VERSION N4
CAT.NUMBER: G4118/G4140

QUANTUM DON WATER EXTR.

LATERAL FLOW TEST KIT

for the quantitative determination of Deoxynivalenol in grains, cereals and animal feed

This Lateral Flow test kit is manufactured by Prognosis Biotech S.A.

ProGnosis Biotech S.A. is ISO 9001:2015 certified by TÜV Hellas (TÜV NORD).

Use only the current version of Product Data Sheet enclosed with the kit.

Quantum DON WATER EXTR., G4118/G4140, is a Lateral Flow Test kit for the quantitative determination of Deoxynivalenol in grains, cereals and animal feed.

This kit contains all reagents required for 18 or 40 reactions

Matrices:

Type I: Corn, Corn Germ, Corn Germ Meal Corn Gluten Meal, Corn Flour, Corn Silage, Wheat, Wheat flour, Wheat germ, Wheat Bran, Barley, Malt, Oats, Soybeans, Soybean Meal, Rye, Rye Flour, DDGS, DDGS Molasses, Sorghum, Sunflower meal, White Rice, Brown Rice, Rice flour, Buckwheat, Cottonseed, Millet, Beer residue, Pasta, Pea flour

- **Results in 30 seconds**
- Total test time: 90 seconds
- Range: 0 - 5ppm
- Shelf life: 12 months
- Storage: 2-8^{o}C

This is an electronic version, please verify always the last one included in the kit.

Specifications

- The LOD of the method is 0.1ppm DON.
- The LOQ of the method is 0.15ppm DON.
- Cross-reactivity: The cross-reaction of the anti-DON antibody with 15-acetyl-DON, DON and 3-acetyl-DON is >100, 100, <0.1% respectively.

1. Description

Quantum DON WATER EXTR. is an innovative Lateral Flow device, utilizing state -of-the-art features for the quantitative detection of Deoxynivalenol in grains, cereals and animal feed. This Lateral Flow test utilizes an ecological solution for the extraction step, instead of the usual organic solvents.

2. General Information

Deoxynivalenol (DON), also known as vomitoxin, is a member of the trichothecene mycotoxins produced by fungi of the Fusarium genus (*F. graminearum*). Grains including barley, wheat, oats, corn and maize are frequently infected by this fungus. Deoxynivalenol, along with 3-acetyl- and 15-acetyl-DON, constitutes a highly toxic molecule and it is considered to play a crucial role in immunological and nervous system problems. Due to their cytotoxicity, these toxins will always be a risk to human and animal health. Most controlling government agencies worldwide have regulations regarding the amount of DON allowable in human and animal foodstuffs. Accurate and rapid determination of DON presence in commodities is of paramount importance.

3. Principle of the Method

The Quantum DON WATER EXTR. lateral flow test is based on the competitive format immunoassay principle. A capture line for DON is placed below the control line. The detection system consists of specific antibodies against DON conjugated to colloidal gold. During testing, the sample flows through the membrane carrying along the detection system and passes through the two lines. If the sample is free of DON, a color development occurs at the test line, indicating the absence of DON in the sample. On the contrary, the presence of DON in the sample will cause a reduced colored signal at the test line. The test line color intensity is indirectly proportionate to the concentration of DON present in the samples. A valid test should always have the upper control line red.

4. Reagents Provided

Quantum DON WATER EXTR. kit contains sufficient reagents and materials for 18/40 reactions.

- 18/40 tests (cassette format) in foils
- Instruction manual
- 18/40 sample diluent tubes
- High range solution

5. Materials required but not provided

- A grinder sufficient to render sample to particle size of fine instant coffee
- Balance with 0 - 50g measuring capability and Graduated cylinder - 50ml
- Deionized water
- Tube roller or Vortex mixer
- 100 or 200µl adjustable micropipettes with disposable tips
- **S-Flow** software along with matching scanner device

6. Storage Instructions

Store kit components between 2 - 8°C. Do not freeze any components provided. The expiry date of the kit and reagents is stated on their labels and no quality guarantee is accepted after the expiration date. The expiry of the kit components can only be guaranteed if the components are stored properly and the reagent is not contaminated due to prior handling. Do not interchange individual components between kits of different lot numbers.

7. Safety and Precautions for use

All reagents should be brought to room temperature (21 - 25°C) before use (at least half an hour) and covered when not in use. Use a clean disposable plastic pipette tip for each reagent, to avoid cross contamination.

8. Sample preparation

1. The sample must be collected according to established sampling techniques. Grind a representative sample to the particle size of fine instant coffee (50% passes through a 20 mesh screen).
2. Weigh out a 5g ground portion of the sample and add 25ml of distilled or deionized water. Mix using a tube roller or vortex for 1min. **The ratio of sample to water is 1:5 (w/v).**
3. Allow the particulate matter to settle. (The extracted sample should have pH value of 6.2 - 7.0. If the pH is less than 6.2, the pH should be neutralized using NaOH.)
4. Add **100µl** of extract (supernatant) into the Sample diluent tube provided and mix well.
5. Add 100µl of the diluted sample in the circular window of the cassette.
6. In case the result is greater than 5000 ppb, the sample should be further diluted with **High Range Solution** and re-tested. To achieve a dilution factor of 5 or 10, add 100µl of the diluted sample into 400µl or 900µl of **High Range Solution** respectively. Use the diluted extract within **30 minutes**.

DILUTION FACTOR 5	DILUTION FACTOR 10
100µl of the diluted sample + 400µl of **High Range Solution**	100µl of the diluted sample + 900µl of **High Range Solution**

9. Method Procedure

1. Before opening the reagents, take the kit out of the fridge and wait until the temperature of the reagents reaches the ambient temperature.
2. Download and/or set the kit's **lot number**, as provided in the Quality Assurance Certificate and then set the suitable **Dilution Factor type**
3. Open as many foils with the cassettes as the number of samples to be tested.
4. Place the cassette inside the plastic holder. The cassette must be facing up.
5. Dispense **100µl of diluted extract** into the circular window of the cassette.
6. Insert the plastic holder into the scanner and press SCAN using S-flow software **immediately.** The 90 seconds scan count down starts immediately.

NOTE: Set the current Room Temperature (°C). when its necessary.

10. Interpretation of results

The Quantum DON WATER EXTR. lateral flow test is manufactured to work along with a scanner device S-FLOW or 3PR.

1st Quantum read: 30seconds after the start of the analysis the device scans the cassette automatically,

⇒ If the sample is free of DON, the analysis stops and the result is below LOQ

⇒ If the sample is suspected positive for DON (above LOQ), the analysis continues until it completes 90 seconds.

Final Quantum read: After the end of analysis the S-Flow software will use a Lot specific curve to calculate the results.

NOTE: A simple visual interpretation of the stick is NOT possible.

11.Performance Evaluation

11.1 Reference Materials

Several reference materials are being used for the evaluation of each product of ProGnosis Biotech S.A. in the context of Quality Control performed by Quality Control Department. Please request a validation report, including the results, at info@prognosis-biotech.com.

11.2 Proficiency Tests

All products participate frequently in Proficiency Tests. For more information, visit the individual product page in our website: **www.prognosis-biotech.com**

12. Method Summary

Total method time: 90 seconds

Extract the samples

⇩

Add 100µl of extract (supernatant) into the Sample diluent tube provided

⇩

Place the cassette inside the plastic holder

⇩

Add 100µl in the circular window of the cassette, insert the plastic holder into the scanner and press SCAN immediately

⇩

Interpretate the results through S-flow software

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