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**
- **EXPIRATION DATE**
- **ACTIVATOR DILUENT** Activator Diluent
- **ACTIVATOR CONCENTRATE** Activator Concentrate
- **EC REPR Authorized Representative**
- **AUTHORIZER Withdrawn from Use**

U.S. License No. 43

Abbott Laboratories Diagnostics Division
Abbott Park, IL 60064

©1995, 2006, Abbott Laboratories
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 (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.

SUMMARY AND EXPLANATION OF THE TEST

Hepatitis B virus (HBV) is a small, partially double stranded, DNA virus and a member of the Hepadnavirus family. The HBV genome consists of four overlapping reading frames representing the core, polymerase, surface, and X genes. This virus is responsible for infecting approximately one third of the global population. Approximately 350 million individuals, or 5% of the world population, are chronic carriers of HBV. HBV is primarily transmitted by sexual, parenteral, and perinatal routes. Premature mortality from chronic liver disease occurs in 10-25% of the chronically infected HBV patients. HBsAg, hepatitis B surface antigen, is the first viral antigen recognized by anti-HBs. Some of these mutations may cause changes in the antigenic structure of HBsAg, resulting in epitopes that are no longer recognized by anti-HBs.

Sensitive immunoassays for the detection of HBsAg were first described in the early 1970s and were subsequently used to screen blood and blood products for the presence of HBsAg to prevent transmission of HBV infection to recipients of blood or blood products. In addition, assays for HBsAg are routinely used to diagnose suspected HBV infection and to monitor the status of infected individuals, i.e., whether the patient has resolved infection or has become a chronic carrier of the virus. The Centers for Disease Control and Prevention have recommended the routine screening of all blood donors prior to donation, since high-risk donors may be in the early stages of infection. HBV, unlike other DNA viruses, replicates through reverse transcription. The reverse transcription process lacks proofreading capability; therefore, HBV is subject to a mutation rate 10 times higher than the mutation rate of other DNA viruses. Some of these mutations may cause changes in the antigenic structure of HBsAg, resulting in epitopes that are no longer recognized by anti-HBs.

BIOLOGICAL PRINCIPLES OF THE PROCEDURE

The ABBOTT PRISM HBsAg assay is a two-step sandwich ChLIA. The reactions occur within the ABBOTT PRISM System in the following sequence:

- Microparticles coated with mouse monoclonal anti-HBs are incubated with sample (either plasma, serum, calibrator, or control) in the incubation well of the reaction tray. During incubation, HBsAg present in the sample binds to the antibody on the Microparticles. After this first incubation is complete, the reaction mixture is transferred to the glass fiber matrix of the reaction tray using the Transfer Wash. The Microparticles are captured by the matrix while the remaining mixture flows through to the absorbent blotter.
- The Acridinium-Labeled Goat Polyclonal Anti-HBs Conjugate is added to the Microparticles on the matrix and incubated. After this second incubation is complete, the unbound Conjugate is washed into the blotter with the Conjugate Wash.
- The chemiluminescent signal is generated by addition of an alkaline hydrogen peroxide solution. The resultant photons are counted.

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 labels and on corresponding instrument tubbing 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. 6D19-69)

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

- 1 Bottle (333 mL) Antibody to Hepatitis B Surface Antigen (Mouse Monoclonal IgG Cofractionated Microparticles in phosphate buffered saline with bovine serum albumin, concentration: 0.025 µg/mL. Preservative: 0.1% sodium azide. (Symbol: ))
- 1 Bottle (328 mL) Antibody to Hepatitis B Surface Antigen (Goat Polyclonal). Acridinium-Labeled Goat Polyclonal Anti-HBs Conjugate in phosphate buffered saline with bovine serum albumin, concentration: 0.03% solids. Preservative: 0.1% sodium azide. (Symbol: )
- 3 Bottles (10.4 mL each) Negative Calibrator (Human). Recalciﬁed, plasma nonreactive for HBsAg, HIV-1 Ag or HIV-1 NAT, anti-HCV, and anti-HIV-1/HIV-2. Preservative: 0.1% sodium azide. (Symbol: NC)
- 3 Bottles (10.4 mL each) Positive Calibrator (Human). Recalciﬁed, inactivated plasma reactive for HBsAg and nonreactive for HIV-1 Ag or HIV-1 NAT, anti-HCV, and anti-HIV-1/HIV-2. Preservative: 0.1% sodium azide. (Symbol: )
- 3 Bottles (10.4 mL each) Positive Calibrator (Human). Recalciﬁed, inactivated plasma reactive for HBsAg and nonreactive for HIV-1 Ag or HIV-1 NAT, anti-HCV, and anti-HIV-1/HIV-2. Preservative: 0.1% sodium azide. (Symbol: )

ABBOTT PRISM System ambient reagent bay and refrigerator.

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

- 1 Bottle (330 mL) Transfer Wash. Phosphate buffered saline. Preservative: 0.1% sodium azide. (Symbol: )
- 1 Bottle (2811 mL) Conjugate Wash. Borate buffered saline. Preservative: 0.1% sodium azide. (Symbol: )

ABBOTT PRISM Activator Concentrate (No. 1475-02)

- 4 Bottles (950 mL each) Activator Concentrate. 0.4% hydrogen peroxide/0.06% dehydrogenase/0.01% sugar.
- 4 Bottles (300 mL each) Activator Diluent. 0.5% sodium hydroxide.

ABBOTT PRISM Run Control Kit (No. 3660-10)

ABBOTT PRISM Positive Run Control Kit (No. 3660-11)

NOTE: Each batch MUST and in a release control (ABBOTT PRISM Positive Control). The ABBOTT PRISM Positive Control (included in kit No. 3660-10 or 3660-11) 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.

Tissos is a registered trademark of IC America.

WARNINGS AND PRECAUTIONS

For In Vitro Diagnostic Use.

The performance characteristics of this product have not been established for the laboratory diagnosis of HBV infection.

The 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 products derived from human blood will or will not contain infectious components. Therefore, all human sourced materials must be considered potentially infectious. It is recommended that these reagents be handled in accordance with the OSHA Standard on Bloodborne Pathogens. 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.

Other Reagents Required

ABBOTT PRISM HBsAg assay results should be interpreted in the context of other tests performed. In addition to the assay results, the interpretation of test results should include other clinical data and the patient’s medical history. The final interpretation of test results is the responsibility of the healthcare provider who ordered the testing. In the event that test results are discordant, other diagnostic tests may be warranted.

For a complete list of Other Reagents Required, please refer to the ABBOTT PRISM HBsAg assay kit packaging insert.
• Do not pipette by mouth.
• Do not eat, drink, 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.24, 27, 28
• Decontaminate 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 1% hydrochloric acid is effective on some lead or copper azide contamination. To prevent formation of lead or copper oxide, flush drains thoroughly with water after disposing of solutions 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 applicable European Community (EC) Directives as: Irritant (Xi). The following are the appropriate Risk (R) and Safety (S) phrases.
• 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 at <-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 centrifuged according to Table II in this section.

• Twenty nonreactive and 20 low-level reactive specimens showed no qualitative performance differences when subjected to 6 freeze-thaw cycles. However, some specimens that have undergone multiple freeze-thaw cycles or have been stored frozen for prolonged periods may give erroneous or inconsistent test results.

• 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), triglycerides (≥ 500 mg/dL), or protein (≥ 12 g/dL). However, specimens that contain 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.

• 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 not be tested using the ABBOTT PRISM HBsAg assay.

• Specimens collected by plasmapheresis, that have not been frozen, do not require centrifugation. All other specimens (including previously frozen plasmapheresis specimens) must be centrifuged as follows:

<table>
<thead>
<tr>
<th>Time (minutes)</th>
<th>RCF (x g)</th>
<th>g-minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>3,000</td>
<td>30,000</td>
</tr>
<tr>
<td>15</td>
<td>3,000</td>
<td>30,000 - 45,000</td>
</tr>
<tr>
<td>20</td>
<td>3,000</td>
<td>30,000 - 60,000</td>
</tr>
<tr>
<td>25</td>
<td>3,000</td>
<td>32,500 - 75,000</td>
</tr>
</tbody>
</table>

Table II

Centrifugation

Time (minutes) RCF (x g) g-minutes
15 12,000 180,000
20 9,000 -12,000 180,000 - 240,000
25 7,200 -12,000 180,000 - 300,000

ANY specimen (excluding non-frozen plasmapheresis) not tested within 24 hours of initial centrifugation, must be re-centrifuged until g-minutes is between 180,000 and 300,000. A refrigerated or non-refrigerated centrifuge is acceptable for use. The acceptable time and force ranges that meet this criterion are listed in Table II.

---

PROCEDURE

Materials Required

Materials Provided

Additional Materials Available

ABBOTT PRISM HBsAg ASSAY PROCEDURE

Key procedures that require operator interaction for testing samples are listed below. For detailed information concerning batch time, maximum batch size, reagent handling and loading, and associated procedural steps, refer to the ABBOTT PRISM Operations Manual, Sections 2, 5, and 7.

Enter a Plan Work Load (refer to the ABBOTT PRISM Operations Manual, Section 5).

Replace reagents as needed (refer to the ABBOTT PRISM Operations Manual, Sections 5 and 7).

NOTE: Gently invert each component several times prior to loading on the ABBOTT PRISM System to ensure a homogenous solution. Additional gentle inversion may be required to thoroughly resuspend microparticles. Avoid foaming. Each component of the ABBOTT PRISM HBsAg Wash Kit should be at room temperature (15 - 30°C) and then mixed before loading onto the ABBOTT PRISM System.

Verify that all tubing label symbols match the symbols on each reagent label. (Refer to the symbol key in the REAGENTS section of the ABBOTT PRISM System manual).

Inspect the test devices. Ensure that the correct test device is used for the sample being tested.

Inspect the wash containers. Empty and clean as defined in the ABBOTT PRISM Operations Manual, Section 5.
3. Control Handling Procedure

2. Additional controls may be run at the operator’s discretion (refer to Controls, Control Handling Procedure, in this section).

• After the calibrators have been automatically pipetted, remove the calibrator racks. Close the calibrator bottles and return them to 2 - 8°C storage.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. See the Specimen Collection and Preparation for Analysis section of the package insert. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered nonreactive. Nonreactive specimens are considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. If the specimen Net Counts for either duplicate release is greater than or equal to the cutoff value, the specimen is considered reactive.
• If the sample Net Counts for either duplicate release is greater than or equal to the cutoff value, the specimen is considered nonreactive. Nonreactive specimens are considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. If the specimen Net Counts for either duplicate release is greater than or equal to the cutoff value, the specimen is considered nonreactive. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. See the Specimen Collection and Preparation for Analysis section of the package insert. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• Repeatedly reactive specimens must be tested by the ABBOTT PRISM HBsAg Confirmatory assay. If the assay is negative, the specimen is considered nonreactive. Positive specimens are considered positive for HBsAg.
• All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• Repeatedly reactive specimens must be tested by the ABBOTT PRISM HBsAg Confirmatory assay. If the assay is negative, the specimen is considered nonreactive. Positive specimens are considered positive for HBsAg.
• All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• Repeatedly reactive specimens must be tested by the ABBOTT PRISM HBsAg Confirmatory assay. If the assay is negative, the specimen is considered nonreactive. Positive specimens are considered positive for HBsAg.
• All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
• If the sample Net Counts for both retests are less than the cutoff value, the specimen is considered negative for HBsAg by the criteria of ABBOTT PRISM HBsAg assay. All specimens (excluding non-frozen-plasmapheresis specimens) that are reactive on initial testing must be centrifuged and retested using the ABBOTT PRISM HBsAg assay Kit. Inactive reactive specimens must be released in duplicate using the ABBOTT PRISM HBsAg assay Kit.

NOTE: Specimens retained within 24 hours of initial centrifugation do not require retesting.
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 in SICO® ABBOTT PRISM HCV. Therefore, heparin is not recommended for any ABBOTT PRISM assay.
- Serum 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 non-specific 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 drainage 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, saliva, semen, amniotic fluid, cerebral spinal 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 diluted specimens reactive for HBsAg ads subtypes (panel members 1, 2, and 3), three diluted specimen reactive for HBsAg ads subtype (panel members 4, 5, and 6) and one specimen negative for HBsAg (panel member 7). Panel members were prepared in recalcified lipemia or gross hemolysis.

Performance has not been established using umbilical cord blood, or body fluids such as urine, saliva, semen, amniotic fluid, cerebral spinal 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 diluted specimens reactive for HBsAg ads subtypes (panel members 1, 2, and 3), three diluted specimen reactive for HBsAg ads subtype (panel members 4, 5, and 6) and one specimen negative for HBsAg (panel member 7). Panel members were prepared in recalcified lipemia or gross hemolysis.

Performance has not been established using umbilical cord blood, or body fluids such as urine, saliva, semen, amniotic fluid, cerebral spinal 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.
anti-HTLV-I positive (12), anti-HTLV-II positive (12), non-viral liver diseases (40), rubella antibody positive (12), toxoplasma antibody positive (11), E. coli infections (5), syphilis serology positive (12), and immune antibody positive (12), rheumatoid factor positive (12), influenza vaccine recipients (52), elevated IgM (12), elevated IgG (13), elevated triglycerides (10), elevated bilirubin (12), elevated hemoglobin (11), and pregnant females (55).

The 50 repeatedly reactive specimens included the following: anti-EBV positive (1), anti-HSV positive (1), anti-HCV positive (1), anti-HIV-1 positive (1), anti-HIV-2 positive (1), non-viral liver diseases (5), rubella antibody positive (1), anti-rubella antibody positive (1), influenza vaccine recipients (1), and pregnant females (13).

The 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 450 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 100.00% (754/754) with a 95% CI of 99.51% to 100.00%.

### TABLE IV

<table>
<thead>
<tr>
<th>Category Tested (% of Total)</th>
<th>Number Confirmed Positive</th>
<th>Number Reactively Repeated (% of Reactively Repeated Proportion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preselected HBsAg Positive</td>
<td>514</td>
<td>304/514 (61.00)</td>
</tr>
<tr>
<td>Acute HBV Infection</td>
<td>101</td>
<td>98/101 (97.00)</td>
</tr>
<tr>
<td>Chronic HBV Infection</td>
<td>47</td>
<td>47/47 (100.00)</td>
</tr>
<tr>
<td>Recovered HBV Infection</td>
<td>136</td>
<td>136/136 (100.00)</td>
</tr>
<tr>
<td>Nonreactive Risk for HBV Infection</td>
<td>450</td>
<td>54/450 (11.95)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,010</td>
<td>754/1,010 (74.81)</td>
</tr>
</tbody>
</table>

- Specimens from the preselected HBsAg positive category were tested only once.
- Preselected HBsAg positive specimens were previously 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 that confirmed positive for HBsAg included the following: intravenous drug users (15), hemodialysis patients (5), hemophilia patients (5), and STD clinic patients (19). 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 VI

<table>
<thead>
<tr>
<th>HBsAg Concentration (ng/mL)</th>
<th>Mean S/CO Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.34</td>
<td>-</td>
</tr>
<tr>
<td>0.005</td>
<td>4.06</td>
<td>+</td>
</tr>
<tr>
<td>0.131</td>
<td>1.39</td>
<td>-</td>
</tr>
<tr>
<td>0.917</td>
<td>8.86</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 13 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 provided 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 dispersed errors and 16 replicates generated similar results within the accuracy of each site for the low-level reactive specimens. The total reproducibility ranged from 5.3 to 9.7 for the low-level reactive specimens. Note: intra-assay reproducibility includes intra-assay and intra-assay variation. Total reproducibility includes intra-assay, inter-assay, and inter-lot variations.

**Specificity**

Specificity was evaluated using 51 postmortem donor sera and 54 normal donors sera. Each of the specimens was tested 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 reagent lots, see Table VII) and 33 replicates (54 specimens with three reagent lots) was 0.24. Results are presented in Table VIII.

### TABLE VII

<table>
<thead>
<tr>
<th>HBsAg Concentration (ng/mL)</th>
<th>Mean S/CO Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.34</td>
<td>-</td>
</tr>
<tr>
<td>0.485</td>
<td>4.02</td>
<td>+</td>
</tr>
<tr>
<td>0.525</td>
<td>4.39</td>
<td>+</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.

- 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.

- The sample to cutoff (S/CO) ratio for the 136 nonreactive postmortem replicates (51 specimens with three reagent lots) was 0.24. Results are presented in Table VIII.

**Reactivity with PRISM HBsAg**

<table>
<thead>
<tr>
<th>Population Specimens Replicates</th>
<th>S/CO Nonreactive Initial Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postmortem</td>
<td>51</td>
</tr>
<tr>
<td>Normal Donor</td>
<td>54</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.

- Assuming the specimen with the initial reactive result would have a nonreactive result upon retest, the PRISM HBsAg assay has an estimated specificity of 99.27% (99.99%) in these studies of postmortem serum specimens collected up to 16 hours after death.
Sensitivity

Sensitivity was evaluated using 51 postmortem specimens and 54 normal donor specimens that were pre-screened for anti-HBs and HBsAg and found to be negative. The 105 specimens were spiked with human plasma positive for HBsAg to create low-level reactive specimens. Each of the specimens was tested once on each of three lots of PRISM HBsAg. The mean sample to cutoff (S/CO) for the 142 postmortem replicates (51 specimens, with three replicates each) is shown in Table IX. S/CO of 2.05, and the mean S/CO ratio for the 162 normal donor replicates (54 specimens, with three replicates each) was 2.07. Results are presented in Table IX.

Table IX

<table>
<thead>
<tr>
<th>Population</th>
<th>Specimen</th>
<th>Replication</th>
<th>S/CO</th>
<th>Normal</th>
<th>Initial Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postmortem</td>
<td>51</td>
<td>142*</td>
<td>2.05</td>
<td>140</td>
<td>102 (99.0%)</td>
</tr>
<tr>
<td>Normal Donor</td>
<td>54</td>
<td>162</td>
<td>2.07</td>
<td>102</td>
<td>102 (100.0%)</td>
</tr>
</tbody>
</table>

* No results were obtained for 7 unique specimens, and 2 specimens using 2 negative lots due to drain time errors.

The PRISM HBsAg assay has an estimated sensitivity of 100.0% (142/142)(binomial confidence interval = [97.44%, 100.00%]) in these studies of postmortem serum specimens collected up to 16.1 hours after death.

BIBLIOGRAPHY