

An efficient and rapid access to the synthesis of tetrahydrochromeno[4,3-*b*]chromene-6,8-dione derivatives by magnesium perchlorate

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Instruments and spectral data

The products were characterized by IR, ^1H -, and ^{13}C -NMR. IR spectra were run on a Bruker, Eqinox 55 spectrometer. ^1H - and ^{13}C -NMR spectra were obtained using a Bruker Avance 400- and 500 MHz spectrometer (DRX).

IR, ^1H -, and ^{13}C -NMR spectra of compounds **4**, **10**, **12**, and **14** (Table 2, Entries 4, 10, 12, and 14) are presented.

Figure 1 IR spectrum of compound **14** in Table 2

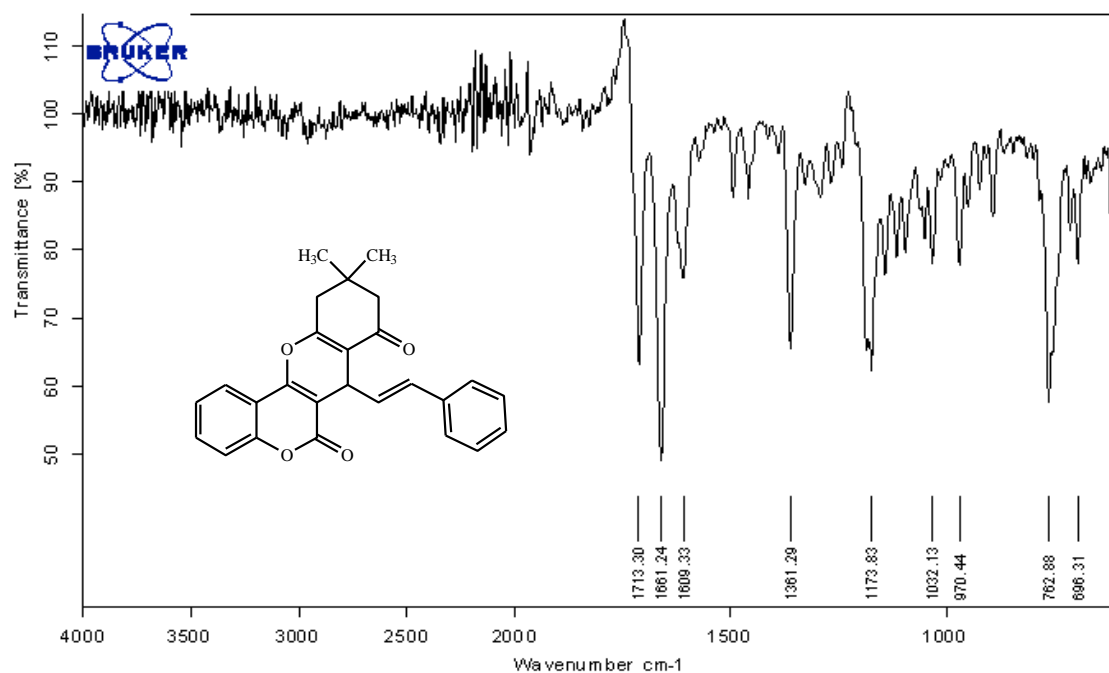


Figure 2 ^{13}C -NMR spectrum of compound 14 in Table 2

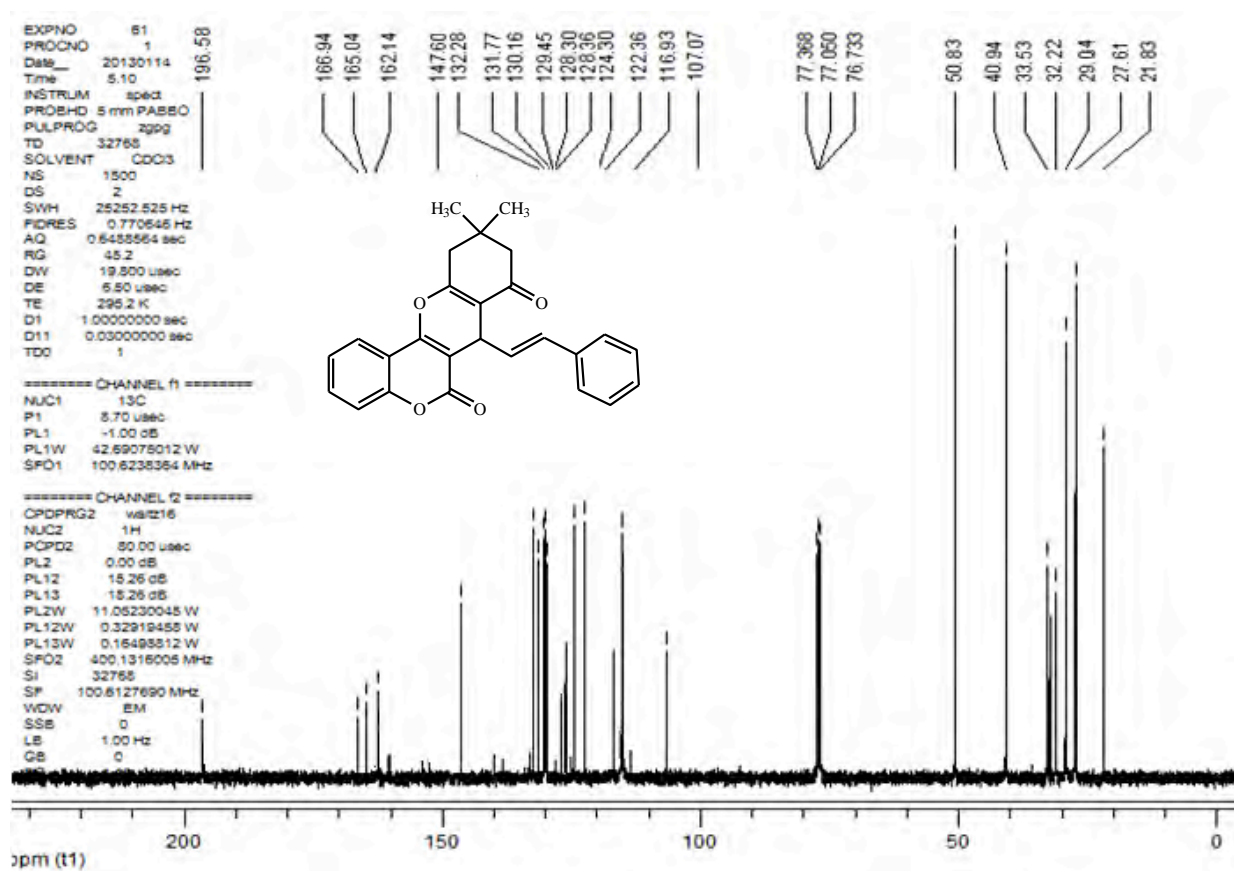


Figure 3 IR spectrum of compound 12 in Table 2

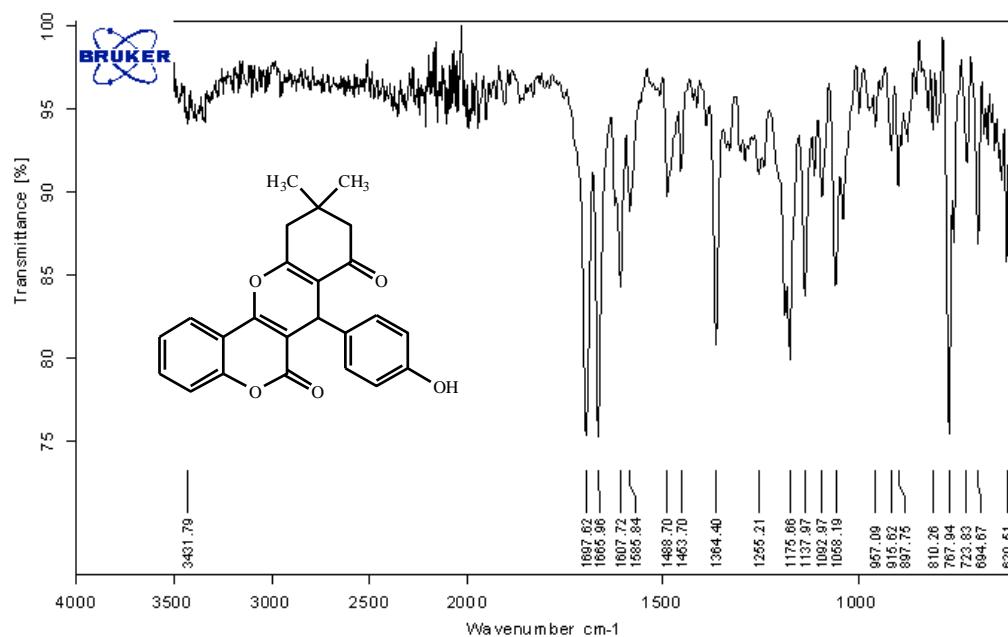


Figure 4 ¹H-NMR spectrum of compound 12 in Table 2

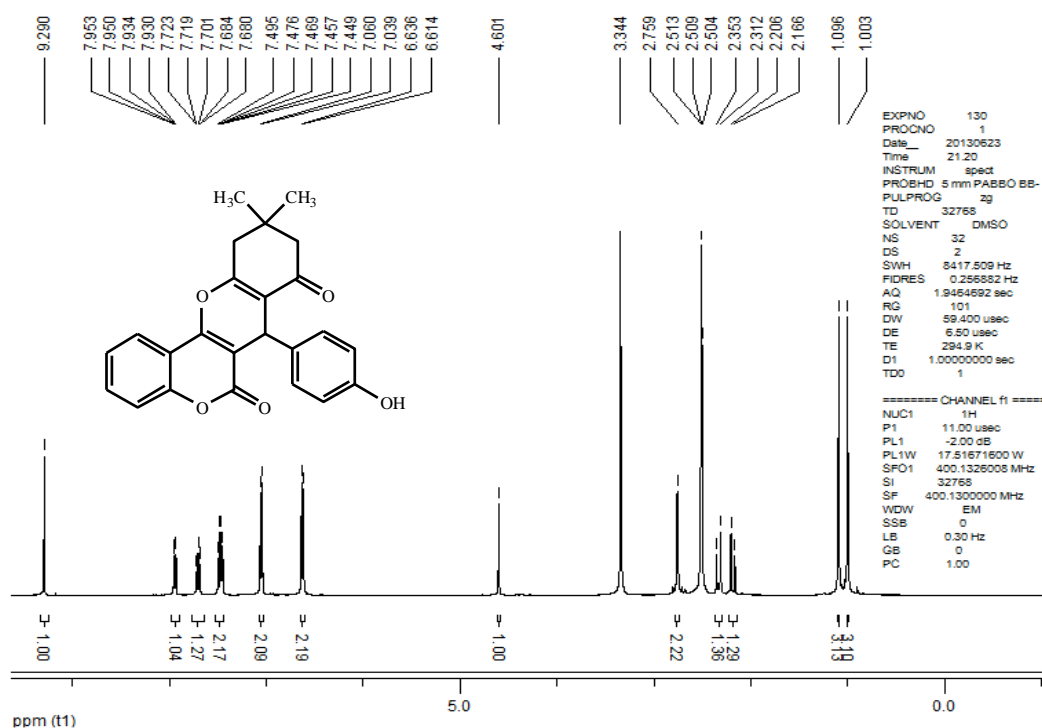


Figure 5 ¹³C-NMR spectrum of compound 12 in Table 2

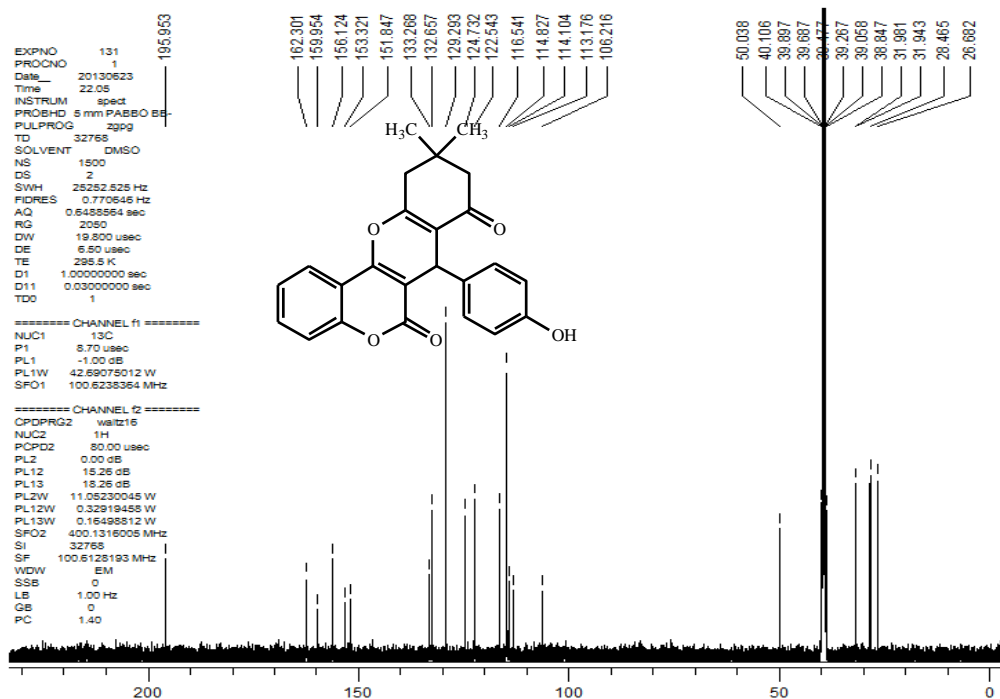


Figure 6 IR spectrum of compound **10** in Table 2

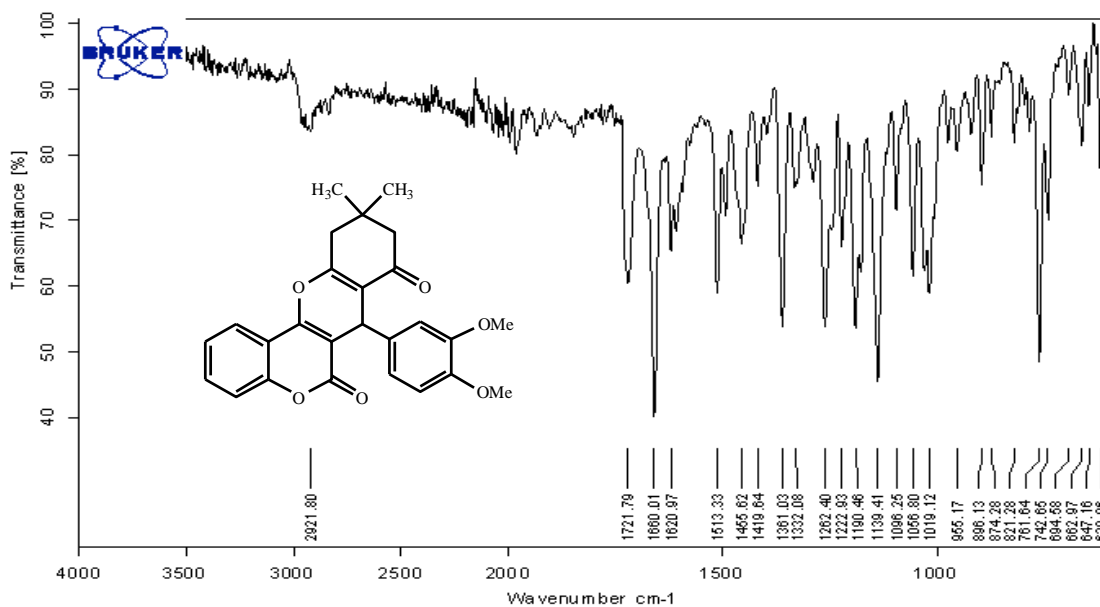


Figure 7 ¹H-NMR spectrum of compound **10** in Table 2

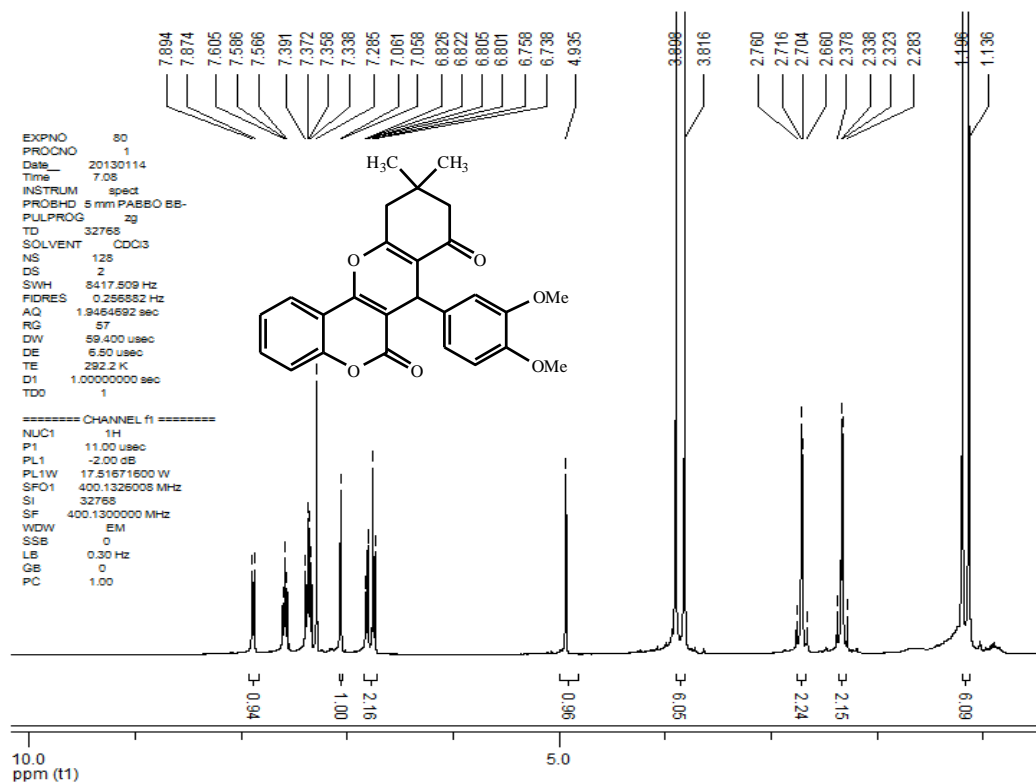


Figure 8 ^{13}C -NMR spectrum of compound **10** in Table 2

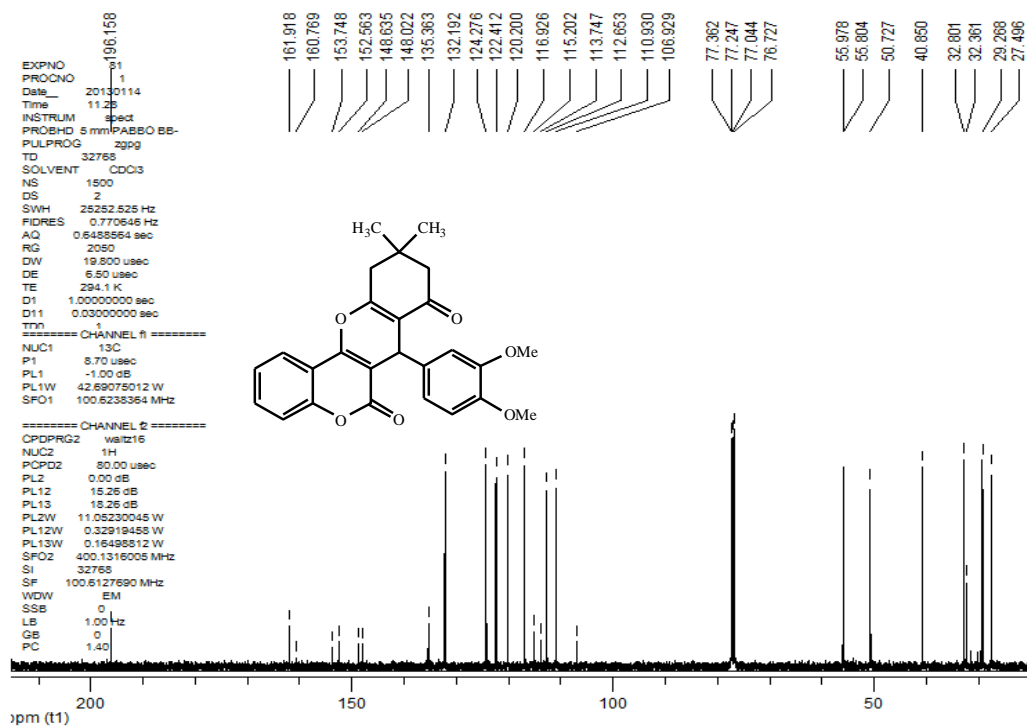


Figure 9 IR spectrum of compound **4** in Table 2

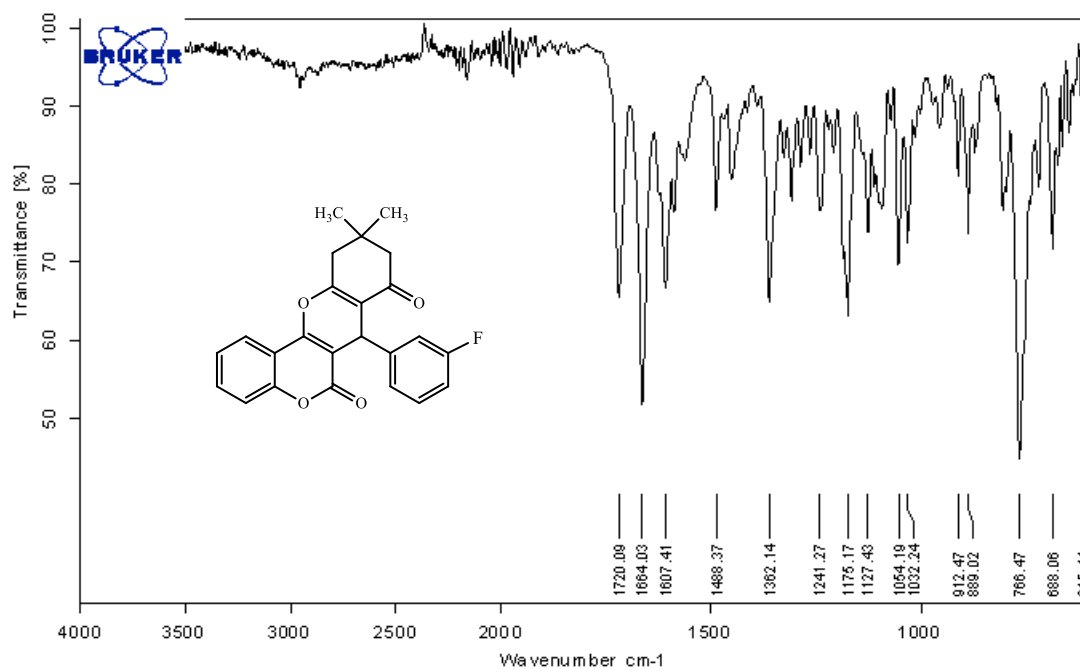


Figure 10 ¹H-NMR spectrum of compound 4 in Table 2

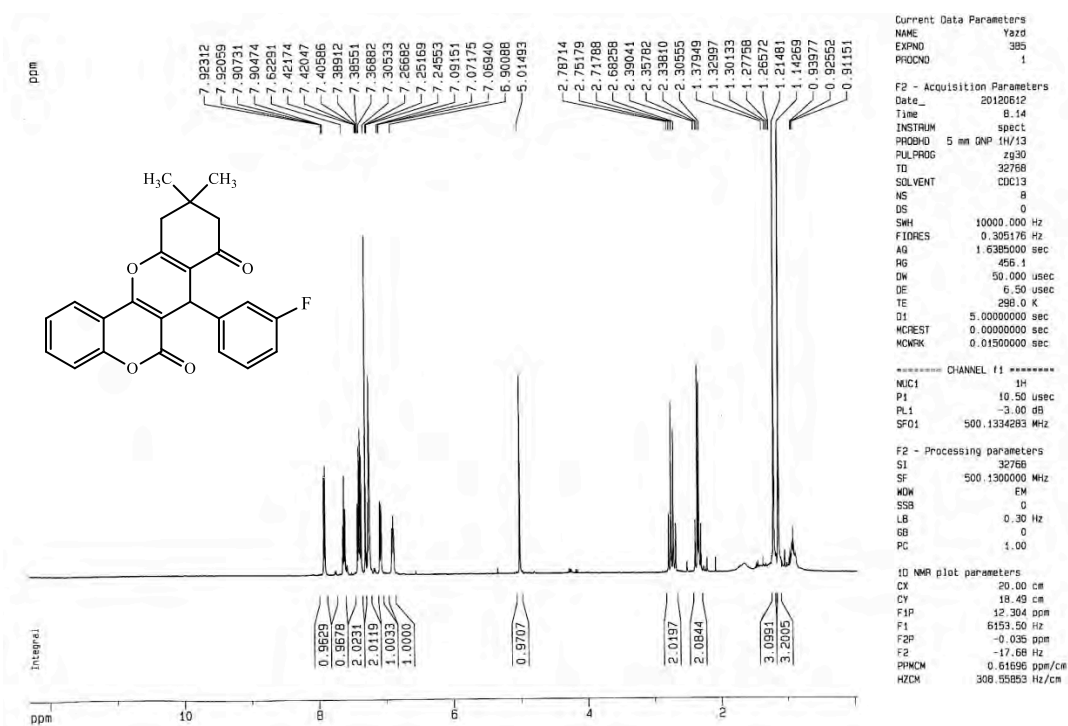


Figure 11 ¹³C-NMR spectrum of compound 4 in Table 2

