]

Hemolysis, Icterus, Lipemia (HIL), and Other Interferences

Specimens that contain...	Demonstrate ≤ 10% change in results up to...
Hemoglobin	500 mg/dL
Triglycerides (intralipids)	1000 mg/dL
Cholesterol	400 mg/dL
Bilirubin, conjugated	40 mg/dL
Bilirubin, unconjugated	40 mg/dL
Protein (human serum albumin)	11 g/dL
Hyper-IgG	30 mg/mL
Biotin	62.5 ng/mL

Results were established using the ADVIA Centaur system.

Performance Characteristics on the Atellica IM Analyzer

Positive Percent Agreement

Positive percent agreement was determined by comparing the Atellica IM Syph assay using the Atellica IM Analyzer to the ADVIA Centaur SYPH assay using the ADVIA Centaur XP system.

A population of 107 ADVIA Centaur SYPH reactive samples was tested using the Atellica IM Syph assay. The performance of the Atellica IM Syph assay is shown in the following table:

Number	Nonreactive	Reactive	Positive Percent Agreement (%)
107	0	107	100% (107/107)

The positive percent agreement of the Atellica IM Syph assay was 100% (107/107) with a 95% confidence interval of 96.5%–100%.

Assay results obtained at individual laboratories may vary from the data presented.

Negative Percent Agreement

Negative percent agreement was determined by comparing the Atellica IM Syph assay using the Atellica IM Analyzer to the ADVIA Centaur SYPH assay using the ADVIA Centaur XP system.

A population of 123 ADVIA Centaur SYPH nonreactive samples was tested using the Atellica IM Syph assay. The performance of the Atellica IM Syph assay is shown in the following table:

Number	Nonreactive	Reactive	Negative Percent Agreement (%)
123	123	0	100% (123/123)

The negative percent agreement of the Atellica IM Syph assay was 100% (123/123) with a 95% confidence interval of 97.0%–100%.

Assay results obtained at individual laboratories may vary from the data presented.

Precision

Precision was determined in accordance with CLSI Document EP05-A3.[15] Samples were assayed on an Atellica IM Analyzer in duplicate in 2 runs per day for 20 days. The assay was designed to have within-laboratory precision ≤ 0.09 Index SD for samples < 0.72 Index, ≤ 12% CV for samples from 0.72–1.32 Index, and ≤ 10% CV for samples > 1.32 Index. The following results were obtained:

			Repeatability		Within-Laboratory Precision	
Sample Type	N[a]	Mean (Index)	SD[b] (Index)	CV[c] (%)	SD (Index)	CV (%)
Plasma A	80	0.46	0.01	N/A[d]	0.01	N/A
Plasma B	80	0.95	0.01	1.4	0.02	2.5
Plasma C	80	8.55	0.10	1.2	0.26	3.1
Plasma D	80	20.68	0.25	1.2	0.73	3.5
Plasma E	80	32.22	0.34	1.1	1.00	3.1
Control 1	80	0.10	0.00	N/A	0.00	N/A
Control 2	80	3.34	0.03	0.8	0.07	2.2

[a] Number of samples tested.
[b] Standard deviation.
[c] Coefficient of variation.
[d] Not applicable.

Assay results obtained at individual laboratories may vary from the data presented.

Technical Assistance

For customer support, contact your local technical support provider or distributor.

siemens.com/healthineers

References

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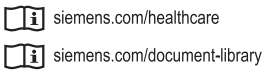
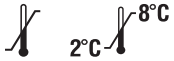
Definition of Symbols

The following symbols may appear on the product labeling:

Symbol	Symbol Title and Description
	Consult instructions for use
	Version of instructions for use
	Internet URL address to access the electronic instructions for use

Symbol	Symbol Title and Description
Rev. REVISION	Revision
	Caution Consult instructions for use or accompanying documents for cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device.
	Biological risks Potential biological risks are associated with the medical device.
	Corrosive
	Dangerous to environment
	Irritant Oral, dermal, or inhalation hazard
	Inhalation hazard Respiratory or internal health
	Flammable Flammable to extremely flammable
	Oxidizing
	Explosive
	Toxic
	Compressed gas
	Keep away from sunlight Prevent exposure to sunlight and heat.
	Up Store in an upright position.
	Do not freeze
	Temperature limit Upper and lower limits of temperature indicators are adjacent to the upper and lower horizontal lines.

Symbol	Symbol Title and Description
	Handheld barcode scanner
IVD	*In vitro* diagnostic medical device
Σ (n)	Contains sufficient for <n> tests Total number of IVD tests the system can perform with the IVD kit reagents appears adjacent to the symbol.
RxOnly	Prescription device (US only) Applies only to United States-registered IVD assays. CAUTION: Federal (USA) law restricts this device to sale by or on the order of a licensed healthcare professional.
	Mixing of substances Mix product before use.
g mL	Reconstitute and mix lyophilized product before use.
	Target
	Interval
	Legal Manufacturer
EC REP	Authorized Representative in the European Community
	Use-by date Use by the designated date.
LOT	Batch code
REF	Catalog number
	Recycle
PRINTED WITH SOY INK	Printed with soy ink
CE	CE Mark
CE 0088	CE Mark with notified body ID number Notified body ID number can vary.
YYYY-MM-DD	Date format (year-month-day)
CHECKSUM	Variable hexadecimal number that ensures the Master Curve and Calibrator definition values entered are valid.
UNITS C	Common Units

Symbol	Symbol Title and Description
UNITS SI	International System of Units
MATERIAL	Material
MATERIAL ID	Unique material identification number
CONTROL NAME	Name of control
CONTROL TYPE	Type of control

Legal Information

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