Data Sheet

Chicken Infectious Bronchitis Virus Antibody (IBV Ab) ELISA Kit

Catalogue No.:CK-E10006

Specification: 96T;96T*2;96T*5

Storage Conditions: The kit shall be stored at 2-8 ℃. Avoid moisture.
Shelf life: 12 months. Please use within 2 months after opening. The date of manufacture is presented in the label of the box.

Sample: serum, plasma

Introduction:

Infectious Bronchitis (IB) is an acute, highly contagious respiratory disease in chickens caused by the Infectious Bronchitis Virus (IBV). The disease has a global distribution and is one of the most significant epidemics severely impacting the poultry industry. Vaccination is the most effective means of prevention and control of Infectious Bronchitis. The level of post-vaccination antibodies serves as an indicator of the vaccine's efficacy and directly influences the immunized flock's resistance to the virus.

This kit is suitable for the detection of antibodies in chicken serum or plasma to determine whether the tested chickens have been infected with Infectious Bronchitis Virus (IBV) or to assess the level of antibodies in immunized chickens; evaluating the risk level of IBV infection in the flock; and understanding the level of maternal antibodies in chicks, to provide a reference for formulating an IBV vaccination program.

Principle :

This kit comprises a coated Microtiter Plate with recombinant IBV N protein, HRP conjugate, and other accompanying reagents. It employs the principle of enzyme-linked immunosorbent assay (ELISA) to detect antibodies against the IBV in the chicken serum or plasma. During the experiment, control serum and test sample are added to the plate. After incubation, if the sample contains IBV antibodies, they will bind to the antigens coated on the microtiter plate. Following washing steps to remove unbound components, the HRP conjugate is added, which specifically binds to the antigen-antibody complexes on the plate. After washing again to remove unbound HRP conjugate, substrate reagents

are added to the wells and react with the enzyme-labeled complexes, resulting in a blue color. The intensity of the color is directly proportional to the amount of specific antibody present in the sample. The reaction is then terminated by adding a stop solution, turning the solution yellow. The absorbance of each well is measured at a wavelength of 450nm using a microtiter plate reader (microplate reader) to determine the presence of IBV antibodies in the sample.

Instrument：

microplate reader, adjustable micropipette, constant temperature device (37°C), centrifuge.

Components:

Reagent	Specification		
Microtiter Plate	96wells	96wells×2	96wells×5
Sample Diluent (yellow cap)	1×50mL	1×50mL	1×200mL
HRP conjugate (red cap)	1×11mL	2×11mL	2×26mL
Concentrated Wash Buffer (20×) (white cap)	1×40mL	1×40mL	1×200mL
Substrate Reagent A(white cap)	1×6mL	1×11mL	1×26mL
Substrate Reagent B(black cap)	1×6mL	1×11mL	1×26mL
Stop Solution (yellow cap)	1×6mL	1×11mL	1×26mL
Positive Control (red cap)	1×1.0mL	1×1.5mL	1×2.0mL
Negative Control (green cap)	1×1.0mL	1×1.5mL	1×2.0mL
Adhesive Membrane	1	2	5
Sealed bag	1	1	2
Dilution plate	1	2	5
Instruction	1	1	1

Experimental preparation

Restore all reagents and samples to room temperature (adjust to around 25°C) for more than 30 min before use. This is a crucial step to ensure there is no precipitation in the reagents.

1. **Sample Preparation**: The serum/plasma should be clear, without hemolysis or contamination. Samples can be stored at 2-8°C for up to 1 week, and for long-term storage, they should be kept at -20°C.
2. **Sample dilution**: Dilute the prepared sample 10-fold using the **sample diluent** (e.g., add 90μL of sample diluent to the dilution plate, followed by the addition of 10μL of the sample, and mix well). What obtained is the **diluted sample.** Negative and positive controls do not require dilution.
3. **Solution preparation**: Dilute the concentrated wash buffer (20×) by a factor of 20 (Concentrated wash buffer/Deionized water= 1: 19). What obtained is the **working wash buffer.**

Please note that the labware must be clean. Use disposable pipette tips to avoid contamination of interference results.

ELISA procedure

Place all reagents and samples to room temperature (adjust to around 25°C) for 30min. Gently shake the reagent bottles before use.

Take out the frame of the microplate along with the required number of wells. Then place the unused microplate wells

into the sealed bag with the desiccant provided. Store the remaining kit in the refrigerator at 2-8°C.

1. Put the required number of the wells on the plate and set up 2 wells each for negative/positive control.
2. Add 100μL of **negative control** to each negative control well. Then add 100μL of **positive control** to each positive control well. For each sample well, first add 90μL of **sample diluent**, then add 10μL of the **diluted sample**.

   Note: The sample dilution ratio is equivalent to 1:100.
3. Shake gently by hand (or use a microplate shaker) for 5s, cover with adhesive membrane and incubate at 37°C (water bath recommended) in the dark for 30 minutes.
4. Discard the liquid from the wells. Add 350μL of **working wash buffer** to each well, let stand for 30 seconds, then discard. Repeat the washing process 5 times. Invert the plate and tap it against a thick absorbent paper (or lint-free cloth), with a soft towel placed underneath. (Bubbles that are not removed after tapping dry can be punctured with a clean pipette tip).
5. Add 100μL of **HRP conjugate** to each well, cover with adhesive membrane, and incubate at 37°C in the dark for 30 minutes.
6. Washing. Same as step **4**.
7. First, add 50μL of **substrate reagent A** to each well, followed by 50μL of **substrate reagent B**. shake gently by hand (or use a microplate shaker) for 5s, cover with adhesive membrane, and incubate at 37°C in the dark for 10 minutes.
8. Add 50μL of **stop solution** to each well and shake gently by hand (or use a microplate shaker) for 5s. Read absorbance (**A value**) at 450nm with microplate reader (with 630nm as a reference wavelength). Finish this step within 10min.

◆ Reference Value

Under normal experimental conditions, the A value of the negative control should be ≤0.2, and the A value of the positive control should be ≥0.6.

◆ Interpretation of Test Results

1. C.O (Cut-off value) =2.1×A_{NC} (calculated as 0.1 when A_{NC} is less than 0.1)

A_{NC}—the average A value of the negative control

2. For unvaccinated flocks:

If A_S ≥ C.O, it is considered positive; if A_S ＜ C.O, it is considered negative.

A_S—the A value of the sample

4. For vaccinated flocks: Monitor and record the antibody levels of the samples. Analyze the distribution of antibody levels and the immune status of the flock based on the results.

◆ Limitations of the Test Method

This experiment serves only as a qualitative detection of antibodies against Infectious Bronchitis Virus in chicken serum or plasma. The rough assessment of antibody levels as strong, moderate, or weak can be made based on the high or low values of the A value.

Attention

- During the experiment, gloves and lab coats should be worn. Strict and comprehensive disinfection and isolation protocols should be followed. All experimental waste should be treated as infectious material.
- The stop solution is corrosive. Avoid contact with skin and clothing. If accidentally contacted, rinse immediately with a large amount of tap water.
- **When taking the microtiter plate out of a refrigerated environment, it should be brought to room temperature before opening the bag.** Unused microplate wells should be stored in the sealed bag with a desiccant.
- During washing, each well should be filled completely with liquid to prevent any residual enzyme on the well's rim from remaining unwashed.
- The samples used for testing should be kept fresh.
- The determination of test results must be based on the readings from the microplate reader.
- Components from different lot numbers must not be mixed.