Anatoxin-a (ATX) Detection Kit (Rapid Recreational Water)

Catalog Number: AU2062

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

1. Intended Use

For the screening of Anatoxin-a in freshwater recreational water or algae culture samples at or above 7 ppb. samples requiring advisories should be confirmed by analytical methods.

2. Introduction

Attogene' s Anatoxin-a Lateral Flow Kit can be used to detect Anatoxin-a at or above 7ppb in recreational water or algae culture samples.

Format: Rapid-Water - Run Time: 30 Minutes

Anatoxin-a is a cyanotoxin produced by cyanobacteria, which live in most aquatic ecosystems. Approximately 41 species of pelagic or benthic cyanobacteria have been shown to produce Anatoxin-a. Under certain environmental conditions, cyanobacteria increase rapidly in number and create a harmful bloom, which may make the water toxic to human health and to animals through the production of cyanotoxins.

Anatoxin-a is a neurotoxin in mammals and is rapidly absorbed from the gastrointestinal tract. It acts as a potent nicotinic cholinergic agonist causing muscle twitching, reduced movement, labored breathing, loss of coordination, gasping, convulsion, and even death. Symptoms occur rapidly and animals that survive generally return to normal status. At the moment, each state makes its own advisory decisions. Some of these limits can be found on the US environmental protection agencies web page (https://www.epa.gov/habs/state-tribal-toxin-thresholds-and-assessment-methods). Most recreational tiered values start at 7ppb and can be as high as 300ppb spurring different actions based on the state.

3. Kit Contents

Component Name	Volume	Storage
Anatoxin-a 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 Anatoxin-a Lateral Flow Kit provides only preliminary qualitative test results. Use another, more quantitative, analytical method such as instrumental analysis to obtain a confirmed quantitative analytical result. A lateral flow reader may be implemented for this purpose.
- 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 Anatoxin-a 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 Anatoxin-a (negative controls) as well as samples containing known quantities of Anatoxin-a (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):

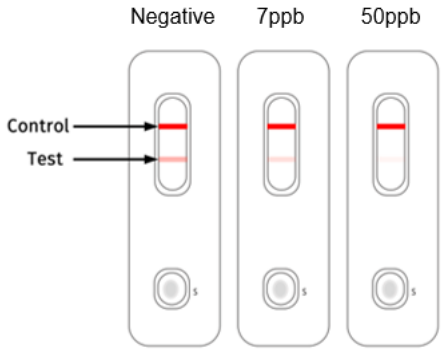
- Empty the contents of the negative control tube directly into the sample port of the cassette.
- Set a timer for 30 minutes.

B. Sample:

- Next, using the 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 either by shaking the tube or by using the syringe.
- Use the syringe to transfer 150ul (denoted as 0.15 on the side of the syringe) from the tube directly into the sample port of the cassette.
- Set a timer for 30 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 negative control indicates a result which is less than 7ppb. Test strips with a test line which is lighter than the control strip indicates a result which is $\geq$ 7 ppb. Test strips with no test line visible (only the control line is visible) indicate a result which is $\geq$ 50 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 – 50 ppb, solutions of known Anatoxin-a concentration (control solutions) must be tested concurrently with samples. Sample test line intensities can then be compared with control solution test line intensities (using a lateral flow reader such as the Detekt Biomedical RDS-2500 for numerical readouts), 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 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.

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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