Technical Manual

Human Measles Virus (MV) IgG ELISA Kit

- Catalogue Code: HDES0001
- Antibody ELISA Kit
- Research Use Only

1. Test principle

This ELISA kit uses Indirect-ELISA as the method to detect the MV-IgG in human serum and plasma. The ELISA Microtiter plate provided in this kit has been pre-coated with purified measles virus antigen. Samples are added to the ELISA Microtiter plate wells and the MV antibody in the sample will combine with the pre-coated antigen to form antigen-antibody compound. Free components are washed away. The HRP conjugated Mouse-anti-human IgG antibody is added to each well and react with the compound to form “MV antigen- MV antibody-HRP antibody” compound. The substrate reagent is added to initiate the color developing reaction. The presence of MV-IgG can be determined by measuring the absorbance value by using a microplate reader with 450 nm (630 nm) wavelength.

2. Kit components

Item	Specification
ELISA Microtiter plate	96 wells
Sample Diluent	50 mL*2
20×Concentrated Wash Buffer	50 mL
HRP Conjugate	12 mL
Substrate Reagent A	6 mL
Substrate Reagent B	6 mL
Stop Solution	6 mL
Positive Control	0.4 mL
Negative Control	0.4 mL
Plate Sealer	3 pieces
Sealed Bag	1 piece
Manual	1 copy

Note: All reagent bottle caps must be tightened to prevent evaporation and microbial pollution.

3. Other materials required but not supplied

- Microplate Reader with 450 nm wavelength filter
- High-precision transferpettor, EP tubes and disposable pipette tips
- 37°C incubator or water bath
- Deionized water
- Absorbent paper

4. Notes

1. Please read the manual carefully before use, changes of operation may result in unreliable results.
2. Wear gloves and work clothes during experiment, and the disinfection and isolation system should be strictly executed. All the waste should be handled as contaminant.
3. The stop solution is corrosive, it should be avoided to contact with skin and clothing. Wash immediately with plenty of water if contact it carelessly.
4. The ELISA Microtiter plate obtained from cold storage conditions should be adjusted to room temperature before use. The unused plate should be kept in a sealed bag with desiccant.
5. Concentrated washing liquid at low temperature condition is easy to crystallization, it should be adjusted to room temperature in order to dissolve completely before use.
6. The results shall depend on the readings of the microplate reader.
7. **Each reagent is optimized for use in the HDES0001. Do not substitute reagents from any other manufacturer into the test kit. Do not combine reagents from other HDES0001 with different lot numbers.**
8. All the samples and waste material should be treated as infective material according to the relevant rules of biosafety.

5. Storage and expiry date

Store unopened at 2 to 8° C. Do not freeze.
Please store the opened plate at 2 to 8° C, the shelf life of the opened kit is up to 1 month.
Expiry date: expiration date is on the packing box.

6. Sample preparation

1. **Serum/plasma:** Human serum and plasma can be used as detected sample, use the conventional method to prepare serum/plasma. Fresh collected samples should be fully centrifuged, then take clear liquid for test. Suspended fibrous protein may cause a false positive.
2. Anticoagulant (EDTA, sodium citrate and heparin) in samples do not affect the result of the experiment in general. Endogenous interference substances in serum such as blood lipids, cholerythrin, hemoglobin, rheumatoid factors positive samples, AFP positive samples and pregnant samples may not affect the results. Common positive samples of specific virus antibodies, such as HAV, HBV, HCV, EB, HSV, RV and related diseases, will not affect the results.
3. There should be no microorganism contained in the samples. Samples can be stored at 2-8° C for one week. If samples not tested in a week, store them at below -20° C and avoid

freeze-thaw cycles.

4. **Diluted Sample:** Dilute the tested **Serum/plasma** with **Sample Diluent** at 1:100 (add 1 mL of sample diluent and then add 10 μL of sample to EP tube, mix fully).
5. **Wash Buffer:** The **20×Concentrated Wash Buffer** should be adjusted to room temperature to make the sediment dissolved fully before use, then dilute it with deionized water at 1:19.

7. Assay procedure

Restore all reagents and samples to room temperature (25° C) before use. All the reagents should be mixed thoroughly by gently swirling before pipetting. Avoid foaming. The unused ELISA Microtiter plate should be sealed as soon as possible and stored at 2-8° C.

1. **Number:** number the sample and control in order (multiple well), and keep a record of control wells and sample wells. Set 1 well for blank control, 3 wells for negative control and 1 well for positive control. **Samples need test in duplicate.** (Blank well is not necessary for dual-wavelength detection)
2. **Add sample:**
   a) Add 100 μL of **Negative/positive control** respectively to **Positive/Negative Control** wells, keep the blank control well empty.
   b) Add 100 μL of **Diluted Sample** to other wells (except blank/ negative/ positive well)
3. **Incubate:** gently tap the plate to mix thoroughly. Cover the ELISA Microtiter plate with sealer. Incubate for 30 min at 37° C in shading light.
4. **Wash:** remove the plate sealer and aspirate the liquid of each well. Repeat the washing procedure for 5 times with **Wash Buffer** and immerse for 30-60 sec each time. Invert the plate and pat it against thick clean absorbent paper (If bubbles exist in the wells, clean tips can be used to prick them).
5. **HRP conjugate:** add 100 μL of **HRP Conjugate** to each well except the blank control well.
6. **Incubate:** cover the plate sealer and mix thoroughly. Incubate for 30 min at 37° C in shading light.
7. **Wash:** repeat step 4.
8. **Add substrate:** add 50 μL of **Substrate Reagent A** and 50 μL of **Substrate Reagent B** to each well. Cover the plate sealer and mix thoroughly. Incubate for 10 min at 37° C in shading light.
9. **Stop reaction:** add 50 μL of **Stop Solution** to each well, gently tap the plate to mix thoroughly.
10. **OD Measurement:** set the Microplate Reader wavelength at 450 nm (it is recommended to set the dual wavelength at 450 nm/630 nm) to detect A value of each well. Blank well is not essential when using dual wavelength 450 nm/630 nm for detection. **Note: Read the results within 30 min.**

8. Reference value

Normally, blank well (just substrate reagent and stop solution) absorbance: A450 ≤ 0.07; positive control (PC): A_{450} > 0.60 and average A value of negative control (NC): A_{450} < 0.15.

9. Interpretation of the results

Cut Off = 0.10 + average A value of negative control (NC) (when average A450 of NC < 0.07, calculate at 0.07; while average A450 of NC ≥ 0.07, calculate at the actual value).

1. Positive result: average A450 of Sample ≥ Cut Off.
2. Negative result: average A450 of Sample < Cut Off.
3. Negative result indicates no MV -IgG antibody detected in samples, while positive result means the opposite.

10. Limitations of test method

1. This test is only used as the qualitative detection of MV-IgG in serum and plasma of human.
2. The detection results of this kit are only for reference. For confirmation of the result, please combine the symptoms and other methods of detection, this detection cannot be used as the only criteria for result.

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