

Nodularin Report*Project: Central Davis Sewer District*

Submitted to: Leland Myers
Organization: Central Davis Sewer District
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Sample Receipt Date: 30 May 18
Sample Condition: 24.6 °C
Report #: 180530 – Central Davis Sewer District
Date Prepared: 1 June 18
Prepared by: Mark Aubel

<u>Sample Identification</u>	<u>Description/Site</u>	<u>Sample Collection Date</u>
FB1	Great Salt Lake	30 May 18
FB4	Great Salt Lake	30 May 18

Analytes: Nodularin (NOD)

Sample Preparation***Water Sample Ultrasonication***

Upon receipt, 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 (200 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 Deionized water (1.0 mL). Further sample dilutions (500x & 50x) were necessary for accurate quantification.

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	106% (@ 500x dilution)
NOD	1.0	FB4	114% (@ 50x dilution)

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 Ion (<i>m/z</i>)
NOD	[M+H] ⁺ 825.5	135

Summary of Results

Sample ID	NOD (ng/mL)
FB1	218
FB4	31
<i>MDL (ng/ mL)</i>	<i>0.25</i>
<i>Analyst Initials</i>	<i>MA</i>
<i>Date Analyzed</i>	<i>5/31/18</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:

June 1, 2018

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