

Resource Summary Report

Generated by [dkNET](#) on Sep 9, 2026

LCMS-SOP Determination of Microcystins in Water Samples by High Performance Liquid Chromatography (HPLC) with Single Quadrupole Mass Spectrometry (MS)

DOI:10.17504/protocols.io.bck2iuye

Type: Protocol

Proper Citation

Gregory L Boyer 2020. LCMS-SOP Determination of Microcystins in Water Samples by High Performance Liquid Chromatography (HPLC) with Single Quadrupole Mass Spectrometry (MS). protocols.io dx.doi.org/10.17504/protocols.io.bck2iuye

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.bck2iuye>

Authors: Gregory L Boyer

Group: Metabolomics Protocols & Workflows

Summary: This standard operating procedure is used to determine and quantify microcystins and nodularin (intracellular and/or extracellular) in whole water samples or filter samples using HPLC-coupled with single quadrupole mass spectrometry (LC-MS). The method described here is a modification of the methods described in Boyer (2007) for particulate microcystins in water samples and does not use solid phase extraction. It was designed to use a 50% acidified methanolic extraction solvent, but is compatible with protocols for direct water analysis (US-EPA, 2016) and higher concentration methanolic extracts (Cerasino et al., 2017). It is not suitable for use with tissues samples or other samples with complex matrix interferences, such as soil or sediments. The method is designed for high throughput (1000-1500 injections per month) using a low-resolution (unit mass) mass spectrometer. It gives results of similar accuracy to the commonly used Abraxis ADDA ELISA with additional information on the microcystin congener profiles.

Affiliations: Department of Chemistry, State University of New York (SUNY), College of Environmental Science and Forestry, Syracuse, NY

Version: 1

Publication Date: 2020

Proper Citation: Gregory L Boyer 2020. LCMS-SOP Determination of Microcystins in Water Samples by High Performance Liquid Chromatography (HPLC) with Single Quadrupole Mass Spectrometry (MS). protocols.io
dx.doi.org/10.17504/protocols.io.bck2iuye

Record Creation Time: 20210329T220532+0000

Record Last Update: 20210329T221000+0000

Data and Source Information

Source: