Giardia Antigen Detection ELISA Kit

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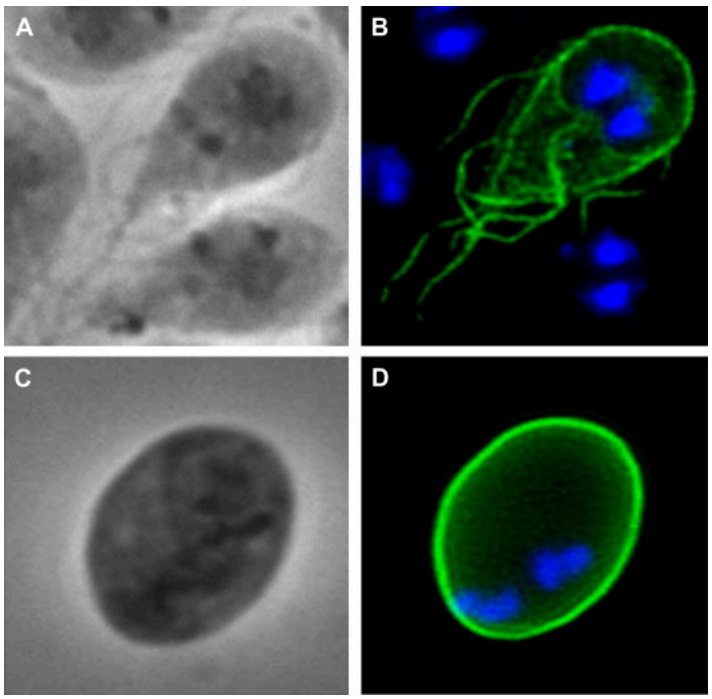
The Giardia Antigen Detection ELISA Kit is an advanced diagnostic tool designed for the qualitative detection of Giardia lamblia-specific antigens in fecal specimens. This enzyme-linked immunosorbent assay (ELISA) offers high sensitivity and specificity for diagnosing giardiasis, an intestinal infection caused by Giardia lamblia, and is used globally in both clinical and research laboratories.

Giardia lamblia

Giardia lamblia, also known as Giardia intestinalis or Giardia duodenalis, is a protozoan parasite that causes giardiasis, a common parasitic infection of the gastrointestinal system. Giardia lamblia is one of the most prevalent waterborne pathogens, causing both acute and chronic diarrhea in humans and animals worldwide.



-Lifecycle and Transmission:

- Giardia lamblia is transmitted primarily through the fecal-oral route, often via contaminated water, food, or surfaces.
- The cyst stage of the parasite is resistant to environmental conditions and can survive in water sources, leading to widespread contamination.
- Ingestion of cysts results in excystation in the intestines, where trophozoites emerge and attach to the intestinal lining, causing symptoms such as diarrhea, abdominal cramps, and bloating.

-Symptoms of Giardiasis:

- Acute Diarrhea
- Abdominal Pain or Cramps
- Nausea
- Bloating
- Fatigue
- Weight Loss (in chronic cases)

Giardiasis can often be misdiagnosed because its symptoms overlap with other gastrointestinal disorders. This is why rapid and accurate diagnosis is crucial for effective treatment.

Key Features

- **High Sensitivity and Specificity**: Detects Giardia lamblia antigens in stool samples, making it an essential diagnostic tool for giardiasis.
- **Fast and Simple**: Quick processing time with a straightforward protocol that requires minimal handling and expertise.
- **Reliable Results**: Provides quantitative data to determine the level of Giardia antigen present in fecal samples.
- **Non-invasive**: Provides an alternative to more invasive methods like biopsies or microscopic examinations.

How the Giardia Antigen Detection ELISA Kit Works?

The Giardia Antigen Detection ELISA Kit uses the ELISA method to detect Giardia antigens from Giardia lamblia in fecal samples. The key components and the procedure are outlined below:

1. **Antigen Capture**: The monoclonal antibodies are pre-coated onto the microtiter plate wells, which specifically bind to Giardia lamblia antigens in the fecal sample.
2. **Incubation**: After adding the fecal sample to the wells, the antigen-antibody complex forms and binds to the plate.
3. **Detection**: The peroxidase-conjugated anti-Giardia antibody is then added, followed by a chromogenic substrate (TMB).
4. **Color Change**: The presence of Giardia antigen is indicated by a color change in the well, with the intensity correlating to the amount of Giardia antigen.

5. **Measurement**: The results are measured using an ELISA plate reader at 450 nm, where the color intensity reflects the level of Giardia antigen.

Detailed Protocol for the Giardia Antigen Detection ELISA Kit

1. Sample Preparation:

- Collect fecal samples in a clean container.
- Homogenize the sample thoroughly to ensure that the antigen is evenly distributed.
- Dilute the sample with sample buffer according to the kit instructions.

2. Plate Preparation:

- **Coated Wells**: The microtiter plate provided with the kit is pre-coated with Giardia-specific antibodies.
- **Add Samples**: Dispense 50 µL of each prepared sample into the designated wells of the microplate.
- **Incubation**: Incubate for 30 minutes at 36 ± 1°C.

3. Washing:

- After incubation, wash the wells using the provided wash buffer to remove any unbound material.
- Repeat this washing step 3 times to ensure that the wells are clean and only the antigen-antibody complex remains.

4. Detection:

- **Add Conjugate:** Add 50 µL of the peroxidase-conjugated anti-Giardia antibody to each well.
- **Incubation:** Incubate for 30 minutes at 36 ± 1°C.
- **Washing:** Wash the wells again using the wash buffer to remove any unbound conjugate.

5. Substrate Addition:

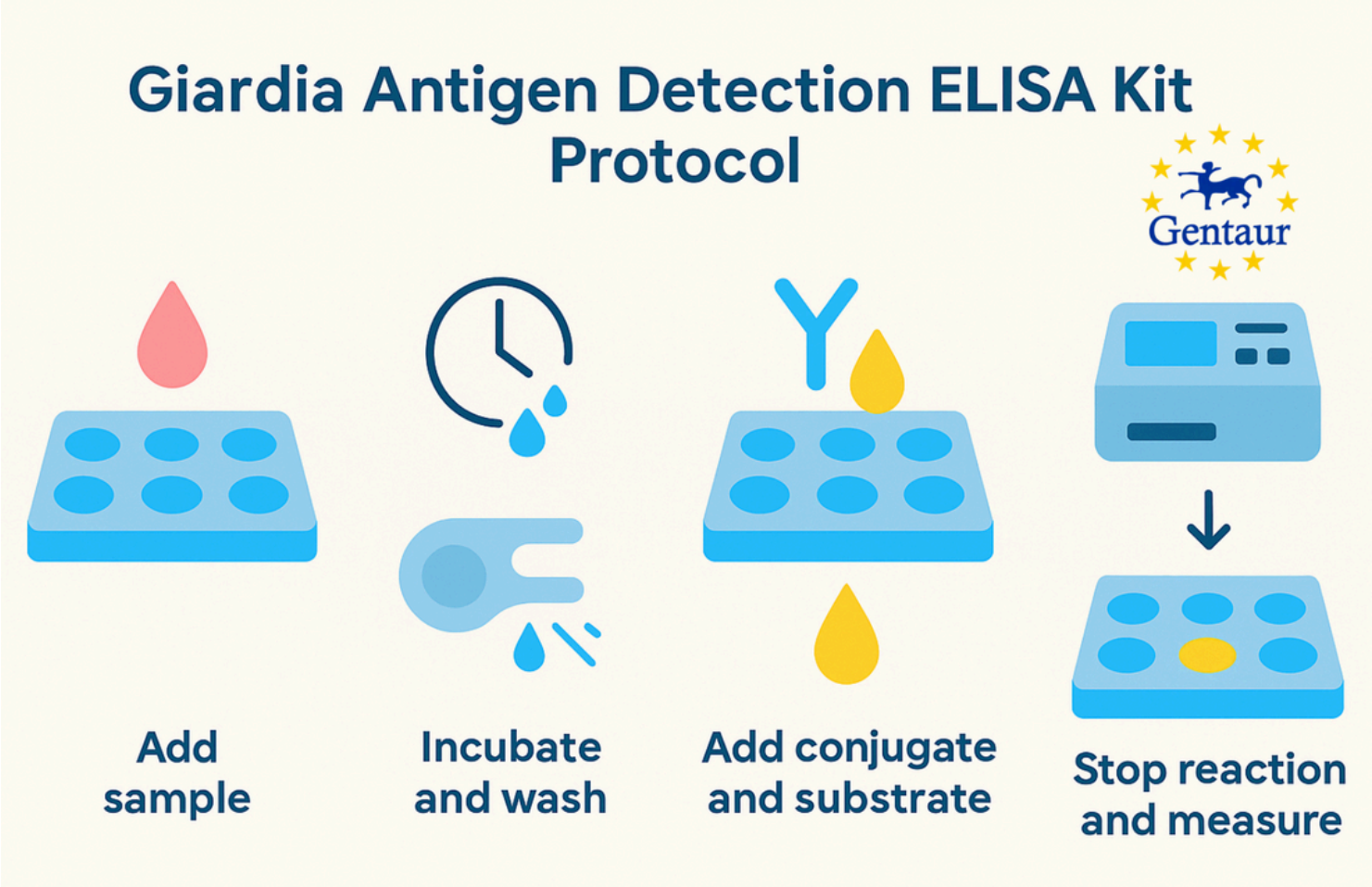
- **Add TMB Substrate**: Add 100 µL of the TMB chromogenic substrate to each well.
- **Incubation**: Allow the reaction to proceed for 15 minutes at room temperature.
- The substrate will produce a blue color if Giardia antigens are present.

6. Reaction Stop:

- After incubation, stop the reaction by adding 50 µL of sulfuric acid.
- The blue color will change to yellow, indicating the presence of Giardia lamblia antigens.

7. Measurement:

- Measure the absorbance at 450 nm using an ELISA plate reader. The absorbance is directly proportional to the amount of Giardia antigen in the sample.



Applications

- **Diagnosis of Giardiasis**: Essential for diagnosing active Giardia lamblia infections, particularly in patients presenting with gastrointestinal symptoms.
- **Monitoring Treatment**: Antigen levels decrease after successful treatment, making this kit useful for treatment monitoring.
- **Screening and Surveillance**: Helps in large-scale screening and epidemiological studies to monitor the prevalence of Giardia lamblia infections in human populations.

Why Choose the Gentaur Giardia Antigen Detection ELISA Kit?

- **Highly Sensitive and Specific**: Detects Giardia lamblia antigens with high accuracy, minimizing false-negative results.
- **Non-invasive Diagnostic Tool**: Offers a simpler, less invasive alternative to traditional diagnostic methods like microscopy or biopsy.
- **Fast and Easy Protocol**: Provides rapid results in less than 2 hours, ideal for clinical laboratories with high patient volume.

The Giardia Antigen Detection ELISA Kit is a sensitive, reliable, and fast diagnostic tool for detecting Giardia lamblia infections. Its ability to detect Giardia antigens in fecal samples makes it an essential tool for diagnosing giardiasis, monitoring treatment effectiveness, and conducting epidemiological surveillance. Whether for clinical use or research studies, this

ELISA kit ensures accurate and actionable results for managing Giardia infections.