Cysticercosis Ag ELISA Kit

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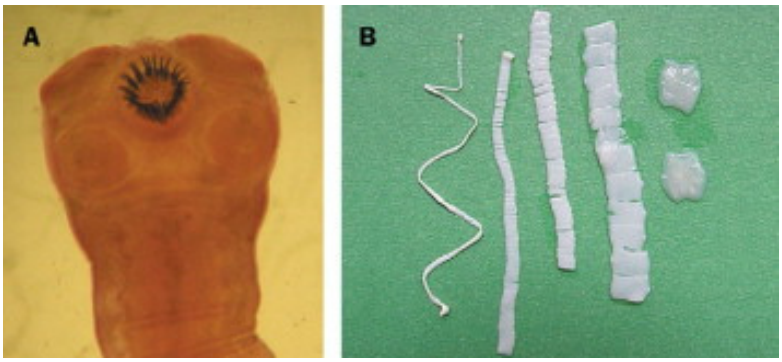
The Cysticercosis Ag ELISA Kit is a cutting-edge diagnostic tool designed to accurately detect Taenia solium antigens in serum and plasma samples. This in vitro enzyme immunoassay (ELISA) specifically targets the presence of active cysts caused by Taenia spp., providing crucial data for the detection of cysticercosis in both humans and pigs. By distinguishing between live cysts and degenerated forms, it serves as an essential diagnostic tool for managing and diagnosing Taenia solium infections.

General Information about Taenia solium Cysticercosis

Taenia solium cysticercosis is a parasitic infection caused by the larval stage of the pork tapeworm, Taenia solium. The Cysticercosis Ag ELISA Kit plays a critical role in diagnosing active infections by detecting circulating Taenia solium antigens in serum and plasma samples. Unlike traditional methods that focus on identifying Taenia solium eggs or proglottids, the Cysticercosis Ag ELISA specifically detects excretory-secretory antigens released by viable cysticerci, which are the larval cysts in tissues.



Key Diagnostic Role in Cysticercosis

- **Detecting Active Infections**: The Cysticercosis Ag ELISA Kit is crucial for identifying viable cysts in human and animal samples. The detection of active cysts is essential in diagnosing neurocysticercosis (infections in the brain) and porcine cysticercosis (in pigs), which are the most concerning forms of the disease.
- **Prevention of Complications**: By detecting active infections early, the ELISA test helps in preventing severe complications such as hydrocephalus, seizures, and neurological damage associated with neurocysticercosis, caused by Taenia solium cysts in the brain.

Key Benefits and Features of the Cysticercosis Ag ELISA Kit

- **High Sensitivity**: Detects active cysts in serum and plasma, ensuring early detection of Taenia solium infections.
- **Specifically Designed for Human and Porcine Samples**: Enables precise diagnosis in both human neurocysticercosis and porcine cysticercosis cases.
- **Efficient Monitoring**: Provides critical insights into treatment efficacy by tracking antigen levels after deworming or anthelmintic therapy.
- **Reliable Results**: Delivers consistent quantitative results, crucial for clinical decision-making and epidemiological studies.
- **Simple Protocol**: Fast and straightforward to perform, requiring minimal hands-on time in the laboratory.

How the Cysticercosis Ag ELISA Kit Works?

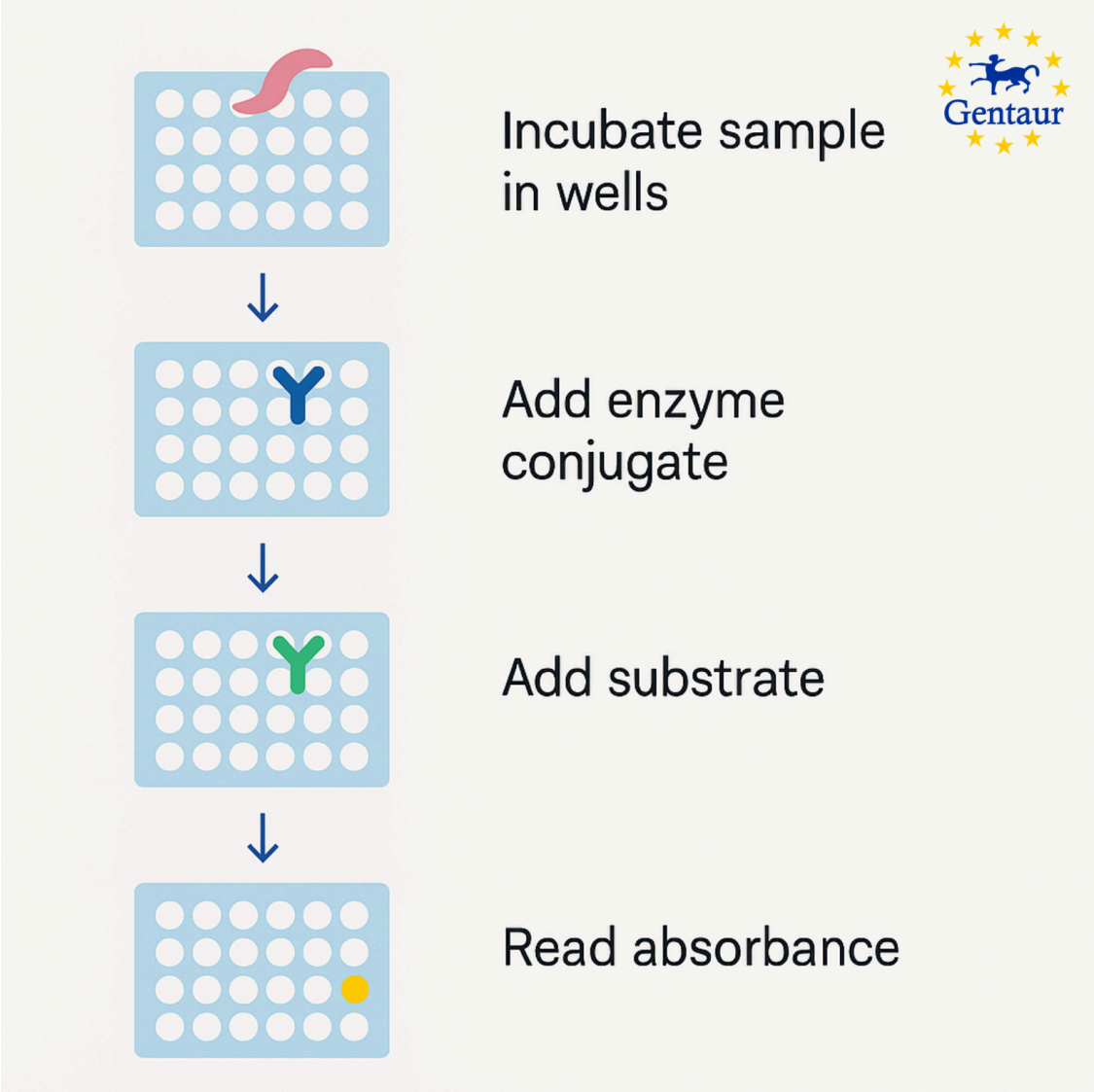
1. Principle of Detection:

The Cysticercosis Ag ELISA Kit utilizes a highly specific and sensitive method based on the capture of excretory-secretory antigens produced by the Taenia solium cysts. Using monoclonal antibodies, the excretory-secretory products are detected in serum or plasma samples.

- **Monoclonal Antibody Binding**: Specific mouse monoclonal antibodies bind to Taenia solium antigens, ensuring high specificity for active cysticercosis.
- **Colorimetric Detection**: The presence of antigens is detected by a color change in the microplate well, which is measurable using spectrophotometry at 450 nm.

2. Testing Procedure:

- **Coating of Wells**: The microplate is pre-coated with specific monoclonal antibodies targeting Taenia solium antigens.
- **Incubation with Serum**: The serum or plasma sample is incubated in the well, allowing the Taenia antigens to bind to the coated antibodies.
- **TMB Substrate Addition**: After washing, a TMB (Tetramethylbenzidine) substrate is added, resulting in a color change that correlates with the concentration of antigen in the sample.
- **Measurement**: The absorbance is measured at 450 nm, where the intensity of the color correlates with the level of antigen present.



Flowchart Structure for Cysticercosis Ag ELISA Procedure

1. **Start**
   a. Label: Start
2. **Prepare Platelets**
   a. Label: Add 50 µL of Screening Platelets to microplate.
   b. Action: Centrifuge for 3 minutes at 1050 g.
   c. Action: Decant and shake for 2 x 10 seconds at 700-1000 rpm.
3. **Add Cell Wash Buffer**
   a. Label: Add 200 µL of Cell Wash Buffer 1x.
   b. Action: Centrifuge for 3 minutes at 1050 g.
   c. Action: Decant and shake for 2 x 10 seconds at 700-1000 rpm.
4. **Add Patient Serum/Plasma**
   a. Label: Add 50 µL of patient serum/plasma.
   b. Action: Incubate for 30 minutes at 36 ± 1°C.
   c. Action: Centrifuge for 3 minutes at 1050 g.
   d. Action: Decant.
5. **Add Monoclonal Antibody MAB**
   a. Label: Add 50 µL of monoclonal antibody MAB.
   b. Action: Incubate for 30 minutes at 36 ± 1°C.
   c. Action: Centrifuge for 3 minutes at 1050 g.

d. Action: Decant.
6. **Cell Wash**
   a. Label: Add 200 µL of Cell Wash Buffer 1x.
   b. Action: Centrifuge for 3 minutes at 1050 g.
   c. Action: Shake for 2 x 10 seconds at 700-1000 rpm.
7. **Add Lysis Buffer**
   a. Label: Add 130 µL of Lysis Buffer.
   b. Action: Mix vigorously by pipetting up and down.
   c. Action: Incubate for 15 minutes at 2-8°C.
8. **Add TMB Substrate**
   a. Label: Add 200 µL of TMB substrate.
   b. Action: Incubate for 15 minutes at 36 ± 1°C.
   c. Action: Stop the reaction by adding H_2SO_4.
9. **Read Results**
   a. Label: Measure absorbance at 450 nm.
   b. Action: Record the results for analysis.

Components Included in the Cysticercosis Ag ELISA Kit

- **Coated Microtiter Plate**: Ready-to-use strips coated with monoclonal antibodies specific to Taenia solium antigens.
- **Positive and Negative Controls**: Essential for verifying the test procedure and ensuring the accuracy of results.
- **Conjugate**: HRP-conjugated monoclonal antibodies for the detection of bound antigens.
- **Chromogen Substrate (TMB)**: Used to produce a colorimetric reaction, indicating the presence of Taenia antigens.
- **Lysis Buffer**: To lyse cysticerci and release their excretory-secretory antigens into the solution.

Clinical Applications

1. **Diagnosis of Active Taenia Infections**:
   - The Cysticercosis Ag ELISA Kit is essential for diagnosing active cysticercosis caused by Taenia solium, especially in cases of neurocysticercosis where Taenia cysts affect the brain.
   - Detects circulating antigens that indicate live cysts, enabling timely diagnosis before degeneration or calcification occurs.
2. **Epidemiological Surveillance**:
   - This assay plays a critical role in monitoring cysticercosis outbreaks, especially in endemic regions where Taenia solium infections are prevalent, such as Latin America, Africa, and Asia.
   - It helps track infection **rates** in **pigs** and **humans**, aiding in the control of **Taenia spp.** transmission.
3. **Treatment Monitoring**:
   - Post-treatment monitoring: After anti-parasitic treatment, antigen levels in the patient's serum drop rapidly. The Cysticercosis Ag ELISA Kit is useful for assessing treatment efficacy and ensuring the elimination of live cysts.

4. **Prevention of Cross-Contamination:**
    - By identifying active cysticercosis in animals and humans, the test supports preventive measures, including quarantine and deworming protocols, especially in porcine farming.

Storage and Handling Instructions

- **Storage Temperature**: Keep all reagents at 2-8°C.
- **Stability**: The reagents remain stable for 12 months from the date of manufacture when stored as directed.
- **Handling**: Follow safety precautions and wear protective gloves when handling reagents, especially the chromogen and lysis buffer.

The Cysticercosis Ag ELISA Kit provides a sensitive, specific, and reliable diagnostic tool for detecting active cysticercosis infections caused by Taenia solium. This kit is essential for accurate diagnosis, effective treatment monitoring, and epidemiological surveillance of Taenia infections in both humans and pigs. By integrating advanced antigen detection, it enhances patient care and supports global cysticercosis control efforts.