MG (Malachite Green) Lateral Flow Assay Kit

Catalog No: E-FS-C007

20T/40T/80T

Version Number:	V1.0
Replace version:	/
Revision Date:	2026.06.02

This manual must be read attentively and completely before using this product.

If you have any problems, please contact our Technical Service Center for help.

Toll-free: 1-888-852-8623 Tel: 1-832-243-6086 Fax: 1-832-243-6017

Email: techsupport@elabscience.com

Website: www.elabscience.com

Please kindly provide us the lot number (on the outside of the box) of the kit for more efficient service.

Test principle

This kit uses the principle of Immunochromatography assay for the qualitative detection. It can detect MG (Malachite Green), in samples, such as muscle (fish, shrimp), water sample, etc. After adding the sample solution into the gold-labelled micro well of detection card, MG of the sample solution combine with the gold-labelled antibody, so as to prevent the combining of gold-labelled antibody with MG conjugate on the cellulose membrane. When the concentration of MG in the sample solution is more than the detection limit, the detect line do not show color (or shows lighter color than control line) and the result is positive. When the concentration of MG in the sample solution is less than the detection limit, the detect line shows color (shows equal or darker color than control line) and the result is negative.

Technical indicator

Detection limit: Fish and shrimp---1 ppb; Water sample---4 ppb.

Kits components

Item	Specification
Detection Card (contains Gold-labelled micro well)	20 T/kit
Extractant	2 vials
Reagent A	2 vials
Oxidant	2 vials
Reconstitution Buffer	2 vials
Manual	1 copy

Note: All reagent bottle caps must be tightened to prevent evaporation and microbial pollution.

Other materials required but not supplied

Instruments: Homogenizer, Nitrogen Evaporators, Water bath, Oscillators, Centrifuge, Graduated pipette, Balance (sensibility 0.01 g).

High-precision transferpettor: Single channel (20-200 μL, 100-1000 μL)

Reagents: Acetonitrile, N-hexane.

Notes

1. FOR RESEARCH USE ONLY. Do not use product out of date or in a broken aluminum foil.
2. The detection card should be adjusted to room temperature after removed from the refrigerator before opening. The opening detection card should be used as soon as possible so as not to be invalid because of moisture.
3. Avoid of contacting the white membrane at the middle of the sample well.
4. The disposable dropper cannot be mixing to avoid the cross-contaminant.
5. The tested sample should be clear, no turbidity particle and no bacterial pollution, otherwise it is easy to result in abnormal phenomena such as obstruction, unobvious color, etc., which affect the judgment of the experiment result.
6. **Each reagent is optimized for use in the E-FS-C007. Do not substitute reagents from any other manufacturer into the test kit. Do not combine reagents from other E-FS-C007 with different lot numbers.**
7. Do not use blue or black marker pens to label samples or equipment during sample preparation. Certain components in these markers may interfere with the antigen-antibody binding of Malachite Green, potentially leading to false-positive results.
8. During sampling and testing, it is recommended to use live fish, live shrimp, or fish/shrimp that have been frozen for no more than two weeks.
    a) For shrimp: Remove the head, shell, and intestinal tract before testing.
    b) For fish: Remove the scales and collect tissue from the back of the fish where fat content is lower. Avoid using fatty areas such as the belly or tail, as excess fat may adhere to the membrane surface or affect the lateral flow system, thereby interfering with test accuracy.
9. When using a nitrogen blow-down instrument or hair dryer to dry samples, maintain an appropriate distance between samples to prevent cross-contamination, especially from positive samples that may interfere with normal sample solutions and cause false-positive results.
10. Ensure the freshness of the samples. Take care to avoid invalid results or contamination due to sample spoilage.
11. Use the prepared samples within 30 minutes. If longer storage occurs, reprocess the samples before testing.
12. Adding too much or too little sample volume may affect color development. Always follow the instructions provided in the manual carefully.
13. Avoid direct sunlight and direct airflow (e.g., from fans) during testing. Before use, ensure that all knives and tools used for sample processing are thoroughly cleaned to prevent cross-contamination.
14. The kit is used for rapid screening of actual samples. If the test result is positive, the instrument method such as HPLC, LC/MS, etc. can be used for quantitative confirmation.

Storage and expiry date

Storage: Store at 2-30℃. With cool and dry environment.

Expiry date: expiration date is on the packing box.

Sample pretreatment

Restore all reagents and samples to room temperature before use.

1. Sample pretreatment Notice:

Experimental apparatus should be clean, and the disposable dropper should be disposable to avoid the experiment result be interfered by the contamination.

2. Sample pretreatment procedure:

2.1 Pretreatment of water sample:

(1) Take 100 µL of the water sample to be tested into 0.5 mL centrifuge tube, add 100 µL of **Reconstitution Buffer**, oscillate vigorously for 1 min in centrifuge tube.

(2) Take 120 µL of the liquid for analysis.

Note: Detection limit: 4 ppb

2.2 Pretreatment of muscle (fish, shrimp) sample:

(1) Remove the skin, bone and fat of fish, shrimp, homogenize with a homogenizer. (It is recommended that the shrimp have their heads and shells removed and be thoroughly cleaned. For fish, scale them and then take the part of the back with less oil for the experiment.)

(2) Weigh 4±0.05 g of homogenate muscle into 15 mL centrifuge tube.

(3) Add 2 mL of **Reagent A**, oscillate vigorously for 2 min, then add 150 µL of **Extractant**, 4 mL of **Acetonitrile** and 2 mL of **N-hexane**, oscillate vigorously for 2 min in centrifuge tube.

(4) Centrifuge at 4000 g for 5 min at room temperature.

(5) At this point, the bottom of the centrifuge tube contains homogenized sample, with three layers of liquid formed from bottom to top. Transfer 2 mL of the middle clear supernatant into a 5 mL centrifuge tube, add 100 µL of **Oxidant**, gently shake in parallel for 30 s to mix thoroughly, then dry under 65°C with a nitrogen evaporator or air blower.

(6) Add 300 µL of **Reconstitution Buffer** into the centrifuge tube, pipette up and down repeatedly for 1 min to make the dry residual dissolve fully.

(7) Take 120 µL of the liquid for analysis.

Note: Detection limit: 1 ppb

Experiment procedure

1. Tear the aluminum foil bag of the detection card and take out the detection card, and put it on a smooth, clean table.
2. Take the prepared sample with the matching disposable dropper, add 120 μL (5-6 drops) of sample to the **gold-labelled micro well**, whip the purple residual with a disposable dropper for 30 s until it is completely dissolved (Avoid foaming), Incubate at room temperature for 3 min.
3. Gently blow and beat with a dropper for 10 s, remove 90 μL (4-5 drops) of the **gold-labelled micro well** into the sample well (S).
4. Incubate for 5 to 8 minutes and then judge the results immediately. Test results are invalid after 8 minutes.

Judgment of result

1. **Negative:** The control line region (C) show color, the test line region (T) shows equal or darker than line C. It indicates the content of MG in the sample is lower than detection limit or the sample doesn't contain MG.
2. **Positive:** The control line region (C) show color, the test line region (T) shows no color or lighter color than line C. It indicates the content of MG in the sample is higher than detection limit.
3. **Invalid:** The control line region (C) shows no color. It indicates operation process is wrong or the test card is invalid.