Tribo™ Vomitoxin Rapid Test Strip User Guide

(Catalog No. TBS11156)

TribioScience, Inc.

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General Description

Vomitoxin, also known as deoxynivalenol (DON), belongs to the class of epoxy-sesquiterpenoid compound, and is a toxic secondary metabolite produced by molds. It can be found at mg/kg level in contaminated grains such as wheat, maize, barley, oats, rye, and sometimes in rice or sorghum. Because of its high cytotoxicity (which arises from its inhibition of protein synthesis) and immunosuppressive activity, vomitoxin poses significant health risks to both human and livestock. U.S. Food and Drug Administration has established a maximum allowed vomitoxin level of 1 ppm in human food, 5 ppm in dog or cat food, and 2-10 ppm for livestock feed.

Tribo™ vomitoxin rapid test strip provides a rapid and convenient test for vomitoxin with a colloidal gold immunochromatographic design. It provides a **fast** (results shown in **10 minutes**), **simple**, **sensitive** and **reliable** detection approach for the presence of vomitoxin in grain samples. The lower limit of detection (LOD) of vomitoxin in the sample is **0.1 µg/ml (0.1 ppm)**.

Intended Use

The *Tribo*™ vomitoxin test strip is a lateral flow strip test for rapid detection of vomitoxin in grain samples.
Assay sensitivity: 0.1 µg/ml (0.1 ppm)

Safety Instructions

To receive complete safety information on this product, contact TribioScience, Inc. and request Material Safety Data Sheet.

Assay Principles

Tribo™ vomitoxin test strip is based on the principle of colloidal gold immunochromatography. An anti-vomitoxin antibody is conjugated to colloidal gold and placed on conjugate pad. Colloidal gold provides red color to visualize antibody-antigen binding. Vomitoxin antigen is immobilized on nitrocellulose membrane. After test sample is loaded onto sample pad, it mixes with gold-antibody conjugate and migrates together along the membrane. If sample contains no vomitoxin, 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 negative result). If vomitoxin is present 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 positive result).

Reagents and Materials in each pack

a) 1 vomitoxin test strip
b) 1 disposable dropper
c) 1 pack of desiccant
d) 1 bottle of sample diluent

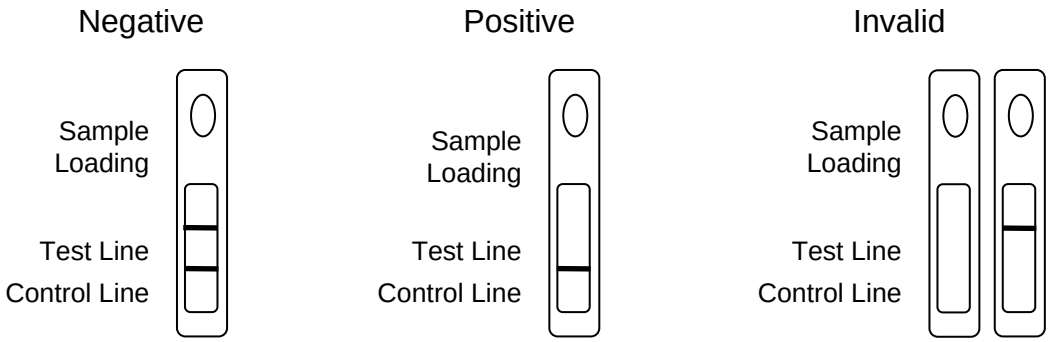
Sample Collection and Test Procedure

- Equilibrate test strip to room temperature (20-25^{o}C)
- Equilibrate test sample to room temperature (20-25^{o}C)

a) Pulverize over 5 g of representative grain sample, and pass through a sieve with mesh size of 20. Place 2 grams of this pulverized sample into a 50 ml centrifuge tube.
b) 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 there is less than 3 ml supernatant after sedimentation, centrifuge at 4,000 rpm for 1 minute.
c) 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.
d) Add 2 drops of test solution described above into sample loading well with a disposable dropper.
e) Observe result in 10 minutes.

Result Interpretation

Test result is interpreted by observing test line and control line shown in result window.
Negative (-): both test and control lines are present, indicating vomitoxin concentration in sample is lower than 0.1 µg/ml;
Positive (+): control line is present, and test line is absent. This result indicates vomitoxin centration is higher than 0.1 µg/ml in the sample;
Invalid test: no control line is present. Please repeat the test using a new test strip following instructions on this user guide.



Precautions

1. Test strip is for one-time use only. Please use the test strip on the same day the package is opened.
2. Do not use tap water, purified water, or distilled water as negative control.
3. Test should be performed at room temperature, and test strip and sample both need to be equilibrated to room temperature before the test.
4. If no liquid movement is observed in the test window 30 seconds after test solution is added to sample loading well, add one more drop of test solution.
5. Positive samples identified by test strip are recommended to be verified with other detection methods (such as HPLC or GC-MS).

Storage and Expiration Date

Storage: Store in a cool (room temperature) and dry place in intact original packaging.
Expiration Date: 12 months after manufacturing date.

Technical Assistance

For ordering or technical assistance regarding this product, or for additional information about TribioScience products, please email info@tribioscience.com or call (650) 917-9269.

General Limited Warranty

TribioScience, Inc. warrants its manufactured products against defects in materials and workmanship when used in accordance with the applicable instructions for a period not to

extend beyond a product's printed expiration date. TribioScience makes no other warranty, expressed or implied. There is no warranty of merchantability or fitness for a particular purpose. The warranty provided herein and the data, specifications and descriptions of TribioScience products appearing in published catalogues and product literature may not be altered except by express written agreement signed by an officer of TribioScience. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, TribioScience Inc.'s sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in materials or workmanship within the warranty period, provided the customer notifies TribioScience promptly of any such defect. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as TribioScience is willing and able to repair or replace any nonconforming TribioScience product or part. TribioScience shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by a customer from the use of its products. However, in some states the purchaser may have rights under state law in addition to those provided by this warranty.

For research use only.

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Tribo™呕吐毒素快速检测试纸卡使用说明书

（产品编号：TBS11156）

1. 产品概述：

脱氧雪腐镰刀菌烯醇（deoxynivalenol）又称呕吐毒素（Vomitoxin），属于霉菌的单端孢菌素族，由某些镰刀霉真菌属产生。呕吐毒素多分布于小麦、大麦、玉米等谷物籽实中，含量通常在 mg/kg 水平。由于它具有很高的细胞毒性及免疫抑制性，对人类及动物构成了严重的健康威胁。

呕吐毒素快速检测试纸卡将胶体金免疫层析原理应用于呕吐毒素含量的快速测定。本产品使用简便，反应灵敏，检测灵敏度为 0.1 微克/毫升（0.1ppm）。检测过程迅速，结果在 10 分钟内显示。

2. 用途及灵敏度：

本产品呕吐毒素快速检测试纸卡适用于谷物等样品中呕吐毒素含量的快速检测。
检测灵敏度：0.1 微克/毫升(0.1 ppm)

3. 检测原理：

呕吐毒素快速检测试纸卡将胶体金免疫层析原理应用于呕吐毒素含量的快速测定。在试纸卡中，抗呕吐毒素抗体偶联到胶体金颗粒上，呕吐毒素测试抗原固定在纤维素滤膜上。如果样品不含有呕吐毒素，胶体金抗体偶联物与固定抗原结合，在膜上显示检测线，检测结果为阴性。如果样品中含有呕吐毒素，呕吐毒素结合在胶体金抗体偶联物上，抑制了胶体金抗体偶联物与固定抗原的结合，不显示检测线，检测结果为阳性。

4. 试纸卡产品组成：

试纸卡（1 块）；一次性吸管（1 支）；干燥剂（1 块）；样品稀释液（1 瓶）

5. 样品处理及检测步骤：

（1）取5g 以上有代表性的样品粉碎（过20目筛），称取2g 均匀粉碎试样加入到离心管中
（2）离心管中准确加入8mL 乙酸乙酯，将瓶塞盖紧密封，用力振荡5分钟（如上清不足3ml，以4000rpm 离心1分钟）。

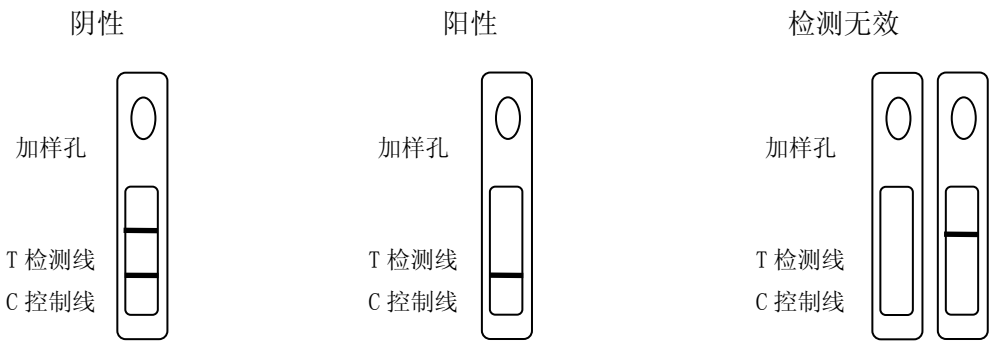
（3）用吸管取3mL 上清液到小玻璃杯中，吹干滤液，用200μl 稀释液复溶，振荡混匀；取100μl 复溶液再加入100μl 稀释液混匀，待测。
（4）用一次性吸管吸取待检样品，在加样孔内滴加样品 2 滴。
（5）加样后计时，10 分钟后判定结果。

6. 结果判定：

阴性（-）：检测线（T）和控制线（C）都显色，表明样品中的呕吐毒素浓度低于 0.1 微克/毫升

阳性（+）：检测线（T）无色，控制线（C）显色，表明样品中的呕吐毒素浓度高于 0.1 微克/毫升

无效：控制线（C）无色，表示使用方法不正确或试纸卡失效，结果无效。请对照使用说明书，用新的试纸卡重新测定



7. 注意事项：

（1）呕吐毒素快速检测试纸卡为一次性使用。打开包装后，请在当日使用。
（2）请勿使用自来水、纯化水及蒸馏水作为阴性对照。
（3）如滴加检测液后 30 秒内，在测试窗口无液体移行，则再补加 1 滴检测液。
（4）在室温(20-25℃)下使用，使用前将检测卡和待检样本恢复至室温(20-25℃)测试。
（5）本品检测为阳性的样本，建议采用更精确的方法（如 HPLC 或 GC-MS）加以复核。

8. 储存条件和有效期：

呕吐毒素快速检测试纸卡原包装在室温(20-25℃)下储存，置于阴凉避光干燥处。有效期为 12 个月，产品批号及有效期见包装袋。

本产品仅供研究使用。