

Supporting information

Amplisins A –E, chromone methide addition products with hypoglycemic activity from a fungicolous fungus *Amplistroma fungicola*

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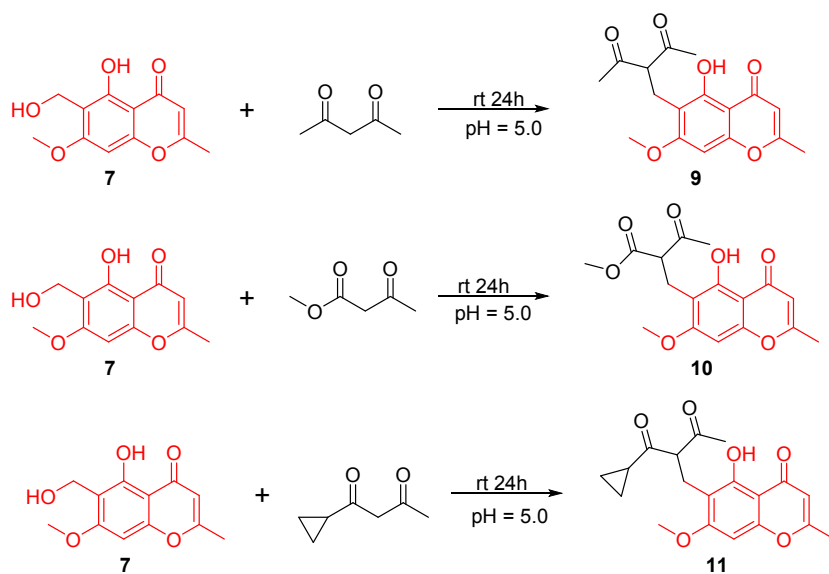
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Scheme S1 Biomimetic 1,4-Michael addition synthesis using 6-hydroxymethyl-eugenin as starting material



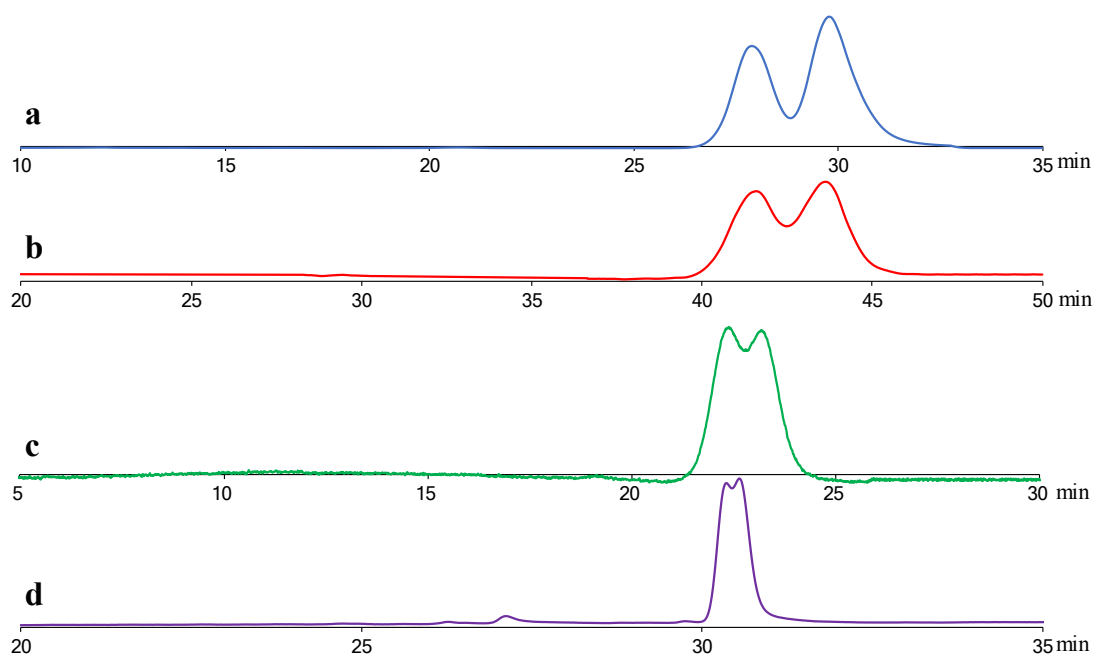


Figure S1 HPLC enantioseparation analysis of (±)-amplisins A-D

Enantioseparation analysis of (±)-amplisins A -D were performed on Shimadzu LC-20AT system equipped with Kromasil 5-CelluCoat column (4.6×250 mm, $5 \mu\text{m}$). The column oven was 40°C , detector wavelength was 254 nm and injection volume were $10 \mu\text{L}$. Acetonitrile/water was used as eluent. The elution conditions were 45% acetonitrile and 55% water for (±)-amplisin A ($t_{\text{R}} = 28.2$ and 29.6 min, **a**), 52% acetonitrile and 48% water for (±)-amplisin B ($t_{\text{R}} = 41.8$ and 43.8 min, **b**), 58% acetonitrile and 42% water for (±)-amplisin C ($t_{\text{R}} = 22.1$ and 23.2 min, **c**), and 40% acetonitrile and 60% water for (±)-amplisin D ($t_{\text{R}} = 30.3$ and 30.6 min, **d**) at a flow rate, 1 mL/min.

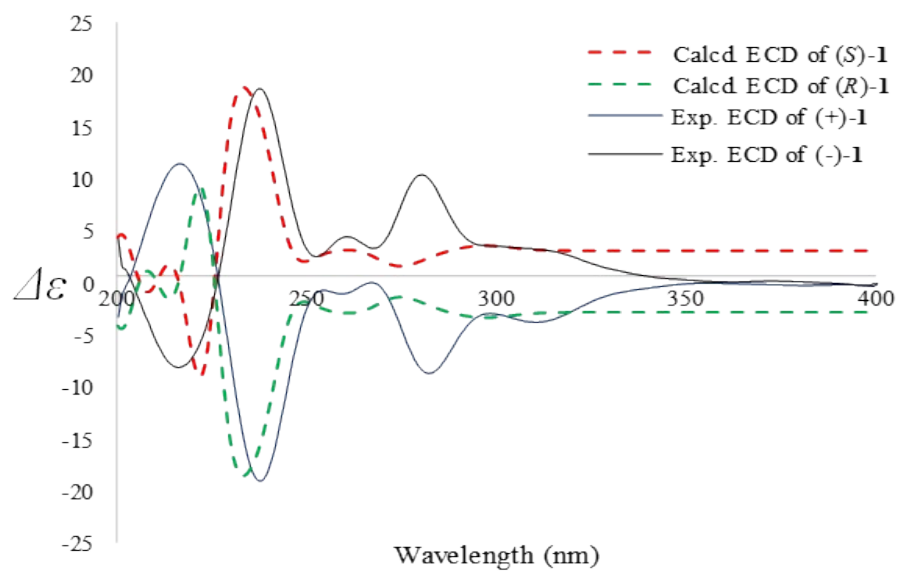


Figure S2 Experimental and calculated ECD spectra of (+)-1 and (-)-1 in methanol

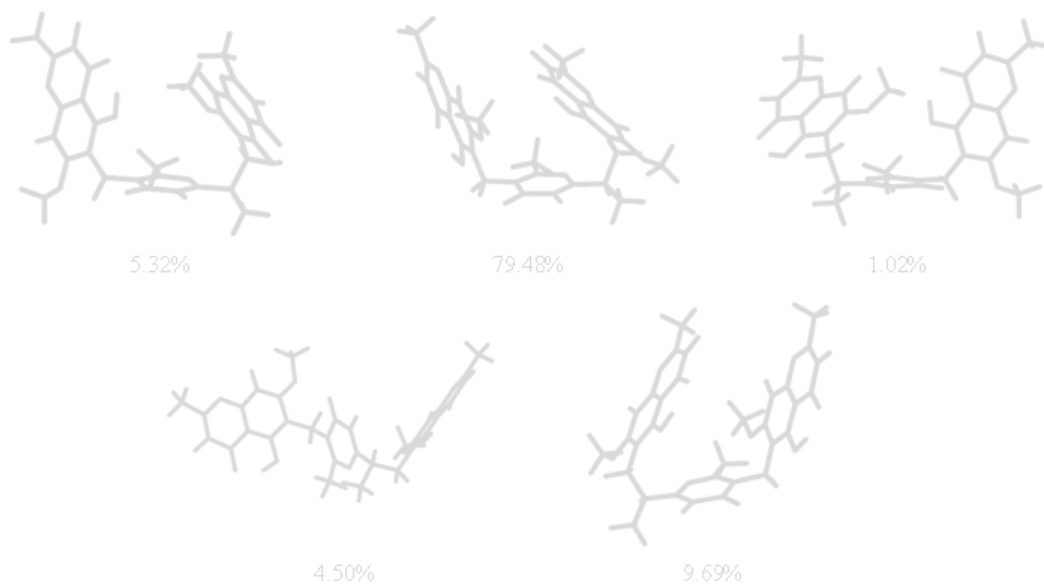


Figure S3 Structures of conformers of (*S*)-**1** at b3lyp/6-311+g (d) level in methanol with the PCM model

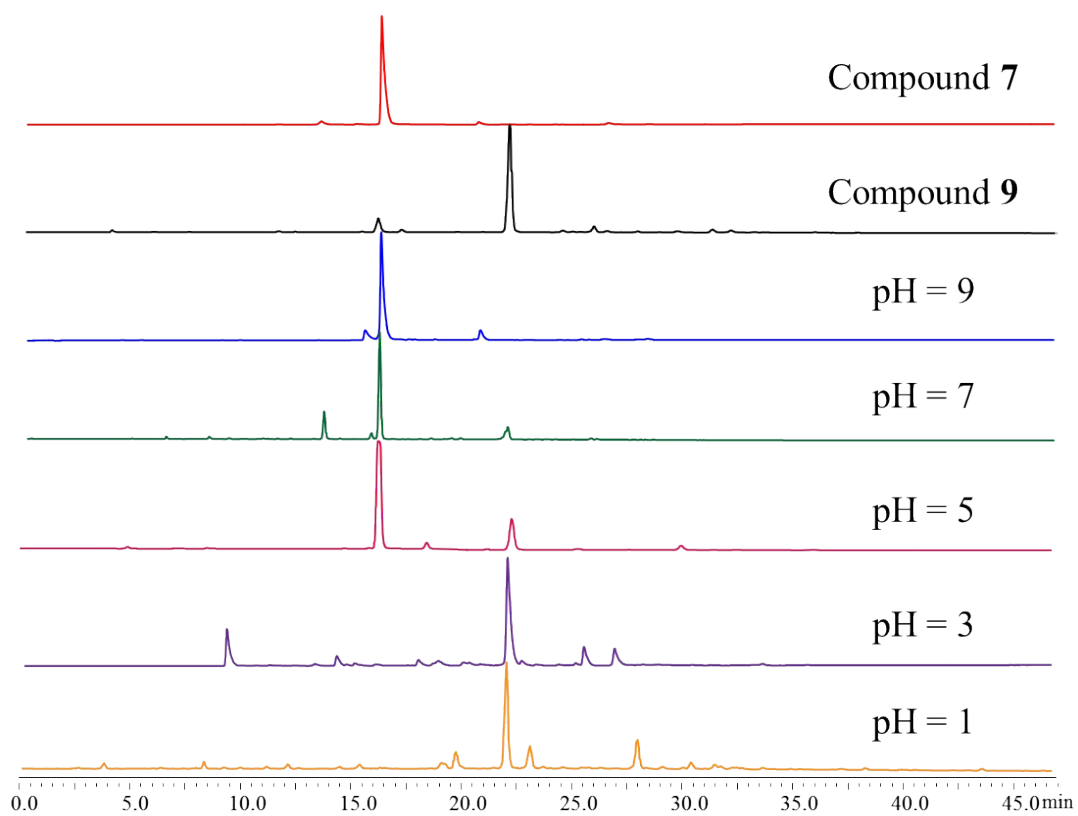


Figure S4 Production of compound **9** via 1,4-Michael addition reaction of compound **7** and acetylacetone at different pH values

Analysis method, column is YMC-pack ODS-A, flow rate is 1 mL/min, temperature is 40 °C, injection volume is 10 μ L, moving phases are MeCN (A) and water with 0.01% TFA (B), procedure is 5% A (0 min) -100% A (30 min) -100% A (50 min), detector wavelength are 210 nm and 254 nm

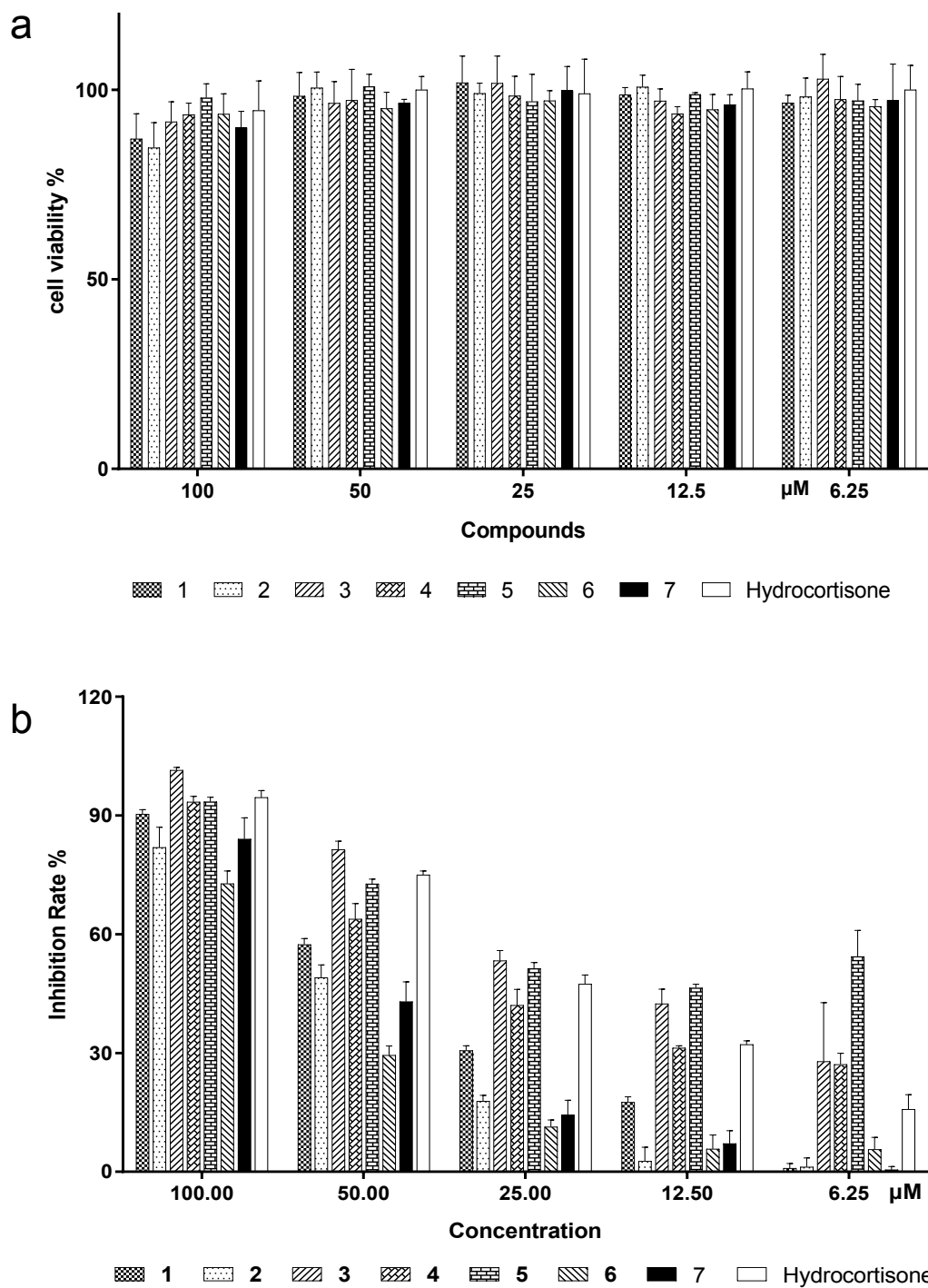


Figure S5 Anti-inflammatory bioactivity of compounds 1-7

a. Cell viability of RAW 264.7 cells after treated by compounds 1-7; b. inhibitory activity on the NO release in LPS-induced RAW 264.7 cells

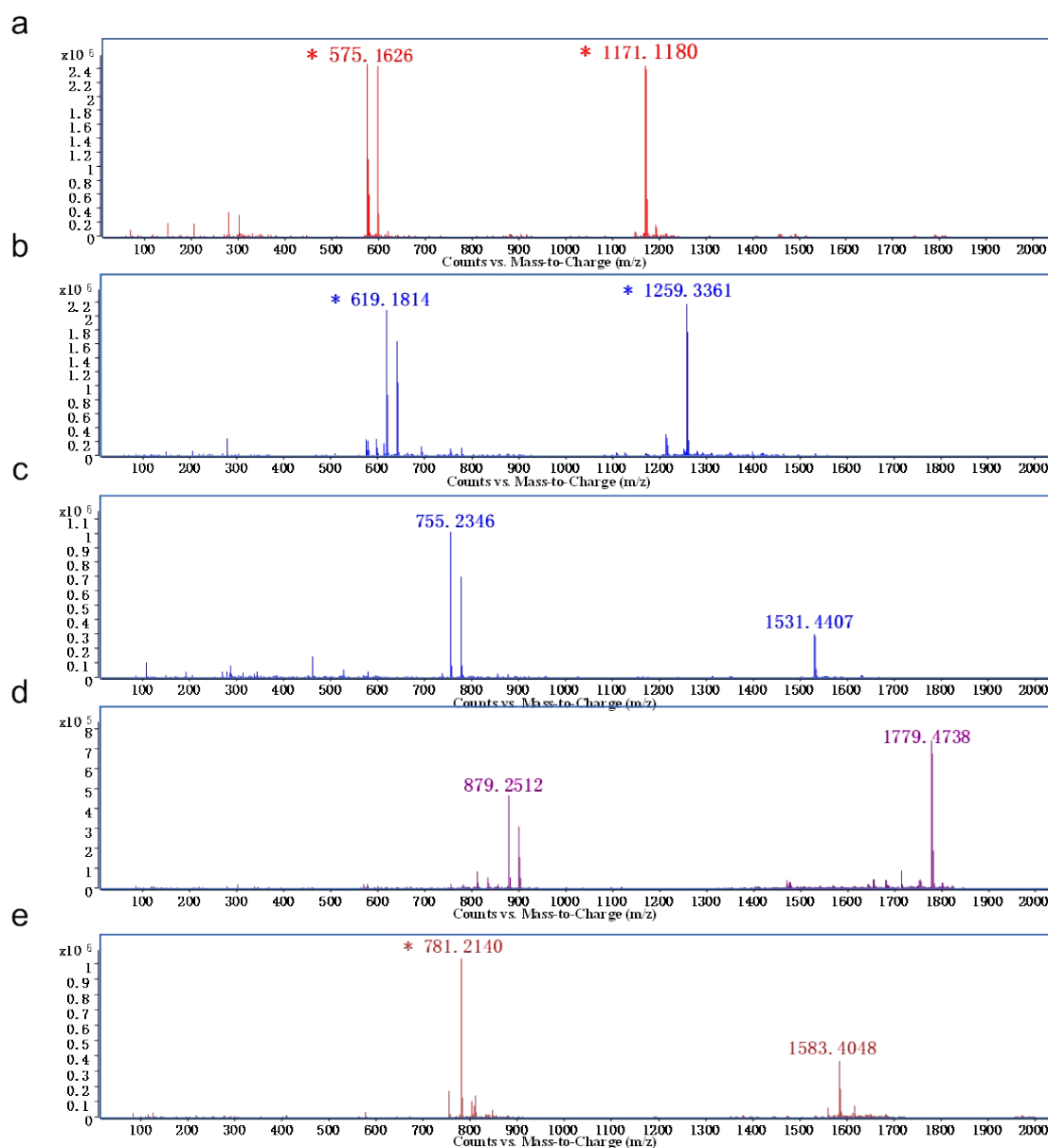


Figure S6 HRESIMS spectra of compounds **1-5** (a-e)

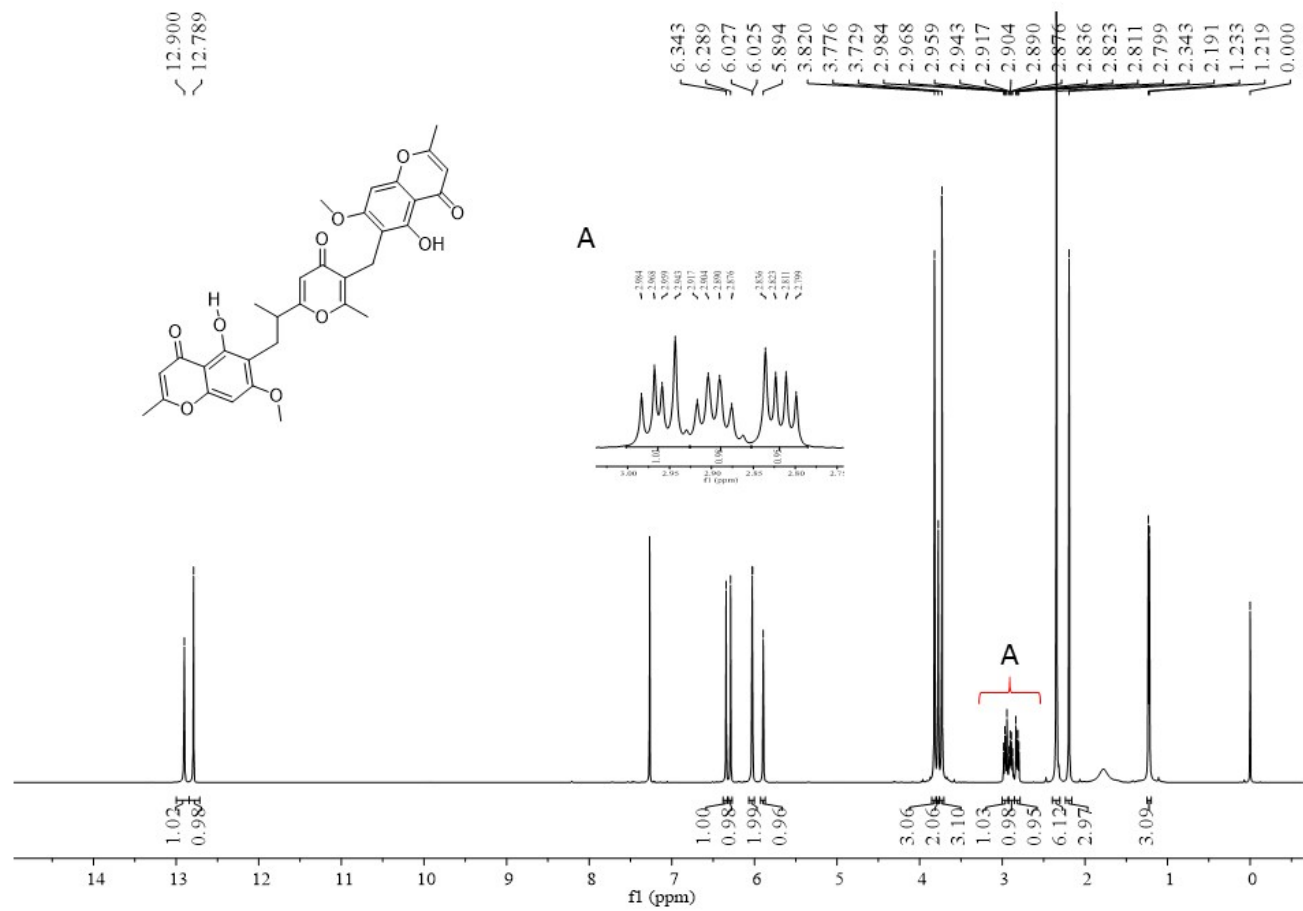


Figure S7 ¹H NMR spectrum of compound 1 in CDCl₃ (500 MHz)

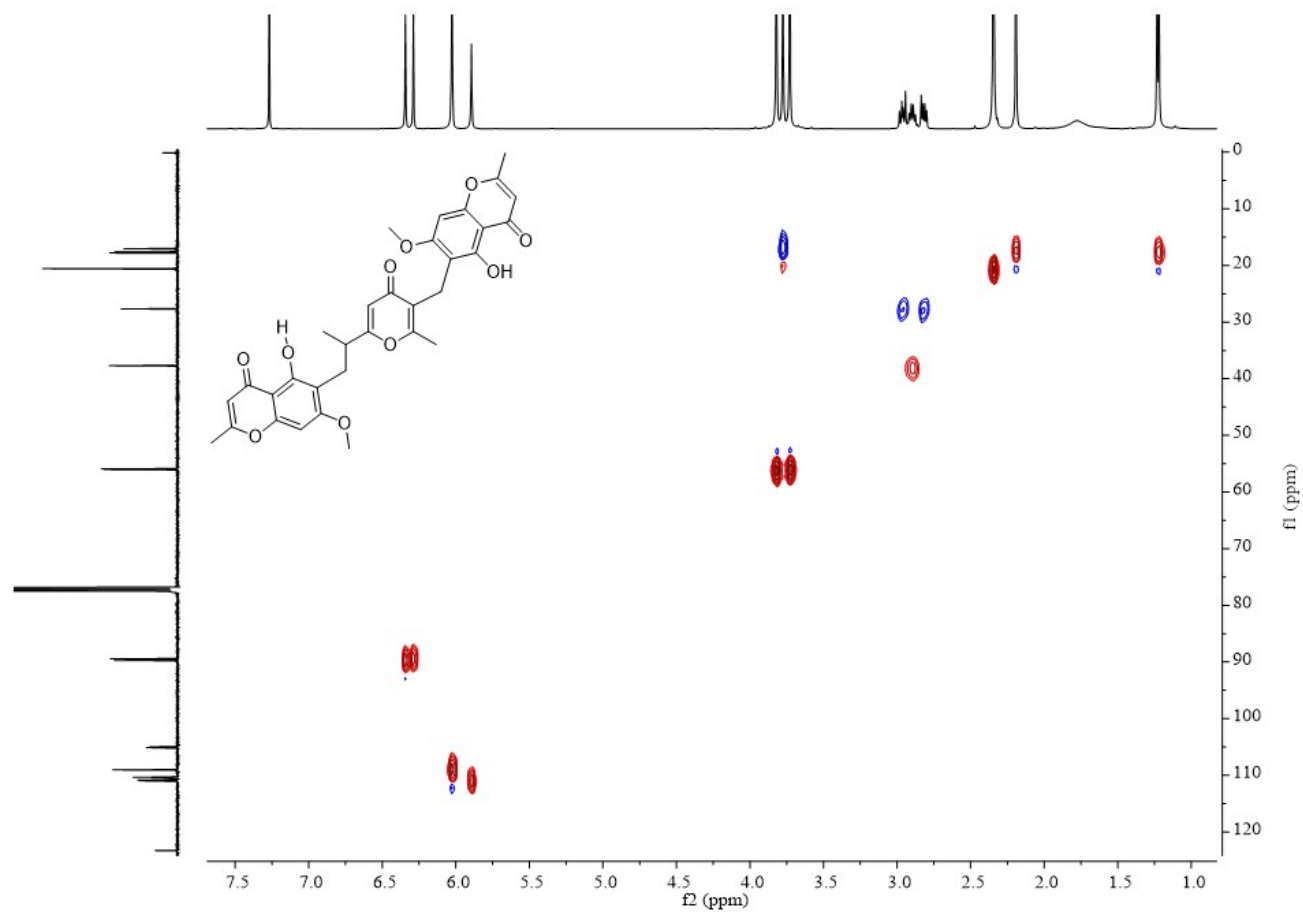


Figure S9 HSQC spectrum of compound **1** in CDCl_3

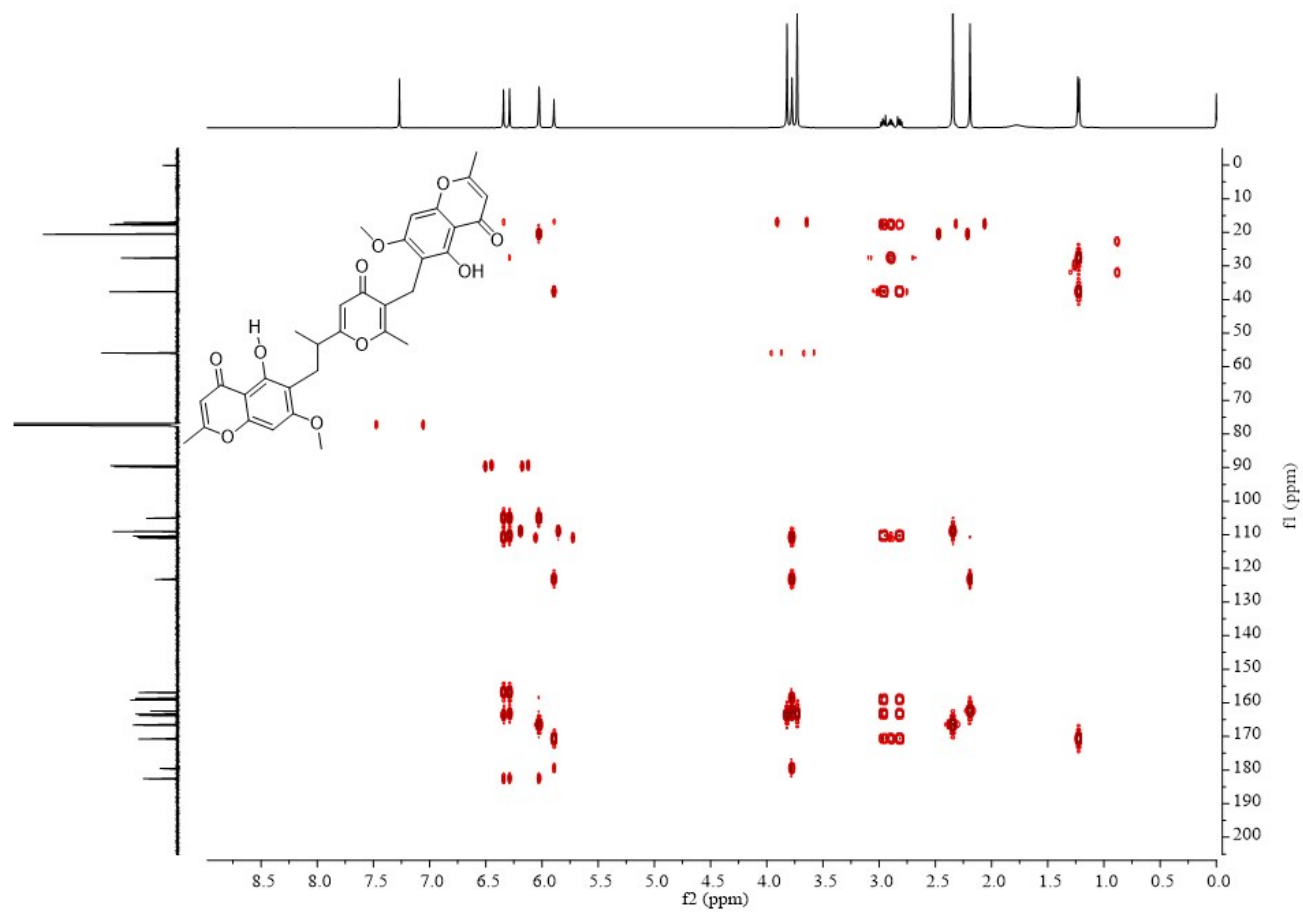


Figure S10 HMBC spectrum of compound **1** in CDCl₃

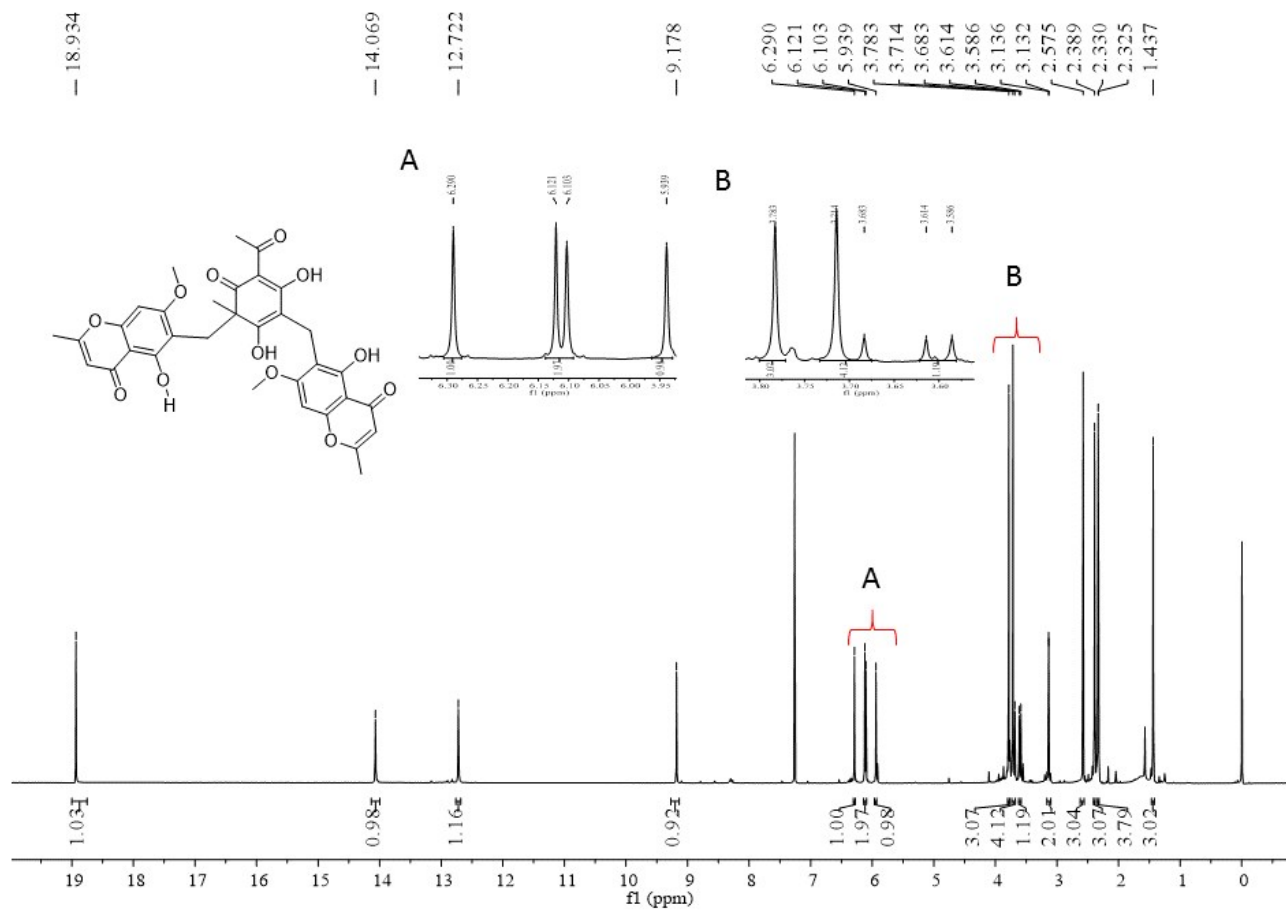


Figure S11 ^1H NMR spectrum of compound **2** in CDCl_3 (500 MHz)

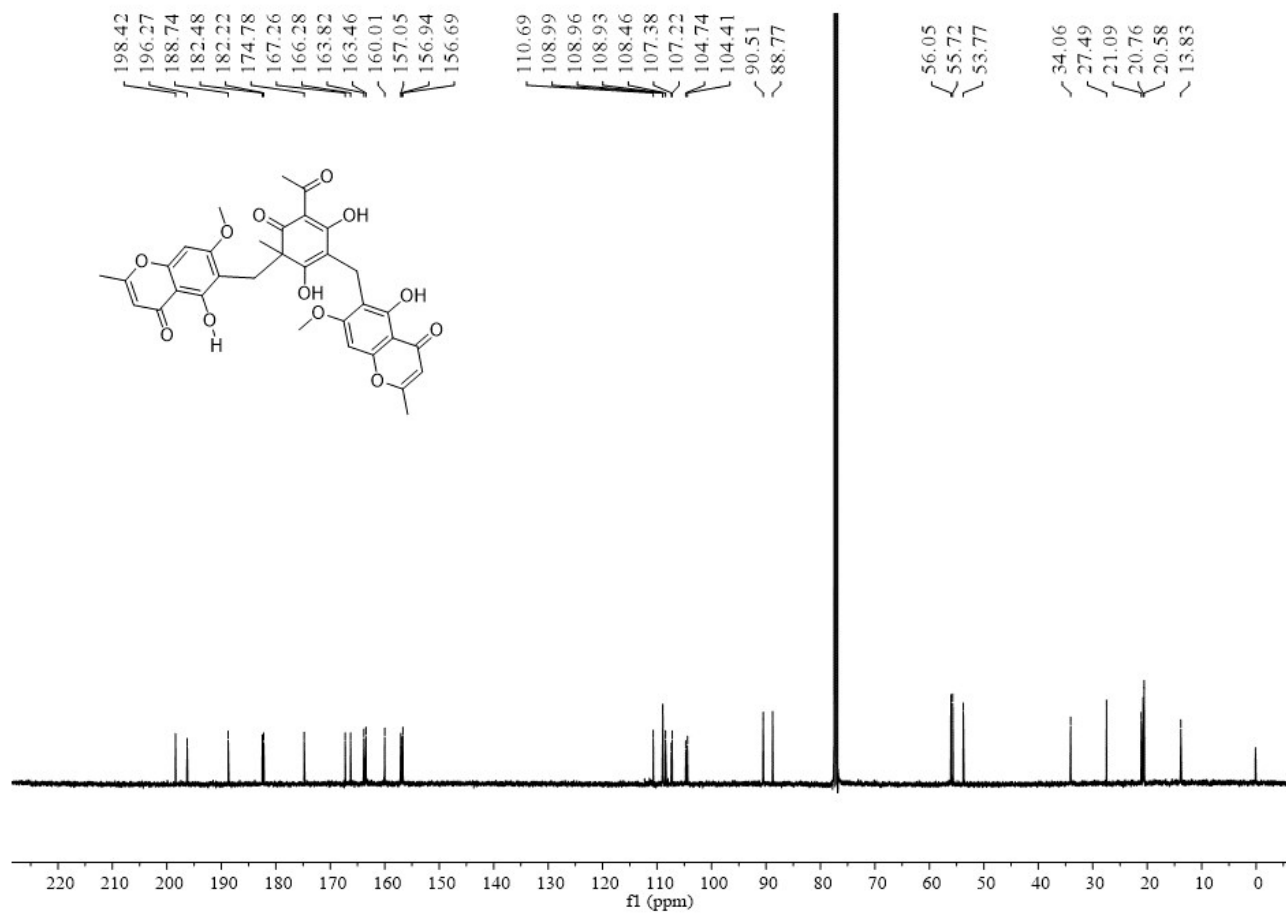


Figure S12 ¹³C NMR spectrum of compound **2** in CDCl₃ (125 MHz)

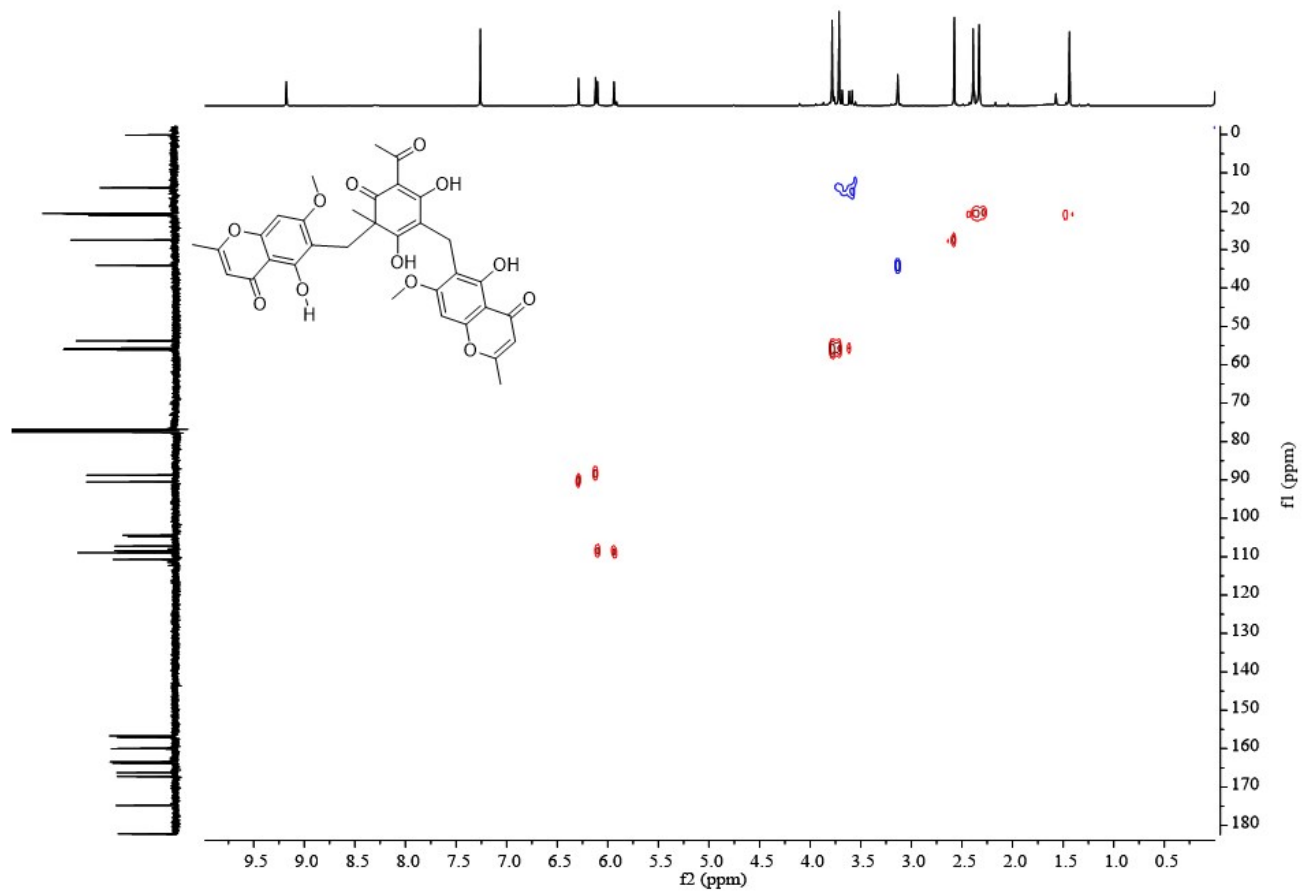


Figure S13 HSQC spectrum of compound 2 in CDCl₃

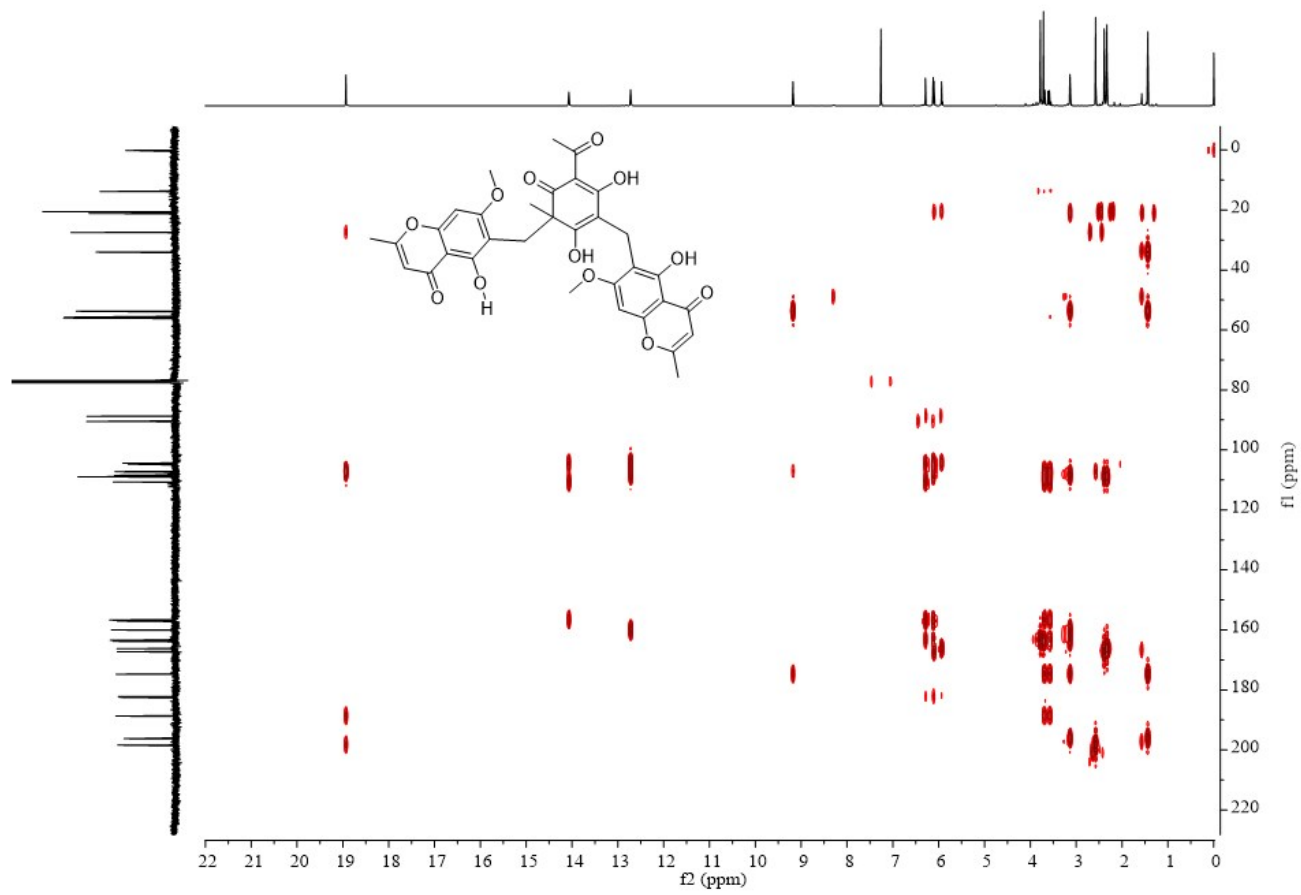


Figure S14 HMBC spectrum of compound **2** in CDCl₃

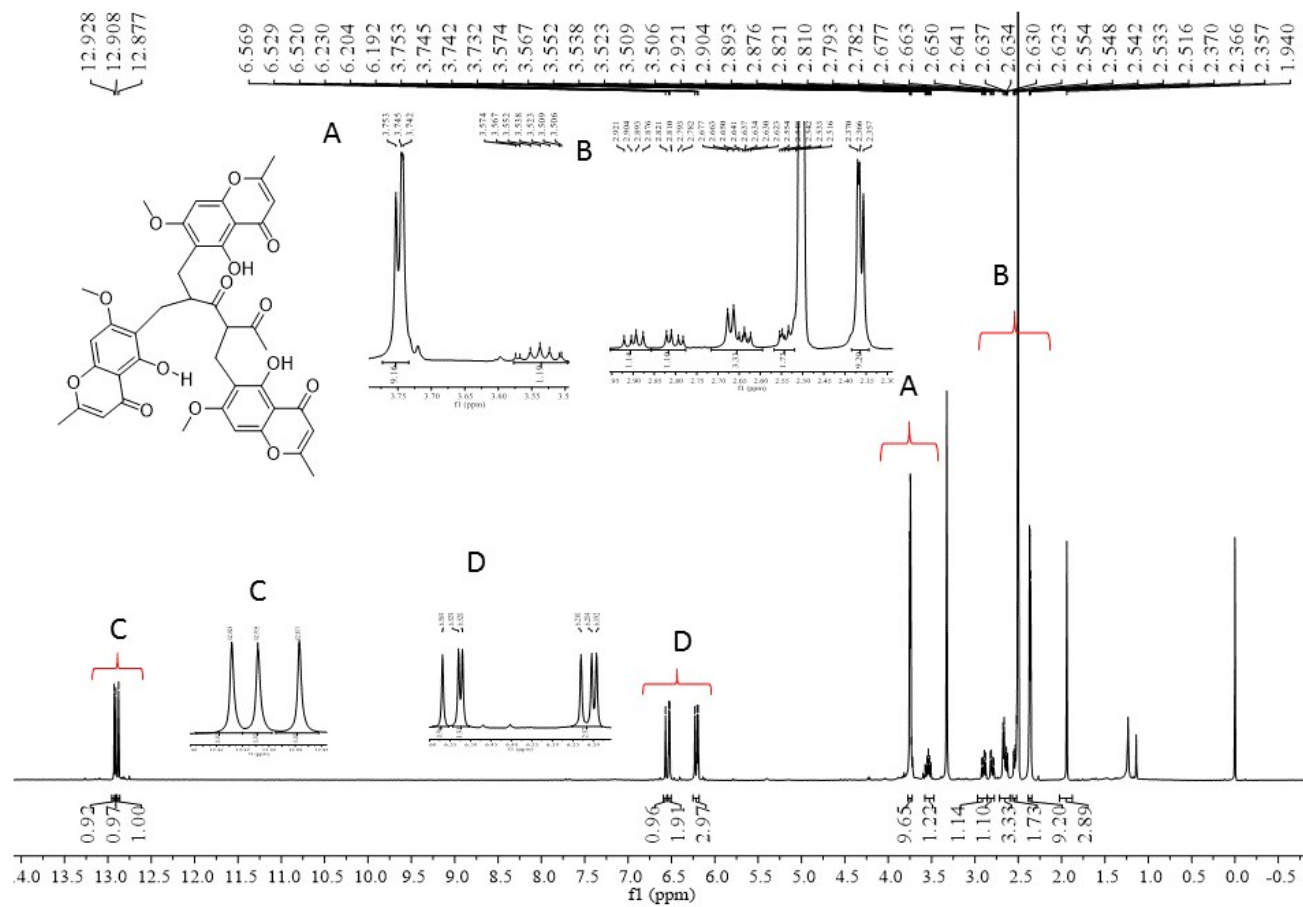


Figure S15 ¹H NMR spectrum of compound 3 in DMSO-*d*₆ (500 MHz)

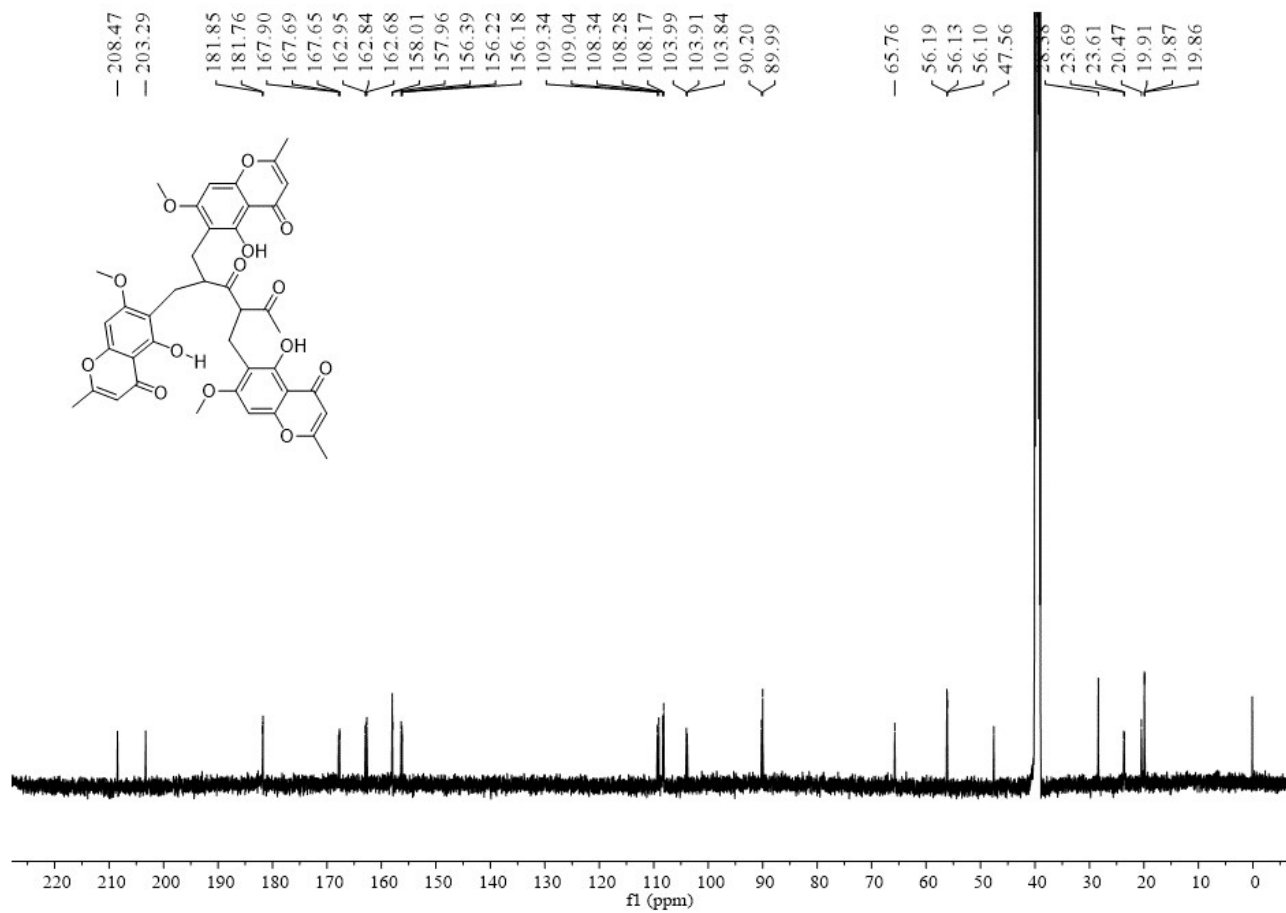


Figure S16 ^{13}C NMR spectrum of compound 3 in $\text{DMSO-}d_6$ (125 MHz)

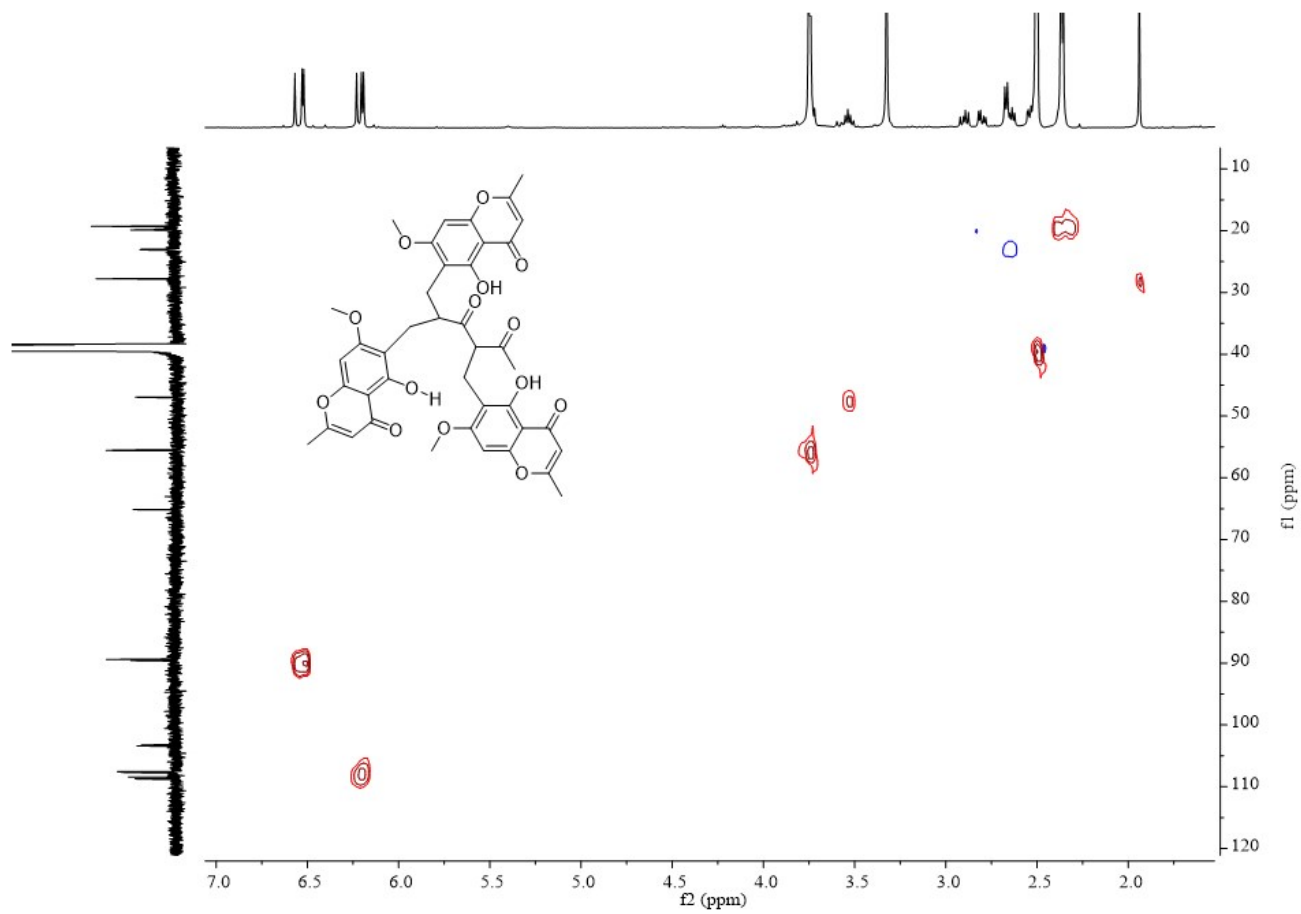


Figure S17 HSQC spectrum of compound **3** in DMSO- d_6

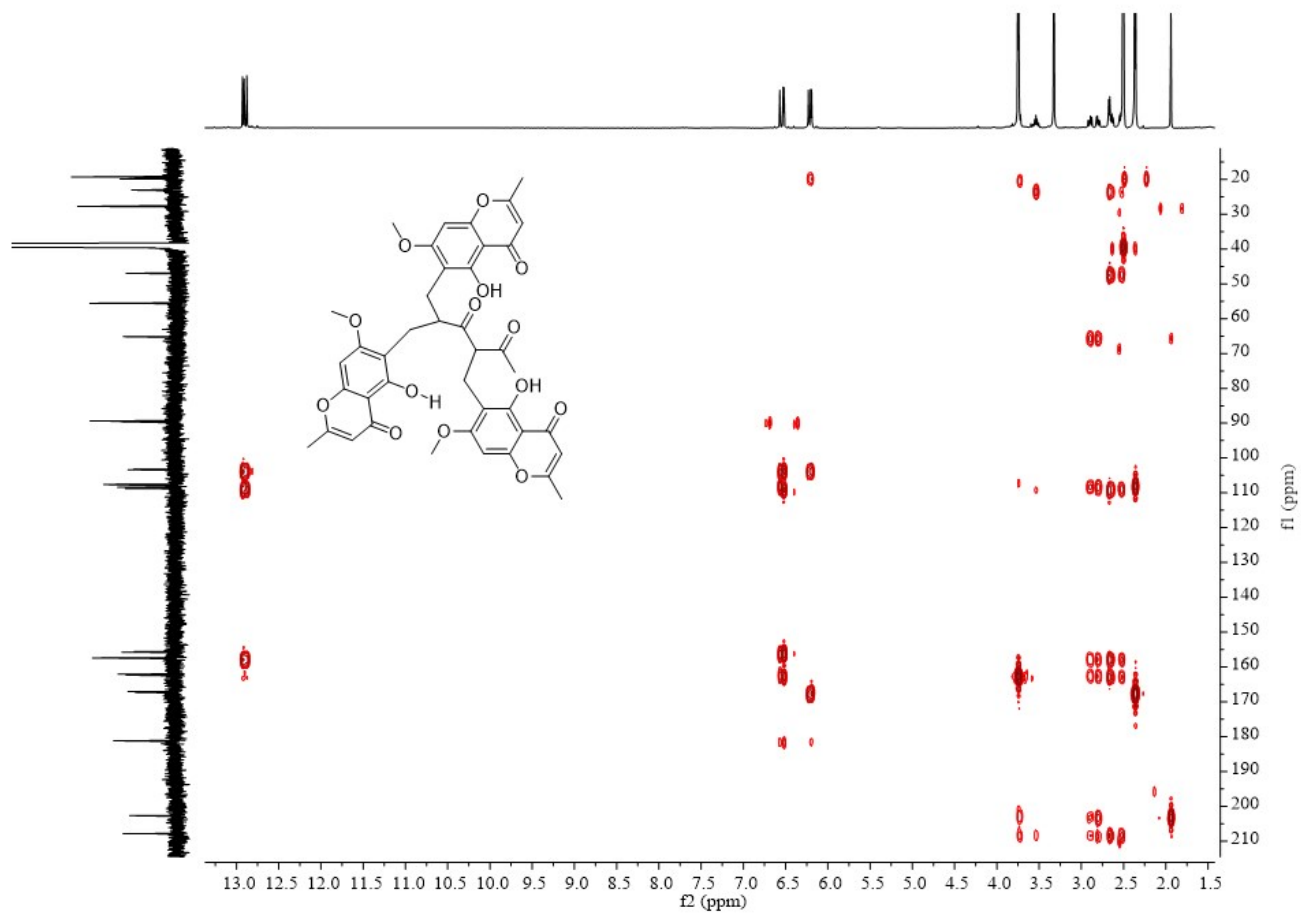


Figure S18 HMBC spectrum of compound 3 in DMSO- d_6

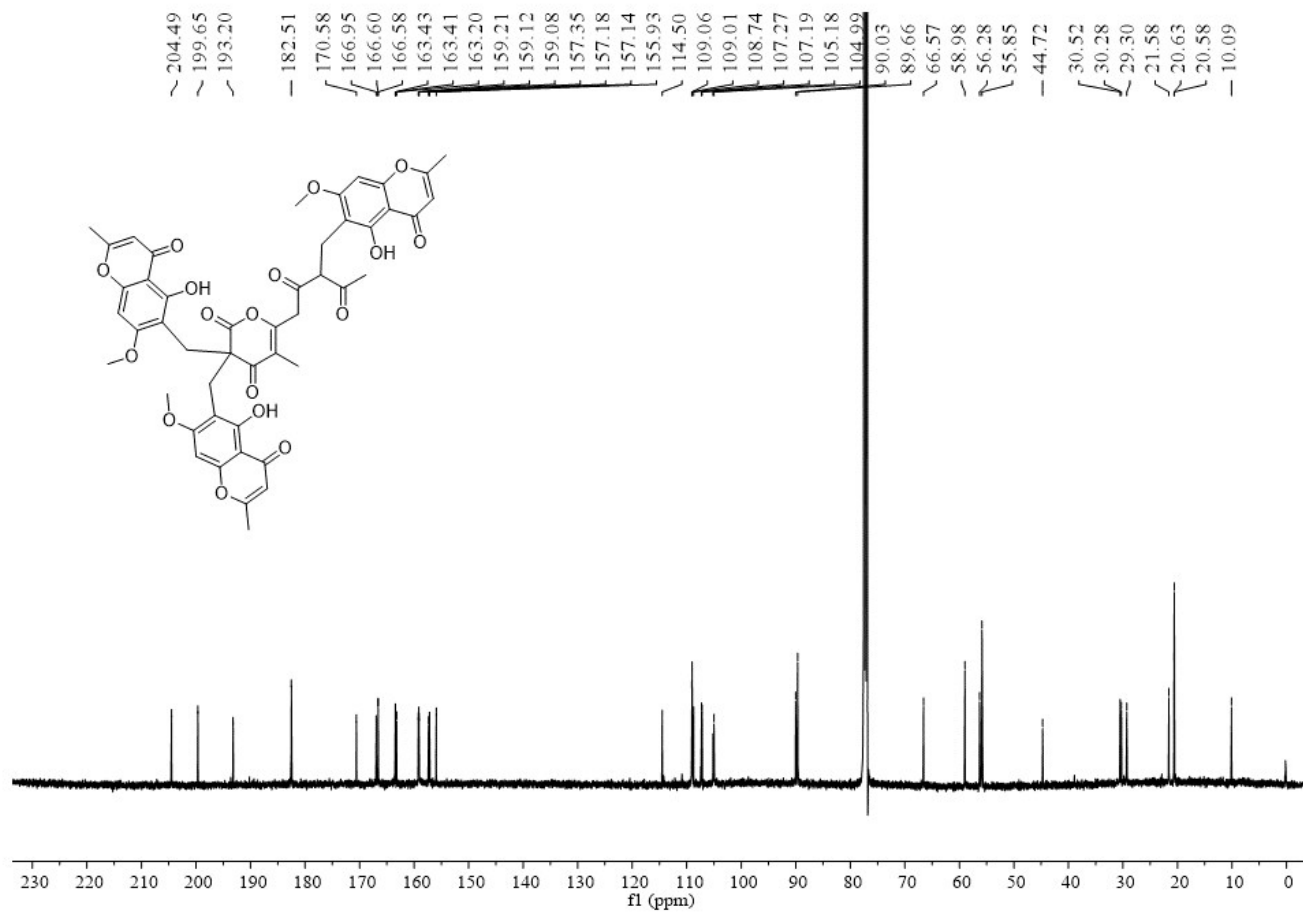


Figure S20 ^{13}C NMR spectrum of compound **4** in CDCl_3 (125 MHz)

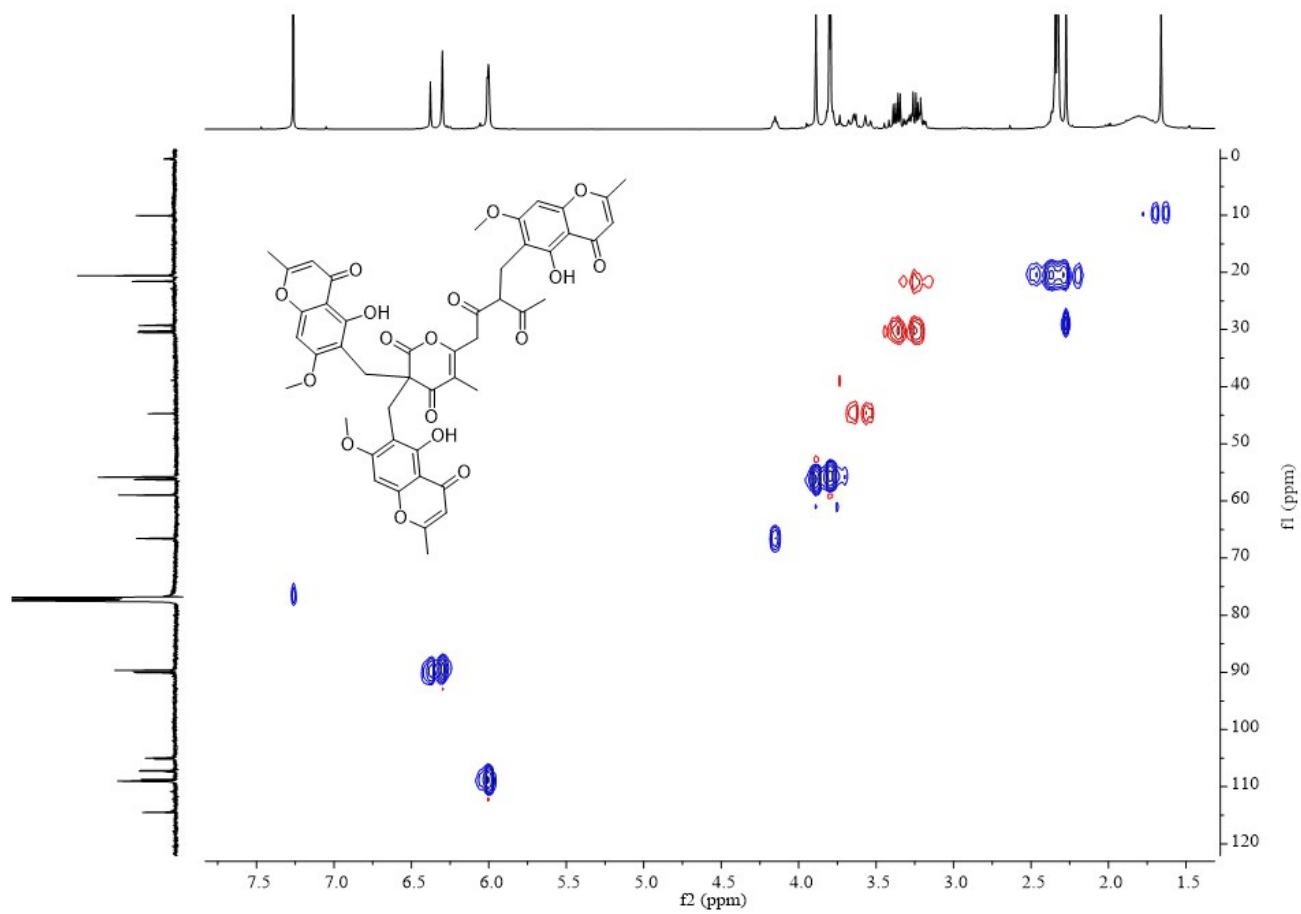


Figure S21 HSQC spectrum of compound 4 in CDCl₃

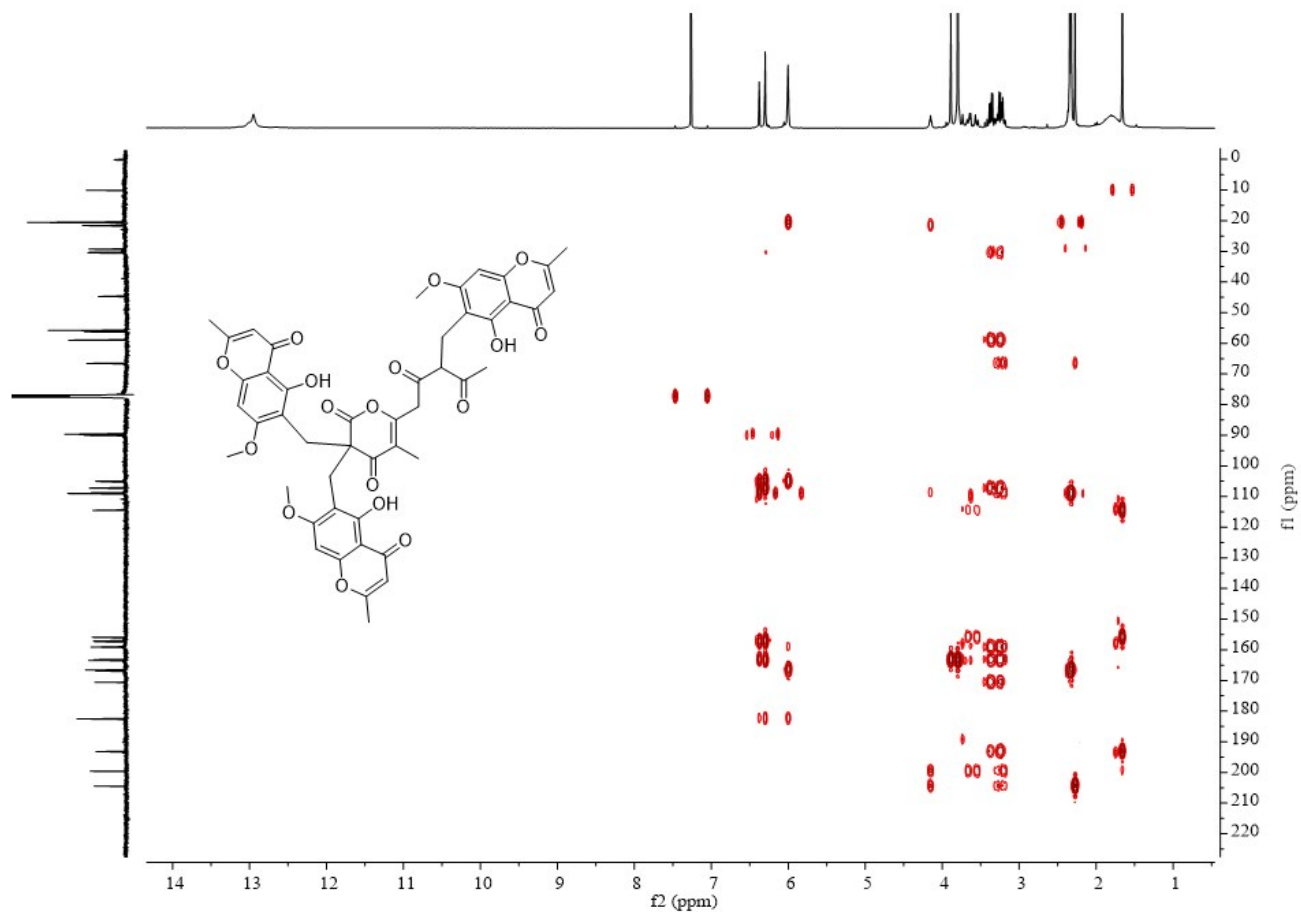


Figure S22 HMBC spectrum of compound 4 in CDCl₃

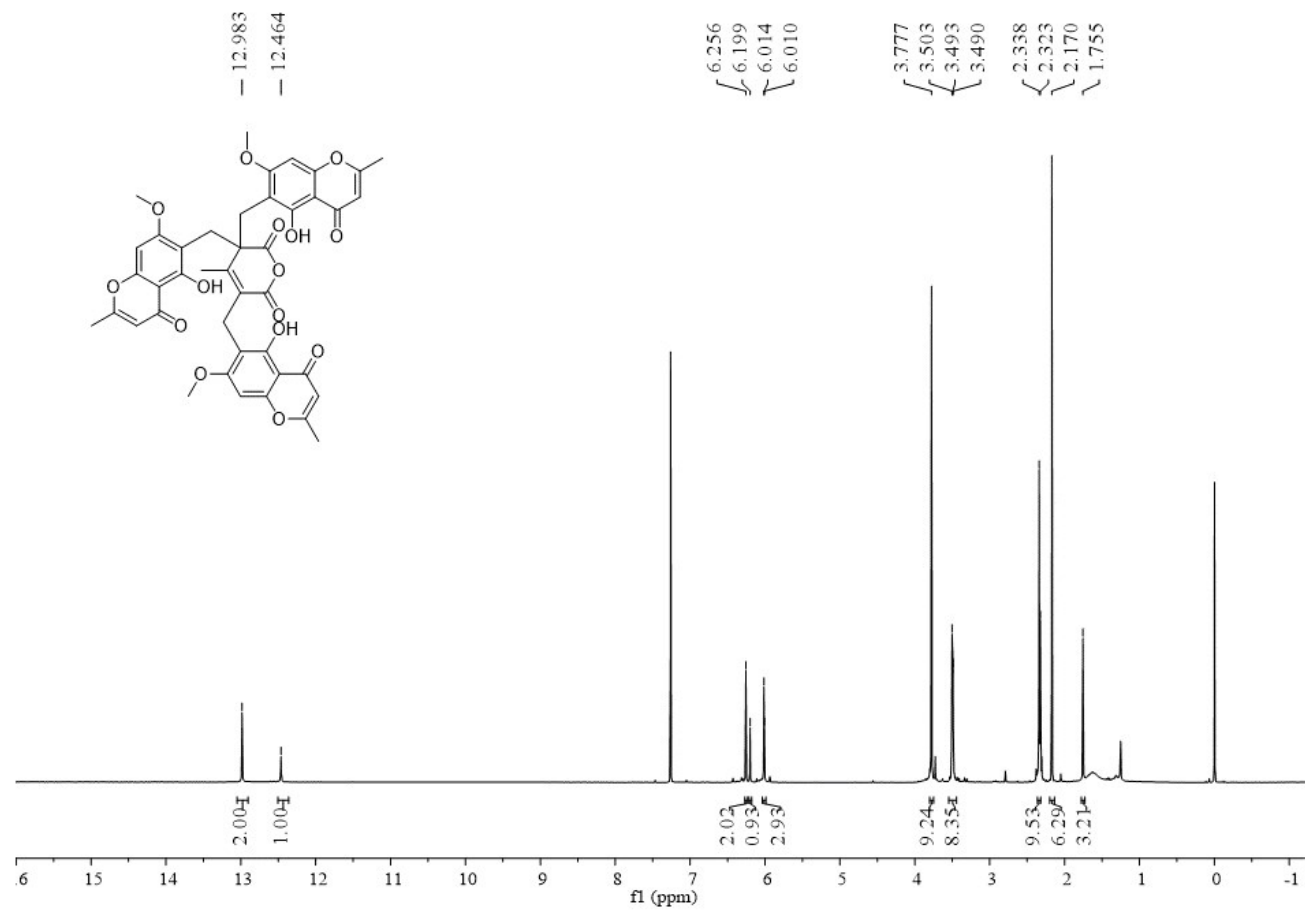


Figure S23 ¹H NMR spectrum of compound **5** in CDCl₃ (500 MHz)

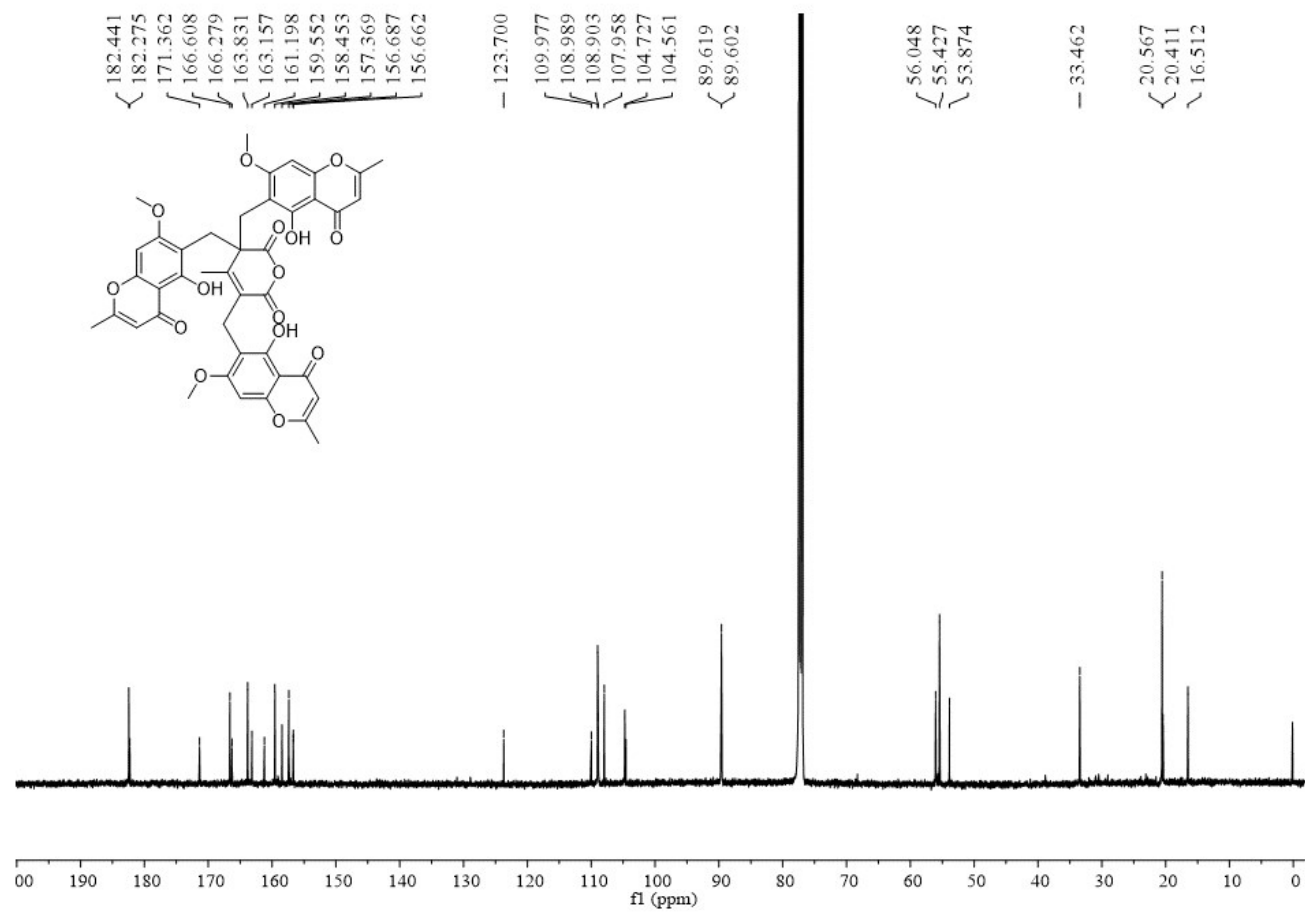


Figure S24 ^{13}C NMR spectrum of compound **5** in CDCl_3 (125 MHz)

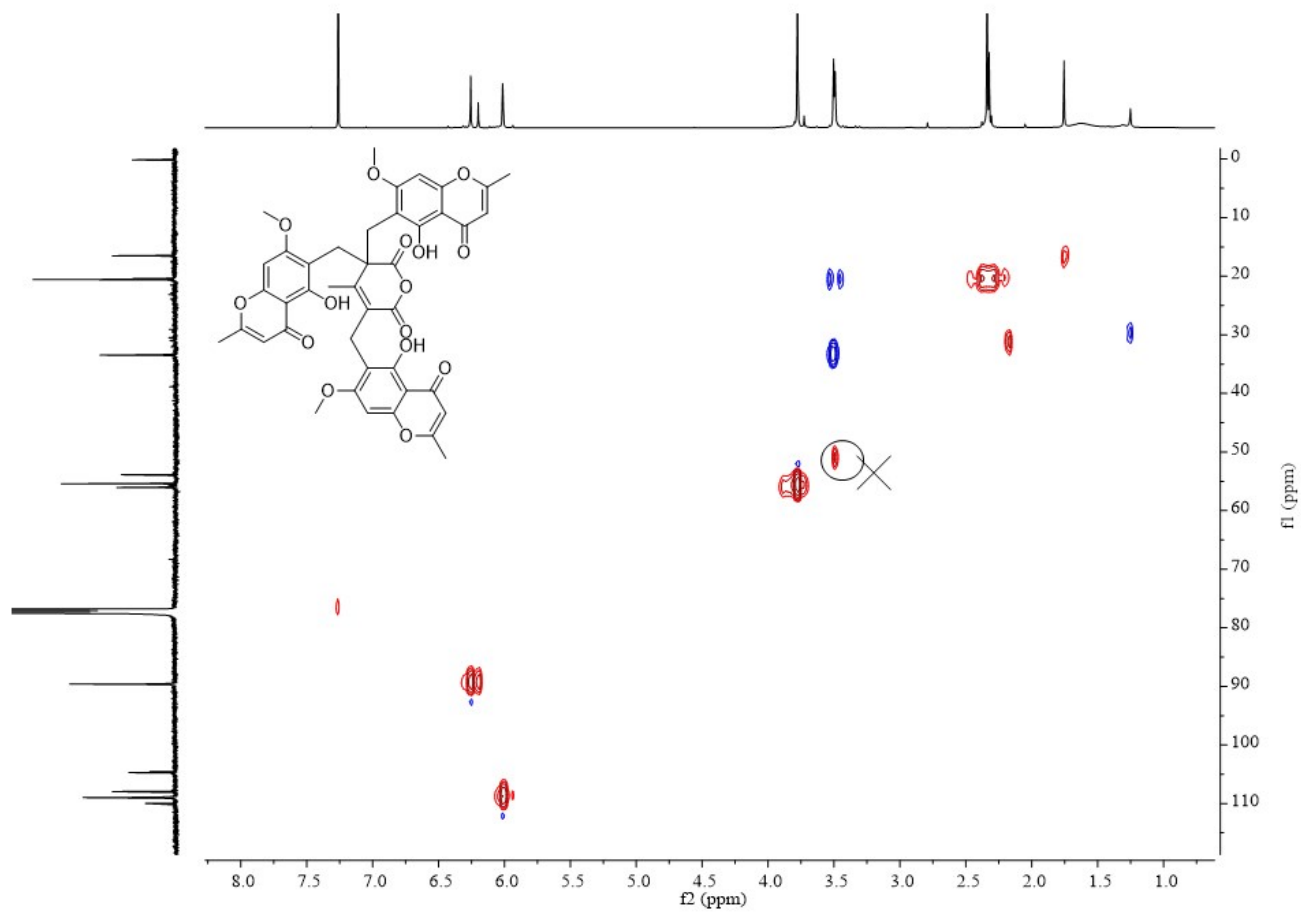


Figure S25 HSQC spectrum of compound 5 in CDCl₃

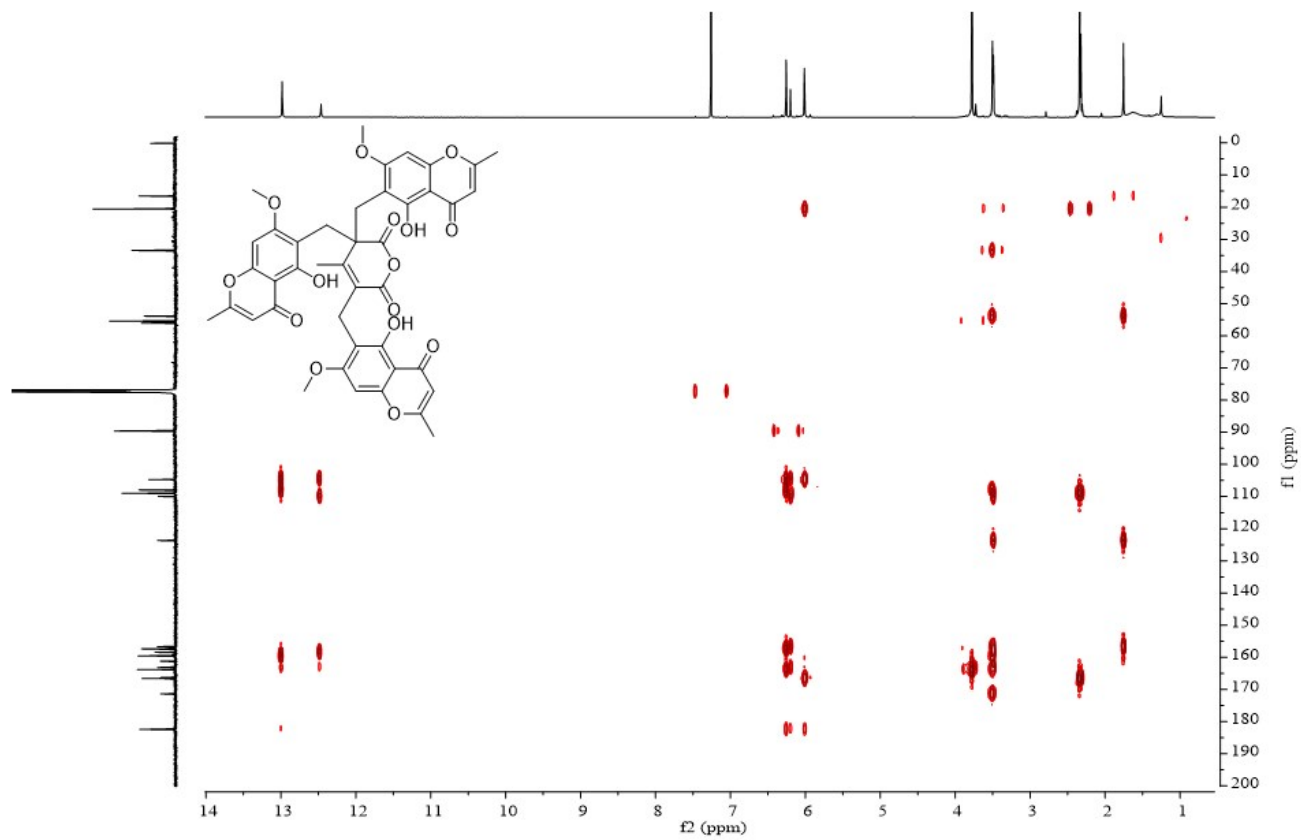


Figure S26 HMBC spectrum of compound **5** in CDCl_3

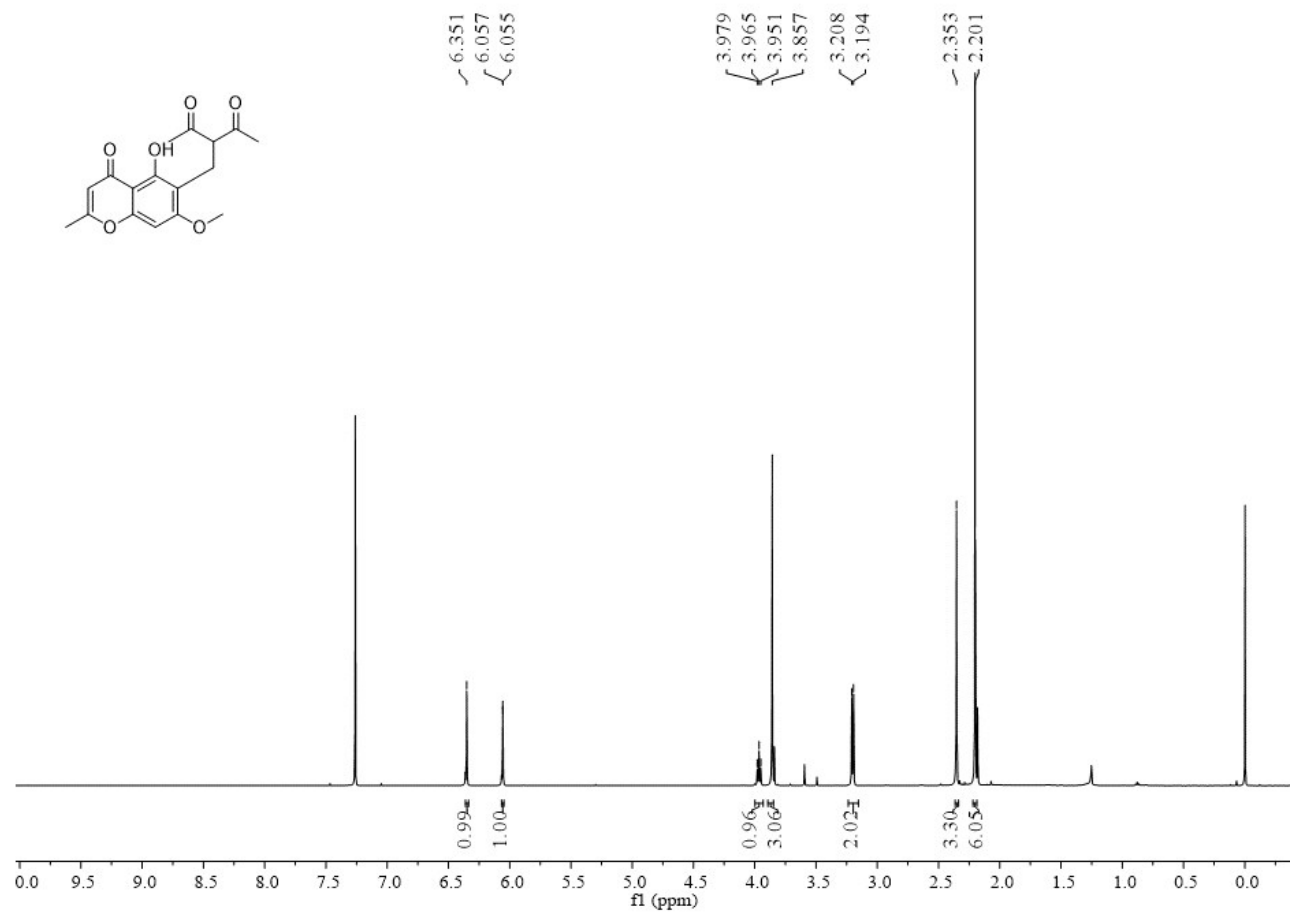


Figure S27 ¹H NMR spectrum of compound **9** in CDCl₃ (500 MHz)

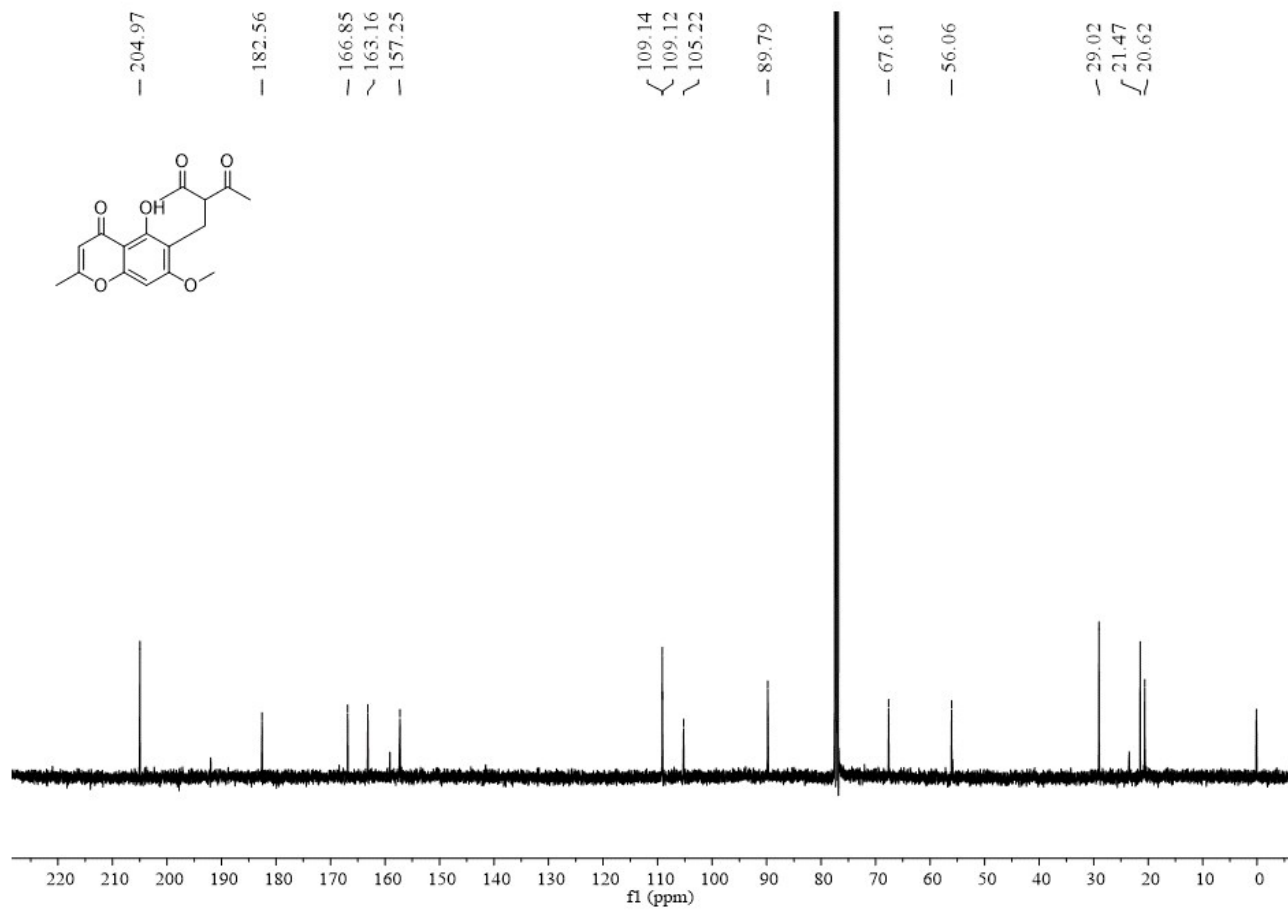


Figure S28 ^{13}C NMR spectrum of compound **9** in CDCl_3 (125 MHz)

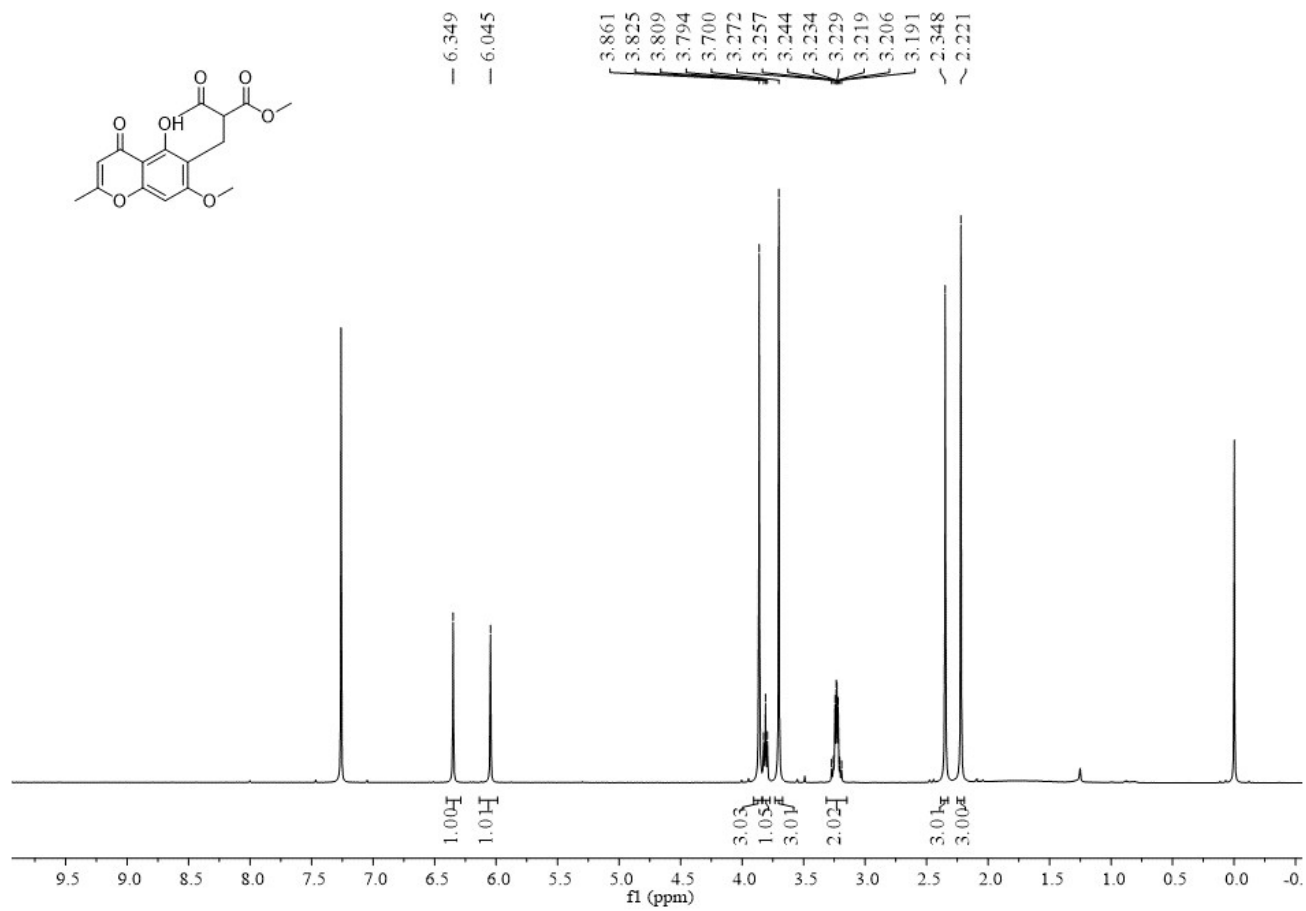


Figure S29 ¹H NMR spectrum of compound **10** in CDCl₃ (500 MHz)

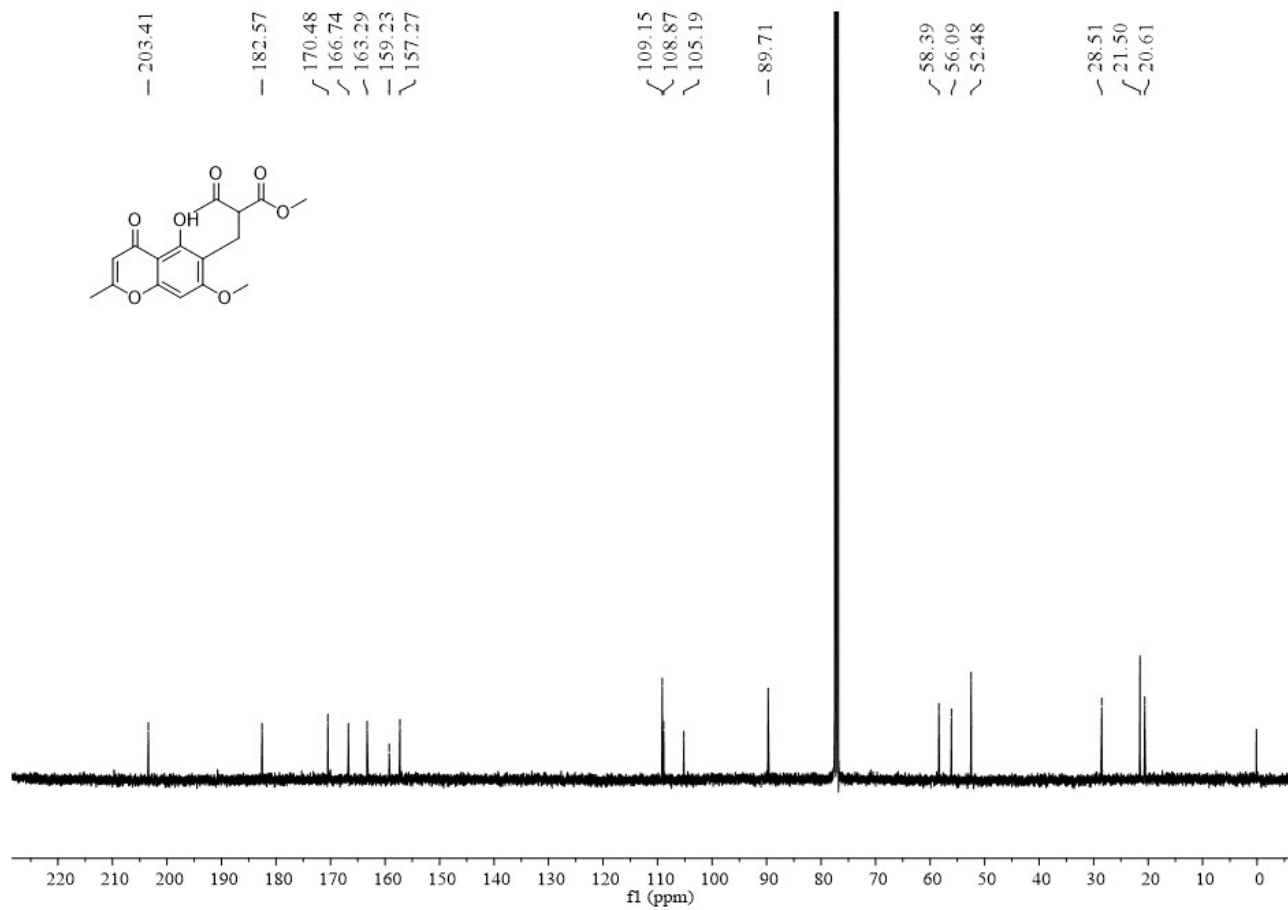


Figure S30 ¹³C NMR spectrum of compound **10** in CDCl₃ (125 MHz)

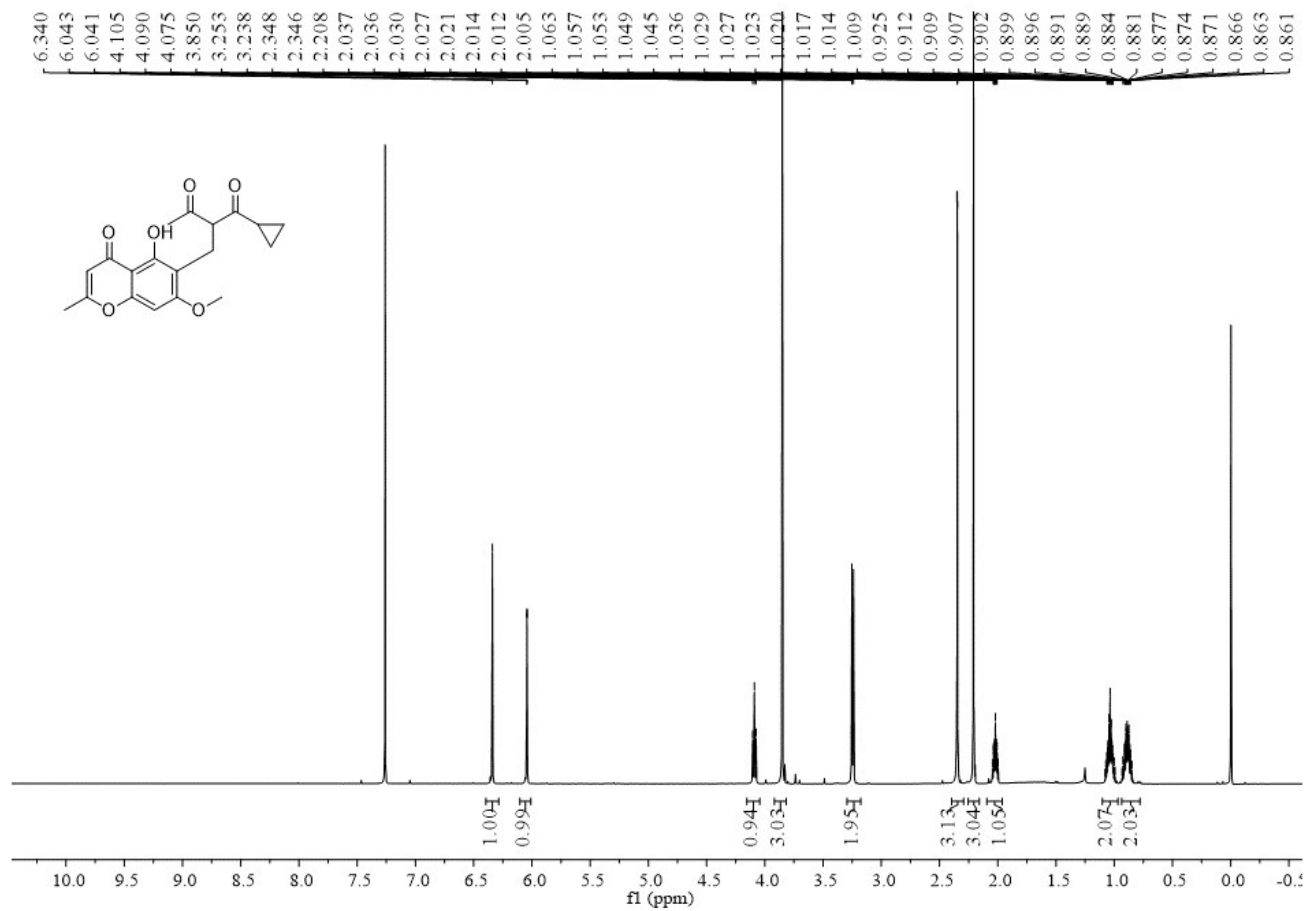


Figure S31 ¹H NMR spectrum of compound **11** in CDCl₃ (500 MHz)

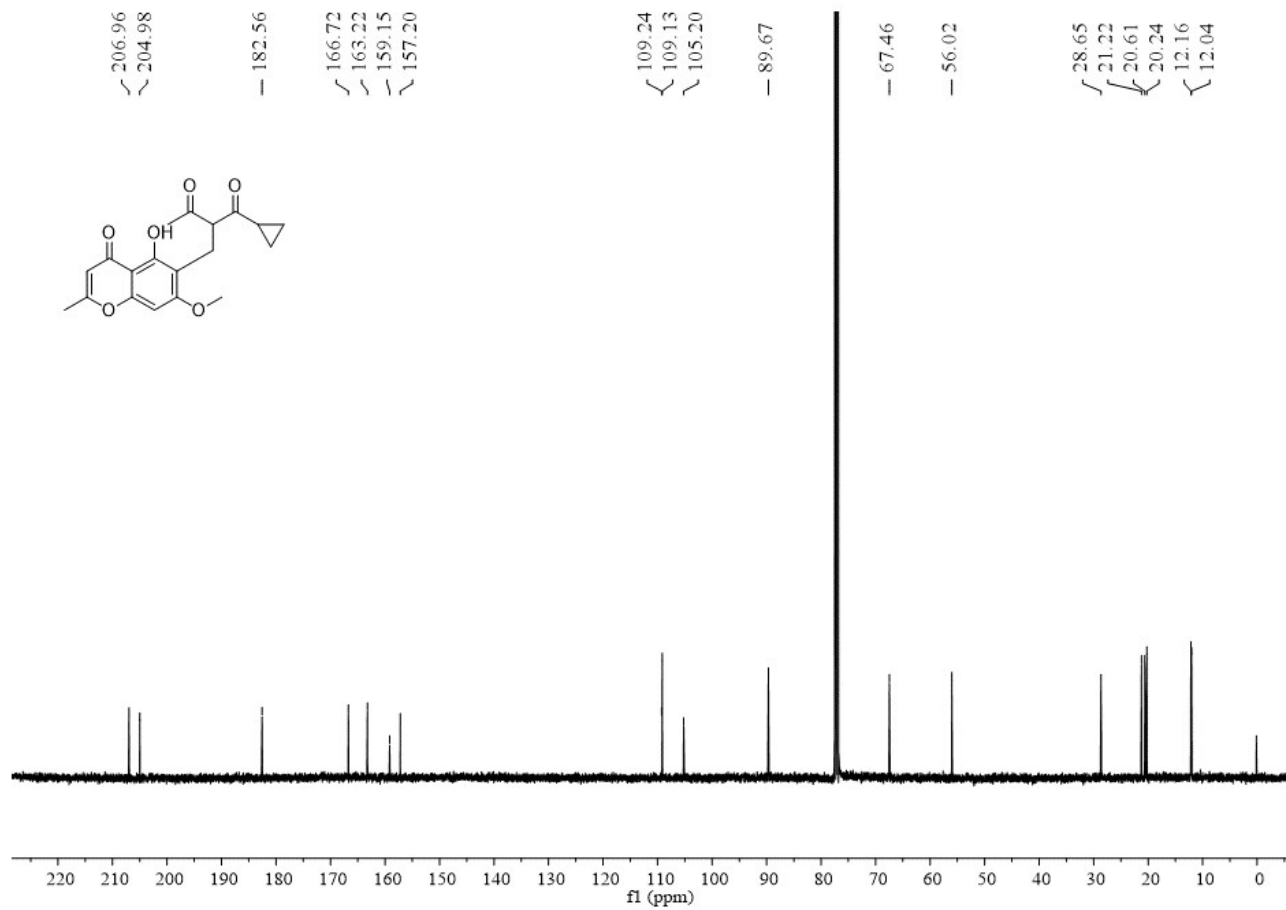


Figure S32 ¹³C NMR spectrum of compound **11** in CDCl₃ (125 MHz)