

## Supporting information

### **Antimicrobial activity and cytotoxicity of polyketides isolated from the mushroom *Xerula* sp. BCC56836**

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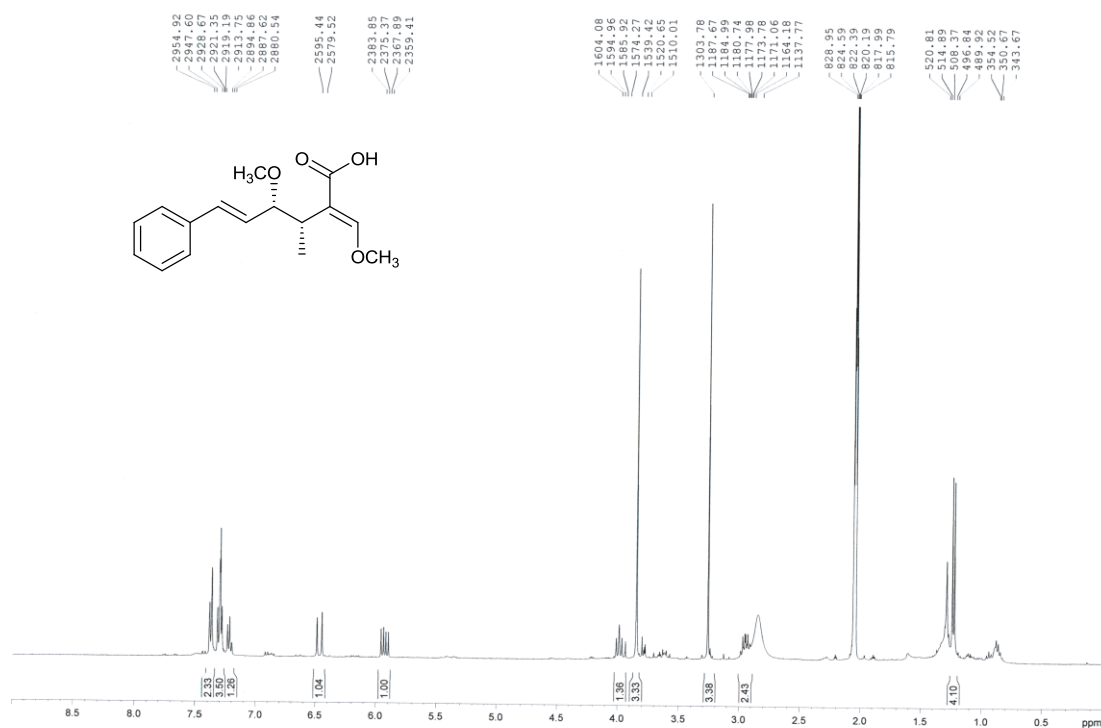
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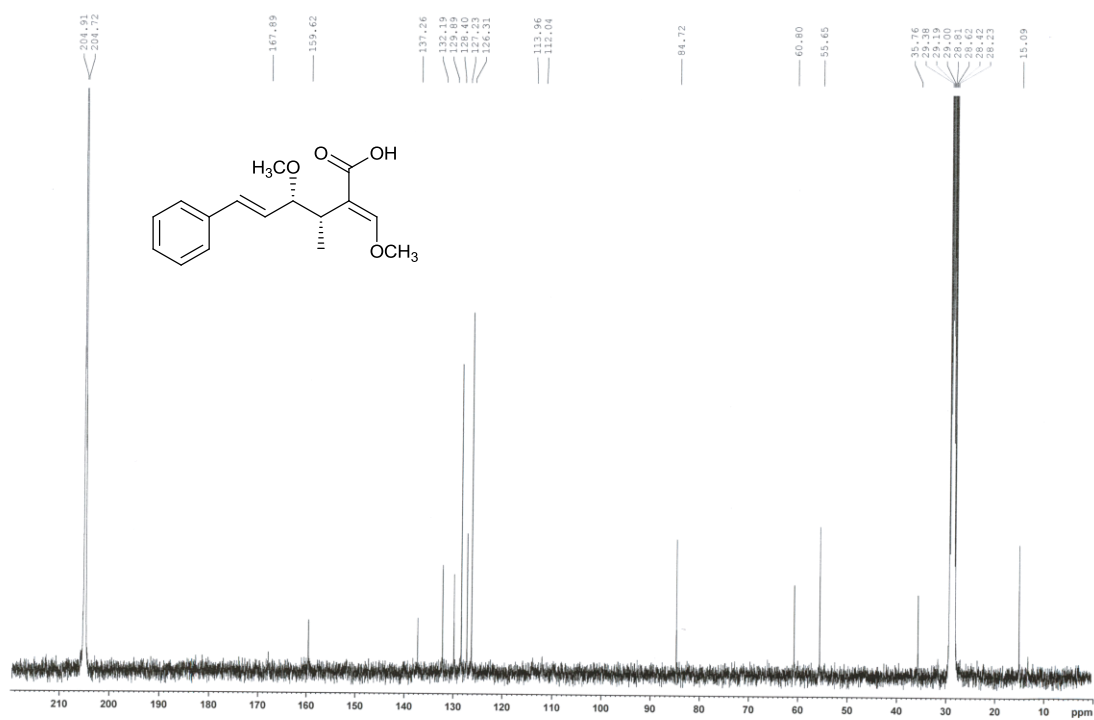


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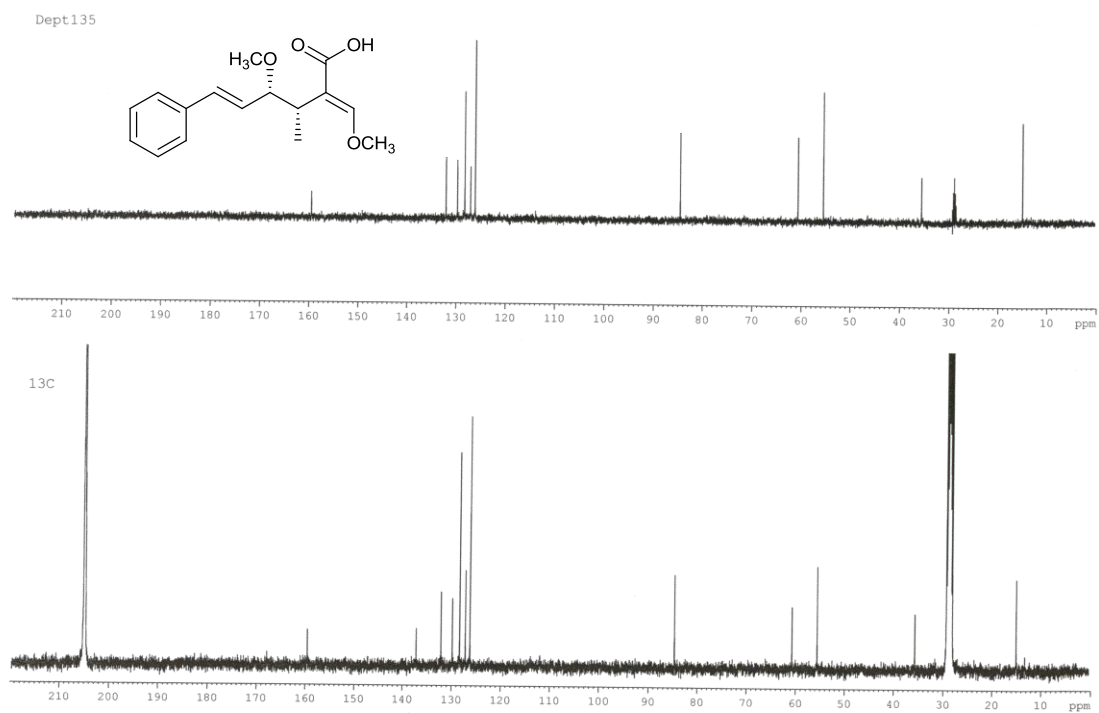
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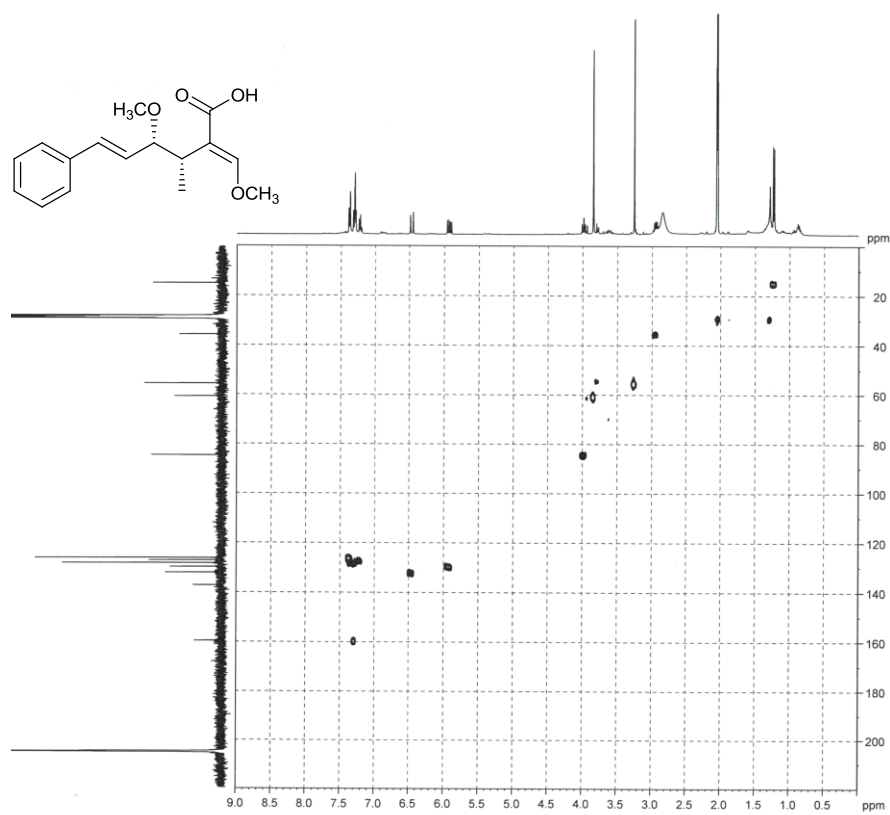
**Figure S1.** <sup>1</sup>H NMR spectrum of compound **1** (400 MHz, acetone-*d*<sub>6</sub>).



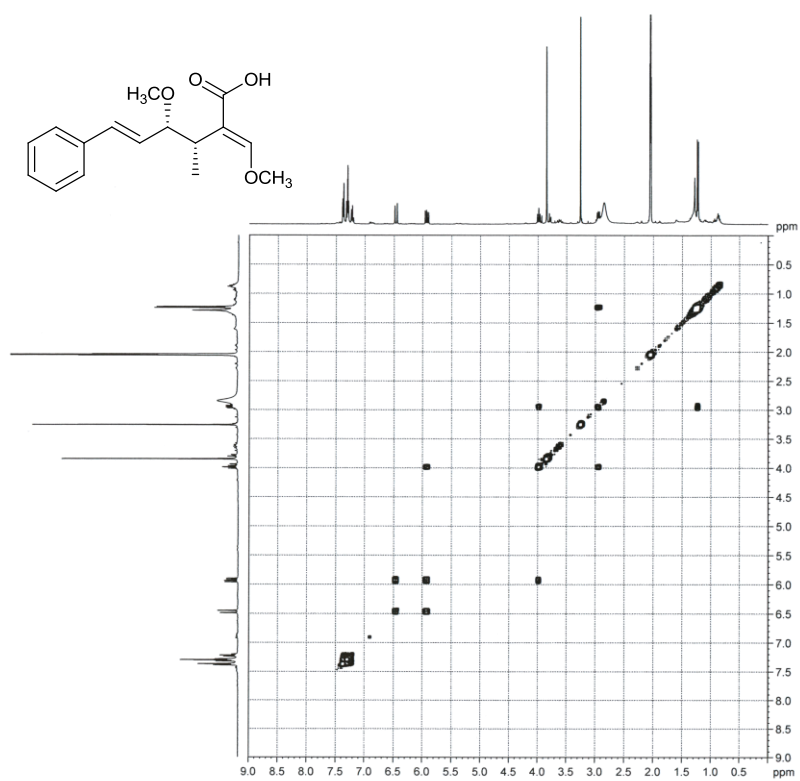
**Figure S2.** <sup>13</sup>C NMR spectrum of compound **1** (100 MHz, acetone-*d*<sub>6</sub>).



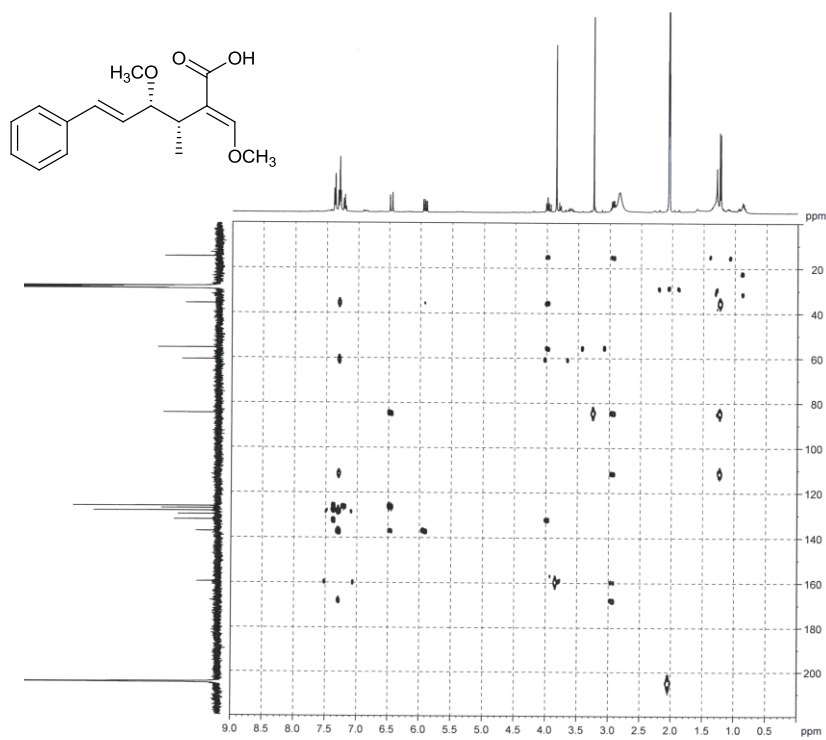
**Figure S3.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **1** (100 MHz, acetone- $d_6$ ).



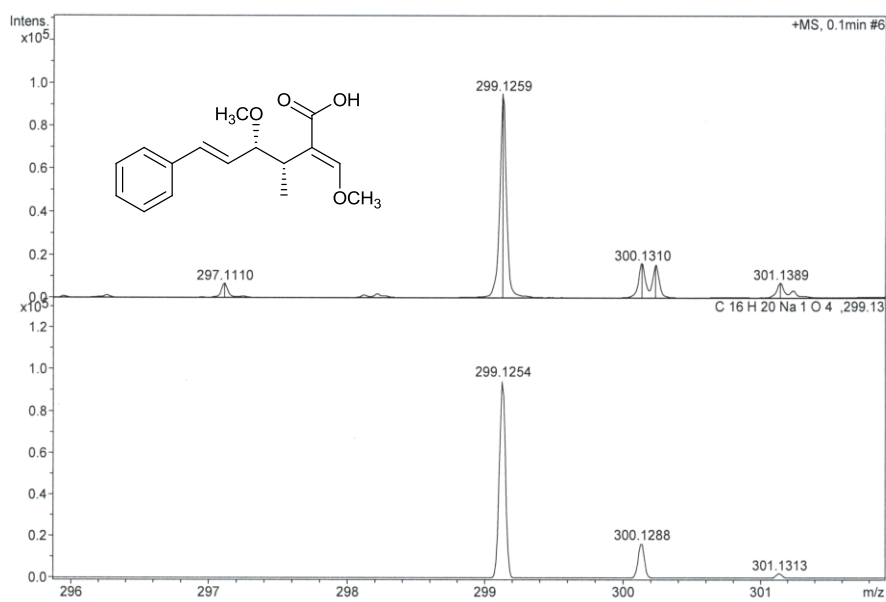
**Figure S4.** HMQC spectrum of compound **1** (400 MHz, acetone- $d_6$ ).



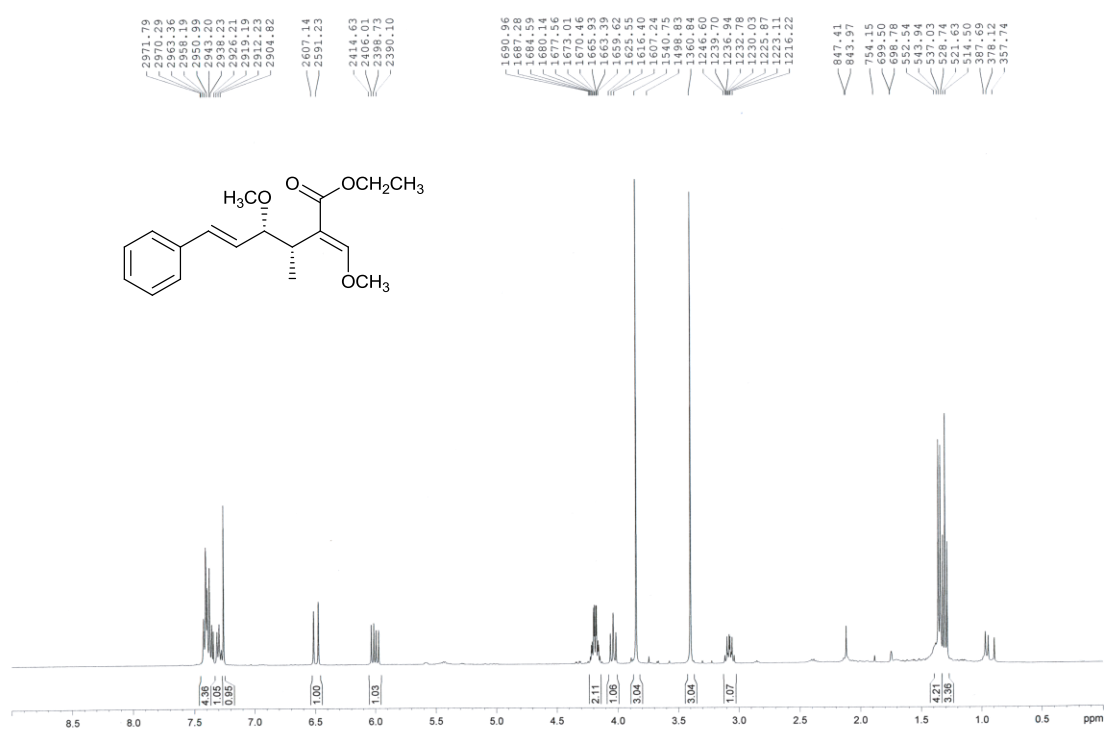
**Figure S5.** COSY spectrum of compound **1** (400 MHz, acetone- $d_6$ ).



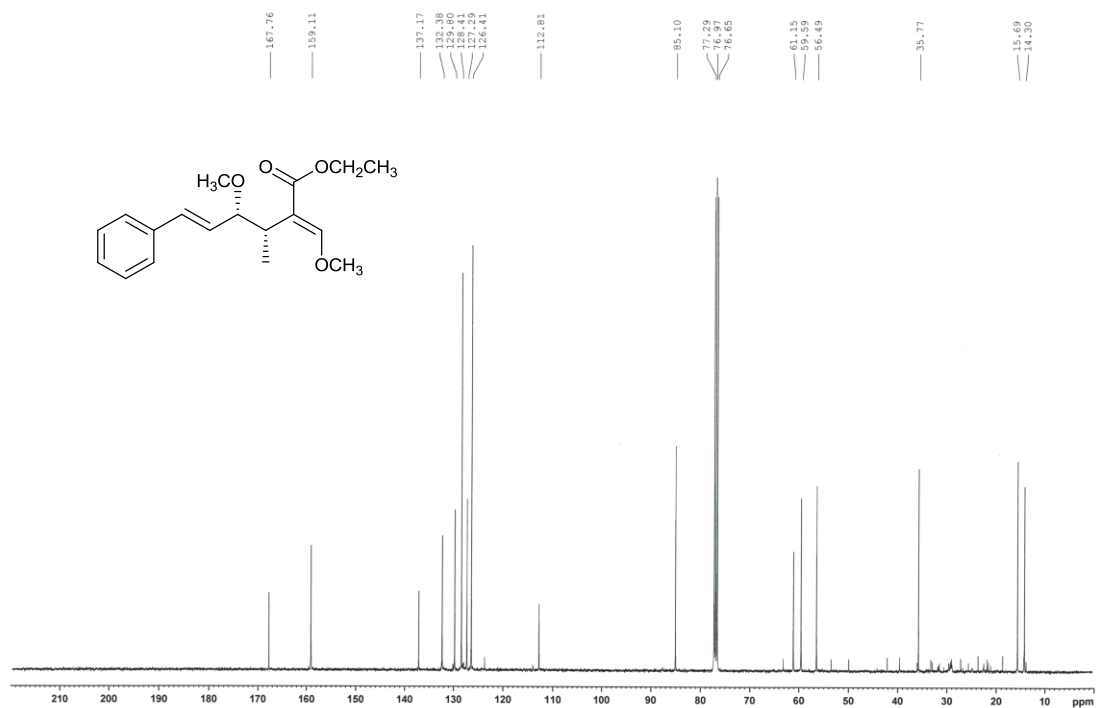
**Figure S6.** HMBC spectrum of compound **1** (400 MHz, acetone- $d_6$ ).



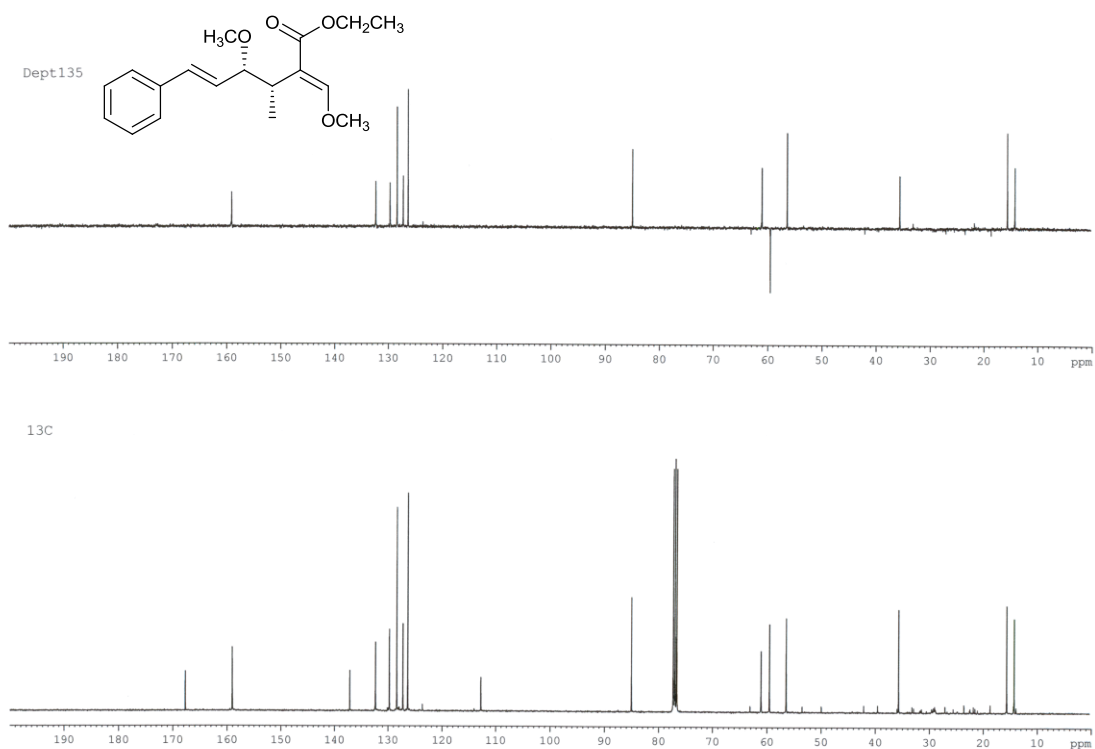
**Figure S7.** HRESIMS of compound **1**.



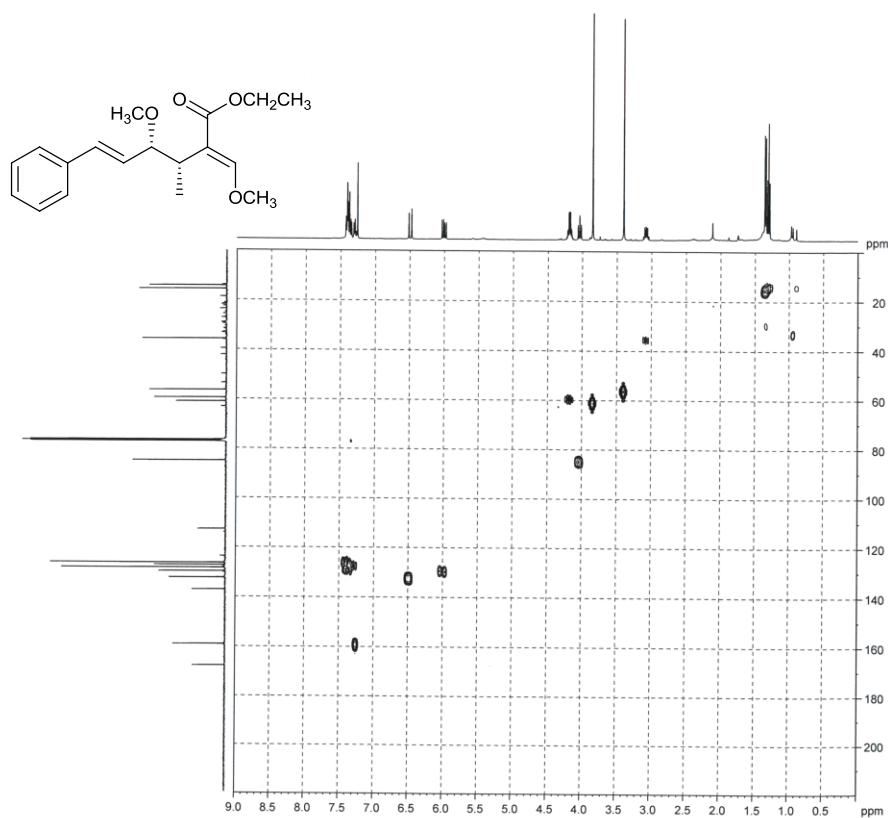
**Figure S8.** <sup>1</sup>H NMR spectrum of compound **3** (400 MHz, CDCl<sub>3</sub>).



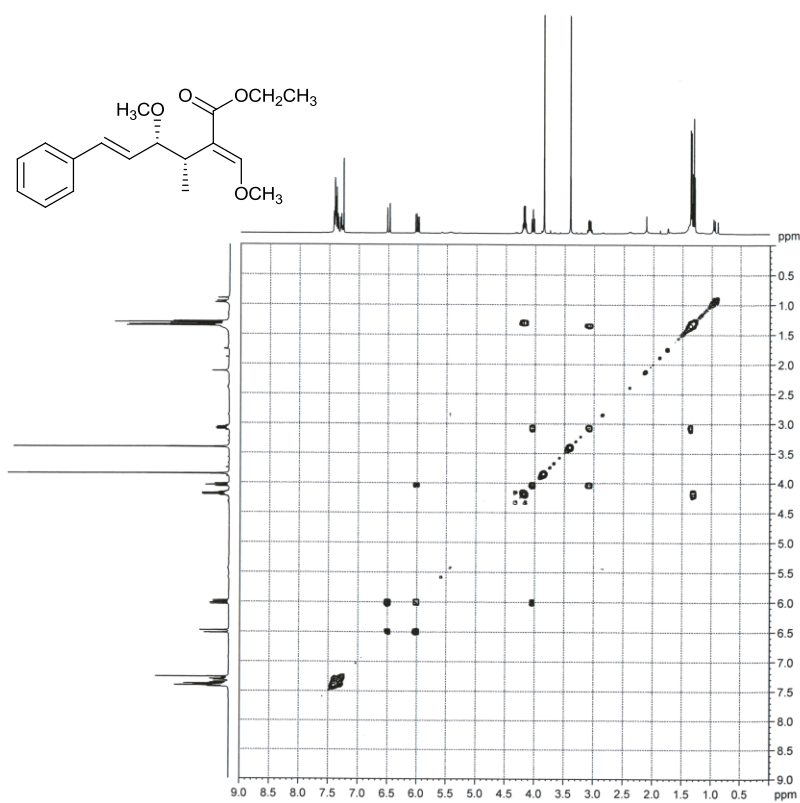
**Figure S9.**  $^{13}\text{C}$  NMR spectrum of compound **3** (100 MHz,  $\text{CDCl}_3$ ).



**Figure S10.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **3** (100 MHz,  $\text{CDCl}_3$ ).

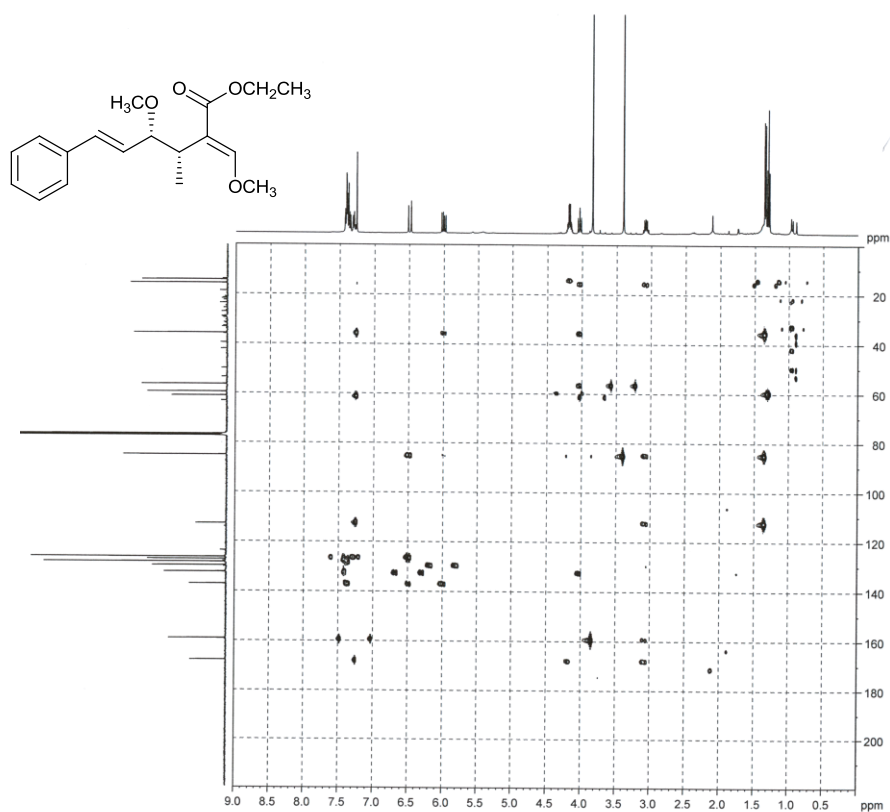


**Figure S11.** HMQC spectrum of compound **3** (400 MHz, CDCl<sub>3</sub>).

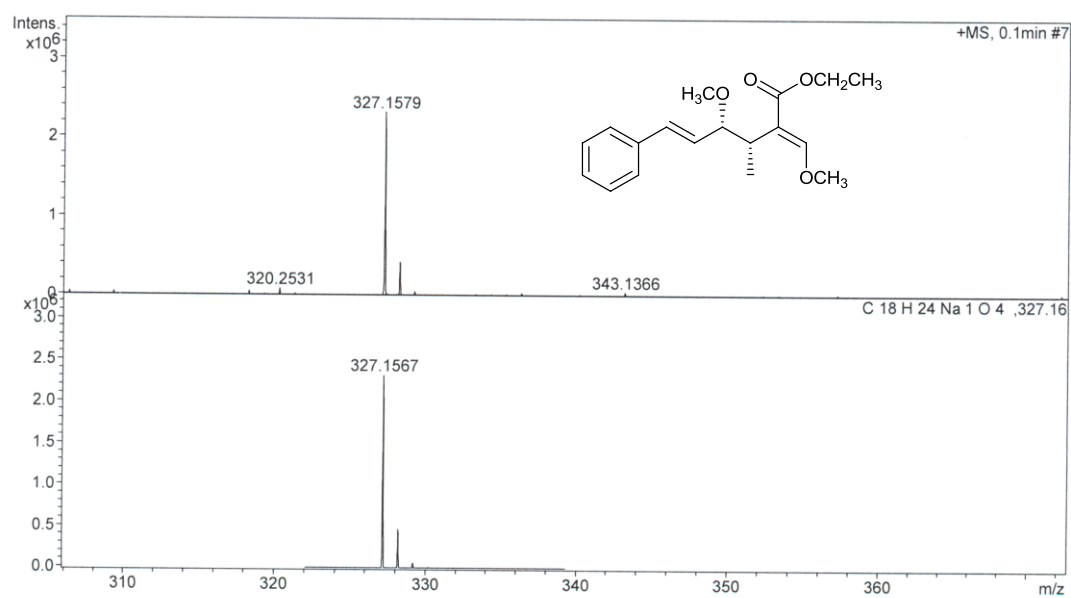


**Figure S12.** COSY spectrum of compound **3** (400 MHz, CDCl<sub>3</sub>).



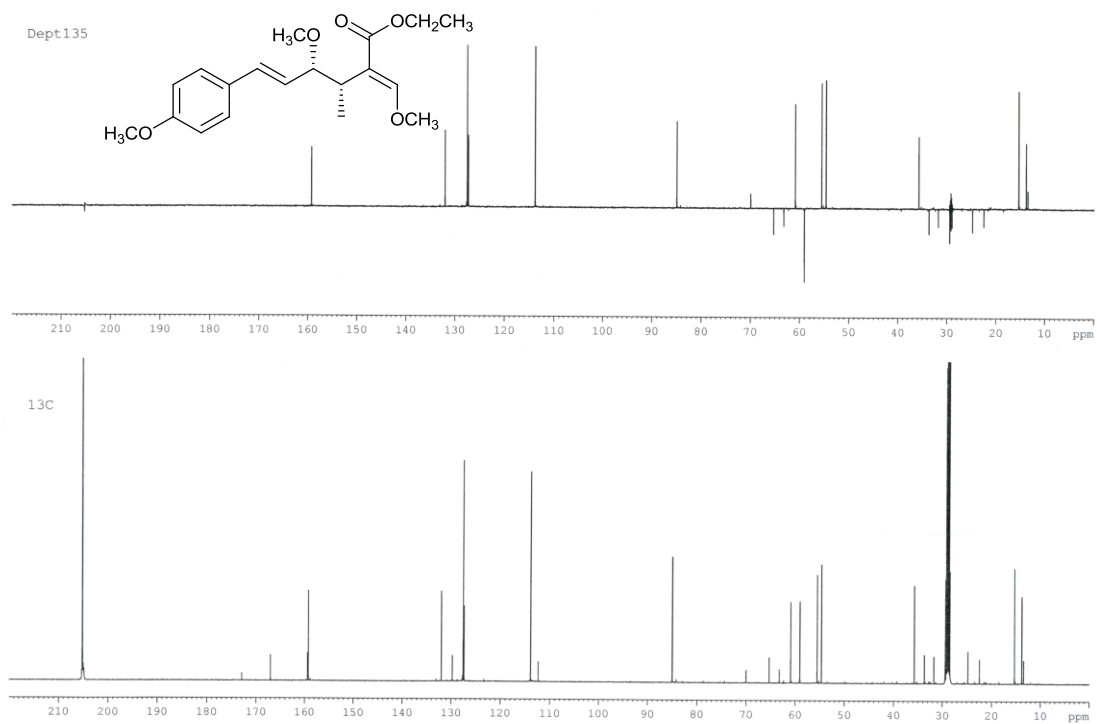


**Figure S13.** HMBC spectrum of compound **3** (400 MHz, CDCl<sub>3</sub>).

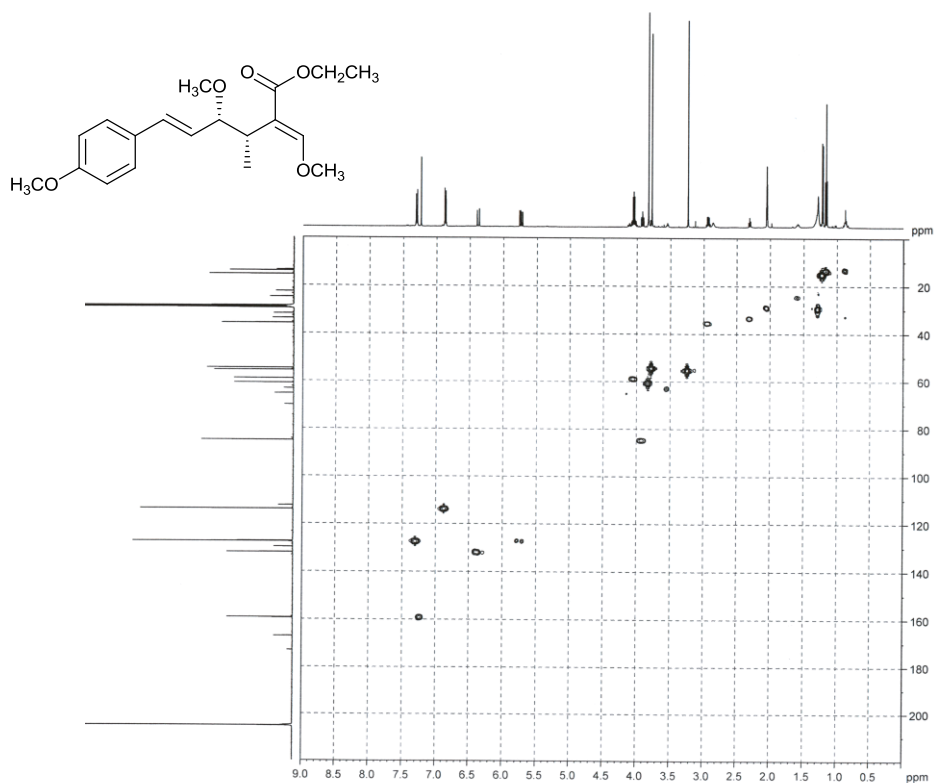


**Figure S14.** HRESIMS of compound **3**.

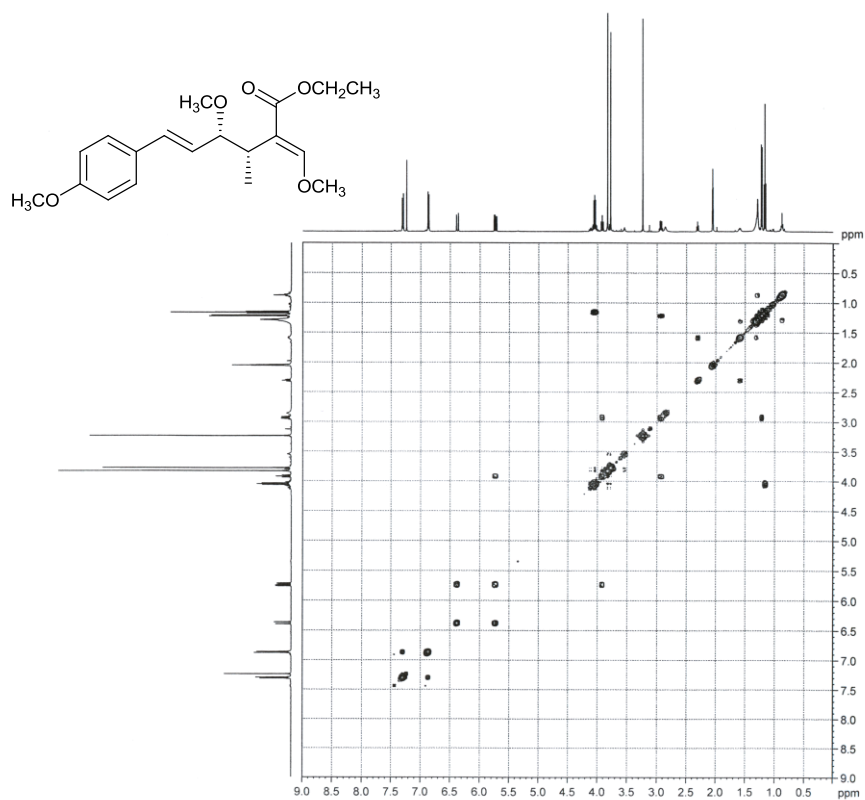




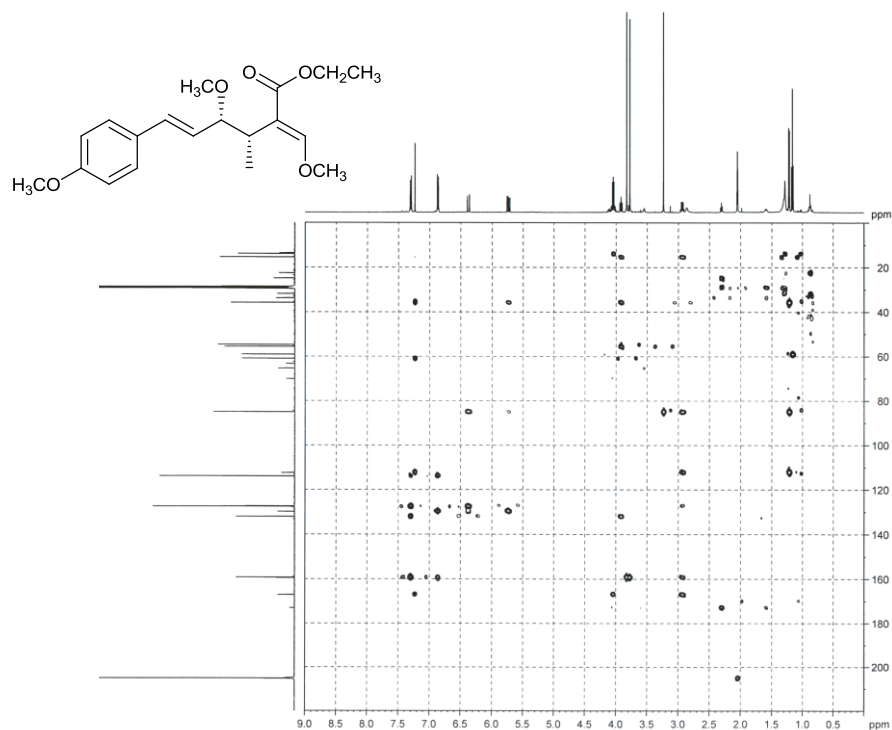
**Figure S17.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **5** (125 MHz, acetone- $d_6$ ).



**Figure S18.** HMQC spectrum of compound **5** (500 MHz, acetone- $d_6$ ).

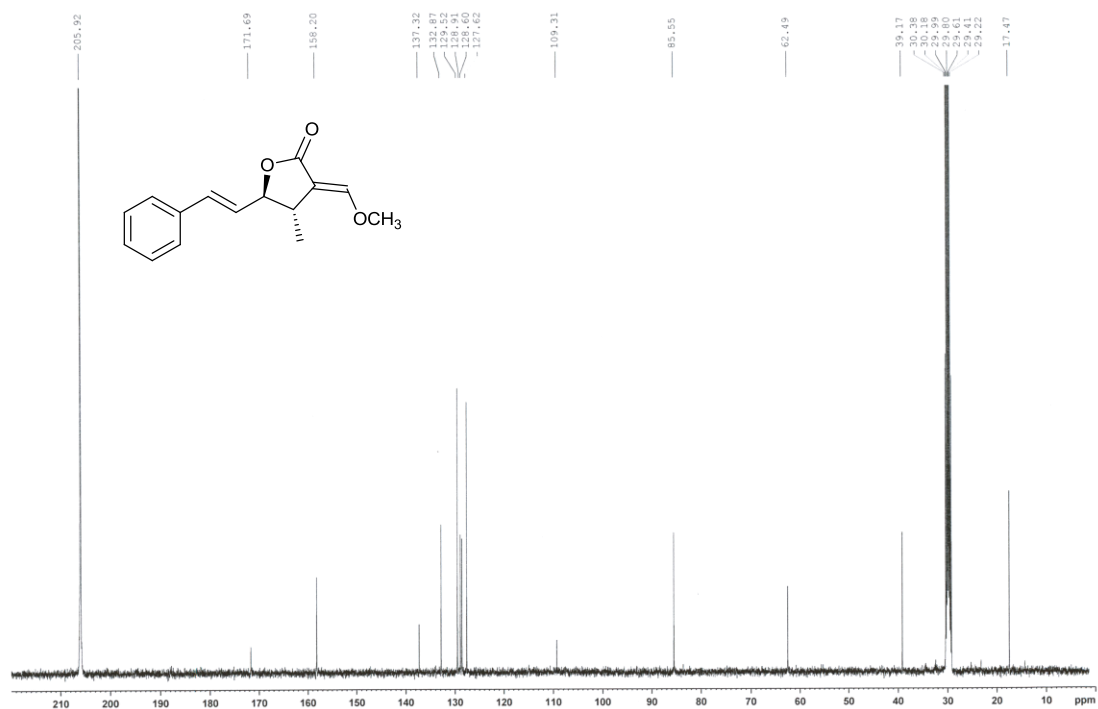


**Figure S19.** COSY spectrum of compound **5** (500 MHz, acetone- $d_6$ ).

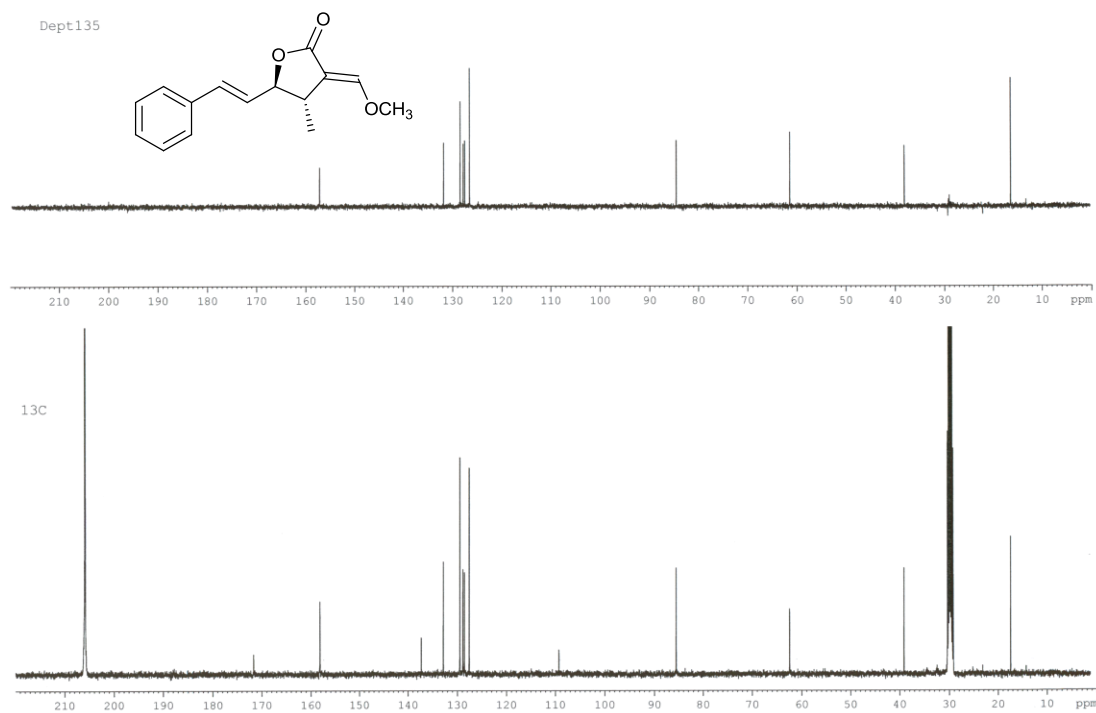


**Figure S20.** HMBC spectrum of compound **5** (500 MHz, acetone- $d_6$ ).

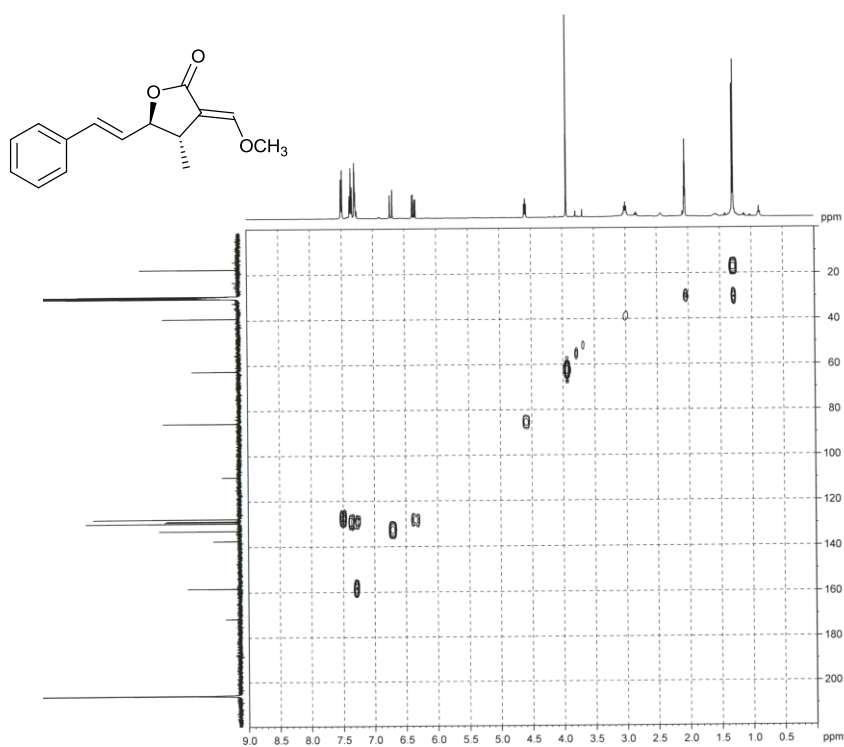




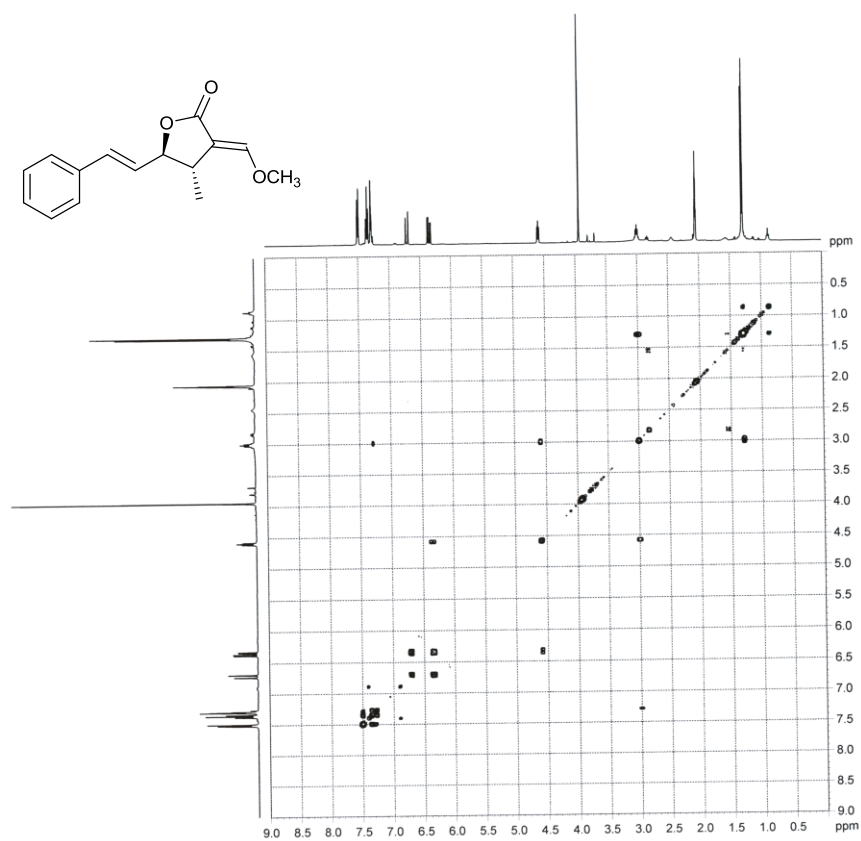
**Figure S23.** <sup>13</sup>C NMR spectrum of compound **6** (100 MHz, acetone-*d*<sub>6</sub>).



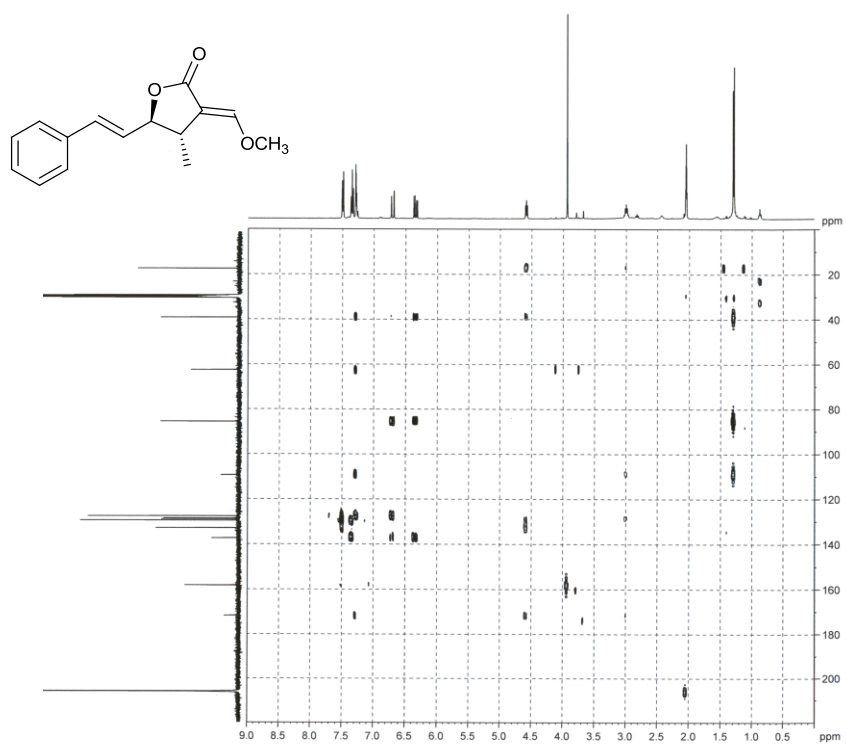
**Figure S24.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **6** (100 MHz, acetone-*d*<sub>6</sub>).



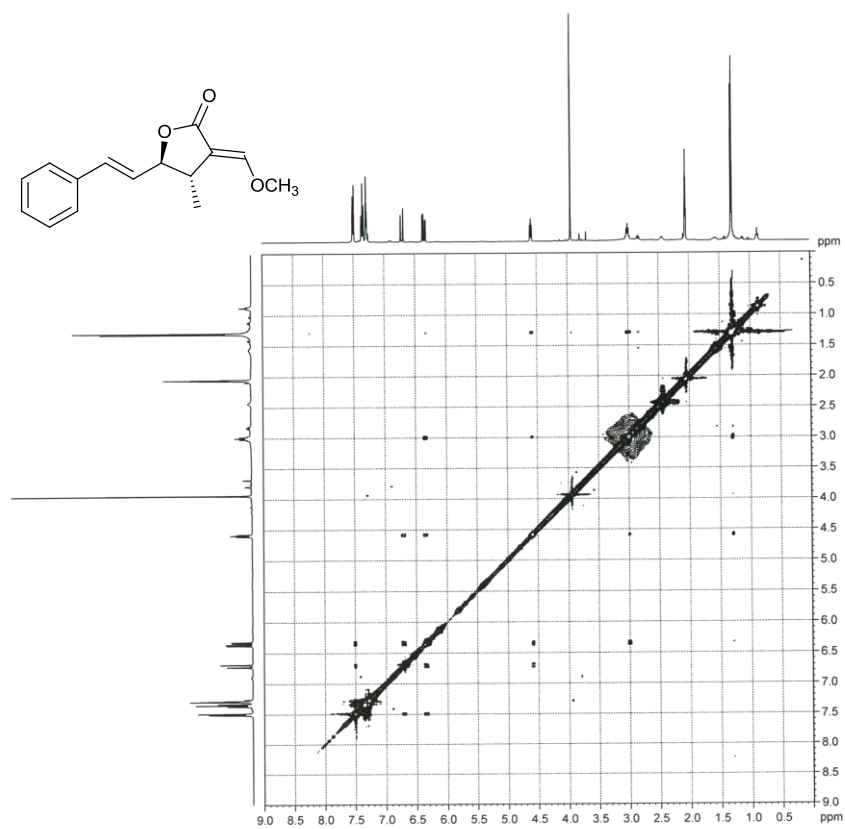
**Figure S25.** HMQC spectrum of compound **6** (400 MHz, acetone- $d_6$ ).



**Figure S26.** COSY spectrum of compound **6** (400 MHz, acetone- $d_6$ ).



**Figure S27.** HMBC spectrum of compound **6** (400 MHz, acetone- $d_6$ ).

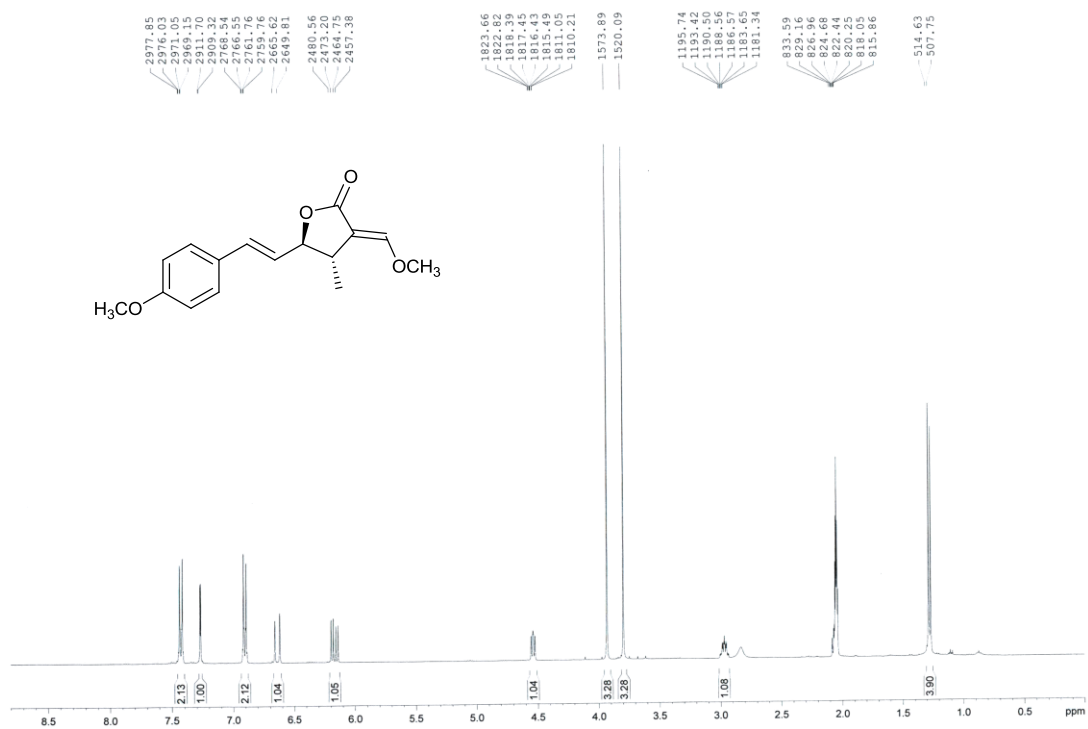


**Figure S28.** NOESY spectrum of compound **6** (400 MHz, acetone- $d_6$ ).

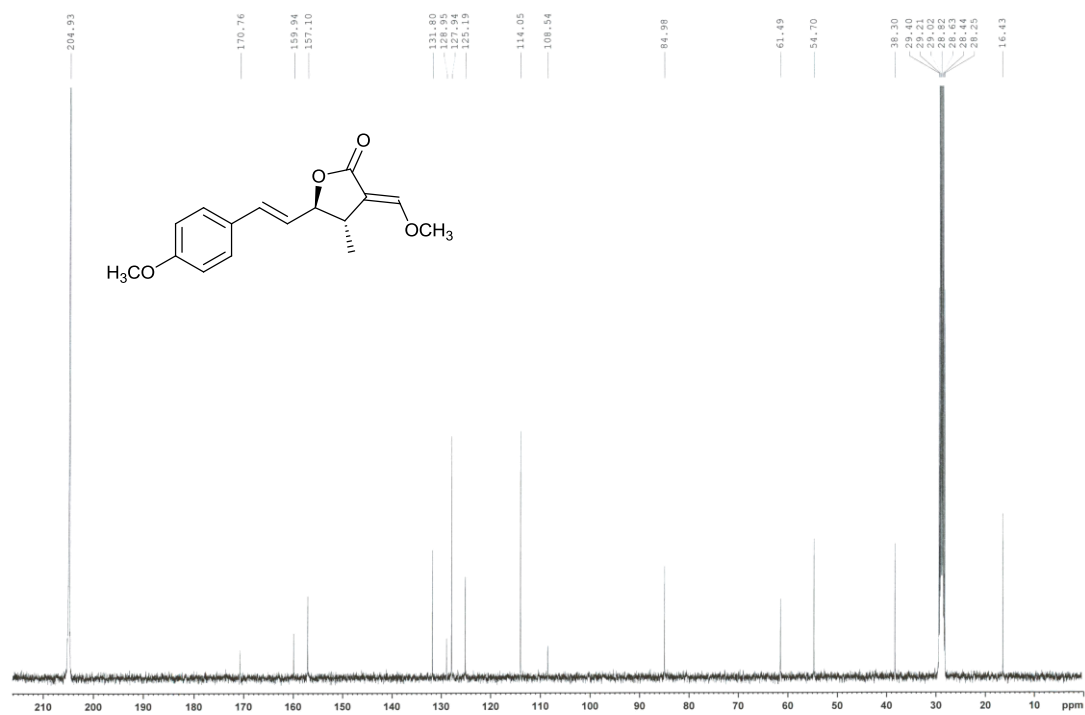




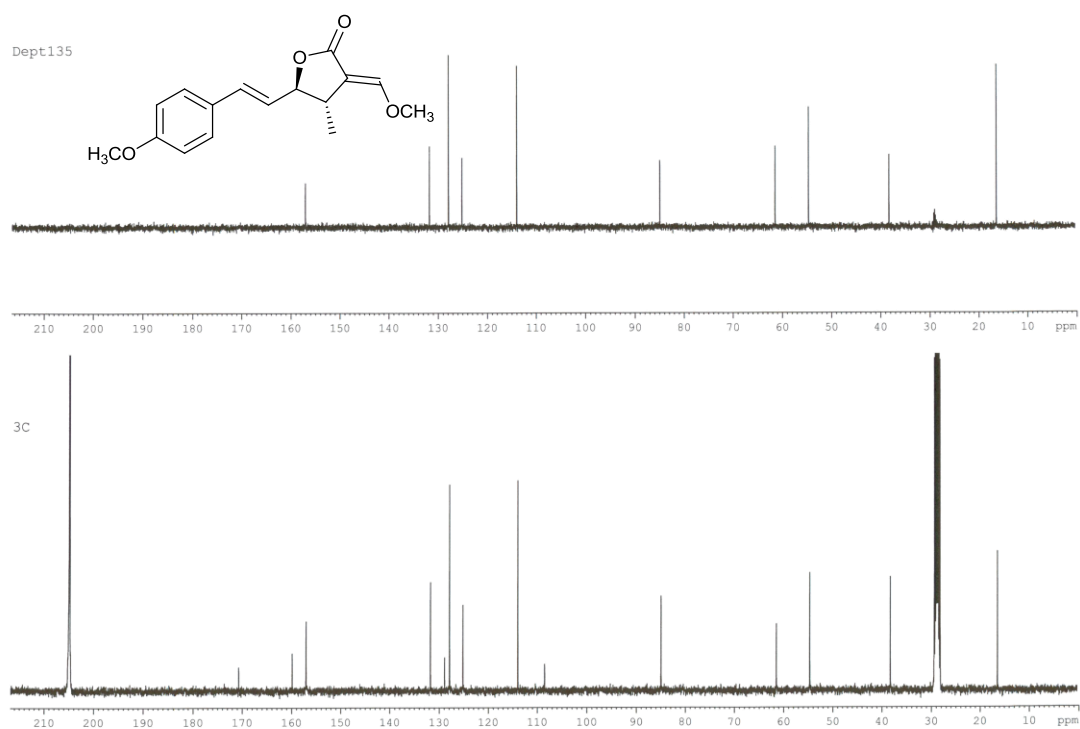
**Figure S29.** HRESIMS of compound **6**.



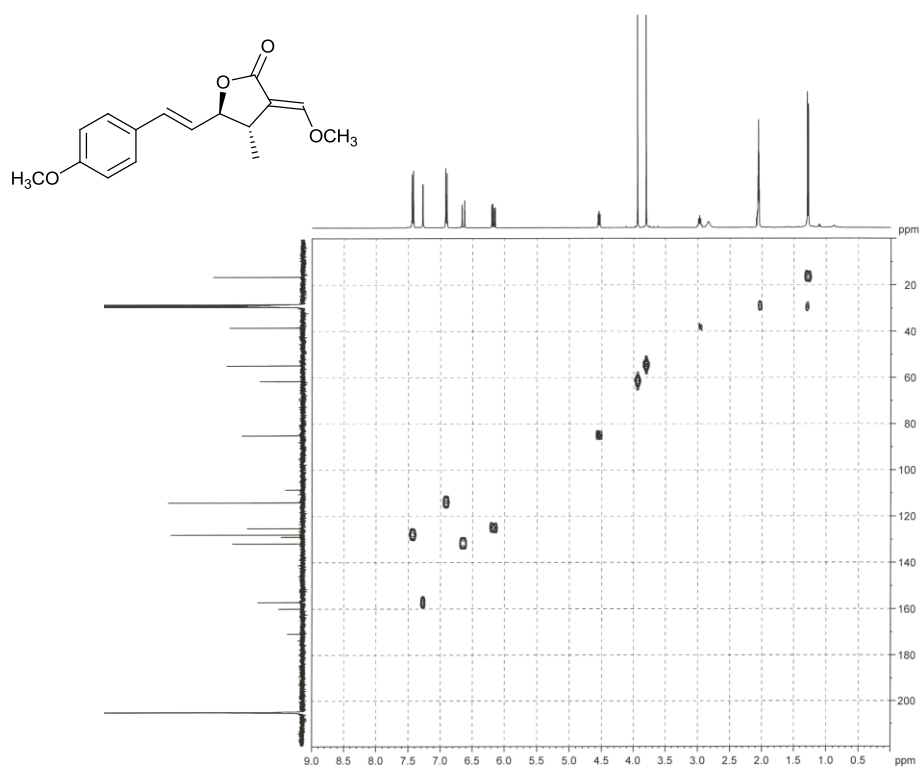
**Figure S30.** <sup>1</sup>H NMR spectrum of compound **7** (400 MHz, acetone-d<sub>6</sub>).



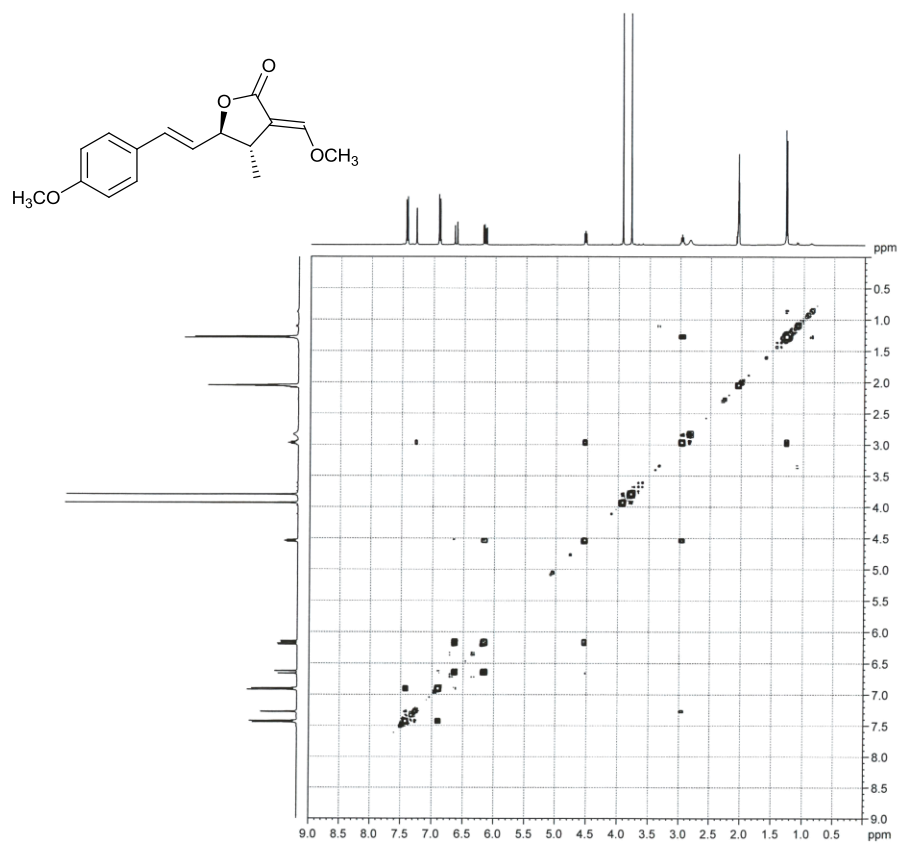
**Figure S31.** <sup>13</sup>C NMR spectrum of compound **7** (100 MHz, acetone-*d*<sub>6</sub>).



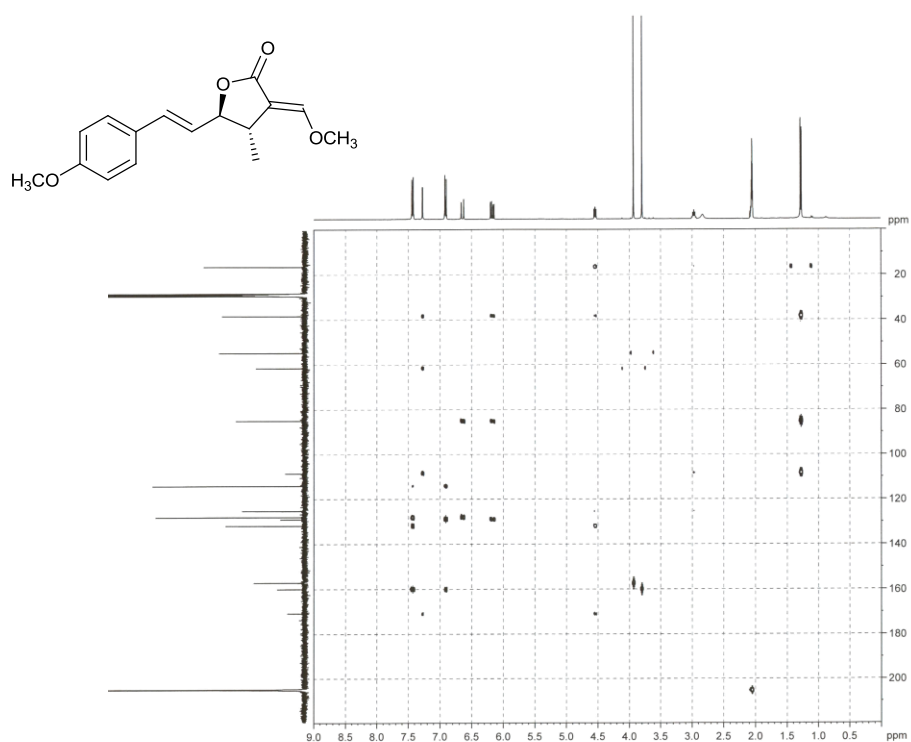
**Figure S32.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **7** (100 MHz, acetone-*d*<sub>6</sub>).



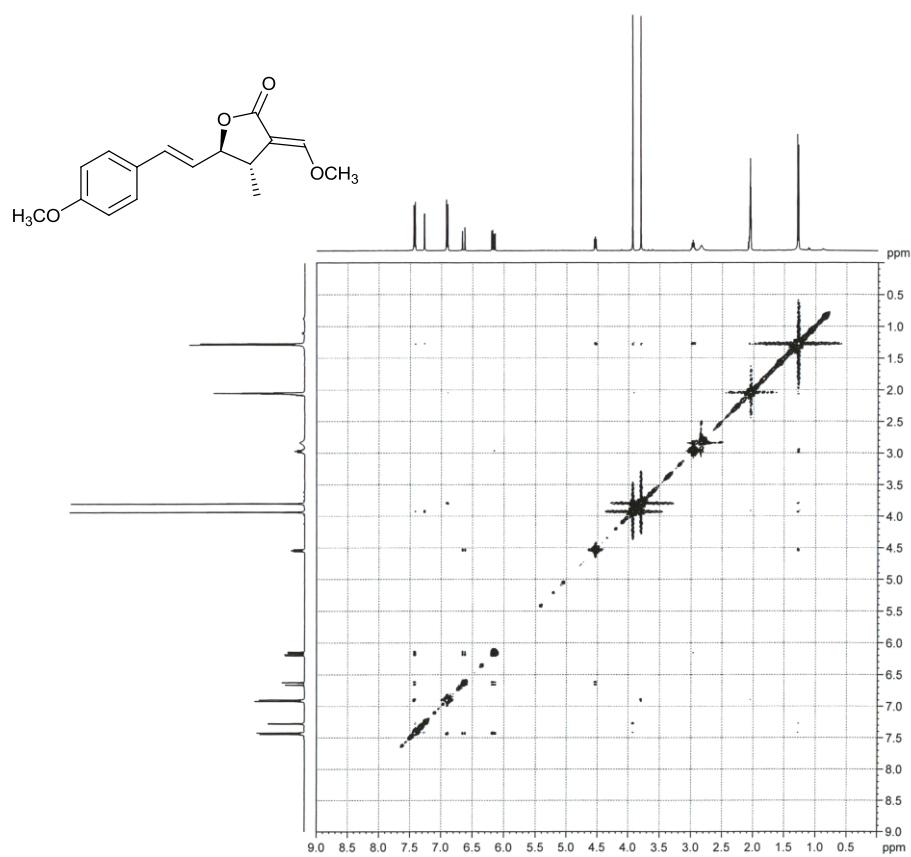
**Figure S33.** HMQC spectrum of compound **7** (400 MHz, acetone- $d_6$ ).



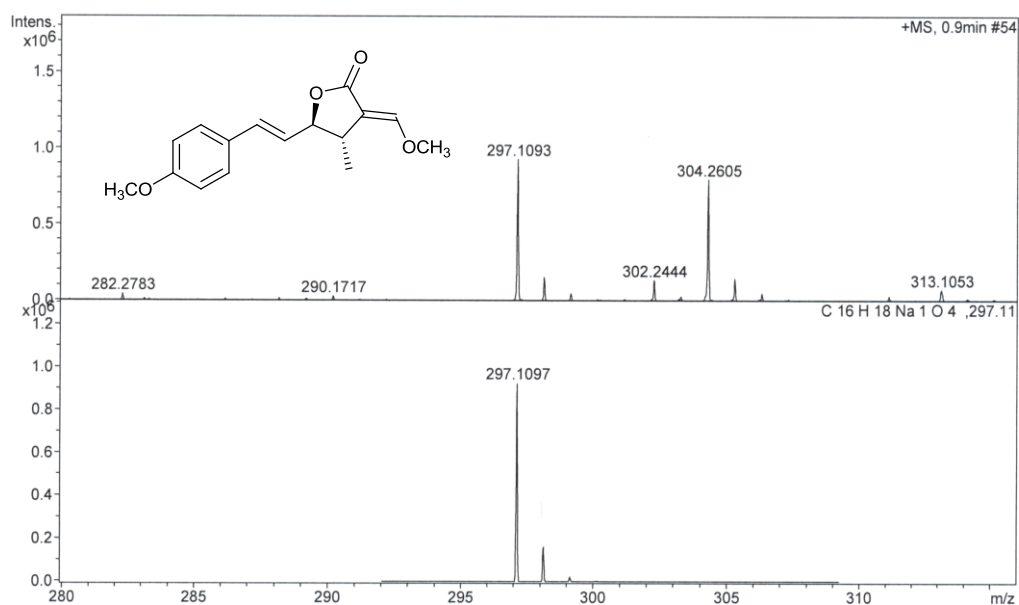
**Figure S34.** COSY spectrum of compound **7** (400 MHz, acetone- $d_6$ ).



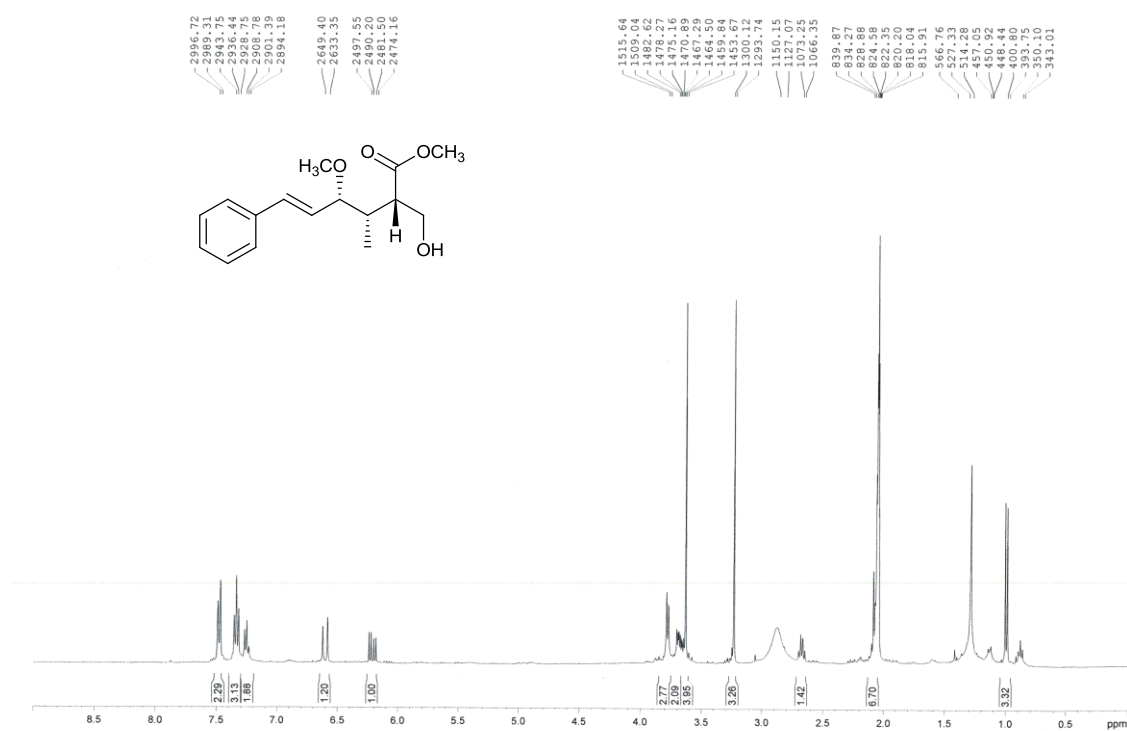
**Figure S35.** HMBC spectrum of compound **7** (400 MHz, acetone- $d_6$ ).



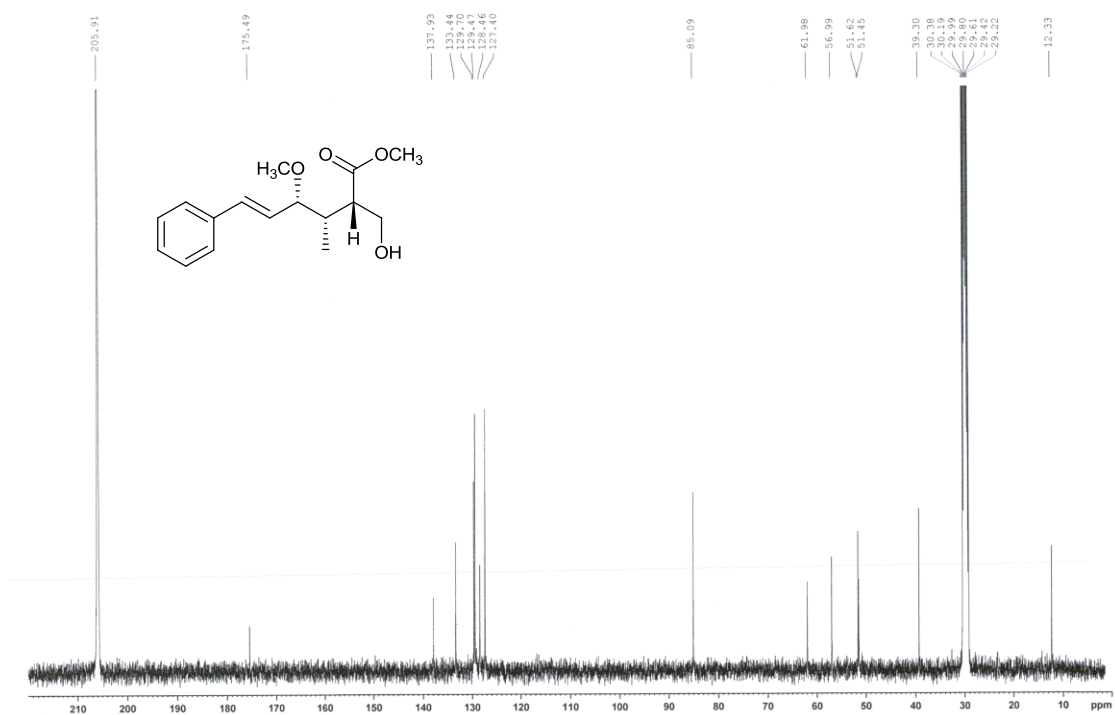
**Figure S36.** NOESY spectrum of compound **7** (400 MHz, acetone- $d_6$ ).



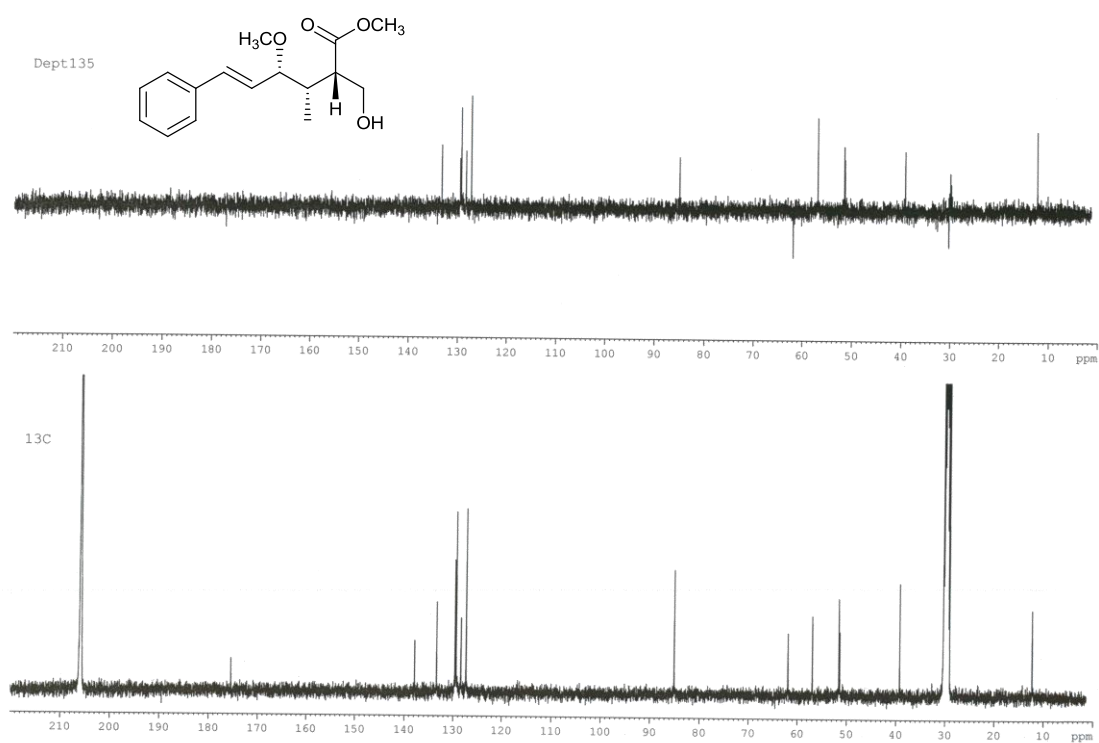
**Figure S37.** HRESIMS of compound **7**.



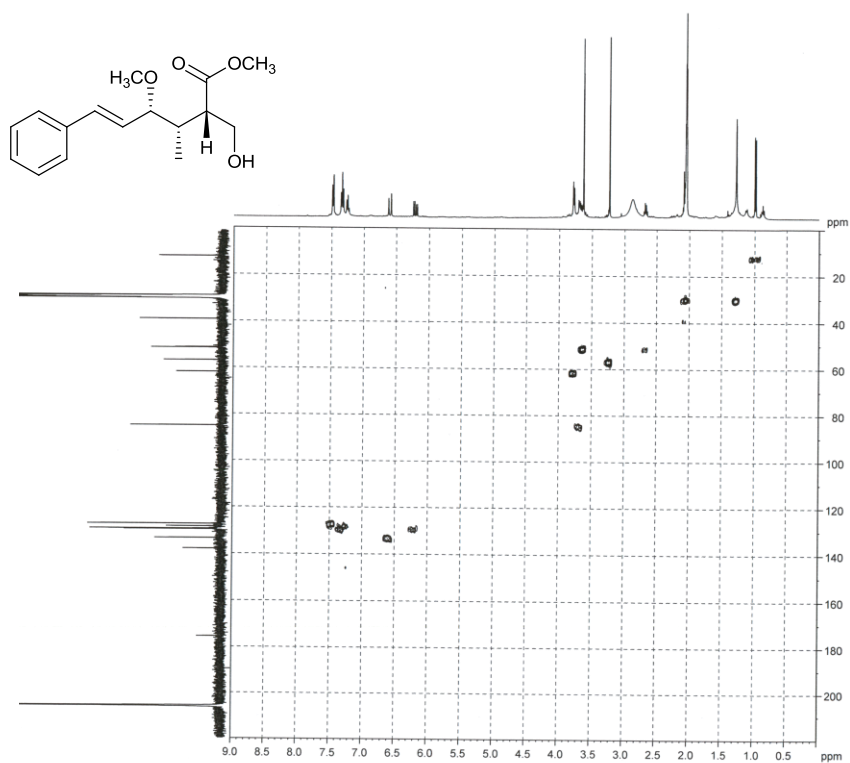
**Figure S38.** <sup>1</sup>H NMR spectrum of compound **8** (400 MHz, acetone-*d*<sub>6</sub>).



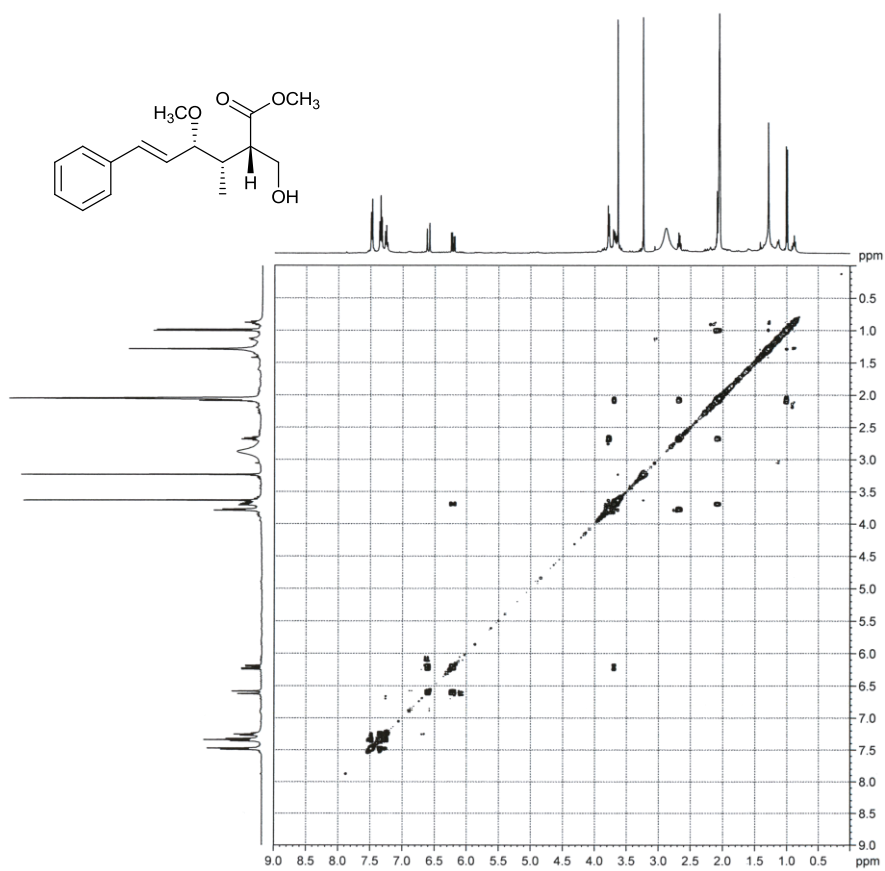
**Figure S39.** <sup>13</sup>C NMR spectrum of compound **8** (100 MHz, acetone-*d*<sub>6</sub>).



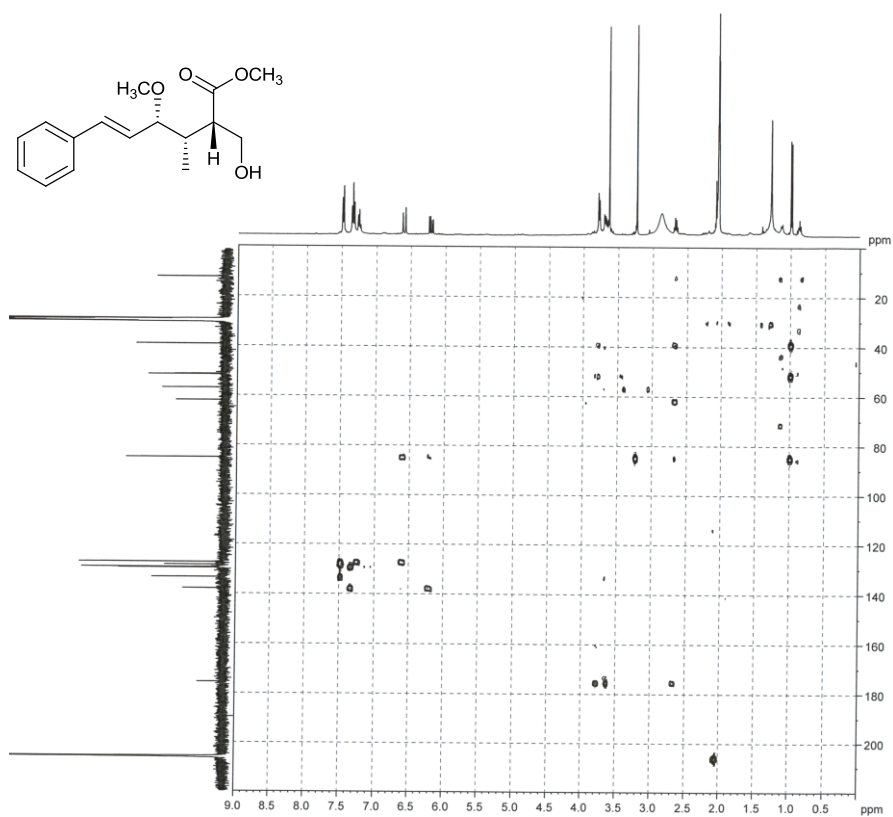
**Figure S40.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **8** (100 MHz, acetone-*d*<sub>6</sub>).



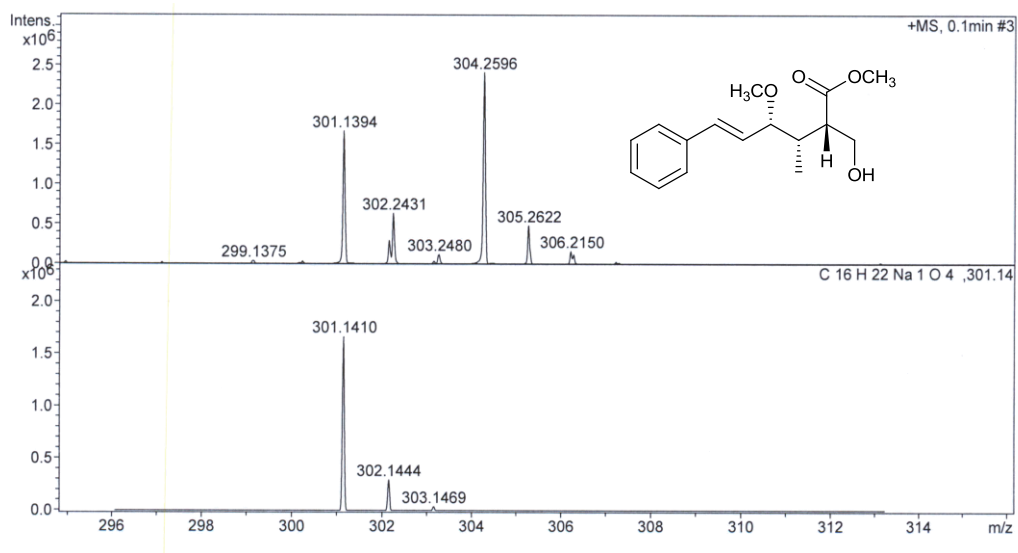
**Figure S41.** HMQC spectrum of compound **8** (400 MHz, acetone- $d_6$ ).



**Figure S42.** COSY spectrum of compound **8** (400 MHz, acetone- $d_6$ ).

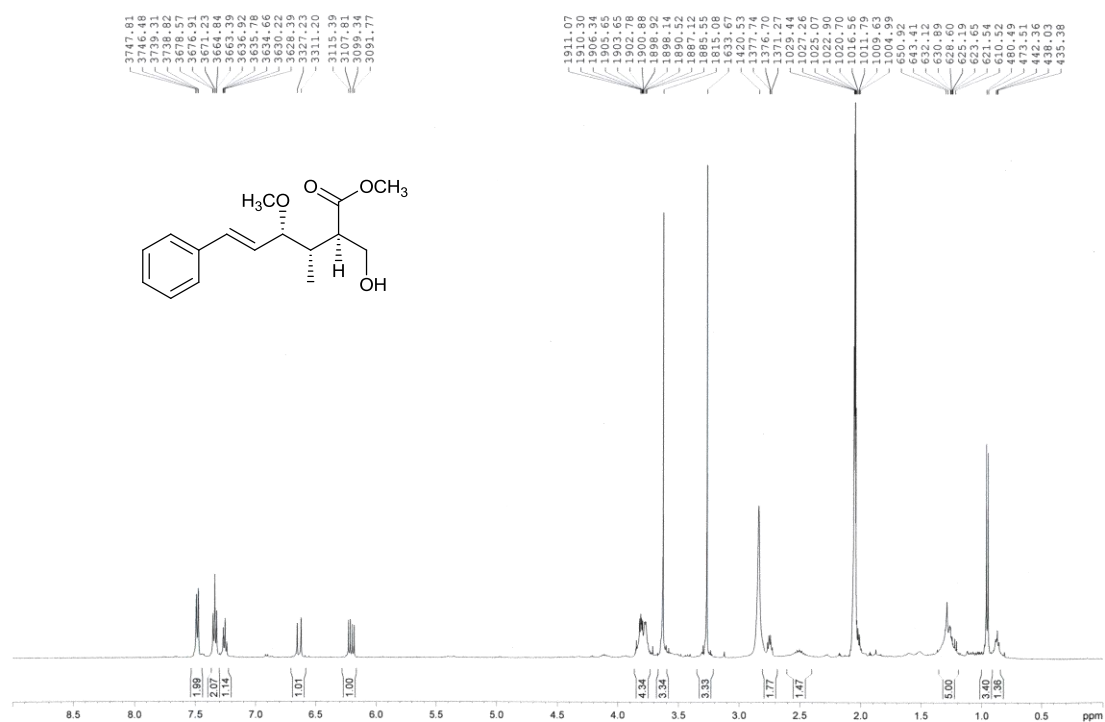


**Figure S43.** HMBC spectrum of compound **8** (400 MHz, acetone- $d_6$ ).

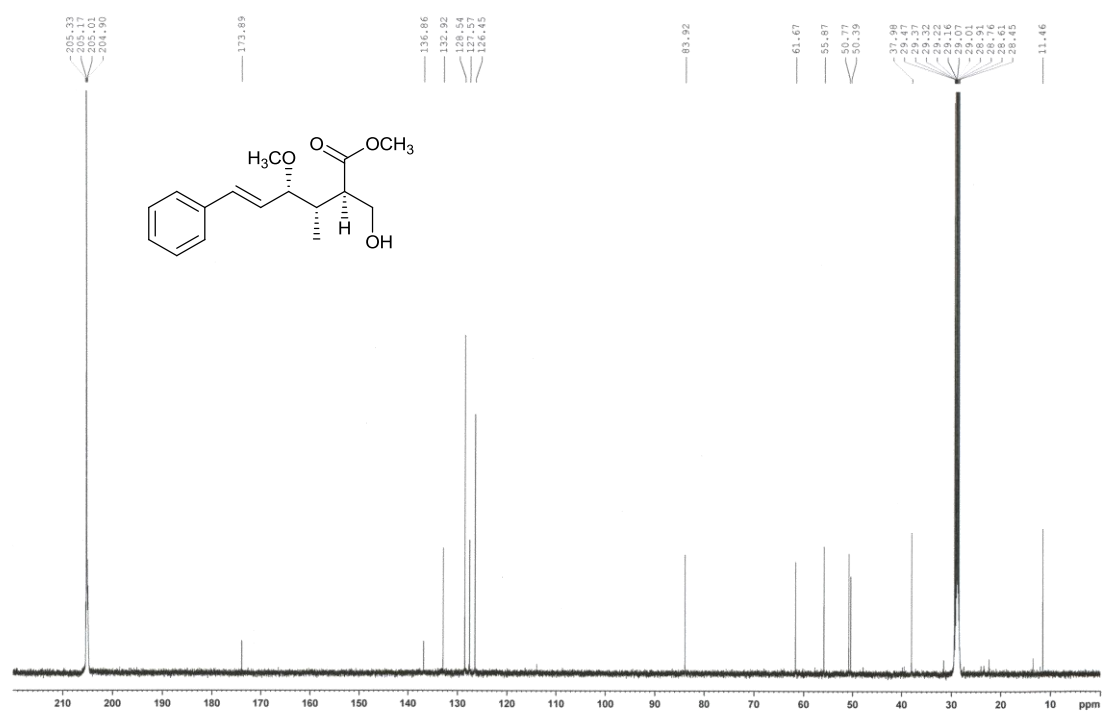


**Figure S44.** HRESIMS of compound **8**.

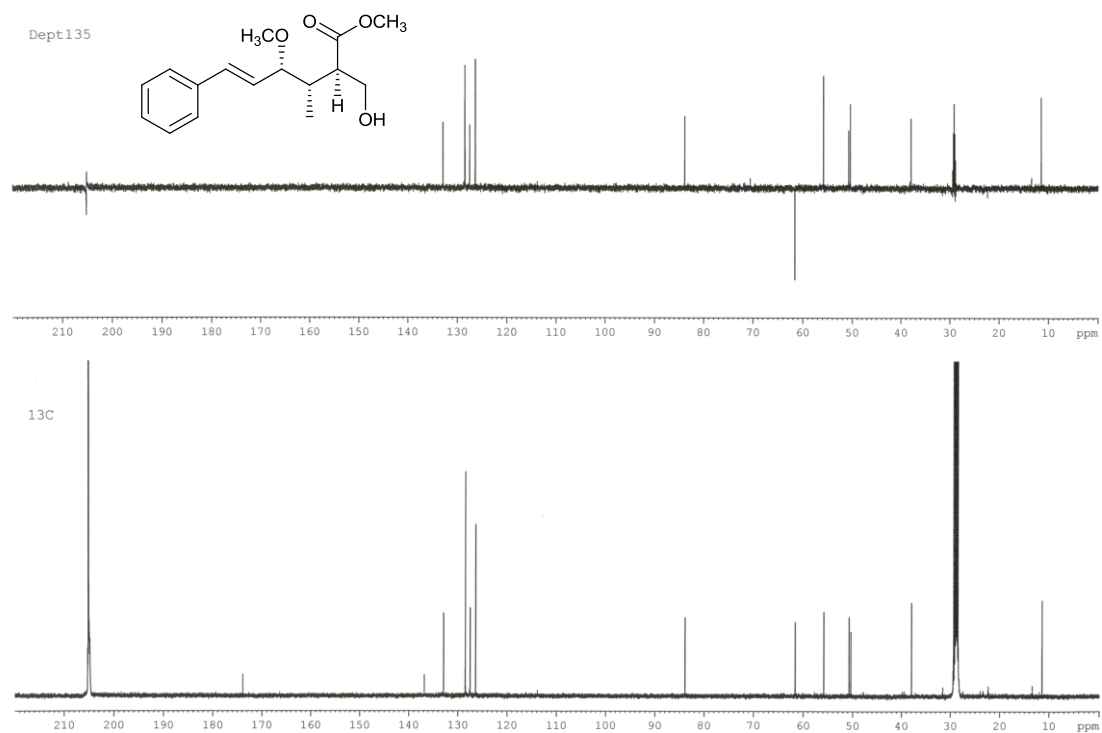




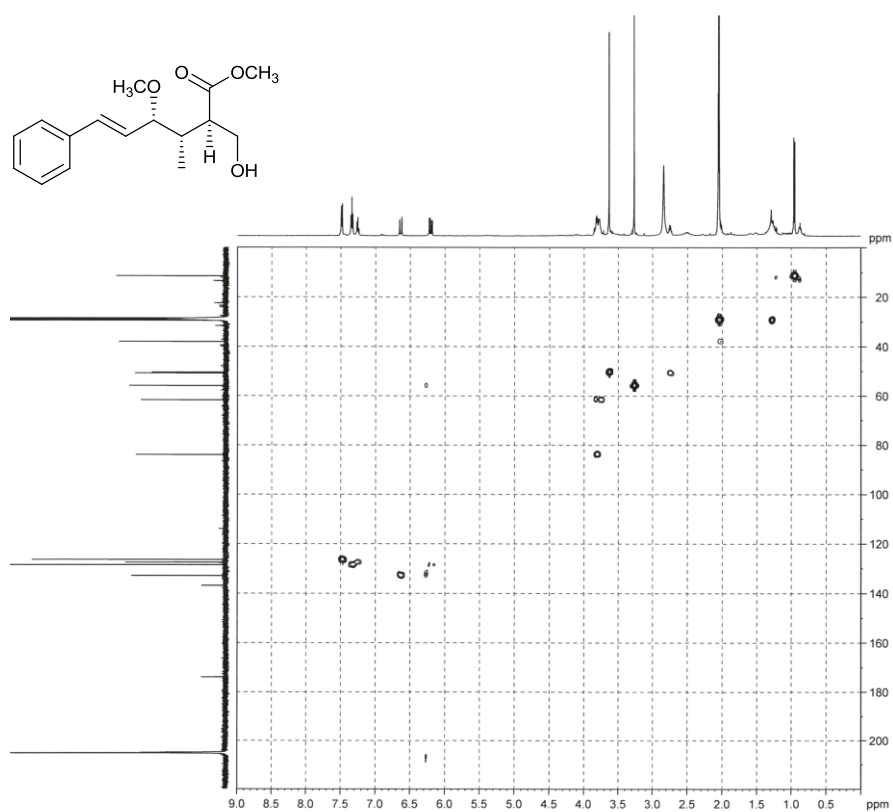
**Figure S45.** <sup>1</sup>H NMR spectrum of compound **9** (500 MHz, acetone-*d*<sub>6</sub>).



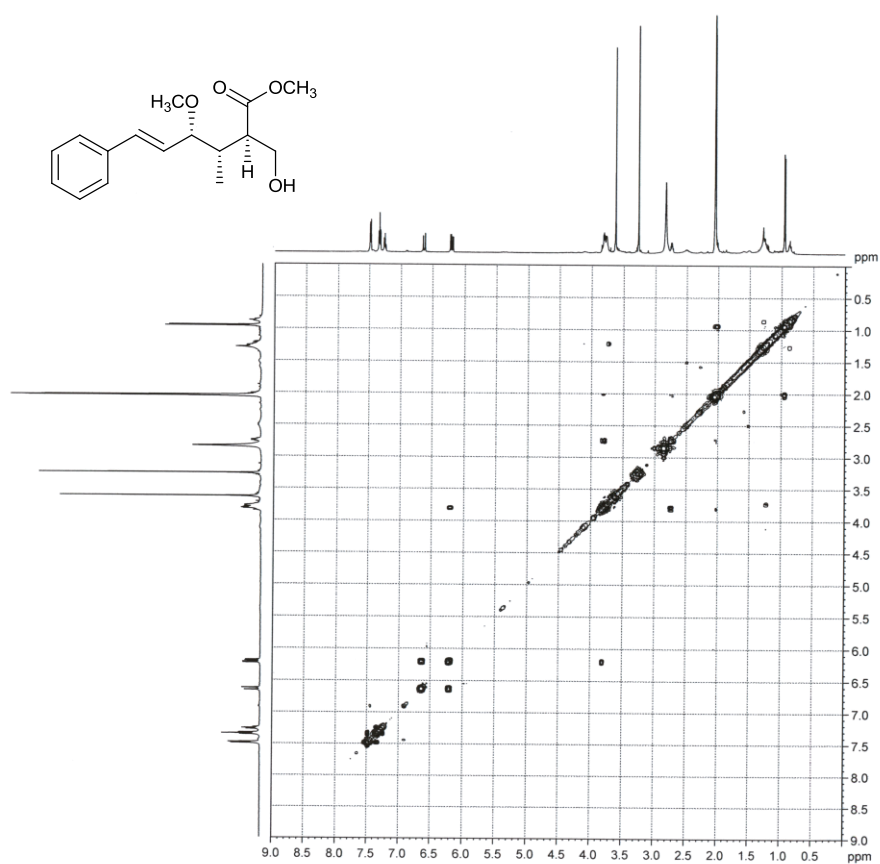
**Figure S46.** <sup>13</sup>C NMR spectrum of compound **9** (125 MHz, acetone-*d*<sub>6</sub>).



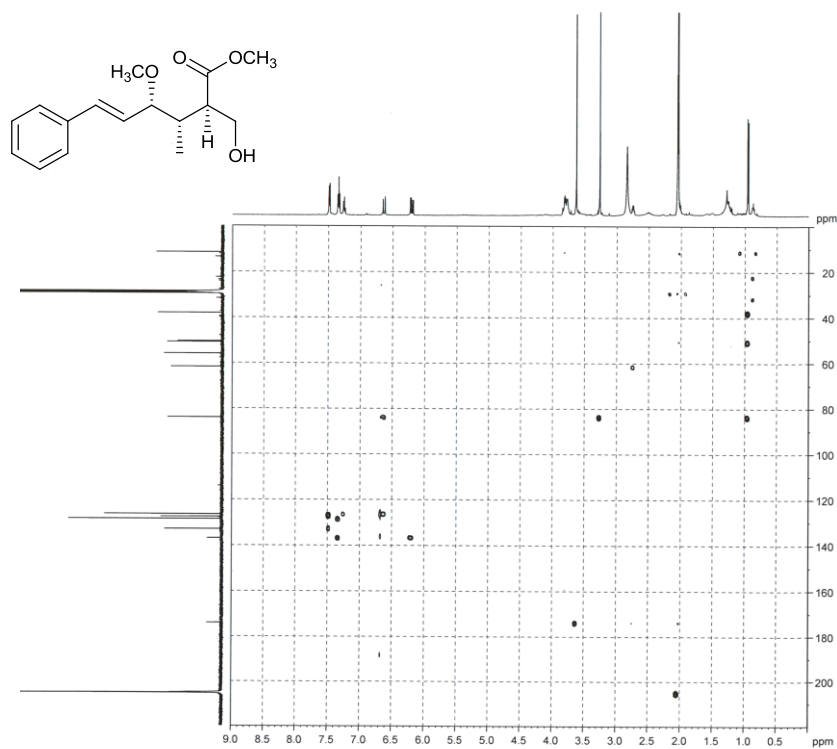
**Figure S47.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **9** (125 MHz, acetone- $d_6$ ).



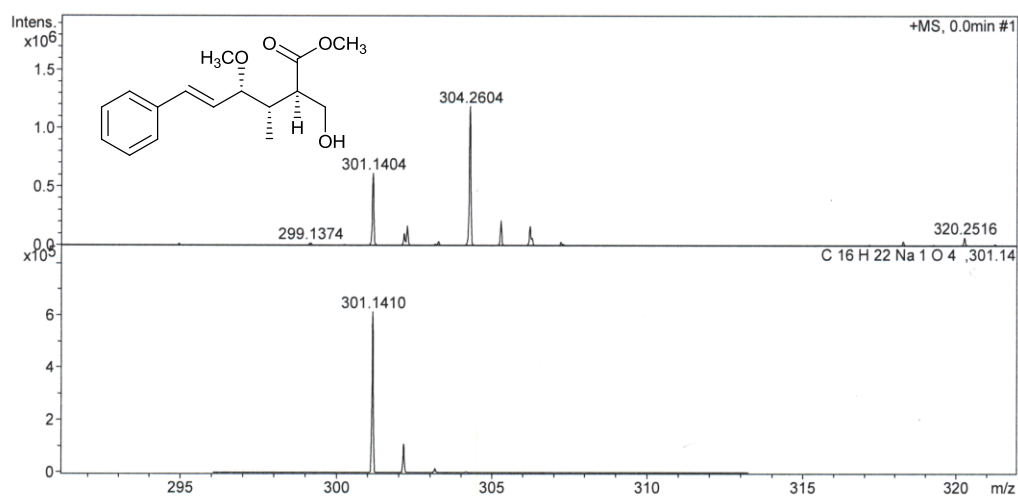
**Figure S48.** HMQC spectrum of compound **9** (500 MHz, acetone- $d_6$ ).



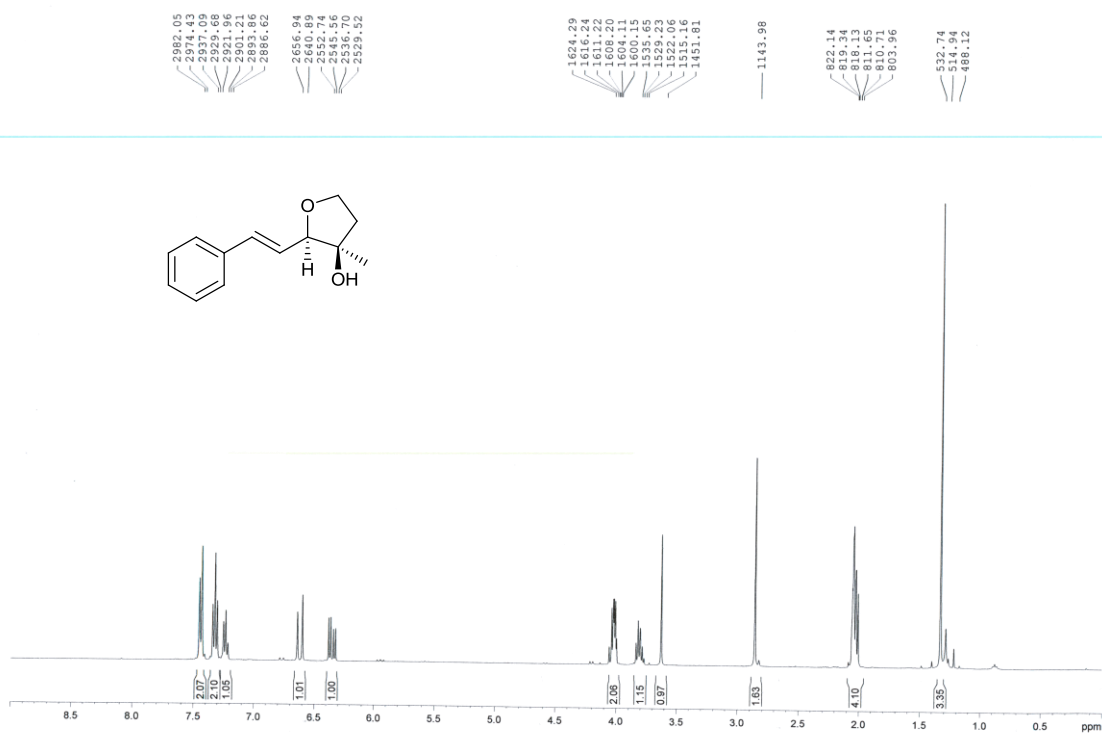
**Figure S49.** COSY spectrum of compound **9** (500 MHz, acetone- $d_6$ ).



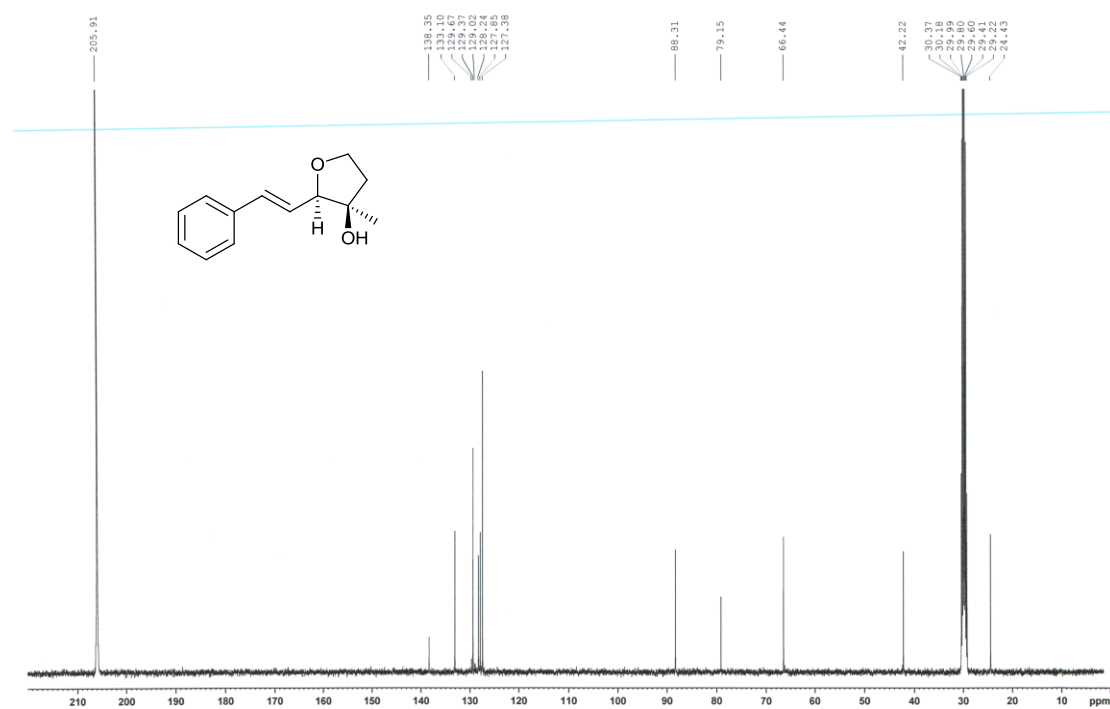
**Figure S50.** HMBC spectrum of compound **9** (500 MHz, acetone- $d_6$ ).



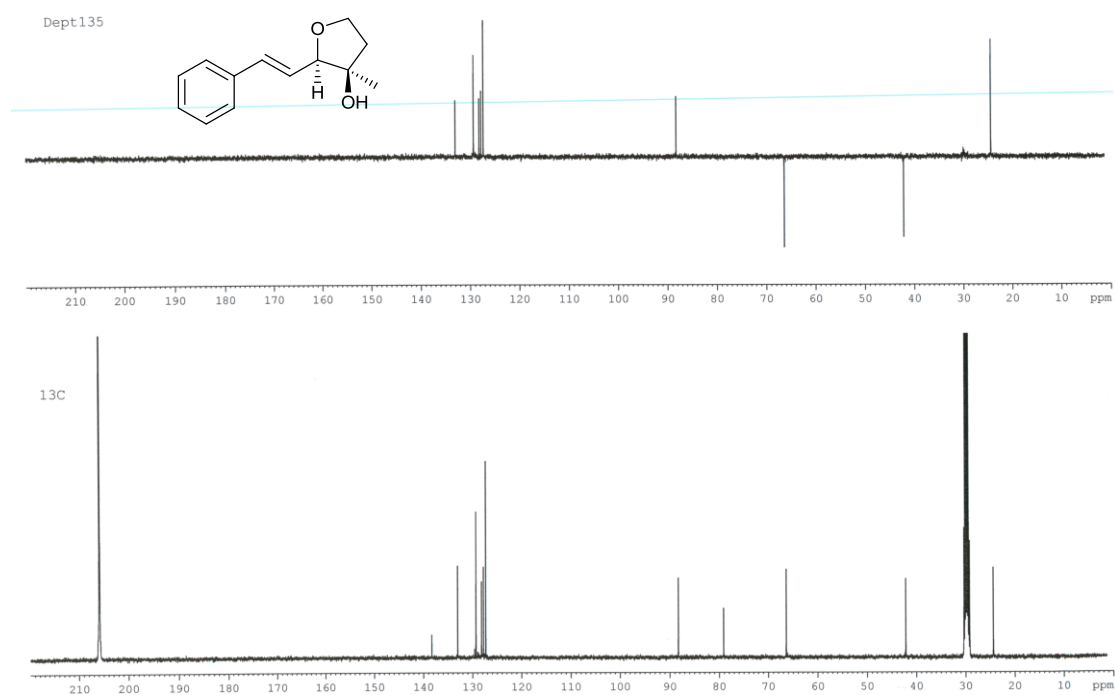
**Figure S51.** HRESIMS of compound **9**.



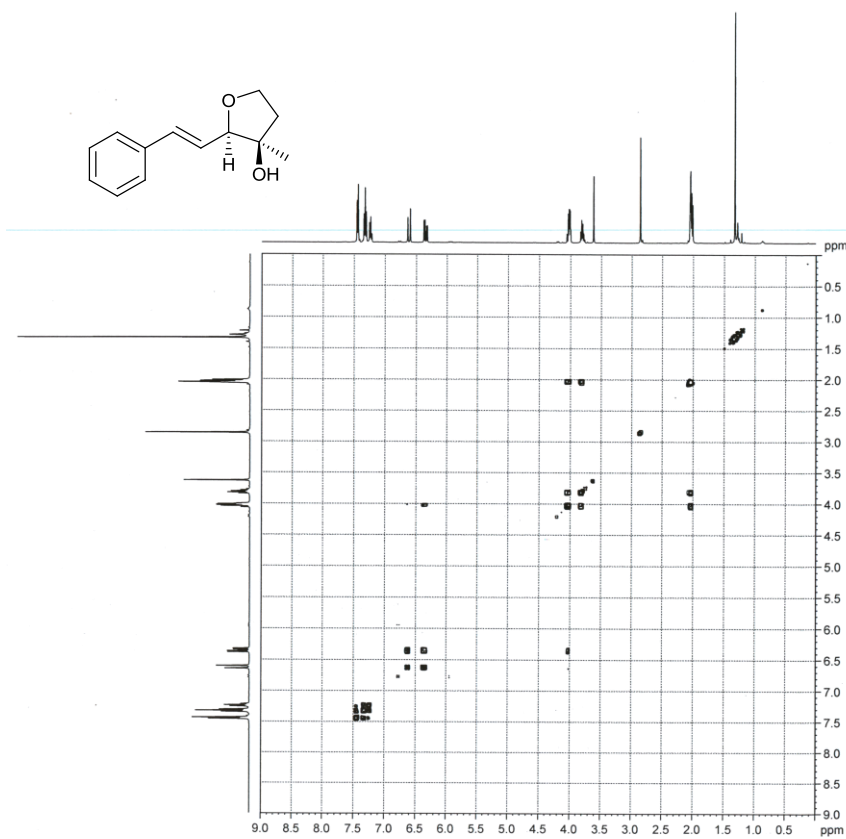
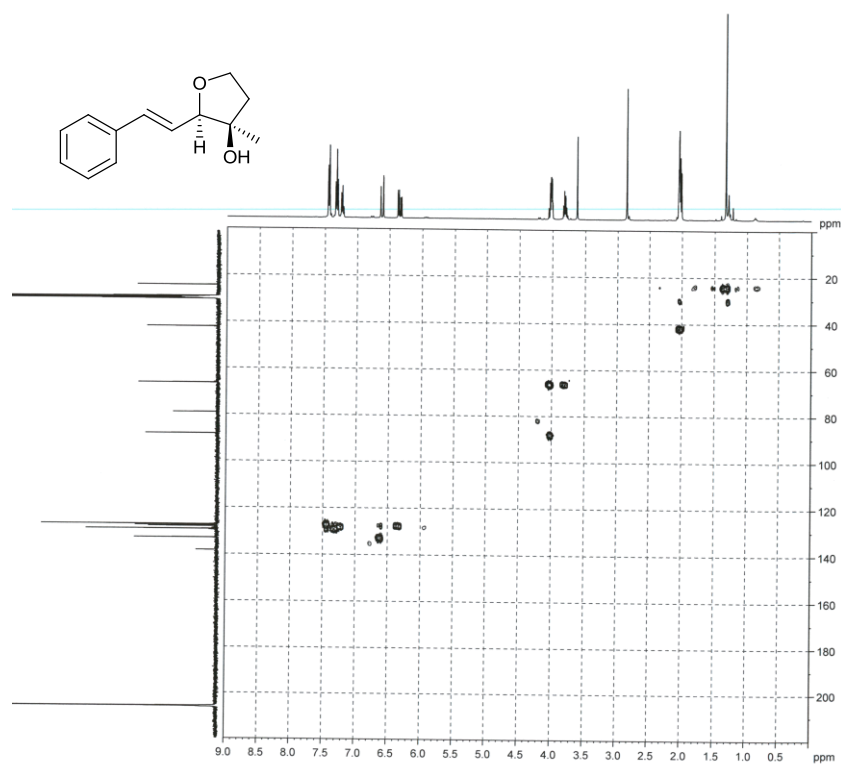
**Figure S52.** <sup>1</sup>H NMR spectrum of compound **10** (400 MHz, acetone-*d*<sub>6</sub>).

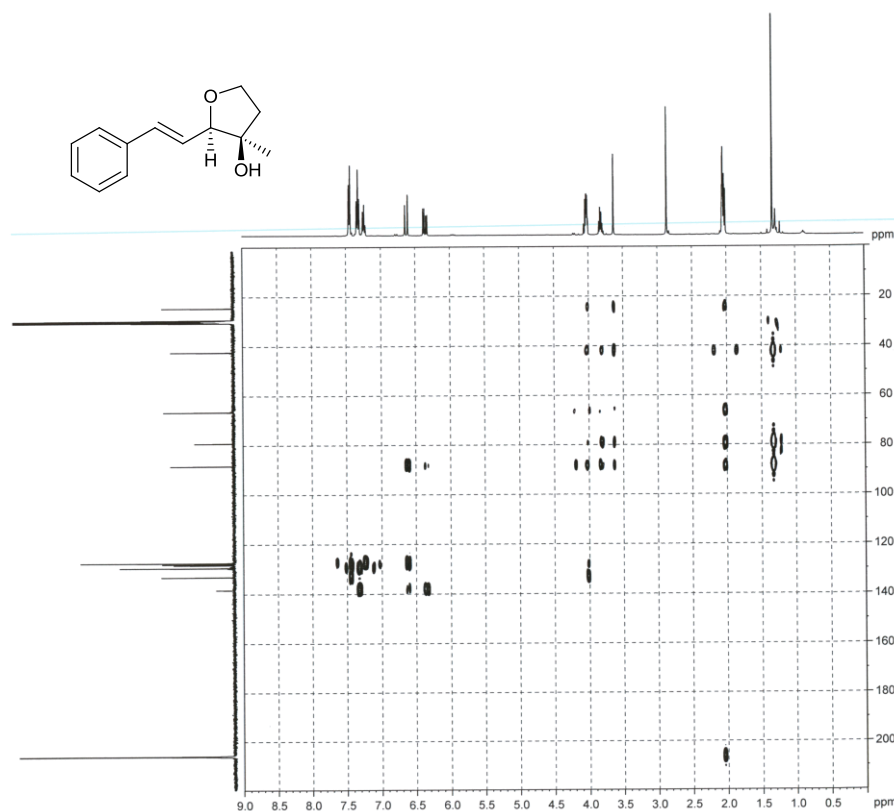


**Figure S53.**  $^{13}\text{C}$  NMR spectrum of compound **10** (100 MHz, acetone- $d_6$ ).

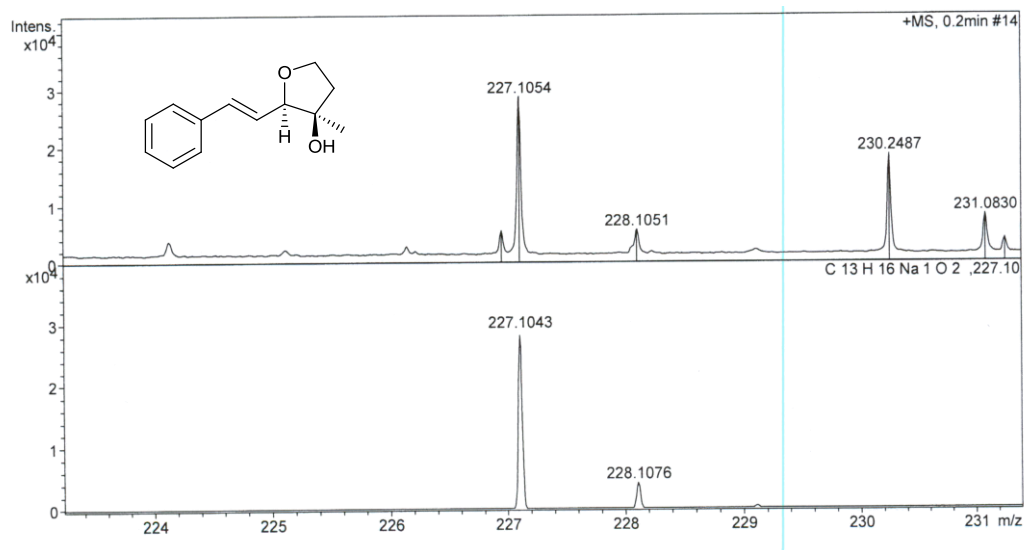


**Figure S54.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **10** (100 MHz, acetone- $d_6$ ).





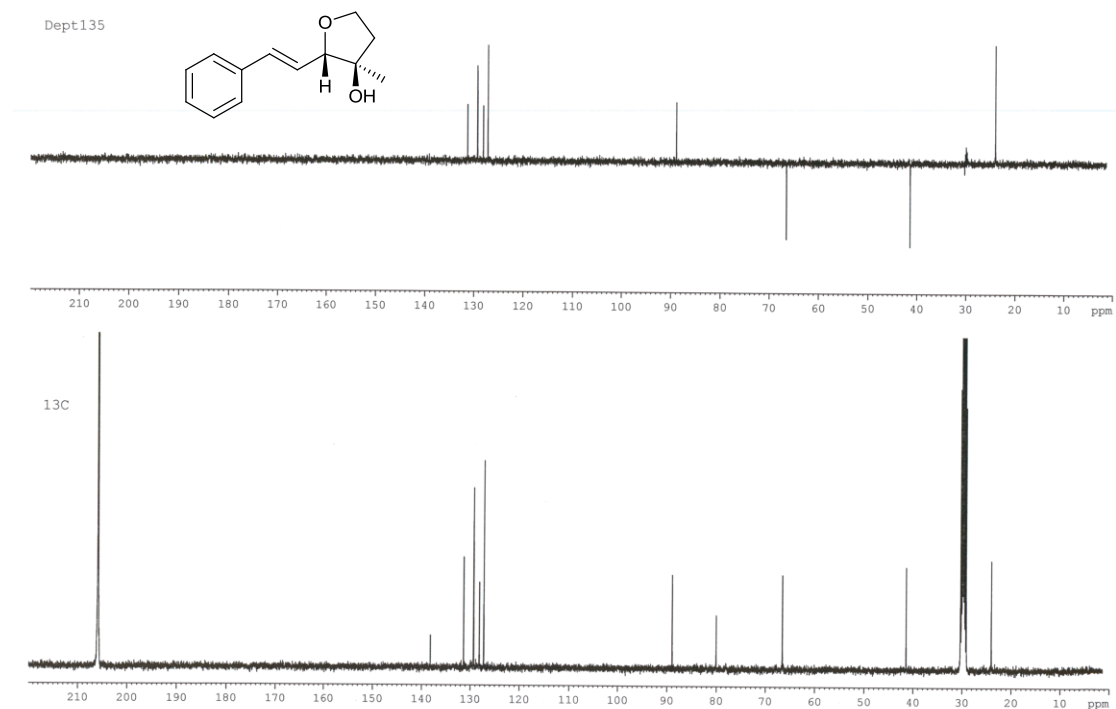
**Figure S57.** HMBC spectrum of compound **10** (400 MHz, acetone- $d_6$ ).



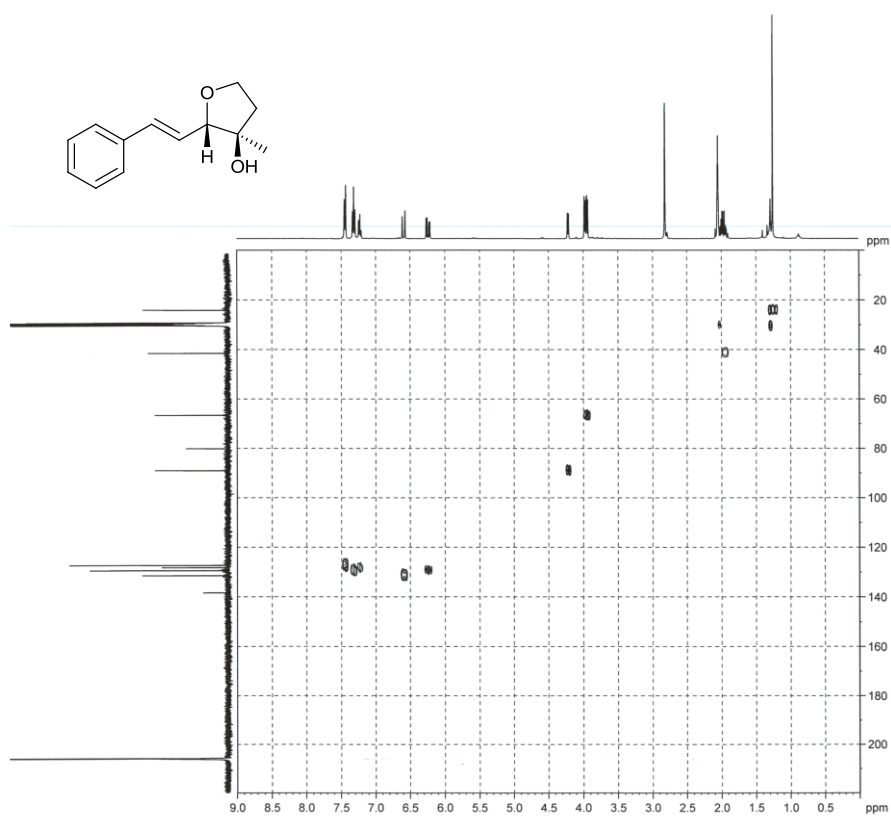
**Figure S58.** HRESIMS of compound **10**.



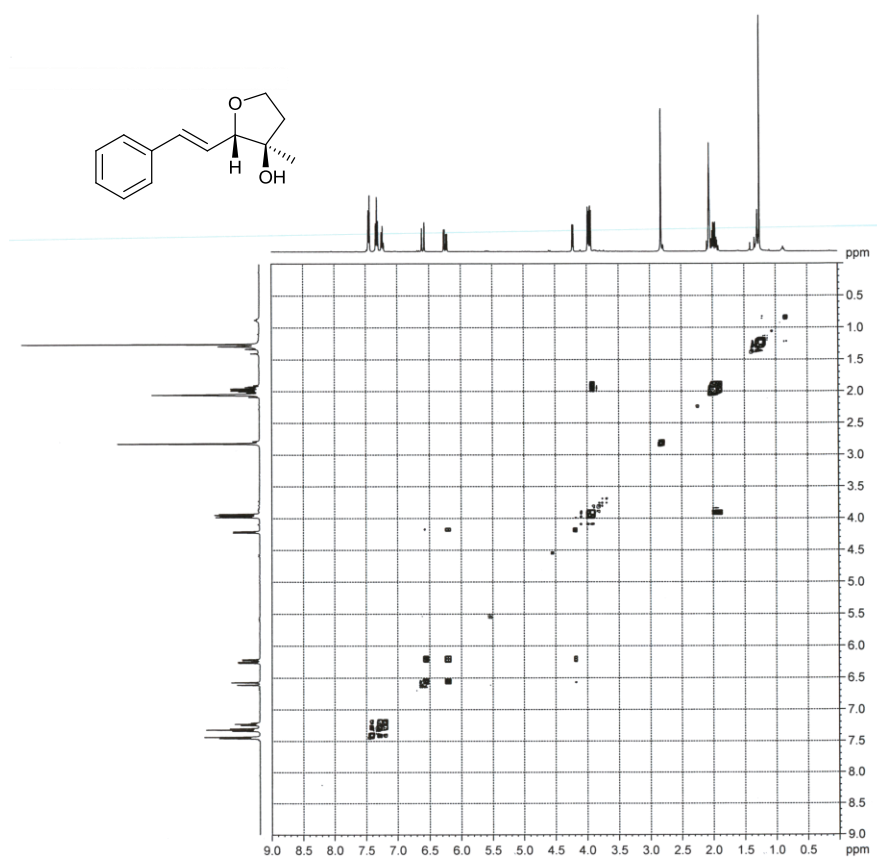




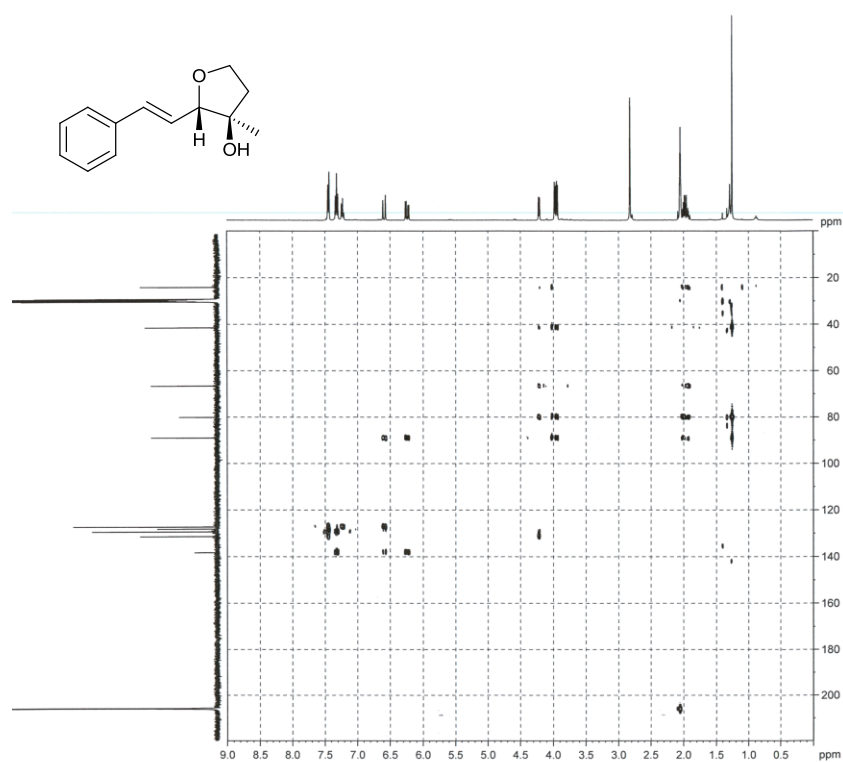
**Figure S61.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **11** (100 MHz, acetone-*d*<sub>6</sub>).



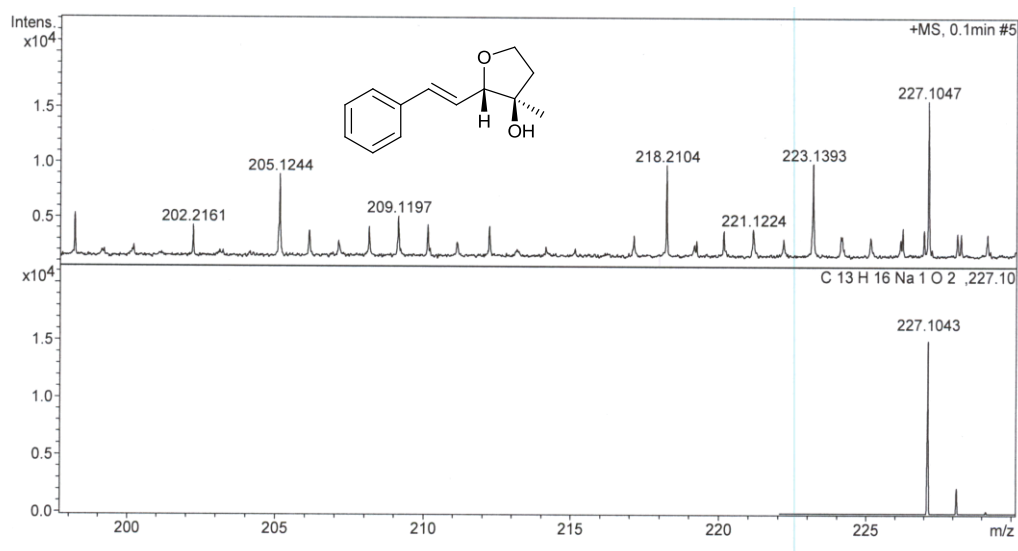
**Figure S62.** HMQC spectrum of compound **11** (400 MHz, acetone-*d*<sub>6</sub>).



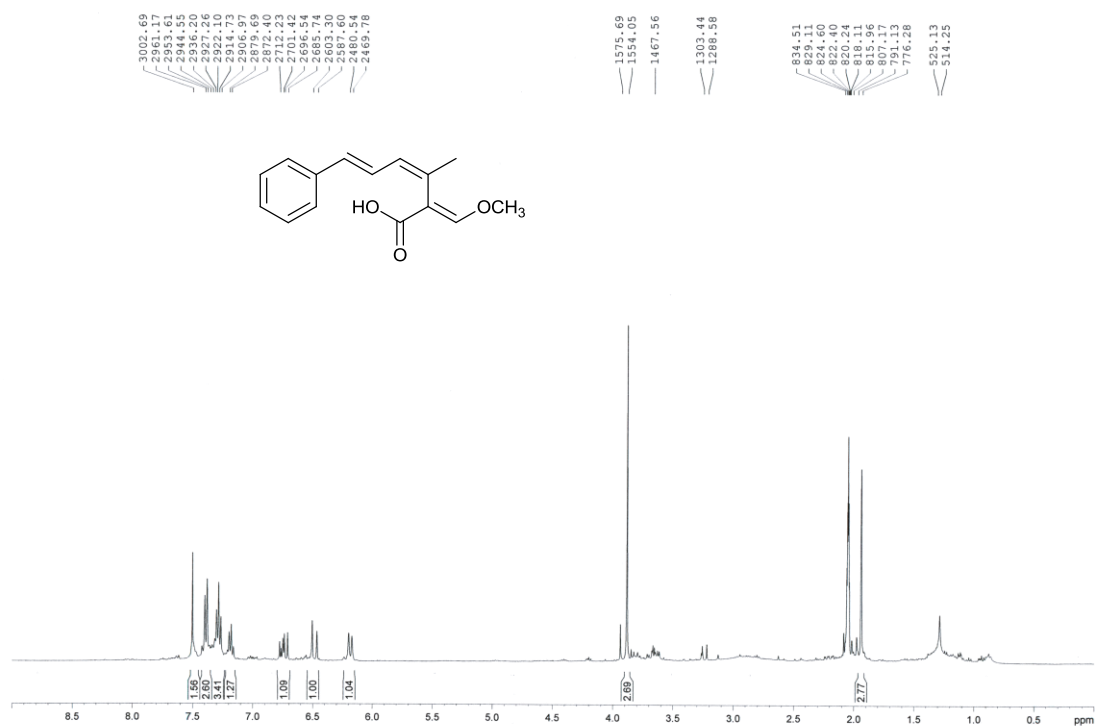
**Figure S63.** COSY spectrum of compound **11** (400 MHz, acetone- $d_6$ ).



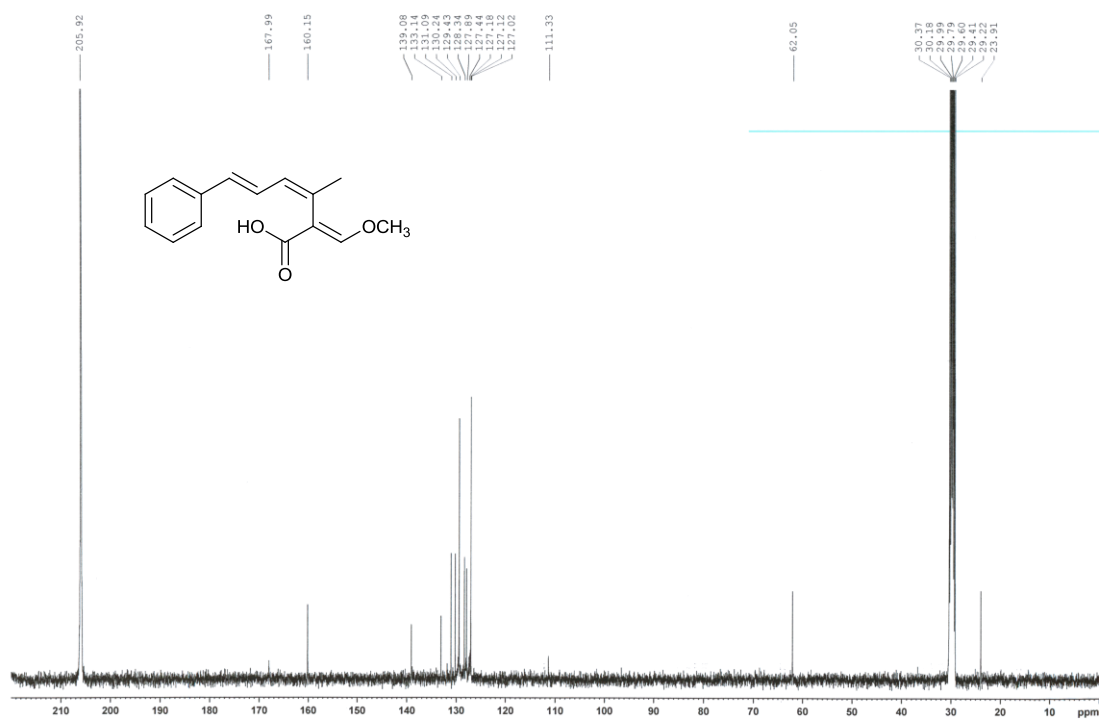
**Figure S64.** HMBC spectrum of compound **11** (400 MHz, acetone- $d_6$ ).



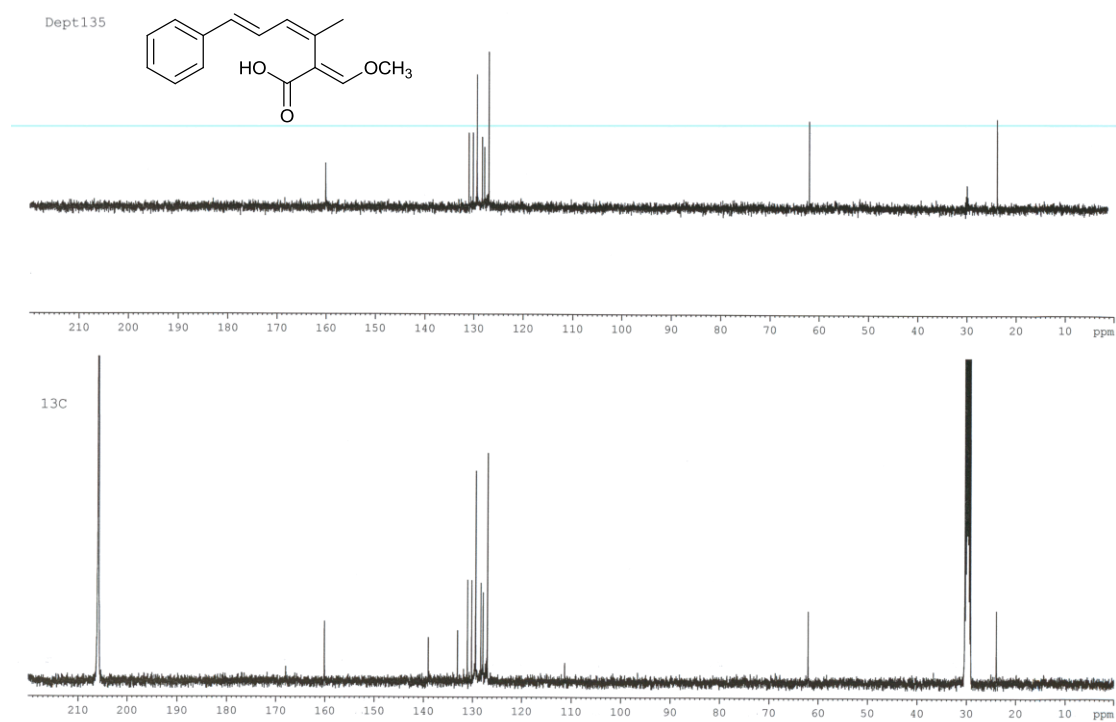
**Figure S65.** HRESIMS of compound **11**.



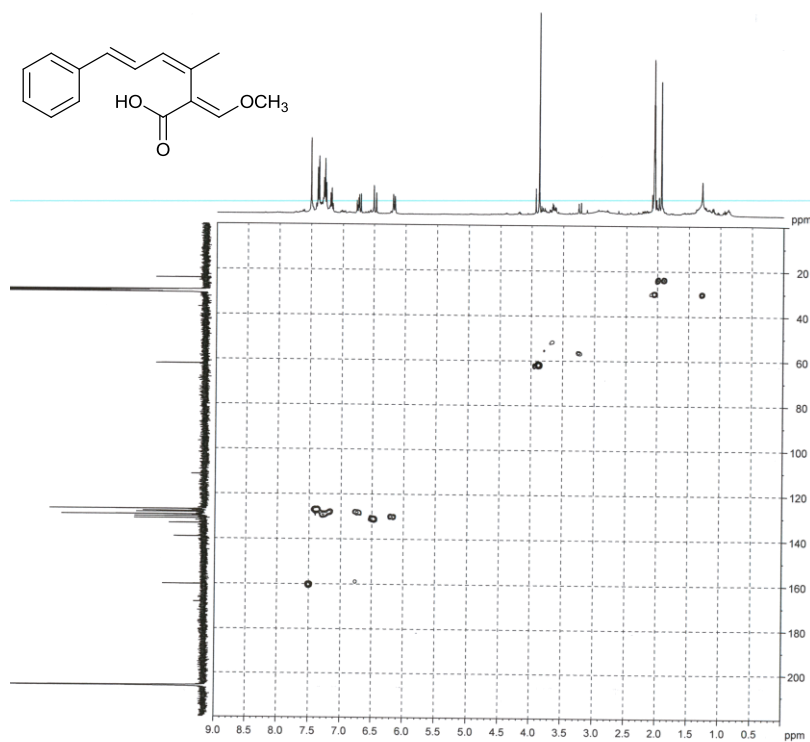
**Figure S66.** <sup>1</sup>H NMR spectrum of compound **12** (400 MHz, acetone-*d*<sub>6</sub>).



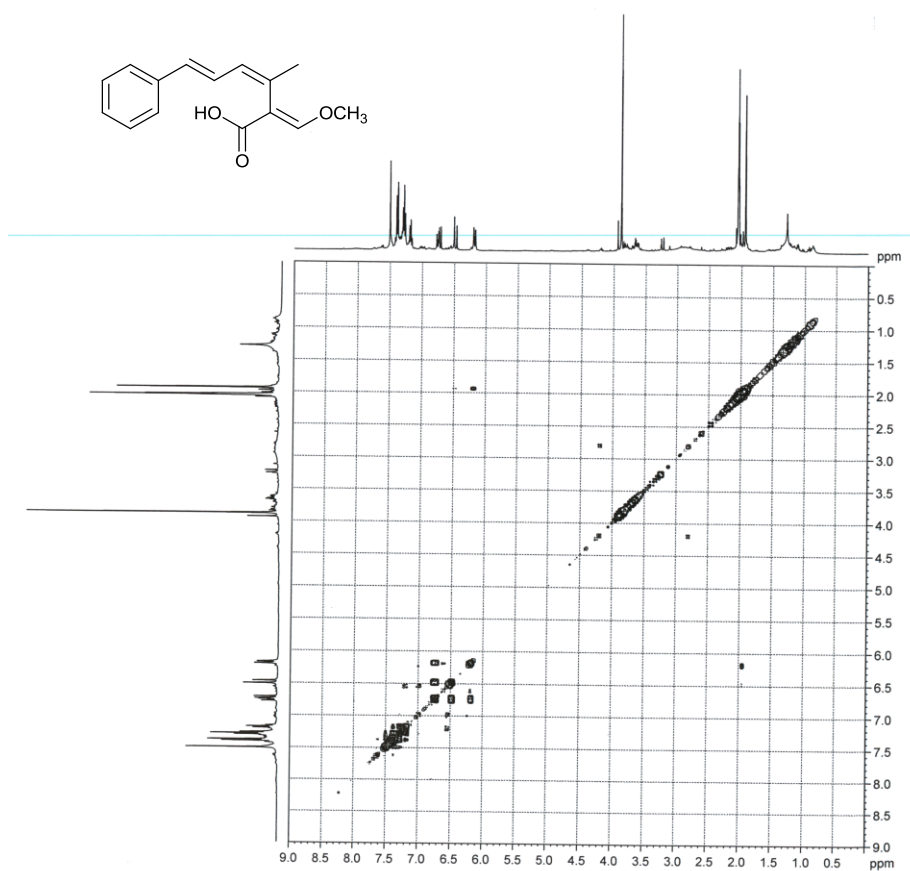
**Figure S67.** <sup>13</sup>C NMR spectrum of compound **12** (100 MHz, acetone-*d*<sub>6</sub>).



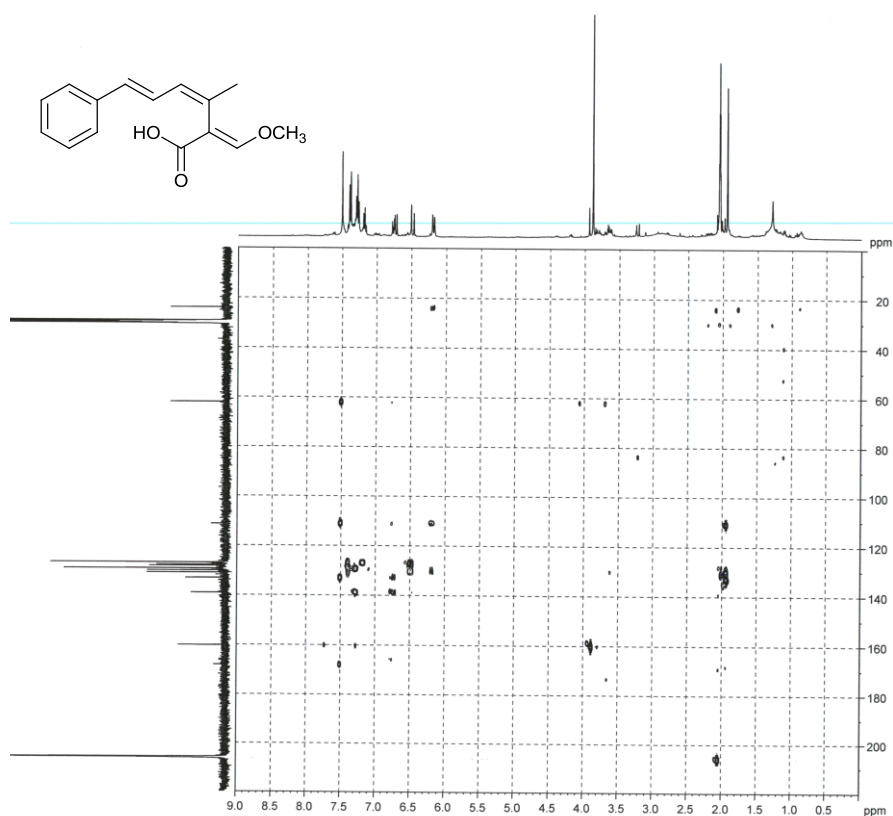
**Figure S68.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **12** (100 MHz, acetone-*d*<sub>6</sub>).



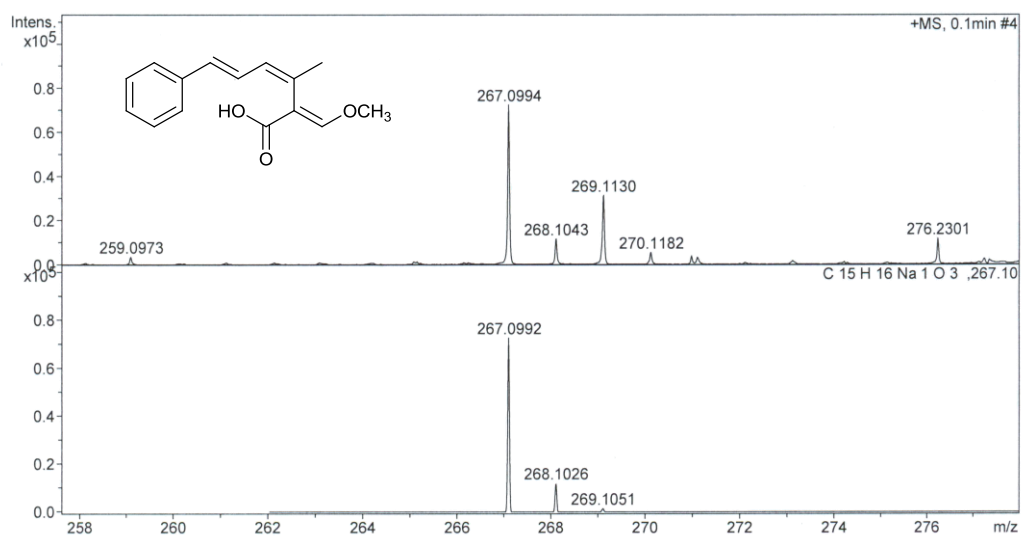
**Figure S69.** HMQC spectrum of compound **12** (400 MHz, acetone- $d_6$ ).



**Figure S70.** COSY spectrum of compound **12** (400 MHz, acetone- $d_6$ ).

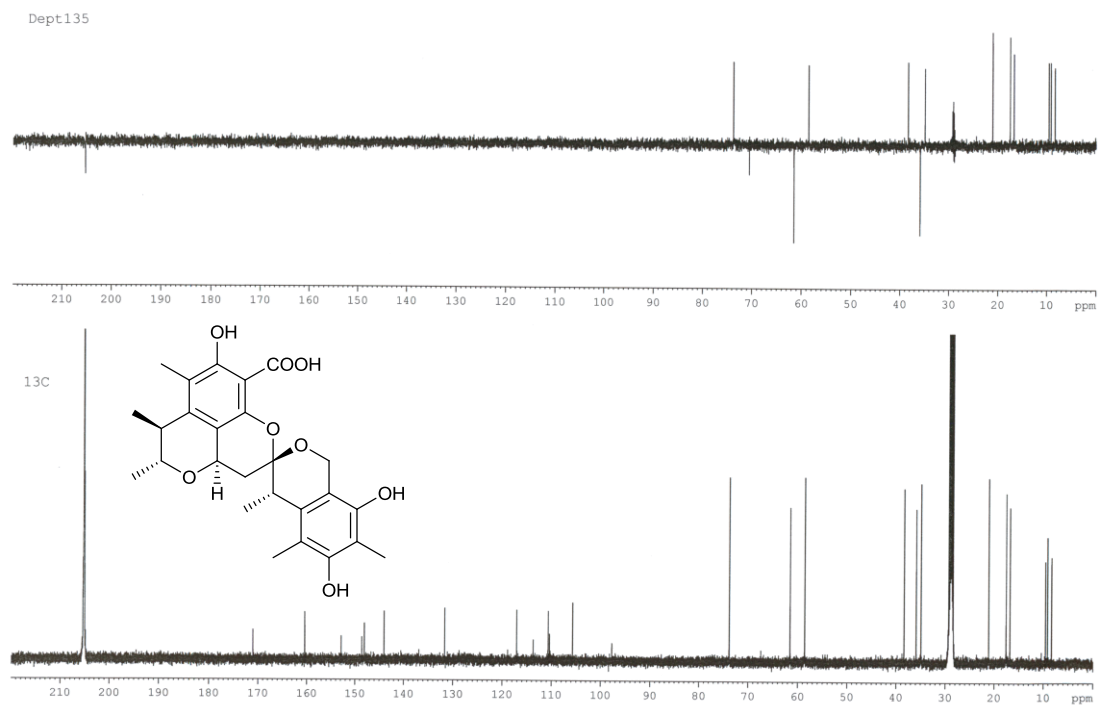


**Figure S71.** HMBC spectrum of compound **12** (400 MHz, acetone- $d_6$ ).

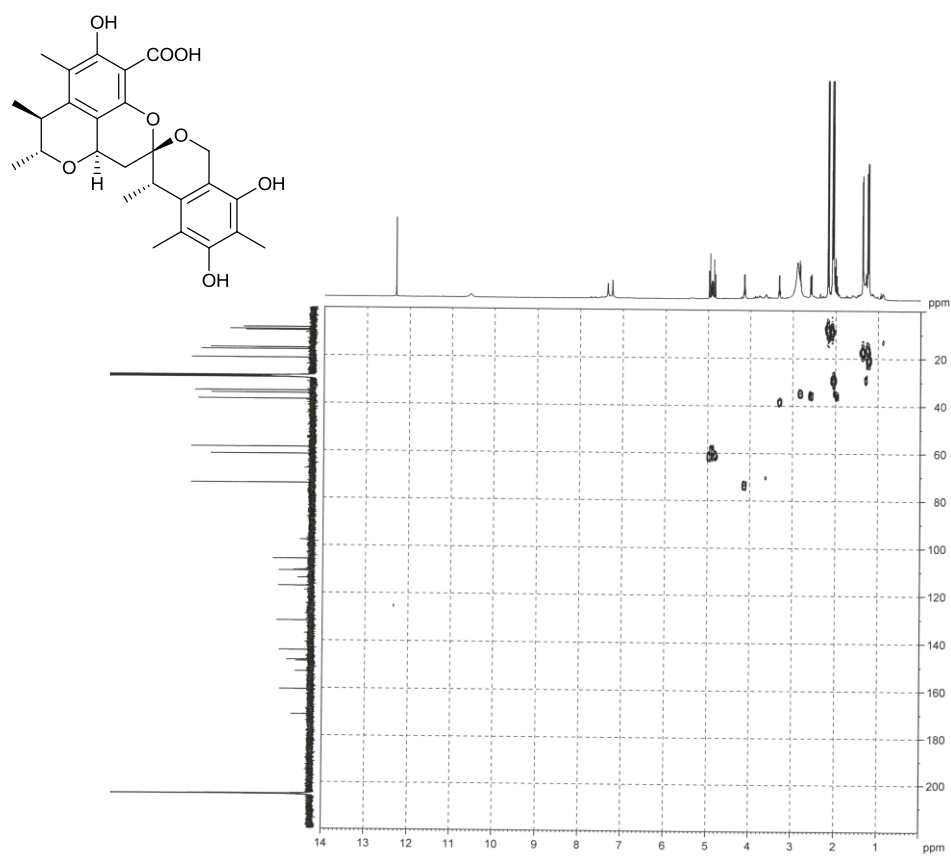


**Figure S72.** HRESIMS of compound **12**.



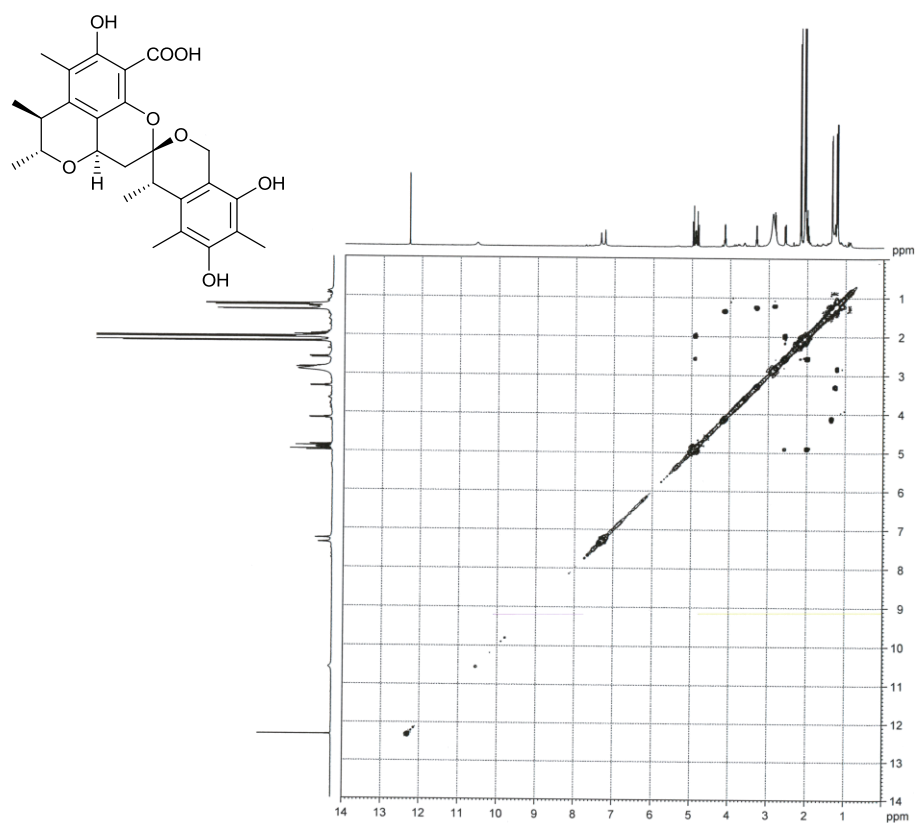


**Figure S75.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **14** (125 MHz, acetone- $d_6$ ).

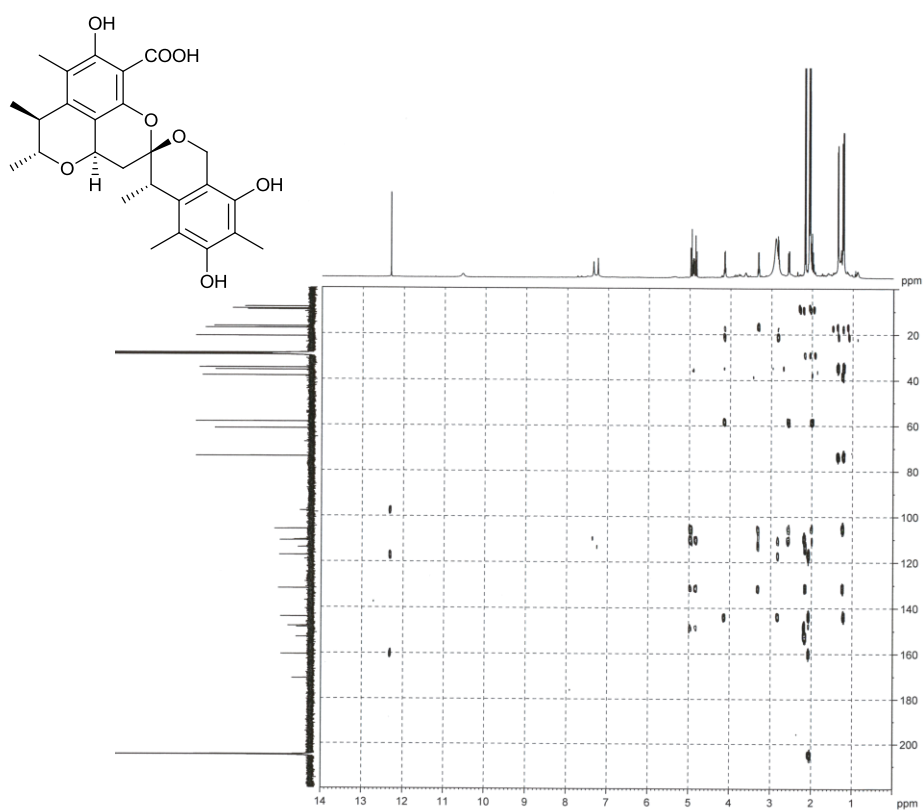


**Figure S76.** HMQC spectrum of compound **14** (500 MHz, acetone- $d_6$ ).

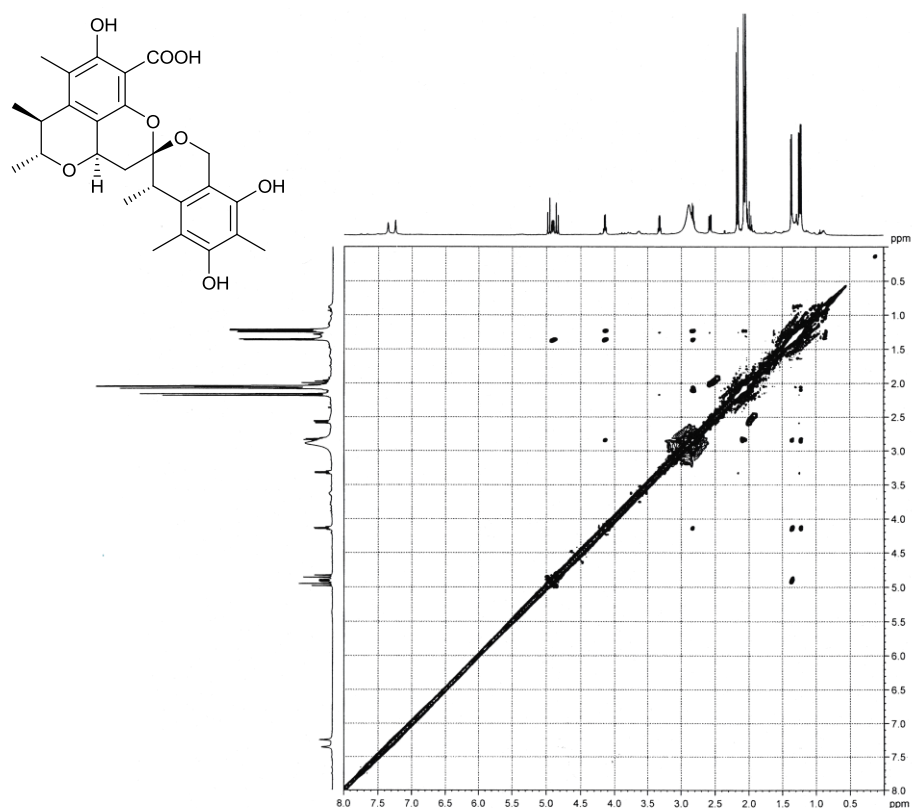




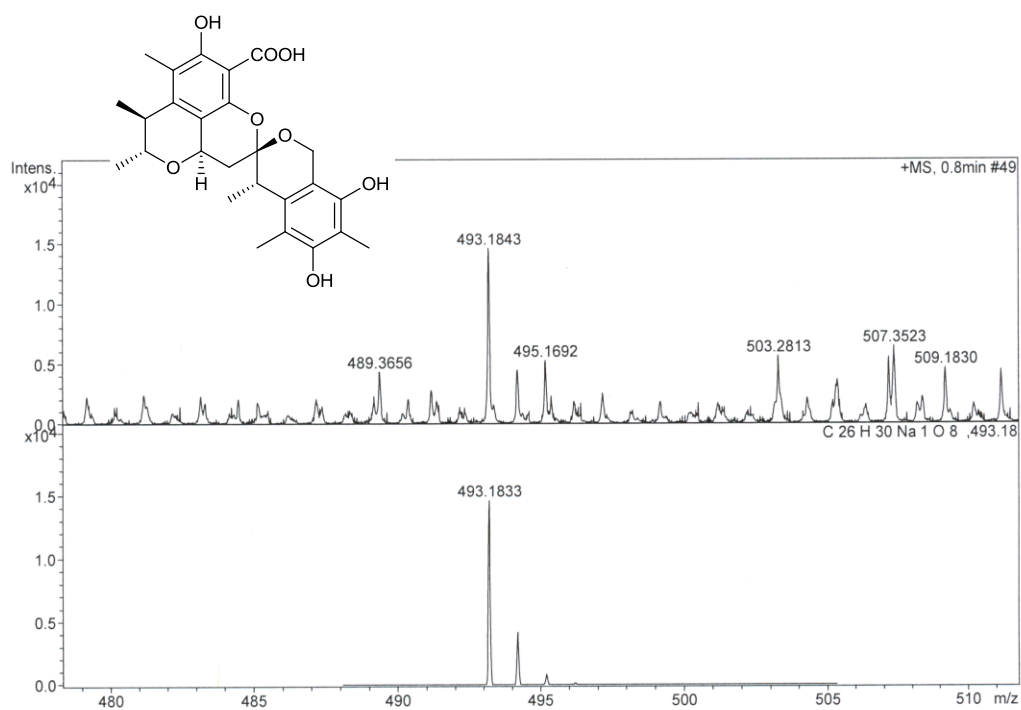
**Figure S77.** COSY spectrum of compound **14** (500 MHz, acetone- $d_6$ ).



**Figure S78.** HMBC spectrum of compound **14** (500 MHz, acetone- $d_6$ ).

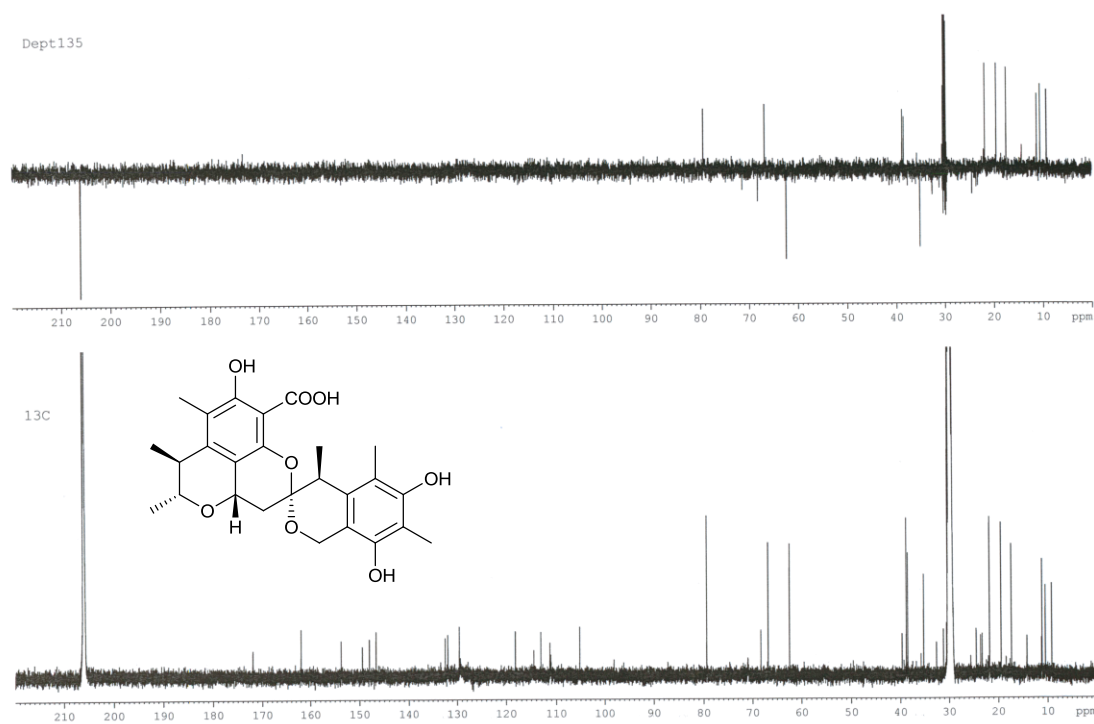


**Figure S79.** NOESY spectrum of compound **14** (500 MHz, acetone- $d_6$ ).

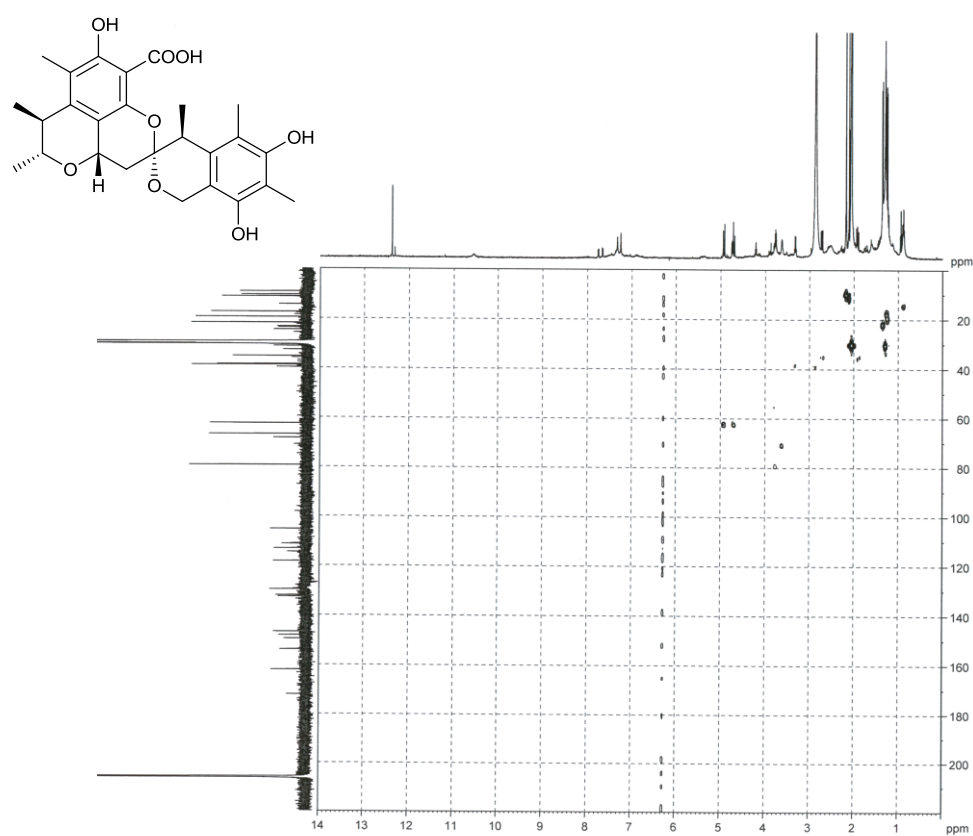


**Figure S80.** HRESIMS of compound **14**.

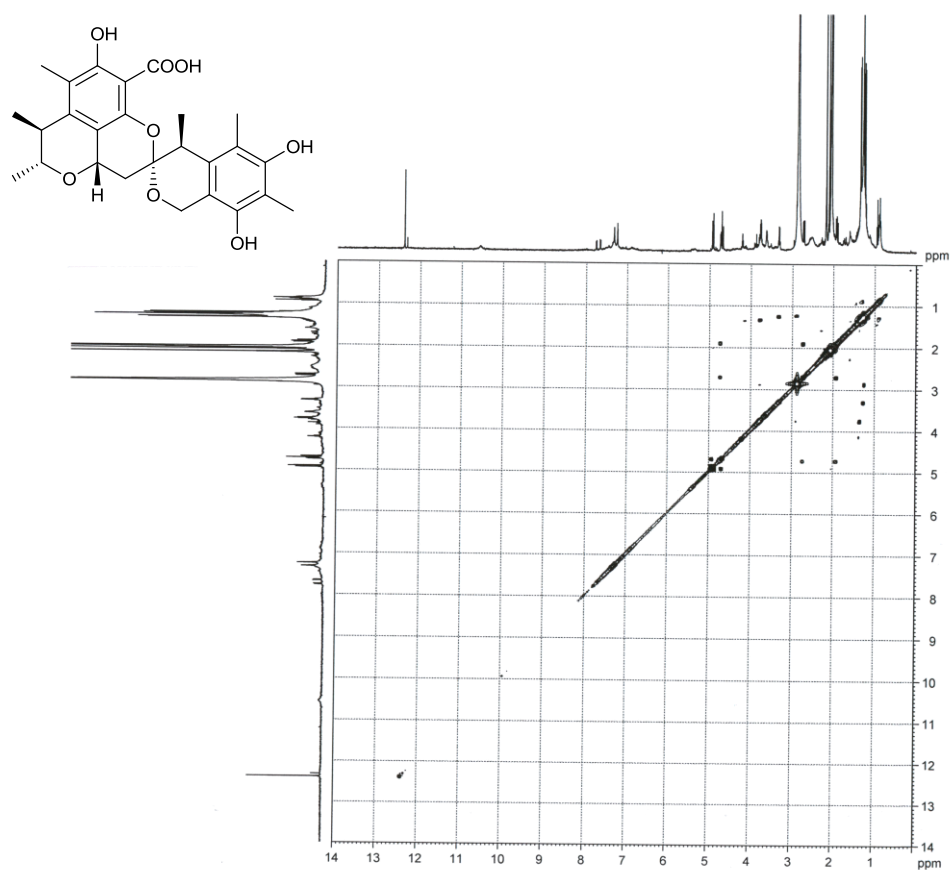




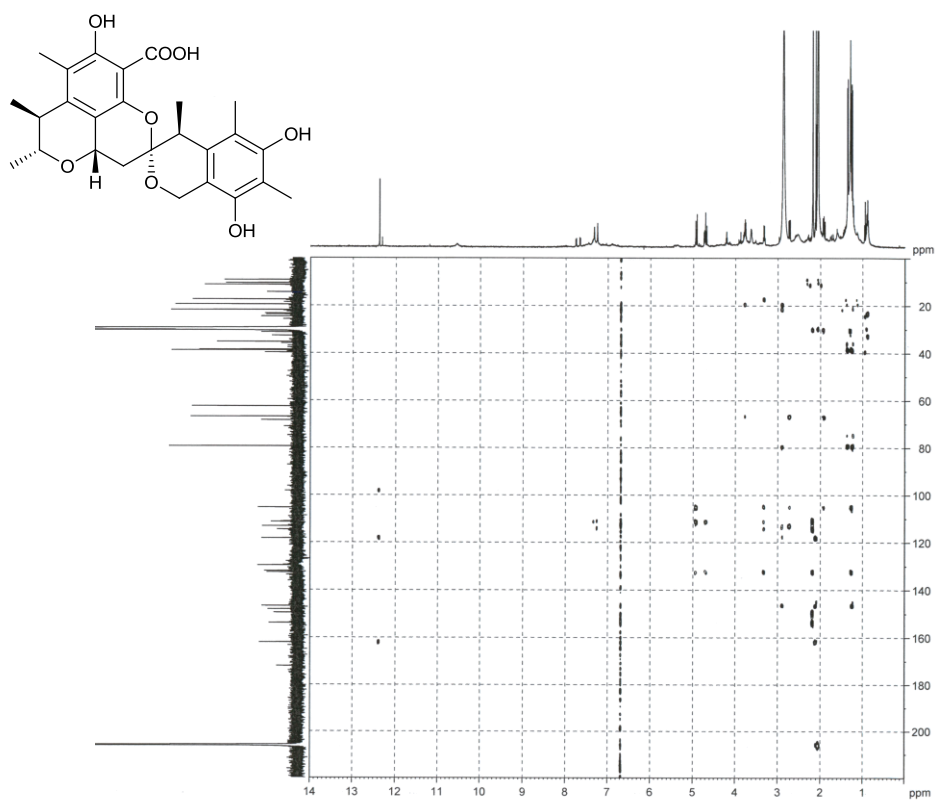
**Figure S83.**  $^{13}\text{C}$  NMR and DEPT-135 spectra of compound **15** (125 MHz, acetone- $d_6$ ).



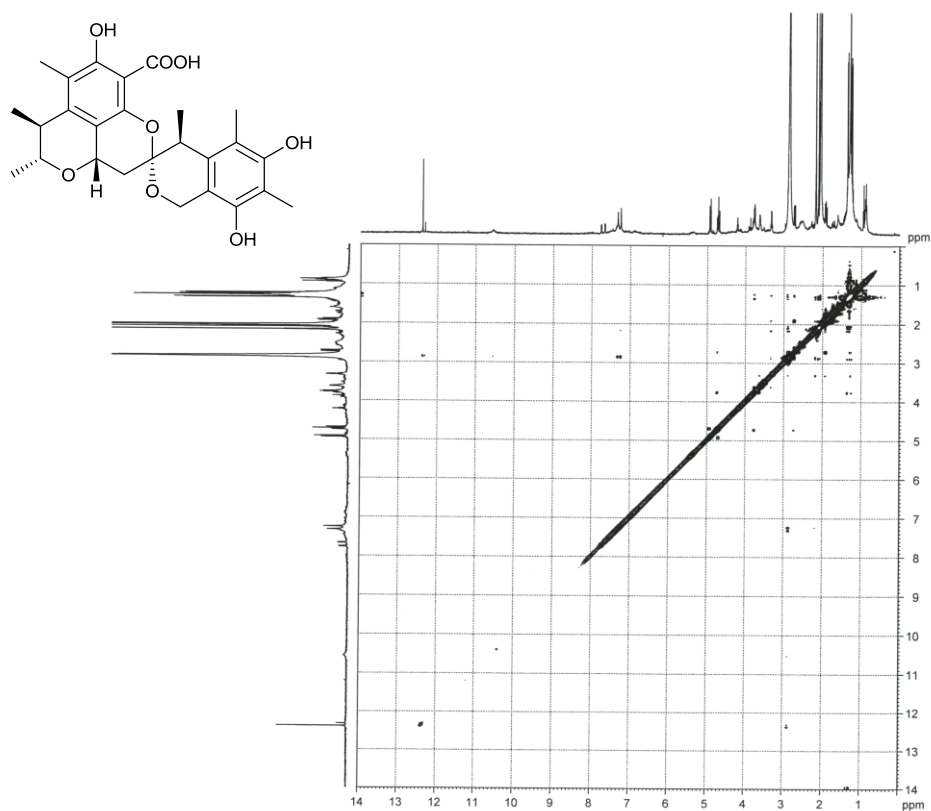
**Figure S84.** HMQC spectrum of compound **15** (500 MHz, acetone- $d_6$ ).



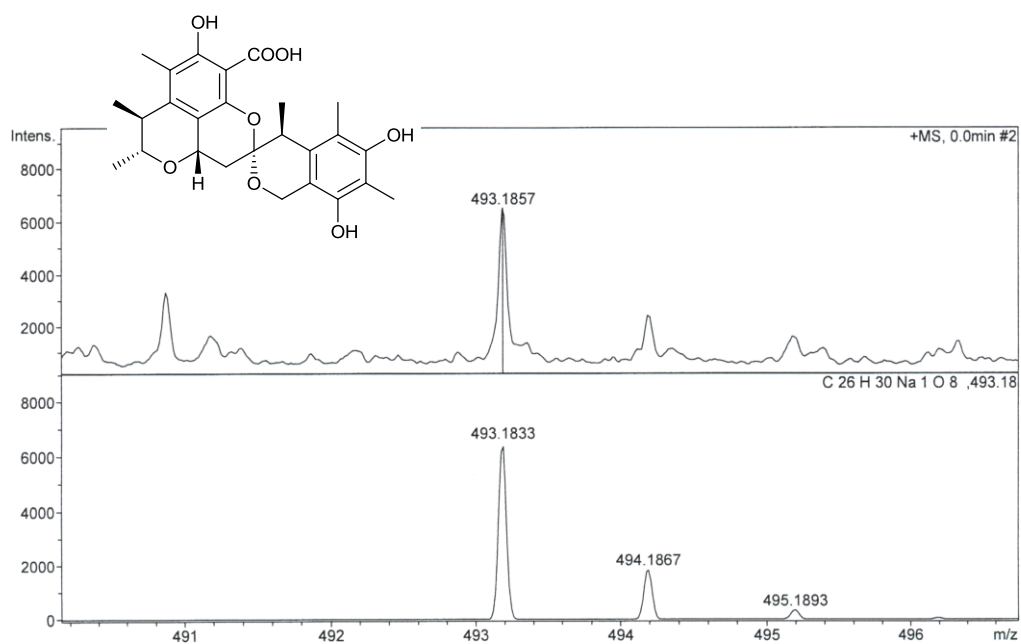
**Figure S85.** COSY spectrum of compound **15** (500 MHz, acetone- $d_6$ ).



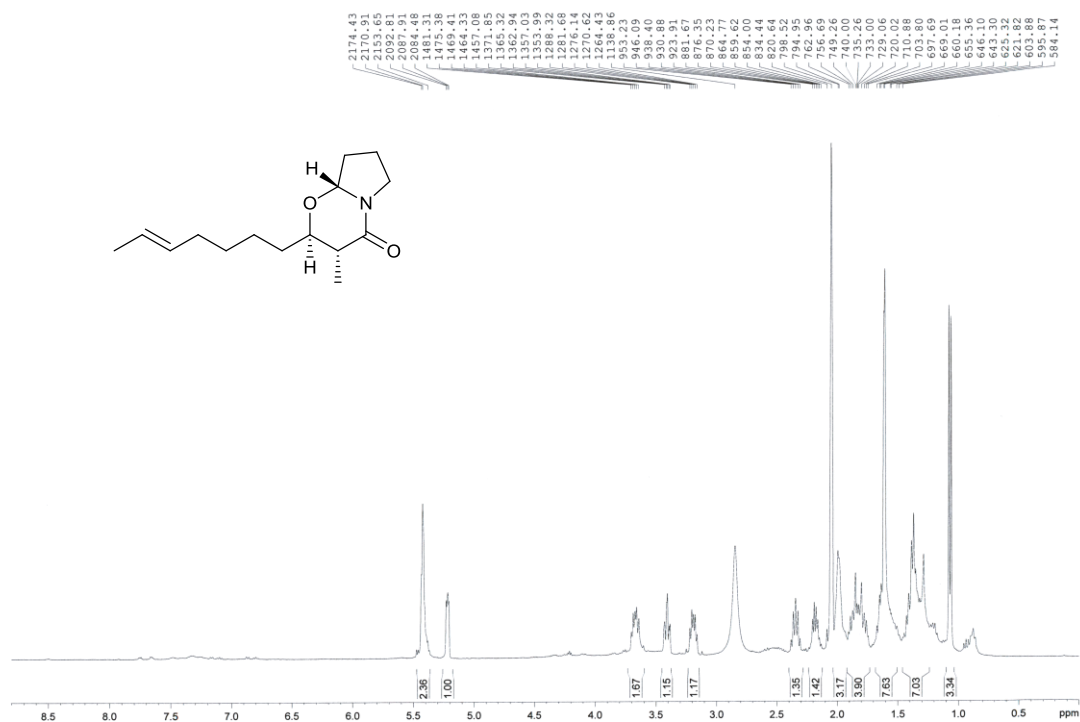
**Figure S86.** HMBC spectrum of compound **15** (500 MHz, acetone- $d_6$ ).



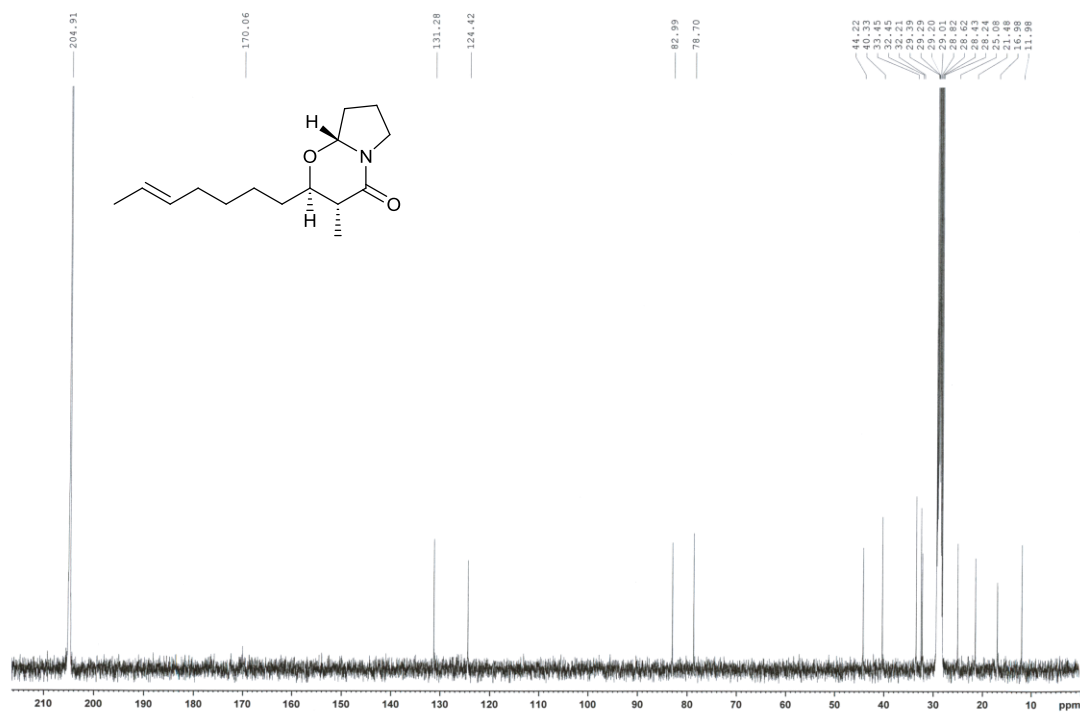
**Figure S87.** NOESY spectrum of compound **15** (500 MHz, acetone- $d_6$ ).



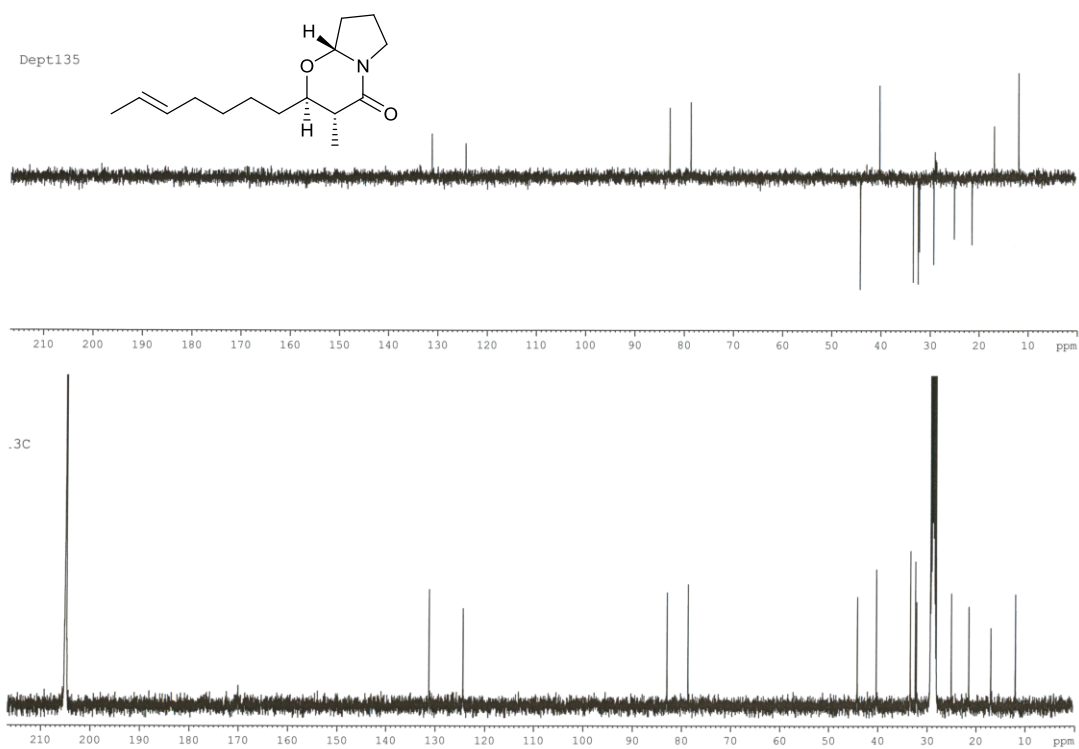
**Figure S88.** HRESIMS of compound **15**.



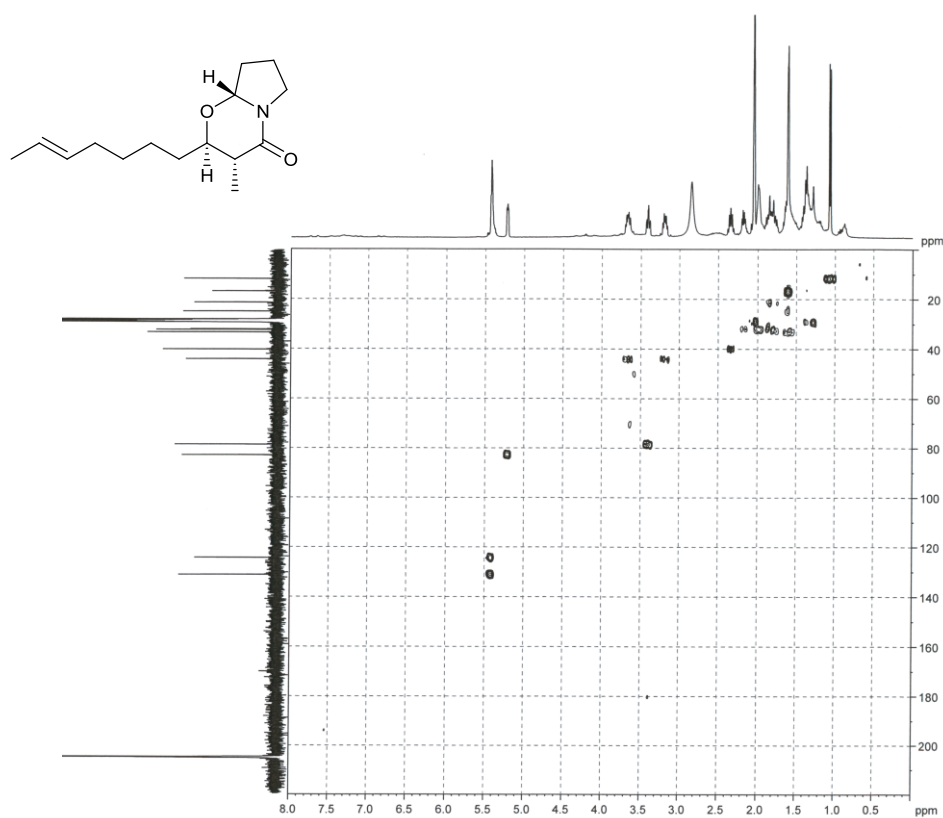
**Figure S89.**  $^1\text{H}$  NMR spectrum of compound **16** (400 MHz, acetone- $d_6$ ).



**Figure S90.**  $^{13}\text{C}$  NMR spectrum of compound **16** (100 MHz, acetone- $d_6$ ).

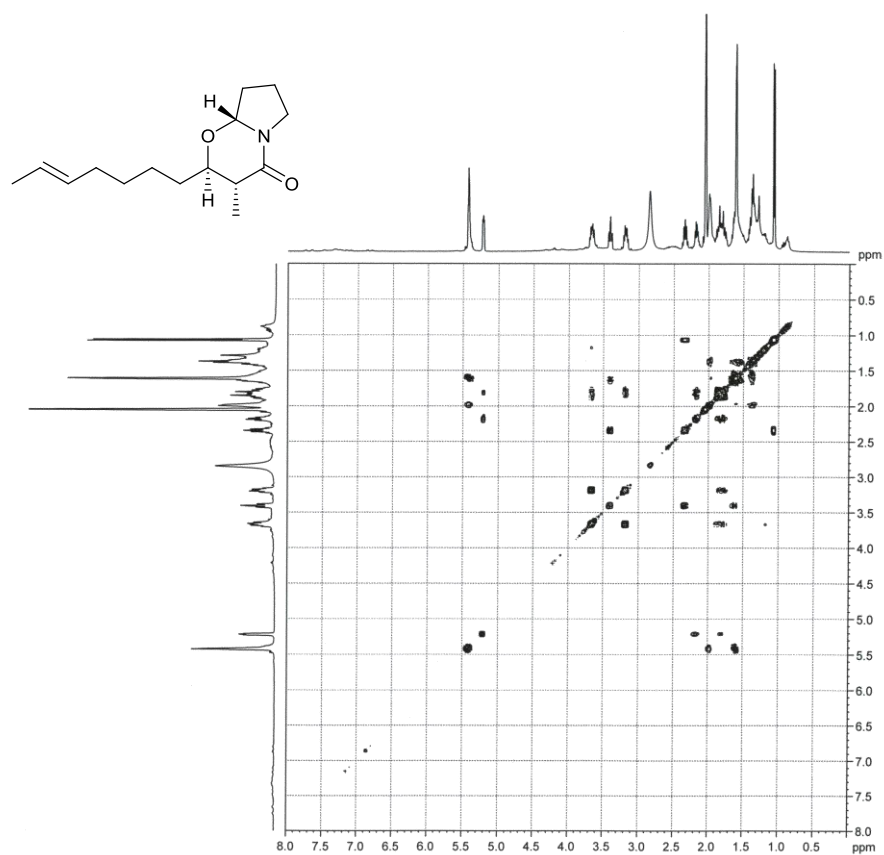


**Figure S91.** <sup>13</sup>C NMR and DEPT-135 spectra of compound **16** (100 MHz, acetone-*d*<sub>6</sub>).

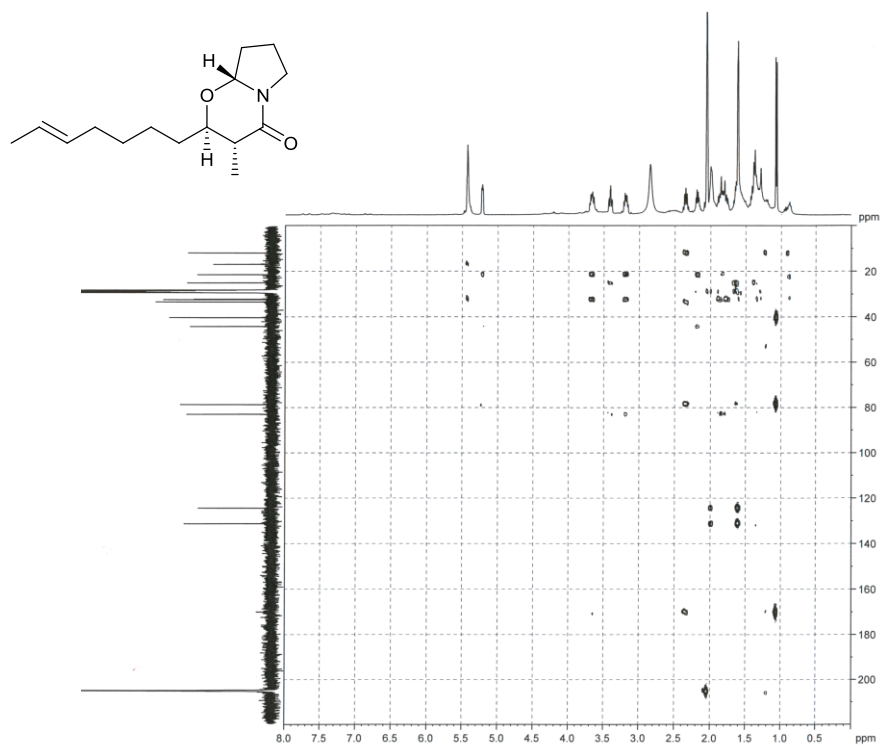


**Figure S92.** HMQC spectrum of compound **16** (400 MHz, acetone-*d*<sub>6</sub>).

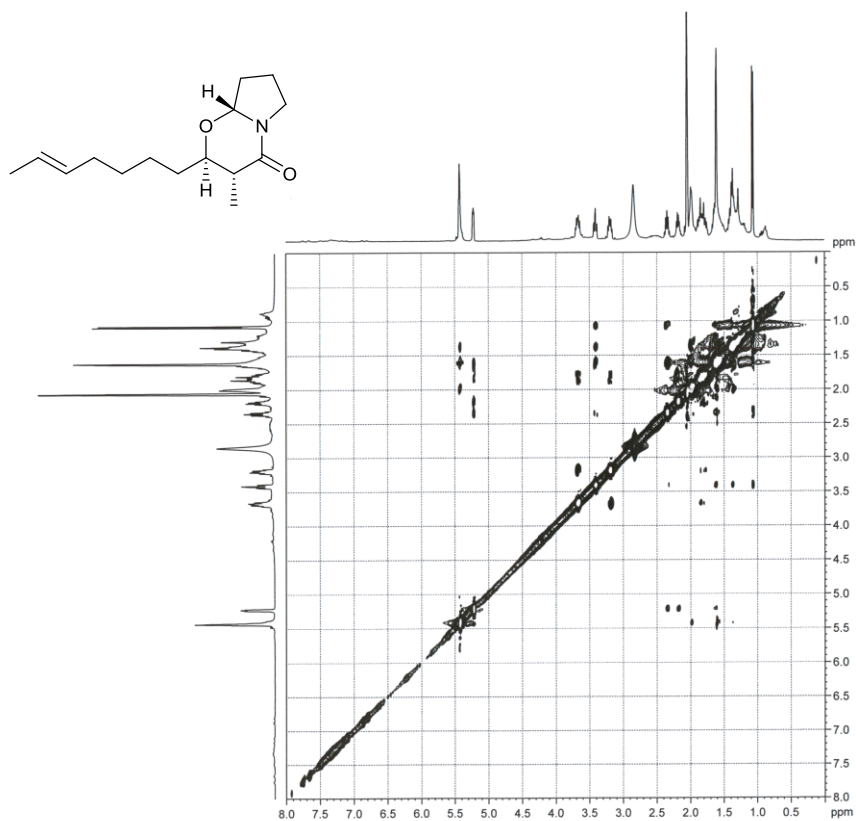




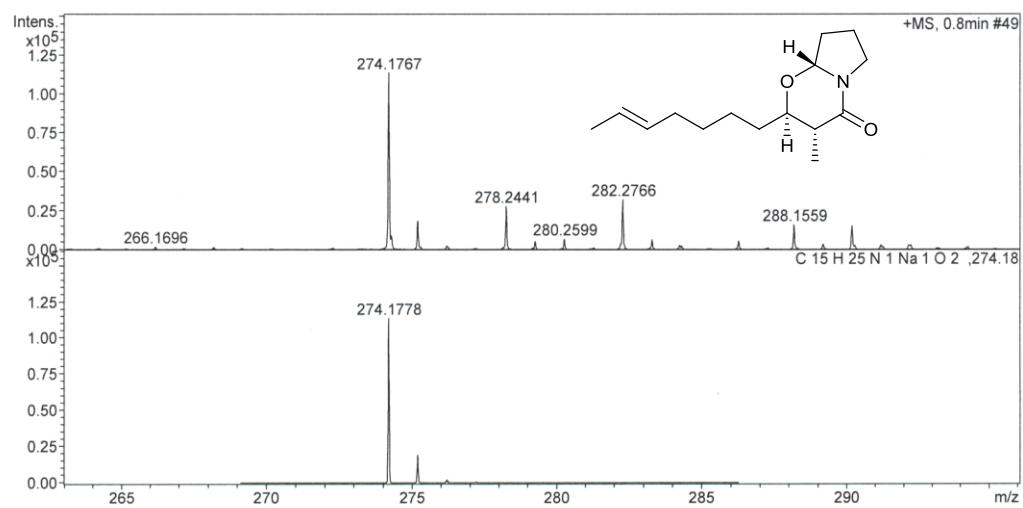
**Figure S93.** COSY spectrum of compound **16** (400 MHz, acetone- $d_6$ ).



**Figure S94.** HMBC spectrum of compound **16** (400 MHz, acetone- $d_6$ ).



**Figure S95.** NOESY spectrum of compound **16** (400 MHz, acetone- $d_6$ ).



**Figure S96.** HRESIMS of compound **16**.