Meizheng
Grain & Feed Test

MEIZHENG
a PerkinElmer company

en.meizhengbio.com

MEIZHENG BIO-TECH

ABOUT US

Meizheng is focused on food safety testing solutions and has developed multiple product lines for food safety testing, including rapid testing, microbiological testing, and lab testing solutions. Our solutions are targeted at food value chain stakeholders in various industries like grain, feed, dairy, honey, meat processing, distribution, etc. Our testing items cover biotoxin, heavy metal, vet drug residue, pesticide residue, nutrition, pathogen, etc.

Through years of development, Meizheng has set up 5 entities and 4 manufacturing sites in China, and has developed technological platforms including immunoassay, ELISA, sample preparation, microbiology, standard materials, automated instrument, etc. The company has passed ISO9001 quality management system, and has also set up a certified third party testing lab.

Meizheng is committed to provide fit–for–purpose food safety testing solutions. Various series products such as ToxinFast®, HMFAST®, AnticFast® and MicroFast® have been recognized by customers. Besides China, Meizheng products have been sold in over 20 countries like Russia, Belarus, France, United Sates, India, Vietnam, etc.

In 2019, Meizheng was incorporated into PerkinElmer, and has further expanded overseas network since then. Also, Meizheng has accelerated various products' certification process in AOAC and ILVO. In 2021, MicroFast® Aerobic Count Plate (AC) has obtained AOAC certificate.

Grain & Feed segment was the earliest business Meizheng developed, the related entity Beijing Huaan Magnech Bio–Tech Co., Ltd. was established in 2007. Over 14 years, the products and solutions have been widely recognized by local customers and institutional experts. Our products cover rapid testing kits, instruments and immunoaffinity columns, enabling detection of mycotoxins, heavy metal, pesticide residues, etc.

Contents

Why detect Mycotoxins in food ?

Aflatoxins are toxic secondary metabolites of the fungi species *Aspergillus flavus*, *A. parasiticus* and *A. nominus*. They are believed to be the most carcinogenic naturally occurring substances. Among them, Aflatoxin B_1 ranks the first in terms of toxicity, carcinogenicity and pollution frequency. Aflatoxin M_1 is the hydroxylated metabolite of Aflatoxin B_1 and a strong carcinogen. Milk and its products are susceptible to Aflatoxin M_1 contamination.

Zearalenone (ZEN) is a toxin produced by fungi of the genus *Fusarium*. Zearalenone has a strong estrogen effect, can cause not only hyperestrogen and severe reproductive tract symptoms and infertility, but also has immunotoxicity and genotoxicity.

Deoxynivalenol (DON) also known as vomitoxin, belongs to the trichothecene group of mycotoxins and is produced by fungi of the genus *Fusarium*, 3–ADON and 15–ADON are DON derivatives. Because of their high cytotoxicity and immunosuppression, they pose a health threat to humans and animals.

Ochratoxin A (OTA) is a toxic metabolite produced by certain bacterial species of the genus *Aspergillus* and *Penicillium*. It has teratogenic, mutagenic and carcinogenic effects.

Fumonisin is a potent fungal toxin produced by different species of the mold *Fusarium*. Studies have found that high concentrations of fumonisin can cause species–specific acute toxicity symptoms in various domestic animals and experimental animals, such as leukoencephalopathy, porcine lung edema, and sheep liver and kidney disease. It has also been found that fumonisin may be related to human esophageal cancer and liver cancer.

T–2 Toxin is produced by various species of *Fusarium*. HT–2 Toxin is the main metabolite of T–2 Toxin. These two toxins are strong inhibitors of protein synthesis in the body, which mainly affect the function of blood, liver, kidney, pancreas muscle and lymphocytes. The general clinical symptoms after poisoning are Anorexia, vomiting, diarrhea, growth arrest, reproduction and neurological dysfunction.

Citrinin is a toxic secondary metabolite produced by fungi *Monascus*. Its main target organ is the kidney, also known as nephrotoxin. At the same time, citrinin is teratogenic.

Sterigmatocystin is a toxic metabolite of the fungi species *Aspergillus* versicolor and *Aspergillus* nidulans. It is carcinogenic and mainly exists in foods such as rice, corn, wheat, soybeans and peanuts.

What can be detected ?

Detection Samples	Test Category	Test Items
Grains, feed, nuts, edible oil, etc.	Aflatoxins	AFT B_1, AFT B_2, AFT G_1, AFT G_2, AFT M_1, AFT M_2
Grains, feed, nuts, edible oil, etc.	Zearalenone	ZEN, ZAN, α –ZOL, β –ZOL, α –ZAL, β –ZAL
Grains, feed, nuts, edible oil, etc.	Deoxynivalenol	DON, 3–ADON, 15–ADON
Grains, feed, nuts, edible oil, coffee beans, alcohol, etc.	Ochratoxin A	OTA
Grains, feed, nuts, edible oil, etc.	Fumonisin	FB_1, FB_2, FB_3
Grains, feed, nuts, edible oil, etc.	T–2 Toxin	HT–2, T–2
Grains, feed, nuts, edible oil, etc.	Citrinin	Citrinin
Grains, feed, nuts, edible oil, etc.	Sterigmatocystin	Sterigmatocystin

For the specific detection samples, please refer to the user instructions or consult your sales representative.

ToxinFast®

Qualitative and Quantitative Lateral Flow Test Kits

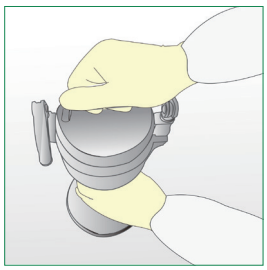
ToxinFast® quantitative and qualitative lateral flow test kits can be used to detect 6 kinds of mycotoxins in the wide range of grains and feed. Qualitative test kit can be read visually, and quantitative test kit can be read by BMZ6000 Portable Strip Reader.

ToxinFast®
Mycotoxin Qualitative and Quantitative Lateral Flow Test Kits

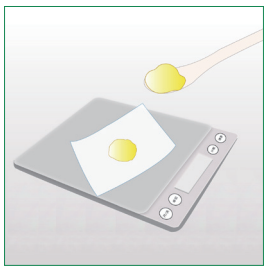
Features

- High sensitivity
- Easy to operate, unified pretreatment procedure, single sample can be tested in ten minutes
- Safe and environmental friendly

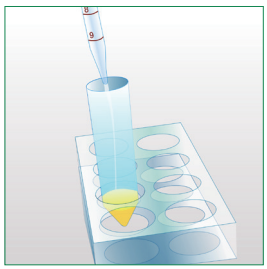
Test Procedure



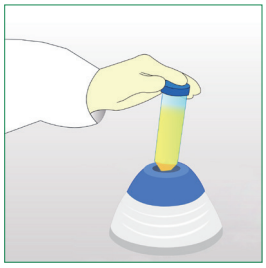
1. Grind



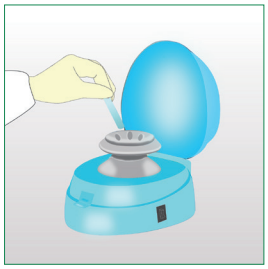
2. Weigh



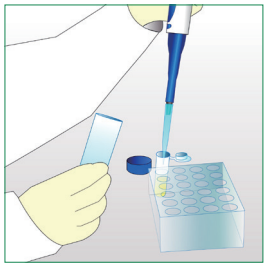
3. Add extraction solution



4. Vortex



5. Centrifuge



6. Dilute

7. Incubate and react

8. Interpret

Product List

Qualitative Test

Catalog No.	Product Name	LOD (μg/kg)	Specification (test/kit)
HQM0150–5	Total Aflatoxins Qualitative Rapid Test Kit	5–50	96
HQM3550–15D	Aflatoxin B_1 Qualitative Rapid Test Kit	5–50	96
HQM3550–16D	Aflatoxin B_1 Qualitative Rapid Test Kit	5–50	96
HQM0950–10D	Zearalenone Qualitative Rapid Test Kit	60–1500	96
HQM1055–8	Deoxynivalenol Qualitative Rapid Test Kit	500–5000	96
HQM1055–10	Deoxynivalenol Qualitative Rapid Test Kit	500–5000	96
HQM0750–2D	Ochratoxin A Qualitative Rapid Test Kit	20–100	96
HQM1750–3D	Fumonisins Qualitative Rapid Test Kit	2000–60000	96
HQM1850–3D	T–2 Toxin Qualitative Rapid Test Kit	100–2000	96

Quantitative Test

Catalog No.	Product Name	LOD (μg/kg)	Specification (test/kit)
HQM1150–9	Total Aflatoxins Quantitative Rapid Test Kit	2	96
HQM1150–10	Aflatoxin B_1 Quantitative Rapid Test Kit	2	96
HQM1350–10	Zearalenone Quantitative Rapid Test Kit	Grain: 20 Feed: 30	96
HQM1450–14	Deoxynivalenol Quantitative Rapid Test Kit	250	96
HQM1550–5	Ochratoxin A Quantitative Rapid Test Kit	Grain: 5 Feed: 25	96
HQM2050–5	Fumonisins Quantitative Rapid Test Kit	500	96
HQM2150–5	T–2 toxin Quantitative Rapid Test Kit	100	96

HMG001
Rapid Testing and Monitoring Analysis System

Type	Mycotoxins	Heavy Metals	Pesticide Residues	Genetically Modified Organism (GMO)
Type I	√			
Type II	√	√		
Type III	√	√	√	
Type IV	√	√	√	√

Features

Platform: One platform can detect mycotoxins, heavy metals, pesticide residues and GMO in grains and feed

Adaptability: Suitable for rapid on-site testing

Accuracy: The results are quantitative and verified by the national authority

1. Reader

2. Grinder

3. Balance

4. Mini Vortex

5. Mini Centrifuge

6. Incubator

7. Timer

8. Pipette
(20–200 μ L,100–1000 μ L)

ToxinFast®
ELISA Test Kits

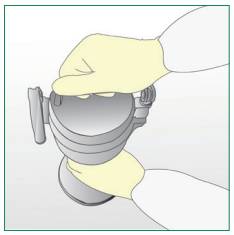
ToxinFast® Mycotoxin ELISA Test Kits are accurate and competitive for the quantitative analysis of mycotoxins for a wide range of food and feed samples. The ELISA test kits are the ideal solution for a parallel measurement of multiple samples and directly read by HF4500 Microplate Reader.

ToxinFast®
Mycotoxin ELISA Test Kits

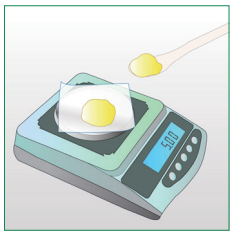
Features

- High sensitivity and good specificity
- Simple sample pretreatment and short reaction time
- Quantified test results
- Coefficient of variation (CV) is less than 10%
- Widely used in screening and determination of grain, oil, feed and by-products

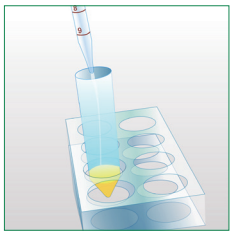
Test Procedure



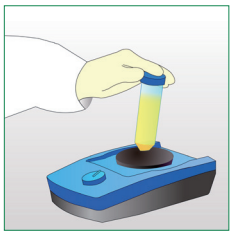
1. Grind



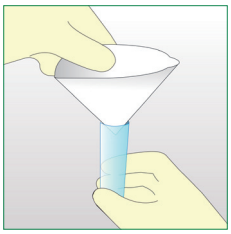
2. Weigh



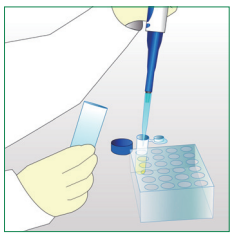
3. Add extraction solution



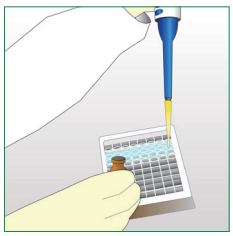
4. Vortex



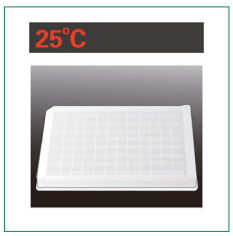
5. Centrifuge or filter



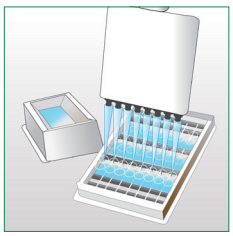
6. Dilute



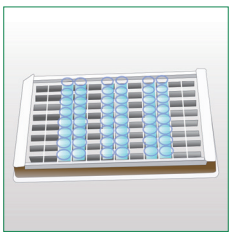
7. Add sample



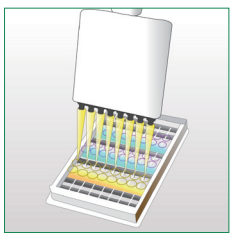
8. Incubate



9. Wash

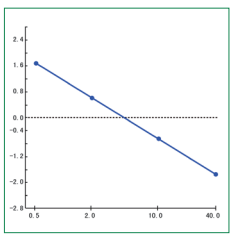


10. Develop color



11. Add stop solution

12. Interpret by Microplate Reader



13. Analyse results

Product List

Catalog No.	Product Name	Sensitivity (μg/kg)	LOD (μg/kg)	Specification (test/kit)
HEM0196	Total Aflatoxins ELISA Test Kit	0.035	1.05	96
HEM0396	Aflatoxin B_1 ELISA Test Kit	0.03	1	96
HEM2596	Aflatoxin B_1 ELISA Test Kit	0.01	0.12	96
HEM0496	Aflatoxin B_1 ELISA Test Kit (20min)	1.5	1.5	96
HEM0696	Zearalenone ELISA Test Kit	0.2	20	96
HEM1796	Zearalenone ELISA Test Kit (20min)	20	20	96
HEM0896	Deoxynivalenol ELISA Test Kit	4	100	96
HEM1896	Deoxynivalenol ELISA Test Kit (20min)	200	200	96
HEM1896-2	Deoxynivalenol ELISA Test Kit	200	200	96
HEM1096	Ochratoxin A ELISA Test Kit	0.05	2.5	96
HEM1096-1	Ochratoxin A ELISA Test Kit	0.1	wine, beer: 2 red wine: 1	96
HEM1296	Fumonisins ELISA Test Kit	5	250	96
HEM1396	T-2 toxin ELISA Test Kit	1	50	96

ToxinFast®
Immunoaffinity Columns

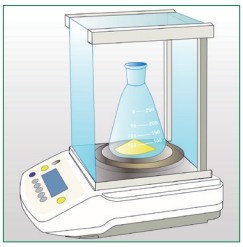
ToxinFast® Immunoaffinity Columns can be used in combination with HPLC or LC–MS/MS to achieve rapid testing, which enable food laboratories to identify, isolate and concentrate ONLY analytes of interest, while reducing or completely eliminating unwanted interferences.

ToxinFast®
Mycotoxin Immunoaffinity Columns

Features

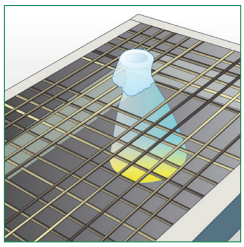
- High specificity, enrich and purify trace toxins
- Penetrating plunger, easy to use, complete the column in 5–10 minutes
- High accuracy, recovery rate can reach 90%–110%
- Widely used, it is the mainstream purification tool for official detection methods in various countries
- Good stability, the coefficient of variation (CV) is less than 10%

Test Procedure

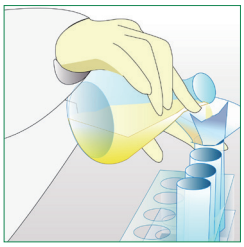


1. Weigh

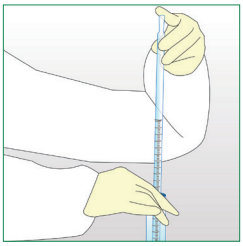
2. Add extraction solution



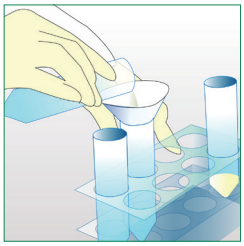
3. Shake



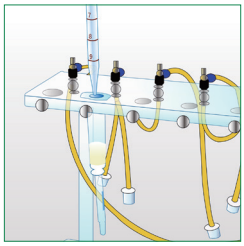
4. Filter



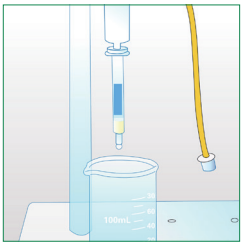
5. Dilute



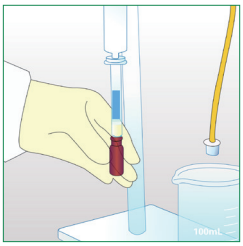
6. Filter by microfiber filter paper



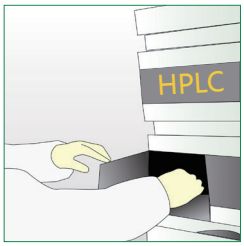
7. Load samples



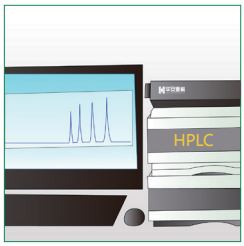
8. Wash



9. Elute



10. Test



11. Analyse results

Product List

Catalog No.	Product Name	Column Capacity (ng)	Specification
HCM0125B/50B	IAC for Aflatoxins Total B_1,B_2,G_1,G_2	300	3mL, 25T/50T
HCM0225B/50B	IAC for Aflatoxins Total B_1,B_2,G_1,G_2,M_1,M_2	AFT B_1,B_2,G_1,G_2: 300 AFT M_1: 100 AFT M_2: 100	3mL, 25T/50T
HCM0325B/50B	IAC for Aflatoxin B_1	300	3mL, 25T/50T
HCM0525B/50B	IAC for Zearalenone	2000	3mL, 25T/50T
HCM0625B/50B	IAC for Deoxynivalenol	2000	3mL, 25T/50T
HCM3025B/50B	IAC for Deoxynivalenols (DON/3-ADON/15-ADON)	DON: 2000 3-ADON: 1000 15-ADON: 2000	3mL, 25T/50T
HCM0725B/50B	IAC for Ochratoxin A	100	3mL, 25T/50T
HCM0825B/50B	IAC for Fumonisins B_1,B_2,B_3	5000	3mL, 25T/50T
HCM0925B/50B	IAC for T-2 Toxin	2000	3mL, 25T/50T
HCM2025B/50B	IAC for T-2,HT-2 Toxin	2000	3mL, 25T/50T
HCM2125B/50B	IAC for Citrinin	500	3mL, 25T/50T
HCM2225B/50B	IAC for Sterigmatocystin	600	3mL, 25T/50T
HCM3825/50	IAC 2-in-1 Aflatoxin B1/Deoxynivalenol	IFU	3mL, 25T/50T
HCM3325B/50B	IAC 2-in-1 Zearalenone/Fumonisins	IFU	3mL, 25T/50T
HCM3525B/50B	IAC 2-in-1 Zearalenone/Deoxynivalenol	IFU	3mL, 25T/50T
HCM3725B/50B	IAC 2-in-1 Aflatoxins (B_1,B_2,G_1,G_2)/Ochratoxin A	IFU	3mL, 25T/50T
HCM4825B/50B	IAC 2-in-1 Aflatoxin B_1/Ochratoxin A	IFU	3mL, 25T/50T
HCM5925B/50B	IAC 2-in-1 Aflatoxin (B_1,B_2,G_1,G_2,M_1,M_2)/Ochratoxin A	IFU	3mL, 25T/50T
HCM6025B/50B	IAC 2-in-1 Zearalenone/Deoxynivalenols (DON,3-ADON, 15-ADON)	IFU	3mL, 25T/50T
HCM6125B/50B	IAC 2-in-1 Aflatoxins (B_1,B_2,G_1,G_2)/Zearalenone	IFU	3mL, 25T/50T
HCM3125B/50B	IAC 3-in-1 Aflatoxin B_1/Zearalenone/Deoxynivalenol	IFU	3mL, 25T/50T

Product List

Catalog No.	Product Name	Column Capacity (ng)	Specification
HCM4125B/50B	IAC 3-in-1 Aflatoxins (B_1,B_2,G_1,G_2)/Zearalenone/Deoxynivalenol	IFU	3mL, 25T/50T
HCM6825B/50B	IAC 3-in-1 Aflatoxins (B_1,B_2,G_1,G_2)/Zearalenone/Ochratoxin A	IFU	3mL, 25T/50T
HCM4725B/50B	IAC 3-in-1 Aflatoxin B_1/Zearalenone/Ochratoxin A	IFU	3mL, 25T/50T
HCM4925B/50B	IAC 3-in-1 Zearalenone/Deoxynivalenol/Fumonisins	IFU	3mL, 25T/50T
HCM6225B/50B	IAC 3-in-1 Zearalenone/Deoxynivalenol/Ochratoxin A	IFU	3mL, 25T/50T
HCM6525B/50B	IAC 3-in-1 Aflatoxin B_1/Zearalenone /T-2 Toxin	IFU	3mL, 25T/50T
HCM3225B/50B	IAC 4-in-1 Aflatoxin B_1/Zearalenone/Deoxynivalenol/Ochratoxin A	IFU	3mL, 25T/50T
HCM3625B/50B	IAC 4-in-1 Aflatoxin B_1/Zearalenone/Deoxynivalenols (DON,3-ADON,15-ADON)/Fumonisins	IFU	3mL, 25T/50T
HCM6625B/50B	IAC 4-in-1 Aflatoxins (B_1,B_2,G_1,G_2)/Ochratoxin A/Fumonisins/ Sterigmatocystin	IFU	3mL, 25T/50T
HCM3110	IAC Mycotoxins 6-in-1 Combo	IFU	6ml, 10T
HCM4210	IAC Mycotoxins 7-in-1 Combo	IFU	6mL,10T

Catalog No.	Product Name	Specification
HPM0125/50	Mycotoxin Cleanup Column (AFT, ZEN, DON)	25T/50T
HPM0225/50	Mycotoxin Cleanup Column (AFT, PAT)	25T/50T
HPM0325/50	Mycotoxin Cleanup Column (AFT, ZEN, T-2)	25T/50T

Instruments

BMZ6000 Portable Strip Reader

- Small and portable
- Fast detection and stable operation
- Large capacity memory
- Thermal print function
- LCD touch screen, Android operating system, user–friendly

HF4500 Microplate Reader

- High definition display, small size
- Support TF card to expand memory
- WiFi module, connection to the laboratory information system supported
- The board can be arranged in rows, which is efficient and convenient
- Android operating system, mouse operation, keyboard operation and independent offline– work supported

Air–Pressure Controller

- Large aperture (six large holes) and mixed aperture (four small holes, two large holes)
- Handle multiple immunoaffinity columns at the same time, improve work efficiency
- Small size, easy disassembly, easy to move
- Durable material, firm design, strong corrosion resistance
- Easy to clean and sterilize

Procedure

1. Assemble the Air–Pressure Controller, connect the air pump to Air–Pressure Controller and the power supply.
2. Place the syringe into the hole of the Controller, tighten it with screws, then connect the immunoaffinity column to the syringe, add the liquid and close the plug.
3. Adjust the airflow to control the flow rate through the column.

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