

## Recreational Water Sample Preparation for 4 PPB Screening Range Using the ABRAXIS<sup>®</sup> Microcystins Strip Test for Source Drinking Water

### 1. Intended Use

For the screening of Microcystins in freshwater recreational water samples at 4 ppb. Samples requiring regulatory actions should be confirmed by ELISA, HPLC, or other conventional methods.

### 2. Materials and Reagents Required

ABRAXIS<sup>®</sup> Microcystins Strip Test Kit for Source Drinking Water (PN 520020 [20T]; PN 520019 [5T])

Disposable graduated pipettes (calibrated at 1 mL)

4 mL glass vials with Teflon-lined caps

Distilled or deionized water

### 3. Notes and Precautions

This procedure is intended for the screening of recreational water samples at 4 ppb. Samples must be diluted as described below prior to lysis and analysis as described in the Source Drinking Water Test user's guide (section E, Procedure) in order to obtain accurate results. Dilution of samples after use of the ABRAXIS<sup>®</sup> QuikLyse<sup>™</sup>\* reagents provided in the ABRAXIS<sup>®</sup> Microcystins Strip Kit for Source Drinking Water (rather than dilution before lysis, as described below) will produce inaccurate results. (\*ABRAXIS<sup>®</sup> QuikLyse<sup>™</sup> reagents may be used in a method of U.S. Patent 9,739,777.)

- The ABRAXIS<sup>®</sup> Microcystins Strip Test for Source Drinking Water is intended for use with fresh water samples only. Analysis of brackish or seawater samples will produce inaccurate results due to matrix interference. Please see the appropriate technical bulletin for analysis of brackish water samples using the ABRAXIS<sup>®</sup> Microcystins Strip Kit for Finished Drinking Water.
- The ABRAXIS<sup>®</sup> Microcystins Strip Tests 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 strips are packaged in a desiccant vial. The vial should be kept completely closed except for opening to remove test strips. When re-closing, ensure lid is completely sealed.
- Avoid touching or bending the membrane on the test strip.
- Avoid cross-contamination of samples by using a new conical vial and disposable pipette for each sample. Use only ABRAXIS<sup>®</sup> Microcystins Strip Test 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.

### 4. Sample Collection and Handling

Collect water samples in glass containers and store refrigerated for up to 5 days. If samples must be held for greater than 5 days, samples should be stored frozen.

### 5. Test Preparation

Allow the test strips, conical vials, and samples to reach room temperature before testing.

## 6. Procedure

For screening samples at 4 ppb, samples must be diluted as described below prior to lysis and analysis using the ABRAXIS<sup>®</sup> Microcystins Strip Test for Source Drinking Water in order to obtain accurate screening results. To dilute water samples prior to screening:

- 6.1 Label 4 mL glass vials for each sample to be tested.
- 6.2 Using a 1 mL graduated disposable pipette, add 3 mL of distilled or deionized water to each of the previously labeled 4 mL glass vials (i.e., transfer 1 mL three times for a total of 3 mL of distilled or deionized water).
- 6.3 Using a new 1 mL graduated disposable transfer pipette for each sample, transfer 1 mL of the appropriate water sample to the appropriate labeled vial.
- 6.4 Cap the vial tightly and shake for 10-20 seconds to mix.

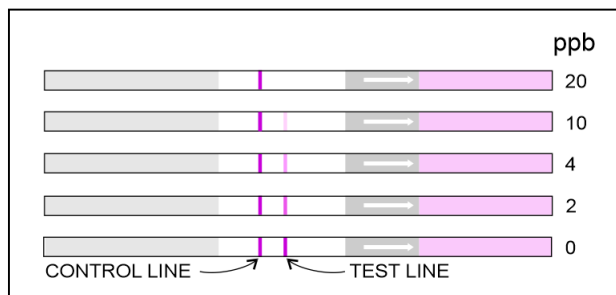
Samples are ready for screening at 4 ppb using the ABRAXIS<sup>®</sup> Microcystins Strip Test for Source Drinking Water.

## 7. 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 the same test strip. 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 control line 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 line 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 5-10 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.

<u>Control Line</u>	<u>Test Line</u>	<u>Interpretation</u>
No control line present	No test line present	Invalid result
Control line present	No test line present	>20 ng/mL (ppb)
	Moderate to equal intensity	Between 0 and 20 ng/mL
Control line present	test line present	(ppb)

The appearance of test strips may also be compared to the illustration below 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.



## 8. Additional Analysis

If necessary, positive samples can be confirmed by ELISA, HPLC, or other conventional methods.

**9. For ordering or technical assistance contact:**

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Date this Technical Bulletin is effective: 09NOV2021

Version: 01