

## Overview

### Useful For

Confirmation of reactive hepatitis E virus IgM antibody screening test results for the diagnosis of acute or recent (<6 months) hepatitis E infection

### Testing Algorithm

See [Hepatitis E: Testing Algorithm for Diagnosis and Management](#) in Special Instructions.

### Special Instructions

- [Hepatitis E: Testing Algorithm for Diagnosis and Management](#)

### Method Name

Line Immunoassay (LIA)

### NY State Available

Yes

## Specimen

### Specimen Type

Serum SST

### Necessary Information

Date of collection is required.

### Specimen Required

**Collection Container/Tube:** Serum gel

**Submission Container/Tube:** Plastic vial

**Specimen Volume:** 0.5 mL

### Collection Instructions:

1. Centrifuge blood collection tube per collection tube 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 a [Gastroenterology and Hepatology Client Test Request](#) (T728) with the specimen.

**Reject Due To**

Gross hemolysis    Reject  
Gross lipemia      Reject  
Gross icterus        Reject

**Specimen Minimum Volume**

0.2 mL

**Specimen Stability Information**

Specimen Type	Temperature	Time	Special Container
Serum SST	Frozen (preferred)		
	Refrigerated	7 days	

**Clinical & Interpretive****Clinical Information**

Hepatitis E virus (HEV) causes an acute, usually self-limited, infection. This small, non-enveloped RNA virus is from animal reservoirs (eg, hogs) and is transmitted to humans via the fecal-oral route. HEV is endemic in Southeast and Central Asia, with several outbreaks observed in the Middle East, northern and western parts of Africa, and Mexico. In developed countries, HEV infection occurs mainly in individuals who have traveled to disease-endemic areas. Transmission of HEV may also occur rarely from direct person-to-person contact or transfusion of blood or blood products. Clinically severe cases occur in young to middle-aged adults. Unusually high mortality (approximately 20%) occurs in patients infected during the third trimester of pregnancy. Although there is no carrier state associated with HEV, immunocompromised patients may have prolonged periods (eg, months) of viremia and virus shedding in the stool.

In immunocompetent patients, viremia and virus shedding in the stool occur in the pre-icteric phase, lasting up to 10 days into the clinical phase. After an incubation period ranging from 15 to 60 days, HEV-infected patients develop symptoms of hepatitis with appearance of anti-HEV IgM antibody in serum, followed by detectable anti-HEV IgG within a few days. Anti-HEV IgM may remain detectable up to 6 months after onset of symptoms, while anti-HEV IgG usually persists for many years after infection. Anti-HEV IgM is the serologic marker of choice for diagnosis of acute HEV infection.

Positive predictive value of a given diagnostic laboratory test is dependent on the prevalence rate of the disease for which the test is being used. Screening tests for detection of diseases with low prevalence rates, such as acute hepatitis E, will have low positive predictive values (ie, relatively high rates of false-positive test results), despite having high specificity rates for such tests. Therefore, an HEV IgM antibody confirmatory test is helpful and necessary to determine the true infection status of patients with reactive HEV IgM antibody screening test results.

**Reference Values**

Negative

**Interpretation**

Positive results confirm the presence of acute or recent (in the preceding 6 months) hepatitis E infection.

Negative results indicate absence of acute or recent hepatitis E infection.

Indeterminate results may be seen in: 1) acute hepatitis E infection with rising level of anti-hepatitis E virus (HEV) IgM; 2) recent hepatitis E infection with declining level of anti-HEV IgM; 3) acute hepatitis E infection due to HEV genotype 2 strains; or 4) cross-reactivity with nonspecific antibodies (ie, false-positive results). Repeat testing of serum for anti-HEV IgM and anti-HEV IgG in 4 to 6 weeks is recommended to determine the definitive HEV infection status.

Unreadable results indicate the presence of unusually strong, nonspecific reactivity of the assay strip background that obscures proper reading of the bands. Such findings are usually due to nonspecific binding of non-hepatitis E IgM antibodies in patient's serum to the HEVM antigens present on the assay strip. Repeat testing with anti-HEV IgM screen and anti-HEV IgG in 4 to 6 weeks is recommended.

**Cautions**

[A negative test result does not exclude the presence of recent hepatitis E infection, especially in immunocompromised patients. Repeat testing of serum for anti-hepatitis E virus \(HEV\) IgM in 2 weeks may be necessary for diagnosis of acute or recent hepatitis E infection.](#)

A positive result does not always indicate the presence of active disease.

Performance characteristics of this assay have not been established for serum specimens that are icteric, lipemic, hemolyzed or contain particulate matter.

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**Clinical Reference**

1. Aggarwal R, Jameel S: Hepatitis E. Hepatology 2011;54(6):2218-2226
2. Hoofnagle JH, Nelson KE, Purcell RH: Hepatitis E. New Engl J Med 2012;367:1237-1244
3. Aggarwal R: Diagnosis of hepatitis E. Nat Rev Gastroenterol Hepatol 2013;10:24-33

**Performance****Method Description**

Highly purified recombinant hepatitis E virus (HEV) antigens (O2N, O2C, and O3 from genotypes 1 and 3, and O2M from genotype 1) are fixed to nitrocellulose membrane test strips. The test strips are incubated with the diluted patient serum sample, allowing virus-specific human IgM antibodies to bind to the antigens present on the test strips. Unbound human antibodies are then washed away. In the second step, the strips are incubated with anti-human IgM antibodies coupled with horseradish peroxidase enzyme. Unbound conjugate antibodies are then washed away. Specifically bound human IgM antibodies are detected with a staining reaction catalyzed by the peroxidase. A dark band will appear on the strip at the corresponding point if a reaction has taken place. (Package insert: recomLine HEV IgG/IgM kit. Mikrogen Diagnostik; rev 10/2014)

**PDF Report**

No

**Specimen Retention Time**

14 days

**Performing Laboratory Location**

Rochester

**Fees & Codes****Test Classification**

This test was developed, and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

**CPT Code Information**

86790

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
HEVML	HEV IgM Ab Confirmation, S	14212-5

Result ID	Reporting Name	LOINC®
61903	HEV IgM Ab Confirmation, S	14212-5