Sample Preparation for Free Microcystins Determination

1. Intended Use

For the preparation of water samples from various points in the water treatment process which are to be evaluated for freeMicrocystins content only.

Note: Samples which require determination of total (both free and cell-bound) Microcystins content require lysis prior toanalysis (see section 2, Notes and Precautions, below for additional information on algal cell containing samples).

2. Notes and Precautions

- The free Microcystins content of a water sample refers to the amount of toxin which is found dissolved in the water sample only. The cell-bound Microcystins content of a water sample refers to the amount of toxin, which is contained within algal cells in a water sample. As it is sheltered from detection by the algal cells, cell-bound toxin is not includedin measurements of free Microcystins content. To determine the total Microcystins content of a sample (both free and cell-bound), algal cells must be lysed prior to analysis, in order to release the cell-bound Microcystins into the water sample. The following procedure is for the determination of free Microcystins only. Please see the appropriate user's guides and technical bulletins for information regarding the determination of total Microcystins content.
- Immediately upon collection, treated (i.e. chlorinated) drinking water samples must be preserved (quenched) with sodiumthiosulfate or ascorbic acid to remove residual chlorine. The quenching of residual chlorine is necessary for treated watersamples only. Untreated drinking water samples (i.e. samples not treated with oxidizers) do not require additional reagents at the time of collection.
- Samples should be collected in glass or polyethylene terephthalate (PETG) sample containers only, as the use of other types of plastic collection and/or storage containers may result in adsorptive loss of Microcystins, producing inaccurate(falsely low) results. Please see the appropriate technical bulletins for information regarding sample collection, treatment, and storage.
- New disposable syringes and glass fiber filters should be used for each sample to avoid cross-contamination of samples.

3. Required Materials

Glass fiber syringe filters, 0.45 µm (Whatman product no. 6894-2504, or equivalent)
Disposable syringes
Glass vials with Teflon-lined caps

4. Sample Preparation

4.1 Shake the sample thoroughly.
4.2 Draw an aliquot of the sample into a clean disposable syringe.
4.3 Attach a clean glass fiber syringe filter to the syringe.
4.4 Filter the sample into an appropriately labeled glass vial.
The sample is now ready to analyze for free Microcystins content

Gold Standard Diagnostics Horsham, Inc.
795 Horsham Road, Horsham, PA 19044 USA
(215) 357-3911 | info.abraxis@us.goldstandarddiagnostics.com | Website: www.abraxiskits.com

5. For ordering or technical assistance contact:

Gold Standard Diagnostics
795 Horsham Road
Horsham, PA 19044
WEB: www.abraxiskits.com

Phone: (215) 357 3911
Fax: (215) 357 5232
Ordering: info.abraxis@us.goldstandarddiagnostics.com
Technical Support: support.abraxis@us.goldstandarddiagnostics.com

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