# Microcystin Lateral Flow Kit
# (Rapid RecreationalWater)

## Catalog Number: AU2024

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

## 1. Intended Use

For the screening of Microcystins in freshwater recreational water samples at 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: Rapid-Water - 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 |
| 1mL Syringe | 5 each | RT |
| Sample Filter | 5 each | RT |
| Sample Dilution Buffer | 5 each | RT |
| Negative Control | 5 each | RT |
| Water Sample Bottle | 5 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
- Marker – for labeling

## 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.
- 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 & disposable pipette.
- Avoid cross-contamination of samples by using a new bottle 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

- Using gloves, collect water samples into the 125 ml Water Sample Bottle and store refrigerated for up to 5 days (label the water collection bottle). 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

- Using gloves, remove each lateral flow cassette from the foil pouch. A marker may be used to write on the plastic cassette if desired.

Perform A and B for each sample evaluation starting with the negative control first.

**A. Negative Control (perform first):**

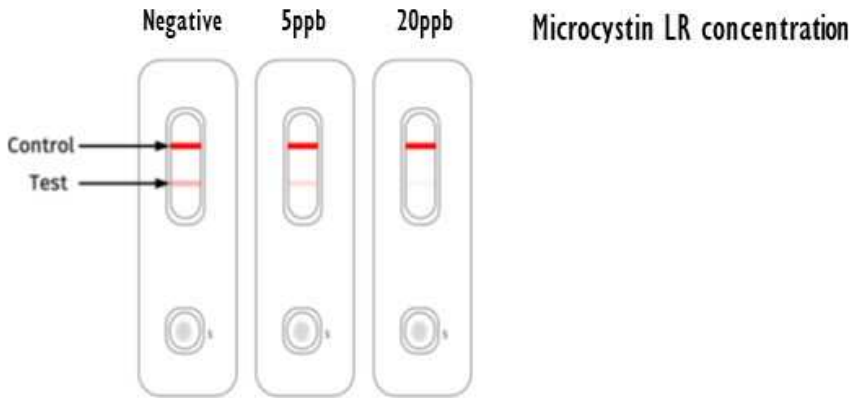
- Use the syringe (DO NOT USE FILTER) to transfer 200ul (denoted as 0.2 on the side of the syringe) from the Negative Control tube directly into the sample port of the cassette.
- Set a timer for 10 minutes.

**B. Sample:**

- Next, using the emptied syringe, take 1mL of sample from the 125mL water sample bottle.
- Add the debris filter onto the end of the syringe.
- Add the full contents of the 1mL syringe into the sample dilution buffer tube.
- Remove the debris filter from the syringe.
- Mix the sample gently up and down 3 times using the syringe.
- Use the syringe to transfer 200ul (denoted as 0.2 on the side of the syringe) from the tube directly into the sample port of the cassette.
- Set a timer for 10 minutes.

## 9. Interpretation of Results

For samples prepared as described above, screening concentrations are determined by comparison of the intensity of the test line to the intensity of the control line on parallel test strips. Although control line intensity may vary, a visible control line must be present for results to be considered valid. 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 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 $\geq$ 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. 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 Microcystins 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. Contact us if you have any questions.