Microcystin Lateral Flow Kit

For Laboratory Use

Catalog Number: AU2024-01

For Research Use Only. Not for use in Diagnostic Procedures.

1. Intended Use

For the rapid screening of Microcystins in algal cultures, recreational water samples at or above 4 ppb. Samples requiring regulatory action should be confirmed by ELISA, HPLC, or other conventional methods.

2. Introduction

Attogene's Microcystin Lateral Flow Kit can be used to detect Microcystins in liquid samples.

Format: 10 test cassettes, Run Time: 10 Minutes

The most frequently reported cyanotoxins are the hepatotoxic Microcystins (MCs). MCs are peptides with a molecular weight ranging from 900 to 1,100 Da. They consist of seven amino acids of which the two terminal amino acids of the linear peptide are condensed to form a cyclic compound.

A tiered notification system which takes different actions based on different numeric thresholds for Microcytin-LR concentrations in recreational waters has been developed. This is guidance that allows states to take various actions—such as posting information about harmful algal blooms (HABs), issuing a recreational public health advisory, or temporarily closing recreational waters through a no contact advisory—depending on the severity of the bloom event.

3. Kit Contents

Component Name	Volume	Storage
Microcystin Cassette	10 each	RT
Sample Dilution Buffer	5 x 20ul each	RT
Negative Control	5 x 200ul each	RT
Manual	1 each	RT

4. Storage and Stability

- The kit should be stored at 2°C - 30°C until ready to use.
- The test must remain in the sealed pouch until use.

5. Required Materials Not Supplied

- Timer - For timing use
- Centrifuge - For preparation of clear specimens
- 200ul Pipettor and pipette tips – to transfer samples and controls

6. Precautions

- The Microcystin Lateral Flow Kit provide only preliminary qualitative test results. Use another, more quantitative, analytical method such as ELISA or instrumental analysis to obtain a confirmed quantitative analytical result. Attogene microcystin ELISA kit can be used for this purpose (catalog number EL2024).
- Prior to use, ensure that the product has not expired by verifying that the date of use is prior to the expiration date on the label.
- The test cassettes are individually packaged in a foil pouch with a desiccant.
- Avoid cross-contamination of samples by using a new tube and disposable pipette tip for each sample.
- Use only Microcystin Lateral Flow Kit reagents from one kit lot, as they have been adjusted in combination.
- It is good laboratory practice to use positive and negative controls to ensure proper test performance. Samples which do not contain microcystins (negative controls) as well as samples containing known quantities of microcystins (positive controls) should be analyzed with each lot of test strips to provide a reference for line intensity to be expected.

7. Water Collection and Storage

- Collect samples into a Sample Bottle and store refrigerated for up to 5 days. If samples must be held for greater than 5 days, samples should be stored frozen.
- Allow the test cassettes, running buffer, and samples to reach room temperature before testing.

8. Procedure

- Open two sealed cassette. It is recommended to perform steps A and B for each sample evaluation.

A. Sample:

NOTE: Each sample dilution buffer tube contains 20ul of a buffering solution necessary for proper running of the strip. Perform a quick centrifugation of the sample dilution buffer tube to ensure the buffer solution is at the bottom of the tube and not stuck on the sides or top.

- Using the pipet transfer 200ul of sample into to one of the sample dilution buffer tubes.
- Mix the sample with the sample buffering solution by pipetting up and down 3 times.
- Using a pipet add the buffered sample directly into the sample port of the cassette.

B. Negative Control:

- Pipet 200ul of the solution in the Negative Control tube directly into the sample port of the cassette.

C. Immediately following steps, A and B

- Set a timer for 10 minutes.
- Read results using your eye or with a lateral flow reader. For additional details see section 9 on interpretation of results.

9. Interpretation of Results

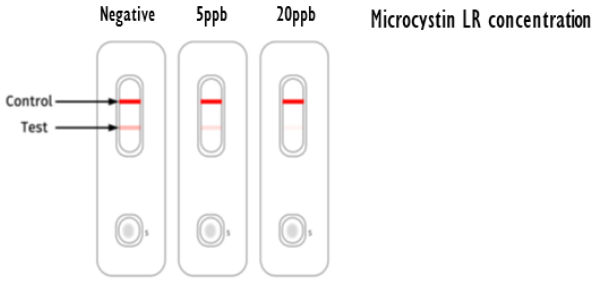
This test is a competitive lateral flow assay containing a control line dependent on the amount of microcystin is in the sample.

What to expect at the test line: The higher the concentration of microcystin is in the sample the lower the intensity of the test line compared to the negative control.

What to expect at the control line: The intensity of the control generally will increase as the test line decreases.

For samples prepared as described above, screening concentrations are determined by comparison of the intensity of the test line on parallel test strips. Test strips with a test line which is darker than or of equal intensity to the test line of the control indicates a result which is the sample is negative or below the limit of detection of the test. Test strips with a test line which is lighter than the control strip indicates a result which is $\geq$ 4 ppb. Test strips with no test line visible (only the control line is

visible) indicates a result which is ≥ 20 ppb. Results should be determined within 5 minutes after completion of the strip test procedure. Determination made using strips which have dried for more or less than the required time may be inaccurate, as line intensities may vary with drying time.



The appearance of test strips may also be compared to the illustration to determine approximate sample concentration ranges. Please note that the illustration is intended for the demonstration of test line to control line intensity only in running buffer spiked with the indicated amount of microcystin LR. Results should not be determined by comparing the intensity of test lines from test strips to the test line intensity of the illustration, as the overall intensity of test strips may vary slightly with different lots of reagents. To obtain semi-quantitative results in the range of 0 – 20 ppb, solutions of known Microcystin concentration (control solutions) must be tested concurrently with samples. Sample test line intensities can then be compared with control solution test line intensities, yielding approximate sample concentrations. Do not use strips run previously to determine semi-quantitative sample concentrations, as test line intensities may vary once strips are completely dry.

10. Additional Analysis

If necessary, positive samples can be confirmed by ELISA, HPLC, or other conventional methods. A lateral flow reader may also be employed to generate numerical readings from the visual result.

Who we are

Attogene is a biotechnology company located in Austin, Texas. Our focus is to enhance health and wellness by offering and developing customer focused Life Science Products domestically and internationally.

Our mission is to:

- Enhance detection technologies
- Enable rapid responses
- Enable impactful research discoveries

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