

## Supplementary Information

**Table S1.** NMR Spectroscopic Data (400 MHz, C<sub>6</sub>D<sub>6</sub>) for 12-epi-hapalindole H isonitrile (**1**).

Position	$\delta_C$ , mult.	$\delta_H$ mult. (J in Hz)	COSY	HMBC
<b>1</b>	-	6.75 s	-	9
<b>2</b>	119.3, CH	7.55 dd (1.8,2)	-	-
<b>3</b>	114, C	-	-	-
<b>4</b>	141.4, C	-	-	6, 17, 18
<b>5</b>	113.6, CH	7.05 d (7.3)	6	6, 7, 16
<b>6</b>	123.7, CH	7.26 dd (7.3, 8)	5, 7	4
<b>7</b>	109.2, CH	6.96 d (8)	6	5, 9
<b>8</b>	134.6, C	-	-	-
<b>9</b>	126.4, C	-	-	7
<b>10 ax</b>	36.9, CH	3.09 dd (10.7, 10.7)	11 ax, 15 ax	-
<b>11 ax</b>	66.2, CH	3.21 br d (10.7)	10 ax	19
<b>12</b>	41.2, C	-	-	19, 21
<b>13 ax</b>	36.6, CH <sub>2</sub>	0.97 m	14	19
<b>13 eq</b>	36.6, CH <sub>2</sub>	1.33 m	14	19
<b>14 ax</b>	21.2, CH <sub>2</sub>	1.15 m	13, 15ax	-
<b>14 eq</b>	21.2, CH <sub>2</sub>	1.33 m	13, 15ax	-
<b>15 ax</b>	50.2, CH	1.03 m (2.8, 10.7)	10 ax, 14	17, 18
<b>16</b>	37.9, C	-	-	5, 17, 18
<b>17</b>	25.3, CH <sub>3</sub>	0.96 s	-	4, 15, 16
<b>18</b>	25.5, CH <sub>3</sub>	1.28 s	-	4, 15, 16
<b>19</b>	17.6, CH <sub>3</sub>	1.10 s	-	11, 12, 13, 20
<b>20</b>	146.5, CH	5.73 dd (10.8, 17.4)	21E, 21Z	19, 21
<b>21 E</b>	114.2, CH <sub>2</sub>	5.08 dd (0.8, 17.4)	20, 21 Z	12,20
<b>21 Z</b>	114.2, CH <sub>2</sub>	5.06 dd (0.8, 10.8)	20, 21 E	12,20
<b>23</b>	n.d.	-	-	-

**Figure S1.** Sequence data (16S rDNA) from *Fischerella* 52-1.

**File name: CYA1 – CYA106F.seq**

**Primer #1: CYA106F**

**Primer sequence: CGGACGGGTGAGTAACGCGTGA**

**Amplified sequence 591 bp**

CTGGAACGGTGGCTAATACCGGATGTGCCGAGAGGTGAAAGGTTAACTGCCTGGAGATGAGCTCGCGT  
 CTGATTAGCTAGTTGGTGGTGTAAAGGGACTACCAAGGCGACGATCAGTAGCTGGTCTGAGAGGATGATCA  
 GCCACACTGGAAGTGAAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTGGGGAATTTCCGCAATGGGC  
 GAAAGCCTGACGGAGCAATACCGCGTGAGGGAGGAAGGCTCTTGGGTTGTAAACCTCTTTTCTCAGGGAA  
 TAAGCAAGTGAAGGTACCTGAGGAATCAGCATCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGG  
 ATGCAAGCGTTATCCGGAATGATTGGGCGTAAAGCGTCCGTAGGTAGCAGTGTGTCTATTGTTAAAGA  
 GTTTGGCTTAACCAAATAAGGGCGGTAGAAACTACACAGCTAGAGTGCCTTCGGGGCAGAGGGAATTCCT  
 GGTGTAGCGGTGAAATGCGTAGAGATCAGGAAGAACACCGGTGGCGAAAGCGCTCTGCTAGGCCGCAACT  
 GACACTGAGGGACGAAAGCTAGGGGAGCGAATG

**File name: CYA9 – CYA359.seq**

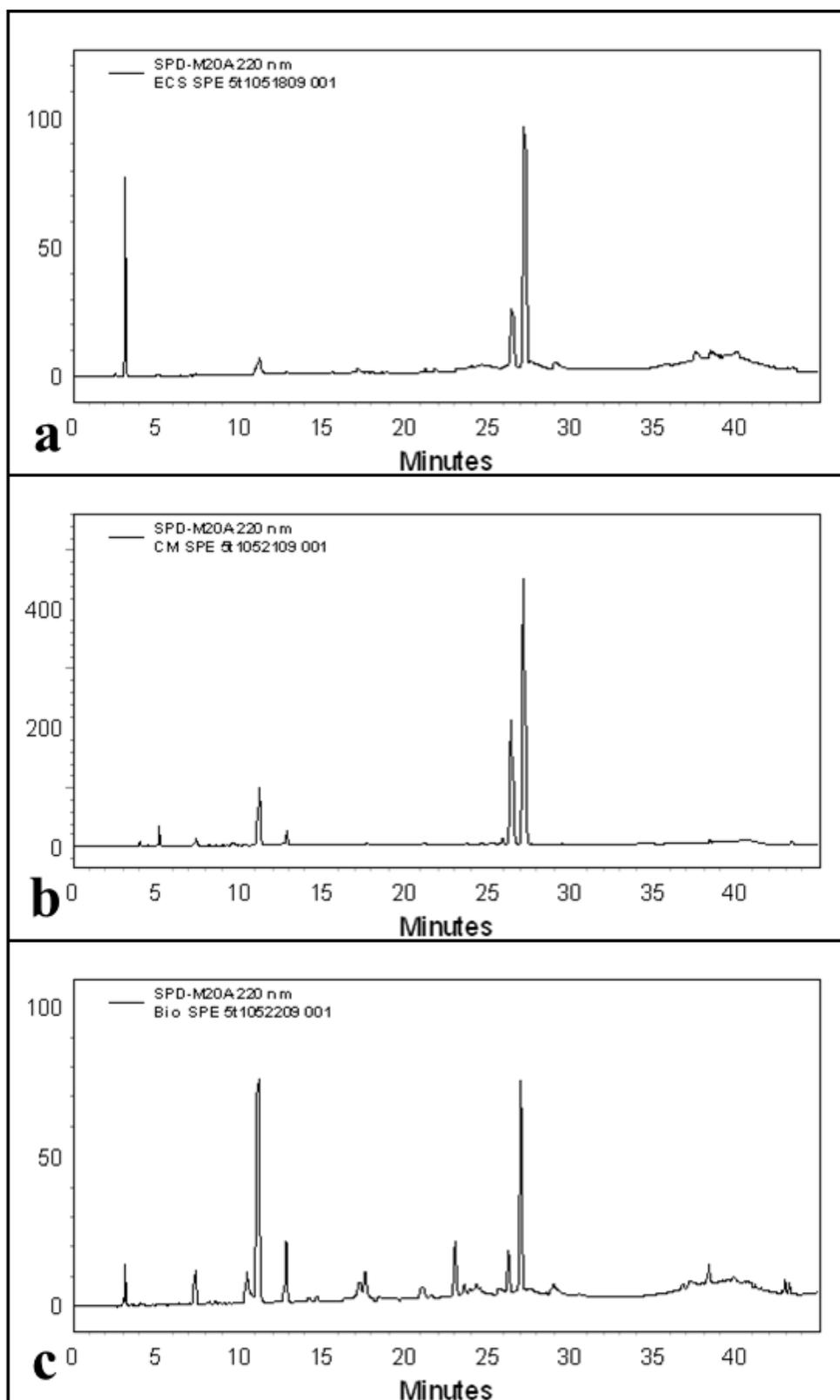
**Primer #2: CYA359F**

**Primer sequence: GGGGAATYTTCCGCAATGGG**

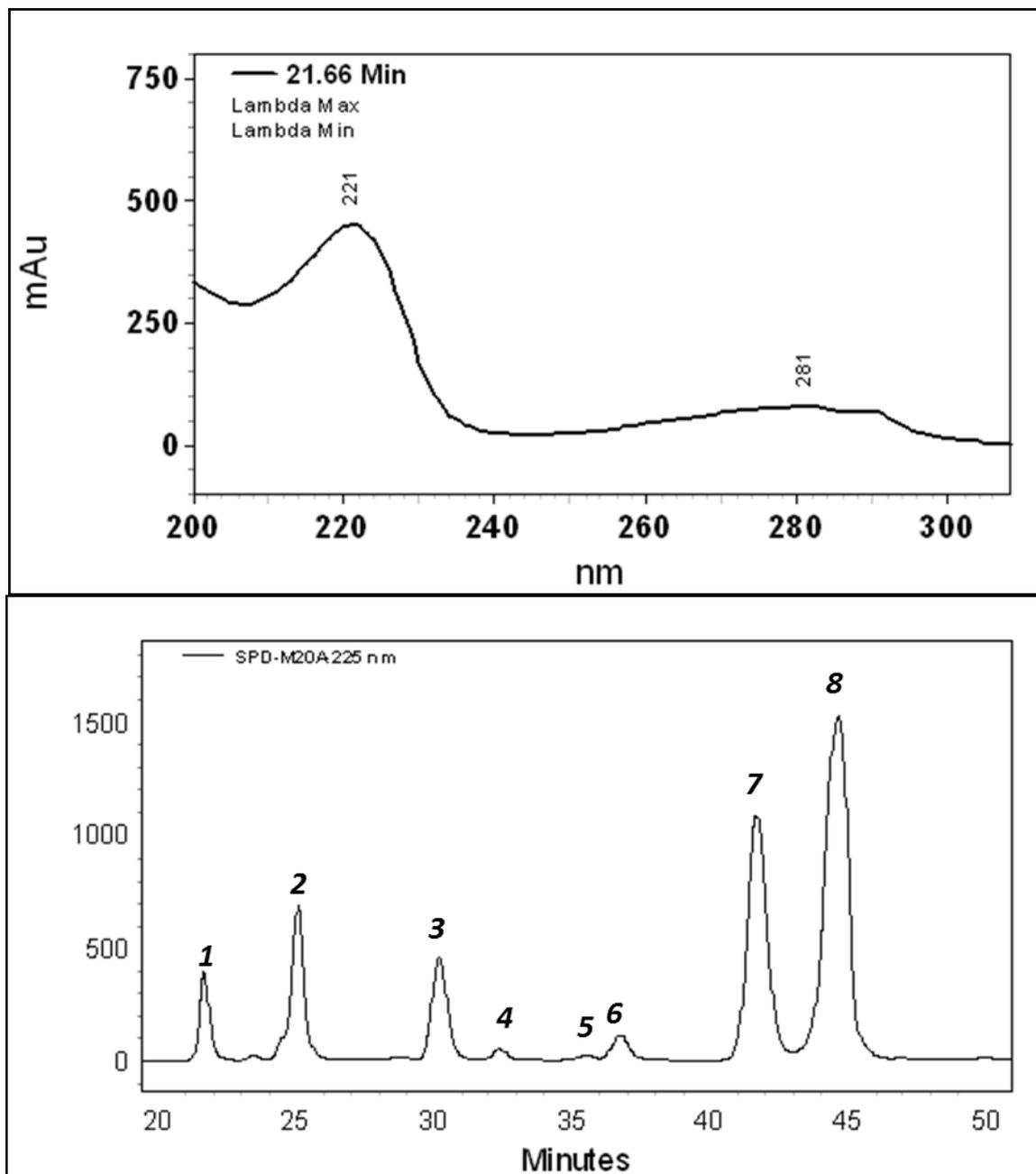
**Amplified sequence 368 bp**

CCGCGTGAGGGAGGAGGCTCTTGGGTTGTAAACCTCTTTTCTCAGGGAATAAGCAAGTGAAGGTACCT  
 GAGGAATCAGCATCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGATGCAAGCGTTATCCGGAA  
 TGATTGGGCGTAAAGCGTCCGTAGGTAGCAGTGTGTCTATTGTTAAAGAGTTTGGCTTAACCAAATAA  
 GGGCGGTAGAAACTACACAGCTAGAGTGCCTTCGGGGCAGAGGGAATTCCTGGTGTAGCGGTGAAATGCG  
 TAGAGATCAGGAAGAACACCGGTGGCGAAAGCGCTCTGCTAGGCCGCAACTGACACTGAGGGACGAAAGC  
 TAGGGGAGCGAATGGGATTA

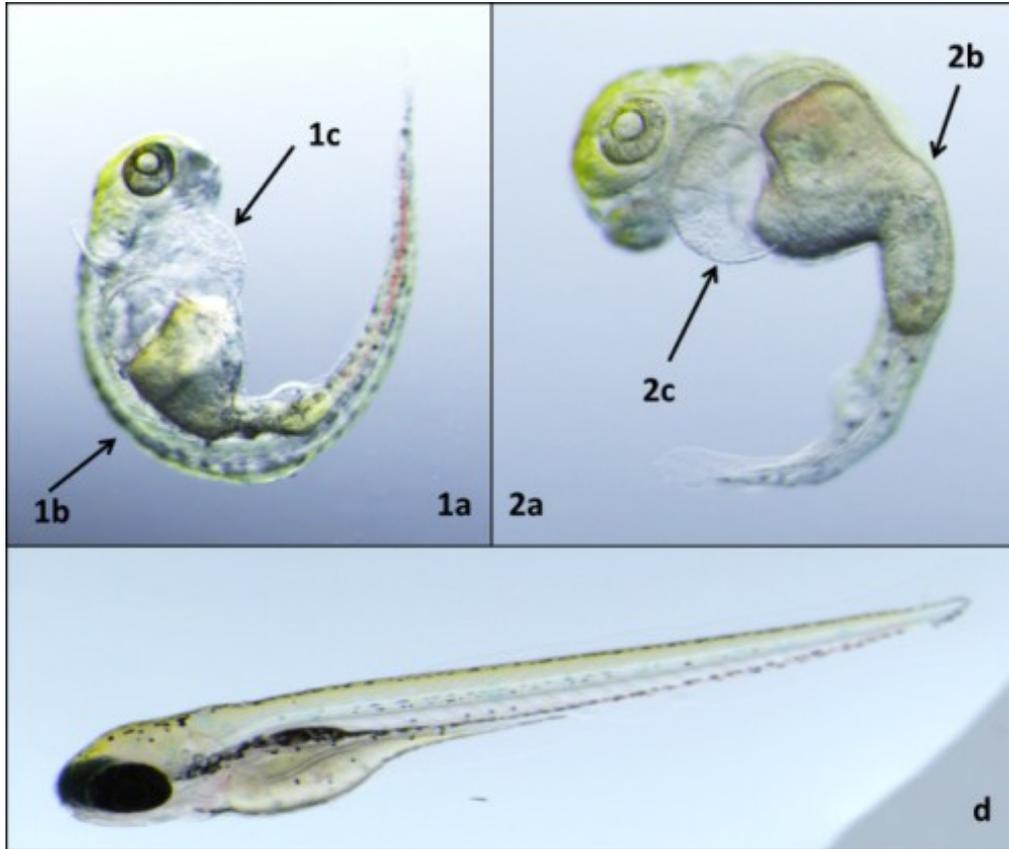
**Figure S2.** HPLC comparison of active fractions from extracts of *Fischerella* 52-1 extracellular material (a); culture medium (b); and biomass (c). Detection at 220 nm, a characteristic  $\lambda_{\max}$  for indole alkaloids from *Fischerella* and the Stigonemataceae.



**Figure S3.** Typical UV spectrum of indole alkaloids, and chromatogram of bioactive HPLC fraction showing components with matching UV absorbance/spectra. Peaks 7 and 8 correspond to compounds **1** and **2** isolated in the present study. Only peaks 3, 7 and 8 showed any significant bioactivity (when tested at equivalent concentrations).



**Figure S4.** Teratogenicity of **1** tested at 5  $\mu\text{g}/\text{mL}$  (1a–c) and 10  $\mu\text{g}/\text{mL}$  (2a–c) in zebrafish embryos exposed until 5 dpf. For reference, an untreated control embryo at 5 dpf is shown (**d**); Notable effects on development at both concentrations include (**a**) overall lack of pigmentations, *i.e.*, melanophores; (**b**) curvature of body axis; and (**c**) pericardial edema.



**Figure S5.** Teratogenicity of **2** tested at 10  $\mu\text{g}/\text{mL}$  (**a**) in zebrafish embryos exposed until 5 dpf. For reference, an untreated control embryo at 5 dpf is shown (**b**).



**Figure S6.** Key HMBC (arrows) and COSY (bold line) correlations for 12-*epi*-hapalindole H isonitrile (**1**).

