

Nodularin Report

Project: Central Davis Sewer District

Submitted to: Leland Myers
Organization: Central Davis Sewer District
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Sample Receipt Date: 12 October 17
Sample Condition: 17.7 °C
Report #: 171011 – Central Davis Sewer District
Date Prepared: 17 October 17
Prepared by: Mark Aubel

<u>Sample Identification</u>	<u>Description/Site</u>	<u>Sample Collection Date</u>
FB1	Great Salt Lake	11 October 17
FB4	Great Salt Lake	11 October 17

Analytes: Nodularin (NOD)

Sample Preparation

Water Sample Ultrasonication

Samples were received and immediately frozen for later preparation. After thawing, the samples were inverted for 60 seconds to mix and sonicated to lyse cells and release of toxins.

Solid Phase Extraction (SPE)

Preconditioned Strata X Polymeric SPE (100 mg) columns were loaded with 1.0 mL of sample, rinsed with 5% MeOH and eluted with 90% acetonitrile. Elutions were blown to dryness (N₂ at 60°C) and reconstituted in 5% MeOH/Deionized water (0.5 mL, providing a 2x pre-concentration).

Quality Control

Table 1: LFSM/LFSMD QC sample prepared for analysis (unless otherwise noted)

Analyte	Concentration (ng/mL)	Sample ID(s)	Return
NOD	1.0	FB1	119%

Additional Quality Control/Quality Assurance checks included method blanks and a LFB.

Analytical Techniques

NOD

The method described in Foss and Aibel (2015) was modified to accommodate only nodularin. A Certified Reference Standard of NOD (1.0 ng/mL) was used to calibrate the method. Table 2 below shows the transition monitored. A MDL was determined through standard addition (LFSM).

Table 2


Analyte	Precursor Ion (<i>m/z</i>)	Fragment Ions (<i>m/z</i>)
NOD	[M+H] ⁺ 825.5	599, 674, 776, 781

Summary of Results

Sample ID	NOD (ng/mL)
FB1	1.36
FB4	0.12
<i>MDL (ng/ mL)</i>	<i>0.05</i>
<i>Analyst Initials</i>	<i>MA</i>
<i>Date Analyzed</i>	<i>10/17/17</i>

Abbreviations:

MDL	Method Detection Limit
MQL	Method Quantification Limit
ND	Not Detected above the MDL
Blank	Regent Water free from interferences
LFB	Lab Fortified Blank
LFSM	Lab Fortified Sample Matrix
LFSMD	Lab Fortified Sample Matrix Duplicate
LD	Lab Duplicate

Submitted by: 
Mark T. Aubel, Ph.D.
Date: October 17, 2017

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