MAYO CLINIC LABORATORIES

Test Definition: HEAB

Hepatitis B Virus e Antibody, Serum

Overview

Useful For

Determining the presence or absence of detectable hepatitis B virus e antibody in monitoring infection status of individuals with chronic hepatitis B

Determining infectivity of hepatitis B virus (HBV) carriers

Monitoring serologic response of chronically HBV-infected patients receiving antiviral therapy

Testing Algorithm

For more information see Hepatitis B: Testing Algorithm for Screening, Diagnosis, and Management

Special Instructions

- Viral Hepatitis Serologic Profiles
- Hepatitis B: Testing Algorithm for Screening, Diagnosis, and Management

Method Name

Electrochemiluminescence Immunoassay (ECLIA)

NY State Available

Yes

Specimen

Specimen Type

Serum SST

Additional Testing Requirements

If ordered with HBVQN / Hepatitis B Virus (HBV) DNA Detection and Quantification by Real-Time PCR, Serum; send separate vials.

Necessary Information

Date of collection is required.

Specimen Required

Patient Preparation: For 24 hours before specimen collection, patient **should not** take multivitamins or dietary supplements (eg, hair, skin, and nail supplements) containing biotin (vitamin B7).
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Serum gel
Submission Container/Tube: Plastic vial

Specimen Volume: 0.7 mL

Collection Instructions:

1. Centrifuge blood collection tube per manufacturer's instructions (eg, centrifuge and aliquot within 2 hours of collection for BD Vacutainer tubes).
2. Aliquot serum into plastic vial.

Forms

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

-Infectious Disease Serology Test Request (T916)

-Gastroenterology and Hepatology Test Request (T728)

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum SST	Frozen (preferred)	90 days	
	Refrigerated	6 days	
	Ambient	72 hours	

Clinical & Interpretive

Clinical Information

During recovery from acute hepatitis B, the hepatitis B e virus antigen (HBeAg) level declines and becomes undetectable and HBe antibody (anti-HBe) appears in the serum. Anti-HBe usually remains detectable for many years after recovery from acute hepatitis B.

In hepatitis B virus (HBV) carriers and in patients with chronic hepatitis B, positive anti-HBe results usually indicate inactivity of the virus and low infectivity of the patients. Positive anti-HBe results in the presence of detectable HBV DNA in serum indicate active viral replication.

For more information, see the following:

-Hepatitis B: Testing Algorithm for Screening, Diagnosis, and Management

-Viral Hepatitis Serologic Profiles

Reference Values

Negative

See Viral Hepatitis Serologic Profiles.

Interpretation

Absence of hepatitis B e antigen (HBeAg) with appearance of HBe antibody (anti-HBe) is consistent with inactivity of the virus and loss of hepatitis B virus (HBV) infectivity.

Although resolution of chronic HBV infection generally follows the appearance of anti-HBe, the HBV carrier state may persist.

Cautions

Serum specimens from individuals taking multivitamins containing biotin or biotin supplements at 20 mg or more per day may have false-positive hepatitis B e antibody (anti-HBe) test results due to interference of biotin with the assay. Such individuals should stop taking these biotin-containing dietary supplements for a minimum of 12 hours before blood collection for this test.

Appearance of anti-HBe in serum does not completely rule-out chronic hepatitis B virus carrier state or infectivity.

Performance characteristics of this assay have not been established in patients younger than 2 years or in populations of immunocompromised or immunosuppressed patients. This assay is not licensed by US Food and Drug Administration for testing cord blood samples or screening donors of blood, plasma, human cell, or tissue products.

Performance characteristics have not been established for the following specimen characteristics:
-Grossly icteric (total bilirubin level of >66 mg/dL)
-Grossly lipemic (intralipid level of >2000 mg/dL)
-Grossly hemolyzed (hemoglobin level of >2000 mg/dL)

Clinical Reference

1. LeFevre ML, U.S. Preventive Services Task Force: Screening for hepatitis B virus infection in nonpregnant adolescents and adults: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2014; 161(1):58-66. doi:10.7326/M14-1018
2. Terrault NA, Bzowej NH, Chang KM, et al. AASLD guidelines for treatment of chronic hepatitis B. Hepatology. 2016; 63(1):261-283
3. WHO guidelines on hepatitis B and C testing. World Health Organization; 2017. Accessed December21, 2023. Available at www.who.int/publications/i/item/9789241549981
4. Jackson K, Locarnini S, Gish R. Diagnostics of hepatitis B virus: Standard of care and investigational. Clin Liver Dis. 2018; 12(1):5-11. doi:10.1002/cld.729
5. Coffin CS, Zhou K, Terrault NA. New and old biomarkers for diagnosis and management of chronic hepatitis B virus infection. Gastroenterology. 2019; 156(2):355-368. doi:10.1053/j.gastro.2018.11.037
6. Conners EE, Panagiotakopoulos L, Hofmeister MG, et al. Screening and testing for hepatitis B virus infection: CDC Recommendations – United States, 2023. MMWR Recomm Rep. 2023;72(1):1-25

Performance

Method Description

The Elecsys Anti-HBe (hepatitis B virus e antibody) assay is based on the competitive immunoassay principle and performed using an electrochemiluminescence method on the automated cobas e 801 immunochemistry analyzer. Anti-HBe present in the patient's sample binds to the added synthetic HBe antigen (HBeAg). The remaining unbound sites on the synthetic HBeAg become occupied with the added biotinylated antibodies and ruthenium complex-labeled antibodies specific for HBeAg. The entire complex becomes bound to streptavidin-coated microparticles (solid phase) via interaction of biotin and streptavidin. The reaction mixture is then aspirated into the measuring cell where the microparticles are magnetically captured onto the surface of the electrode. After unbound substances are washed away, voltage is applied to the electrode, which induces chemiluminescent emission that is measured by a photomultiplier. Test result is determined by comparing the electrochemiluminescence signal generated from the reaction product to the cutoff index value set from reagent lot-specific assay calibration.(Package insert: Elecsys Anti-HBe. Roche Diagnostics; v1.0, 12/2021)

PDF Report

No

Day(s) Performed

Monday through Saturday

Report Available

Same day/1 to 3 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

86707

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Hepatitis B Virus e Antibody, Serum

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
HEAB	HBe Antibody, S	33463-1

Result ID	Test Result Name	Result LOINC® Value
HEAB	HBe Antibody, S	33463-1