Antibody to Hepatitis B Surface Antigen (Mouse Monoclonal IgM)

Key to symbols used

REF
List Number

IVD
For In Vitro Diagnostic Use

LOT
List Number

ACTIVATOR DILUENT
Activator Diluent

ACTIVATOR CONCENTRATE
Activator Concentrate

EC REP
Authorized Representative

Legal Manufacturer

U.S. License No. 43

ABBOTT LABORATORIES
Diagnostics Division
Abbott Park, IL 60064

Customer Service
United States: 1-877-4ABBOTT
NAME AND INTENDED USE

The ABBOTT PRISM HBsAg assay is an in vitro chemiluminescent immunoassay (ChLIA) for the qualitative detection of hepatitis B surface antigen (HBsAg) in human serum and plasma specimens. The ABBOTT PRISM HBsAg assay (ChLIA) is intended to screen individual human donors, including volunteer donors of whole blood and blood components, and other living donors for the presence of HBsAg. It is also intended for use in testing blood and plasma specimens to screen organ donors when specimens are obtained while the donor’s heart is still beating, and in testing blood specimens to screen cadaveric (non-heart-beating) donors. It is not intended for use on cord blood specimens. 

For further information regarding ChLIA technology, refer to the ABBOTT PRISM Operations Manual, Section 3.

REAGENTS

NOTE: Each specific component description that follows is accompanied by a unique symbol. These symbols appear on both the component label and on corresponding instrument tubing identifier labels. They are meant to facilitate identification and installation of reagent bottles within the ABBOTT PRISM System ambient reagent bay and refrigerator.

ABBOTT PRISM HBsAg Assay Kit (No. 6D19-68)

NOTE: Do not mix reagents from different bottles. Do not mix or interchange reagents from different ABBOTT PRISM HBsAg Assay Kits.

1. Bottle (353 mL) Antibody to Hepatitis B Surface Antigen (Mouse Monoclonal IgG Coated). Contains 1 mg/mL recombinant Hepatitis B surface antigen in phosphate buffered saline with 1% bovine serum albumin, 0.025% sodium azide. Preservative: 0.1% sodium azide. (Symbol: ♦)
2. Bottle (288 mL) Antibody to Hepatitis B Surface Antigen (Goat Polyclonal). Contains 1 mg/mL recombinant Hepatitis B surface antigen in phosphate buffered saline with 1% bovine serum albumin. Preservative: 0.1% sodium azide. (Symbol: ●)
3. Bottle (10.4 mL each) Calibrator. Contains 0.25 µg/mL Hepatitis B surface antigen in phosphate buffered saline with 0.1% sodium azide. Preservative: 0.1% sodium azide. (Symbol: ○)
4. Bottle (2 mL) Positive Run Control. Contains 0.25 µg/mL Hepatitis B surface antigen in phosphate buffered saline. Preservative: 0.1% sodium azide. (Symbol: ×)
5. Bottle (2 mL) Negative Run Control. Contains 0.06% diethylenetriaminepentaacetic acid. Preservative: 0.1% sodium azide. (Symbol: ▲)
6. Bottle (2 mL) Negative Control Kit (No. 3E60-10) or 3E60-11) contains 0.06% diethylenetriaminepentaacetic acid. Preservative: 0.1% sodium azide. (Symbol: ○)
7. Bottle (8 mL each) Immunoprobe. Contains 0.25 µg/mL Hepatitis B surface antigen in phosphate buffered saline with 0.1% sodium azide. Preservative: 0.1% sodium azide. (Symbol: ○)
8. Bottle (1 mL) Activator Concentrate. Contains 1.0% sodium azide. (Symbol: ●)
9. Bottle (900 mL each) Activator Diluent. Contains 0.4% hydrogen peroxide/0.06% diethylenetriaminepentaacetic acid. Preservative: 0.1% sodium azide. (Symbol: ●)
10. Bottle (33.9 mL) Transfer Wash. Contains 0.03% solids. Preservative: 0.1% sodium azide. (Symbol: ●)
11. Bottle (333 mL) Antibody to Hepatitis B Surface Antigen (Mouse Monoclonal) Coated Microparticles in phosphate buffered saline with 0.1% sodium azide. (Symbol: ♦)
12. Bottle (328 mL) Antibody to Hepatitis B Surface Antigen (Goat Polyclonal). Contains 1 mg/mL recombinant Hepatitis B surface antigen in phosphate buffered saline. Preservative: 0.1% sodium azide. (Symbol: ●)
13. Bottle (700 mL) Positive Calibrator (Human). Contains 0.25 µg/mL Hepatitis B surface antigen in phosphate buffered saline. Preservative: 0.1% sodium azide. (Symbol: ○)
14. Bottle (300 mL each) Conjugate Wash. Contains 0.03% solids. Preservative: 0.1% sodium azide. (Symbol: ●)
15. Bottle (300 mL each) Antibody to Hepatitis B Surface Antigen (Goat Monoclonal IgM) Coated Microparticles in phosphate buffered saline with 0.1% sodium azide. (Symbol: ♦)
16. Bottle (300 mL each) Antibody to Hepatitis B Surface Antigen (Goat Monoclonal IgG) Coated Microparticles in phosphate buffered saline with 0.1% sodium azide. (Symbol: ♦)
17. Bottle (300 mL each) Antibody to Hepatitis B Surface Antigen (Goat Monoclonal IgG) Coated Microparticles in phosphate buffered saline with 0.1% sodium azide. (Symbol: ♦)

Other Reagents Required

ABBOTT PRISM HBsAg Wash Kit (No. 6D19-58)

1. Bottle (353 mL) Transfer Wash. Contains 0.03% solids. Preservative: 0.1% sodium azide. (Symbol: ●)
2. Bottle (1 mL) Conjugate Wash. Contains 0.06% diethylenetriaminepentaacetic acid. Preservative: 0.1% sodium azide. (Symbol: ●)

ABBOTT PRISM Activator Concentrate (No. 1A15-02)

4. Bottle (300 mL each) Activator Concentrate. Contains 0.4% hydrogen peroxide/0.06% diethylenetriaminepentaacetic acid. Preservative: 0.1% sodium azide. (Symbol: ●)
5. Bottle (300 mL each) Activator Diluent. Contains 0.03% solids. Preservative: 0.1% sodium azide. (Symbol: ●)

ABBOTT PRISM Run Control Kit (No. 3E60-10)

Other Reagents Required

ABBOTT PRISM Positive Run Control Kit (No. 3E60-11)

NOTE: Each batch MUST be in a release control (ABBOTT PRISM Positive Control). The ABBOTT PRISM Positive Control (included in Kit No. 3E60-10 or 3E60-11) must be used as the release control which has been configured to validate the system functionality and release sample results. Refer to the ABBOTT PRISM Run Control Kit package insert or the ABBOTT PRISM Positive Run Control Kit package insert for detailed handling and use instructions.

ABBOTT PRISM HBsAg assay meets FDA potency requirements.

Safety Precautions

CAUTION: This product contains human sourced and/or potentially infectious components. Some components sourced from human blood have been tested and found to be reactive for HBsAg, by FDA licensed tests. Refer to the REAGENTs section of this package insert. No known test method can offer complete assurance that all infectious agents from infected specimens have been removed from the reagent. Therefore, all human sourced materials must be considered potentially infectious. It is recommended that these reagents and human specimens be handled in accordance with the OSHA Bloodborne Pathogens. 72 Biosafety Level 2 or other appropriate biosafety precautions should be used for materials that contain or are suspected of containing infectious agents. These precautions include, but are not limited to the following:

• Wear gloves when handling specimens or reagents.
• Do not pipette by mouth.
• Do not eat, drink, smoke, apply cosmetics, or handle contact lenses in work areas where specimens or reagents are handled.
• Clean and disinfect all spills of specimens or reagents using an appropriate disinfectant, such as 0.1% sodium hypochlorite, or other suitable disinfectants.3,17,29
• Decant, capitulate, and dispose of all specimens, reagents, and other potentially contaminated materials in accordance with local, state, and federal regulations.29,30
• The ABBOTT PRISM Line Cleaner (No. 7A03-31) containing sodium azide. To remove contamination from old drains suspected of azide accumulation, the National Institute for Occupational Safety and Health recommends the following: (1) siphon liquid from trap using a rubber or plastic hose, (2) fill drain with 10% sodium hydroxide solution, (3) allow to stand for 16 hours, and (4) flush well with water.
• The components containing sodium azide are classified per the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) as: Irritant (Xi). The following are the appropriate Risk (R) and Safety (S) phrases.
  R32 Contact with acids liberates very toxic gas.
  S35 This material and its container must be disposed of in a safe way.
Preparation of Activator Solution
Activator solution must be prepared by mixing equal parts of ABBOTT PRISM Activator Concentrate and ABBOTT PRISM Activator Diluent. The activator solution expires 24 hours from preparation. The ABBOTT PRISM Activator Concentrate may be used immediately after removing from the refrigerator. The volume of activator solution required to multiple tests is calculated by the ABBOTT PRISM System software. Refer to the ABBOTT PRISM Operations Manual, Section 5, PLAN WORK LOAD for additional information. Use clean pipettes and/or metal-free containers (such as pipette tips or acid washed and purified or equivalent water rinsed glassware) to measure. Refer to the ABBOTT PRISM Operations Manual Glossary for the definition of purified water. Prepare the activator solution in the bottle provided in the ABBOTT PRISM Accessory Kit (SA36-60). Cover the bottle opening securely with the cap provided and invert gently 5 to 10 times to mix. Load the activator solution on the ABBOTT PRISM System. Refer to the ABBOTT PRISM Operations Manual, Section 5, PREPARE AND LOAD ACTIVATOR SOLUTION, for additional information.
NOTE: The activator solution must be used within 24 hours of preparation.
Storage Instructions
Store the ABBOTT PRISM HBsAg Assay Kit, ABBOTT PRISM Run Control Kit, ABBOTT PRISM Positive Run Control Kit, and ABBOTT PRISM Activator Concentrate at 2 - 8°C.
• Store the ABBOTT PRISM HBsAg Wash Kit and ABBOTT PRISM Activator Diluent at room temperature (15 - 30°C).
• Store ABBOTT PRISM Pipette Tips and ABBOTT PRISM Reaction Trays in their original packaging until use.
Indications of Instability or Deterioration of Reagents
The ABBOTT PRISM System will not continue to process samples when calibrator values do not meet specifications. This may indicate either deactivation or contamination of reagents, or instrument failure. Refer to the ABBOTT PRISM Operations Manual, Section 10, for additional information.
INSTRUMENT PROCEDURE
• ABBOTT PRISM software version 3.11 or higher must be used to perform the assay.
• Refer to the ABBOTT PRISM Operations Manual for a detailed description of Instrument Procedures.
• Refer to the ABBOTT PRISM Operations Manual, Section 7, for limitations associated with test management.
• Solutions required for instrument cleaning and maintenance are described in detail in the ABBOTT PRISM Operations Manual, Sections 5 and 9.
SPECIMEN COLLECTION AND PREPARATION FOR ANALYSIS
• Serum (including serum collected in separator tubes) or plasma is recommended for any ABBOTT PRISM assay. Follow the manufacturer’s processing instructions for serum and plasma collection tubes. CAUTION: Do not use specimens collected in heparin. Use of heparin as an anticoagulant may cause a reduction in Sample Net Counts and in Sample Net Counts/Cutoff Value (S/CO) for ABBOTT PRISM HCV. Therefore, heparin is not recommended for any ABBOTT PRISM assay.
• This assay was designed and validated for use with individual human serum and plasma specimens. This assay has not been validated for use with pooled specimens.
• Do not use cadaveric plasma specimens.
• Do not use heat-inactivated specimens.
• Do not use specimens with obvious microbial contamination.
• When shipped, specimens must be packaged and labeled in compliance with applicable regulations covering the transport of clinical specimens and infectious substances. Specimens may be shipped at 30°C or colder for a period not to exceed 7 days. Prior to freezing, the serum or plasma should be removed from the clot or red blood cells.
• Failure to follow the specified centrifugation procedure on specimens tested with the ABBOTT PRISM HBsAg assay may cause a reduction in Sample Net Counts and in S/CO (Sample Net Counts/Cutoff Value).

• Specimens may be stored for up to 14 days at 2 - 8 °C. If storage periods greater than 14 days are anticipated, the serum or plasma should be removed from the clot or red blood cells to avoid hemolysis. Store the serum or plasma frozen (-20°C or colder).

• For cadaveric specimens, follow general standards and/or regulations for collection, storage and handling. Cadaveric specimens may be stored frozen (-20°C or colder) or stored for up to 2 days at 2 - 8 °C. If storage periods greater than 2 days at 2 - 8 °C are anticipated, the serum should be removed from the clot to avoid hemolysis and stored frozen.

• Previously frozen specimens must be mixed gently and thoroughly after thawing and centrifugation according to Table II in this section.

• Twenty nonreactive and 20 low-level reactive specimens showed no impact of greater concentrations of these potentially interfering substances on the ABBOTT PRISM HBsAg assay is unknown.

• Performance has not been established using umbilical cord blood, or body fluids such as urine, saliva, semen, amniotic fluid, cerebrospinal fluid, or pleural fluid. These specimens should be tested using the ABBOTT PRISM HBsAg assay.

• Specimens collected by plasmapheresis, that have not been frozen, or non-hemolyzed specimens should be used when possible.

• Twenty nonreactive and 20 low-level reactive specimens showed no impact of greater concentrations of these potentially interfering substances have not been tested. The impact of greater concentrations of these potentially interfering substances on the ABBOTT PRISM HBsAg assay is unknown.

• Clear, non-hemolyzed specimens should be used when possible. Specimens containing visible particulate matter may give erroneous or inconsistent test results.

• No qualitative performance differences were observed when 20 nonreactive and 18 low-level reactive specimens were spiked with elevated levels of bilirubin (≥ 20 mg/dL), hemoglobin (≥ 500 mg/dL), red blood cells (≥ 0.4% v/v) or triglycerides (≥ 3000 mg/dL), or protein (≥ 12 g/dL). However, specimens that contain greater concentrations of these potentially interfering substances may give erroneous or inconsistent test results.

• Failure to follow the specified centrifugation procedure may give erroneous or inconsistent test results.

<table>
<thead>
<tr>
<th>Table II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centrifugation</strong></td>
</tr>
<tr>
<td><strong>Time (minutes)</strong></td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>25</td>
</tr>
</tbody>
</table>

ANY specimen (excluding non-frozen plasmapheresis) not tested within 24 hours of initial centrifugation, must be re-centrifuged before retesting. Previously frozen specimens must be centrifuged such that g-minutes is between 30,000 and 75,000. A refrigerated or non-refrigerated centrifuge is acceptable for use. The acceptable time and force ranges that meet this criterion are listed in Table I.

<table>
<thead>
<tr>
<th>Table I</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centrifugation</strong></td>
</tr>
<tr>
<td><strong>Time (minutes)</strong></td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>25</td>
</tr>
</tbody>
</table>

Convert rpm to RCF as follows: RCF = \( \frac{1.12 \times \text{rpm} \times \text{max} \times 4 \pi}{1000} \) 

Convert RCF to rpm as follows: rpm = \( \frac{\text{RCF} \times 1000 \times \text{max}}{1.12 \times 4 \pi} \) 

**RCF** - The relative centrifugal force generated during centrifugation.

**rpm** - The revolutions per minute of the rotor on which the specimens are being spun (usually the digital readout on the centrifuge will indicate the rpm).

**Centrifugation Time** - The time should be measured from the time the rotor reaches the required RCF or rpm to the time it begins decelerating.

**rpm** - Radius of the rotor in millimeters. The radius measured is dependent on whether the rotor is a fixed angle rotor or a swinging bucket rotor. This value is typically provided with the rotor, by the manufacturer. For the fixed angle rotor, R = \( \frac{r}{\cos(\theta)} \) is a measure of the distance from the rotor axis (center) to the bottom of the tube cavity. For the swinging bucket rotor, R is a measure of the distance from the rotor axis (center) to the bottom of the tube bucket while it is extended during rotation.

**g-minutes** - The unit of measure for the product of RCF (x g) and centrifugation time (minutes).
1. The ABBOTT PRISM Positive Control

Controls contamination of reagents, or instrument failure. It does not meet specifications. This may indicate either deterioration or the ABBOTT PRISM System will not generate results when calibrator values are above limits.

Cutoff: The ABBOTT PRISM Positive Control is provided in reports to show reactivity relative to the cutoff value. In the ABBOTT PRISM HBsAg assay, specimens with Net Counts greater than or equal to the cutoff value are considered reactive. The ABBOTT PRISM System calculates the ABBOTT PRISM HBsAg assay and calibrator results. These parameters cannot be printed, displayed, or edited.

Cutoff Value = Mean Negative Calibrator (NC) Net Counts + (0.19 × Mean Positive Calibrator (PC) Net Counts)

Example: Mean NC Net Counts = 100
Mean PC Net Counts = 1,000
Cutoff Value = 100 + (0.19 × 1,000) = 290

Results

• In the ABBOTT PRISM HBsAg assay, specimens with Net Counts less than the cutoff value are nonreactive and need not be tested further. Nonreactive specimens are considered nonreactive for HBsAg by the criteria of ABBOTT PRISM HBsAg.

• Repeatedly reactive specimens must be tested by the ABBOTT PRISM HBsAg Confirmatory assay, a licensed neutralizing confirmatory test. Only the specimens which are confirmed by specific neutralization with anti-HBs are considered positive for HBsAg.

• Individuals who are repeatedly reactive may be referred for medical evaluation which may include additional testing.

• The association of infectivity of donated blood or plasma and the presence of HBsAg is strong, it is recognized that presently available methods for HBsAg detection are not sensitive enough to detect all potentially infectious units of blood, plasma or possible cases of HBV infection. A nonreactive test result does not exclude infection.

Reading Results

Some S/CO values may be flagged with "<" or ">" symbols. For more information on sample reports, refer to the ABBOTT PRISM Operations Manual. In Section 5, Operating Instructions, Reports. The ABBOTT PRISM System reports sample results in Net Counts and S/CO. Net Counts are used by the ABBOTT PRISM System to interpret results. The S/CO value is provided in reports to show reactivity relative to the cutoff value. In the ABBOTT PRISM HBsAg assay, specimens with S/CO values of less than 1.00 are considered nonreactive. Specimens with an S/CO value of greater than or equal to 1.00 are considered reactive.

System Errors

For a description of the error codes that appear on ABBOTT PRISM System reports, refer to the ABBOTT PRISM Operations Manual. In Section 10.
LIMITATIONS OF THE PROCEDURE
• This assay was designed and validated for use with individual human serum and plasma specimens. This assay has not been validated for use with pooled specimens.
• Do not use specimens collected in heparin. Use of heparin as an anticoagulant may cause a reduction in Sample Net Counts when tested in SICCO Abbott PRISM HCV. Therefore, heparin is not recommended for any ABBOTT PRISM assay.
• Specimens from heparinized patients may be incompletely coagulated. Erroneous or inconsistent test results may occur due to the presence of fibrin. To prevent this phenomenon, draw specimens prior to heparin therapy.
• False-reactive test results can be expected with any test kit. False-reactive test results have been observed due to nonspecific interactions. Refer to the SPECIFIC PERFORMANCE CHARACTERISTICS section of this package insert for assay performance characteristics.
• Some specimens that have undergone multiple freeze-thaw cycles or have been stored frozen for prolonged periods may result in erroneous or inconsistent test results.
• Previously frozen specimens must be centrifuged per the SPECIMEN COLLECTION AND PREPARATION FOR ANALYSIS section of this package insert prior to running the assay.
• An increased occurrence of drain time errors may be observed for cadaveric specimens.
• Do not use cadaveric plasma specimens.
• Performance has not been established using umbilical cord blood, or body fluids such as urine, sputum, semen, amniotic fluid, cerebrospinal fluid, or pleural fluid. These specimens should not be tested using the ABBOTT PRISM HBsAg assay.
• Do not use heat-inactivated specimens.
• Do not use specimens with obvious microbial contamination, gross lipemia or gross hemolysis.

SPECIFIC PERFORMANCE CHARACTERISTICS

ASSAY REPRODUCIBILITY
Assay reproducibility was determined by testing a seven-member panel consisting of three replicate reactive for HBsAg ad subtype (panel members 1, 2, and 3), three diluted reactive specimens for HBsAg ay subtype (panel members 4, 5, and 6) and one specimen nonreactive for HBsAg (panel member 7). Panel members were prepared in recalcified human plasma. Each panel member was tested in replicates of four in five runs over five days with each of three reagent lots at six sites. In addition, each panel member was tested in replicates of four in five runs over five days with one of three reagent lots at four of the six sites. The Negative and Positive Controls were tested once at the beginning and end of each run on each subchannel. The intra-assay and inter-assay, standard deviation (SD) and percent coefficient of variation (%CV) were determined with a variance component analysis31 for a mixed model32 (Table III).

<table>
<thead>
<tr>
<th>Panel or Control</th>
<th>Number of Replicates</th>
<th>Mean S/CO</th>
<th>SD</th>
<th>%CV</th>
<th>Mean S/CO</th>
<th>SD</th>
<th>%CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Control</td>
<td>433p</td>
<td>0.26</td>
<td>0.08</td>
<td>14.6</td>
<td>0.041</td>
<td>15.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.23</td>
<td>0.138</td>
<td>5.2</td>
<td>0.204</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cutoff Value = Mean Negative Calibrator Net Counts + (0.19 x Mean Positive Calibrator Net Counts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ABBOTT PRISM HBsAg Assay Reproducibility

<table>
<thead>
<tr>
<th>Category</th>
<th>Tested</th>
<th>Number Confirmed Positive (% of RR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Blood and Plasmapheresis Donors</td>
<td>25,238</td>
<td>(0.03 - 0.09) (0.01 - 0.06) 6 (75.00)</td>
</tr>
<tr>
<td>Serum</td>
<td>870</td>
<td>5 (0.06) 3 (0.04) 4 (80.00)</td>
</tr>
<tr>
<td>Plasma</td>
<td>13,911</td>
<td>8 (0.06) 5 (0.04) 4 (80.00)</td>
</tr>
<tr>
<td>Donors</td>
<td>8,246</td>
<td>5 (0.06) 3 (0.04) 2 (66.67)</td>
</tr>
</tbody>
</table>

Assay Specificity
A total of 25,238 fresh serum and plasma specimens from volunteer whole blood donors and plasmapheresis donors were collected and tested at six geographically distinct blood centers (Table IV). Two sites tested a total of 8,246 serum specimens with initial and repeat reactive rates of 0.06% (5/8,246) and 0.04% (3/8,246), respectively. Three sites tested a total of 13,911 plasma specimens with initial and repeat reactive rates of 0.06% (87/13,911) and 0.04% (57/13,911), respectively. One site tested a total of 3,081 plasmapheresis donor specimens with initial and repeat reactive rates of 0.03% (10/3,081), repeat reactive rates of 0.00% (0/3,081), respectively. In six of the eight specimens (75.00%), the presence of HBsAg was confirmed by specific neutralization with anti-HBs. Two of the eight specimens were not confirmed as positive.

Specificity based on assumed zero prevalence of HBsAg in whole blood and plasmapheresis donors was estimated in these studies to be 99.99% (25,230/25,232) with a 95% confidence interval (CI) of 99.97% to 100.00%. The six repeatedly reactive specimens that confirmed positive for HBsAg were excluded from these calculations.

Three sites evaluated 870 serum and plasma specimens either collected from individuals with medical conditions unrelated to HBV infection or containing potentially interfering substances (Table IV). Fifty-nine of the 870 specimens (6.78%) were initially reactive, and 50 of the 870 specimens (5.75%) were repeatedly reactive. Forty of the 50 specimens (80.00%) confirmed positive for HBsAg, and ten specimens did not confirm by specific antibody neutralization. The ten specimens included one anti-EBV positive (12 tested), one anti-HIV positive (12 tested), one rubella antibody positive (12 tested), one anti-nuclear antibody positive (12 tested), one elevated triglycerides (10 tested), and five pregnant females (10S tested). The estimated specificity in this population was 98.90% (25,230/25,232).

TABLE IV
Reactivity of the ABBOTT PRISM HBsAg Assay in Whole Blood and Plasmapheresis Donors, in Specimens from Individuals with Medical Conditions Unrelated to HBV Infection, and in Specimens Containing Potentially Interfering Substances

<table>
<thead>
<tr>
<th>Category</th>
<th>Tested</th>
<th>Number Confirmed Positive (% of RR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Blood and Plasmapheresis Donors</td>
<td>25,238</td>
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<tr>
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<tr>
<td>Donors</td>
<td>8,246</td>
<td>5 (0.06) 3 (0.04) 2 (66.67)</td>
</tr>
<tr>
<td>Medical Conditions Unrelated to HBV Infection</td>
<td>3,081</td>
<td>1 (0.03) 0 (0.00) 0 (0.00)</td>
</tr>
<tr>
<td>Potentially Interfering Substances</td>
<td>870</td>
<td>50 (5.75) 40 (4.60)</td>
</tr>
</tbody>
</table>

IRR = Initial Reactive; RR = Repeat Reactive; CI = Confidence Interval

- A specimen was confirmed positive for HBsAg if the non-neutralized IR = Initial Reactive; RR = Repeat Reactive; CI = Confidence Interval
- Interassay variability contains intra-assay variability.
- One replicate was invalid due to instrument detection of sample drain time error.
- Two replicates were invalid due to instrument detection of sample dispense error.
anti-HTLV-I positive (12), anti-HTLV-II positive (12), non-viral liver diseases (42), rubella antibody positive (12), toxoplasma antibody positive (11), E.coli infections (5), syphilis serology positive (12), and hepatitis B antibody positive (12), rheumatoid factor positive (12), influenza vaccine recipients (52), elevated IgG (12), elevated IgM (13), elevated triglycerides (10), elevated bilirubin (13), elevated hemoglobin (11), and pregnant females (55).

The 50 repeatedly reactive specimens included the following: anti-EBV positive (1), anti-HIV-1 positive (1), anti-HIV-2 positive (1), non-viral liver diseases (5), rubella antibody positive (1), anti-rheumatoid factor positive (1), influenza vaccine recipients (1), elevated triglycerides (1), and pregnant females (32).

The following 40 specimens confirmed positive for HBsAg: anti-HCV positive (1), anti-HIV-1 positive (5), and anti-HIV-2 positive (1), non-viral liver diseases (5), influenza vaccine recipients (1), and pregnant females (27).

**ASSAY SENSITIVITY**

A total of 1,212 serum and plasma specimens from 514 individuals known to be positive for HBsAg, 98 individuals with acute HBV infection, 101 individuals with chronic HBV infection, 47 individuals who have recovered from HBV infection, and 452 individuals at increased risk for HBV infection were tested with the ABBOTT PRISM HBsAg assay. A total of 767 specimens (63.28%) were repeatedly reactive, of which 754 (98.31%) were confirmed positive by specific antibody neutralization (Table V). The overall sensitivity was estimated in these studies to be 100.0% (754/754) with a 95% CI of 99.51% to 100.00%.

**TABLE VI**

<table>
<thead>
<tr>
<th>Number Confirmed Positive</th>
<th>Number Repeat Reactive</th>
<th>Number Porative Reactive</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen</td>
<td>No. of Specimen</td>
<td>No. of Specimen</td>
<td>Group</td>
</tr>
<tr>
<td>Positive</td>
<td>514</td>
<td>162</td>
<td>HBsAg</td>
</tr>
<tr>
<td>Acute HBV Infection</td>
<td>98</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Chronic HBV Infection</td>
<td>101</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Recovered HBsAg</td>
<td>47</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Risk for HBV Infection</td>
<td>502</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,212</td>
<td>767</td>
<td></td>
</tr>
</tbody>
</table>

- Specimens from the preselected HBsAg positive category were tested only once.
- Preselected HBsAg positive specimens were repeatedly confirmed positive by specific antibody neutralization.
- Individuals at increased risk for HBV infection included the following categories: intravenous drug users (204), hemodialysis patients (50), hemophilia patients (50), and STD clinic patients (148).
- The 54 repeatedly reactive specimens included the following: intravenous drug users (25), hemodialysis patients (6), hemophilia patients (4), and STD clinic patients (19).
- The 41 specimens, which confirmed positive for HBsAg included the following: intravenous drug users (15), hemodialysis patients (5), hemophilia patients (4), and STD clinic patients (18). Of these 41 specimens, 32 were confirmed positive by a licensed reference HBsAg test. The PRISM assay confirmed an additional 9 specimens. In addition, there were no specimens in this category (452 specimens) that were confirmed positive by the licensed reference HBsAg test that were not confirmed positive by the PRISM assay.

The sensitivity of the ABBOTT PRISM HBsAg assay was evaluated using a seven-member panel comprised of specimens from an Abbott Laboratories HBsAg Sensitivity Panel. Panel members were prepared in recalcified human plasma. Three panel members were reactive for HBsAg as subtype, three members were reactive for HBsAg as subtype, and one member was nonreactive for HBsAg. The panel was tested as described in the ASSAY REPRODUCIBILITY section of this package insert. The detection of HBsAg ad and ay subtypes is presented in Tables VI and VII, respectively.

**TABLE VII**

<table>
<thead>
<tr>
<th>HBsAg Concentration (mg/ml)</th>
<th>Mean S/CO Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.917</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>0.525</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>0.445</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>0.093</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

The ability of the ABBOTT PRISM HBsAg assay to detect HBsAg was evaluated by testing 12 HBV seroconversion panels from blood and plasmapheresis donors who seroconverted over the course of their donation history. All specimens were also tested by a FDA licensed assay. The ABBOTT PRISM HBsAg assay detected HBsAg three to 15 days (one to three bleeds) earlier in ten of the 12 panels and five to 48 days (one to three bleeds) longer in four of the 12 panels when compared to the licensed assay. Both assays detected HBsAg in the first available bleed for two of the 12 panels.

**PERFORMANCE CHARACTERISTICS OF CADAVERIC SERUM TESTING**

Reproducibility

Inter-assay reproducibility of PRISM HBsAg was assessed using 10 postmortem donor sera. These sera specimens were spiked with human plasma positive for HBsAg to create low-level reactive specimens. Each of the specimens was tested in triplicate on three different days on each of three lots of PRISM HBsAg at one site for a total of 270 replicates. Three replicates generated disparate errors and 16 replicates generated drain time errors and were excluded from the analysis. For intra-assay reproducibility, the VCO ranged from 2.9 to 5.5 for the low-level reactive specimens. For inter-assay reproducibility over all lots, the percent coefficient of variation (VCO) ranged from 4.4 to 8.7 for the low-level reactive specimens. The total reproducibility ranged from 5.3 to 9.7 for the low-level reactive specimens. Note: inter-assay reproducibility includes intra-assay and inter-assay variation. Total reproducibility includes intra-assay, inter-assay and inter-lot variations.

Specificity

Specificity was evaluated using 51 postmortem donor specimens and 54 normal donor specimens. Each of the specimens was tested only once on each of three lots of PRISM HBsAg. The mean sample to cutoff (S/CO) ratio for the 136 nonreactive postmortem replicates (51 specimens with three reactive lots; see Table VIII, footnotes a and b) was 0.35, and the mean S/CO for 162 normal donor replicates (54 specimens with three reactive lots) was 0.24. Results are presented in Table VIII.

**TABLE VIII**

<table>
<thead>
<tr>
<th>No. of</th>
<th>Population</th>
<th>Specimen</th>
<th>S/CO Nonreactive</th>
<th>Initial Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postmortem</td>
<td>51</td>
<td>137</td>
<td>0.35</td>
<td>136</td>
</tr>
<tr>
<td>Normal Donor</td>
<td>54</td>
<td>162</td>
<td>0.24</td>
<td>162</td>
</tr>
</tbody>
</table>

- No results were obtained for 15 specimens on one lot due to drain time errors and one specimen on one lot due to an invalid result.
- Specimen was not retested due to insufficient specimen volume.
BIBLIOGRAPHY

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