## **ADVANCES IN OCEANOGRAPHY AND LIMNOLOGY**

DOI: 10.4081/aiol.2017.6342

## SUPPLEMENTARY MATERIAL

## Chlorination and ozonation differentially reduced the microcystin content and tumour promoting activity of a complex cyanobacterial extract

Iva Sovadinová,<sup>1,2\*</sup> Pavel Babica,<sup>1,2,3</sup> Ondřej Adamovský,<sup>1,2</sup> Alla Alpatova,<sup>4,5</sup> Volodymyr Tarabara,<sup>4</sup> Brad Luther Upham,<sup>2</sup> Luděk Bláha<sup>1</sup>

<sup>1</sup>RECETOX - Research Centre for Toxic Compounds in the Environment, Faculty of Science, Masaryk University, Kamenice 753/5, 62500 Brno, Czech Republic

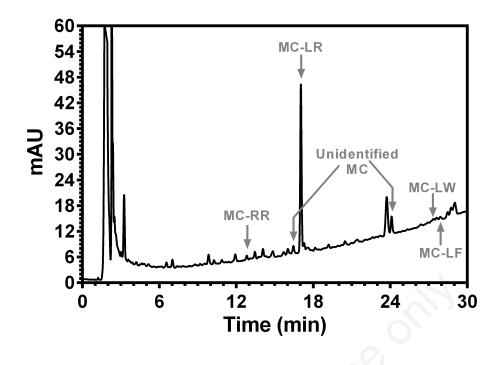
<sup>2</sup>Department of Pediatrics and Human Development, and Institute for Integrative Toxicology, Michigan State University, 1129 Farm Lane, East Lansing, MI 48824, USA

<sup>3</sup>Department of Experimental Phycology and Ecotoxicology, Institute of Botany, Czech Academy of Sciences, Lidicka 25/27, 60200 Brno, Czech Republic

<sup>4</sup> Department of Civil and Environmental Engineering, Michigan State University, 428 S. Shaw Lane, East Lansing, MI 48824, USA

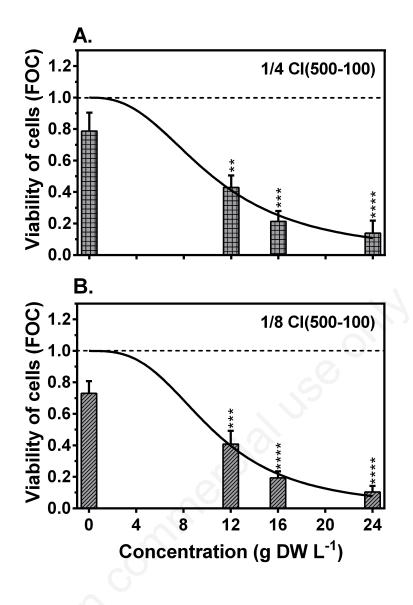
<sup>5</sup>Civil and Environmental Engineering, University of Alberta, AB T6G 2E1 Edmonton, Canada

\*Corresponding author: sovadinova@recetox.muni.cz



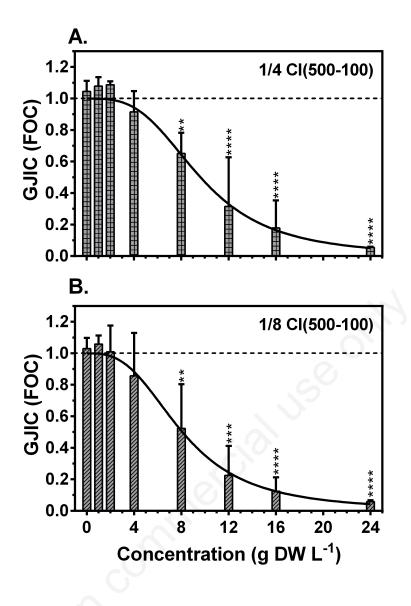
**Supplementary Fig. 1.** HPLC chromatogram of the cyanobacterial extract recorded at 238 nm. The arrows indicate peaks with microcystin UV absorption spectrum.





**Supplementary Fig. 2.** The effect of four-times (A) and eight-times (B) increase of weight ratio of chlorine to dry mass of the original extract on the efficiency of chlorination on cytotoxicity removal. Data are fractions of controls (FOC) as means  $\pm$  standard deviations of independent repetitions of the experiment (n=3) in which FOC=1 was a negative control with no cytotoxicity. Significant differences from the vehicle control are indicated by asterisks (one-way ANOVA followed by Dunnet's *post-hoc* test; \*P $\leq$ 0.05; \*\*P $\leq$ 0.01; \*\*\*P $\leq$ 0.001; \*\*\*\*P $\leq$ 0.001). <sup>1</sup>/<sub>4</sub> Cl(500-100) and <sup>1</sup>/<sub>8</sub> Cl(500-100) – before chlorination the original extract was diluted four and eight times, respectively; free Cl concentration were 500 mg L<sup>-1</sup> and duration 100 min (for both variants).





**Supplementary Fig. 3.** The effect of four-times (A) and eight-times (B) increase of weight ratio of chlorine to dry mass of the original extract on the efficiency of chlorination on removal of GJIC inhibition. Data are fractions of controls (FOC) as means  $\pm$  standard deviations of independent repetitions of the experiment (n=3) n which FOC=1 was a negative control with no cytotoxicity. Significant differences from the vehicle control are indicated by asterisks (one-way ANOVA followed by Dunnet's *post-hoc* test; \*P $\leq$ 0.001; \*\*\*P $\leq$ 0.001; \*\*\*P $\leq$ 0.001). <sup>1</sup>/<sub>4</sub> Cl(500-100) and <sup>1</sup>/<sub>8</sub> Cl(500-100) – before chlorination the original extract was diluted four and eight times, respectively; free Cl concentration were 500 mg L<sup>-1</sup> and duration 100 min (for both variants).

