

Rapid and Low-Cost Field Toxin Analysis to Monitor Harmful Algal Blooms

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Supplementary Information

Table S1. Aptamer sequences found by Eissa et al., using the SELEX technique, along with their dissociation constants, K_D .

Group	Clone Number	Aptamer Sequence	K_D (nM)
A	BT1	CACACCAAACACACAAGTGGACCCTGACGCATGGATAGGGTGACGGTATACGCGGGCATG	385
	BT10	GGCCACCAAACCACACCGTTCGCAACCGCGAGAACCGAAGTAGTGATCATGTCCCTGCGTG	92
B	BT5	CACGGGCAGAGGGATAGGTTGTTGACGGGGCTGGTGGGTGGTGCCTCGCGCTATCGTG	311
C	BT3	GGCGATAGGCAGTGTTCGGGGTCGGAGAGCGAGGTAATAGCGTGATGGGTGCTGTGTG	278
D	BT31	ACCACCGGCCGAGATAGTCTAGACCACTATGTTGTTGTGCTTACTGCTGTGTGGTGTGG	1296
E	BT22	GGCCACACAAACAACATGACAACACGTCTCACATAACGCCACGTGCTGCCGCTCATCG	258
F	BT9	TCACGAGAGCGAGAGCGCCCCCACCACAGCCGTCAACCCTATTCTCTGCCGTTG	166

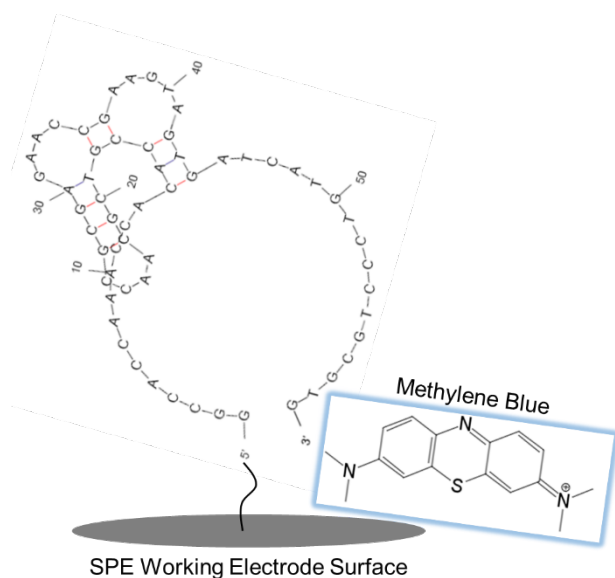


Figure S1. SPE functionalized with the methylene blue tagged BT10 aptamer.

Table S2. List of samples sent by Mote under various conditions. The samples were combined into sets (a, b, and c) that had similar conditions with varying amounts of K. Brevis added. Some samples were duplicated, shown in grey below, to act as an internal validation for their preparation.

5,000 cells/L	a) Lysed Cells - 25 PSU
	b) Lysed Cells - 35 PSU
	c) Whole Cells - 35 PSU
50,000 cells/L	a) Lysed Cells - 25 PSU
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5,000,000 cells/L	a) Lysed Cells - 25 PSU
	b) Lysed Cells - 35 PSU
	c) Whole Cells - 35 PSU
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Table S3. Comparison of the PbTx-2 concentrations in the Mote samples when analyzed by Mote's HPLC-MS-MS.

Set ID	Sample	Mote HPLC-MS-MS (ng/L)
a)	5x10 ³ Lysed Cells - 25 PSU	104.92
	5x10 ⁴ Lysed Cells A - 25 PSU	1,181.22
	5x10 ⁴ Lysed Cells B - 25 PSU	890.53
	5x10 ⁵ Lysed Cells - 25 PSU	8,653.37
	5x10 ⁶ Lysed Cells - 25 PSU	55,190.49
b)	5x10 ³ Lysed Cells - 35 PSU	49.13
	5x10 ⁴ Lysed Cells - 35 PSU	567.65
	5x10 ⁵ Lysed Cells A - 35 PSU	7,553.56
	5x10 ⁵ Lysed Cells B - 35 PSU	5,480.28
	5x10 ⁶ Lysed Cells - 35 PSU	50211.49
c)	5x10 ³ Whole Cells - 35 PSU	58.42
	5x10 ⁴ Whole Cells - 35 PSU	442.32
	5x10 ⁵ Whole Cells - 35 PSU	8,263.82
	5x10 ⁶ Whole Cells A - 35 PSU	35,012.35
	5x10 ⁶ Whole Cells B - 35 PSU	43,556.18