



Supplementary Information

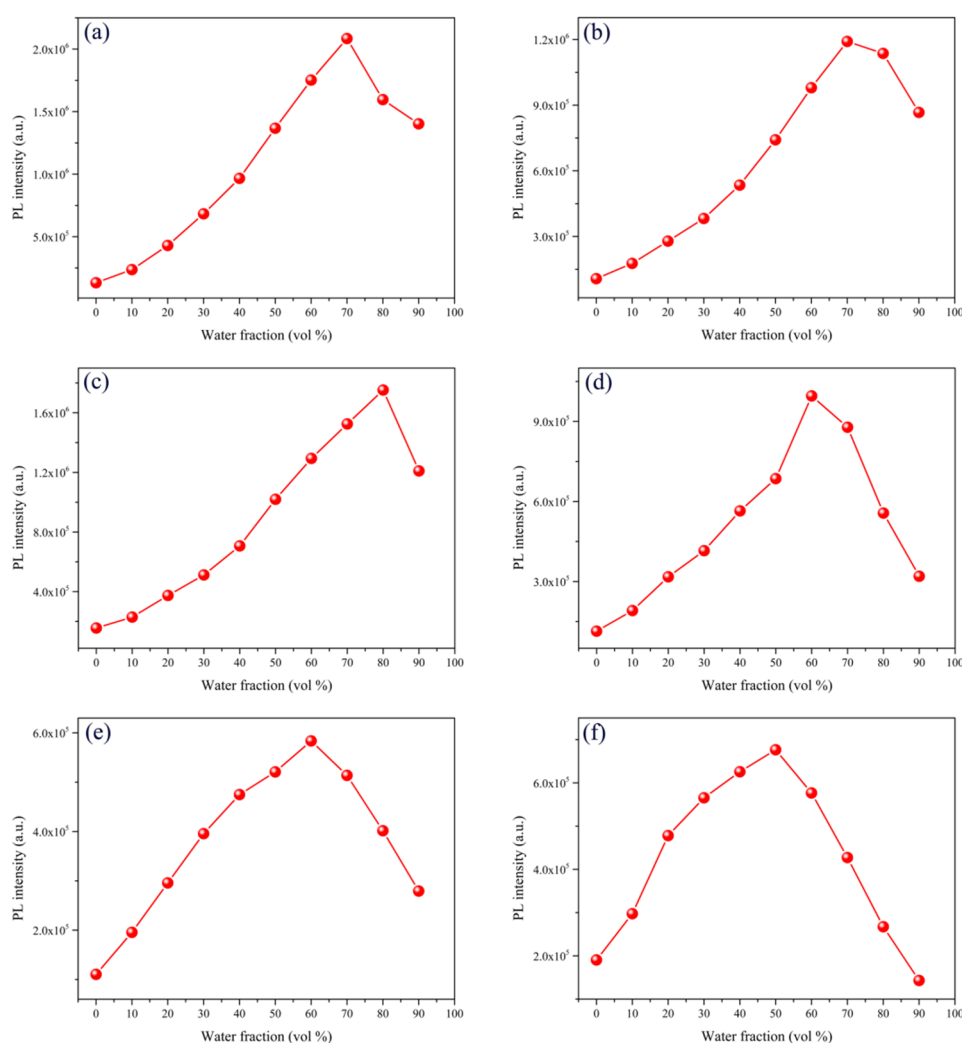
# Synthesis of New AIEE-Active Chalcones for Imaging of Mitochondria in Living Cells and Zebrafish In Vivo

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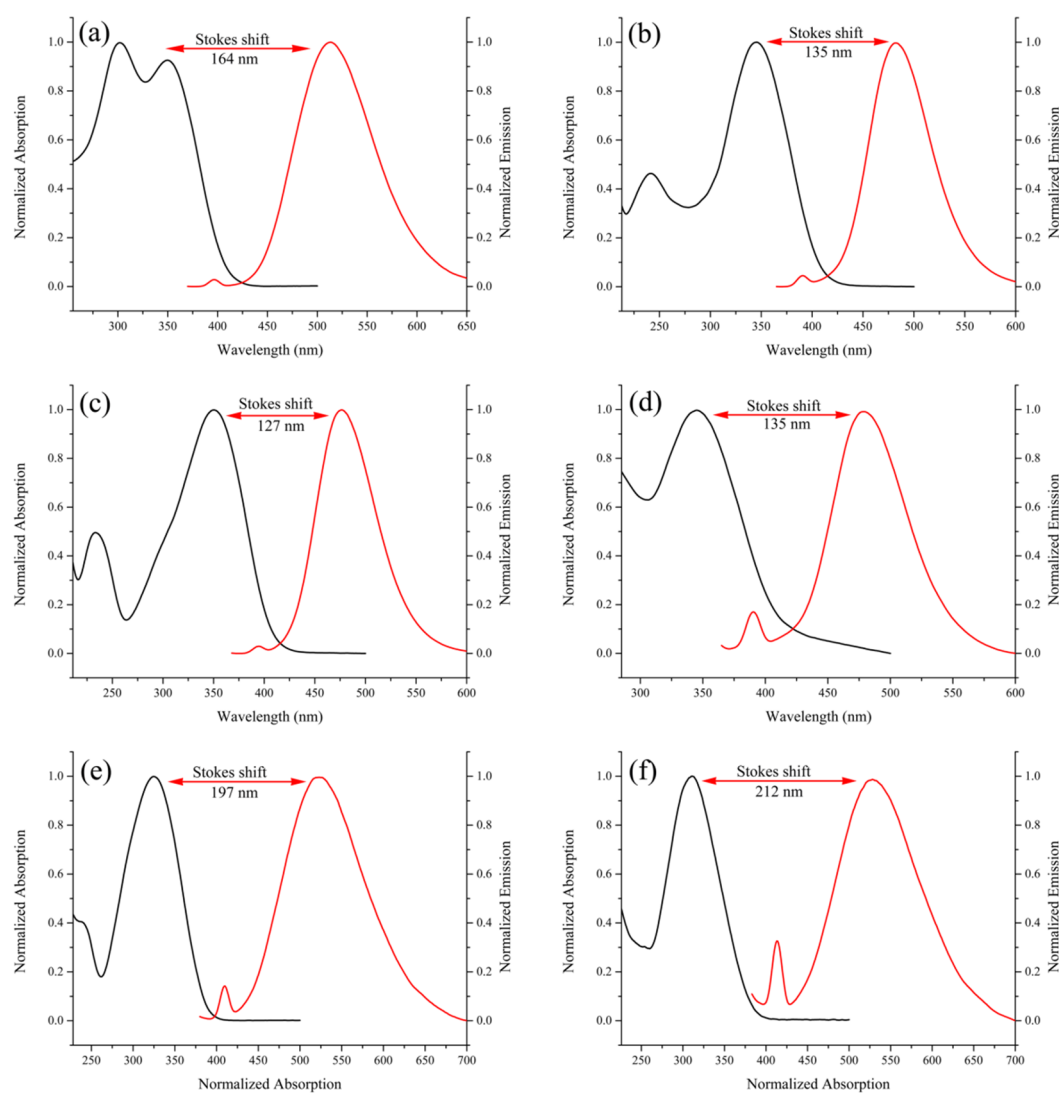
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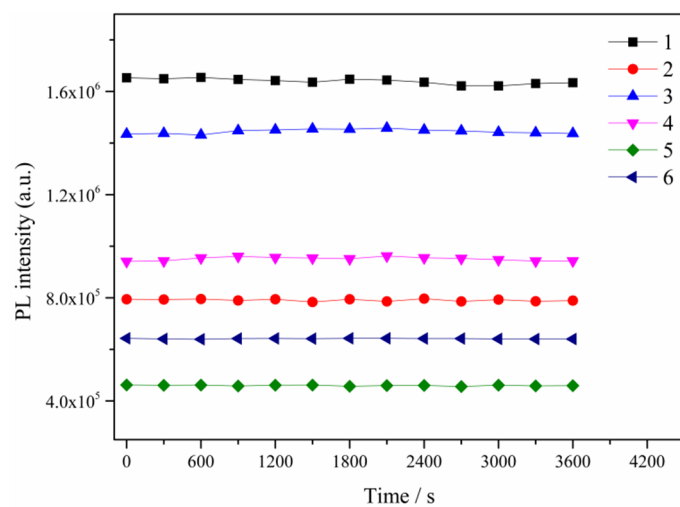
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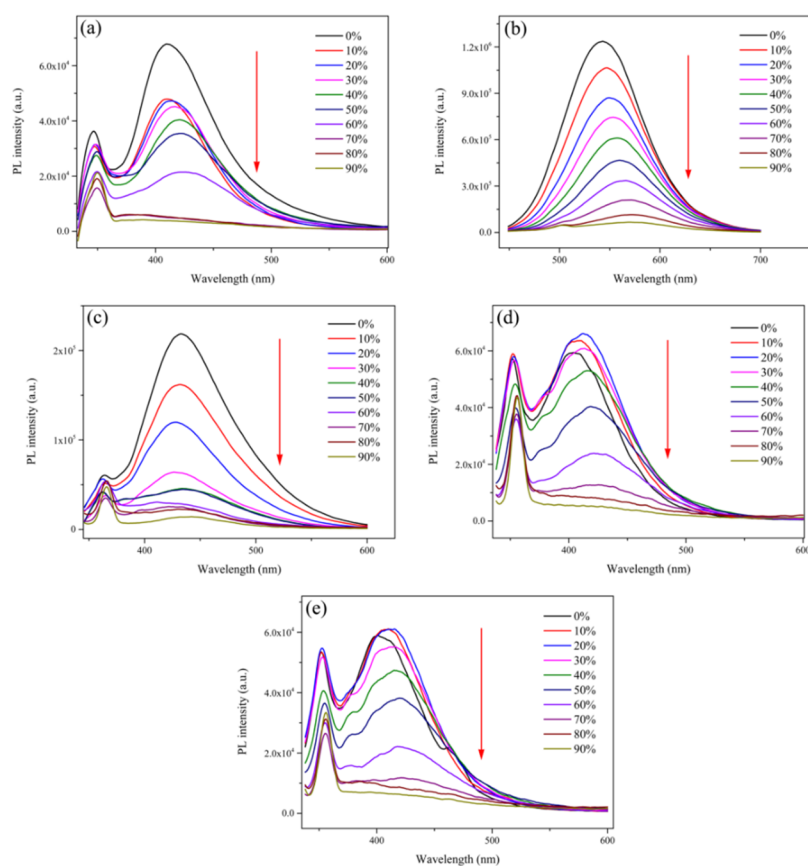
**Figure S1.** The variation trend of the maximum fluorescence intensity of compounds (a) 1, (b) 2, (c) 3, (d) 4, (e) 5, (f) 6 in CH<sub>3</sub>OH/H<sub>2</sub>O mixed solutions ( $c = 2.07 \times 10^{-5}$  M) with different water fractions (0%–90%).



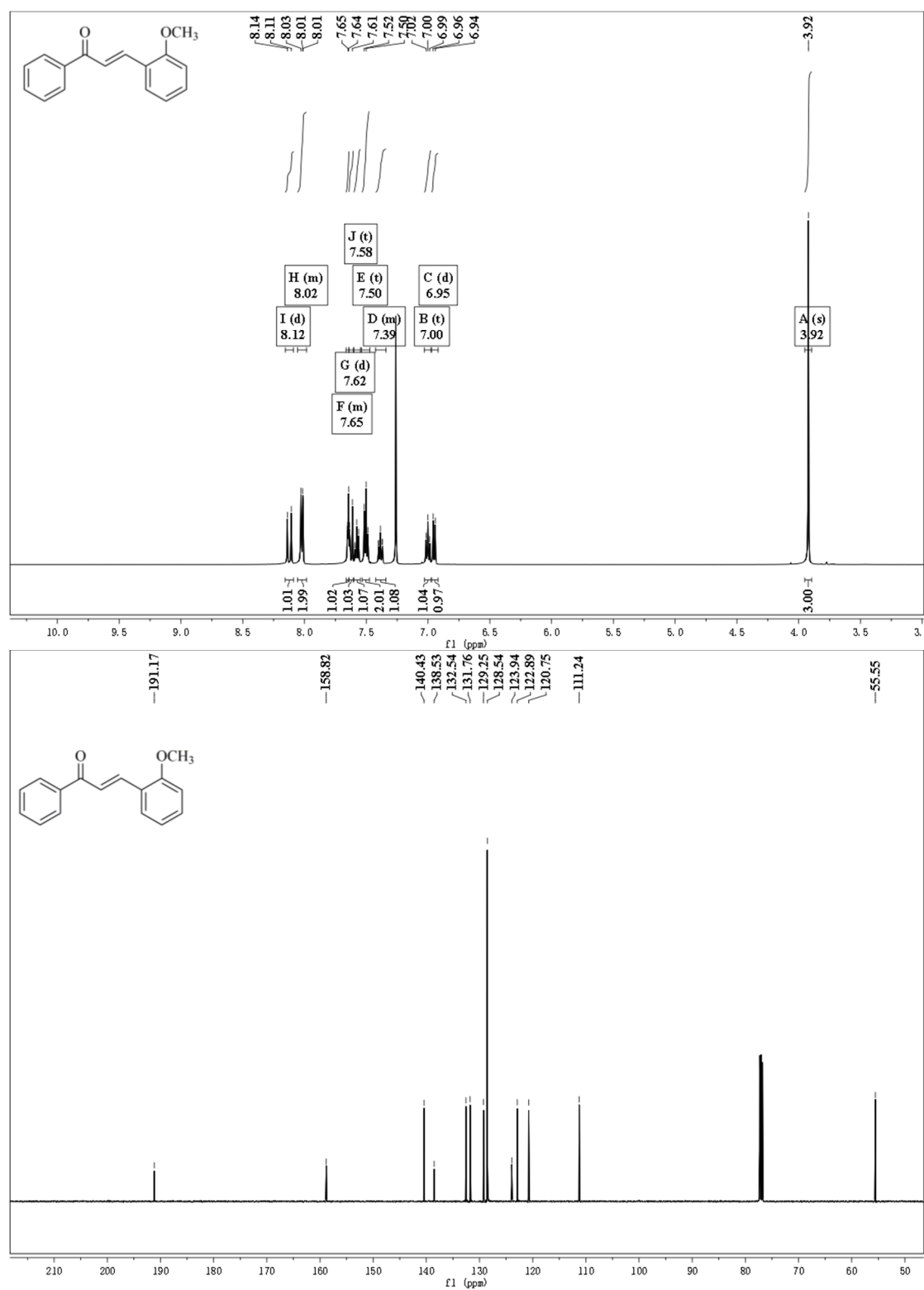
**Figure S2.** Normalized UV absorption and fluorescence spectra of compounds (a) **1**, (b) **2**, (c) **3**, (d) **4**, (e) **5**, (f) **6** in CH<sub>3</sub>OH/H<sub>2</sub>O mixed solutions ( $c = 2.07 \times 10^{-5}$  M) with 90% water fractions.

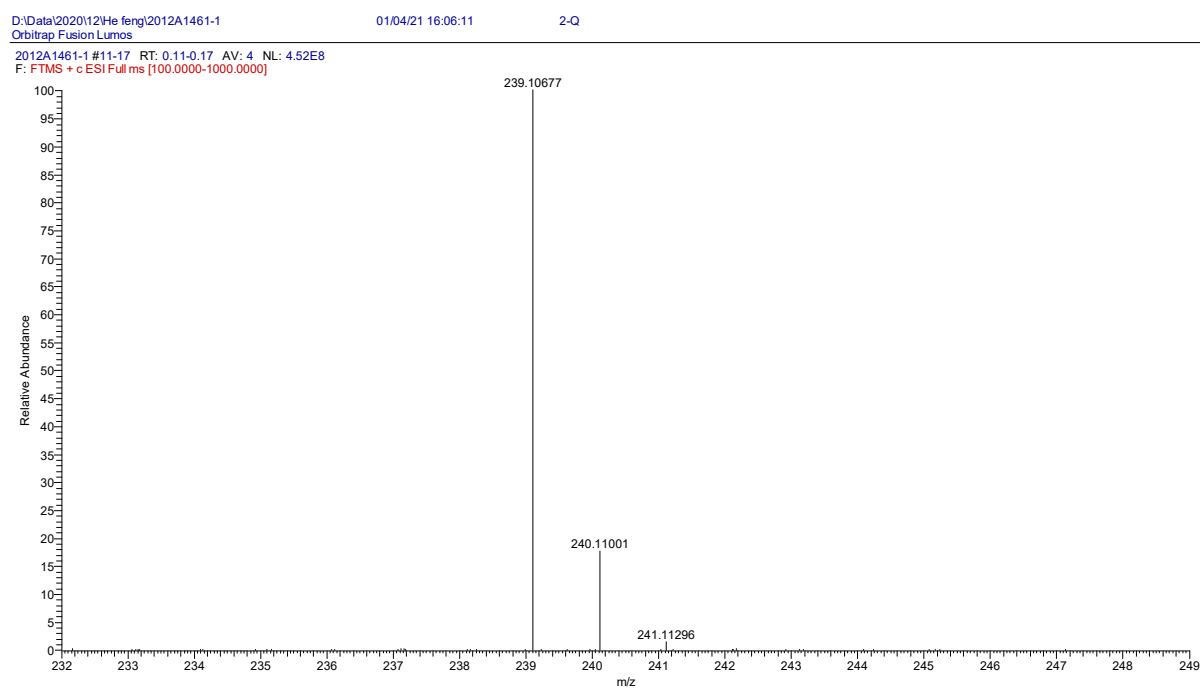


**Figure S3.** Time-dependent fluorescence spectra of **1** (3:7 *v:v*), **2** (3:7 *v:v*), **3** (2: 8 *v:v*), **4** (4: 6 *v:v*), **5** (4: 6 *v:v*) and **6** (5:5 *v:v*) in CH<sub>3</sub>OH/H<sub>2</sub>O (*v:v*) mixed solutions ( $c = 2.07 \times 10^{-5}$  M).

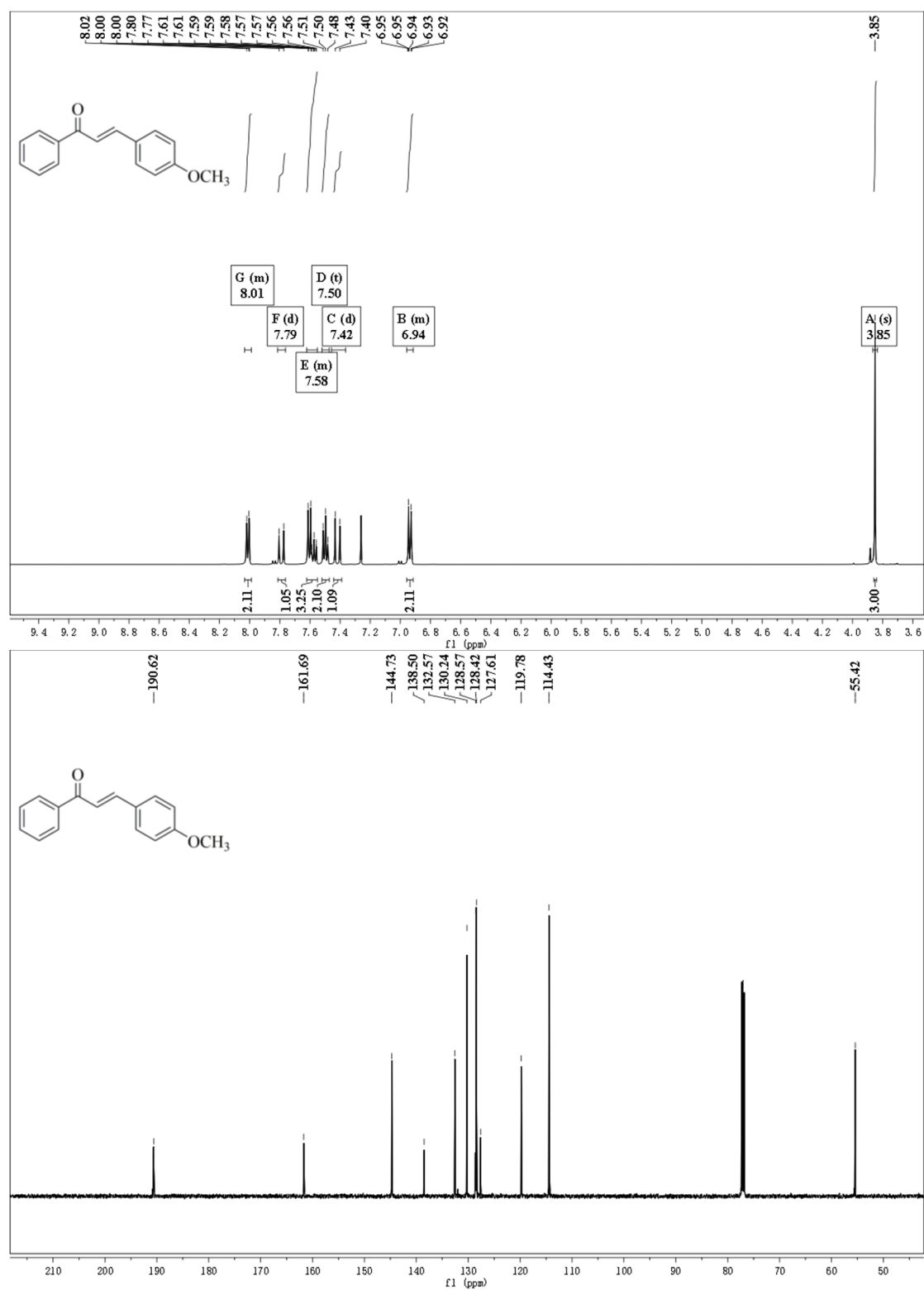


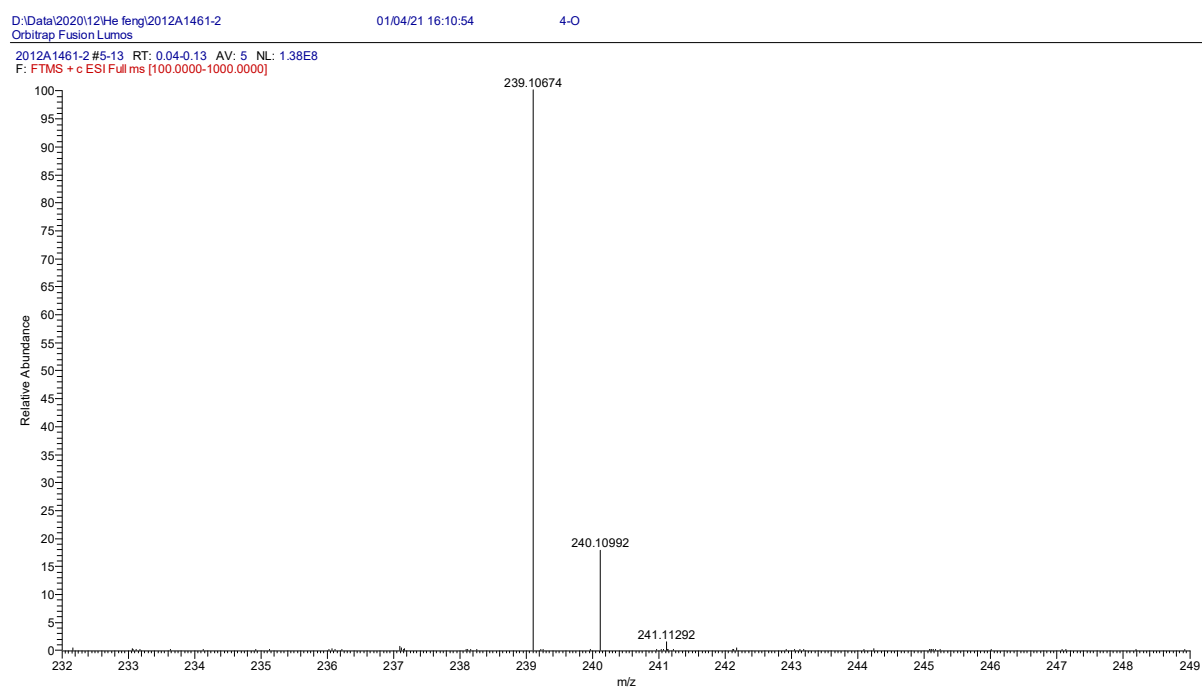
**Figure S4.** PL spectra of compounds (a) 7, (b) 8, (c) 9, (d) 10, (e) 11 in CH<sub>3</sub>OH/H<sub>2</sub>O mixed solutions ( $c = 2.07 \times 10^{-5}$  M) with different water fractions (0%-90%).



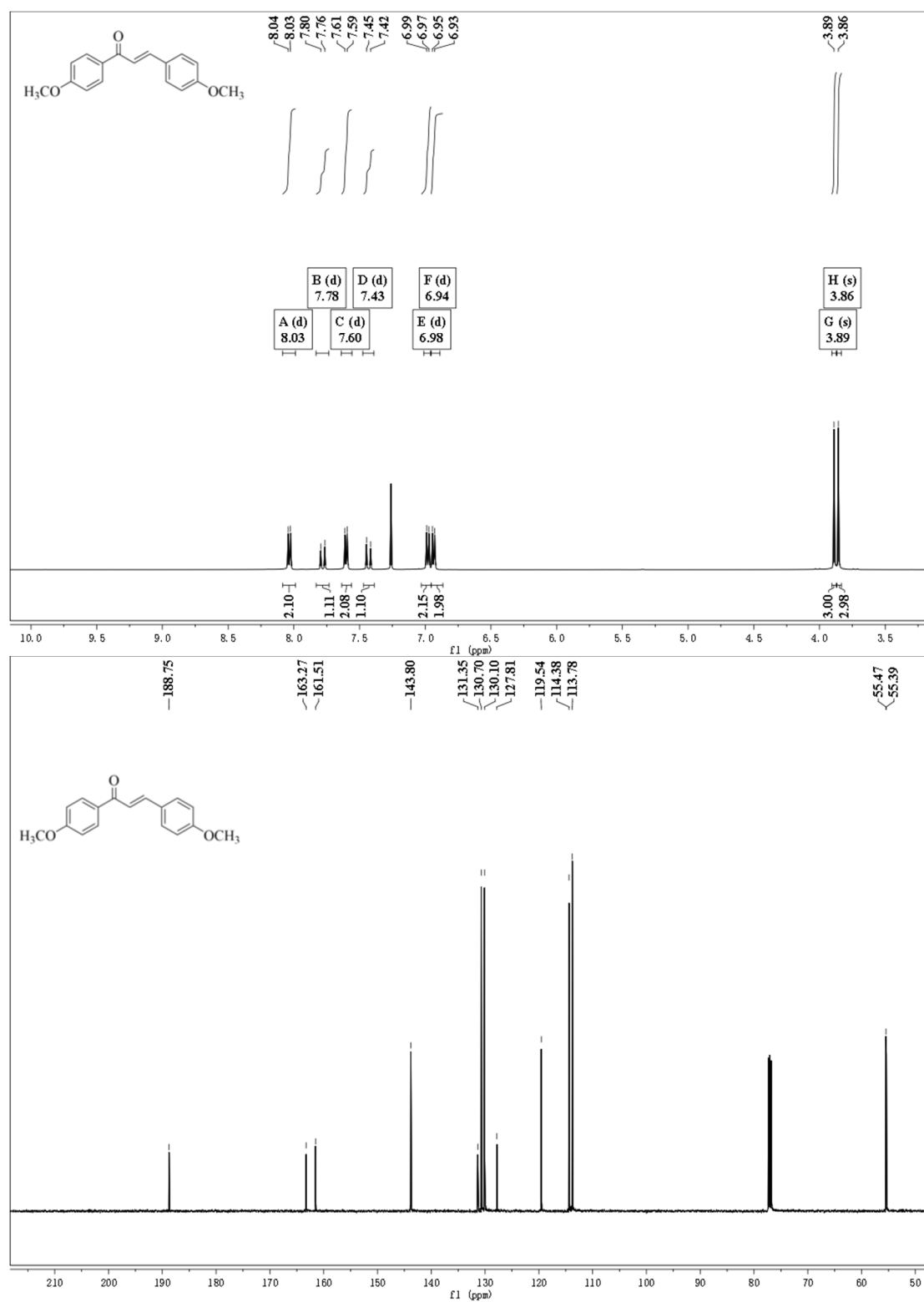


**Figure S5.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **1**.

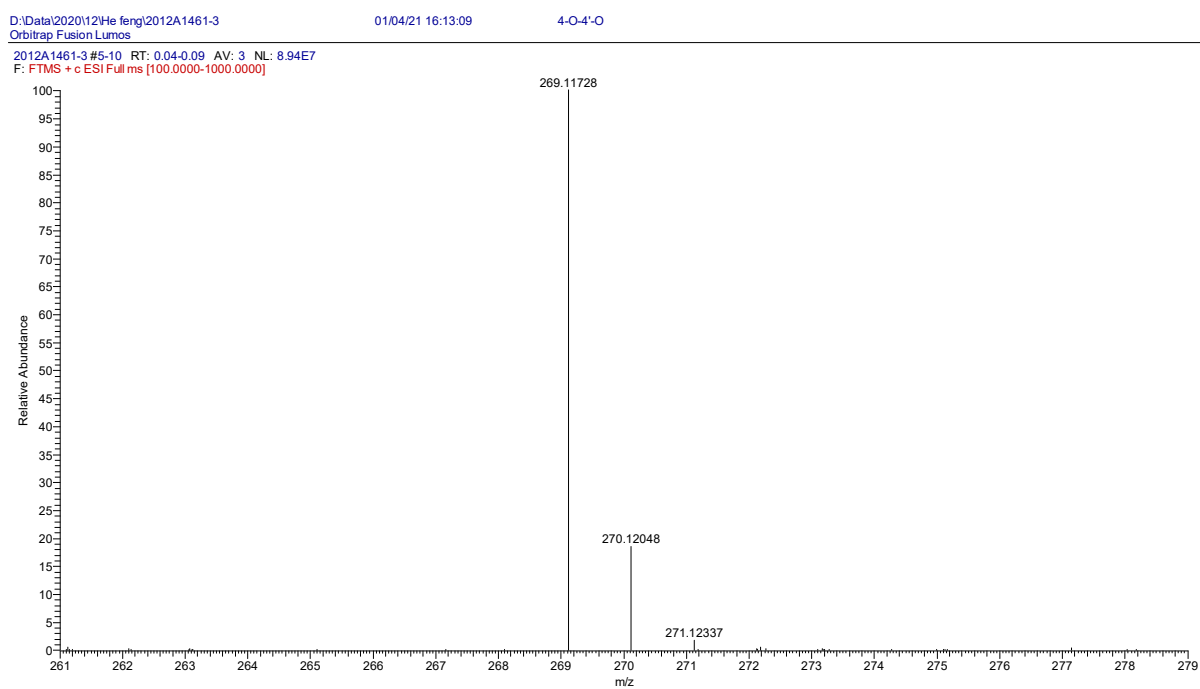




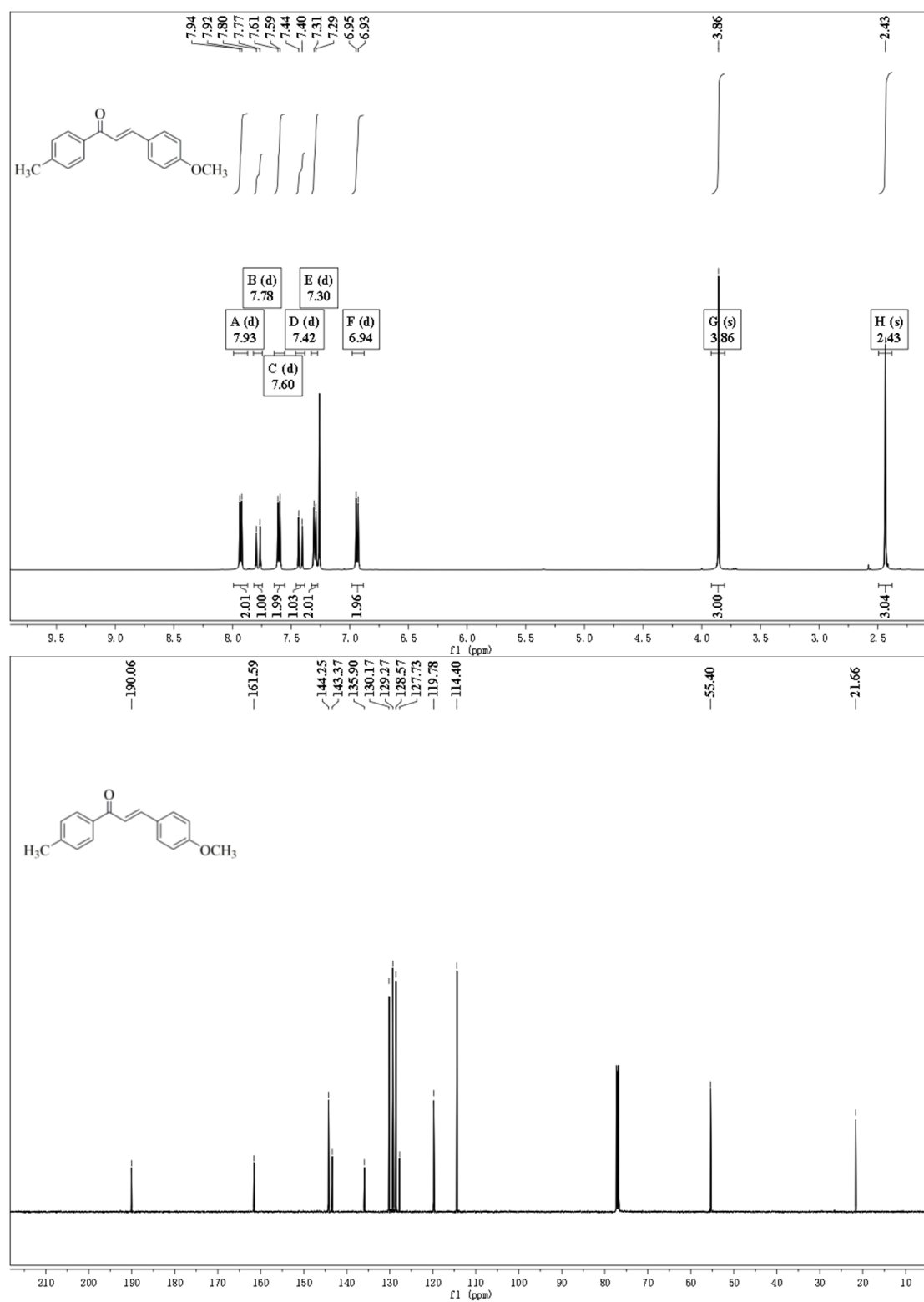
**Figure S6.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **2**.

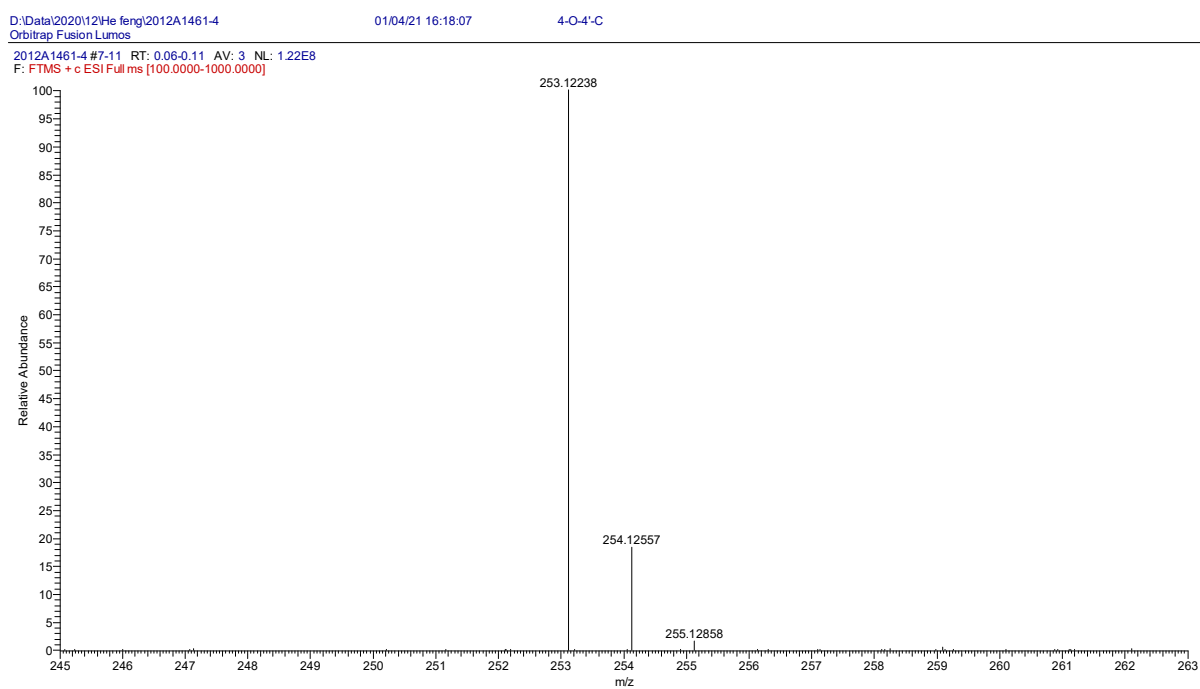




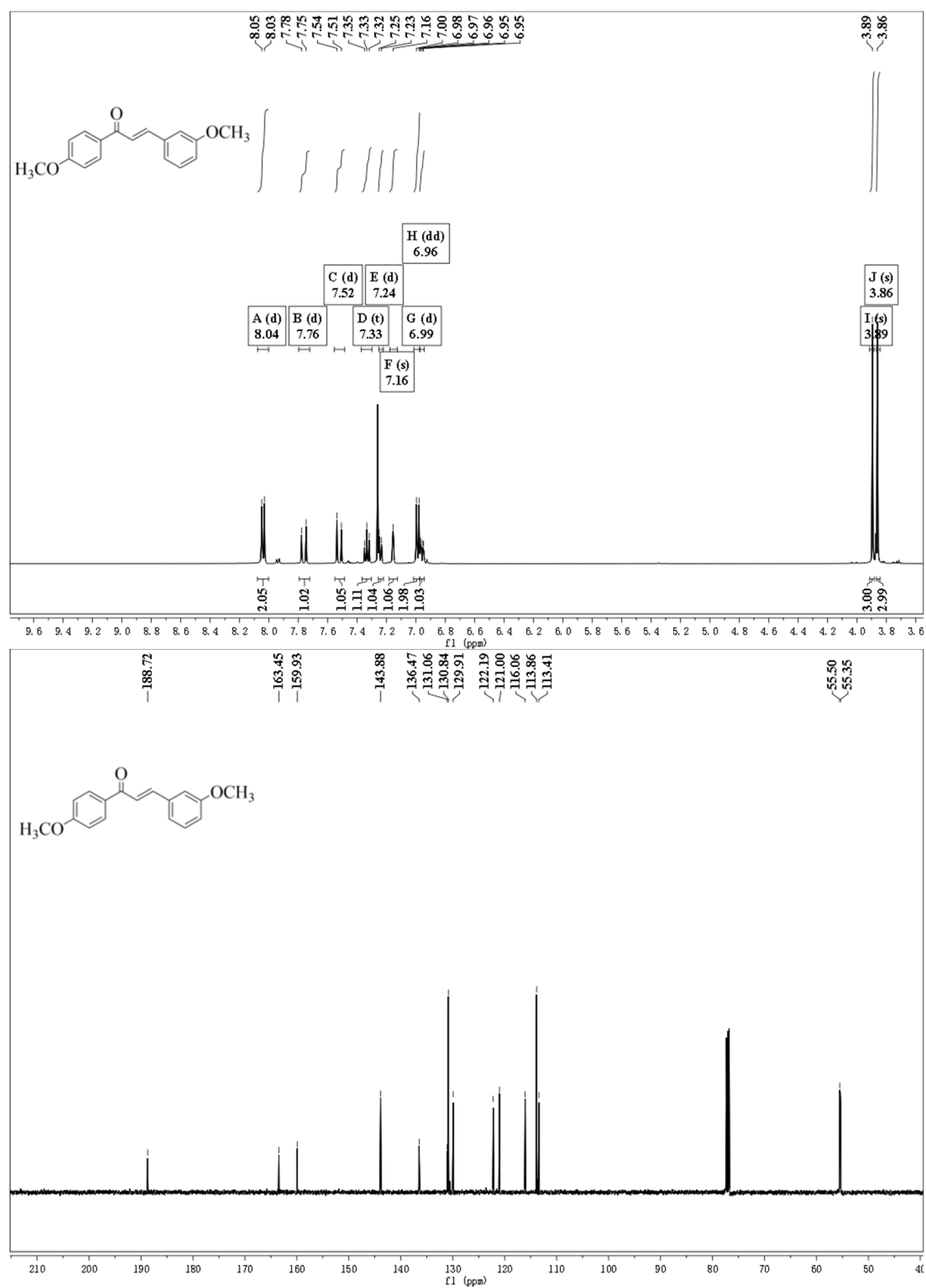


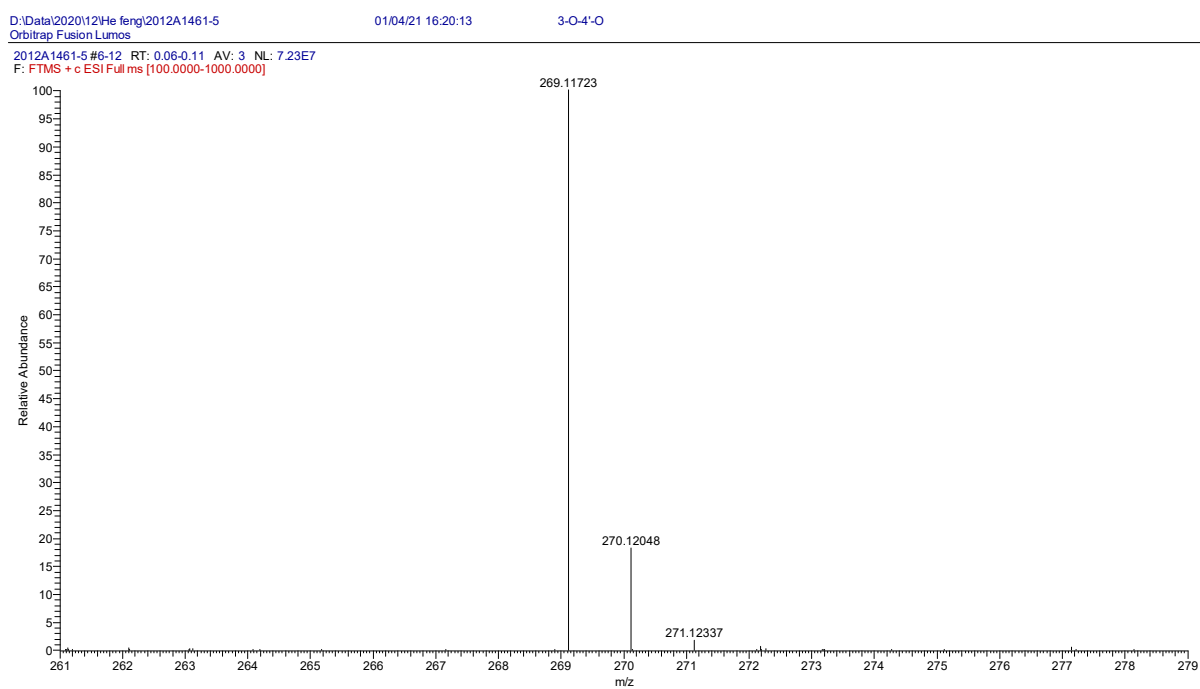
**Figure S7.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **3**.



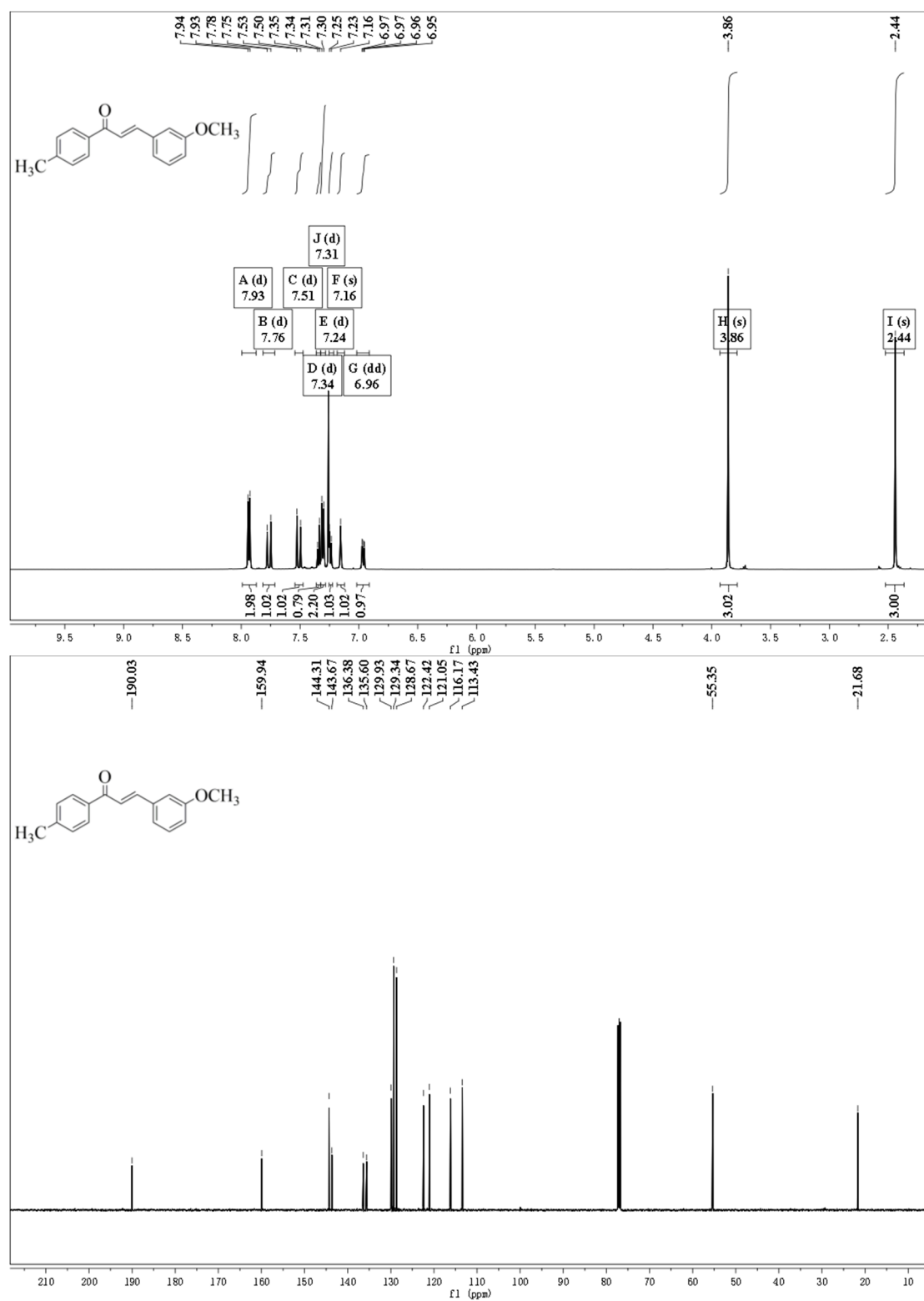


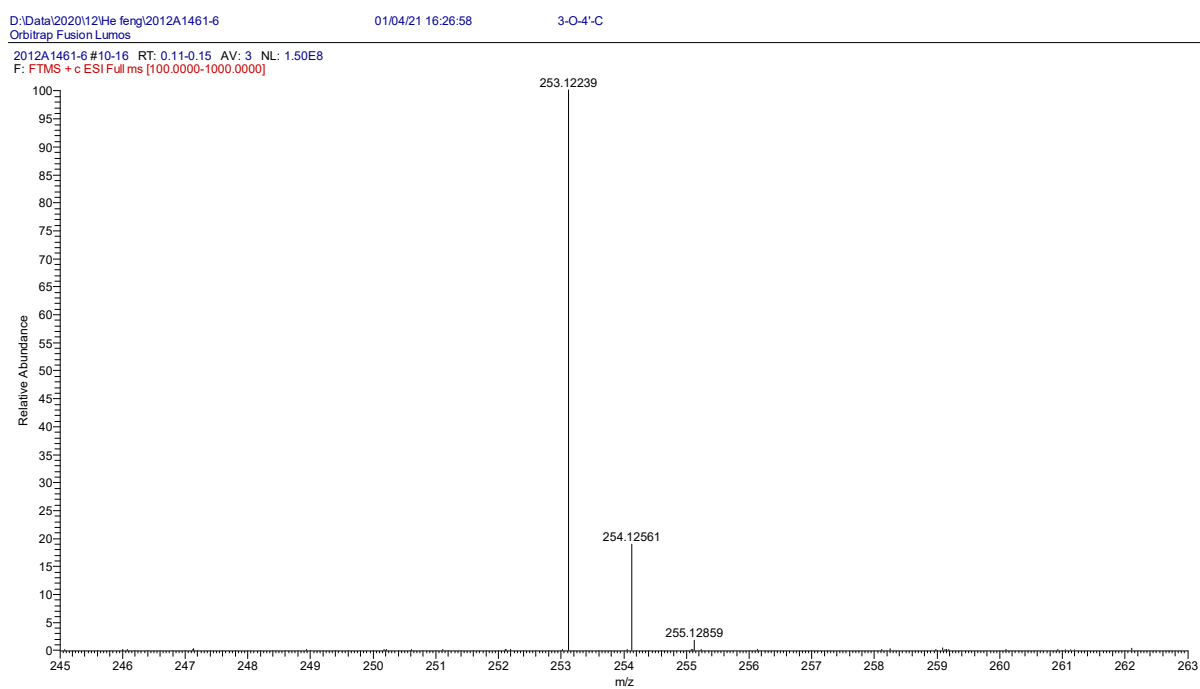
**Figure S8.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **4**.



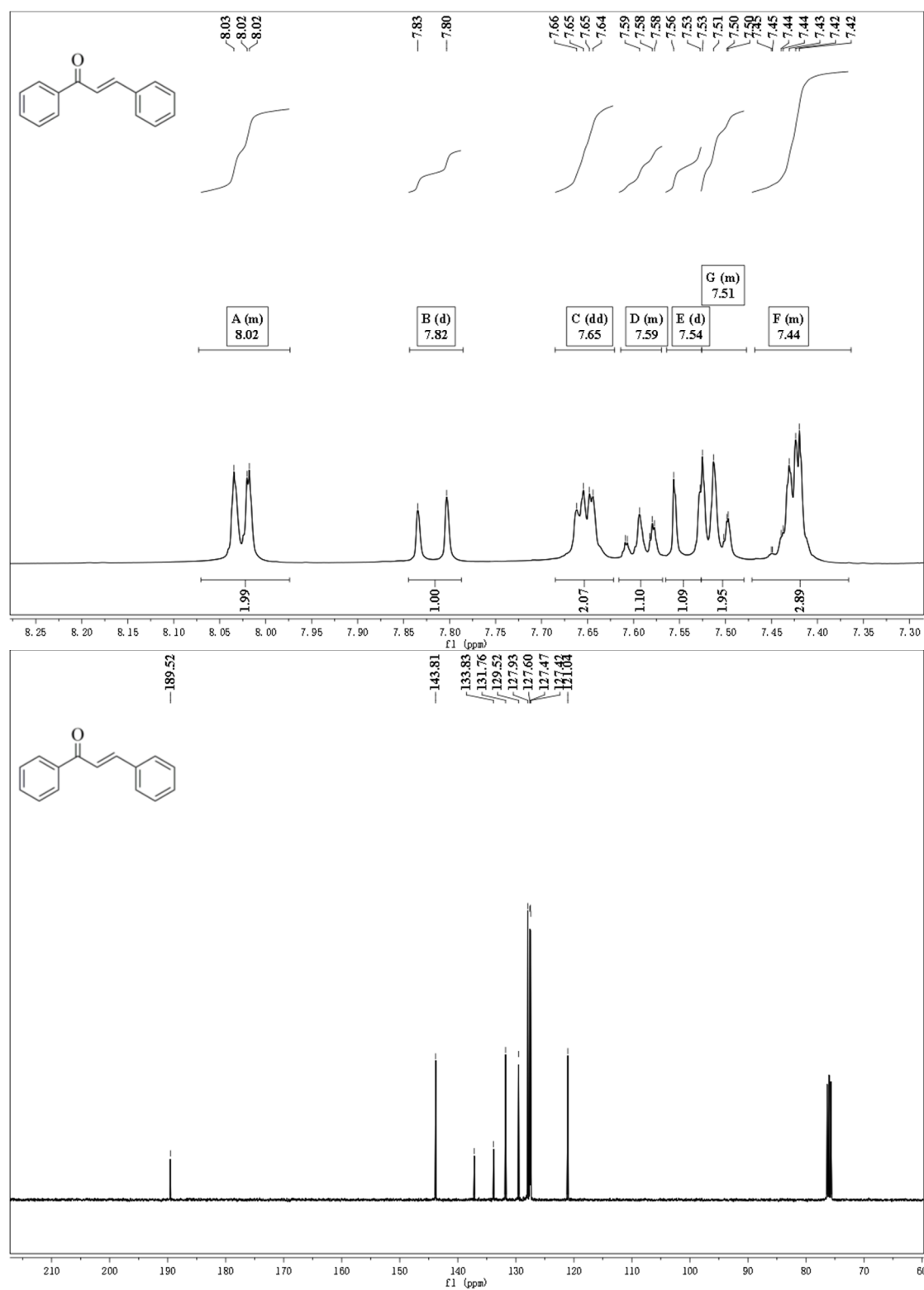


**Figure S9.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **5**.

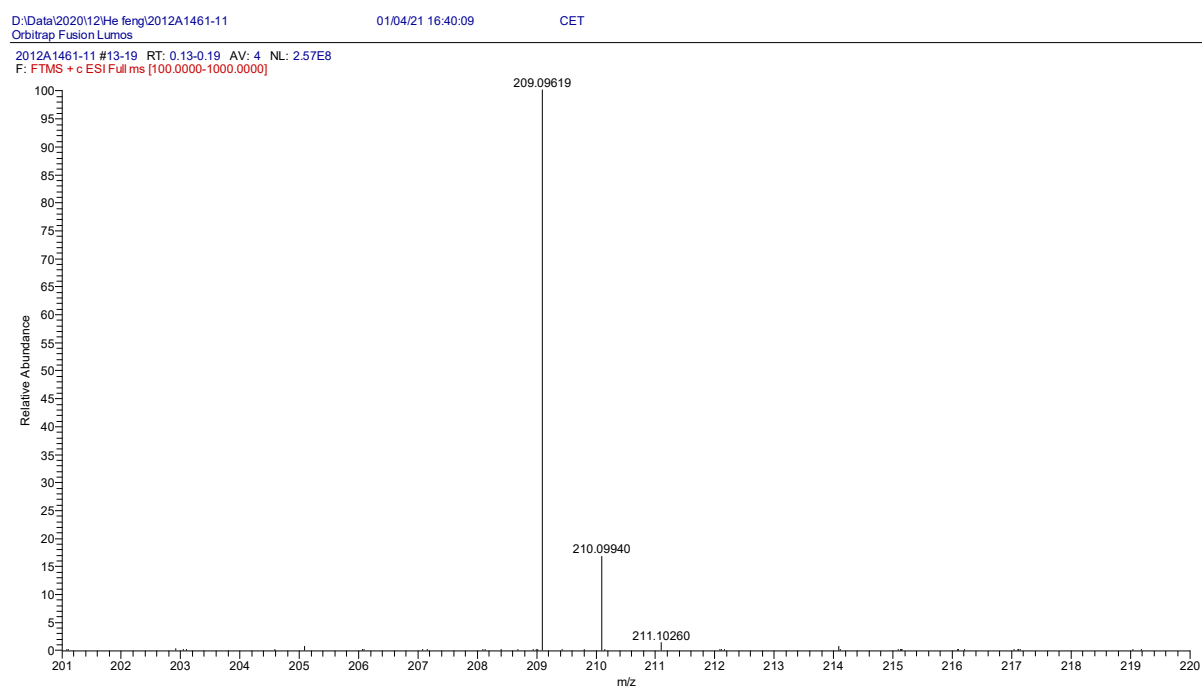




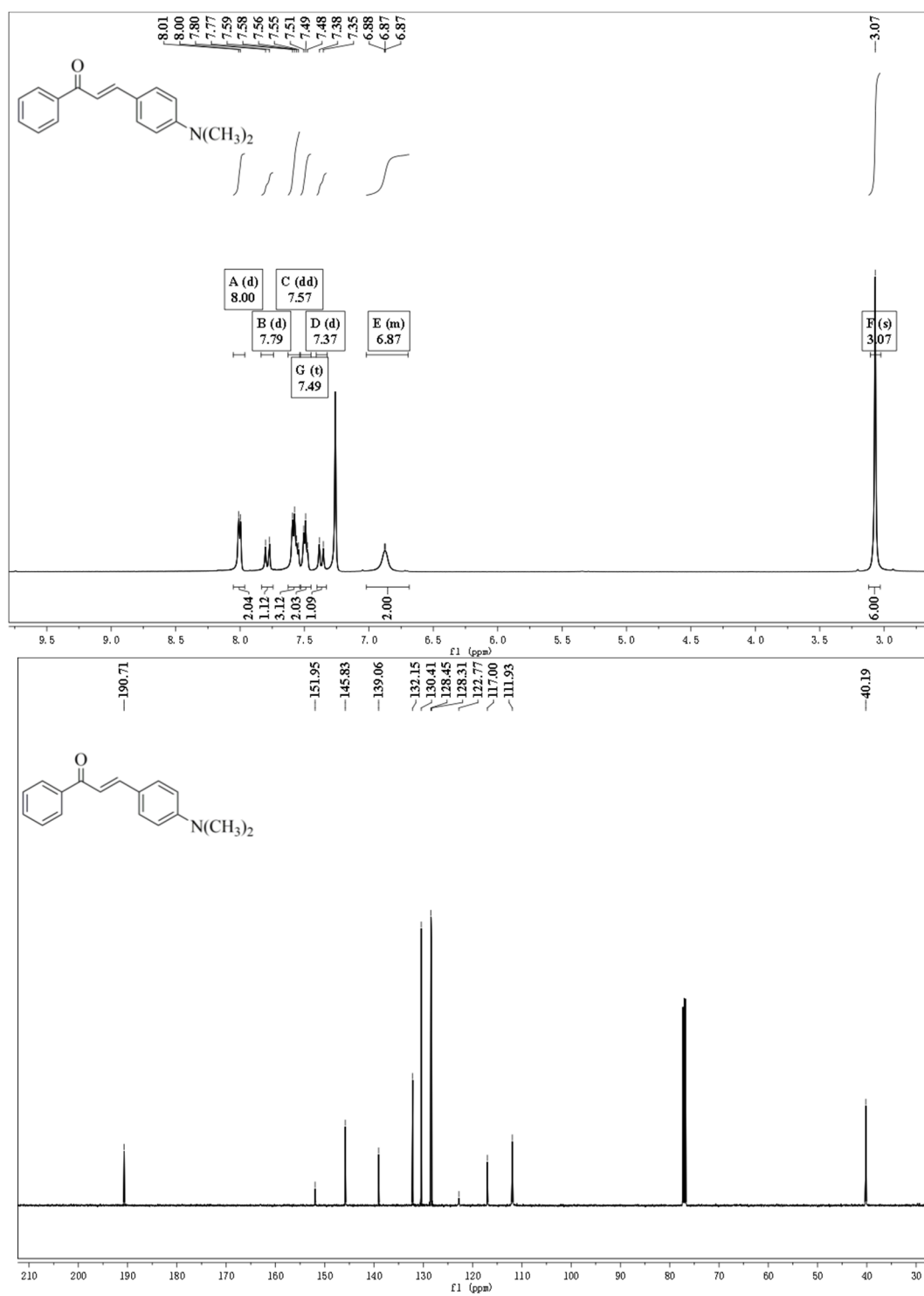
**Figure S10.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **6**.

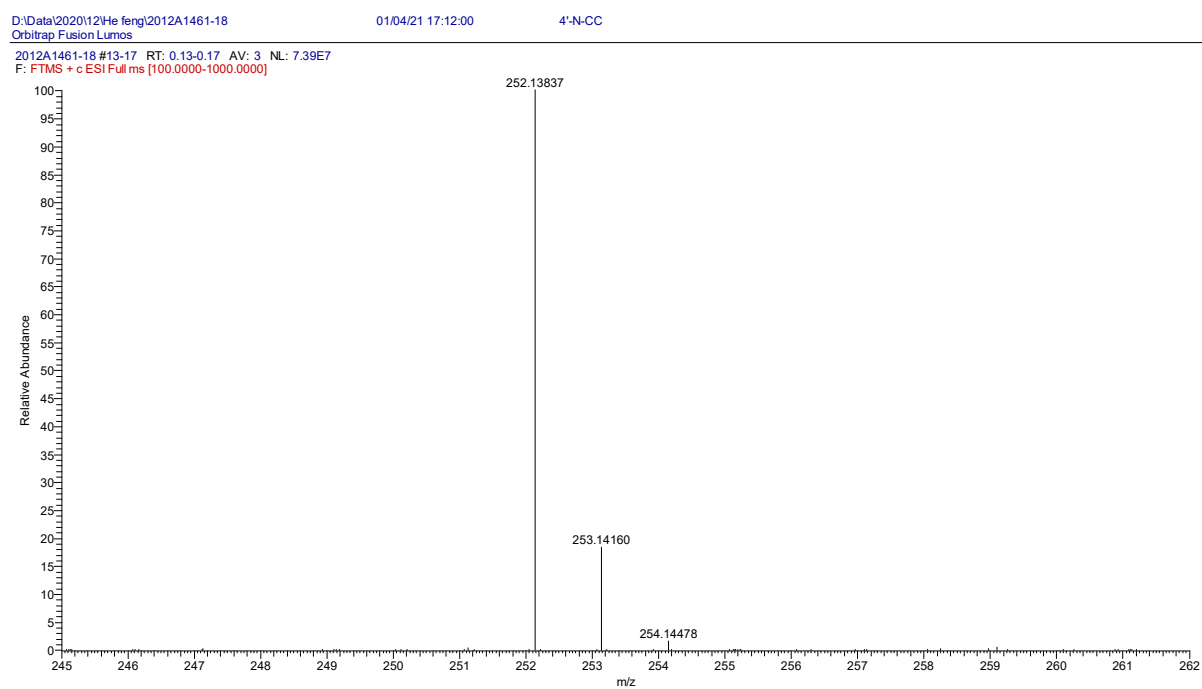




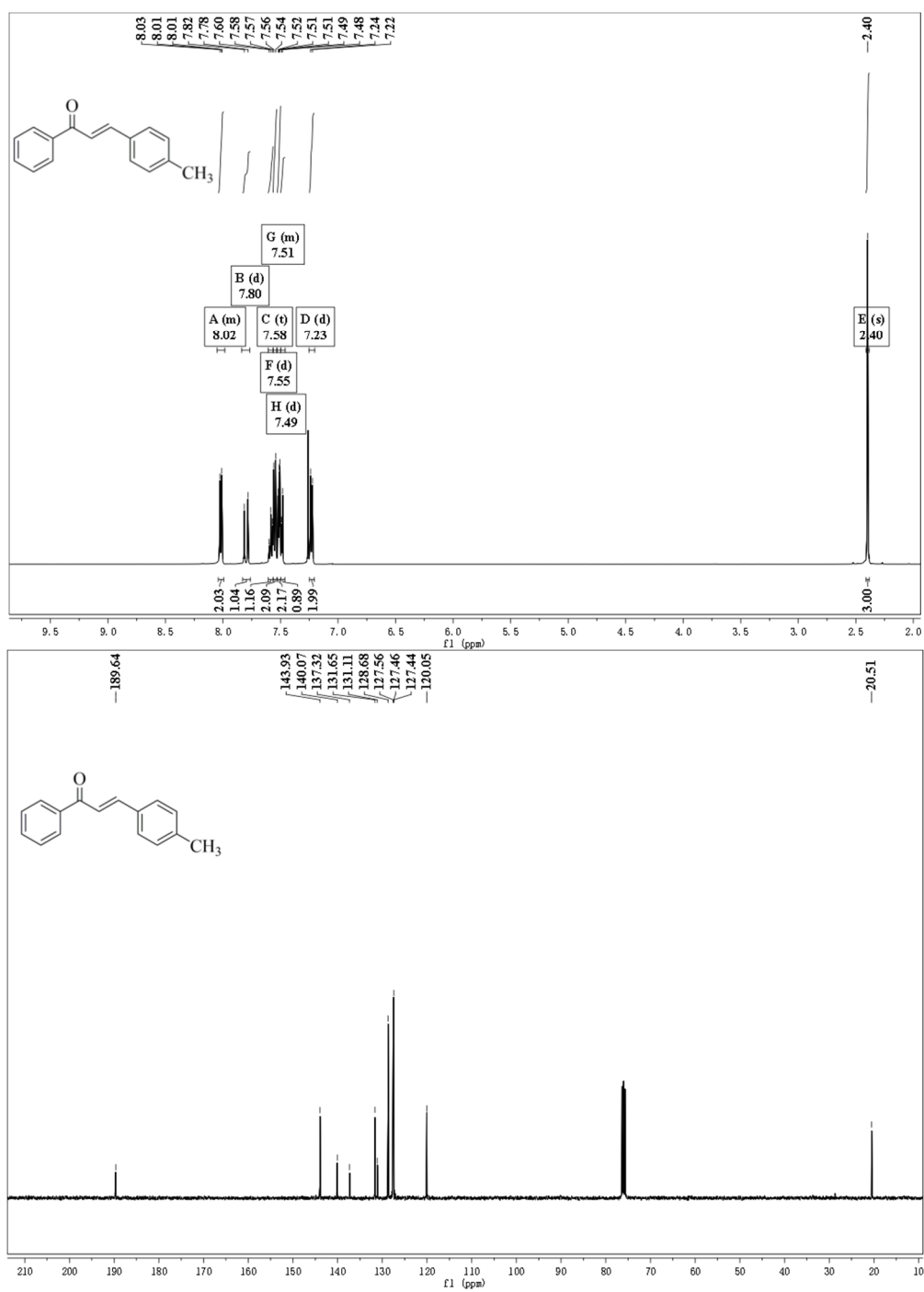


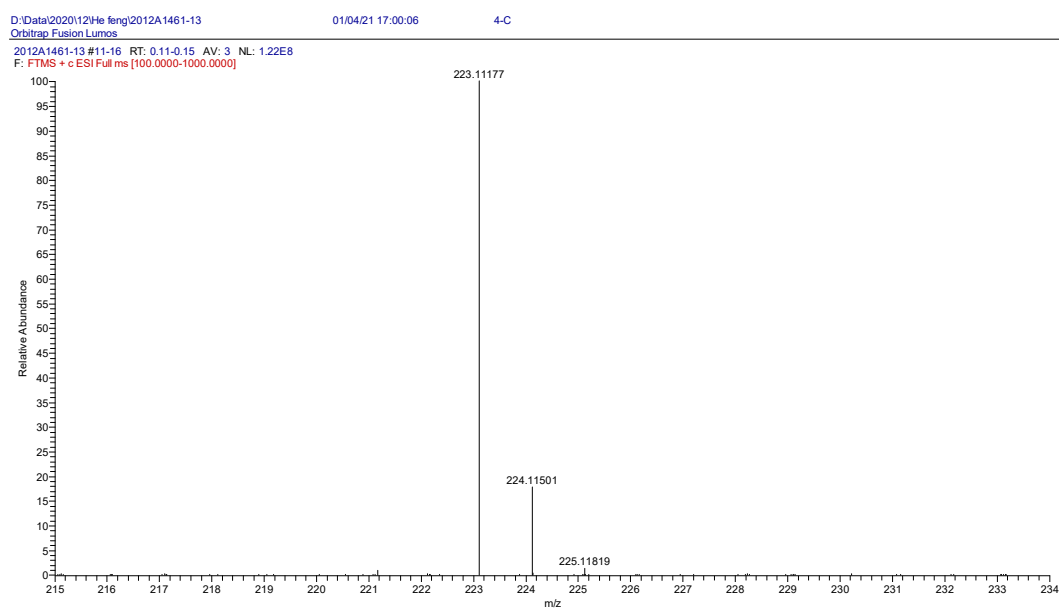
**Figure S11.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound 7.



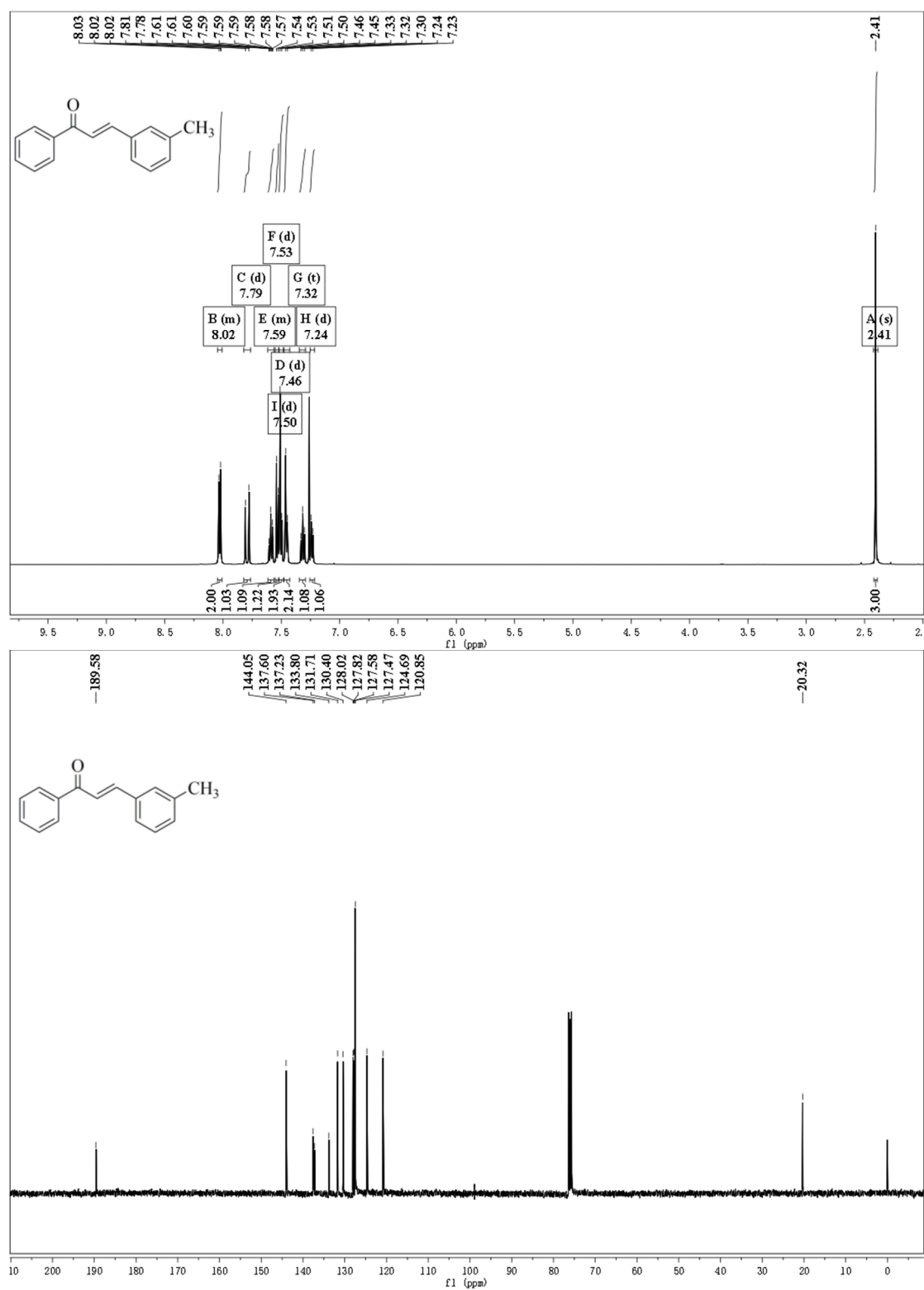


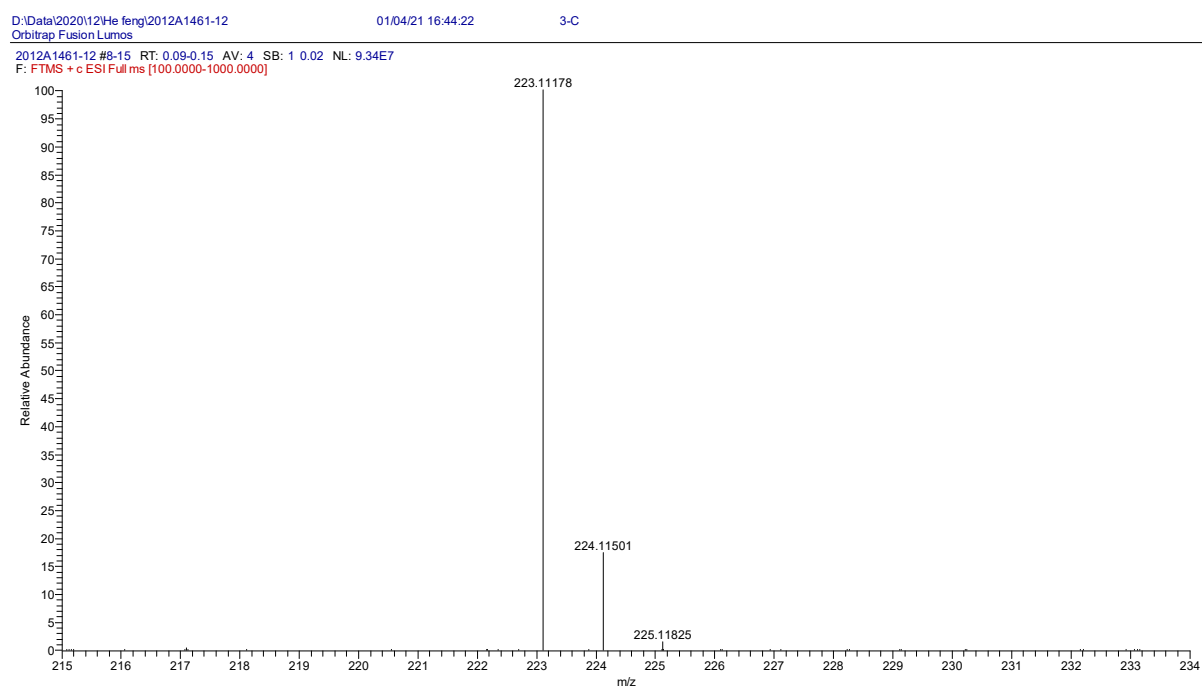
**Figure S12.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **8**.



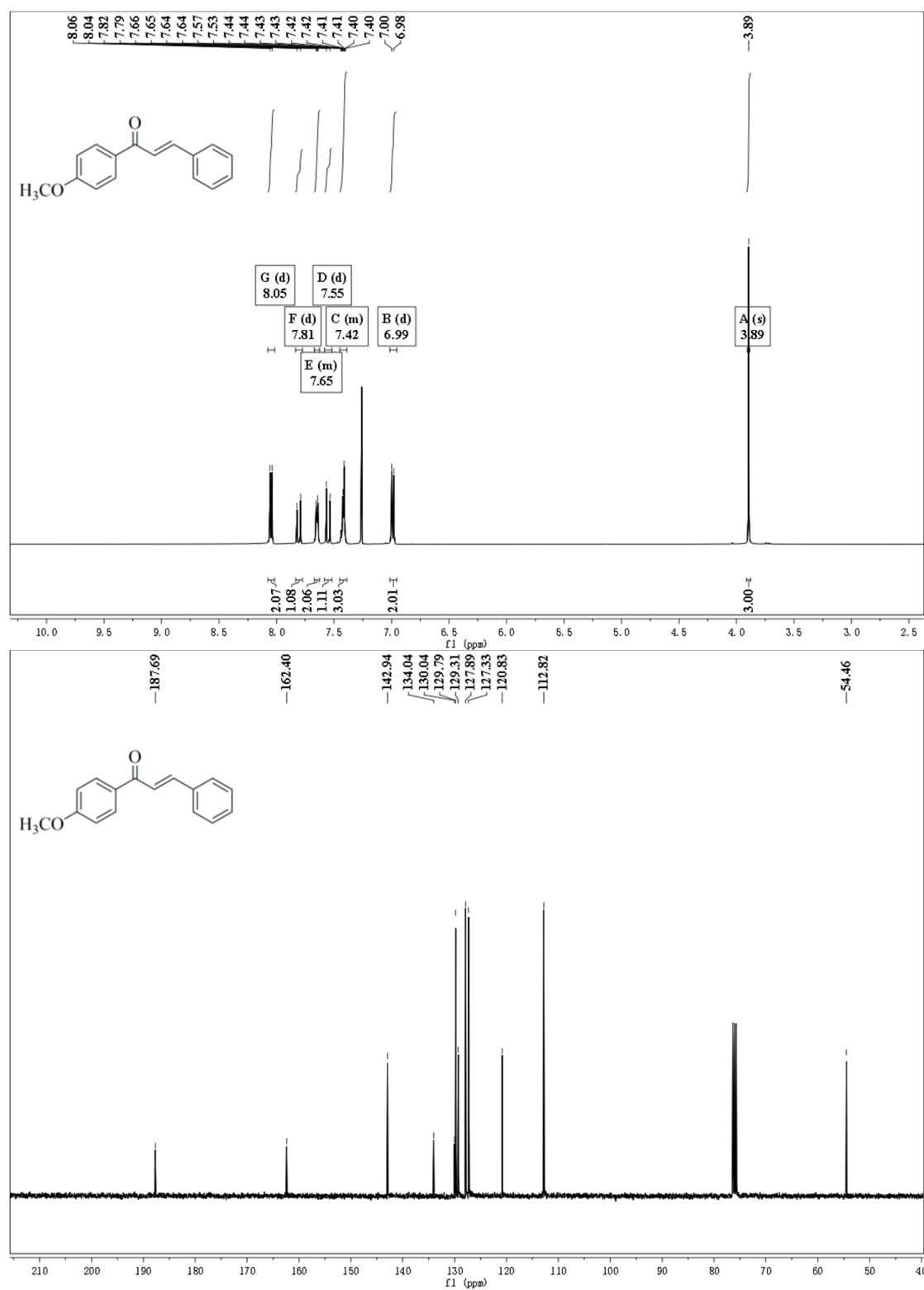


**Figure S13.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **9**.

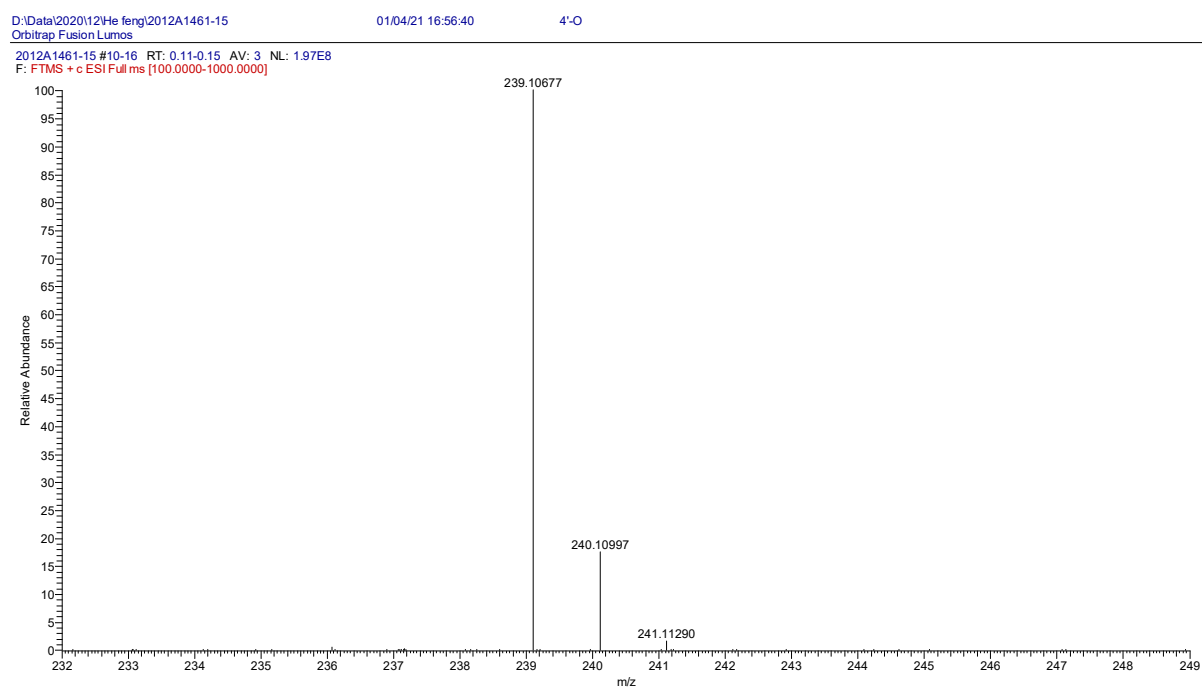




**Figure S14.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **10**.







**Figure S15.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra and ESI-MS analysis for compound **11**.