



Supporting Information

for

Muyocopronones A and B: azaphilones from the endophytic fungus *Muyocopron laterale*

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Preparations of MTPA diesters 2a and 2b, phylograms of ECN-279 and related species, and copies of 1D and 2D NMR data for 1 and 2

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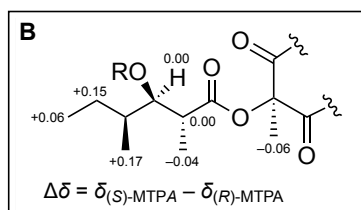
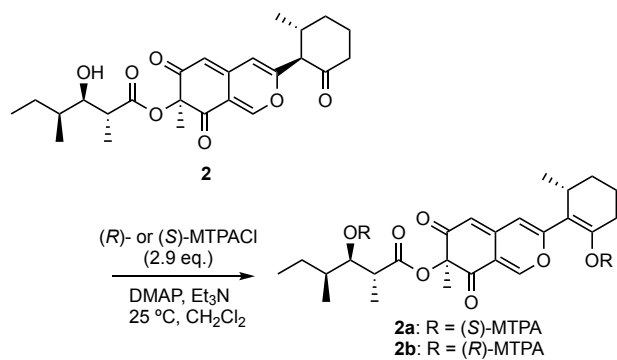
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Preparations of MTPA diesters **2a** and **2b**

To a solution of **2** (4.0 mg, 0.009 mmol) with DMAP (4.0 mg, 0.033 mmol) and triethylamine (4.9 μ L, 0.035 mmol) in CH_2Cl_2 (1.0 mL) was added (*R*)-MTPACl (4.8 μ L, 0.026 mmol). After standing still at dark place (25 $^\circ\text{C}$) for 7 h, the resulting solution was directly subjected to silica gel CC with *n*-hexane/ethyl acetate (1:1) to obtain the (*S*)-MTPA diester **2a** (2.8 mg). Similarly, the mixture of **2** (4.0 mg, 0.009 mmol), DMAP (4.0 mg, 0.033 mmol), and triethylamine (4.9 μ L, 0.035 mmol) in CH_2Cl_2 (1.0 mL) was treated with (*S*)-MTPACl (4.8 μ L, 0.026 mmol) by the same manner as above to obtain (*R*)-MTPA diester **2b** (1.7 mg).

(*S*)-MTPA diester **2a**: yellow gum; ^1H NMR δ_{H} 0.92 (3H, d, J = 6.4 Hz, H-8'), 0.96 (3H, t, J = 7.3 Hz, H-6'), 1.09 (3H, d, J = 6.9 Hz, H-16), 1.21 (1H, m, H_a-5'), 1.23 (3H, d, J = 7.3 Hz, H-7'), 1.26 (1H, m), 1.45 (3H, s, H-9), 1.51 (1H, m, H_b-5'), 1.76–1.91 (4H, m), 2.29–2.41 (2H, m), 2.78 (1H, m, H-11), 3.09 (1H, br dq, J = 6.9, 7.3 Hz, H-2'), 3.50 (6H, methoxy groups of MTPA), 5.35 (1H, d, J = 0.9 Hz, H-5), 5.41 (1H, dd, J = 5.0, 6.9 Hz, H-3'), 6.16 (1H, s, H-4), 7.34–7.62 (11H, m, phenyl groups of MTPA and H-1).

(*R*)-MTPA diester **2b**: yellow gum; ^1H NMR δ_{H} 0.76 (3H, d, J = 6.9 Hz, H-8'), 0.89 (3H, t, J = 7.3 Hz, H-6'), 1.06 (3H, d, J = 6.9 Hz, H-16), 1.07–1.12 (1H, overlapped signal, H_a-5'), 1.27 (3H, d, J = 7.3 Hz, H-7'), 1.36 (1H, m, H_b-5'), 1.50 (3H, s, H-9), 1.76–1.92 (4H, m), 2.25–2.44 (2H, m), 2.77 (1H, m, H-11), 3.09 (1H, qd, J = 6.9, 7.3 Hz, H-2'), 3.54 and 3.59 (6H, methoxy groups of MTPAs), 5.36 (1H, d, J = 0.9 Hz, H-5), 5.41 (1H, dd, J = 5.0, 6.9 Hz, H-3'), 6.16 (1H, s, H-4), 7.35–7.64 (11H, m, phenyl groups of MTPA and H-1).

A

Scheme S1: (A) Synthesis of MTPA diesters **2a** and **2b**. (B) $\Delta\delta$ values for (*S*)- and (*R*)-MTPA esters of **2**. $\Delta\delta$ values of C-4' and C-5'b could not be calculated due to overlap with other signals.

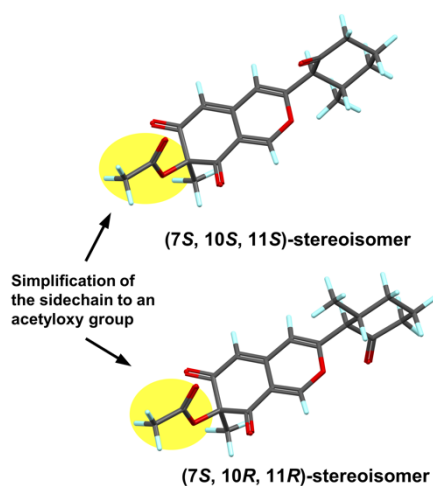


Figure S1: Simplified models for calculations of ECD spectra of **2**.

ECN279
ITS gene

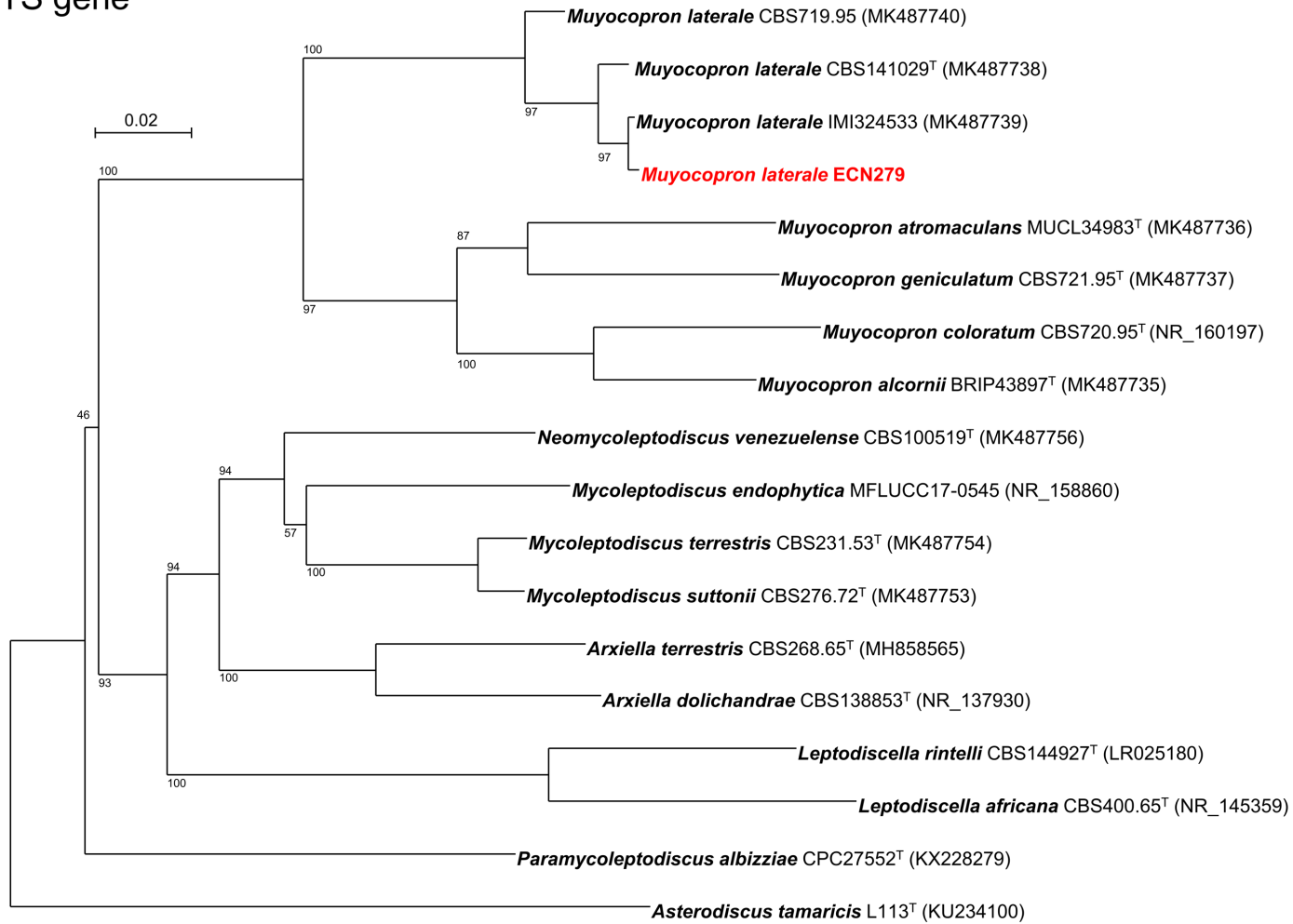


Figure S2: Phylogram obtained from ITS of rDNA sequences of ECN-279 and related species.

ECN279
26S rRNA

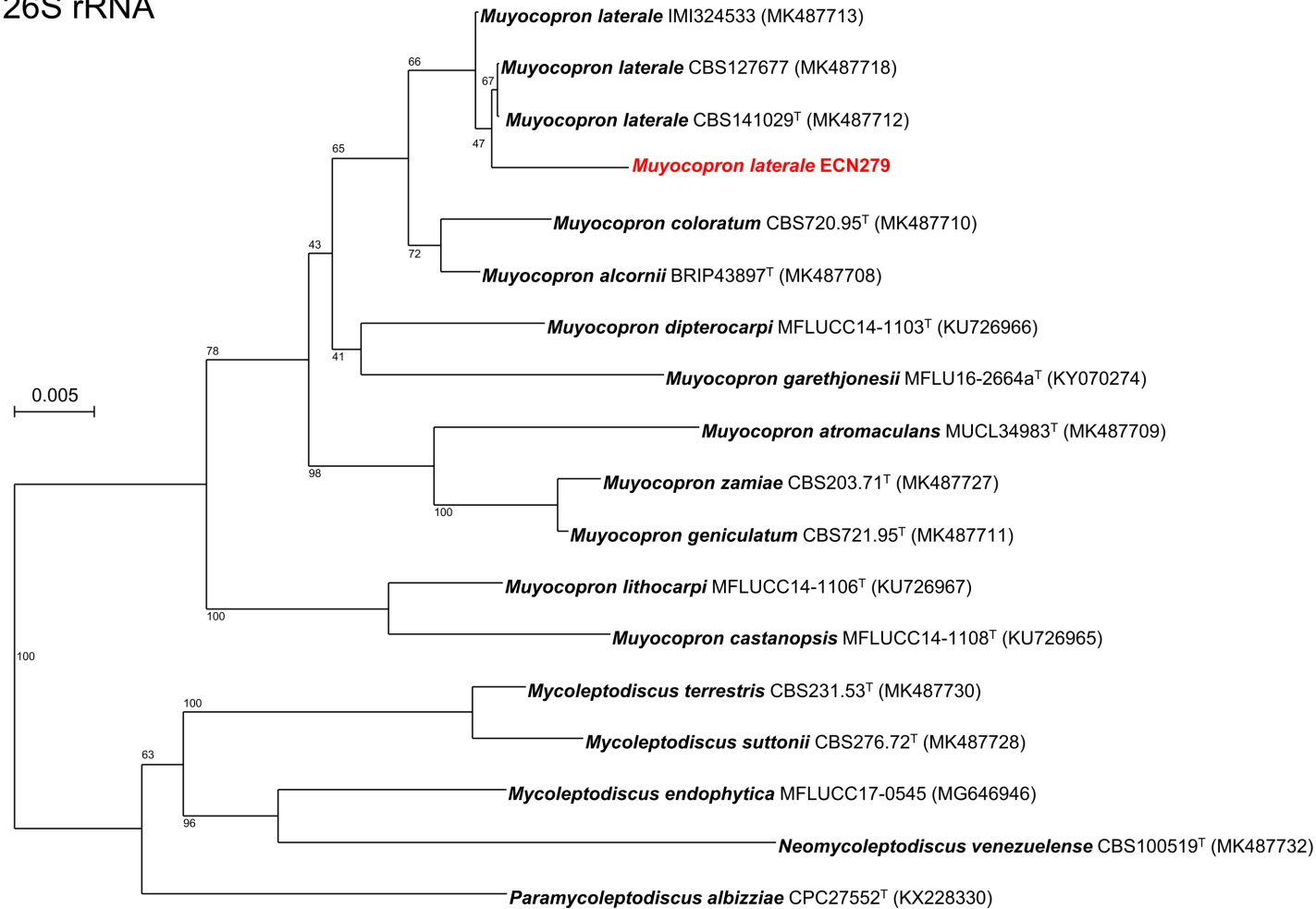


Figure S3: Phylogram obtained from D1/D2 domain of 26SrRNA sequences of ECN-279 and related species.

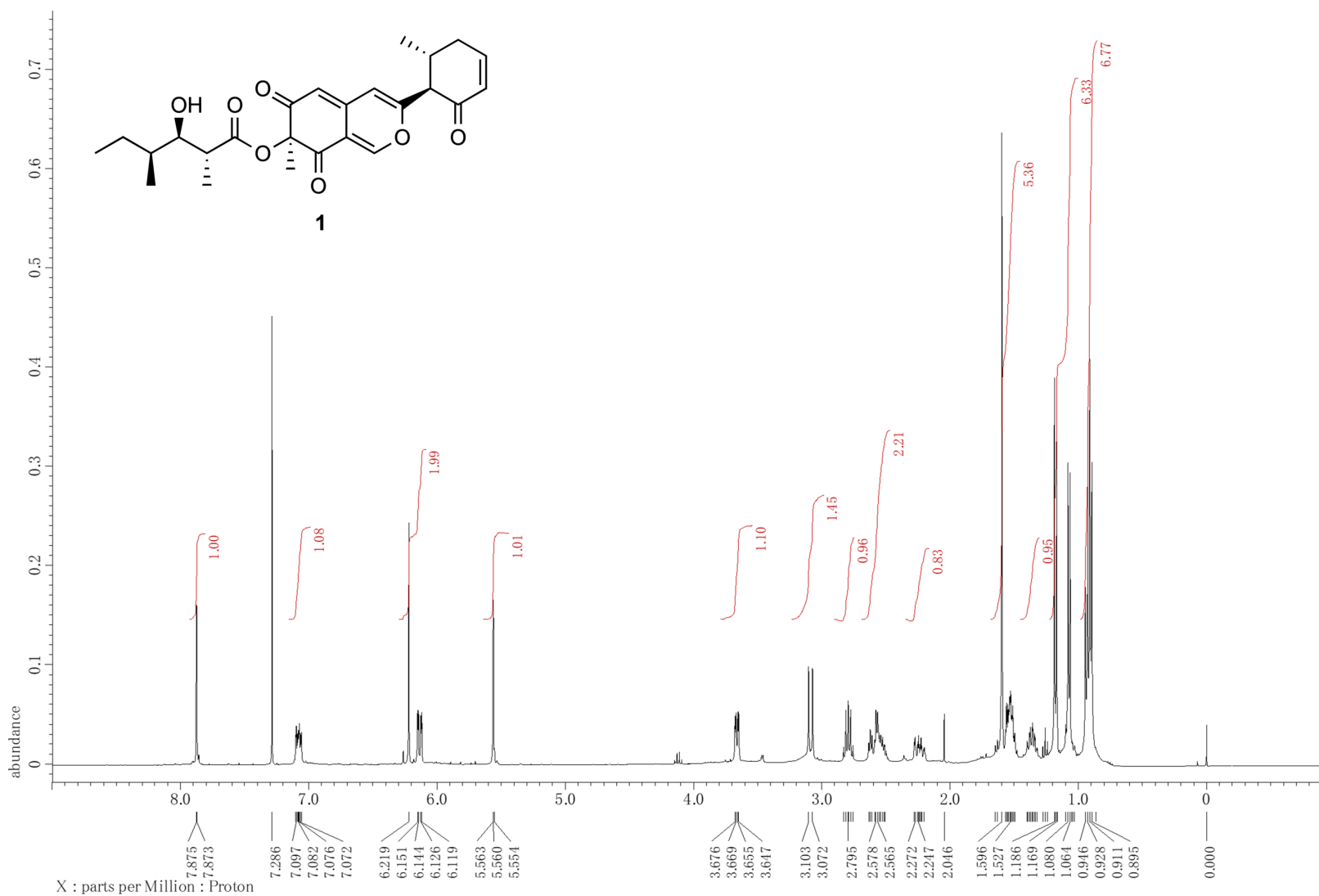


Figure S4: ¹H NMR spectrum (400 MHz, CDCl₃) of muiyocpronone A (1).

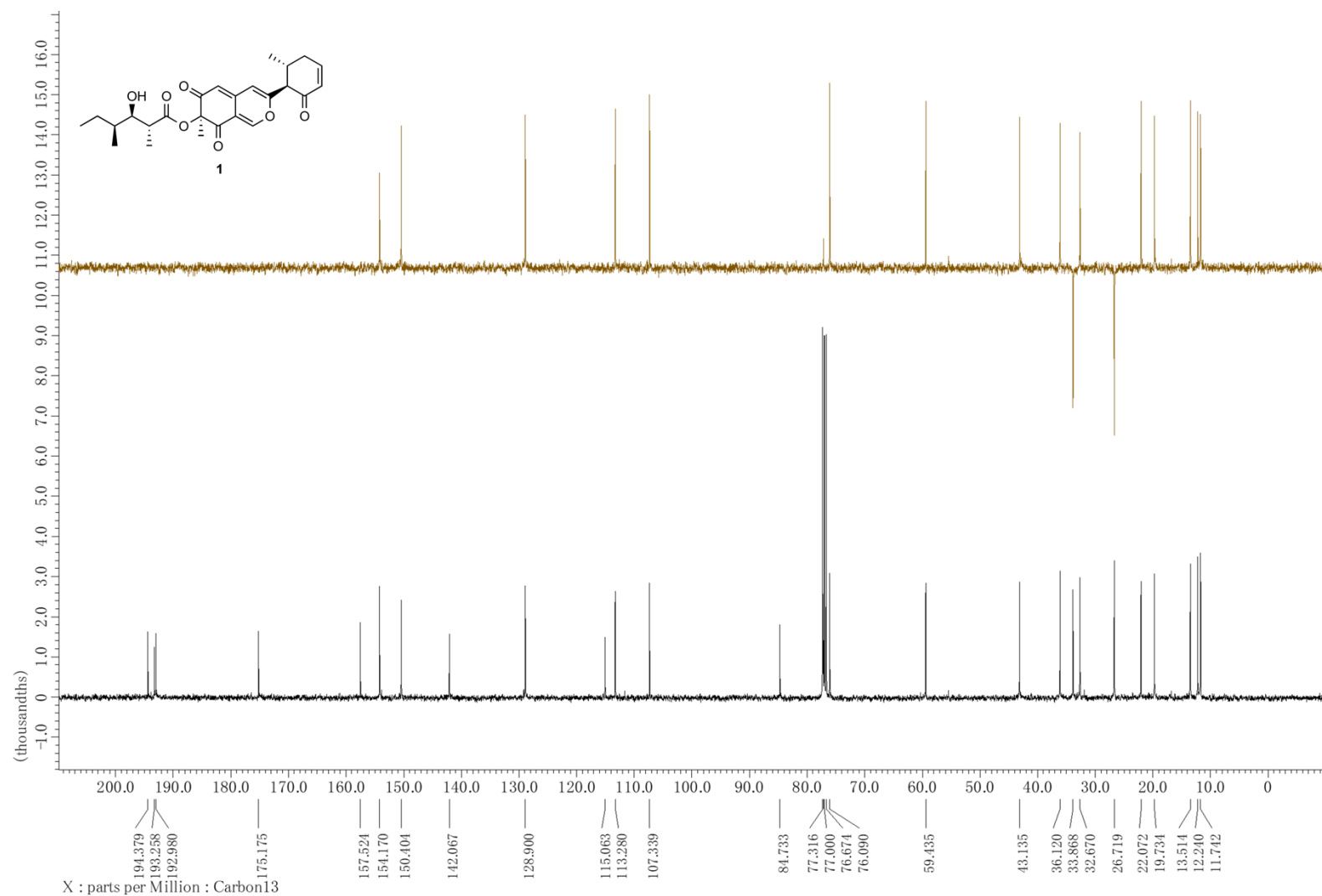


Figure S5: ¹³C NMR and DEPT135 spectra (100 MHz, CDCl₃) of muiyocopronone A (1).

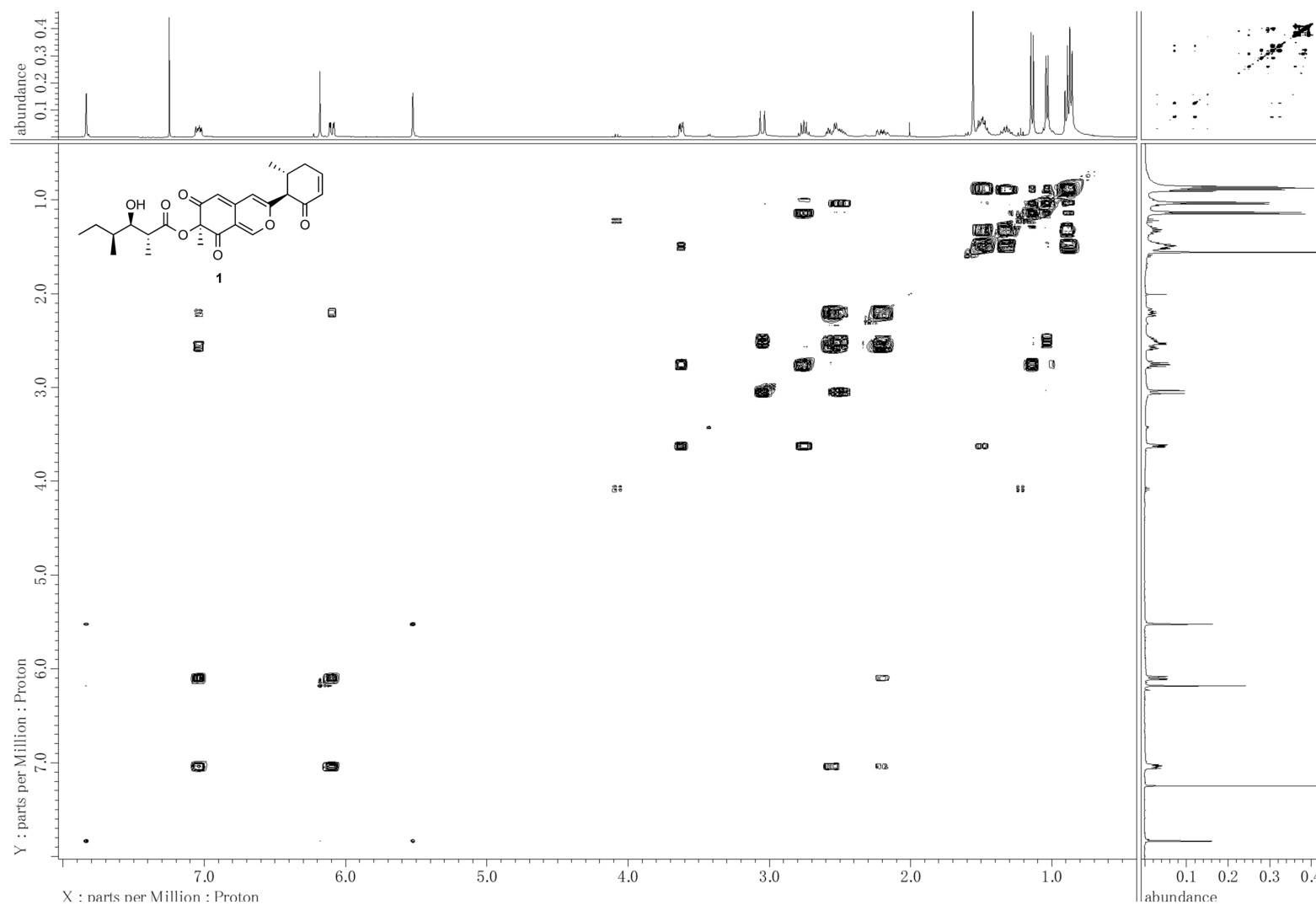


Figure S6: DQF-COSY spectrum (CDCl₃) of muiyocopronone A (1).

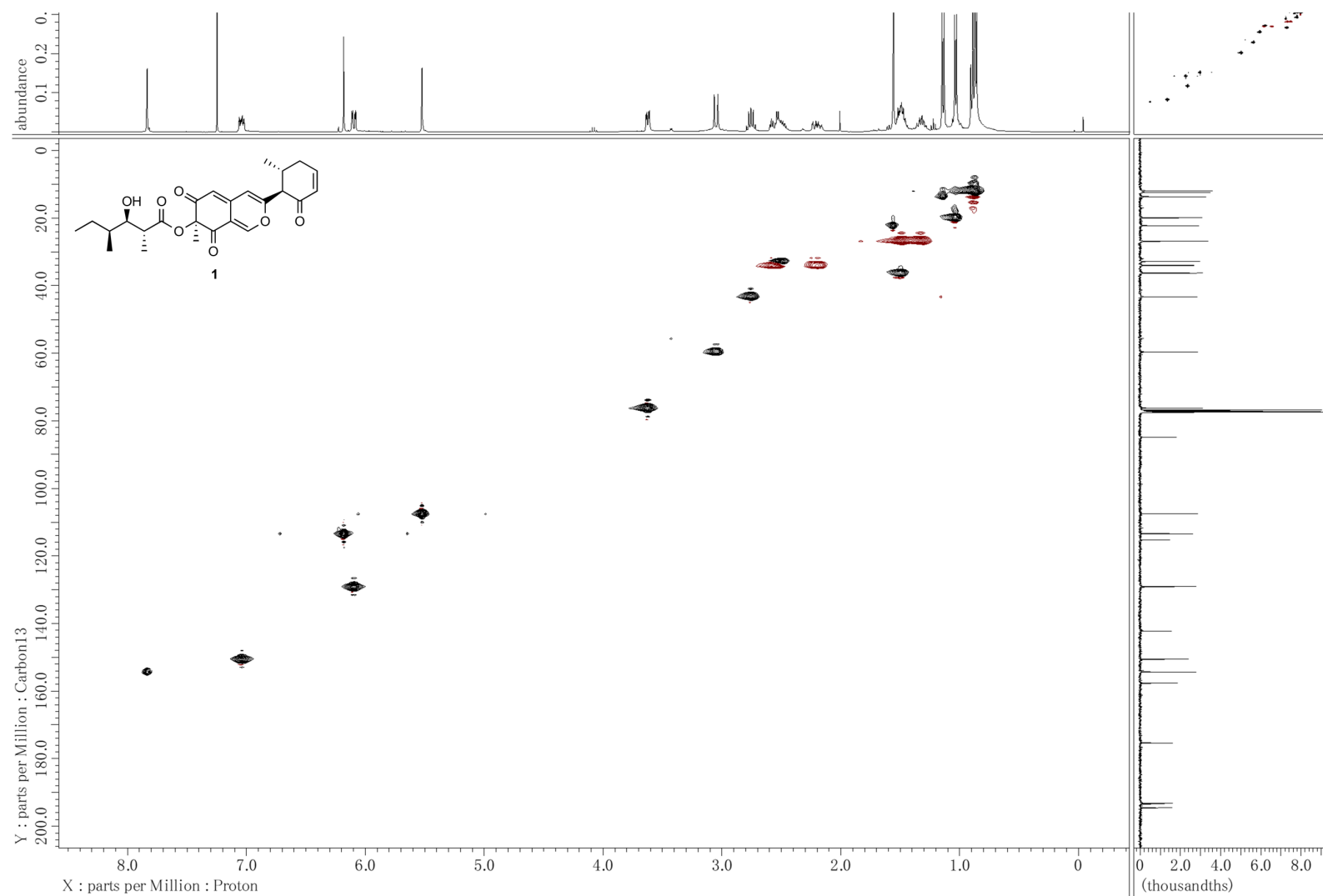


Figure S7: HSQC spectrum (CDCl₃) of muiyocpronone A (1).

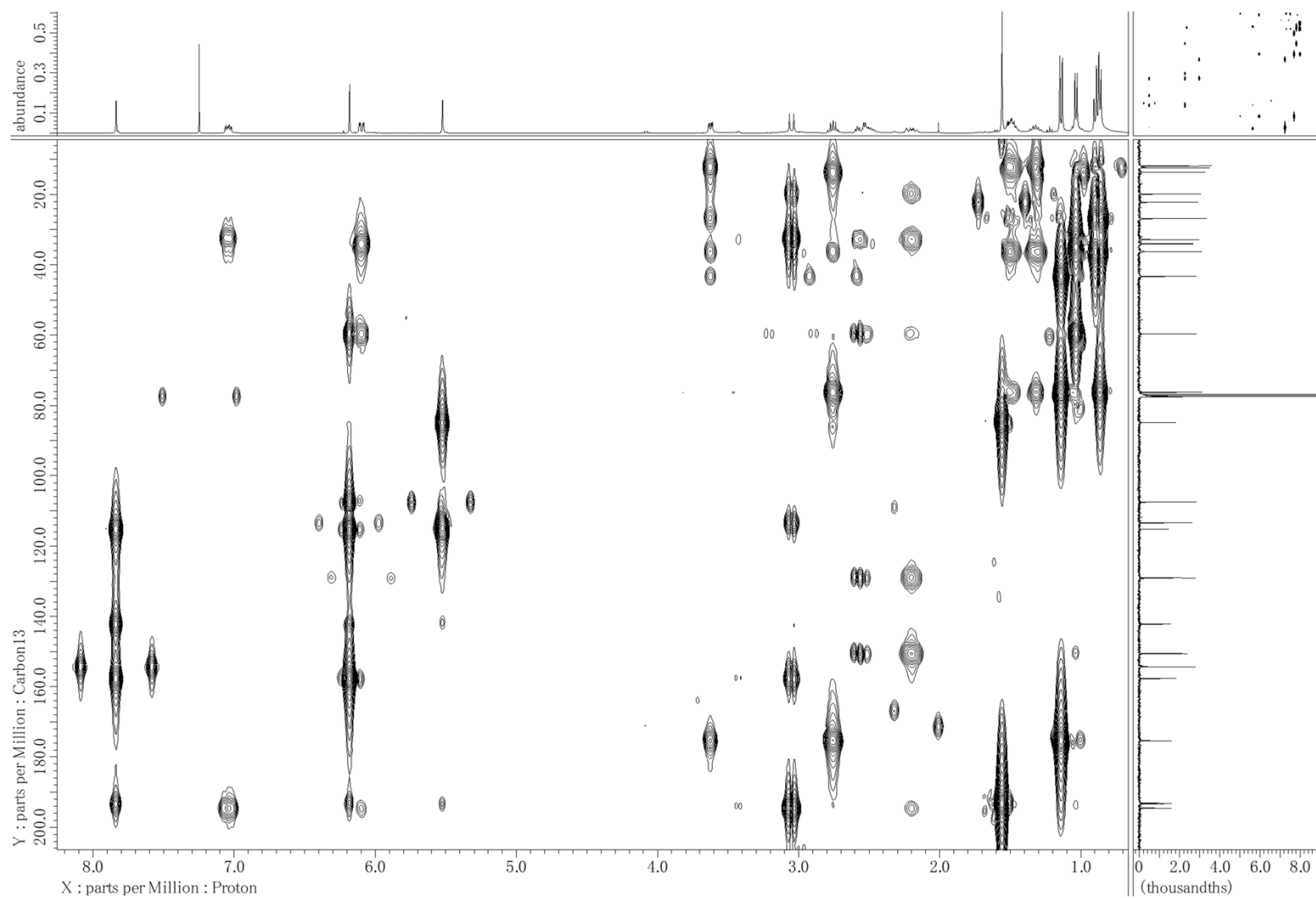


Figure S8: HMBC spectrum (CDCl₃) of muyocopronone A (**1**).

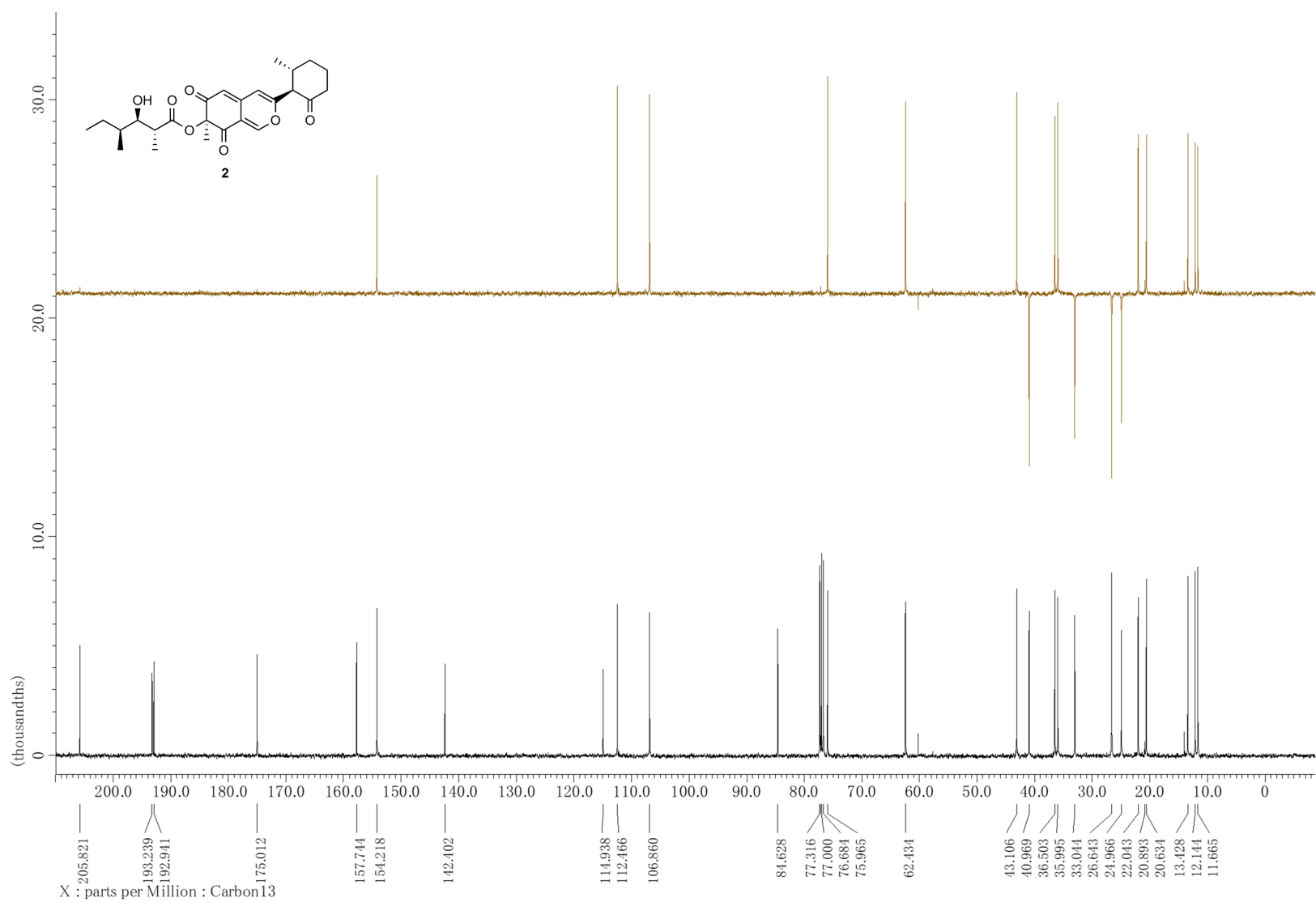


Figure S10: ^{13}C NMR and DEPT135 spectra (100 MHz, CDCl_3) of muyocopronone B (2).

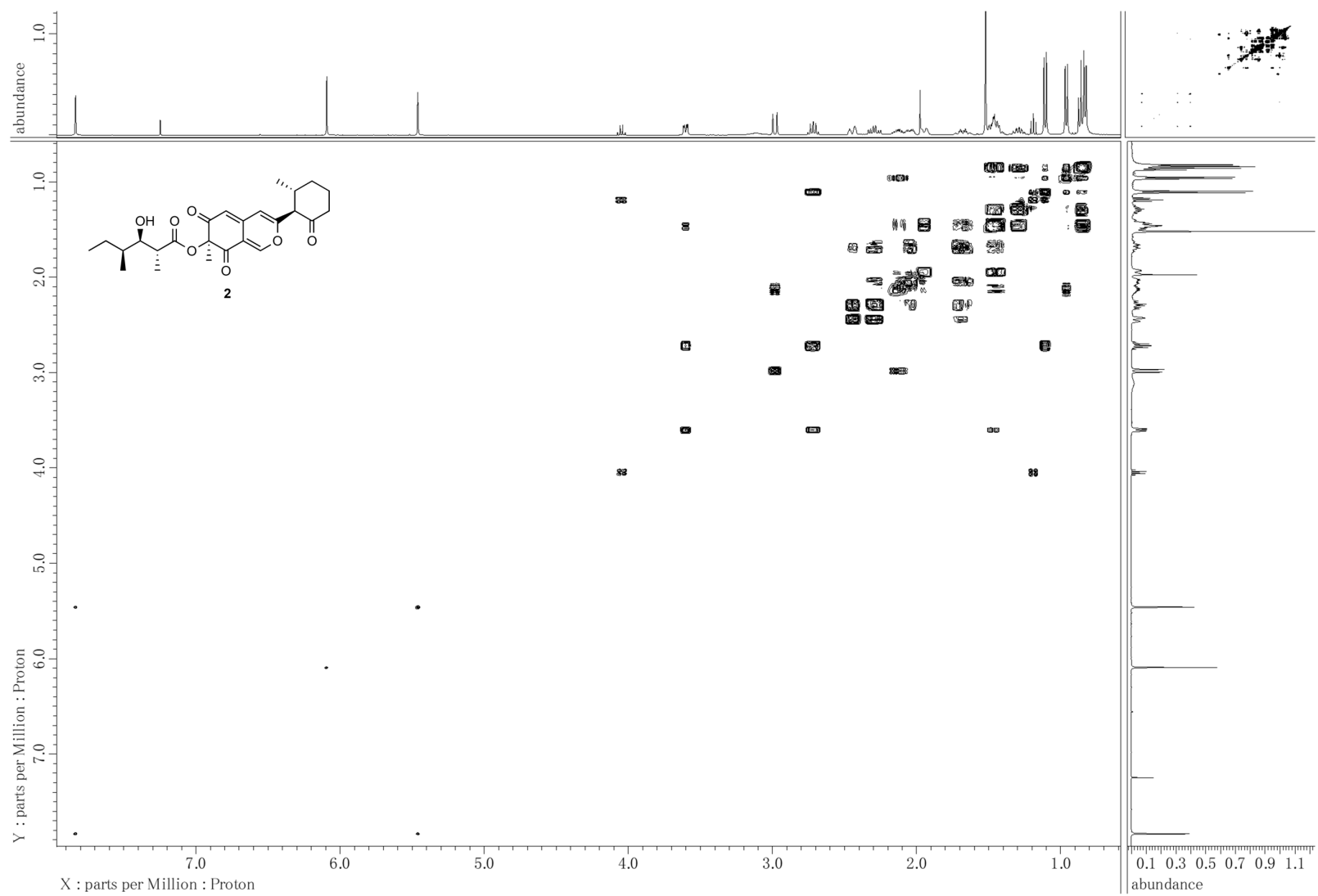


Figure S11: DQF-COSY spectrum (CDCl_3) of muyocopronone B (2).

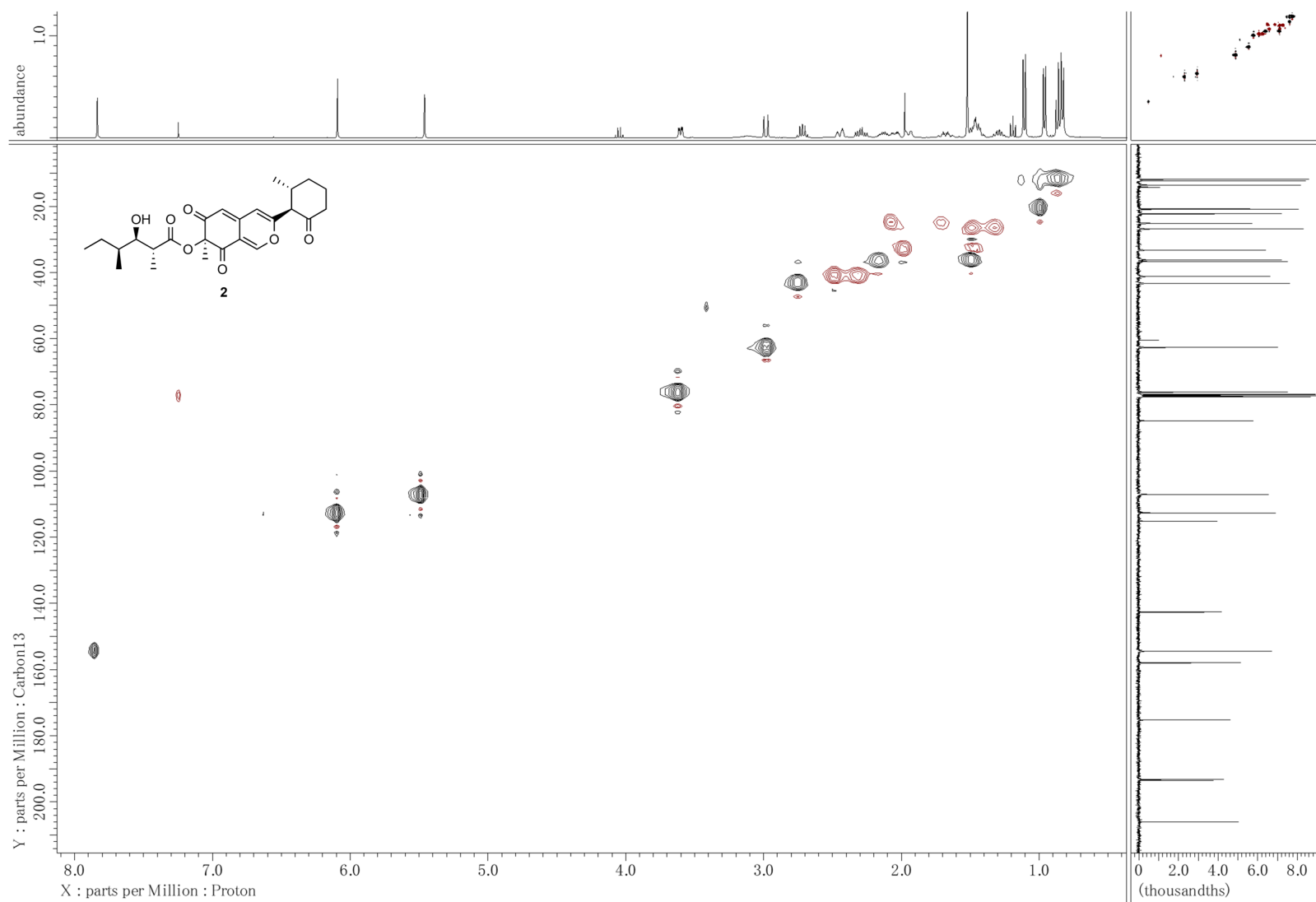


Figure S12: HSQC spectrum (CDCl₃) of muyocopronone B (**2**).

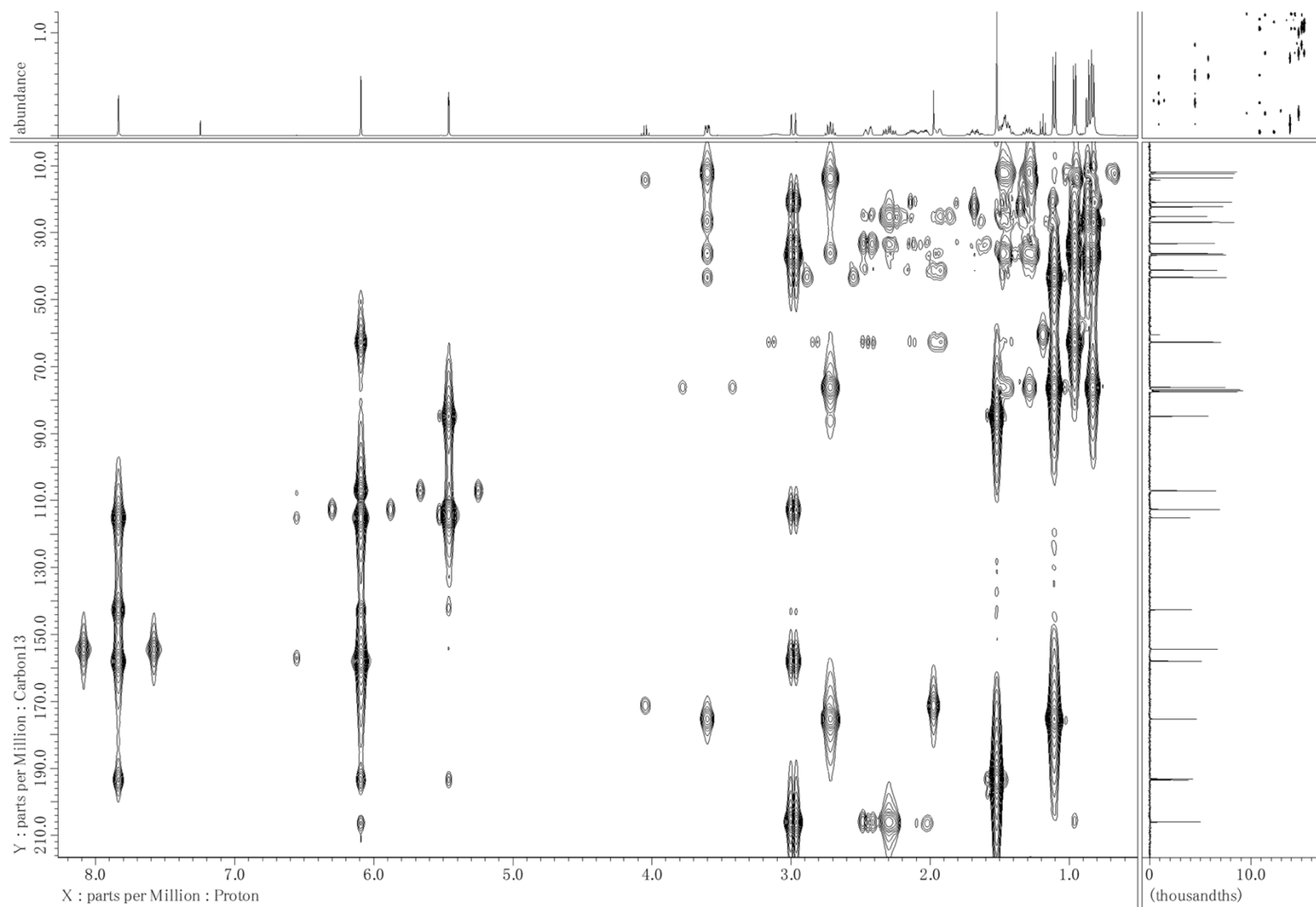


Figure S13: HMBC spectrum (CDCl_3) of muyocopronone B (**2**).

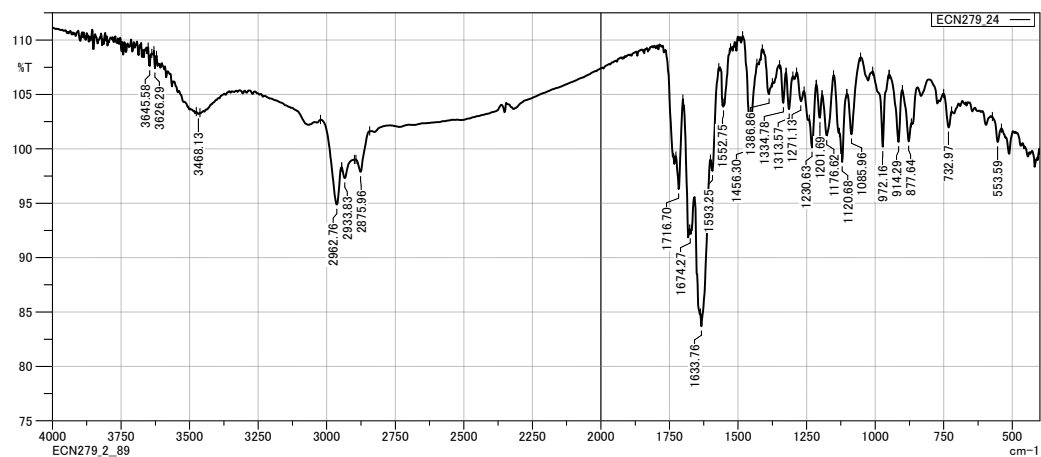


Figure S14: IR spectrum of myocopronone A (1).

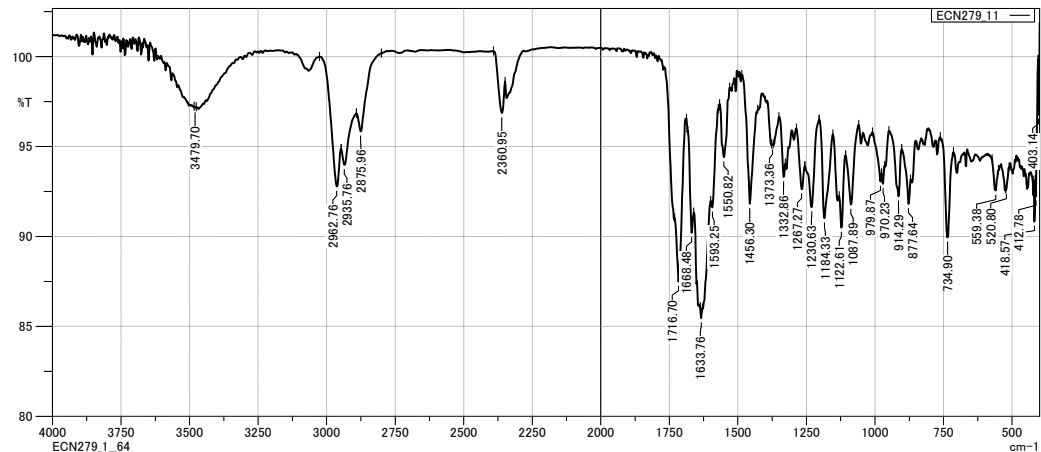


Figure S15: IR spectrum of myocopronone B (2).

Table S1: Anti-bacterial activities of **1** and **2**

bacteria	Antibiotic resistant (–)/susceptible (+)	MIC (µg/mL)				
		1	2	piperacillin	vancomycin	amikacin
<i>Staphylococcus aureus</i> PAGU 273 ^T	methicillin (+)	1024	128	<1	<1	8
<i>Staphylococcus aureus</i> PAGU 841	methicillin (–)	>1024	128	512	1	4
<i>Enterococcus faecalis</i> PAG102 ^T	vancomycin (+)	1024	128	<1	16	256
<i>Enterococcus faecalis</i> PAG100	vancomycin (–)	1024	128	2	<1	256
<i>Staphylococcus epidermidis</i> PAGU 283 ^T		>1024	128	<1	<1	<1