Supplementary Material

**Supplementary Table 1**: Fatty acid (pg cell-1) profiles of *Karlodinium veneficum* in ambient, treatment-ST and treatment-LT cultures

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| Fatty Acid |   | *K. veneficum* (pg/cell) |
|   |   | Ambient (n=4) | Treatment-ST (n=4) | Treatment-LT (n=3) |
|   |  |   |   |   |
| C8:0 |   | 0.018 ± 0.00 | 0.032 ± 0.02 | - |
| C10:0 |   | 0.045 ± 0.01 | 0.065 ± 0.02 | 0.122 ± 0.02 |
| C11:0 |   | 0.048 ± 0.02 | 0.131 ± 0.07 | - |
| C12:0 |   | 0.115 ± 0.01 | 0.168 ± 0.02 | 0.024 ± 0.00 |
| C14:0 |   | 7.31 ± 0.35 | 10.2 ± 1.4 | 5.64 ± 0.60 |
| C14:1 |   | 0.019 ± 0.00 | 0.026 ± 0.03 | 0.018 ± 0.01 |
| C15:0 |   | 0.036 ± 0.02 | 0.125 ± 0.03 | - |
| C15:1 |   |  0.017± 0.01 | 0.040 ± 0.01 | - |
| C16:0 |   | 7.59 ± 0.39 | 11.4 ± 1.9 | 7.01 ± 0.62 |
| C16:1 |   | 0.299 ± 0.04 | 0.129 ± 0.03 | 1.77 ± 0.35 |
| C17:0 |   | 0.027 ± 0.02 | 0.136± 0.09 | 0.046 ± 0.01 |
| C18:0 |   | 1.49 ± 0.08 | 2.27 ± 0.70 | 0.916 ± 0.05 |
| C18:1(c+t) |   | 2.53 ± 0.41 | 0.266 ± 0.04 | 3.23 ± 0.29 |
| C18:2 t |   | 0.118 ± 0.04 | - | 0.335 ± 0.04 |
| C18:3n6 |   | 0.024 ± 0.02 | - | 0.128 ± 0.01 |
| C18:3n3 |   | 0.172 ± 0.07 | 0.278 ± 0.09 | 0.371 ± 0.03 |
| C20:0 |   | 0.203 ± 0.02 | 0.239 ± 0.05 | 0.216 ± 0.03 |
| C20:1 |   | 1.22 ± 0.40 | 0.945 ± 0.27 | 3.72 ± 0.65 |
| C20:2 |   | 0.064 ± 0.01 | 0.073 ± 0.02 | 0.050 ± 0.02 |
| C20:3n6 |   | - | - | 0.074 ± 0.04 |
| C20:3n3 |   | - | - | 0.047 ± 0.01 |
| C22:0 |   | - | - | 0.063 ± 0.01 |
| C20:5n3 |   | 0.038 ± 0.02 | 0 | 0.150 ± 0.03 |
| C22:2 |   | 0.610 ± 0.18 | 1.07 ± 0.70 | 0.137 ± 0.01 |
| C23:0 |   | 0.125 ± 0.07 | 0.147 ± 0.01 | 0.340 ± 0.05 |
| C24:0 |   | 0.410 ± 0.13 | - | 0.798 ± 0.10 |
| C22:6n3 |   | 0.060 ± 0.01 | 0.146 ± 0.05 | 0.185 ± 0.02 |
| C24:1 |   | 0.456 ± 0.22 | 0.442 ± 0.13 | 2.84 ± 0.45 |
|   |  |   |   |   |
| Total |   | 23.0 ± 2.0 | 28.4 ± 4.9 | 28.4 ± 2.9 |
| Saturated |   | 17.4 ± 0.9 | 24.9 ± 4.2 | 15.2 ± 1.4 |
| Unsaturated |   | 5.62 ± 1.2 | 3.42 ± 0.97 | 13.2 ± 1.6 |
| MUFA |   | 4.53 ± 1.0 | 1.85 ± 0.39 | 11.7 ± 1.5 |
| PUFA |   | 1.09 ± 0.25 | 1.57 ± 0.76 | 1.48 ± 0.11 |
| ω3 |   | 0.27 ± 0.09 | 0.42 ± 0.13 | 0.75 ± 0.07 |
| ω6 |   |   |   |   |
| EPA + DHA |   | 0.27 ± 0.09 | 0.42 ± 0.13 | 0.75 ± 0.07 |
|   |  |   |   |   |
| %SFA |   | 75.8 ± 2.9 | 88.1 ± 2.5 | 53.6 ± 0.76 |
| %MUFA |   | 19.5 ± 2.9 | 6.49 ± 0.37 | 41.2 ± 0.95 |
| %PUFA |   | 4.70 ± 0.9 | 5.44 ± 2.6 | 5.22 ± 0.21 |
| %ω3 |   | 1.15 ± 0.3 | 1.47 ± 0.22 | 2.66 ± 0.10 |
| %EPA + DHA |   | 0.42 ± 0.08 | 0.50 ± 0.09 | 1.18 ± 0.05 |
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