






Getting Started with Community-Based Algal Toxin Testing

-  **ABRAXIS® Algal toxin test strip kits**
-  **AbraScan® test strip reader**
-  **Microcystins LR QC check samples**



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Selecting the appropriate test strip kit:

What toxins do you want to test for?

We offer separate test strip kits for Microcystins, Anatoxin-a, and Cylindrospermopsin. There is no single kit that tests for all toxins. Microcystins is generally the most common algal toxin but this can vary. To minimize unnecessary testing as well as the associated expense and time, you'll want to know what algal toxins are a concern for your specific water body. If you don't already know, here are some resources that can help:

- **Local government** – Federal and local government agencies and associations such as the EPA, USGS, State DEP, DOH, DEQ or Parks and Recreation often have information about the most prevalent algal toxins in your area or the specific water body you're planning to test.
- **Labs offering microscopic algae identification or qPCR testing services** – Microscopy and qPCR provide insight into the toxins that **may** be present based on the specific cyanobacteria or cyanobacterial genes found in the sample. Although they can not tell you whether toxins are actually present, they can help you to limit the number of toxins for which you need to test.

When should you consider sending your sample to the lab?

While our kits generally save both money and time, they do have a shelf life of ~6-9 months and are sold in packs of 5 or 20 tests. If you are only planning to test a sample or two per season then it may be more economical to send your sample(s) to a lab for ELISA analysis instead.

Deciding between the various Microcystins test strip kit options:

What type of sample are you testing?



Raw source or recreational water: For raw, untreated water samples, cyanobacterial cells need to be lysed prior to testing to obtain a total toxin concentration (both intracellular and extracellular toxins). Our kits include our proprietary QuikLyse® reagent. The kits also have different test ranges for different water uses.



Finished drinking water: As a basic rule of thumb, if you are testing finished water treated with chlorine, you should use one of the finished drinking water test kits. Treated samples do not typically require cell lysis so these kits do not contain QuikLyse.

The importance of sampling

Is your sample representative?

Analytical tests provide information based on the sample submitted. If a sample is not representative of what you want to test, results can be mis-leading. Consider the following when collecting samples and determine what sample plan best addresses the exposure risk you are most concerned about for your water body:

- **Location and activity risk:** Different activities have different risks. A drinking water in-take may be a higher exposure risk than a swimming area and a swimming area may be a higher risk than a boating area.
- **Time of day and water depth:** Cyanobacteria migrate within the water column - closer to the surface in daytime for heat and light and near the bottom in the evening for nutrients.
- **Number of samples and frequency:** The more areas you can test at the highest frequency, the more likely you are to identify a potential health risk, but the risk must be weighed against budget and time available for testing

Algal toxin test strip kits

Perfect for volunteer, community and remote algal toxin monitoring

ABRAXIS® lateral flow test strip kits are simple. They don't require trained laboratory personnel or expensive equipment to run and they provide fast results (<1 h). This makes them ideal for citizen-science programs and remote algal toxin monitoring. Test strips can be read visually for qualitative results or you can couple them with our hand-held AbraScan® test strip reader for semi-quantitative test results. Cost per test is ~\$25-\$40 depending on the pack size ordered.



*The upper range of detection can be extended by further sample dilution prior to analysis. Applications for additional sample matrices are also available. Contact support.abraxis@us.goldstandarddiagnostics.com for assistance.

Toxin	Kit range	LOD	5-test kit	20-test kit
Anatoxin-a	0 – 2.5 ppb*	0.4 ppb	520042	520043
Cylindrospermopsin	0 – 10.0 ppb*	0.5 ppb	520029	520030
Microcystins Finished Drinking Water	0 – 5.0 ppb*	1.0 ppb	520016	520017
Microcystins Finished Drinking Water 0.3	0 – 3.0 ppb*	0.3 ppb	N/A	520046
Microcystins Source Drinking Water	0 – 5.0 ppb*	1.0 ppb	520019	520020
Microcystins Recreational Water	0 – 10.0 ppb*	2.5 ppb	520023	520022

NOTE: Our kits include materials and reagents for sample analysis. Additional materials may be required for sample prep and collection. Consult the test kit user's guide.

Why use ABRAXIS® algal toxin test strip kits?

- **Answers in hours, not days** – Our test strips provide qualitative answers in <1 hour, allowing you to take more immediate action to protect public health
- **Detect algal toxins, not cyanobacterial cells or genes** – Microscopy and qPCR can provide valuable insights into potential hazards but our test strips detect the actual toxins that pose a health risk in your water body
- **ADDA specific** – Our microcystins test strip kits, like our ELISA plate kits, use antibodies specific to the highly conserved ADDA region of the microcystins molecule to provide excellent cross reactivity to all of the 200+ microcystins congeners. No other kit currently on the market offers ADDA specificity
- **Widely adopted, proven technology** – Our test strips have been used world-wide for over a decade to assess the threat of harmful algal blooms

AbraScan® test strip reader

Removes subjectivity, provides traceability

The hand-held AbraScan Test Strip Reader is compatible with ABRAXIS® lateral flow test strips. The easy-to-use reader eliminates the need for subjective visual comparison of control and test line intensities and maintains a digital photographic record of all test strip results.

- Pre-programmed for ABRAXIS® Algal toxin test strip kits
- Objectively analyzes a test strip in 5-10 seconds
- Rugged, requires minimal maintenance
- Intuitive user interface and color touchscreen display
- Proprietary line detection algorithms adjust for variability in test strip positioning



Part #	Description
475025B	Abrascan® Dipstick Reader III, handheld reader with supplemental software

ABRAXIS® Microcystins-LR QC check samples

ABRAXIS Microcystins LR check samples can be used to conveniently assess testing accuracy. The Microcystin-LR Check Sample Set contains 3 vials of pre-measured and lyophilized Microcystin-LR. (0, 2 and 20 ppb). Follow directions to reconstitute with 5 mL deionized or distilled water to assess result accuracy of tests performed with ABRAXIS® Microcystins Test Strip Kits.



Compatible with:

- ABRAXIS® Microcystins Strip Kits for Finished Drinking Water (520016, 520017 and 520046)
- ABRAXIS® Microcystins Strip Kits for Source Drinking Water (520019 and 520020)
- ABRAXIS® Microcystins Strip Kits for Recreational Water (520022 and 520023)

Part #	Description
422011	ABRAXIS® Microcystins LR Check Samples, set of 3 (0,2 and 20 ppb)

Other considerations

What if I get a positive result?

Regardless of the test method, it is always good practice to confirm positive test results by an alternative technology. While awaiting the outcome of confirmatory test results, actions such as the use of signs or other communications to reduce the risk of public exposure (human or animal) to potential toxin threats based on the preliminary results should be considered.



Contact Us

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