Supplementary Materials

Monoterpene Hydroxy Lactones Isolated from *Thalassiosira* sp. Microalga and their Antibacterial and Antioxidant Activities

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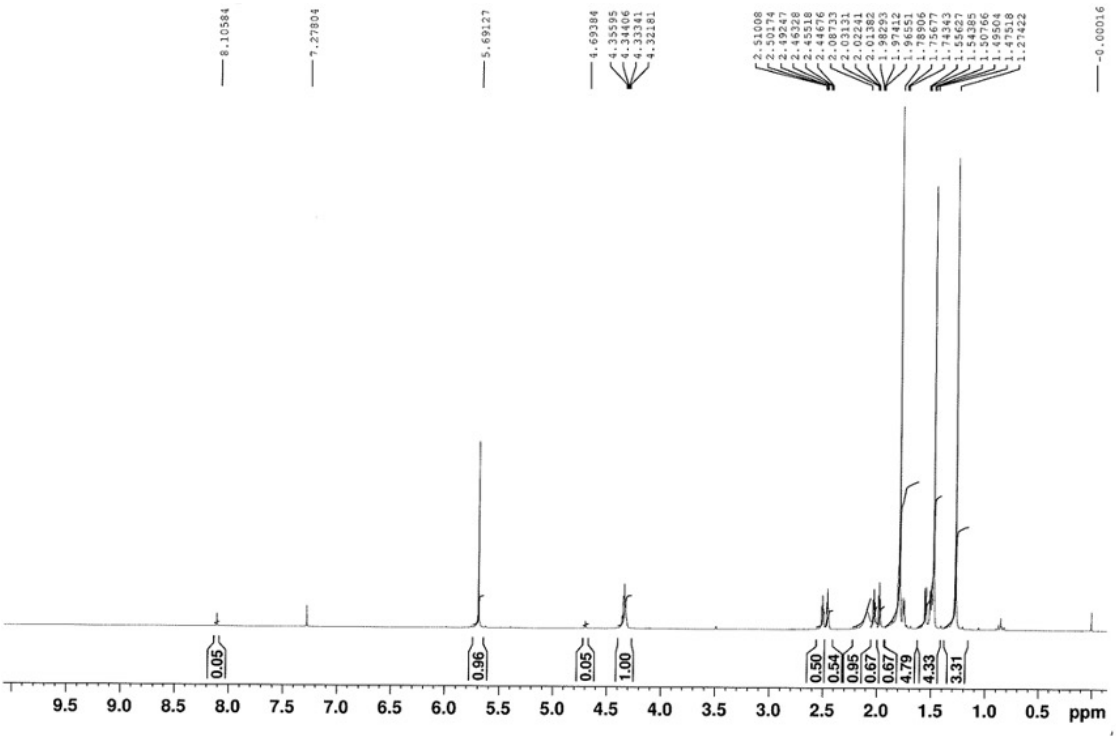


Figure S1-1. ^{1}H NMR spectrum of compound **1** ($CDCl_3$, 300.13 MHz).

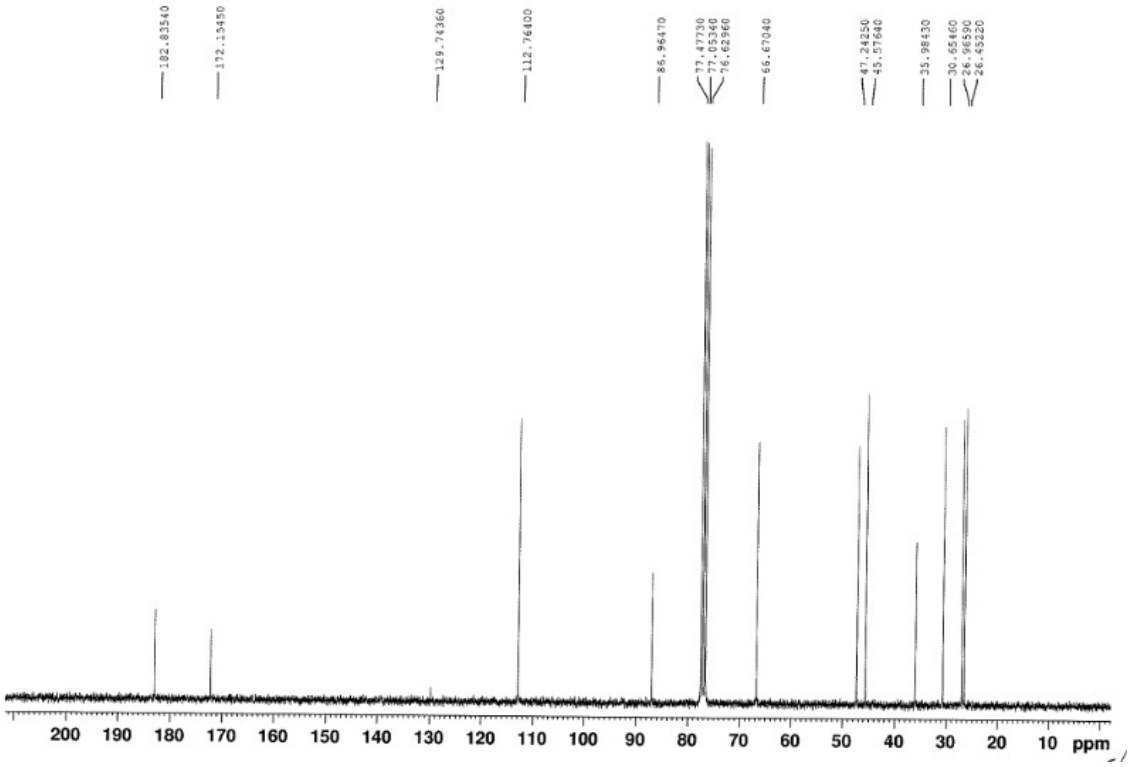


Figure S1-2. ^{13}C-NMR spectrum of compound **1** ($CDCl_3$, 300.13 MHz).

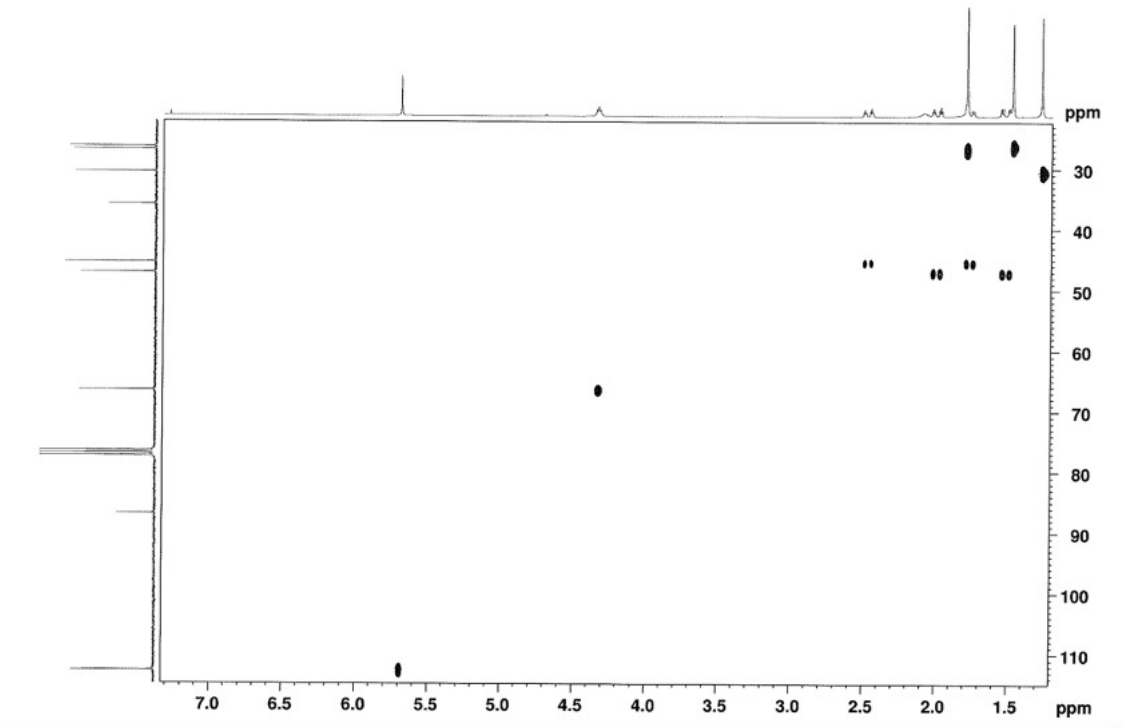


Figure S1-3. HSQC spectrum of compound **1** ($CDCl_3$, 300.13 MHz).

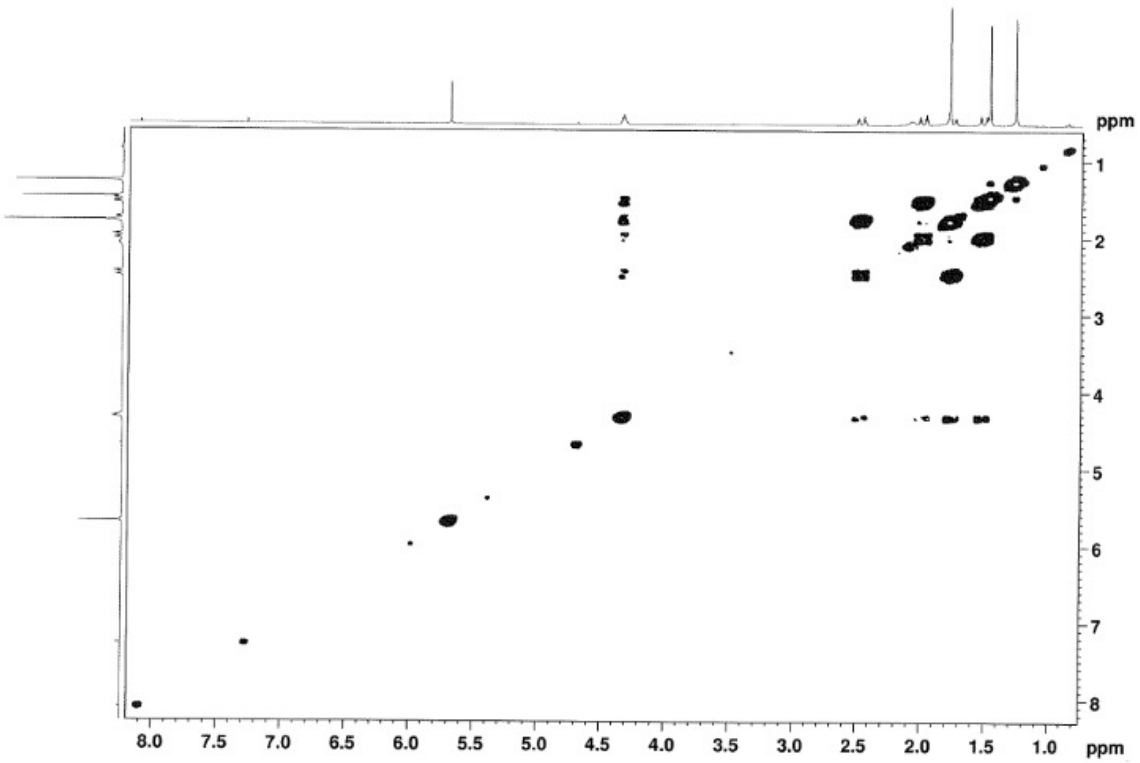


Figure S1-4. COSY spectrum of compound **1** ($CDCl_3$, 300.13 MHz).

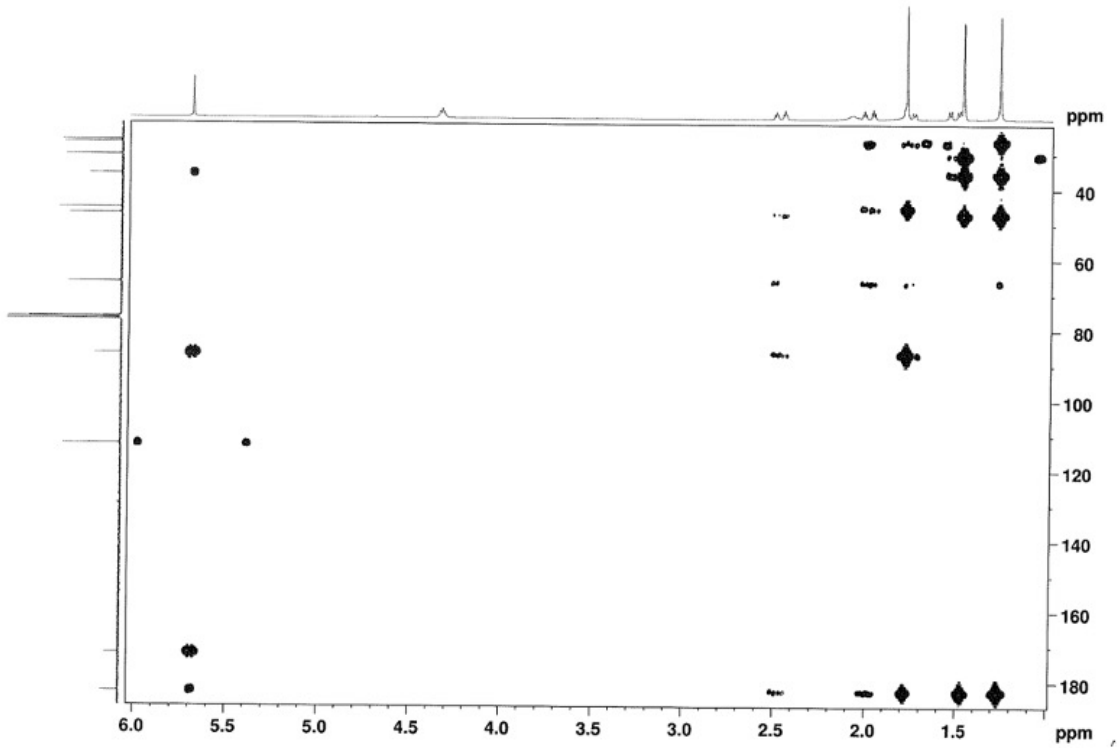


Figure S1-5. HMBC spectrum of compound **1** ($CDCl_3$, 300.13 MHz).

Diffraction data were collected at 291 K with a Gemini PX Ultra (Rigaku/Oxford, Neu-Isenburg, Germany) equipped with CuKα radiation (λ = 1.54184 Å). The structures were solved by direct methods using SHELXS-97 [1] and refined with SHELXL-97 [1]. Carbon and oxygen atoms were refined anisotropically. Hydrogen atoms were either placed at their idealized positions using

appropriate HFIX instructions in SHELXL, and included in subsequent refinement cycles, or were directly found from difference Fourier maps and were refined freely with isotropic displacement parameters. Full details of the data collection and refinement and tables of atomic coordinates, bond lengths and angles, and torsion angles have been deposited with the Cambridge Crystallographic Data Centre (CCDC).

aktsd394_424
Crystal was monoclinic, space group $P2_1$, cell volume 526.88(6) Å^3 and unit cell dimensions a = 6.0774(4) Å, b = 11.6890(7) Å and c = 7.8721(6) Å, and β = 109.582(8)° (uncertainties in parentheses). Flack x was refined parameter by means of TWIN and BASF in SHELXL to 0.0(7). The refinement converged to R (all data) = 7.92% and wR2 (all data) = 17.94%. CCDC 2096018.

aktsd115_121
Crystal was monoclinic, space group $C2$, cell volume 5457.2(10) Å^3 and unit cell dimensions a = 71.099(12) Å, b = 7.5834(5) Å and c = 10.1218(6) Å, and β = 90.419(8)° (uncertainties in parentheses). Flack x was refined parameter by means of TWIN and BASF in SHELXL to 0.2(15). The refinement converged to R (all data) = 18.12% and wR2 (all data) = 43.46%. CCDC 2095981.

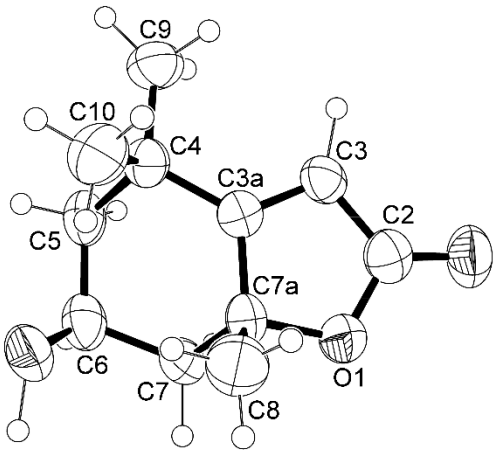


Figure S1-6. ORTEP diagram and diffraction data of compound **1.**

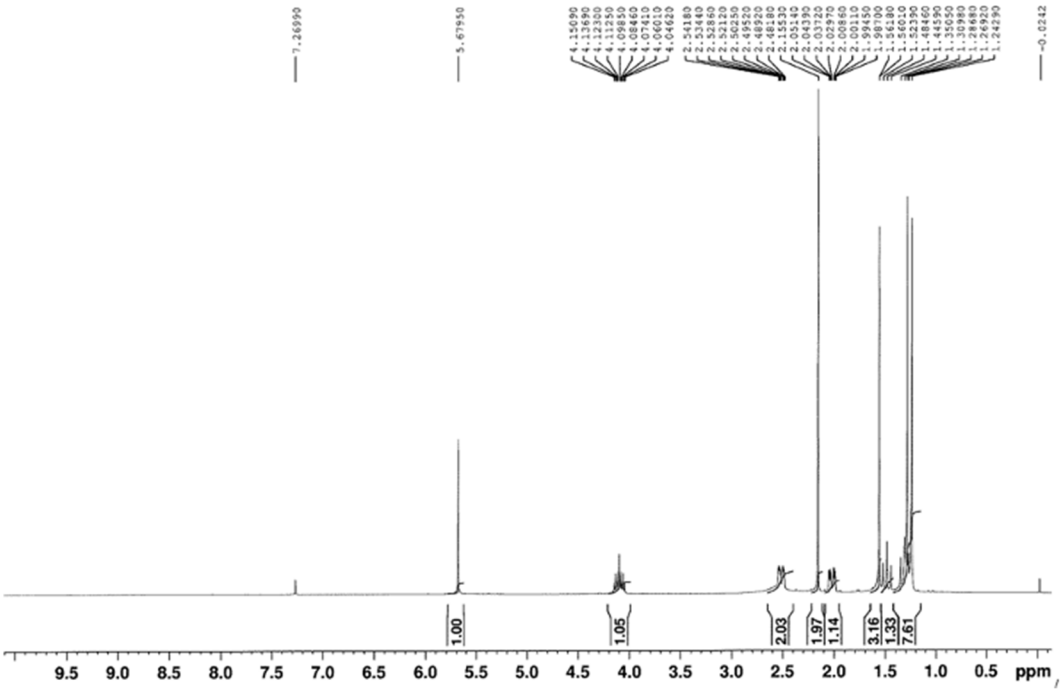


Figure S2-1. ^{1}H NMR spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

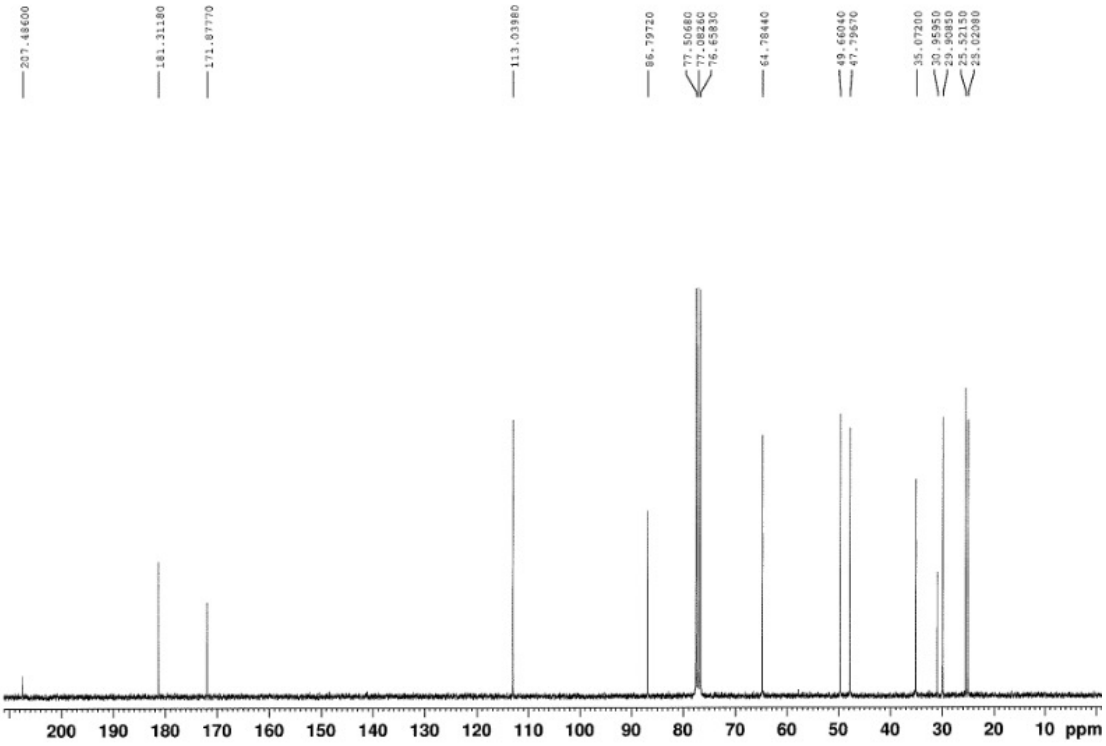


Figure S2-2. ^{13}C-NMR spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

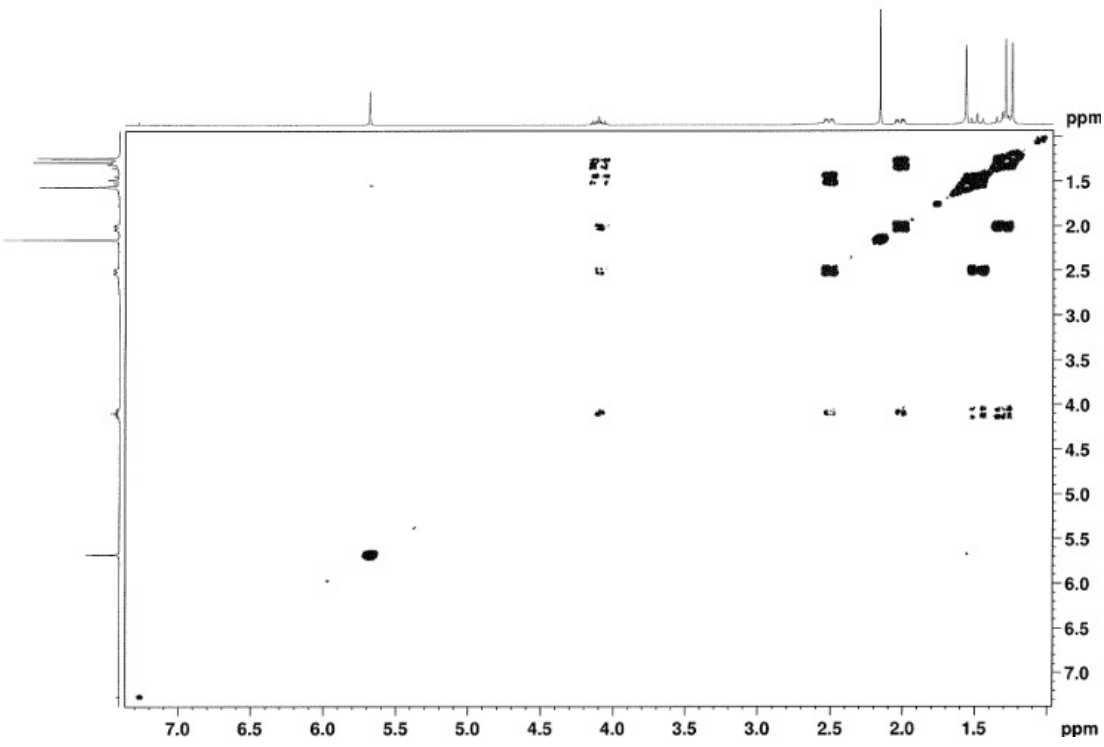


Figure S2-3. COSY spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

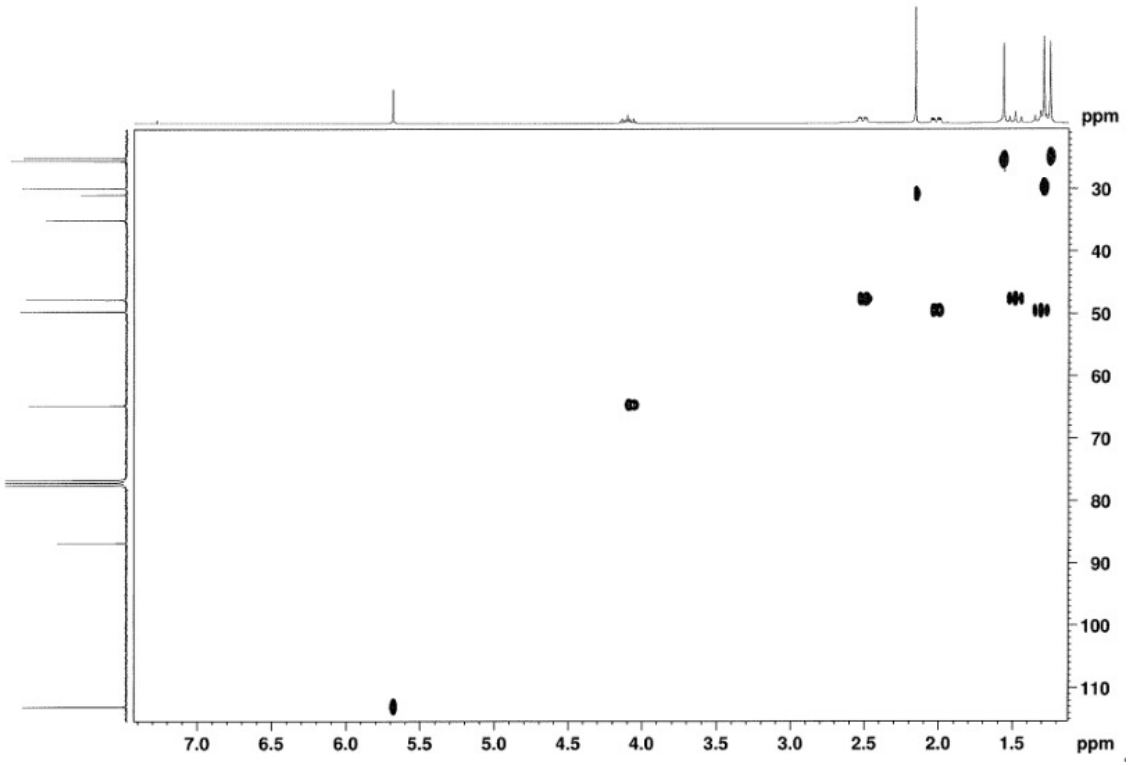


Figure S2-4. HSQC spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

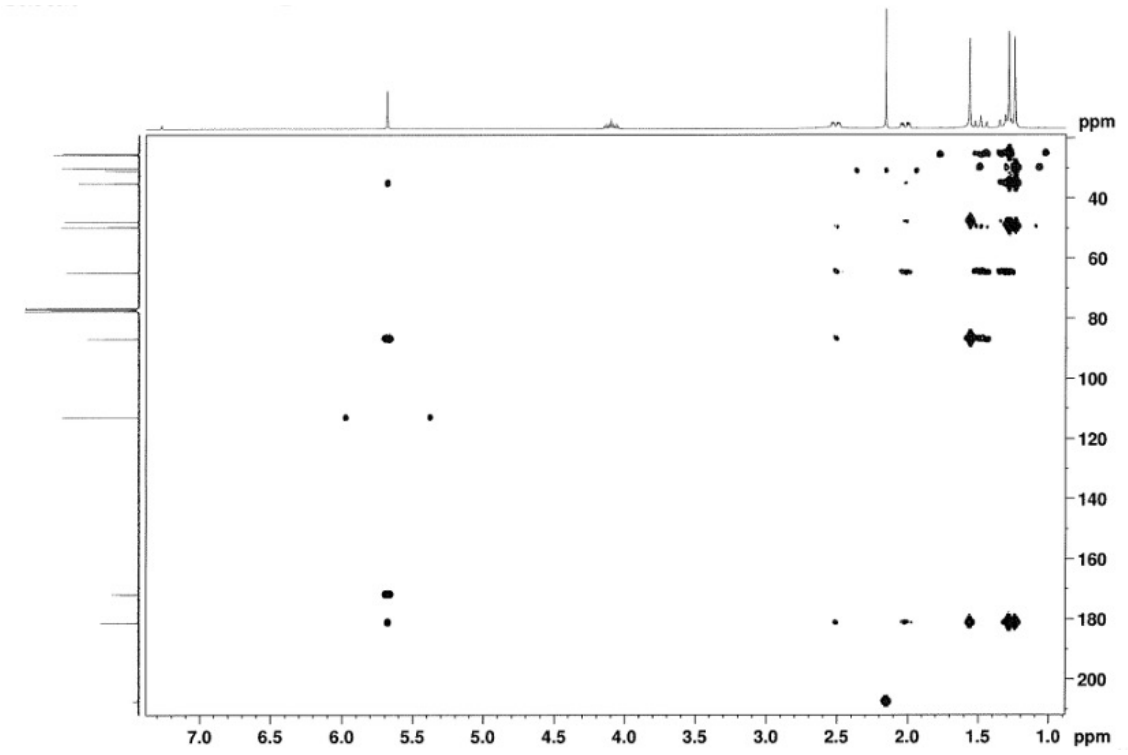


Figure S2-5. HMBC spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

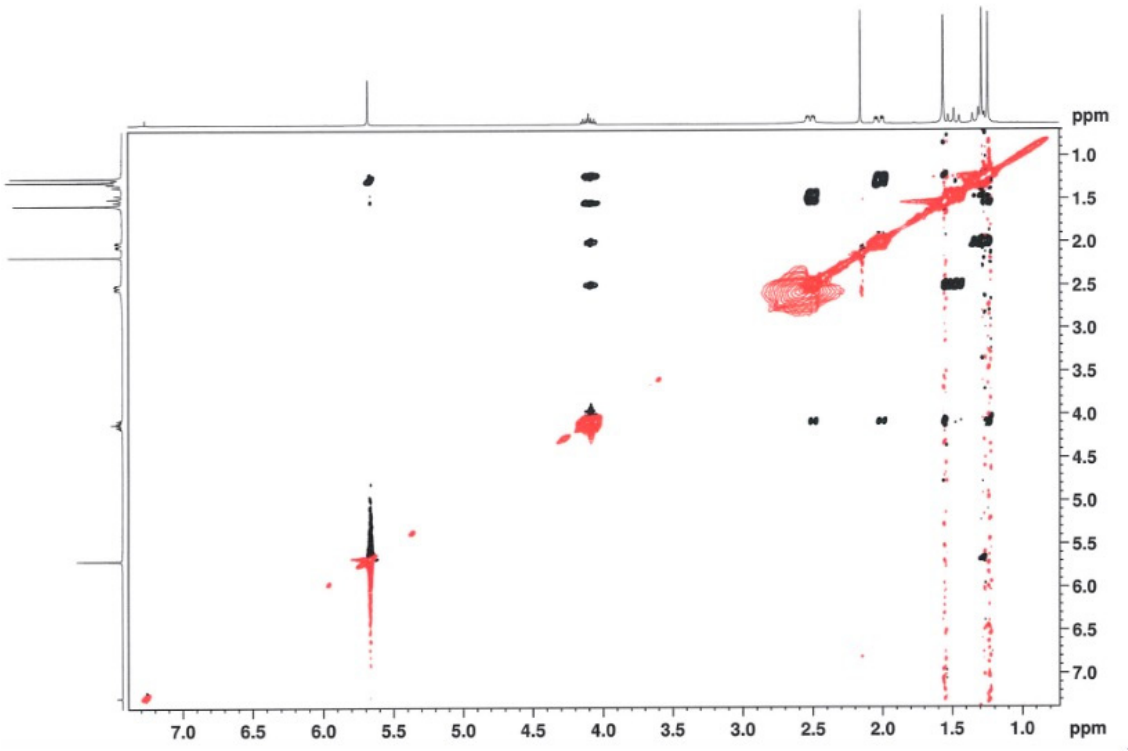


Figure S2-6. NOESY spectrum of compound **2** ($CDCl_3$, 300.13 MHz).

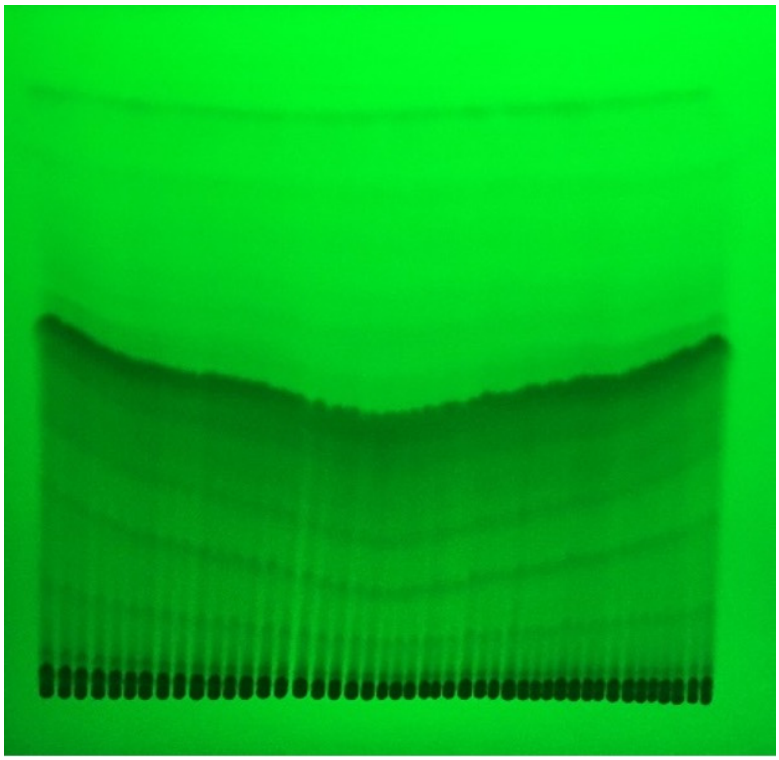


Figure S3. TLC profile of crude dichloromethane extract of *Thalassiosira* sp.