

Supporting Information

**Chlorinated metabolites with antibacterial activities from a deep-sea-derived
Spiromastix fungus**

List of contents

- Figure S1-1.** HRESIMS spectrum of compound **1**.
- Figure S1-2.** ^1H NMR spectrum of compound **1** in $\text{DMSO-}d_6$ (400 MHz).
- Figure S1-3.** APT spectrum of compound **1** in $\text{DMSO-}d_6$ (100 MHz).
- Figure S1-4.** HSQC spectrum of compound **1** in $\text{DMSO-}d_6$.
- Figure S1-5.** $^1\text{H-}^1\text{H}$ COSY spectrum of compound **1** in $\text{DMSO-}d_6$.
- Figure S1-6.** HMBC spectrum of compound **1** in $\text{DMSO-}d_6$.
- Figure S1-7.** NOESY spectrum of compound **1** in $\text{DMSO-}d_6$.
- Figure S2-1.** HRESIMS spectrum of compound **2**.
- Figure S2-2.** ^1H NMR spectrum of compound **2** in $\text{DMSO-}d_6$ (400 MHz).
- Figure S2-3.** APT spectrum of compound **2** in $\text{DMSO-}d_6$ (100 MHz).
- Figure S2-4.** HSQC spectrum of compound **2** in $\text{DMSO-}d_6$.
- Figure S2-5.** $^1\text{H-}^1\text{H}$ COSY spectrum of compound **2** in $\text{DMSO-}d_6$.
- Figure S2-6.** HMBC spectrum of compound **2** in $\text{DMSO-}d_6$.
- Figure S2-7.** NOESY spectrum of compound **2** in $\text{DMSO-}d_6$.
- Figure S3-1.** HRESIMS spectrum of compound **3**.
- Figure S3-2.** ^1H NMR spectrum of compound **3** in $\text{DMSO-}d_6$ (400 MHz).
- Figure S3-3.** APT spectrum of compound **3** in $\text{DMSO-}d_6$ (100 MHz).
- Figure S3-4.** HSQC spectrum of compound **3** in $\text{DMSO-}d_6$.
- Figure S3-5.** $^1\text{H-}^1\text{H}$ COSY spectrum of compound **3** in $\text{DMSO-}d_6$.
- Figure S3-6.** HMBC spectrum of compound **3** in $\text{DMSO-}d_6$.
- Figure S3-7.** NOESY spectrum of compound **3** in $\text{DMSO-}d_6$.
- Figure S4-1.** HRESIMS spectrum of compound **4**.
- Figure S4-2.** ^1H NMR spectrum of compound **4** in $\text{DMSO-}d_6$ (400 MHz).
- Figure S4-3.** APT spectrum of compound **4** in $\text{DMSO-}d_6$ (100 MHz).
- Figure S4-4.** HSQC spectrum of compound **4** in $\text{DMSO-}d_6$.
- Figure S4-5.** $^1\text{H-}^1\text{H}$ COSY spectrum of compound **4** in $\text{DMSO-}d_6$.
- Figure S4-6.** HMBC spectrum of compound **4** in $\text{DMSO-}d_6$.
- Figure S4-7.** NOESY spectrum of compound **4** in $\text{DMSO-}d_6$.
- Figure S5-1.** HRESIMS spectrum of compound **5**.

Figure S5-2. ^1H NMR spectrum of compound **5** in $\text{DMSO-}d_6$ (400 MHz).

Figure S5-3. APT spectrum of compound **5** in $\text{DMSO-}d_6$ (100 MHz).

Figure S5-4. HSQC spectrum of compound **5** in $\text{DMSO-}d_6$.

Figure S5-5. $^1\text{H-}^1\text{H}$ COSY spectrum of compound **5** in $\text{DMSO-}d_6$.

Figure S5-6. HMBC spectrum of compound **5** in $\text{DMSO-}d_6$.

Figure S6-1. HRESIMS spectrum of compound **6**.

Figure S6-2. ^1H NMR spectrum of compound **6** in $\text{DMSO-}d_6$ (400 MHz).

Figure S6-3. APT spectrum of compound **6** in $\text{DMSO-}d_6$ (100 MHz).

Figure S6-4. HSQC spectrum of compound **6** in $\text{DMSO-}d_6$.

Figure S6-5. $^1\text{H-}^1\text{H}$ COSY spectrum of compound **6** in $\text{DMSO-}d_6$.

Figure S6-6. HMBC spectrum of compound **6** in $\text{DMSO-}d_6$.

Figure S7-1. HRESIMS spectrum of compound **7**.

Figure S7-2. ^1H NMR spectrum of compound **7** in $\text{DMSO-}d_6$ (400 MHz).

Figure S7-3. APT spectrum of compound **7** in $\text{DMSO-}d_6$ (100 MHz).

Figure S7-4. HSQC spectrum of compound **7** in $\text{DMSO-}d_6$.

Figure S7-5. $^1\text{H-}^1\text{H}$ COSY spectrum of compound **7** in $\text{DMSO-}d_6$.

Figure S7-6. HMBC spectrum of compound **7** in $\text{DMSO-}d_6$.

Figure S8-1. Experimental ECD spectra of **5** and **6** in MeOH

Figure S8-2. ECD spectrum of clearanol C (cited from literature)

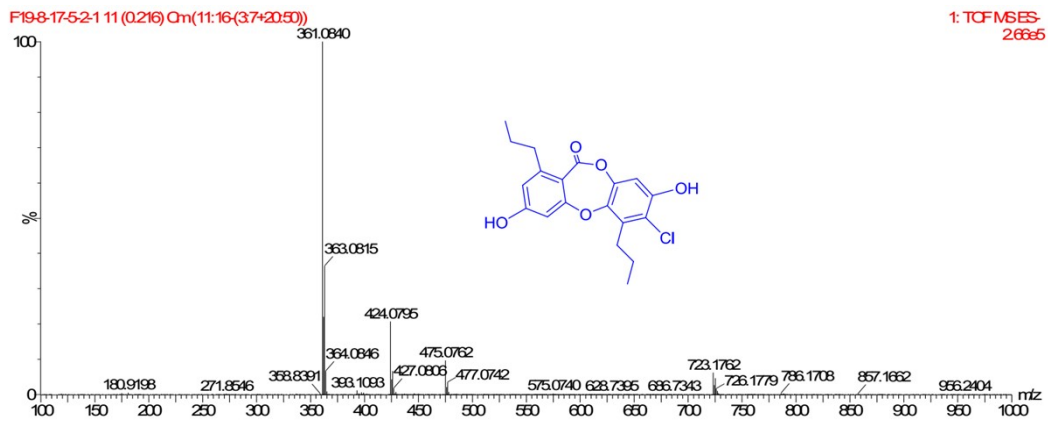


Figure 1-1. HRESIMS spectrum of compound 1.

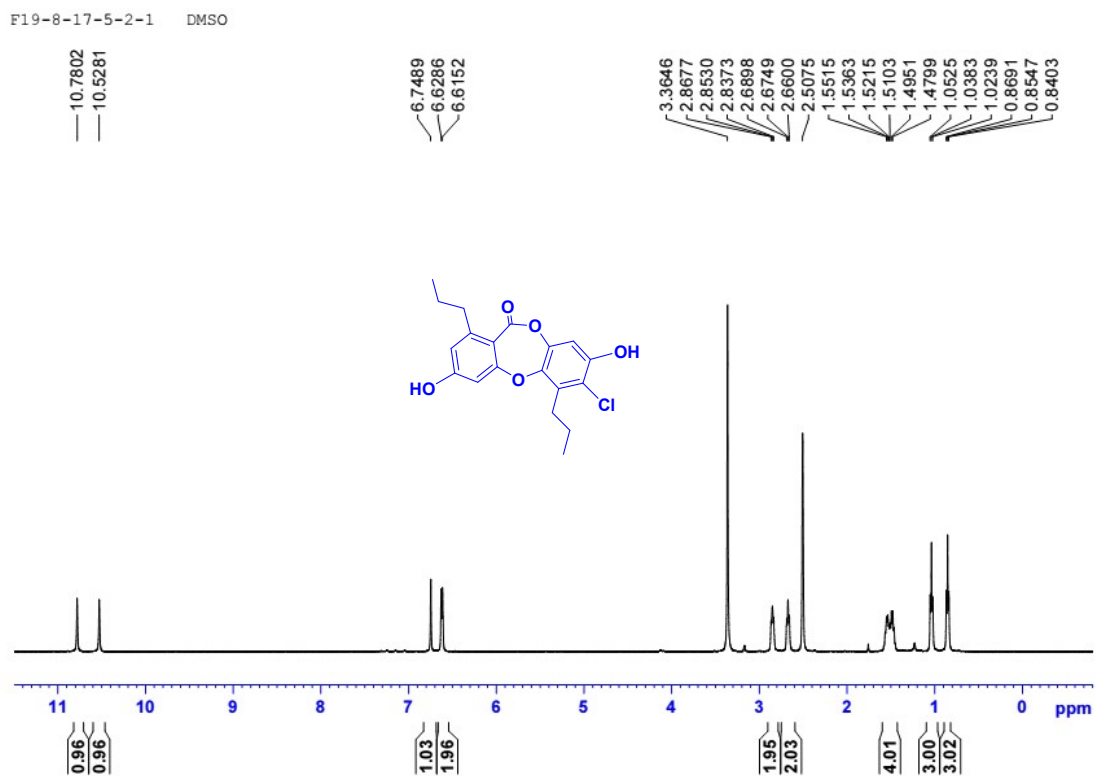


Figure 1-2. ¹H NMR spectrum of compound 1 in DMSO-*d*₆ (400 MHz).

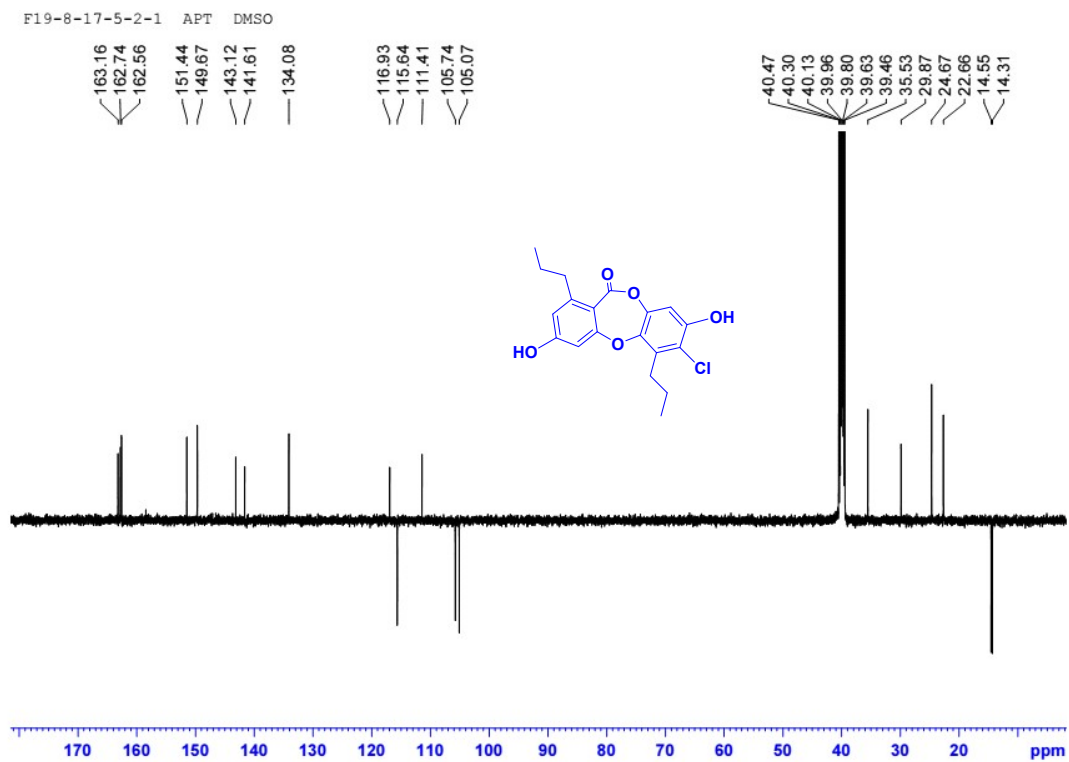


Figure 1-3. APT spectrum of compound 1 in DMSO- d_6 (100 MHz).

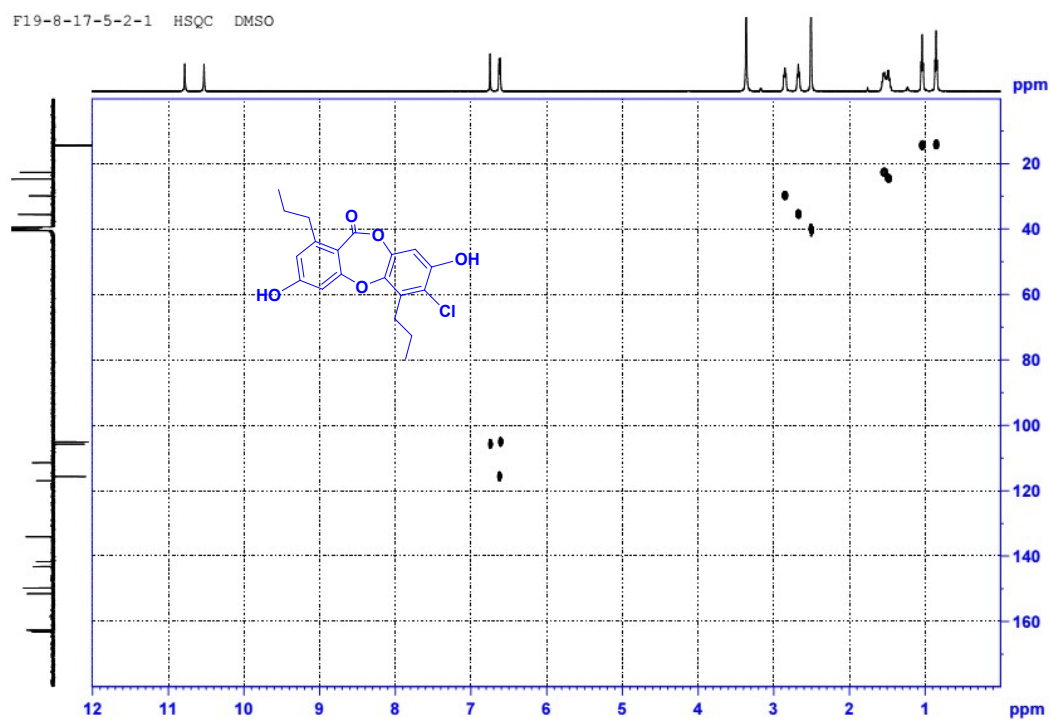


Figure 1-4. HSQC spectrum of compound 1 in DMSO- d_6 .

F19-8-17-5-2-1 COSY DMSO

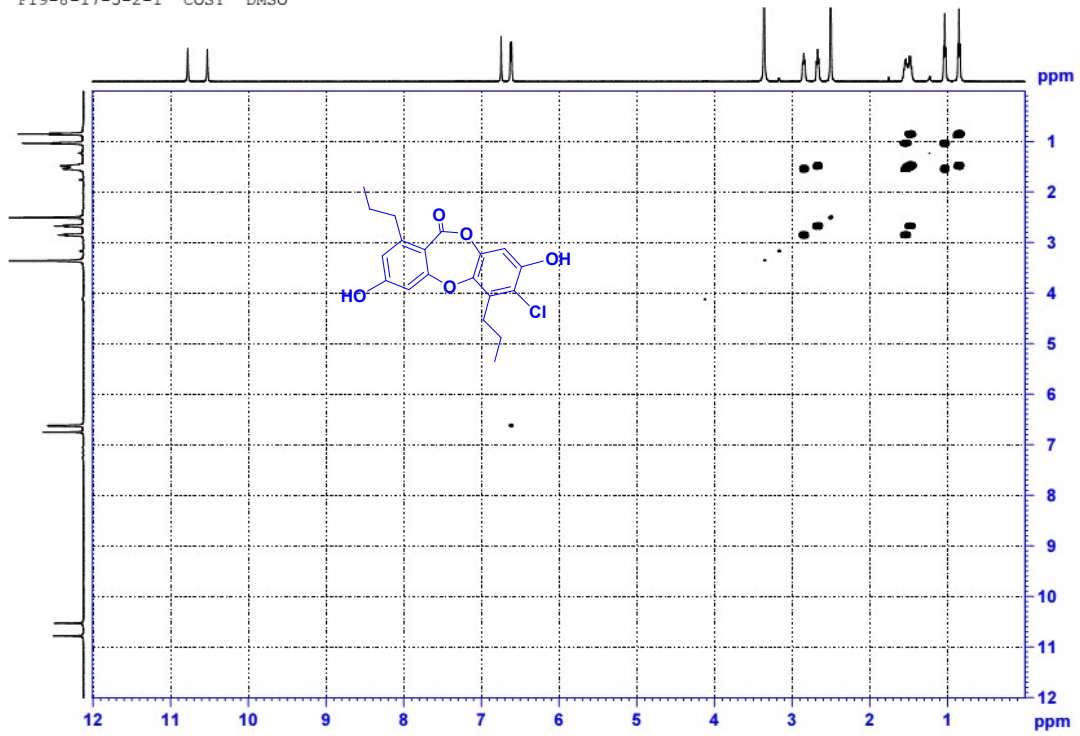


Figure 1-5. ^1H - ^1H COSY spectrum of compound 1 in $\text{DMSO-}d_6$.

F19-8-17-5-2-1 HMBC DMSO

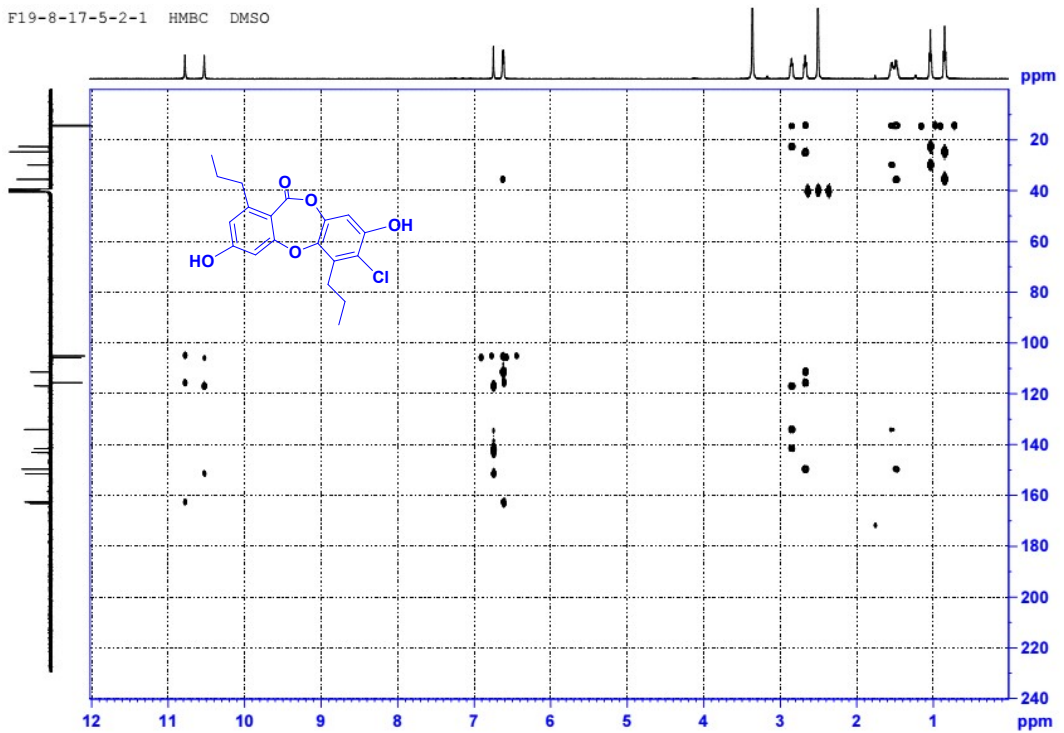


Figure 1-6. HMBC spectrum of compound 1 in $\text{DMSO-}d_6$.

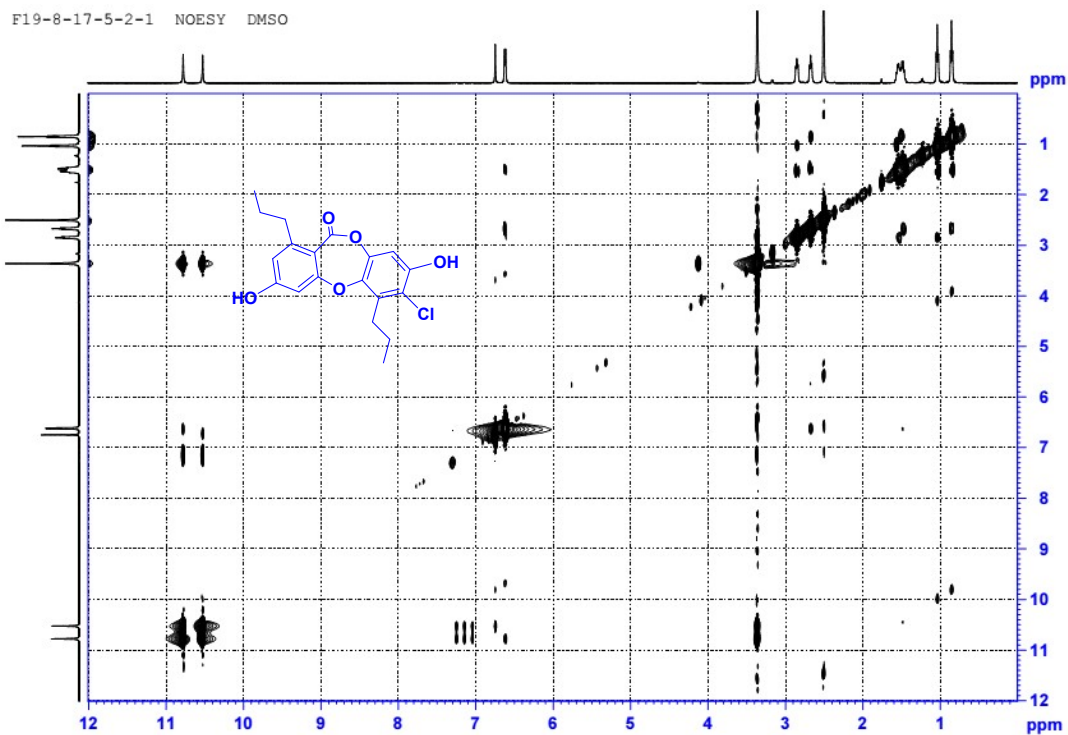


Figure 1-7. NOESY spectrum of compound 1 in DMSO- d_6 .

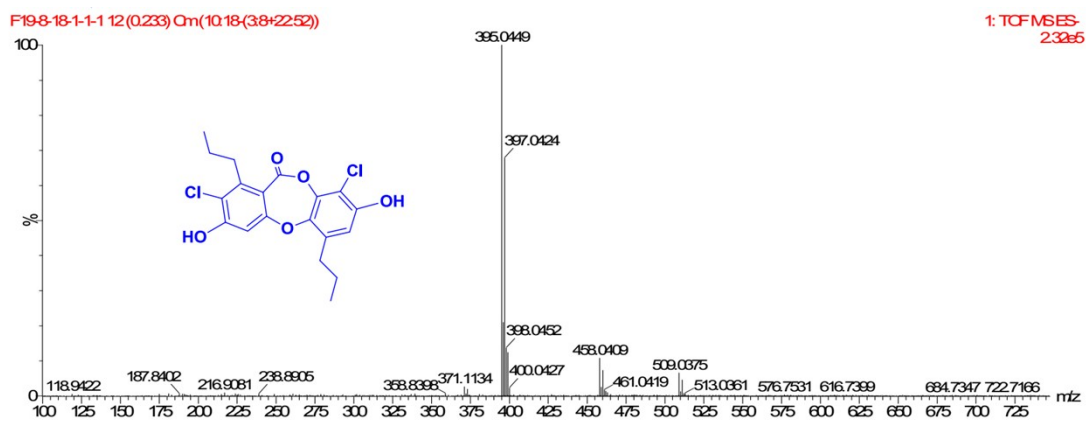


Figure 2-1. HRESIMS spectrum of compound 2.

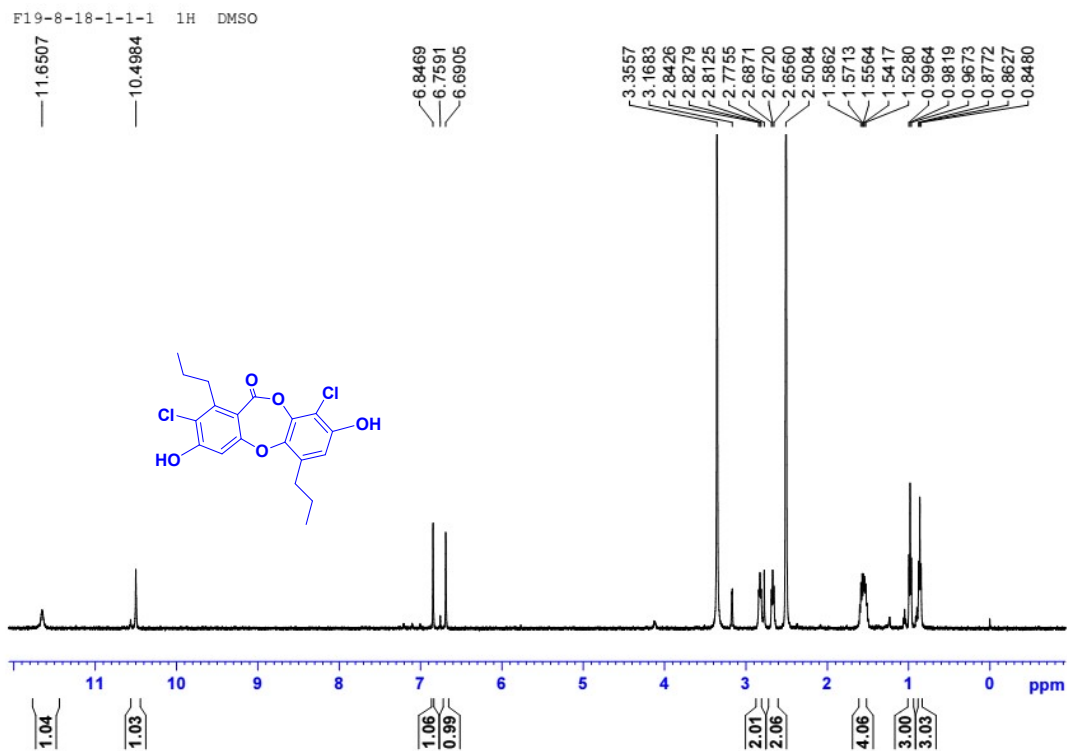


Figure 2-2. ^1H NMR spectrum of compound 2 in $\text{DMSO-}d_6$ (400 MHz).

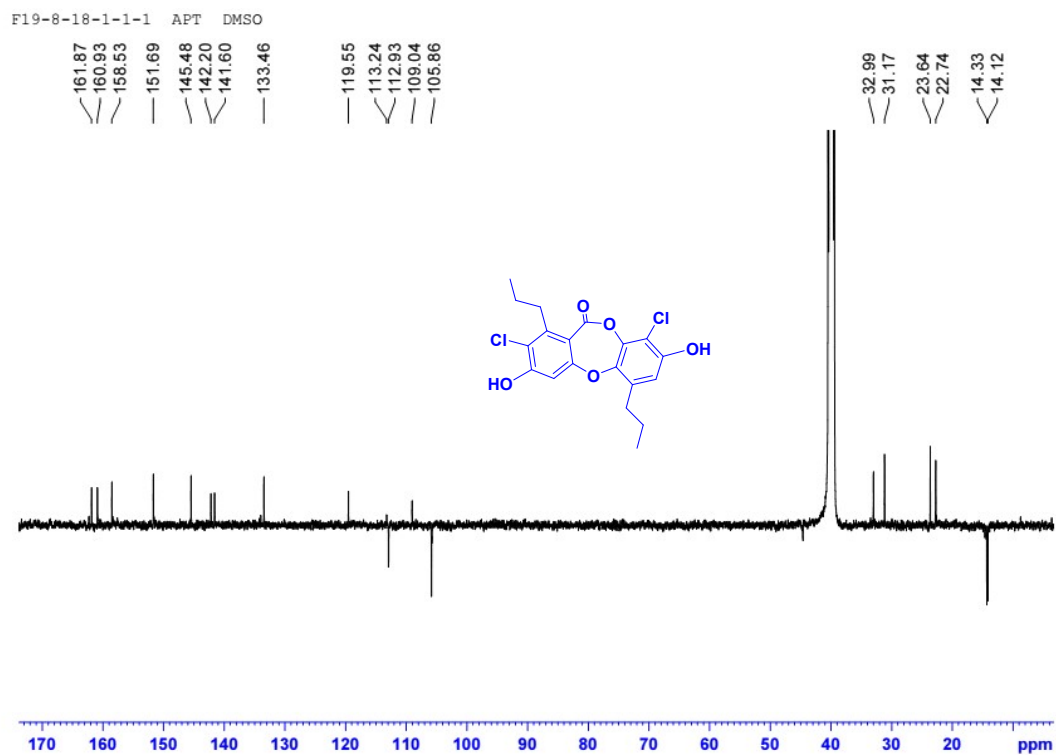


Figure 2-3. APT spectrum of compound 2 in $\text{DMSO-}d_6$ (100 MHz).

F19-8-18-1-1-1 HSQC DMSO

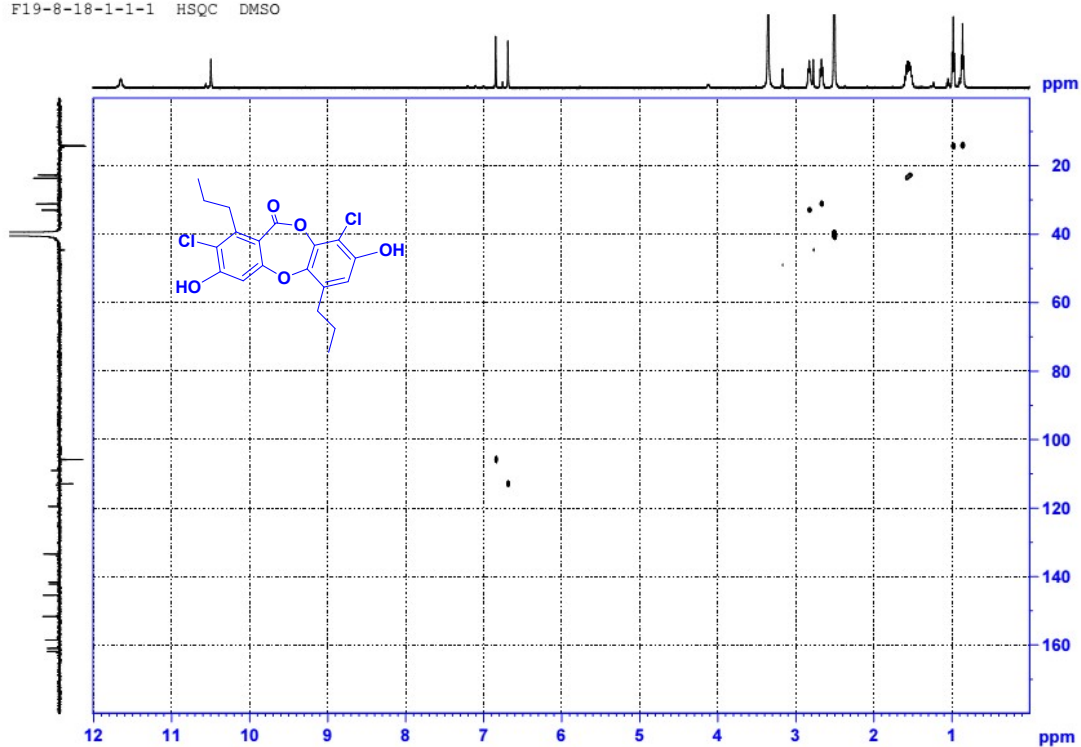


Figure 2-4. HSQC spectrum of compound 2 in DMSO- d_6 .

F19-8-18-1-1-1 COSY DMSO

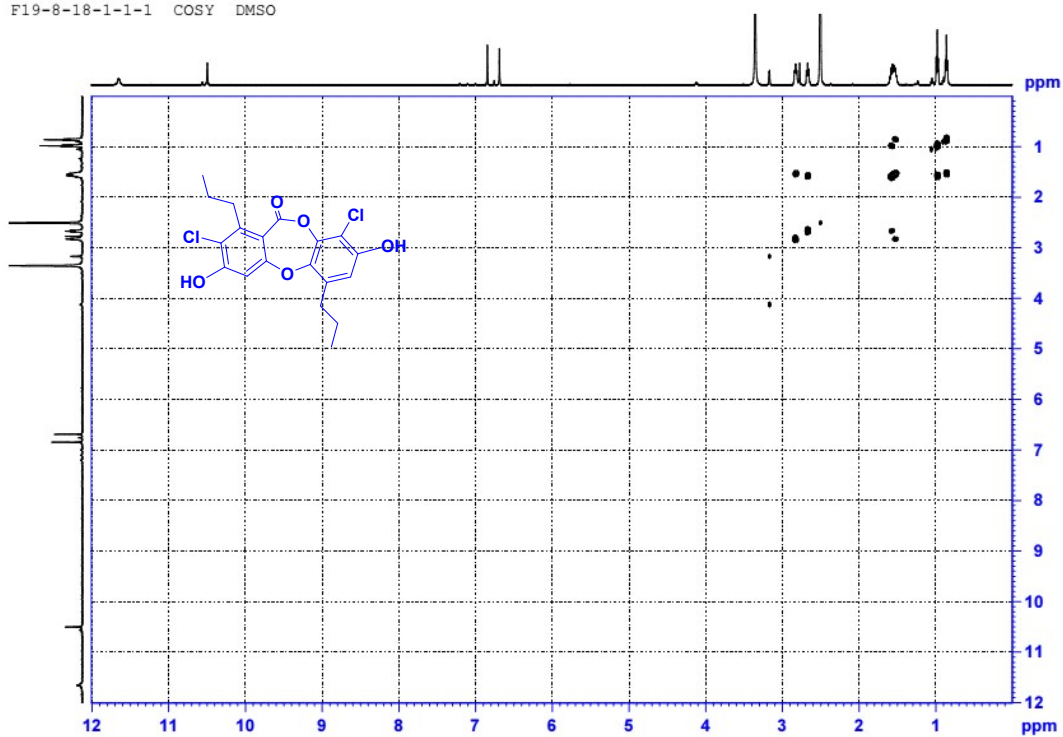


Figure 2-5. ^1H - ^1H COSY spectrum of compound 2 in DMSO- d_6 .

F19-8-18-1-1-1 HMBC DMSO

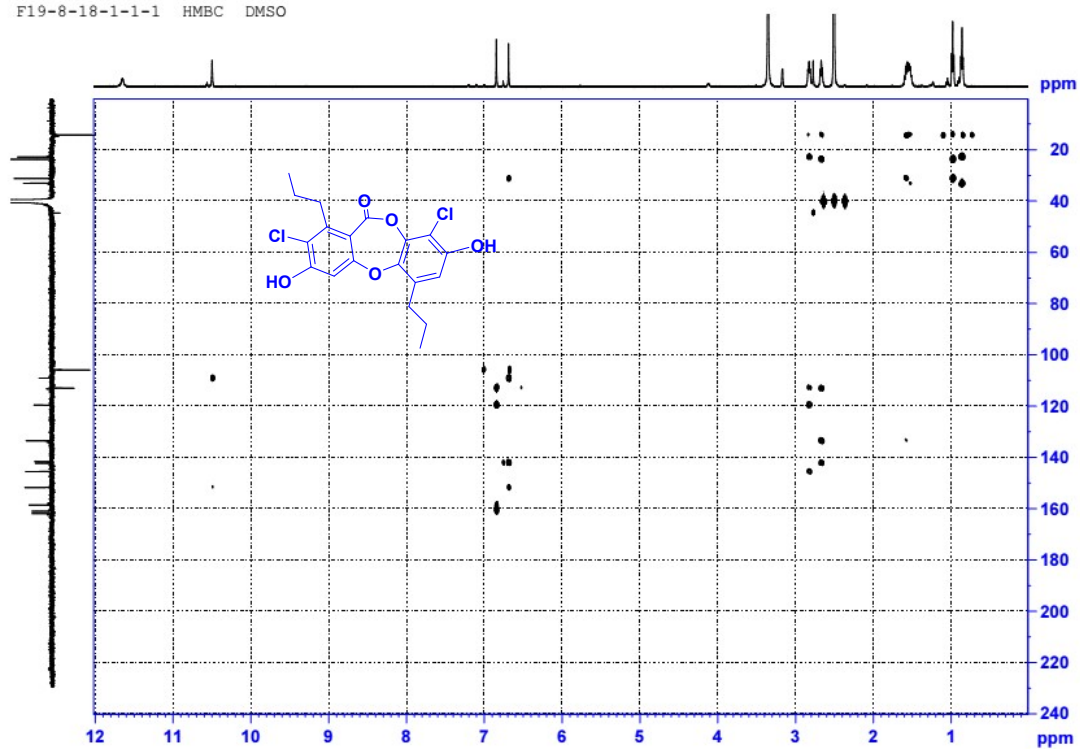


Figure 2-6. HMBC spectrum of compound 2 in DMSO- d_6 .

F19-8-18-1-1-1 NOESY DMSO

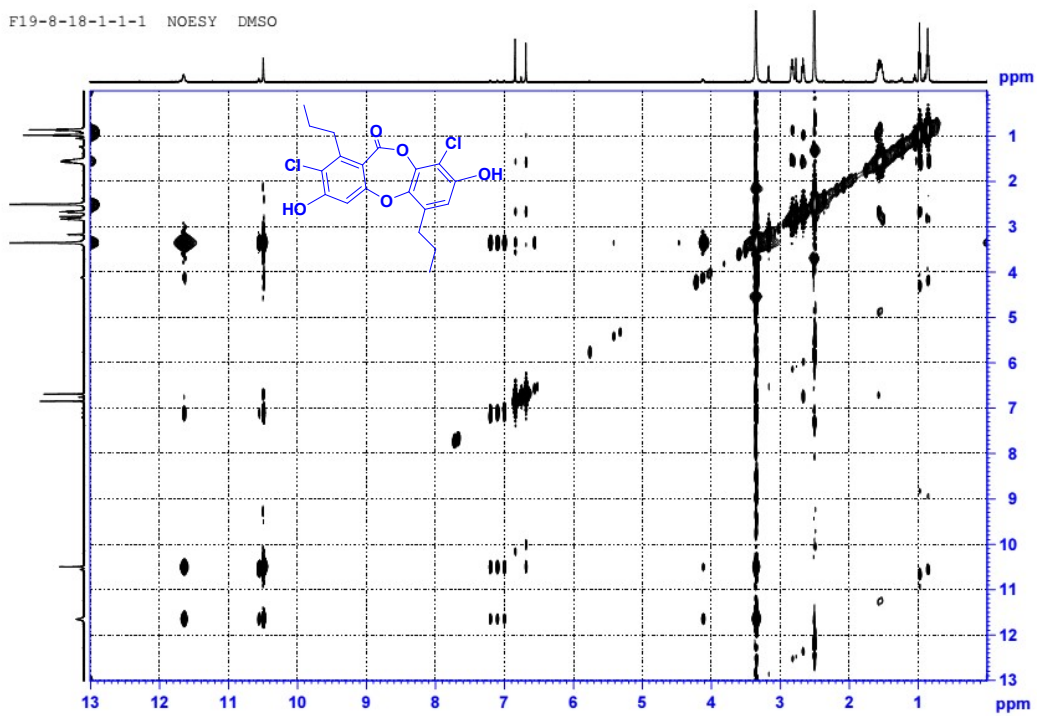


Figure 2-7. NOESY spectrum of compound 2 in DMSO- d_6 .

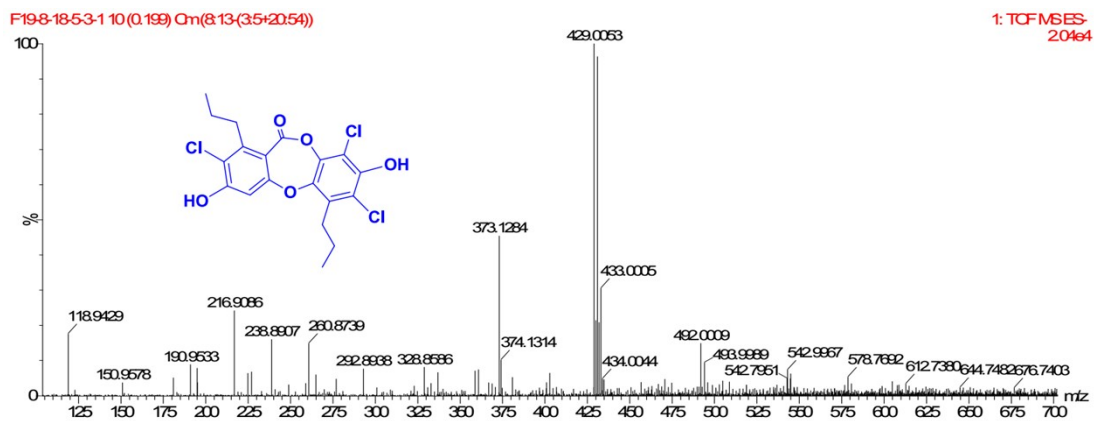


Figure 3-1. HRESIMS spectrum of compound 3.

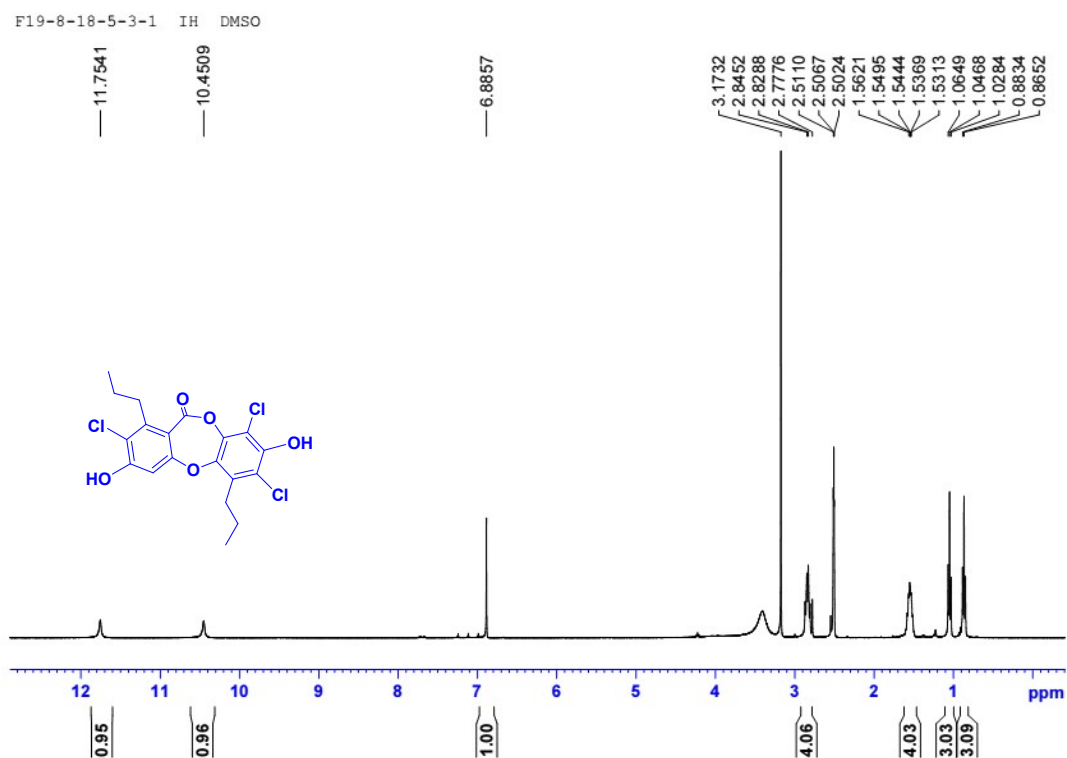


Figure 3-2. ^1H NMR spectrum of compound 3 in $\text{DMSO-}d_6$ (400 MHz).

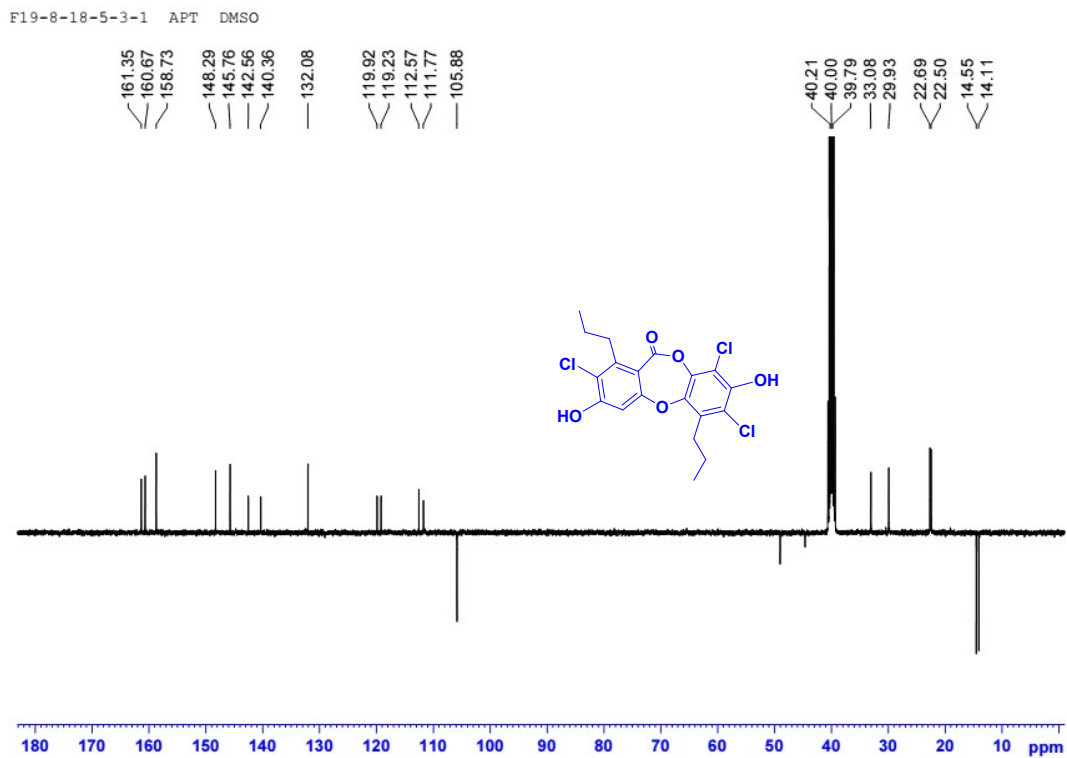


Figure 3-3. APT spectrum of compound 3 in DMSO- d_6 (100 MHz).

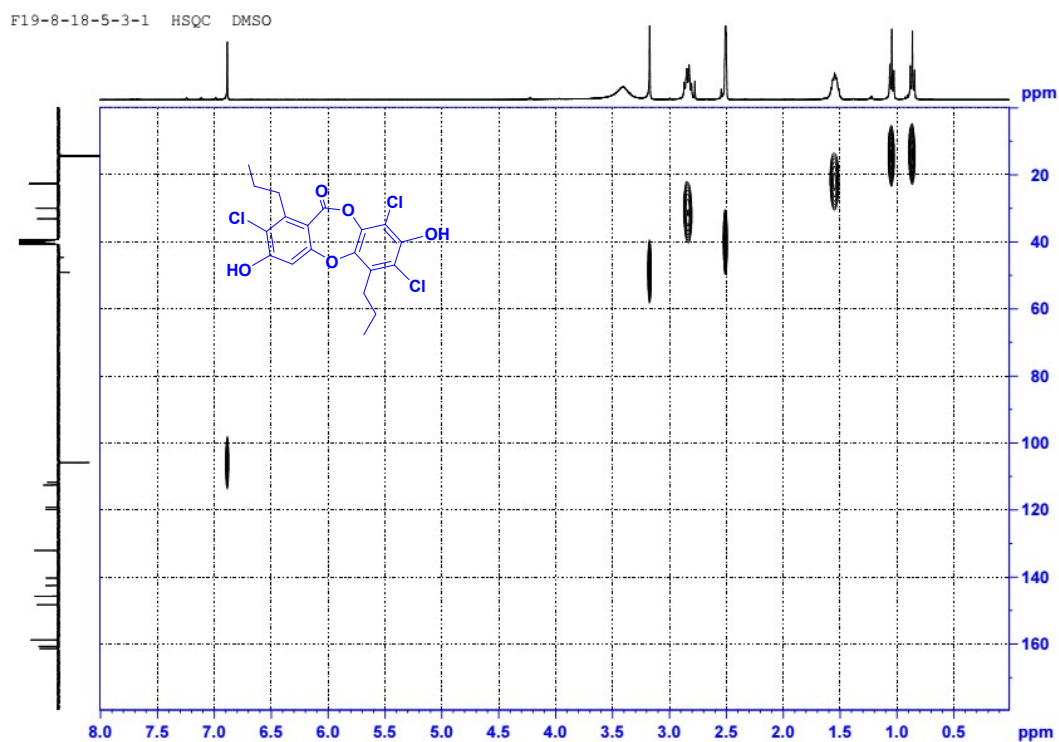


Figure 3-4. HSQC spectrum of compound 3 in DMSO- d_6 .

F19-8-18-5-3-1 COSY DMSO

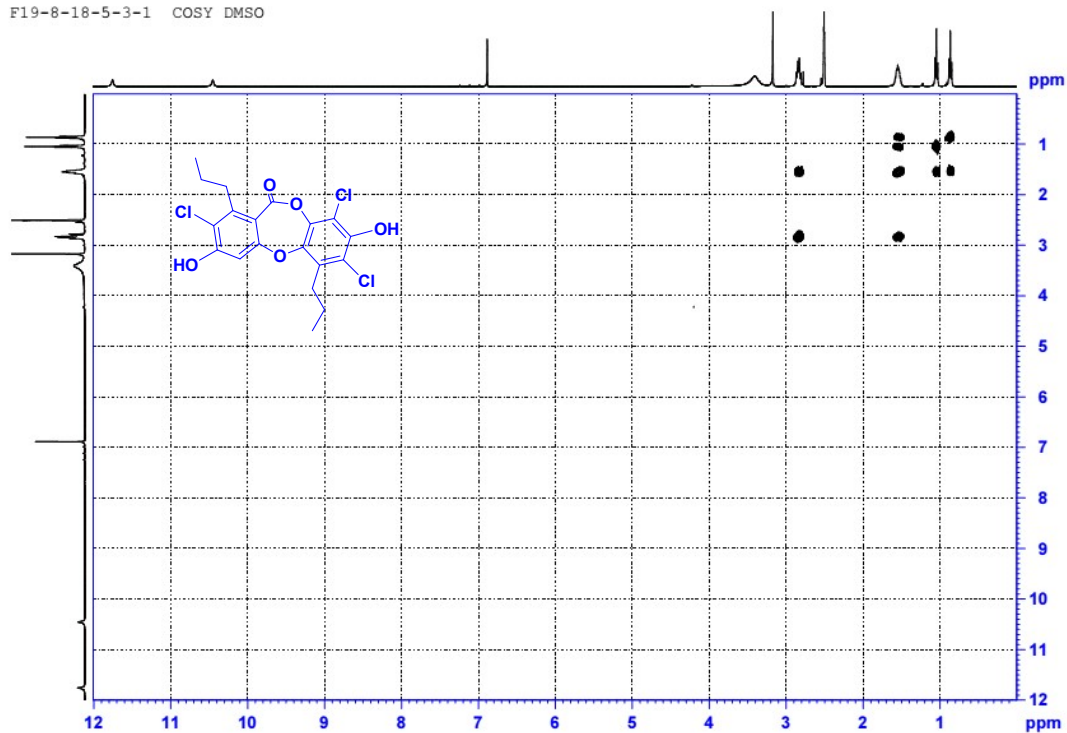


Figure 3-5. ^1H - ^1H COSY spectrum of compound 3 in $\text{DMSO-}d_6$.

F19-8-18-5-3-1 HMBC DMSO

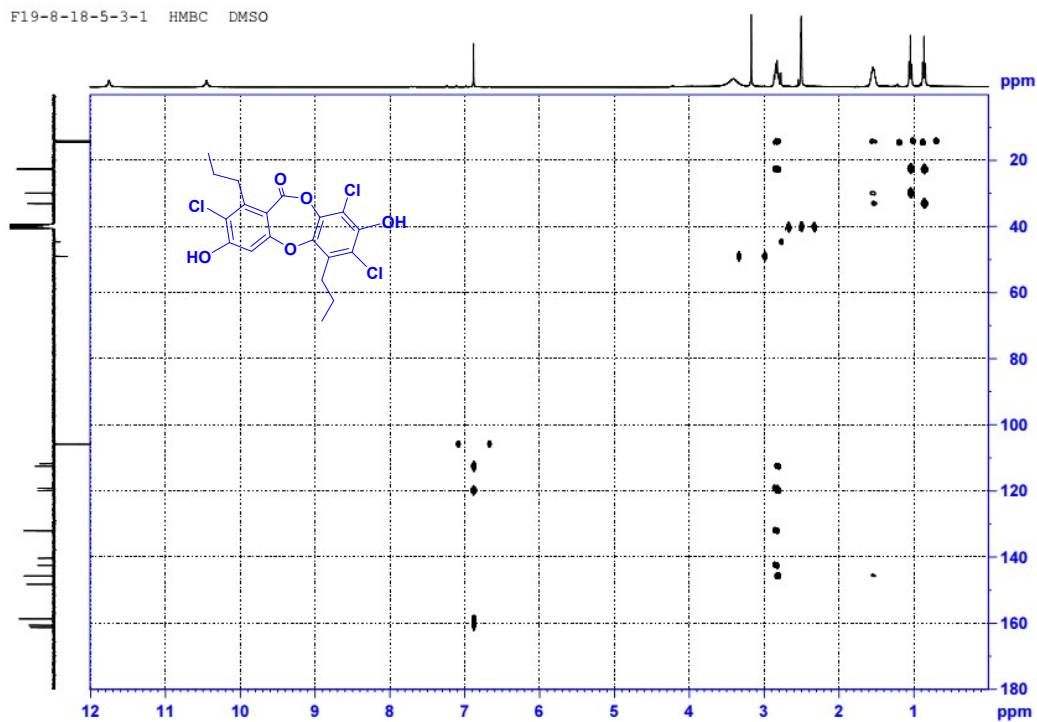


Figure 3-6. HMBC spectrum of compound 3 in $\text{DMSO-}d_6$.

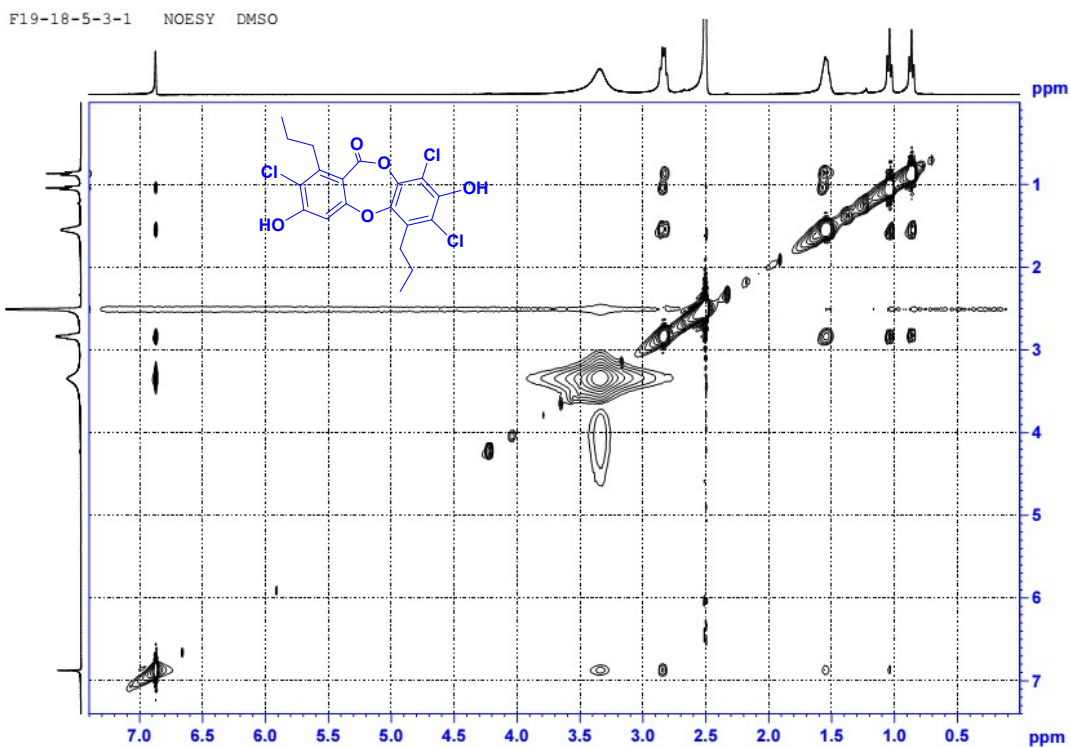


Figure 3-7. NOESY spectrum of compound 3 in DMSO- d_6 .

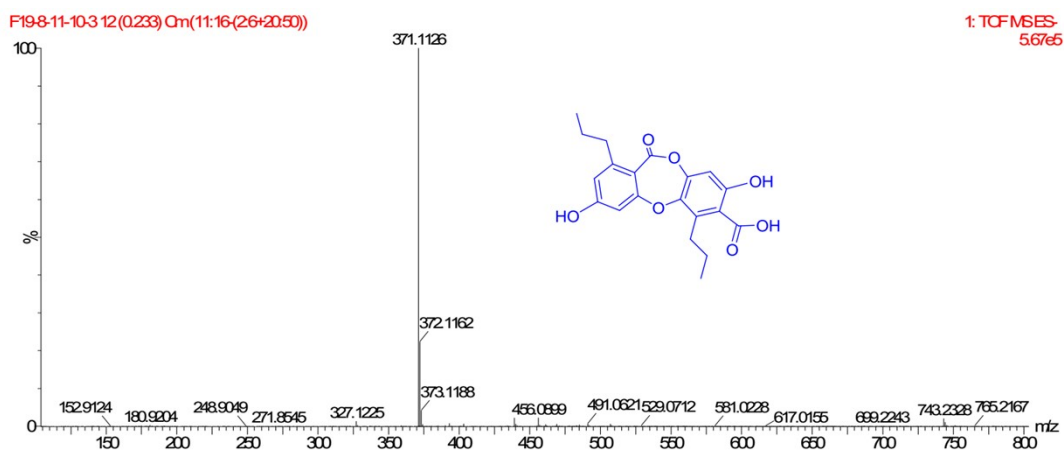


Figure 4-1. HRMSIMS spectrum of compound 4.

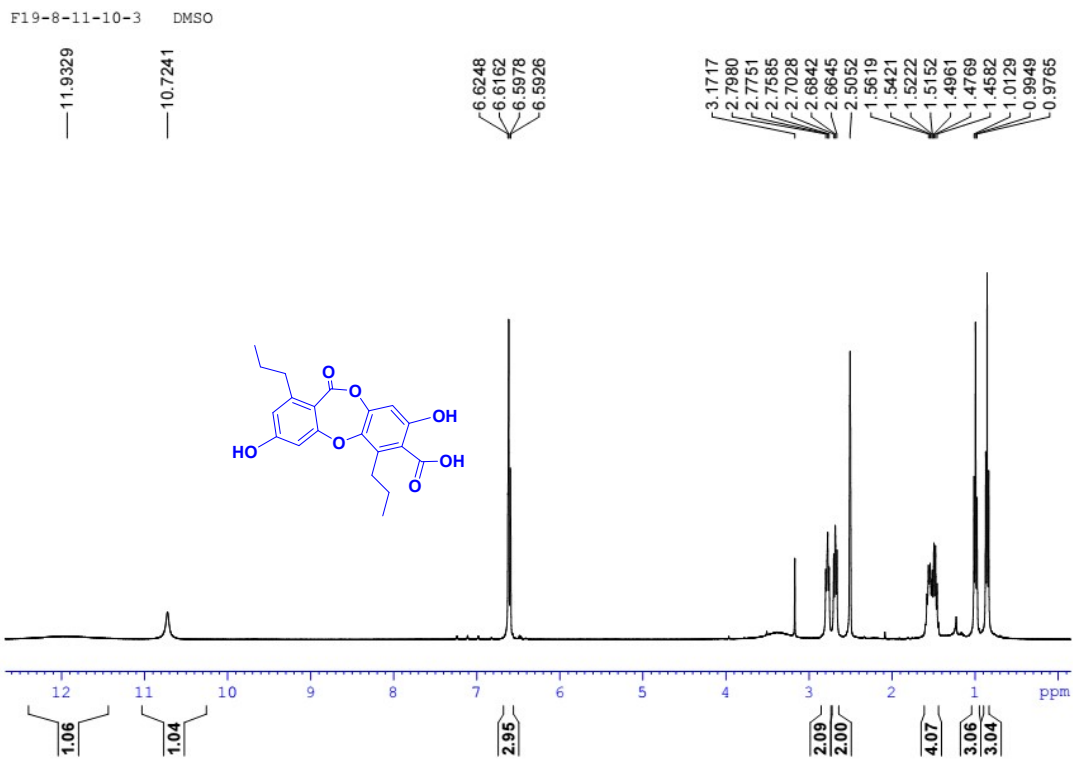


Figure 4-2. ^1H NMR spectrum of compound 4 in $\text{DMSO-}d_6$ (400 MHz).

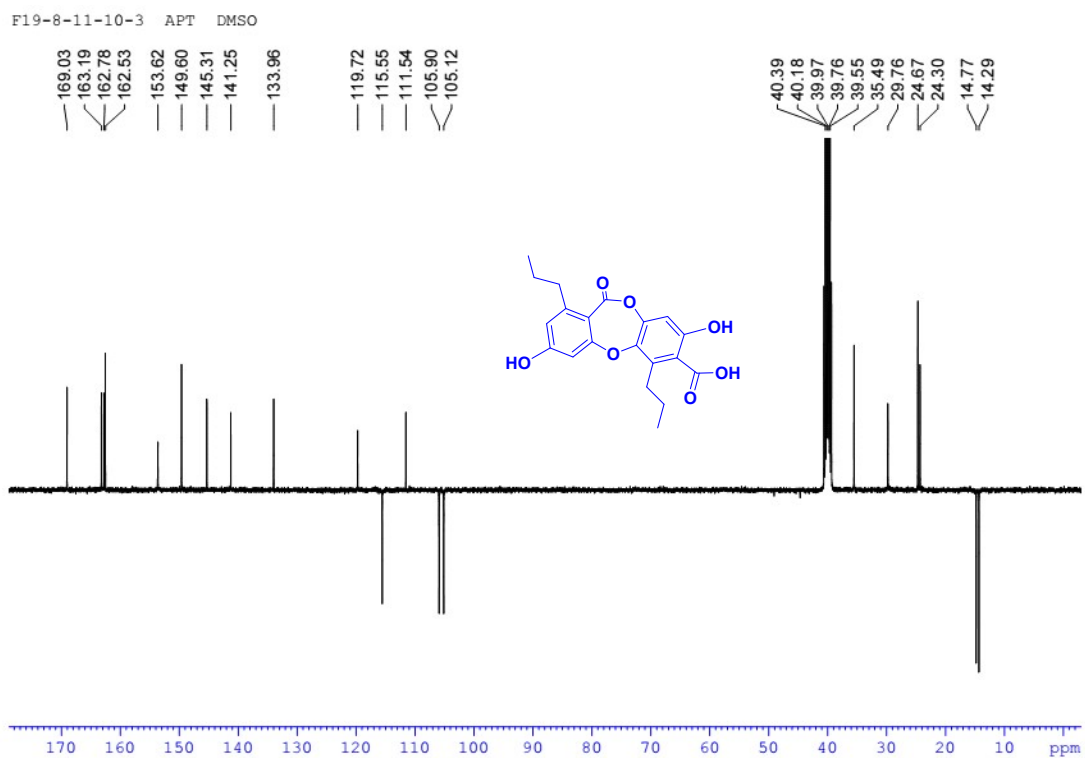


Figure 4-3. APT spectrum of compound 4 in $\text{DMSO-}d_6$ (100 MHz).

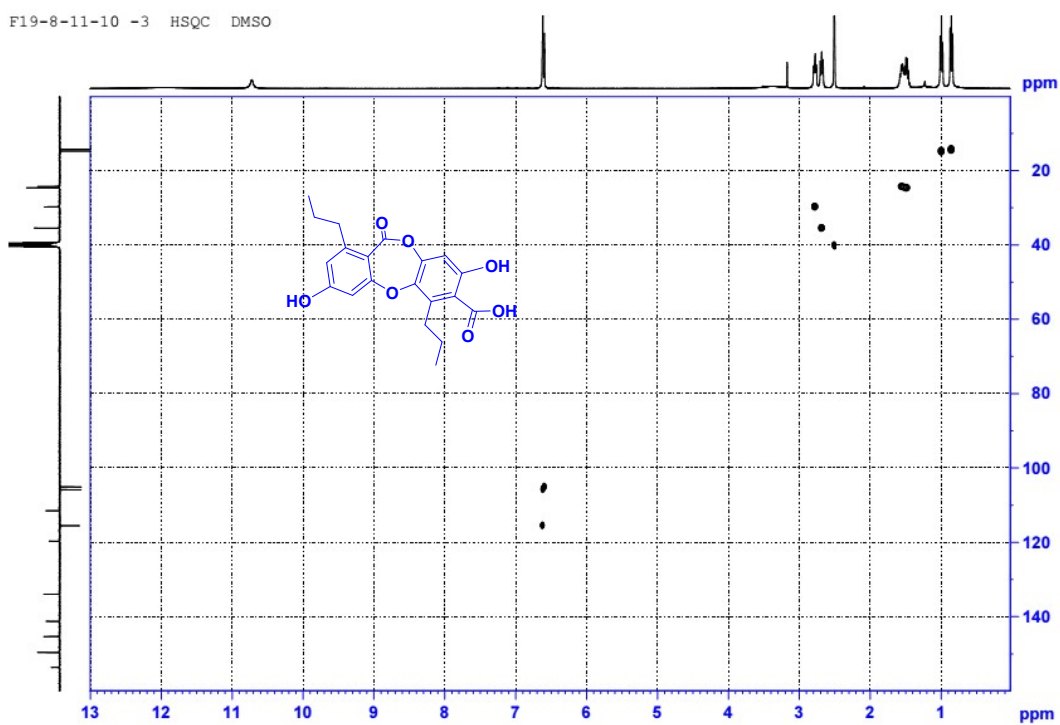


Figure 4-4. HSQC spectrum of compound 4 in DMSO- d_6 .

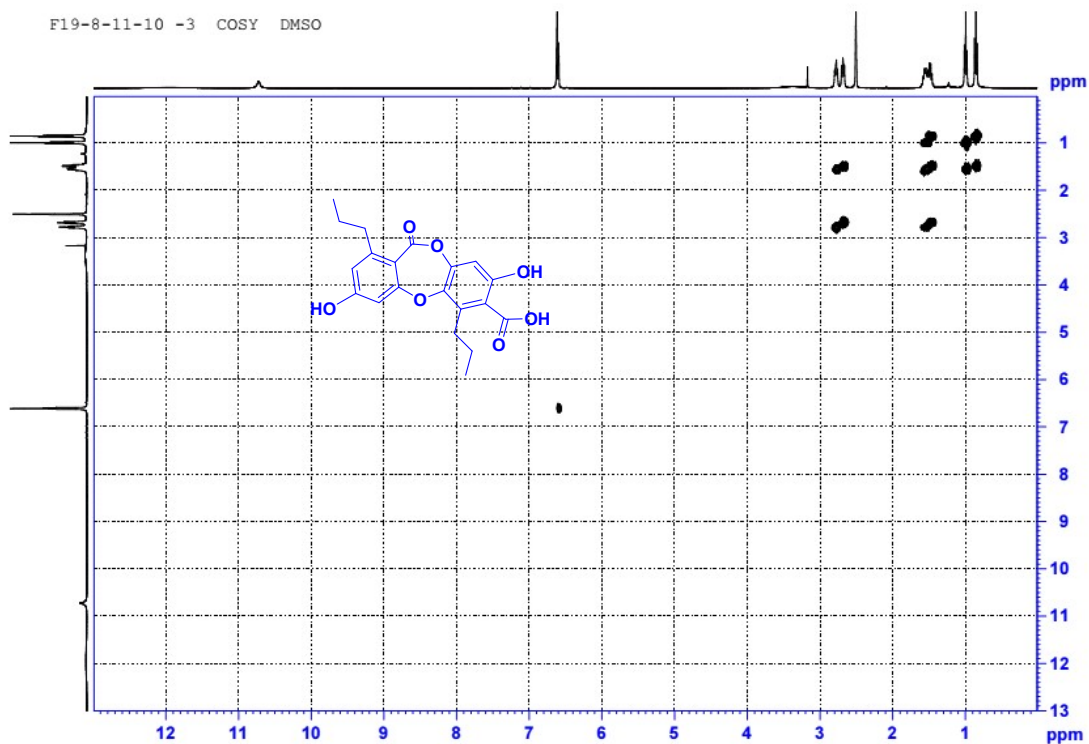


Figure 4-5. ^1H - ^1H COSY spectrum of compound 4 in DMSO- d_6 .

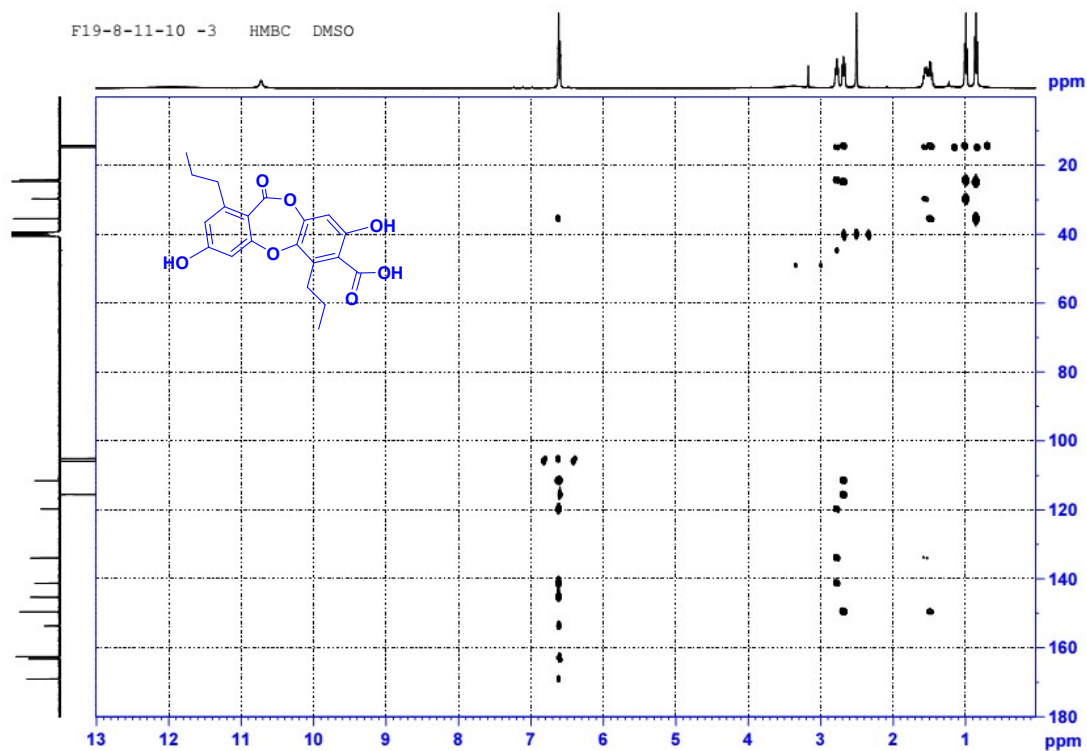


Figure 4-6. HMBC spectrum of compound 4 in DMSO-*d*₆.

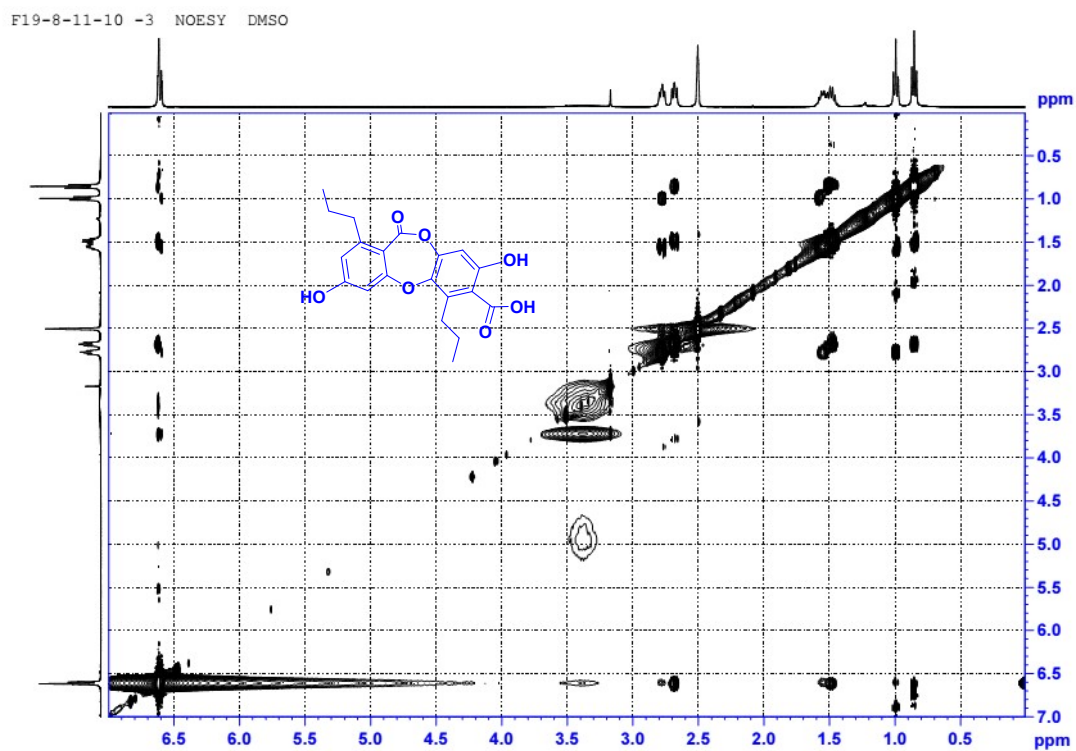


Figure 4-7. NOESY spectrum of compound 4 in DMSO-*d*₆.

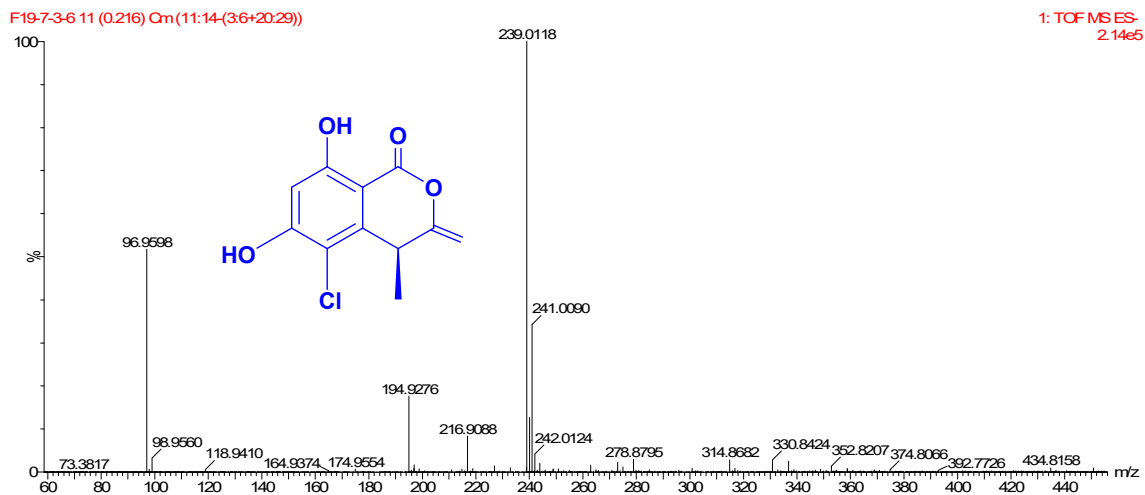


Figure 5-1. HRESIMS spectrum of compound 5.

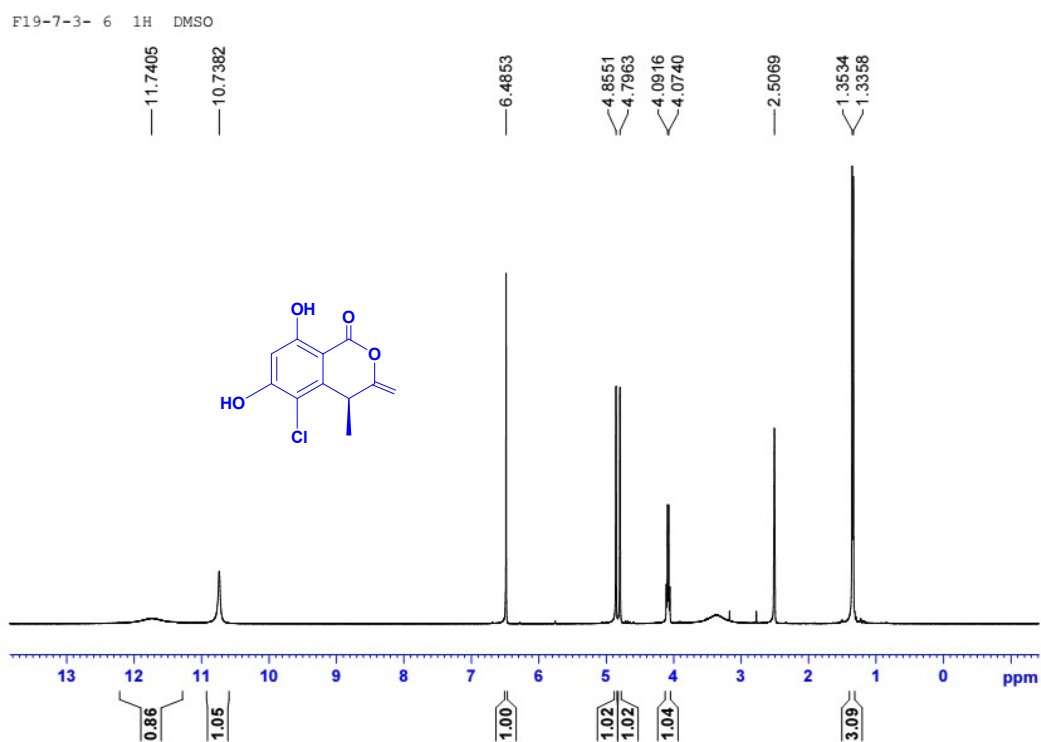


Figure 5-2. ¹H NMR spectrum of compound 5 in DMSO-*d*₆ (400 MHz).

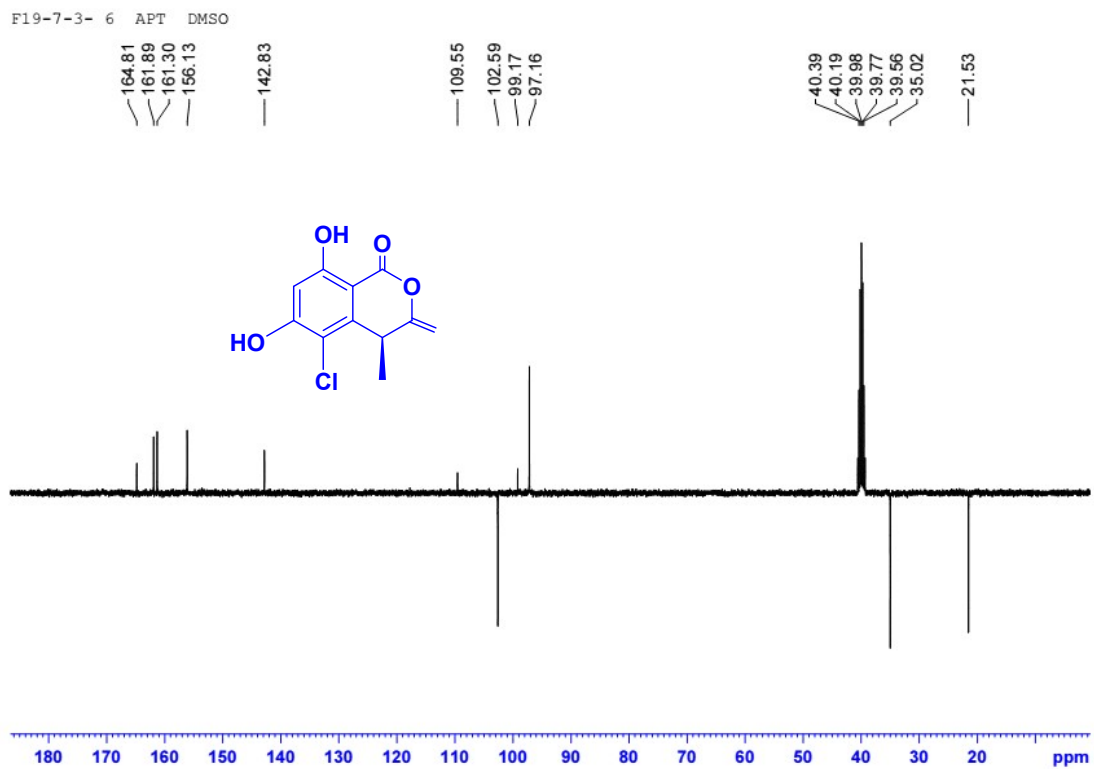


Figure 5-3. APT spectrum of compound 5 in DMSO- d_6 (100 MHz).

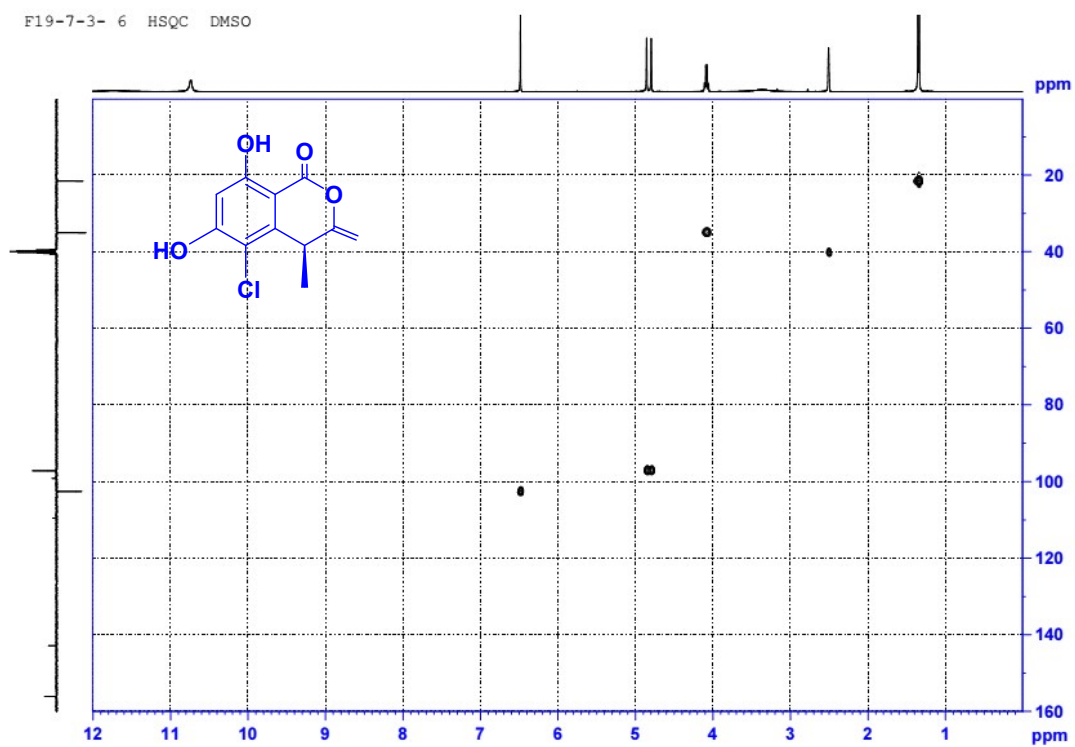


Figure 5-4. HSQC spectrum of compound 5 in DMSO- d_6 .

F19-7-3- 6 COSY DMSO

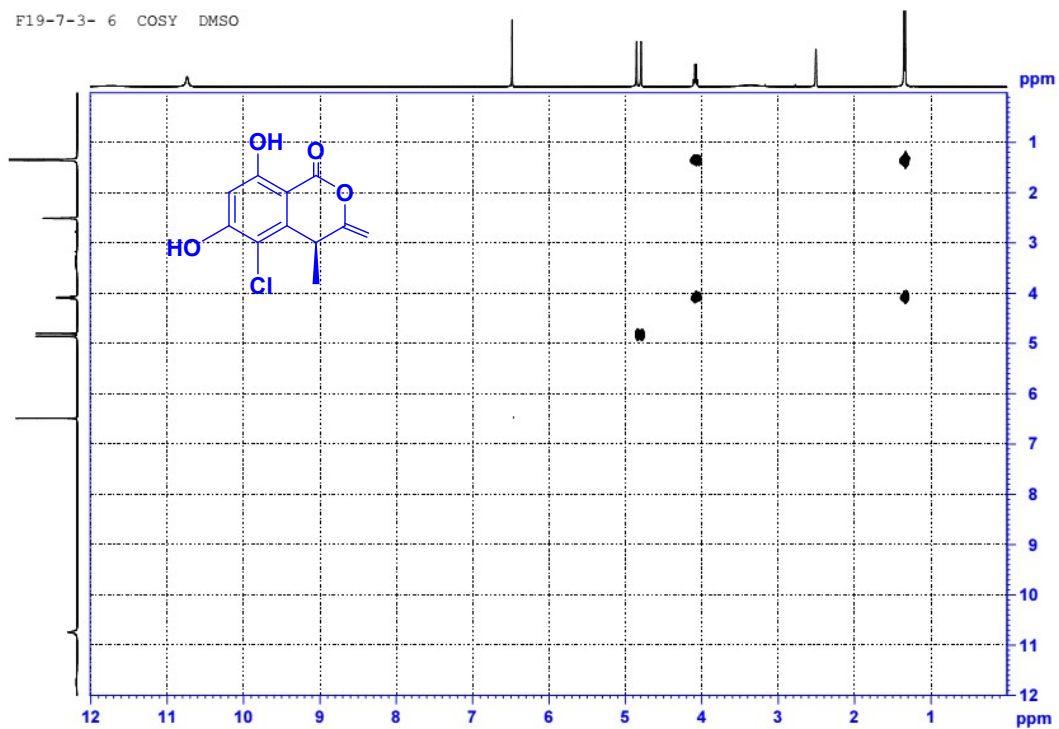


Figure 5-5. ^1H - ^1H COSY spectrum of compound 5 in $\text{DMSO-}d_6$.

F19-7-3- 6 HMBC DMSO

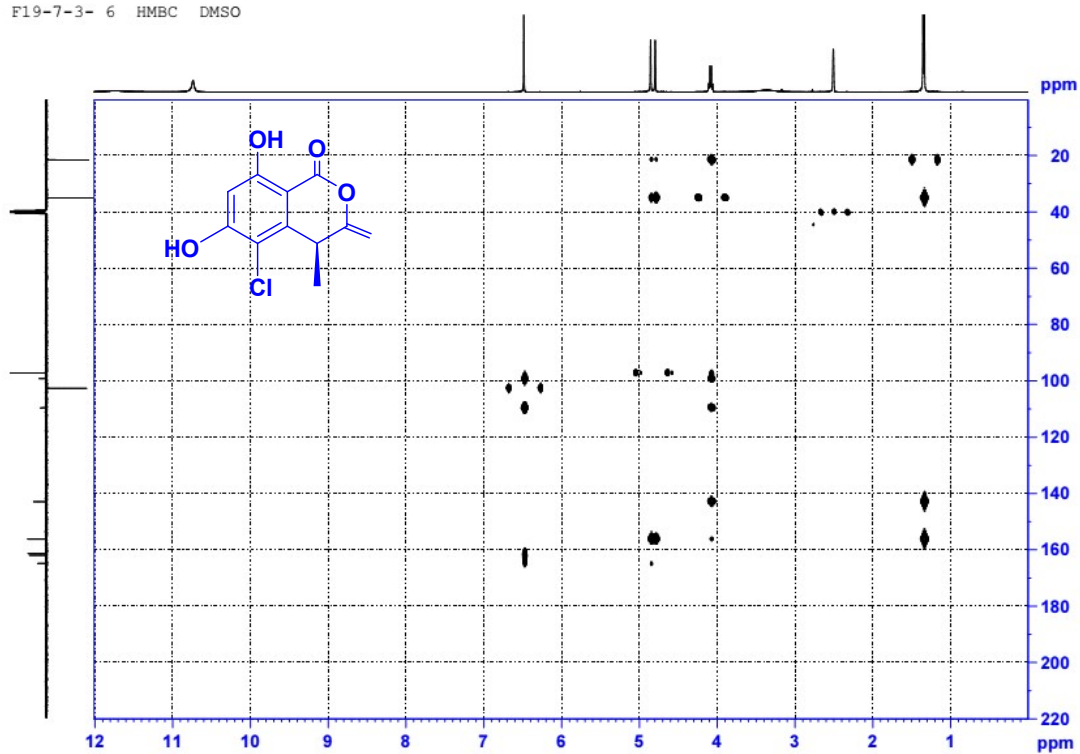


Figure 5-6. HMBC spectrum of compound 5 in $\text{DMSO-}d_6$.

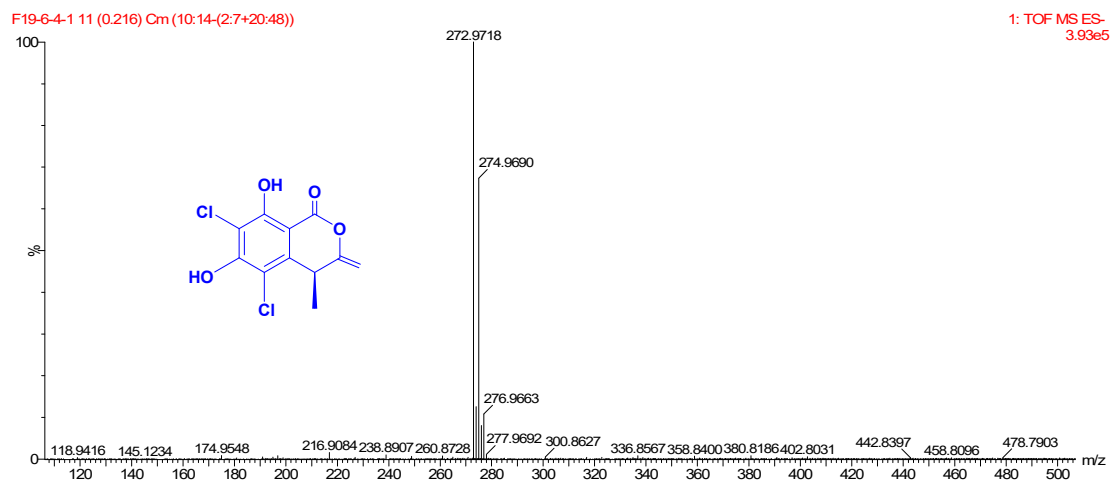


Figure 6-1. HRESIMS spectrum of compound 6.

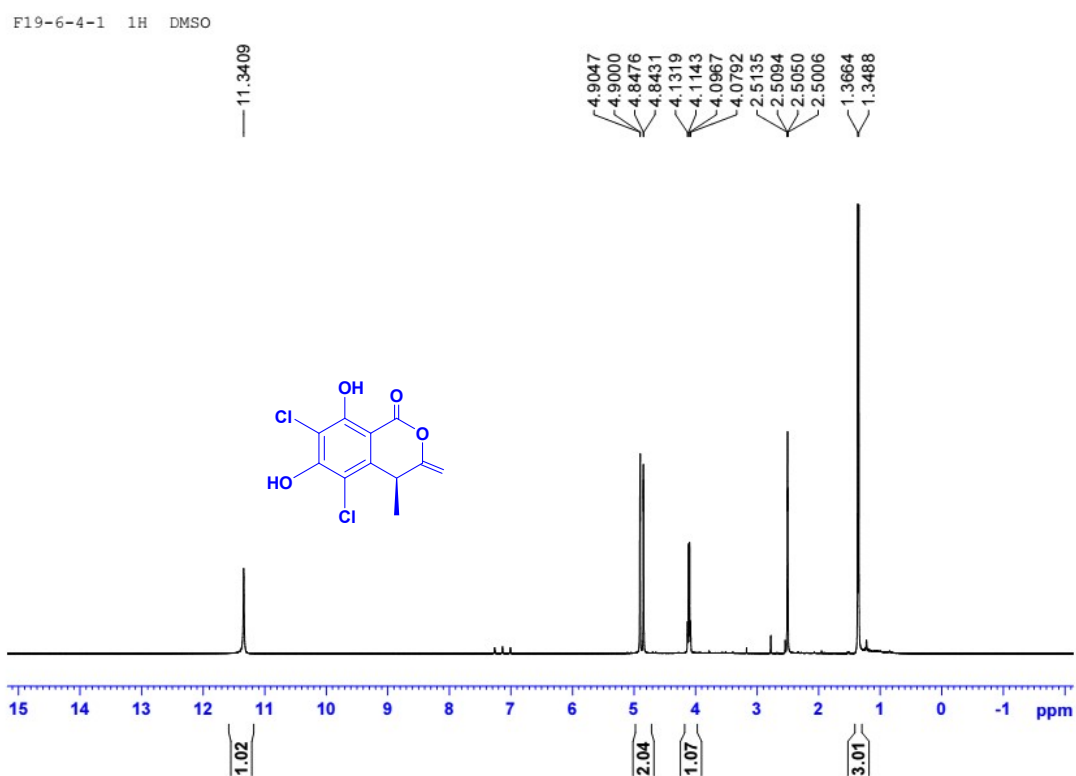


Figure 6-2. ^1H NMR spectrum of compound 6 in $\text{DMSO-}d_6$ (400 MHz).

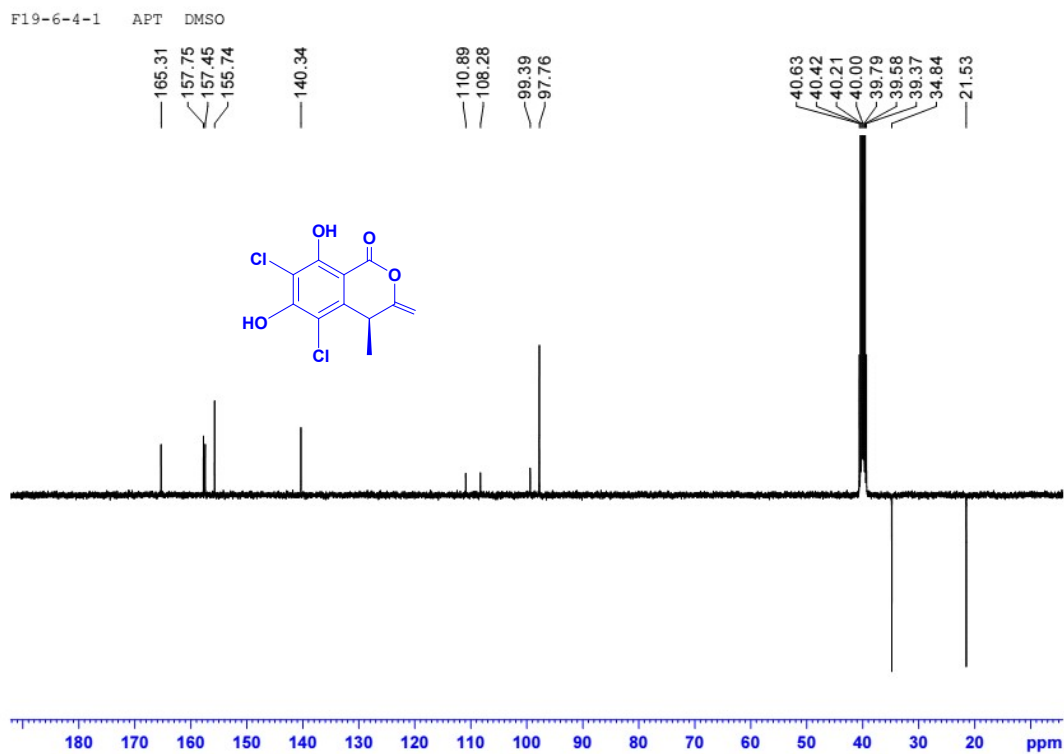


Figure 6-3. APT spectrum of compound 6 in DMSO- d_6 (100 MHz).

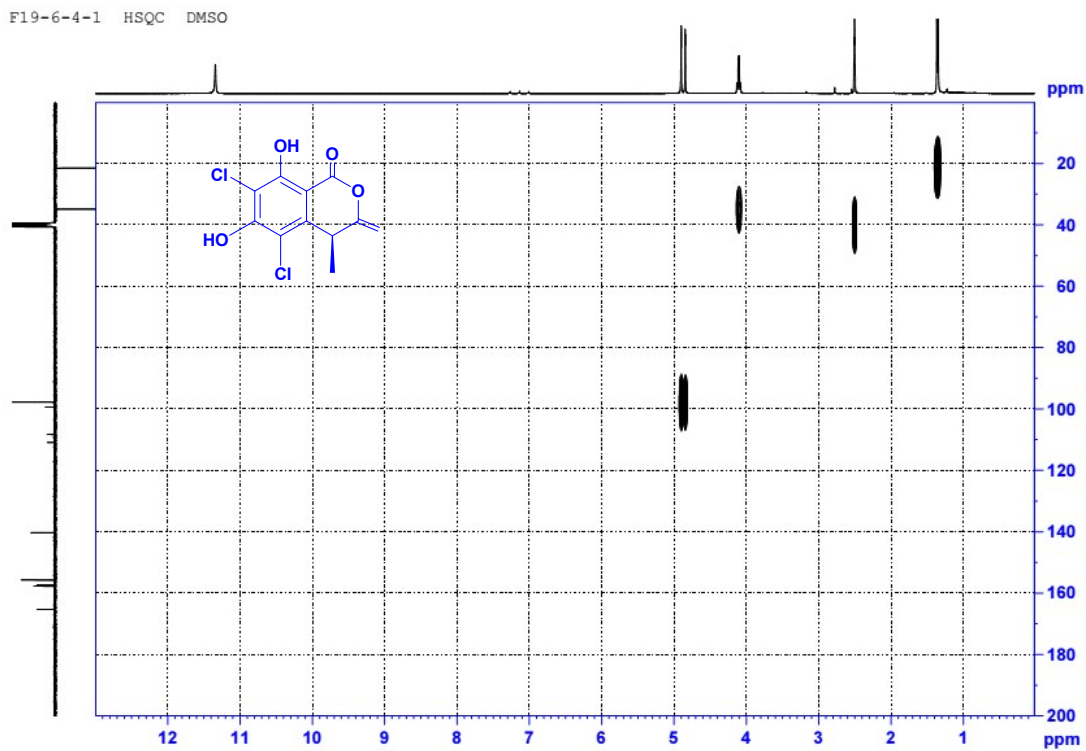


Figure 6-4. HSQC spectrum of compound 6 in DMSO- d_6 .

F19-6-4-1 COSY DMSO

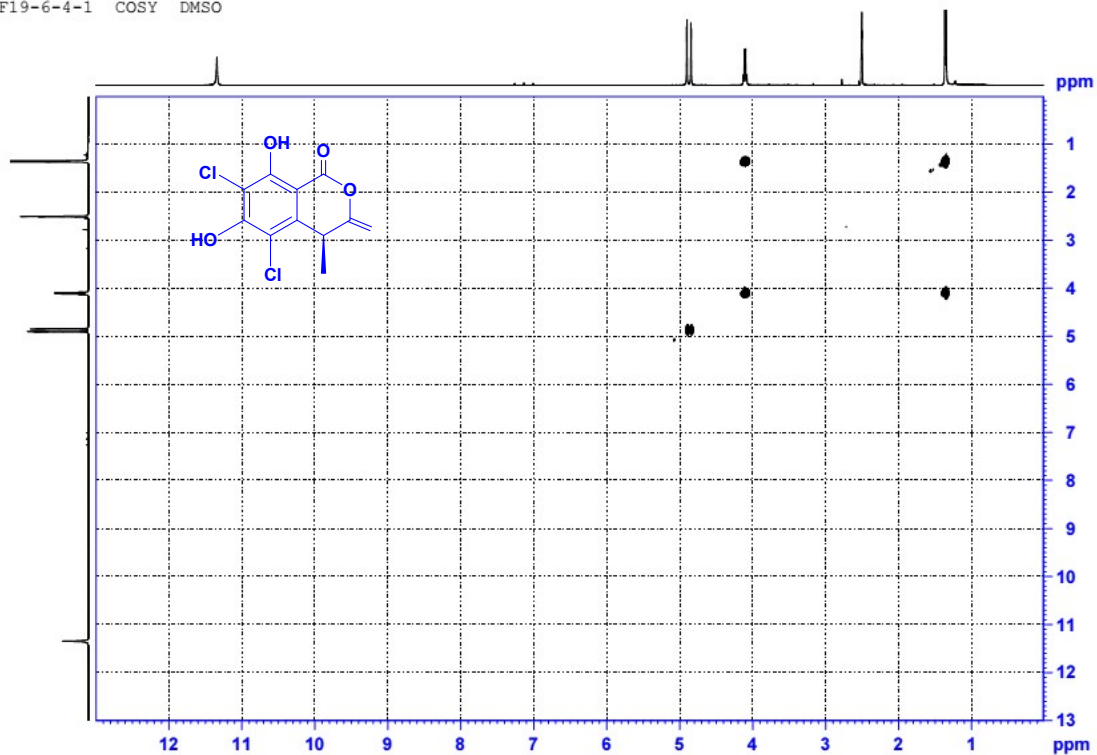


Figure 6-5. ^1H - ^1H COSY spectrum of compound **6** in $\text{DMSO-}d_6$.

F19-6-4-1 HMBC DMSO

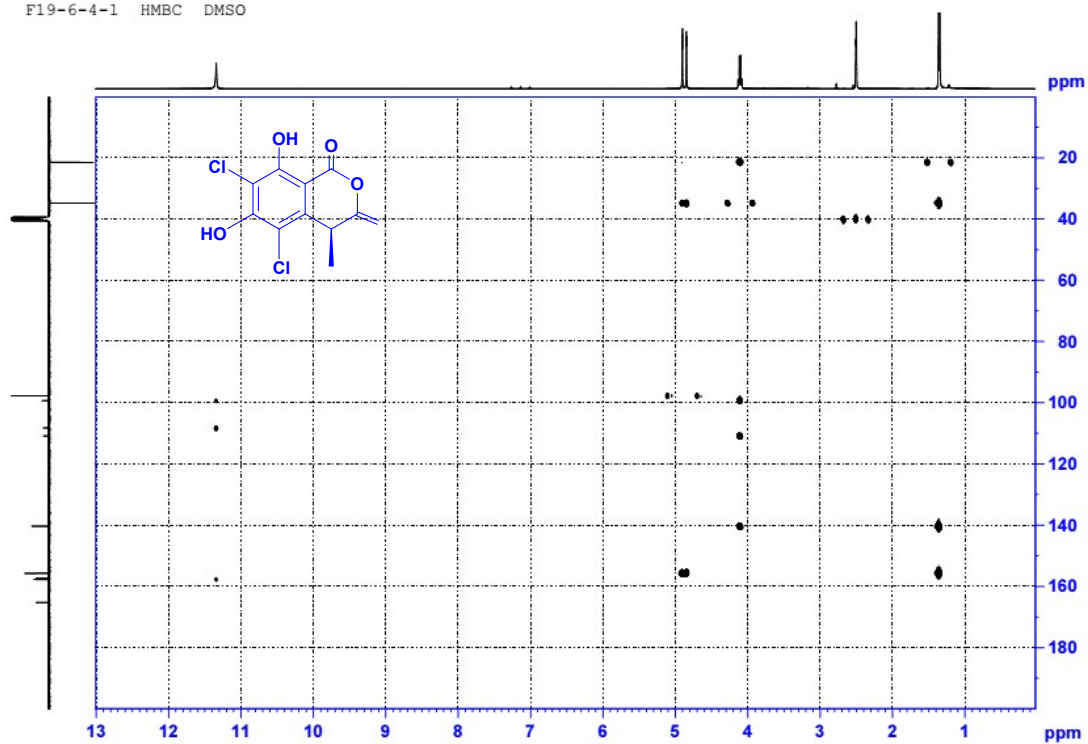


Figure 6-6. HMBC spectrum of compound **6** in $\text{DMSO-}d_6$.

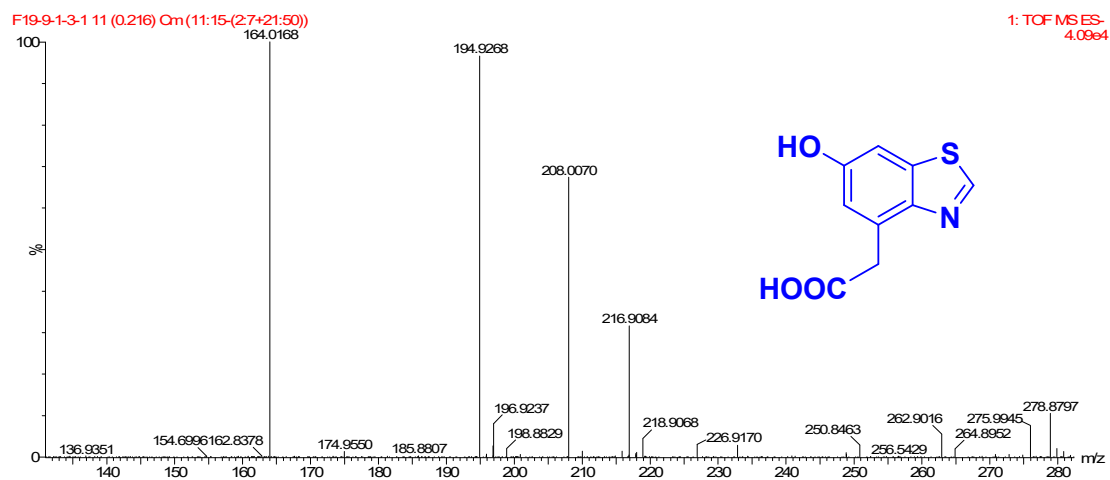


Figure 7-1. HRESIMS spectrum of compound 7.

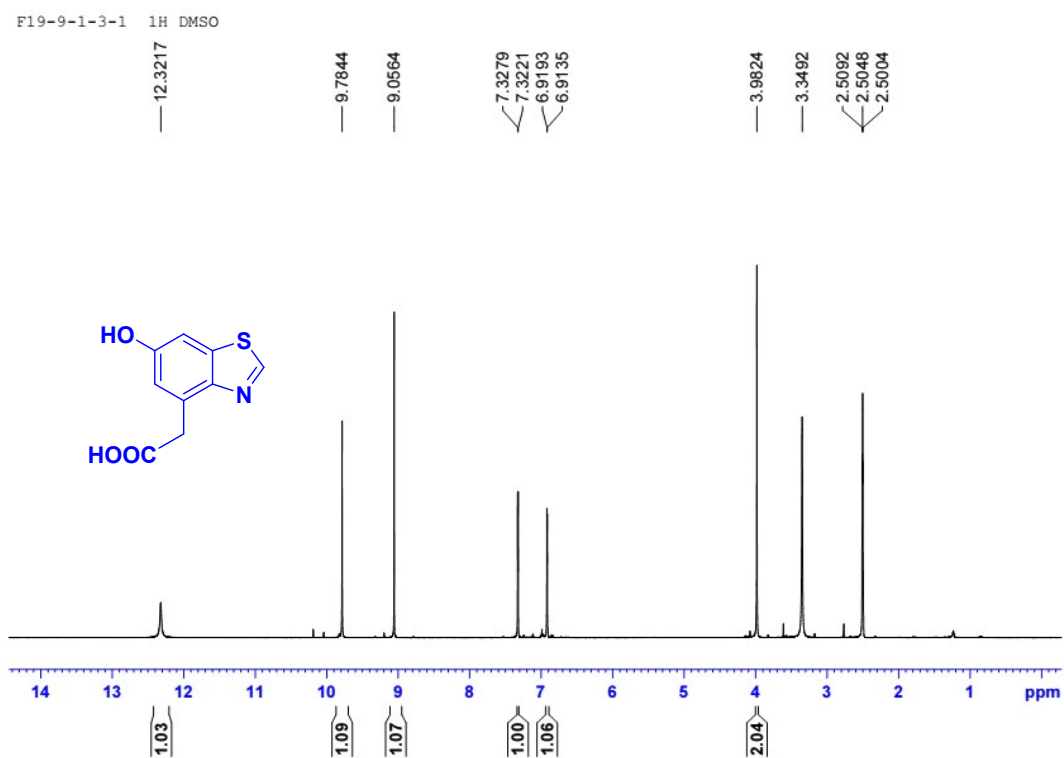


Figure 7-2. ^1H NMR spectrum of compound 7 in $\text{DMSO-}d_6$ (400 MHz).

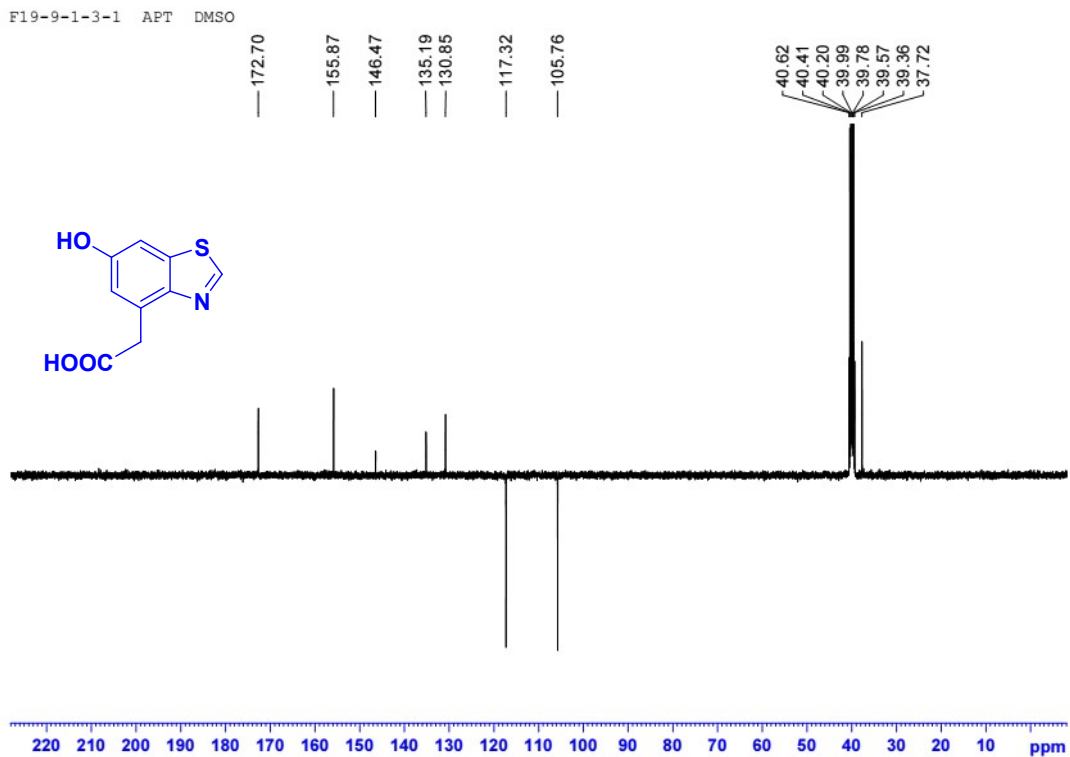


Figure 7-3. APT spectrum of compound 7 in DMSO- d_6 (100 MHz).

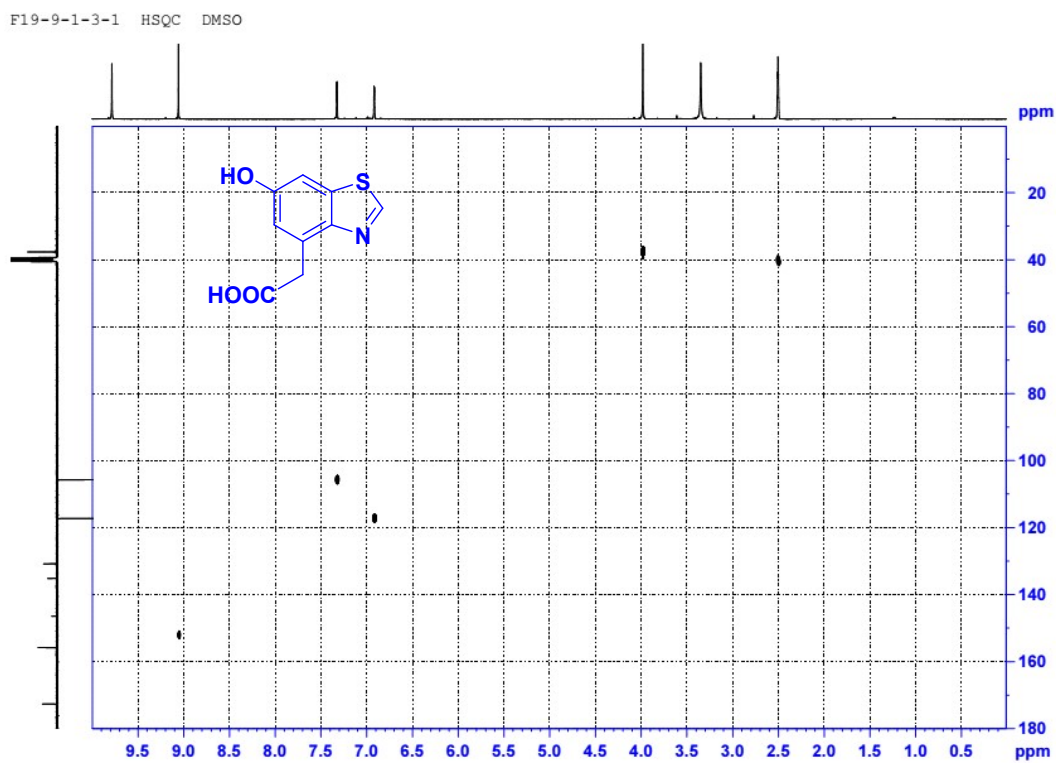


Figure 7-4. HSQC spectrum of compound 7 in DMSO- d_6 .

F19-9-1-3-1 COSY DMSO

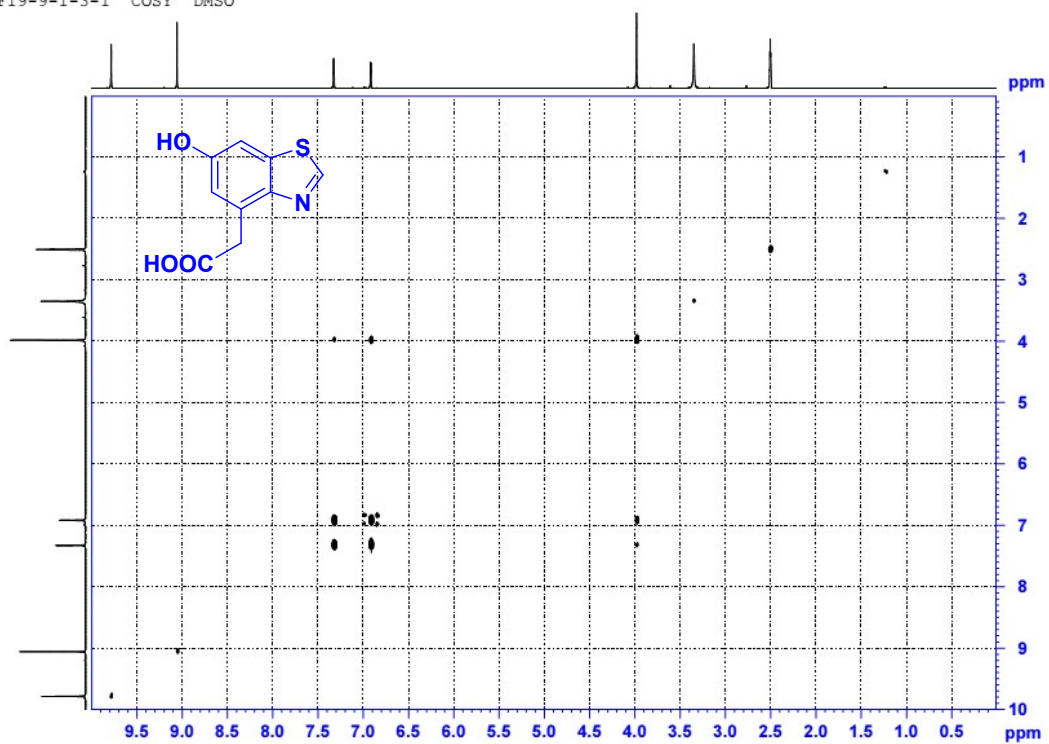


Figure 7-5. ¹H-¹H COSY spectrum of compound 7 in DMSO-*d*₆.

F19-9-1-3-1 HMBC DMSO

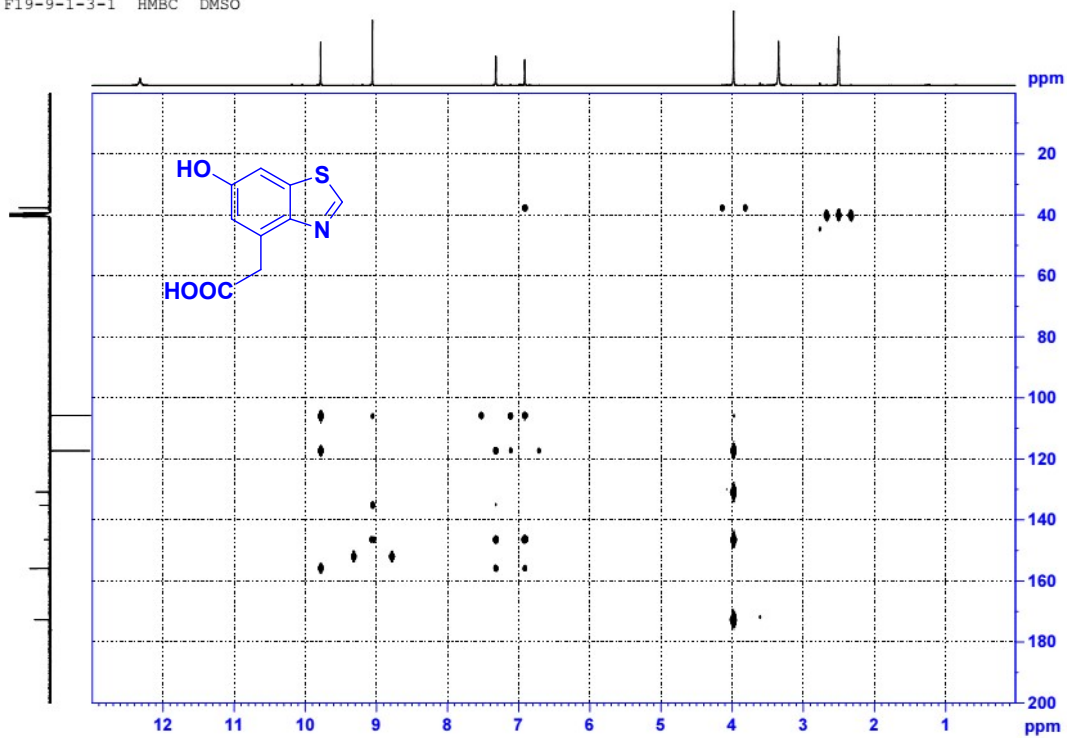


Figure 7-6. HMBC spectrum of compound 7 in DMSO-*d*₆.

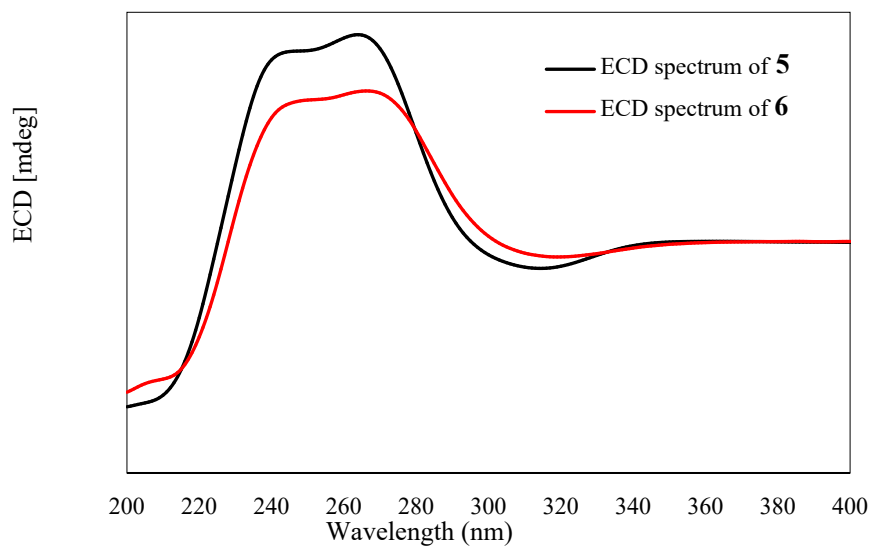


Figure S8-1. Experimental ECD spectra of **5** and **6** in MeOH

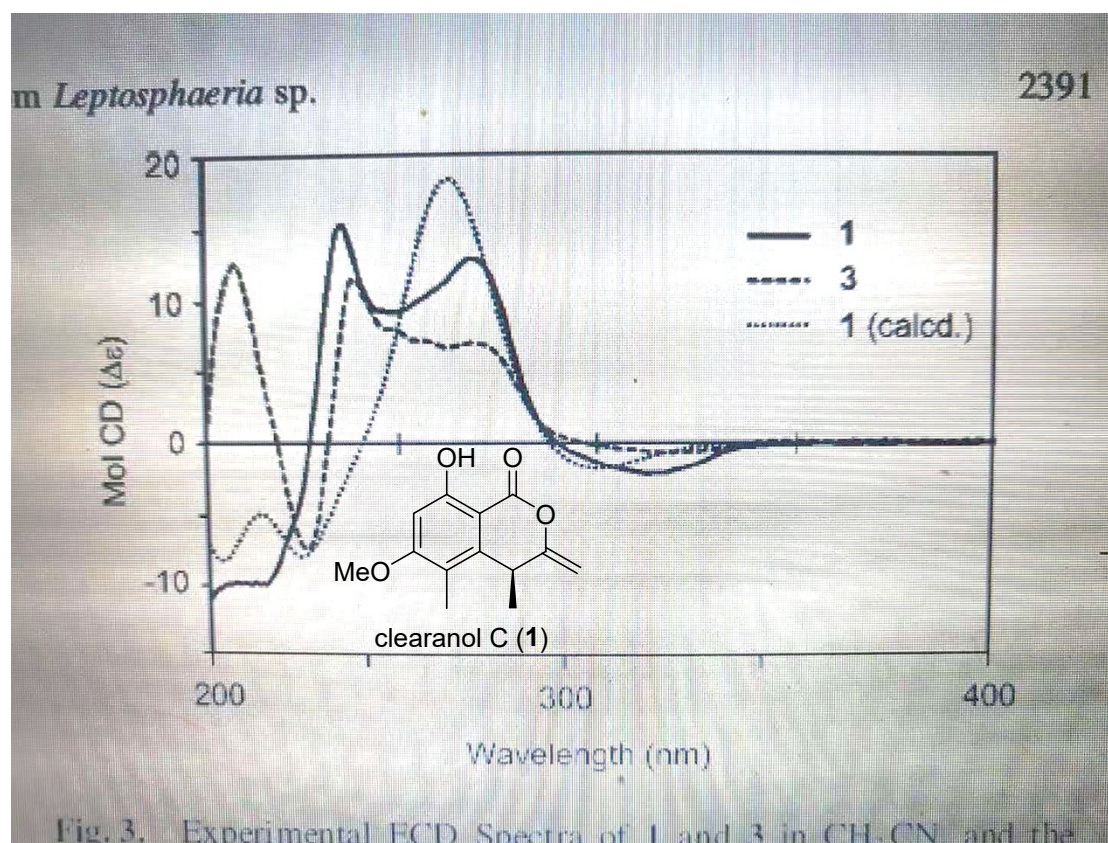


Figure S8-2. ECD spectrum of clearanol C (**1**)
(Ref. 30: *Biosci. Biotech. Bioch.* 2011, 75, 2390–2393)