

Adda Microcystins/Nodularins Report*Project: City Cape Coral*

Submitted to: Maya Robert
Organization: City Cape Coral
Address: 815 Nicholas Pkwy E Cape Coral, FL 33901
Email: mrobert@capecoral.net
Sample Receipt Date: 18 August 2020
Sample Condition: 19.6 °C upon arrival
Report#: 200817_City_Cape_Coral
Date Prepared: 19 August 2020
Prepared by: Kamil Cieslik

Table 1: Samples analyzed

<u>Sample ID</u>	<u>Site/Description</u>	<u>Collection Date</u>	<u>Collection Time</u>
CC81720	Makai Canal	17 August 2020	1012

Analytes: Adda Microcystins/Nodularins (MCs/NODs)**Sample Preparation*****Water Sample Ultrasonication***

The sample was received and inverted for 60 seconds to mix. A subset from the sample was removed prior to cell lysis for algal identification purposes. A second subset (100 mL) from the sample was sonicated to release toxins and prepared for analysis.

Analytical Techniques

Enzyme-Linked Immunosorbent Assay (ELISA)

MCs/NODs

A microcystins/nodularins Adda ELISA (Abraxis) was utilized for the quantitative and sensitive congener-independent detection of MCs/NODs (US EPA Method 546 & Ohio EPA DES 701.0). The current method reporting limit is 0.75 ng/mL (ppb) based on kit sensitivity, dilution factors, and initial demonstration of capability.

Quality Control

Table 2: LFSM and IS QC samples prepared for analyses pre-extraction (unless otherwise noted). Additional Quality Control/Quality Assurance checks included method blanks, continued calibration checks, LFBs, and external curves.

Analyte	Concentration (ng/mL)	Sample ID	QC Type	Return
MC-LR	5.0	CC81720	LFSM	107%

Table 3: Adda MC-ELISA Quality Control Value Table

Date Analyzed:	19 August 2020	Requirement	Pass/Fail
R² value:	0.999	≥0.98	PASS
%CV range STDs:	0.0-1.8%	≤15%	PASS
LFB (1 ppb) recovery:	90%	±40% True Value	PASS
%CV range LFB:	3.9%	<20%	PASS
Low CV (0.15 ppb) recovery:	70%	±50% True Value	PASS
LRB	<0.08	<0.08	PASS

Qualifier	Flag
CL	Analytical result is estimated due to ineffective quenching.
J	Analyte was positively identified; the associated numerical value is estimated.
PT	The reported result is estimated because the sample was not analyzed within required holding time.
B	Analytical result is estimated. Analyte was detected in associated reagent blank as well as the samples.
E	Analytical result is estimated. Values achieved were outside calibration range.
N	Spiked sample control was outside limits
T	The reported result is estimated because the sample exceeded temperature threshold when received

Summary of Results

Table 4: Summary of results in ng/mL

Sample ID	MCs/NODs (ng/mL)
CC81720	3.28
MRL (ng/mL)	0.75
Analyst Initials	KC
Date Analyzed	8/19/2020

Abbreviations

NA	Not Applicable	LFSM	Lab Fortified Sample Matrix
MDL	Method Detection Limit	LFSMD	Lab Fortified Sample Matrix Duplicate
MQL	Method Quantification Limit	LD	Lab Duplicate
ND	Not Detected above the MDL	IS	Internal Standard
Blank	Regent Water free from interferences	—	Not Analyzed
LFB	Lab Fortified Blank	MRL	Method Reporting Limit
CCC	Continued Calibration Check	CV	Low-range calibration verification

Interpretations:

The level of MCs/NODs detected by Adda ELISA in the submitted sample does not exceed the current 'EPA Recommended Value for Recreational Criteria and Swimming Advisory', which is currently 8.0 ng/mL (ppb) total microcystins.

Submitted by: 
 Mark T. Aubel, Ph.D.
 Lab Director
 Date: August 20, 2020

*The results in this report relate only to the samples listed above.
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