



**User's Manual**

# Human HDV-IgM(Hepatitis D Virus-Immunoglobulin M) ELISA Kit



**DEIA072**



**96T**



This product is for research use only and is not intended for diagnostic use.

For illustrative purposes only. To perform the assay the instructions for use provided with the kit have to be used.

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## PRODUCT INFORMATION

### Intended Use

This immunoassay kit allows for the qualitative determination of HDV IgM in human serum or plasma.

### Principles of Testing

This kit was based on Capture enzyme-linked immune-sorbent assay technology. Anti- human IgM ( $\mu$  chain) antibody was pre-coated onto 96-well plates. The test samples were added to the wells, unbound conjugates were washed away with wash buffer. Then added HDV-Ag/HRP-anti-HDV, if there were any HDV-IgM in the samples, it would form a Anti- human IgM –HDV-IgM-HDV-Ag/anti-HDV-HRP complex. TMB substrates were used to visualize HRP enzymatic reaction. It was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The optical density of developed color is read with a suitable photometer at 450nm with a selected reference wavelength within 650 nm.

### Reagents And Materials Provided

1. Micro ELISA Plate(Dismountable), 12 × 8, 2-8°C /-20°C
2. HDV-IgM Positive Control, 0.5ml×1, 2-8°C
3. HDV-IgM Negative Control, 1ml×1, 2-8°C
4. HDV Ag/HRP-anti-HDV, 6.5ml×1, 2-8°C
5. TMB substrate A, 7ml×1, 2-8°C (Avoid Direct Light)
6. TMB substrate B, 7ml×1, 2-8°C (Avoid Direct Light)
7. Stop solution, 6ml×1, 2-8°C
8. Wash buffer (40×), 20ml×1, 2-8°C
9. Plate Sealer, 3pieces
10. Product Description, 1 copy

### Materials Required But Not Supplied

1. Microplate reader (wavelength: 450nm)
2. 37°C incubator
3. Automated plate washer
4. Precision single and multi-channel pipette and disposable tips
5. Clean tubes and Eppendorf tubes
6. Deionized or distilled water

### Storage

2-8°C (for sealed box), please do not freeze! See kit label for expiry date

## Specimen Collection And Preparation

Isolate the test samples soon after collecting, then, analyze immediately (within 2 hours). Or aliquot and store at -20°C for long term. Avoid multiple freeze-thaw cycles.

**1. Serum:** Coagulate the serum at room temperature (about 1 hours). Centrifuge at approximately 1000 xg for 15 min. Analyze the serum immediately or aliquot and store at -20°C.

**2. Plasma:** Collect plasma with heparin or EDTA as the anticoagulant. Centrifuge for 15min at 2-8°C at 1500 xg within 30 min of collection. For eliminating the platelet effect, suggesting that further centrifugation for 10 min at 2-8°C at 10000 xg. Analyze immediately or aliquot and store frozen at -20°C. **Note:** Samples used within 5 days can be stored at 2-8°C; otherwise, they must be stored at -20°C or -80°C or liquid nitrogen to avoid loss of biological activity and contamination. Avoid multiple freeze-thaw cycles. Hemolytic samples are not suitable for this test.

## Reagent Preparation

Dilute 20mL of Concentrated Wash Buffer to 800 mL of Wash Buffer with deionized or distilled water.

## Assay Procedure

### Manual Washing

Discard the solution in the plate without touching the side walls. Clap the plate on absorbent filter papers or other absorbent material. Fill each well completely with 350ul wash buffer and soak for 1 to 2 minutes, then aspirate contents from the plate, and clap the plate on absorbent filter papers or other absorbent material. Repeat this procedure two more times for a total of THREE washes.

### Automated Washing

Aspirate all wells, then wash plate THREE times with 350ul wash buffer. After the final wash, invert plate, and clap the plate on absorbent filter papers or other absorbent material. It is recommended that the washer be set for a soaking time of 1 minute.

### Assay Procedure

1. Label the sample wells, 2 Negative Controls, 1 Positive Control and 1 blank well.
2. Add 50µL sample, Negative Controls and Positive Control to each well (except blank well) and gently tap the plate to ensure thorough mixing. Seal the plate with a cover and incubate at 37°C for 30 min.
3. Remove the cover, and wash plate 5 times with Wash buffer and let the wash buffer stay in the wells for 0.2 minute each time.
4. Add 50 µL HDV Ag/HRP-anti-HDV into each well (except blank well) and gently tap the plate to ensure thorough mixing.
6. Seal the plate with a cover and incubate at 37°C for 30 min.
7. Remove the cover, and wash plate 5 times with Wash buffer and let the wash buffer stay in the wells for 0.2 minute each time.
8. Add 50 µl of TMB substrate A and 50 µl of TMB substrate B into each well (except blank well). Gently tap the plate to ensure thorough mixing. Cover the plate and incubate at 37°C in dark for 10 min. And the shades of blue can be seen in the Positive Controls. Negative Controls wells show no obvious color.

9. Add 50 µl of Stop solution into each well and mix thoroughly. The color changes into yellow immediately.
10. Read the O.D. absorbance at 450 nm in a microplate reader immediately after adding the stop solution.  
(Use the blank well to set zero)

## Calculation

### Calculation

Negative control:  $A \leq 0.1$  (If one well  $A > 0.1$ , it should be abandoned; If two wells  $A > 0.1$ , it should be retested)

Positive control:  $A \geq 0.8$

### Calculation of the Cutoff Value

Cutoff Value =  $NCx \times 2.1$

NCx: Mean Absorbance of Negative Control. When  $NCx < 0.05$ , Calculate as 0.05.

### Note:

Sample with absorbance values  $\leq$  Cutoff Value is NON-REACTIVE and are considered NEGATIVE for HDV-IgM.

Sample with absorbance values  $>$  Cutoff Value are considered POSITIVE for HDV-IgM.

Positive samples are recommended to be diluted 1000 times with normal saline to repeat the experiment and determine the results again.

## Specificity

Specifically binds with HDV-IgM, no obvious cross reaction with other analogues.

## Precautions

1. To inspect the validity of experiment operation and the appropriateness of sample dilution proportion, pilot experiment using standards and a small number of samples is recommended.
2. After opening and before using, keep plate dry.
3. Before using the kit, spin tubes and bring down all components to the bottom of tubes.
4. Storage TMB reagents avoid light.
5. Washing process is very important, not fully wash easily cause a false positive and high background.
6. Duplicate well assay is recommended for both standard and sample testing.
7. Don't let microplate dry at the assay, for dry plate will inactivate active components on plate.
8. Don't reuse tips and tubes to avoid cross contamination.
9. Please do not mix the reagents in different kits of our company. Do not mix reagents from other manufacturers.
10. To ensure accurate results, proper adhesion of plate sealers during incubation steps is necessary.