



QUANTUM ZON GREEN

LATERAL FLOW TEST KIT

for the quantitative detection of Zearalenone in grains and cereals.

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 ZON Green, G5018/G5040, is a Lateral Flow Test kit for the quantitative determination of Zearalenone in grains and cereals.

This kit contains all reagents required for 18 or 40 reactions

Matrices:

Type I: Corn, Barley, Oat

Type II: Wheat, Corn Flour, Rice, Brown Rice, Triticale

Type III: Wheat Flour

Type IV: Wheat Bran

Type V: Quantify samples that exceed the higher Zearalenone limit of Types I, II, III & IV.

- **Results in 2 minutes**
- Total test time: 4 minutes
- Range:
 - Type I & Type II: 0-500ppb
 - Type III: 0-300ppb
 - Type IV: 0-800ppb
 - Type V: 0-5000ppb
- Shelf life: 12 months
- Storage: 2-8°C



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

Specifications

- The LOD of the method is: 23ppb (Type I, II & IV), 13.4ppb (Type III), 170ppb (Type V)
- The LOQ of the method is: 35ppb (Type I, II & IV), 20ppb (Type III), 250ppb (Type V)
- Cross-reactivity: The cross-reaction of the anti-ZON antibody with Zearalenone, α -zearalenol, β -zearalenol, Zearalanone, α -zearalanol and β -zearalanol is 100, 85, 47, 72, 60 and 62% respectively.

1. Description

Quantum ZON Green is an innovative Lateral Flow device, utilizing state-of-the-art features for the quantitative detection of Zearalenone in grains and cereals. This Lateral Flow test utilizes an ecological solution for the extraction step, instead of the usual organic solvents.

2. General Information

Zearalenone (ZON) is a member of the trichothecene mycotoxins produced by fungi of the Fusarium genus (F. graminearum). Grains including barley, wheat, oats, corn, rice and maize are frequently infected by this fungus. It is frequently implicated in reproductive disorders of farm animals and occasionally in hyperoestrogenic syndromes in humans. There is evidence that ZON and its metabolites possess oestrogenic activity in pigs, cattle and sheep. Moreover, ZON has also been shown to be hepatotoxic, haematotoxic, immunotoxic and genotoxic. Most controlling government agencies worldwide have regulations regarding the amount of ZON allowable in human and animal foodstuffs. Accuracy and rapid determination of ZON presence in commodities is of paramount importance.

3. Principle of the Method

The Quantum ZON Green lateral flow test is based on the competitive format immunoassay principle. A capture line for ZON is placed below the control line. The detection system consists of specific antibodies against ZON 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 ZON, a color development occurs at the test line, indicating the absence of ZON in the sample. On the contrary, the presence of ZON 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 ZON present in the samples. A valid test should always have the upper control line red.

4. Reagents Provided

Quantum ZON Green kit contains sufficient reagents and materials for 18/40 measurements.

- 18/40 tests (cassette format) in foils
- 18/40 Extraction Powder pouches
- High range solution (product specific)
- Instruction manual

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
- Mini centrifuge (spin) and plastic tubes 1,5 or 2ml
- 100 or 200 μ l 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

a. Preparation of samples containing up to 500ppb (Types I&II), 300ppb (Type III) or 800ppb (Type IV).

1. The sample must be collected according to established sampling techniques. Grind a representative sample to the particle size of fine instant coffee (85-95% passes through a 20 mesh screen).
2. Weigh out a 10g ground portion of the sample
3. Add the content of 1 pouch of extraction powder into the grounded sample.

4. Add 50ml of distilled or deionized water into the sample. The ratio of sample to water is 1:5 (w/v). Mix using a mechanical roller or vortex for 2min.

5. Transfer 1ml of the extract to a clean tube and centrifuge for 30sec using a mini centrifuge (spin).

Transfer the extract (supernatant) to a clean tube. The extract is ready to use and is good for 1hour at RT. Vortex the extract prior to use.

b. Preparation of samples exceeded the higher limit.

Note: For all samples that tested above higher limit, the extract should be diluted **16** folds with High Range Solution for re-analysis.

1. Add **1.6ml** of High Range Solution into a clear plastic tube.
2. Add **100 μ l** from the extract to the plastic tube containing the HRS. This diluted extract will be used for re-analysis.

Type V (Quantify from 250 up to 5000ppb)
100 μ l of the extract + 1.6ml 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 Choose the suitable **Type (I, II, III or IV)**
3. Place the cassette inside the plastic holder. The cassette must be facing up.
4. Dispense slowly **100 μ l of the extract** into the circular window of the cassette.
5. Insert the plastic holder into the scanner and press SCAN using S-flow software **immediately**. The 4 minute scan count down starts immediately.

NOTE: For all the samples of Types I or II that tested above 500ppb, samples of Type III that tested above 300ppb and samples of Type IV above 800ppb, follow the same procedure using the diluted extract as a sample. Choose **Type V** before scanning.

10. Interpretation of results

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

1st Quantum read: 2 minutes after the start of the analysis the device scans the cassette automatically,

- ⇒ If the sample is free of ZON, the analysis stops and the result is below LOQ
- ⇒ If the sample is suspected positive for ZON (above LOQ), the analysis continues until it completes 4 minutes.

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

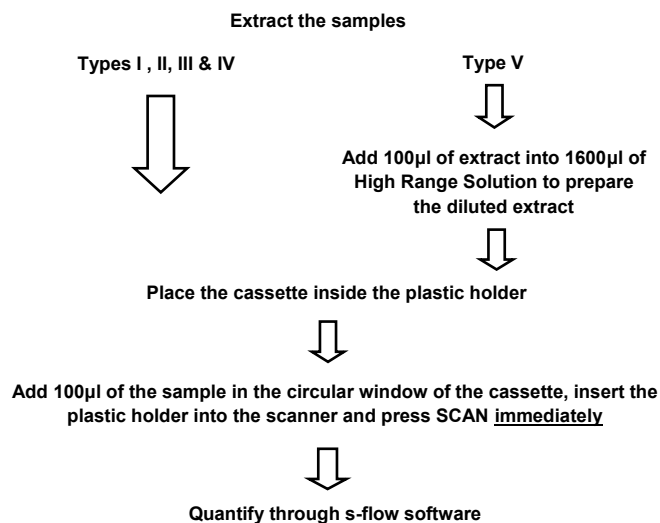
Several reference materials are being used for the evaluation of each product of ProGnosis Biotech S.A. in the context of Quality Control performed by Quality Control Department. Please request a validation report, including the results, at exports@prognosis-biotech.com.

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: 4 minutes



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All immune assays supplied by ProGnosis Biotech S.A., are warranted to meet or exceed our published specification when used under normal conditions in your laboratory. If the product fails during the stated period, a replacement product will be issued.

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G5018-G5040 Manual_Quantum_ZON Green_v2_en



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