

**Sesquiterpene lactones from *Artemisia absinthium*. Biotransformation  
and rearrangement of 3 $\alpha$ -hydroxypelenolide**

Braulio M. Fraga,<sup>1</sup> Carmen E. Díaz,\*<sup>1</sup> María Bailén,<sup>2</sup> Azucena González-Coloma\*<sup>3</sup>

<sup>1</sup> Instituto de Productos Naturales y Agrobiología, C.S.I.C.; Avda. Astrofísico F. Sánchez 3, 38206-La Laguna, Tenerife, Canary Islands, Spain

<sup>2</sup> Departamento de Medicina Preventiva y Salud Pública y Microbiología. Facultad de Medicina. Universidad Autónoma de Madrid. c/ Arzobispo Morcillo, s/n °- 28049, Madrid;

<sup>3</sup> Instituto de Ciencias Agrarias, CSIC, Serrano 115-dpdo, 28006 Madrid, Spain

\*Corresponding authors:

E-mail address: celisa@ipna.csic.es (C.E. Díaz)

E-mail address: azu@ica.csic.es (A. González-Coloma)

**List of contents:**

**Figure S1.**  $^1\text{H}$ -NMR spectrum of compound **1** ( $\text{CDCl}_3$ , 500 MHz)

**Figure S2.**  $^{13}\text{C}$ -NMR spectrum of compound **1** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S3.**  $^1\text{H}$ -NMR spectrum of compound **2** ( $\text{CDCl}_3$ , 500 MHz)

**Figure S4.**  $^{13}\text{C}$ -NMR spectrum of compound **2** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S5.**  $^1\text{H}$ -NMR spectrum of compound **3** ( $\text{CDCl}_3$ , 500 MHz)

**Figure S6.**  $^{13}\text{C}$ -NMR spectrum of compound **3** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S7.**  $^1\text{H}$ -NMR spectrum of compound **9** ( $\text{CDCl}_3$ , 500 MHz)

**Figure S8.**  $^{13}\text{C}$ -NMR spectrum of compound **9** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S9.**  $^1\text{H}$ -NMR spectrum of compound **10** ( $\text{CDCl}_3$ , 500 MHz)

**Figure S10.**  $^{13}\text{C}$ -NMR spectrum of compound **10** ( $\text{CD}_3\text{OD}$ , 125 MHz)

**Figure S11.**  $^1\text{H}$ -NMR spectrum of compound **11** ( $\text{CD}_3\text{OD}$ , 500 MHz)

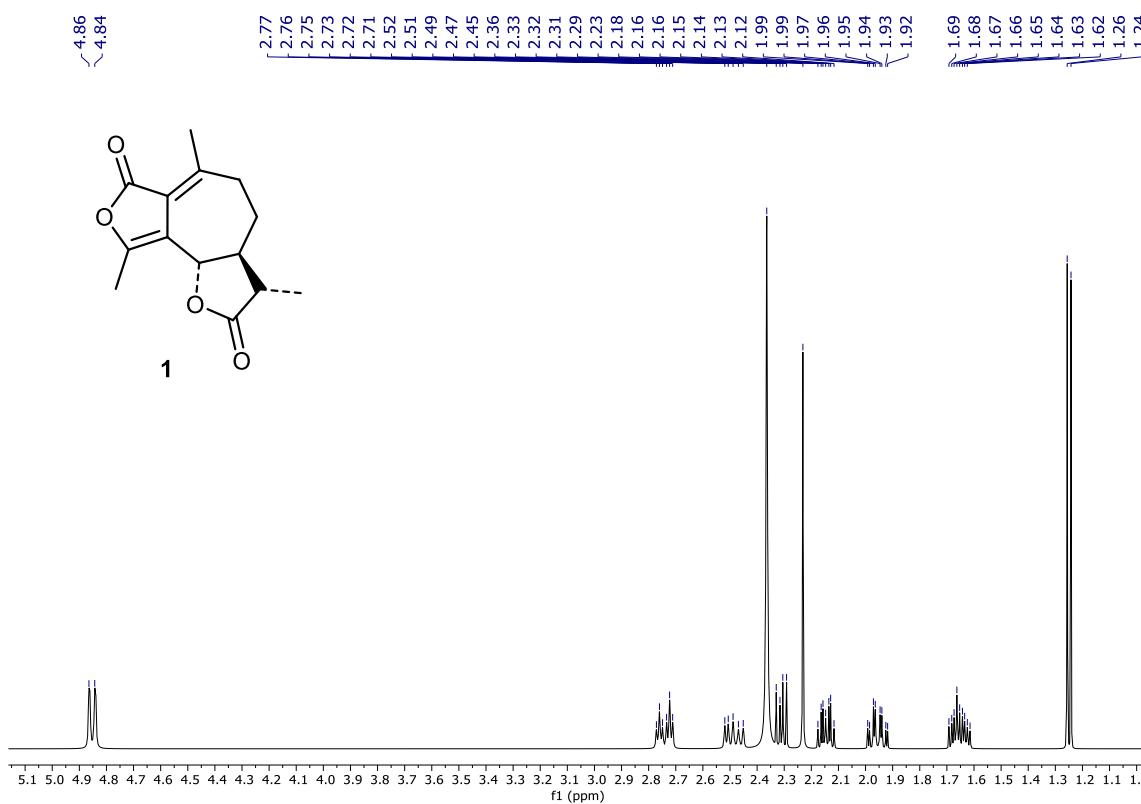
**Figure S12.**  $^{13}\text{C}$ -NMR spectrum of compound **11** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S13.**  $^1\text{H}$ -NMR spectrum of compound **12** ( $\text{CDCl}_3$ , 500 MHz)

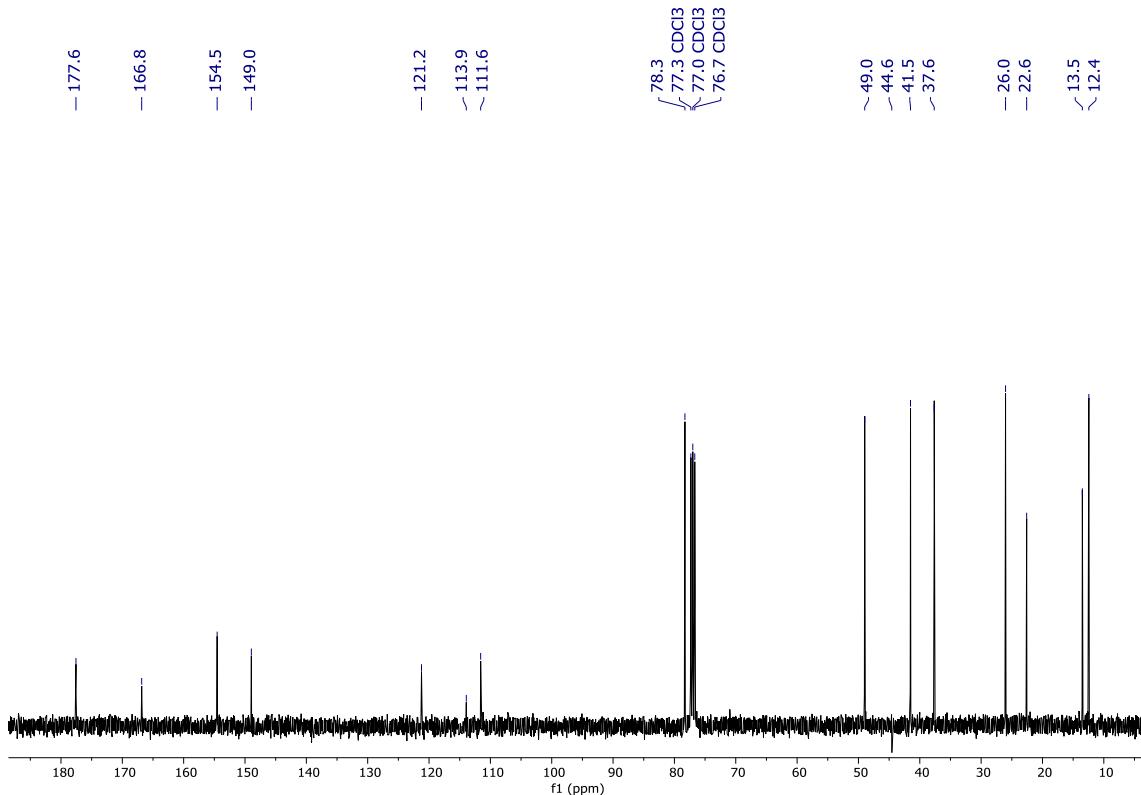
**Figure S14.**  $^{13}\text{C}$ -NMR spectrum of compound **12** ( $\text{CDCl}_3$ , 125 MHz)

**Figure S15.**  $^1\text{H}$ -NMR spectrum of compound **19** ( $\text{CDCl}_3$ , 500 MHz)

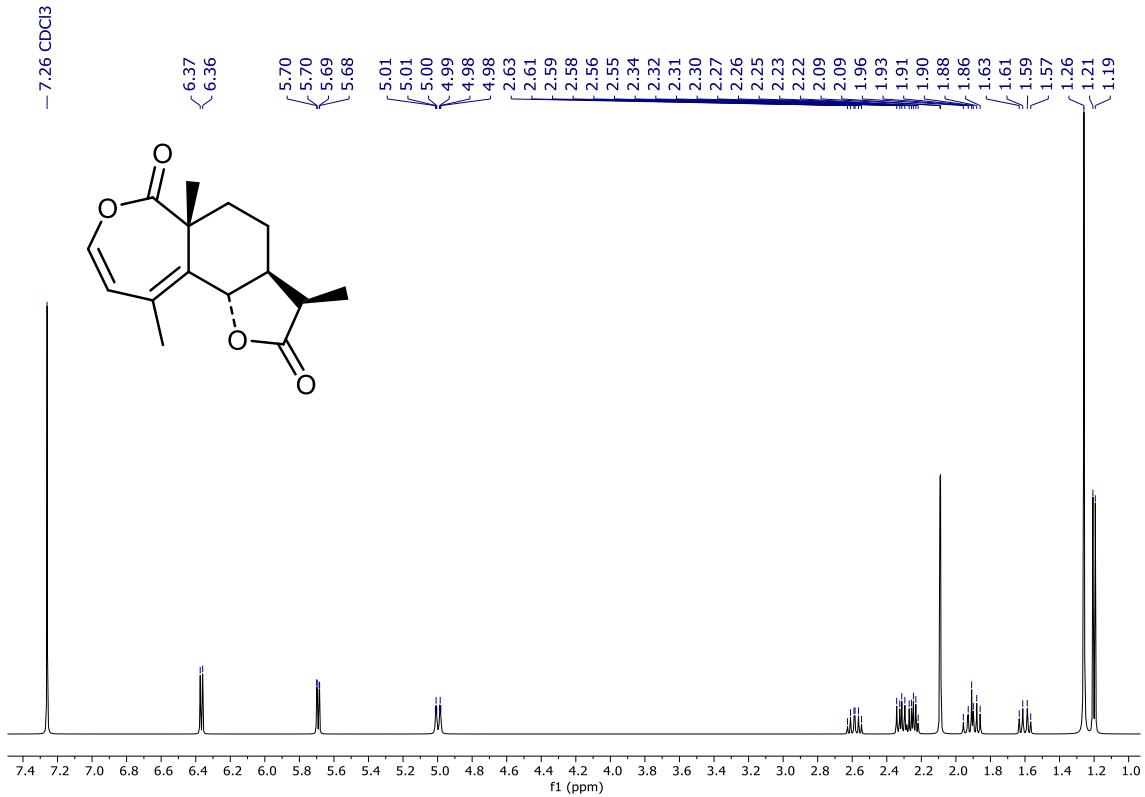
**Figure S16.**  $^{13}\text{C}$ -NMR spectrum of compound **19** ( $\text{CDCl}_3$ , 125 MHz)



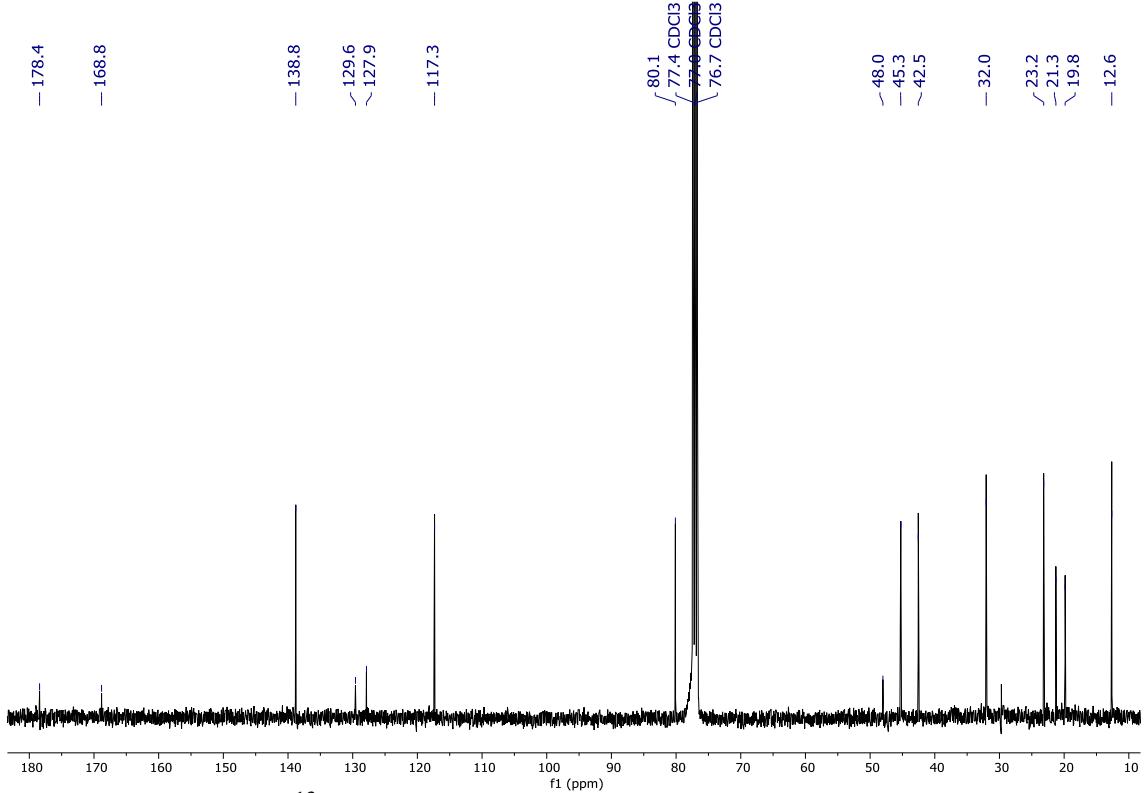
**Figure S1.**  $^1\text{H}$ -NMR spectrum of compound **1** ( $\text{CDCl}_3$ , 500 MHz)



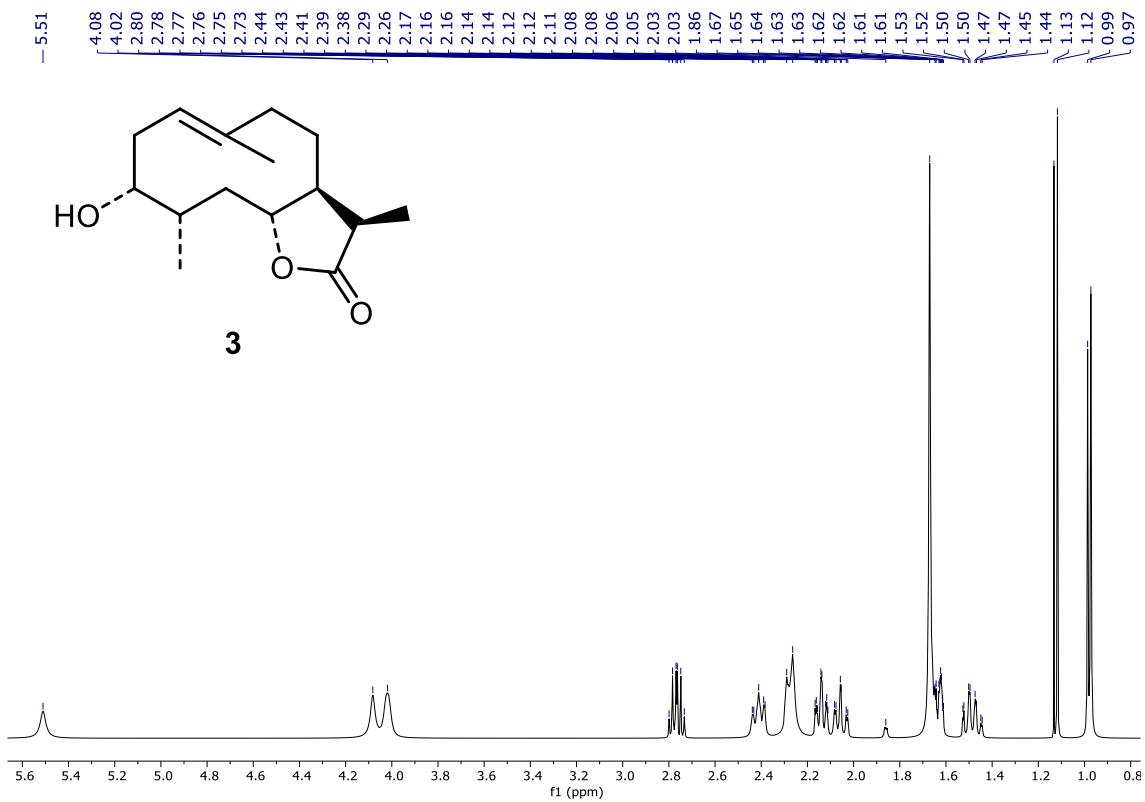
**Figure S2.**  $^{13}\text{C}$ -NMR spectrum of compound **1** ( $\text{CDCl}_3$ , 125 MHz)



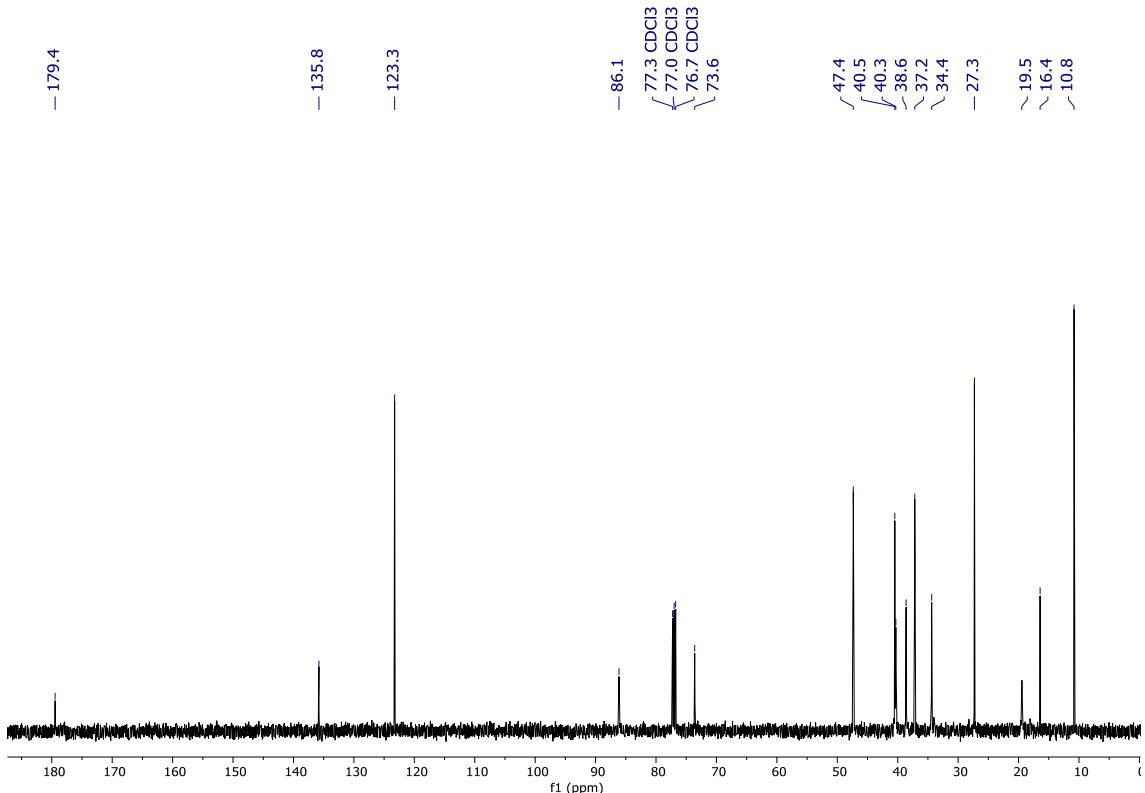
**Figure S3.**  $^1\text{H}$ -NMR spectrum of compound **2** ( $\text{CDCl}_3$ , 500 MHz)



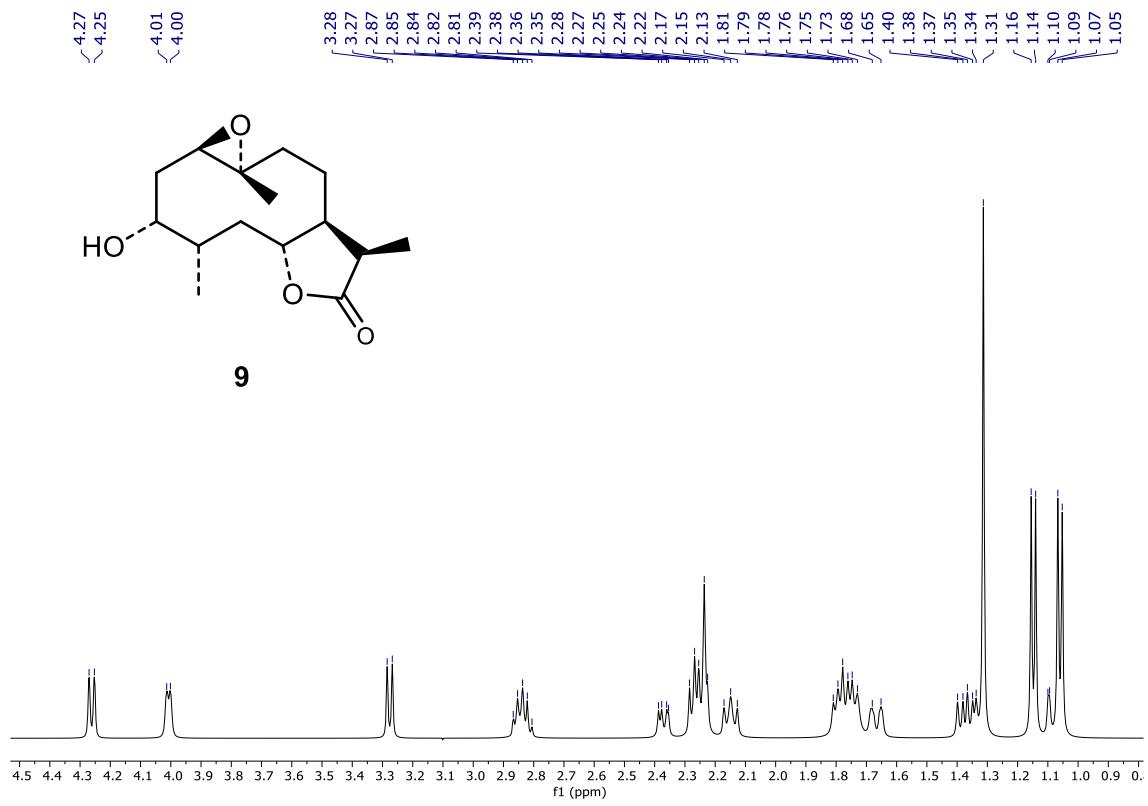
**Figure S4.**  $^{13}\text{C}$ -NMR spectrum of compound 2 ( $\text{CDCl}_3$ , 125 MHz)



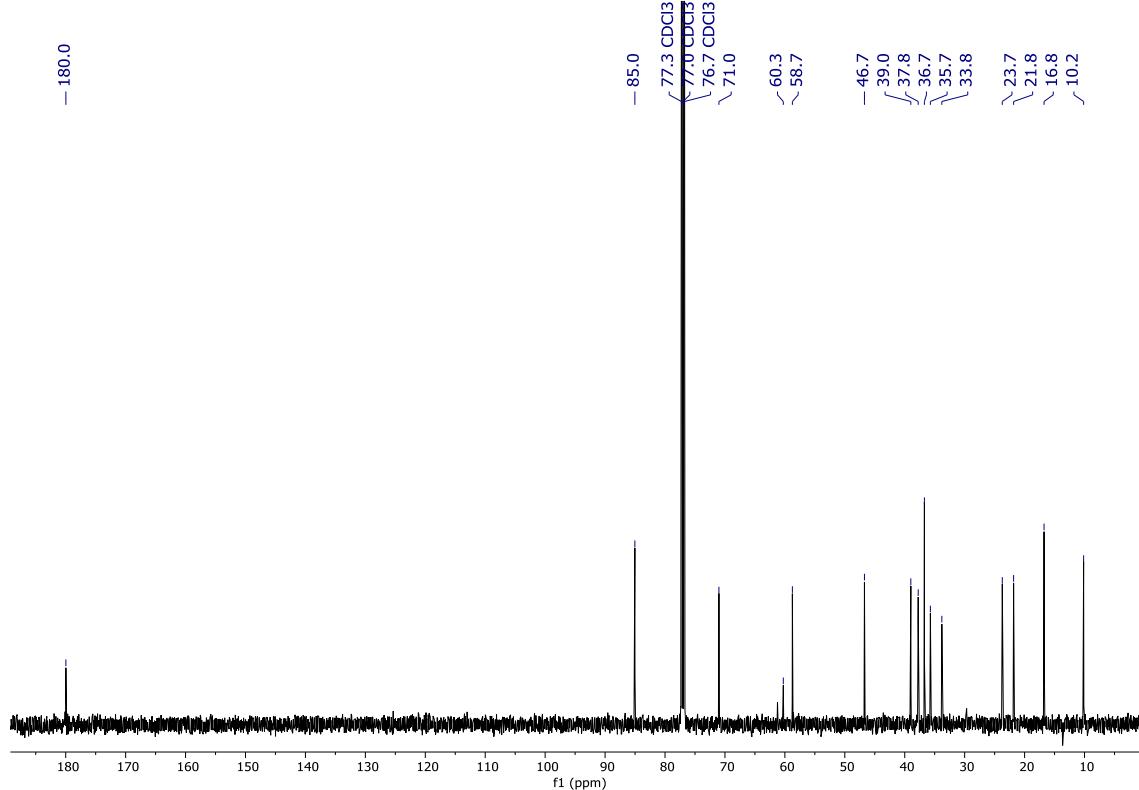
**Figure S5.**  $^1\text{H}$ -NMR spectrum of compound **3** ( $\text{CDCl}_3$ , 500 MHz)



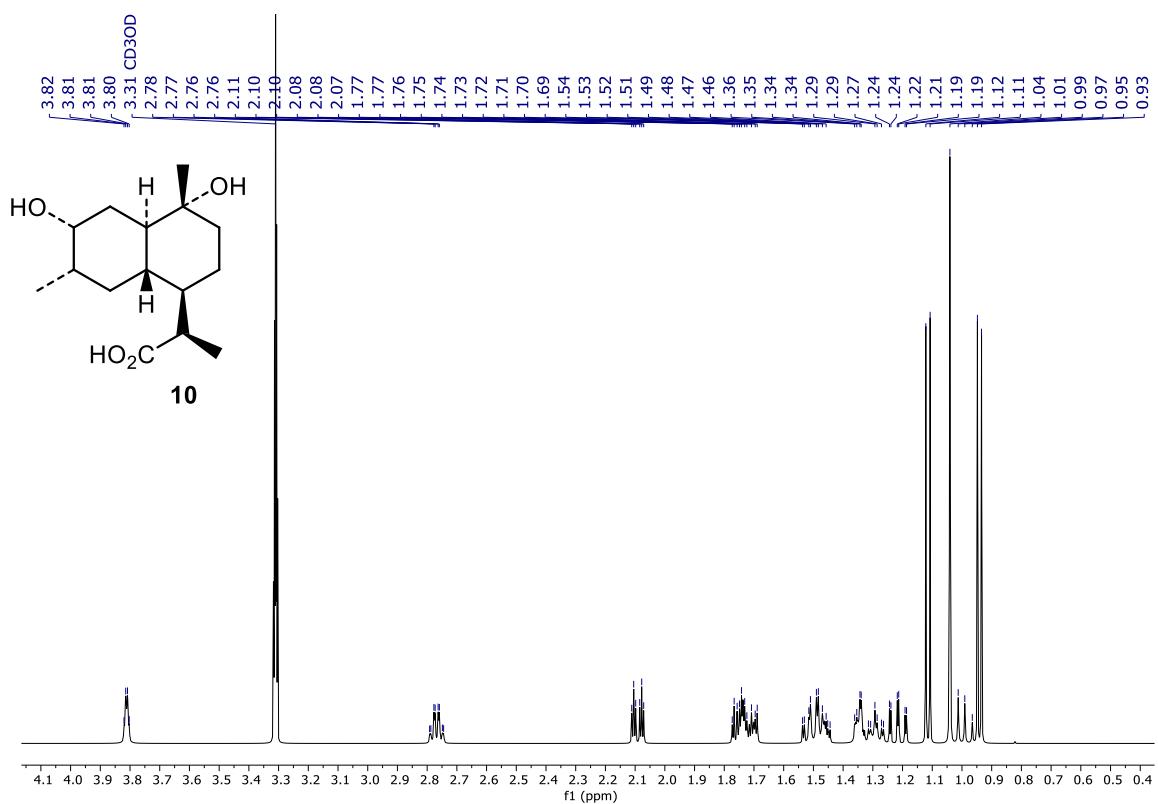
**Figure S6.**  $^{13}\text{C}$ -NMR spectrum of compound **3** ( $\text{CDCl}_3$ , 125 MHz)



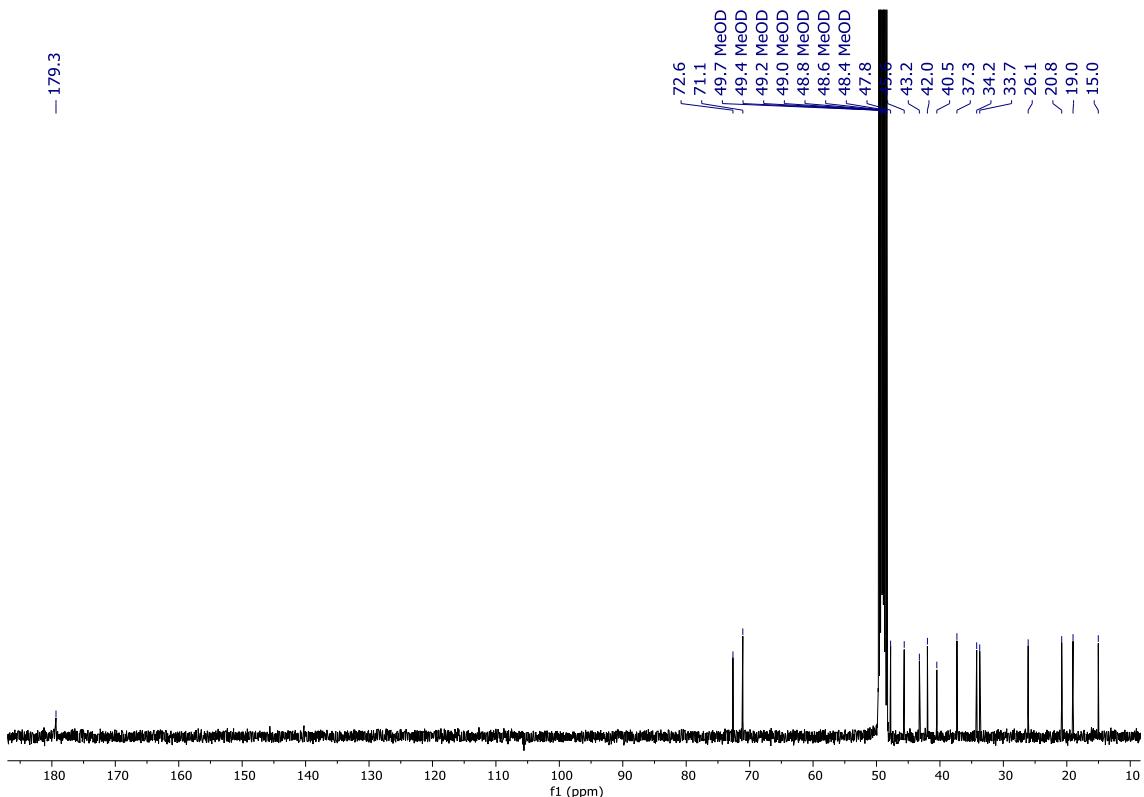
**Figure S7.** <sup>1</sup>H-NMR spectrum of compound 9 (CDCl<sub>3</sub>, 500 MHz)



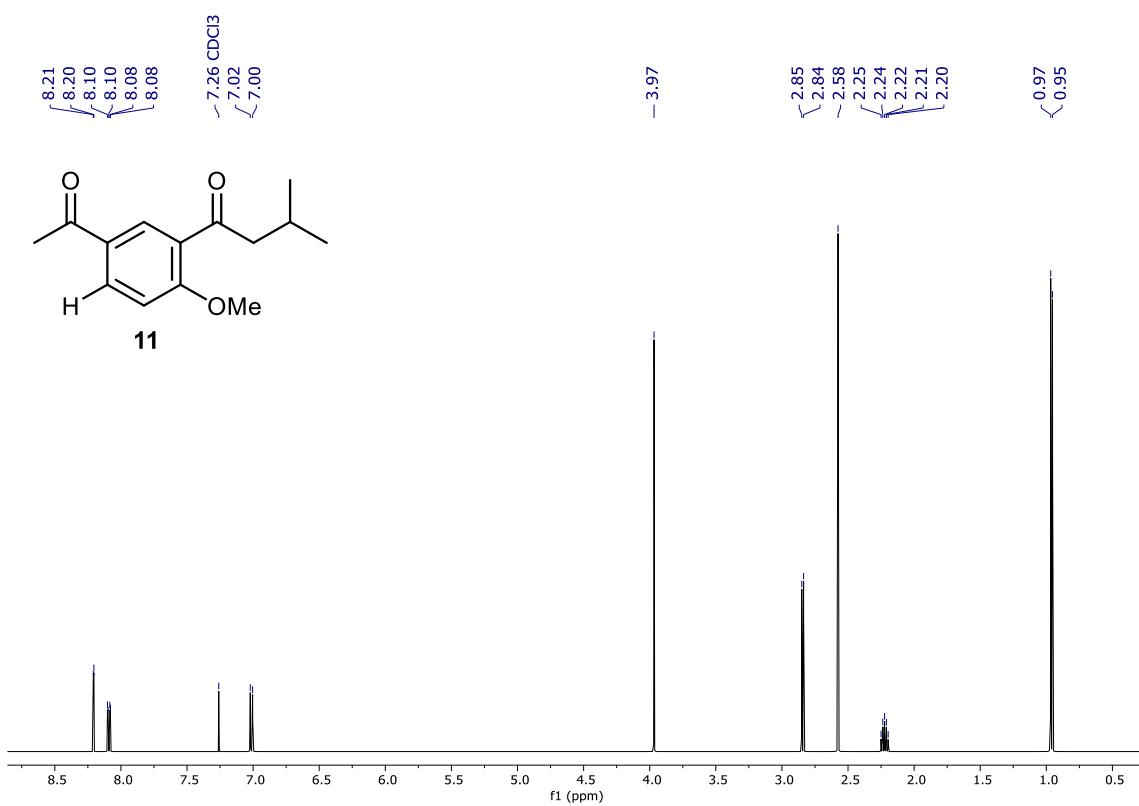
**Figure S8.** <sup>13</sup>C-NMR spectrum of compound 9 (CDCl<sub>3</sub>, 125 MHz)



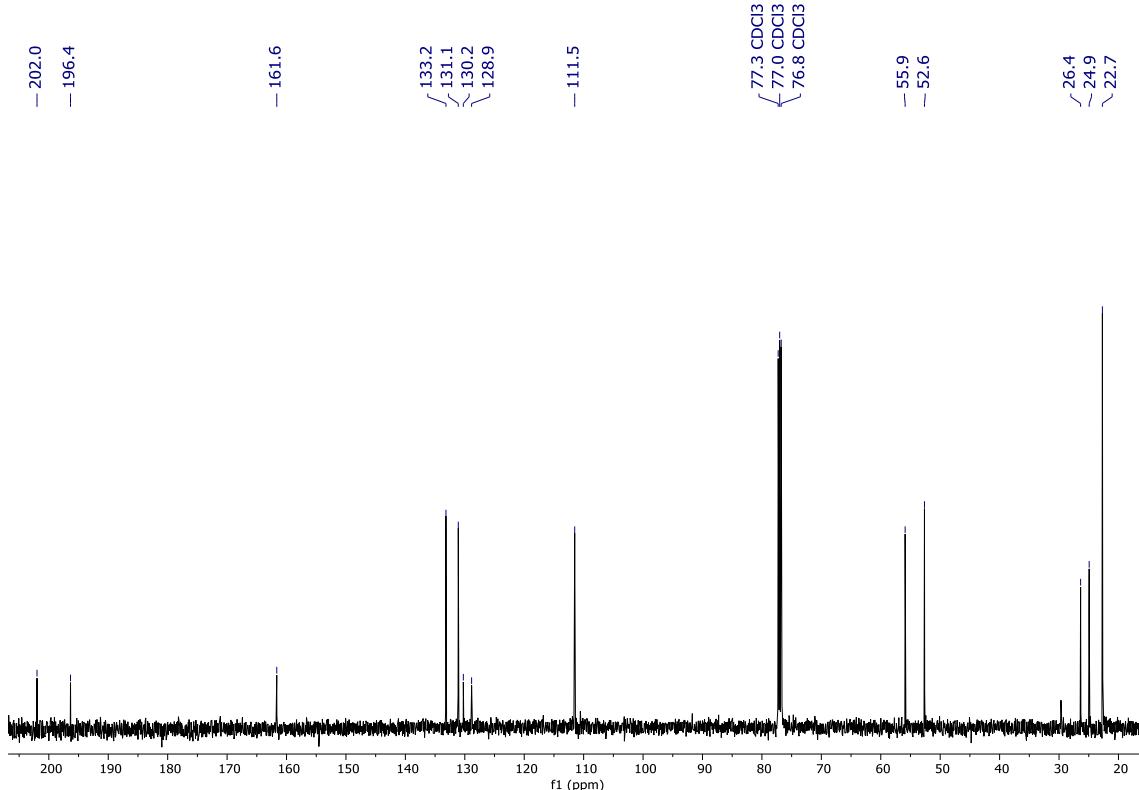
**Figure S9.** <sup>1</sup>H-NMR spectrum of compound **10** (CD<sub>3</sub>OD, 500 MHz)



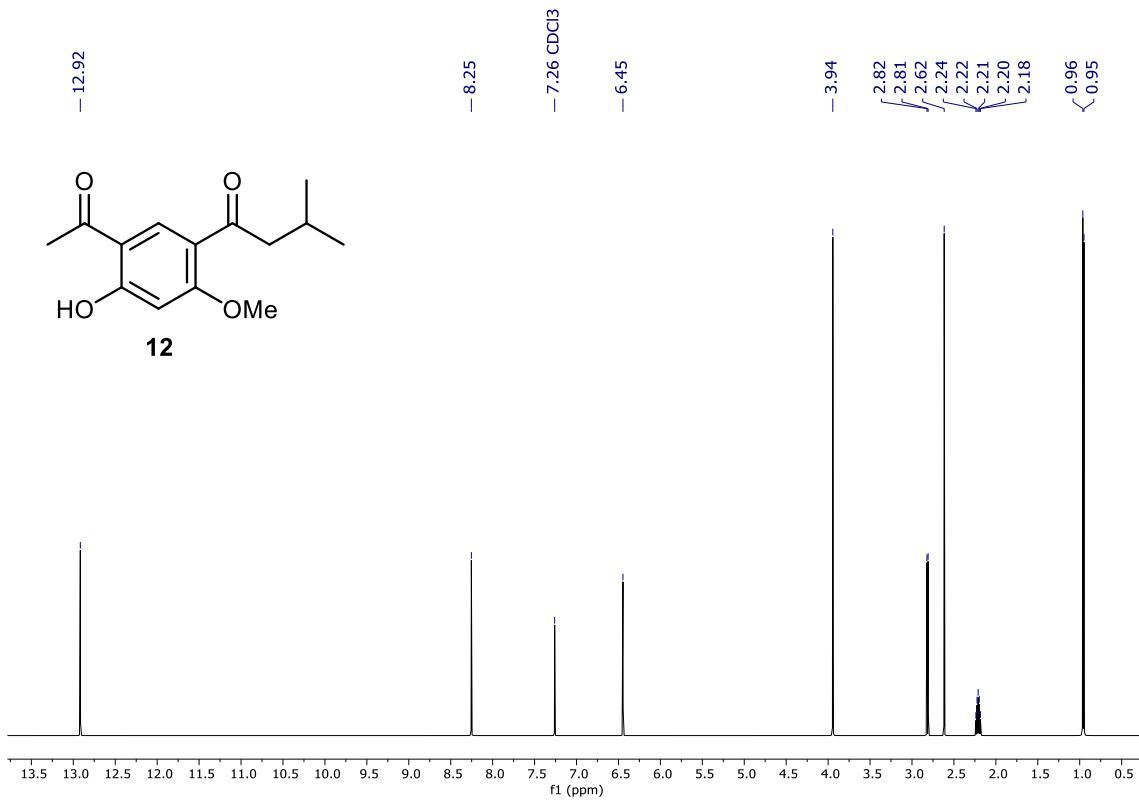
**Figure S10.** <sup>13</sup>C-NMR spectrum of compound **10** (CD<sub>3</sub>OD, 125 MHz)



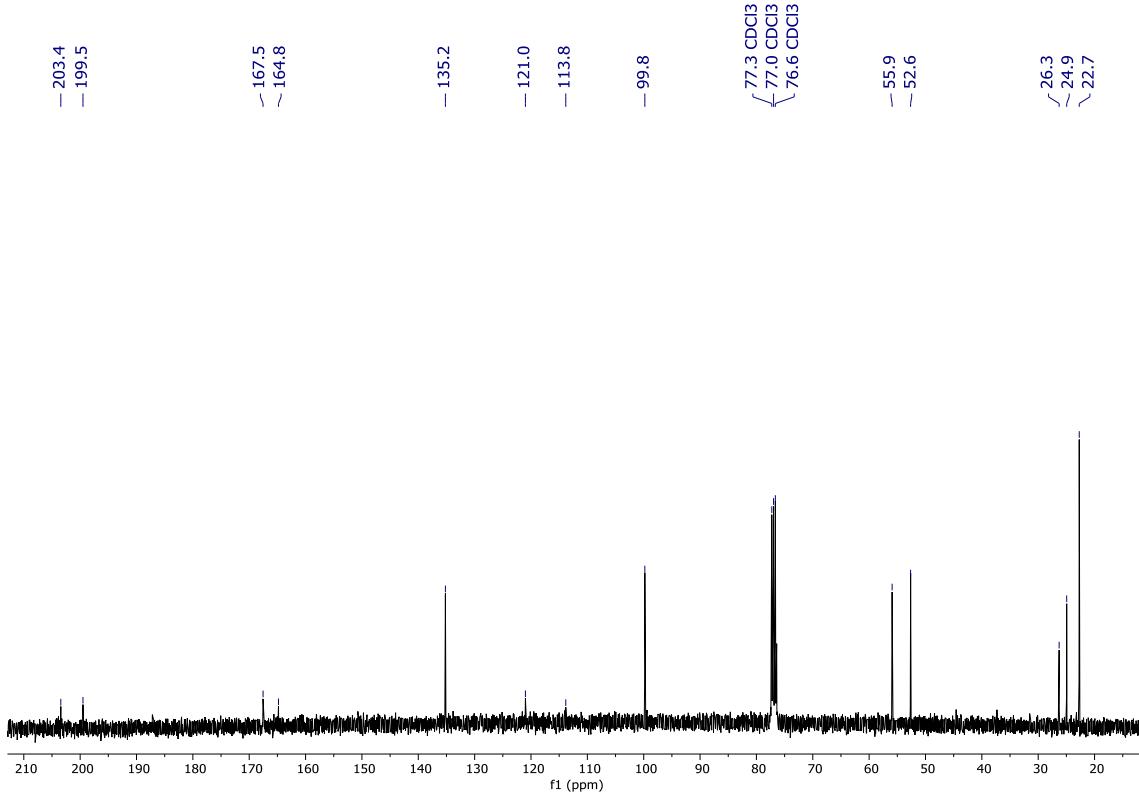
**Figure S11.** <sup>1</sup>H-NMR spectrum of compound **11** (CDCl<sub>3</sub>, 500 MHz)



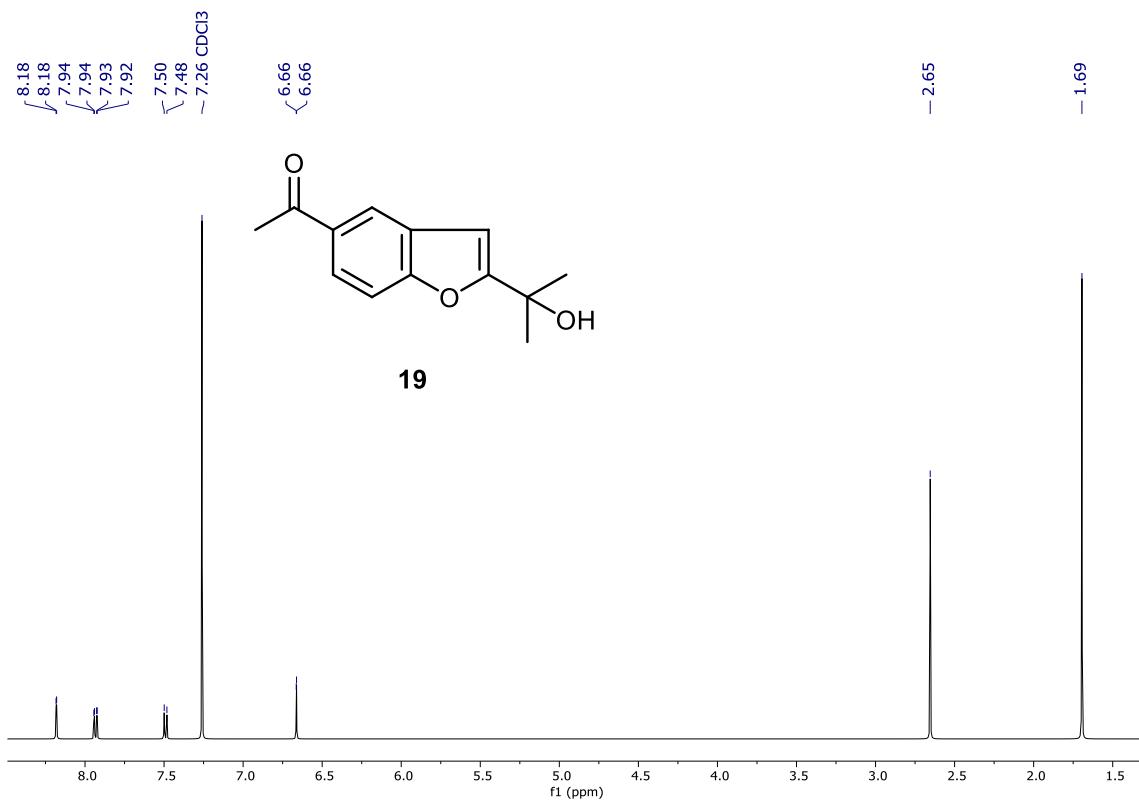
**Figure S12.** <sup>13</sup>C-NMR spectrum of compound **11** (CDCl<sub>3</sub>, 125 MHz)



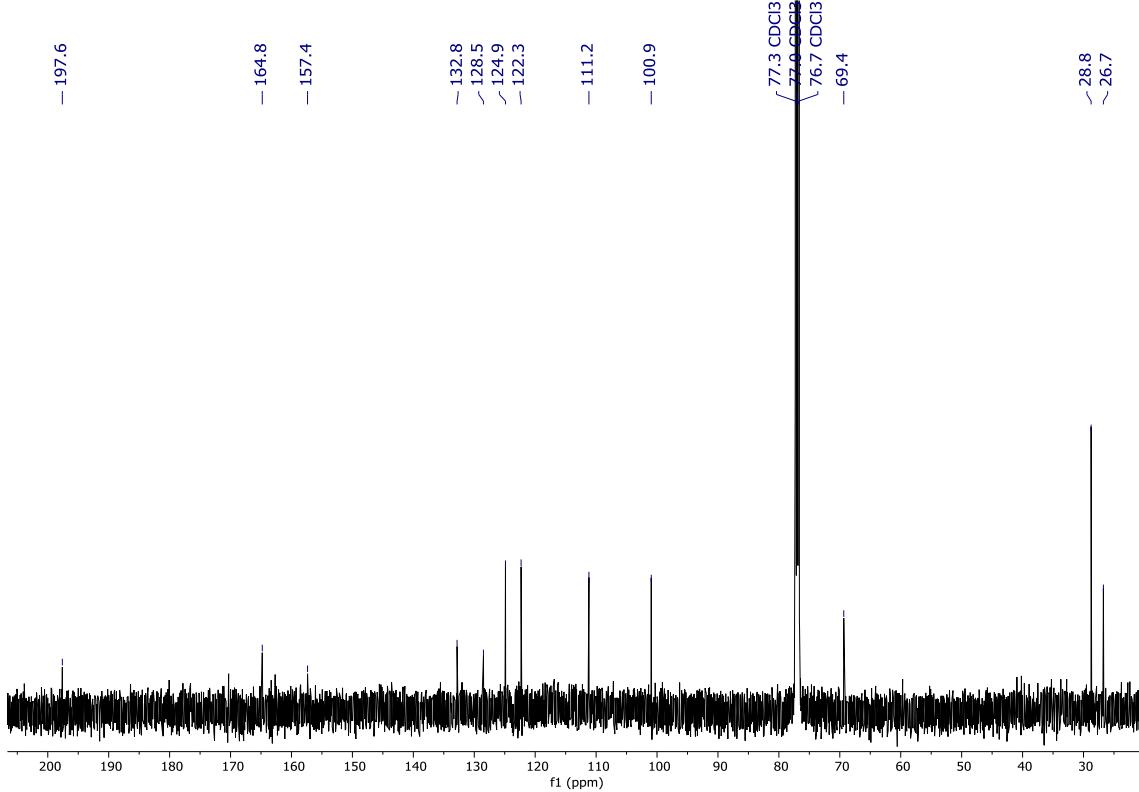
**Figure S13.** <sup>1</sup>H-NMR spectrum of compound **12** (CDCl<sub>3</sub>, 500 MHz)



**Figure S14.** <sup>13</sup>C-NMR spectrum of compound **12** (CDCl<sub>3</sub>, 125 MHz)



**Figure S15.** <sup>1</sup>H-NMR spectrum of compound **19** ( $\text{CDCl}_3$ , 500 MHz)



**Figure S16.** <sup>13</sup>C-NMR spectrum of compound **19** ( $\text{CDCl}_3$ , 125 MHz)