

## Zearalenone (ZEA) Test Strip (Catalog: TBS11171; 20 tests/kit)

For detection of ZEA from grain and other food samples.

### INTRODUCTION

Zearalenone (also known as ZEA, RAL, and F-2 mycotoxin), is a potent estrogenic compound produced by some *Fusarium* species. It is commonly found in grains such as maize, barley, oats, wheat, rice, and sorghum, and therefore can be found in bread as well. Its strong estrogenic effect can lead to a significant increase in estrogen levels in poultry and livestock, and its impact on the reproductive system of pregnant animals and human could lead to abortion, fetal death, or malformed fetus. In addition, eating food prepared with zearalenone contaminated flour can also lead to toxicity to the central nervous system, with symptoms of nausea, feeling cold, headache, depression, or ataxia.

Tribioscience's Zearalenone Rapid Test Strip provides a rapid and convenient method to test zearalenone with a colloidal gold immunochromatographic design. It is a fast (results shown in 10 minutes), simple (no instrument is required, and results can be observed visually), sensitive and reliable detection approach for the presence of zearalenone in grains and grain products. The lower limit of detection (LOD) of zearalenone in the sample is 200 ng/ml (200 ppb).

### KIT APPLICATIONS

Tribioscience's Zearalenone Test Strip is a lateral flow strip test for rapid detection of zearalenone in grain and grain.

Assay sensitivity: 200 ng/ml (200 ppb).

Assay time: 5-10min

### PRINCIPLE OF THE ASSAY

The Zearalenone Rapid Strip Test is based on the principle of competitive lateral flow immunochromatography. A Zearalenone antibody is conjugated to colloidal gold and placed on conjugate pad. Colloidal gold provides red color to visualize antibody-antigen binding. Zearalenone antigen is immobilized on nitrocellulose membrane. After testing sample is loaded onto sample pad, it mixes with gold-antibody conjugate and migrates together along the membrane. If sample contains no zearalenone, antibody conjugated to colloidal gold will bind the antigen immobilized on membrane, leading to clear red color presented on membrane detection line where the test antigen is immobilized (indicating a negative result). If zearalenone is present in the test sample, it will bind gold-antibody conjugate and prevent its binding onto the antigen line on membrane. As a result, no color will be visible on detection line on membrane (indicating a positive result).

### KIT CONTENT AND STORAGE CONDITIONS

- 20×foil pouches/kit. Each pouch contains one cassette, one pipette and a desiccant.
- Assay buffer (10 mL)

Shelf-life: Storage at room temperature (2-30°C) is stable for one year.

### PRECAUTIONS

Wear protective gloves, clothing, eye, and face protection. Wash hands thoroughly after handling.

### SAMPLE PREPARATION AND TEST PROCEDURES

Bring test strip, samples, and all reagents to room temperature (20-25°C) before use.

#### Sample Preparation:

1. Pulverize over 5 g of representative grain sample and pass through a sieve with mesh size of 20.
2. Place 2 grams of this pulverized sample into a 50 ml centrifuge tube.
3. Add 8 ml ethyl acetate (EtAc) into this centrifuge tube and close lid tightly. Shake violently (or vortex) for 5 minutes and let stand afterwards. If less than 3 ml supernatant is present after sedimentation, centrifuge at 4,000 rpm for 1 minute.
4. Transfer 3 ml supernatant into a clean glass beaker, blow air over surface until solvent evaporates completely. Re-dissolve residue in 200 µl sample diluent (included with the test strip) by shaking and mixing thoroughly. Take 100 µl of this re-dissolved solution and add another 100 µl sample diluent to obtain test solution.

#### Testing Procedures

1. Take out the cassette from the foil pouch and place it horizontally.
2. Gradually drip 3 drops of sample into the sample hole "S". Interpret the result in 5-10 minutes.
3. Result Interpretation.

Test result is interpreted by observing test line and control line shown in result window as the below diagram (Fig. 1). **Negative (-):** both test (T) and control lines (C) are present, indicating "Negative" which means that the Zearalenone concentration in sample is lower than the detectable amount; **Positive (+):** control line(C) is present, and test line (T) is absent. This result indicates the Zearalenone concentration is higher than the detectable line in sample. **Invalid test:** no control line (C) is present. Please repeat the test using a new test strip following instructions in this user guide.

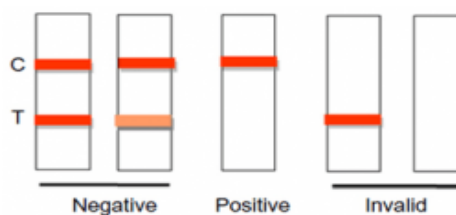


Fig. 1 Diagram for result interpretation.

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### RELATIVE PRODUCTS

Clenbuterol Rapid Test for Tissue Samples (TBS11112)  
Clenbuterol Rapid Test for Urine Samples (TBS11111)  
Ractopamine rapid detection test strip (TBS11131)  
Shiga Toxin (STX) Rapid Test Strip (TBS11151)  
Vomitoxin / Deoxynivalenol (DON) Test Strip (TBS11156)  
Ochratoxin A test strip (TBS11161)  
Aflatoxin B1 Test Strip (TBS11166)  
Chloramphenicol Fast ELISA (TBS21121)  
Melamine Fast ELISA (TBS21104)  
Total Aflatoxin Fast ELISA(TBS21131)  
Ochratoxin-A Fast ELISA(TBS21133)  
Microbial Magnetic DNA Extraction (TBS6025)  
STEC-Salmonella qPCR kit (TBS42029)  
4-in-1 Aspergillus qPCR kit (TBS42025)