

Supporting Information

Eco-friendly synthesis of chromeno[4, 3-b]chromenes with a new photosensitized WO₃/ZnO@NH₂-EY nanocatalyst

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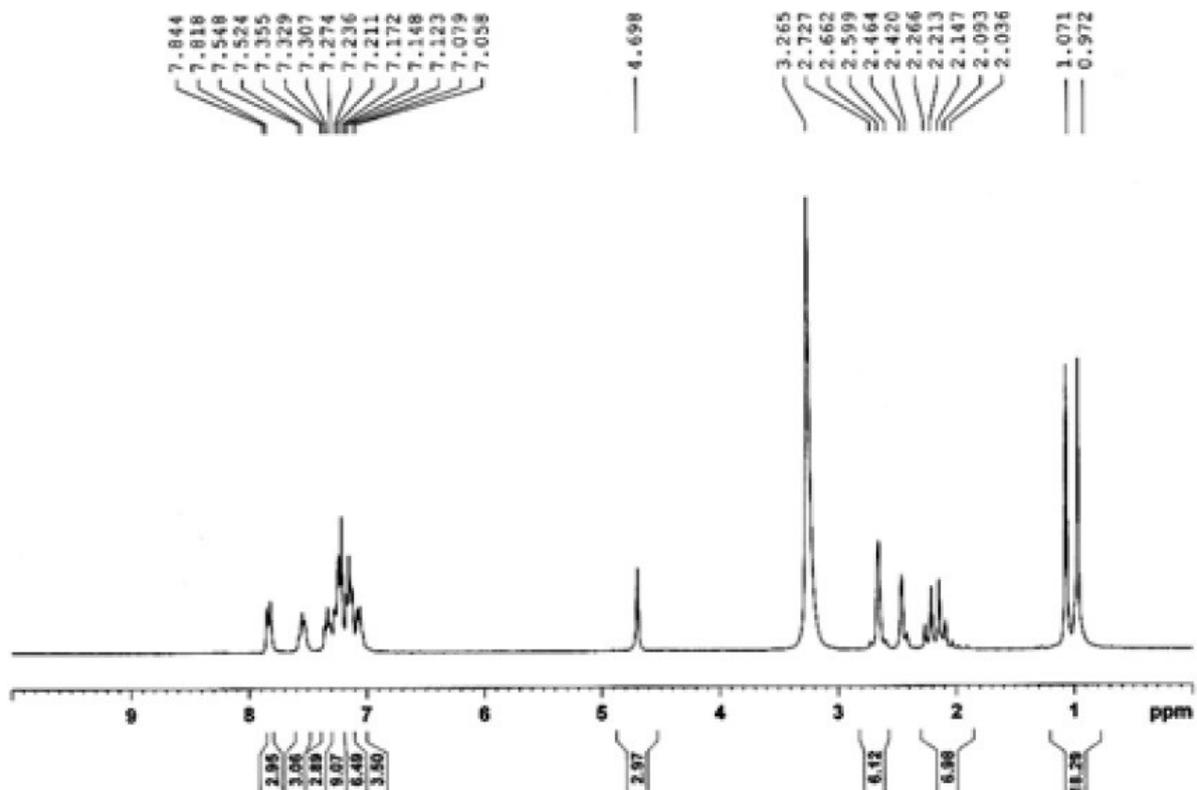


Fig. 1. ¹H NMR: 10,10-dimethyl-7-phenyl-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 1)

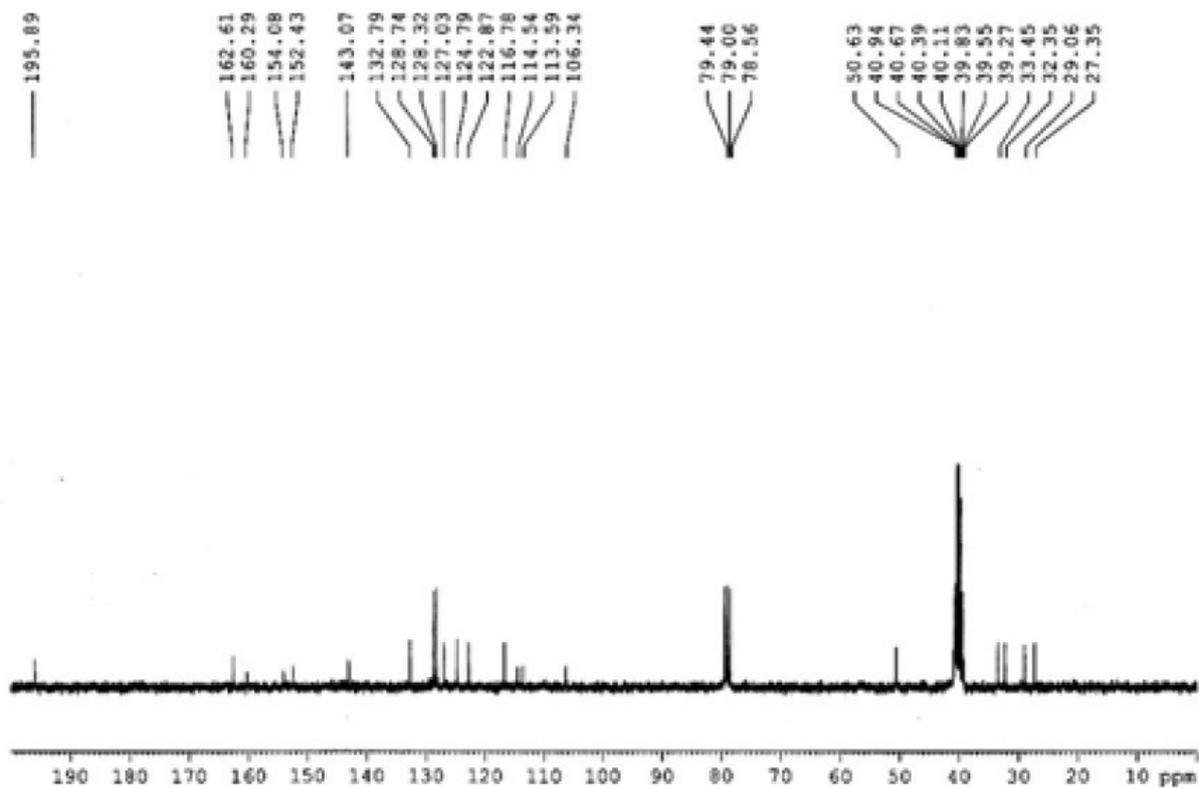


Fig. 2. ^{13}C NMR: 10,10-dimethyl-7-phenyl-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 1)

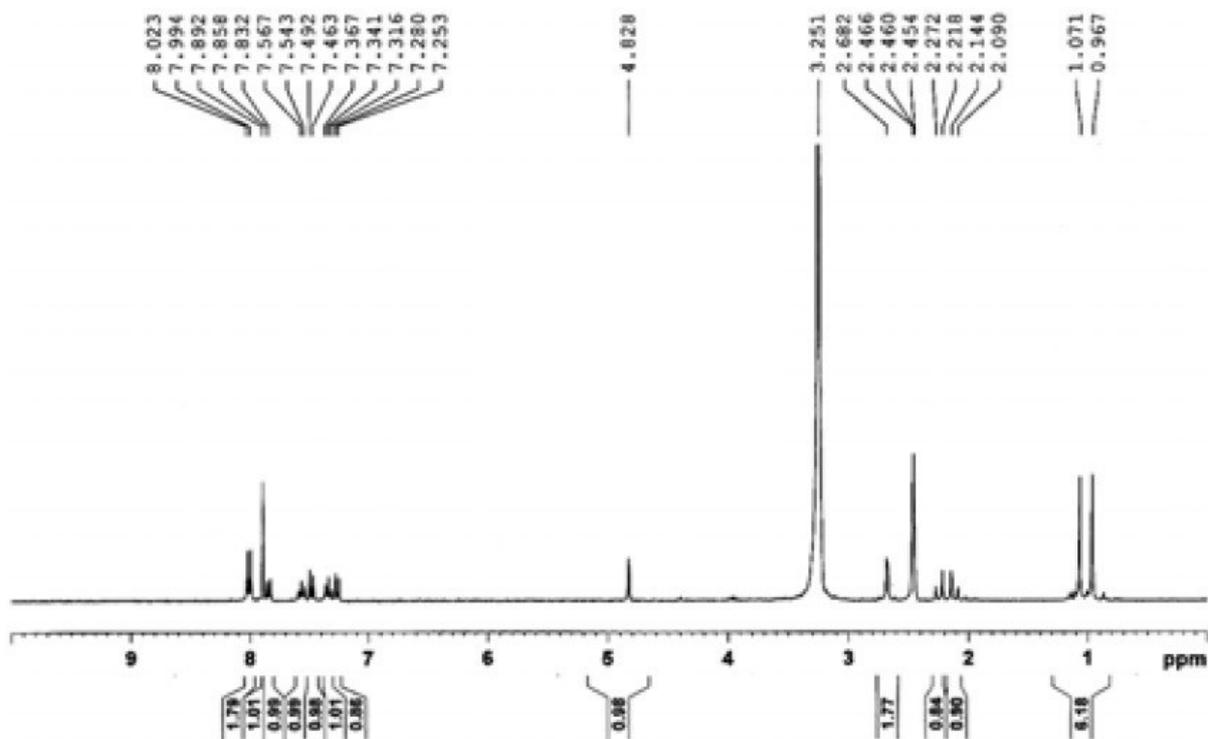


Fig. 3. ^1H NMR: 10,10-Dimethyl-7-(4-nitrophenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 2)

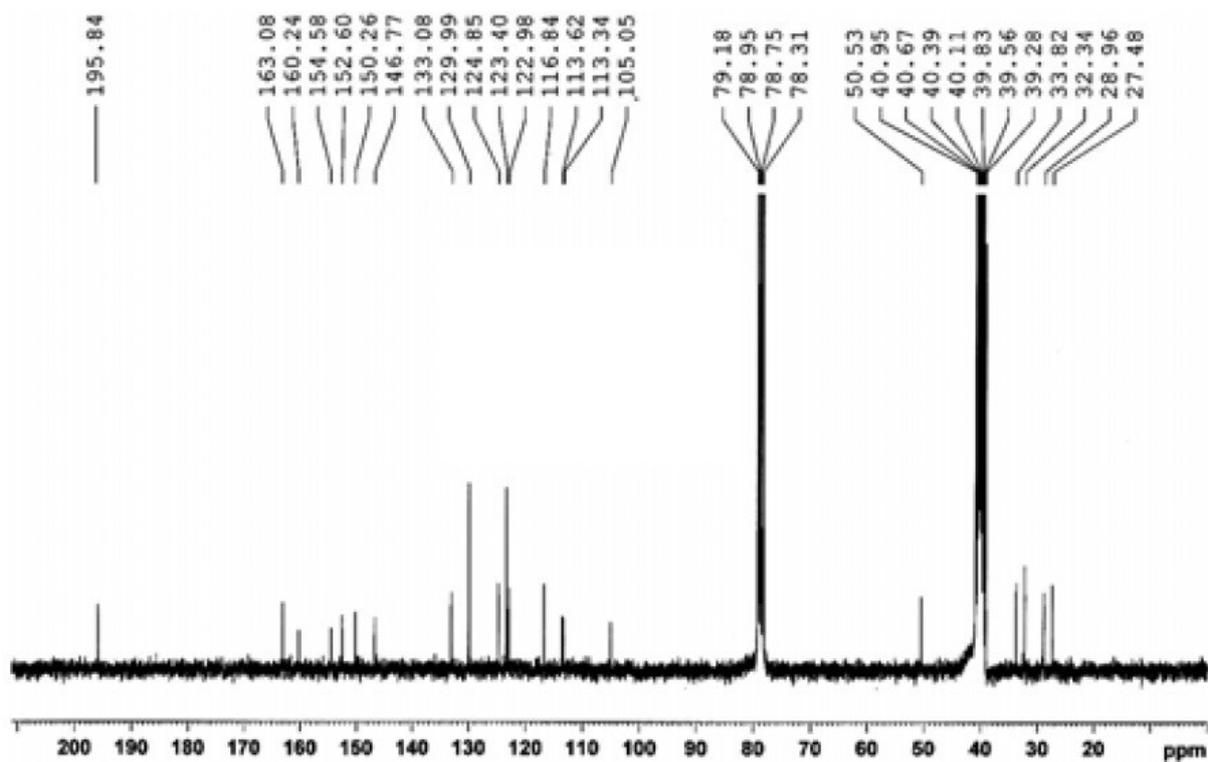


Fig. 4. ^{13}C NMR: 10,10-Dimethyl-7-(4-nitrophenyl)-10,11-dihydrochromeno[4,3-b] chromene-6,8(7H,9H)-dione (Table 4, entry 2)

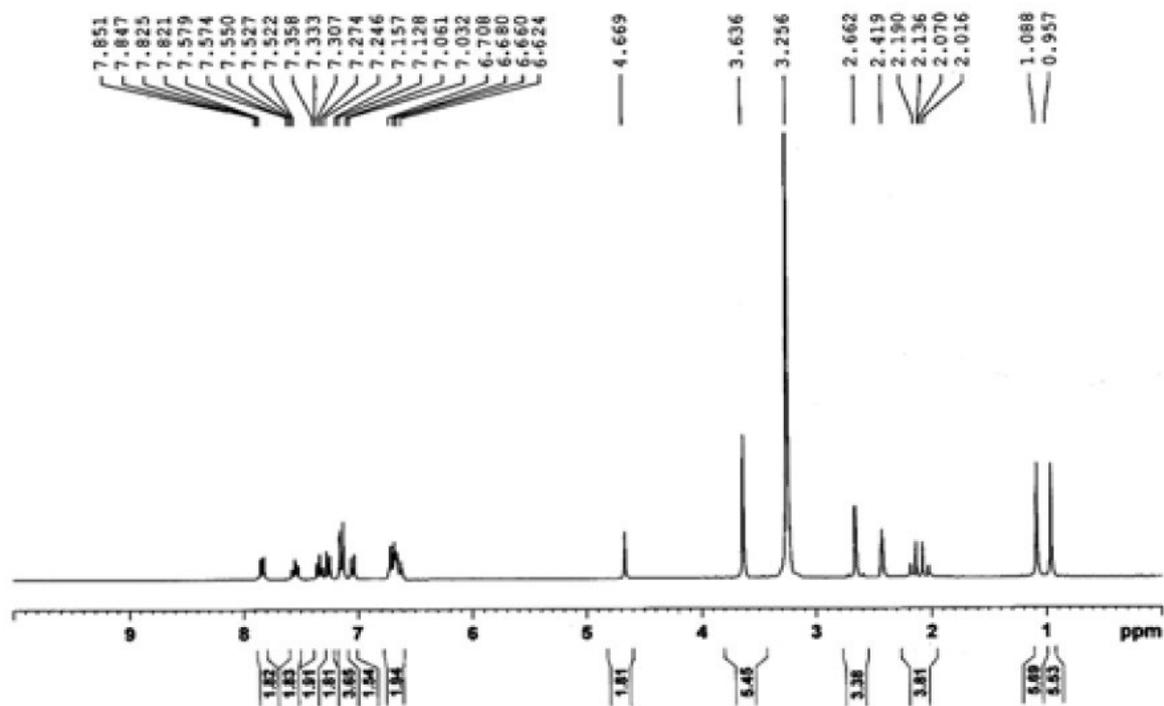


Fig. 5. ^1H NMR: 10,10-Dimethyl-7-(4-methoxyphenyl)-10,11-dihydrochromeno[4,3-b] chromene-6,8(7H,9H)-dione (Table 4, entry 4)

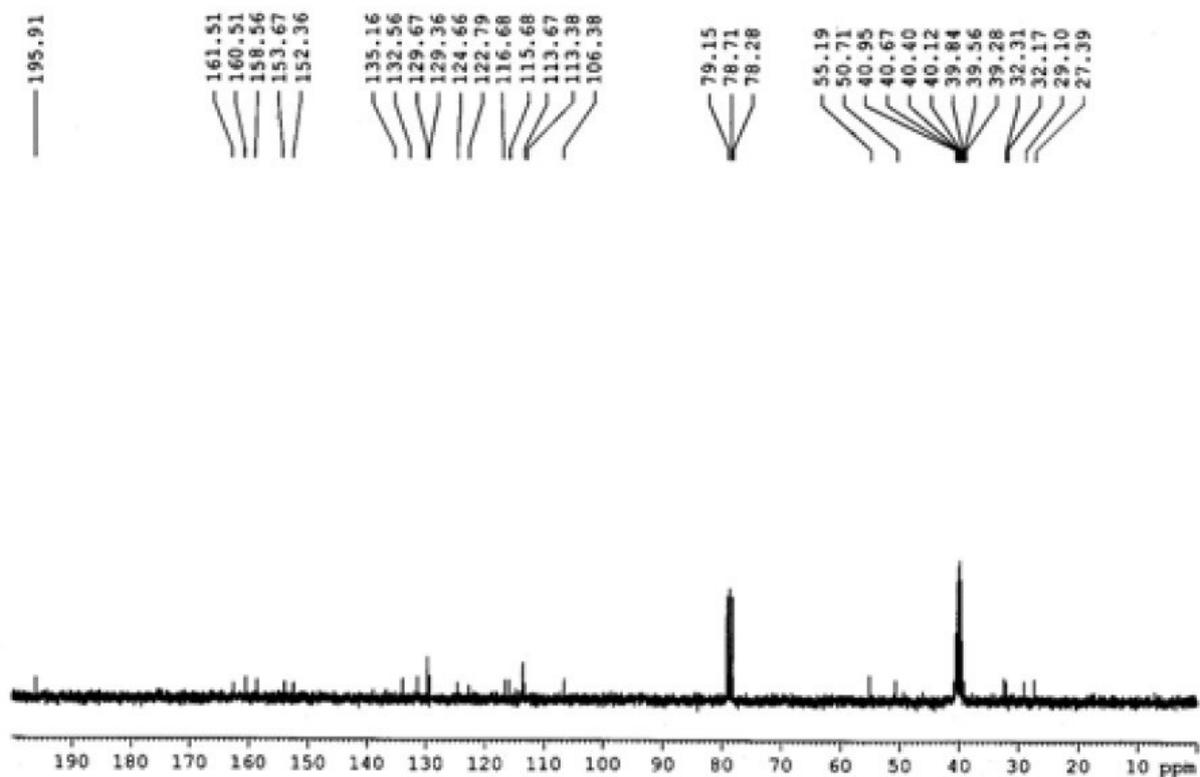


Fig. 6. ^{13}C NMR: 10,10-Dimethyl-7-(4-methoxyphenyl)-10,11-dihydrochromeno[4,3-b] chromene-6,8(7H,9H)-dione (Table 4, entry 4)

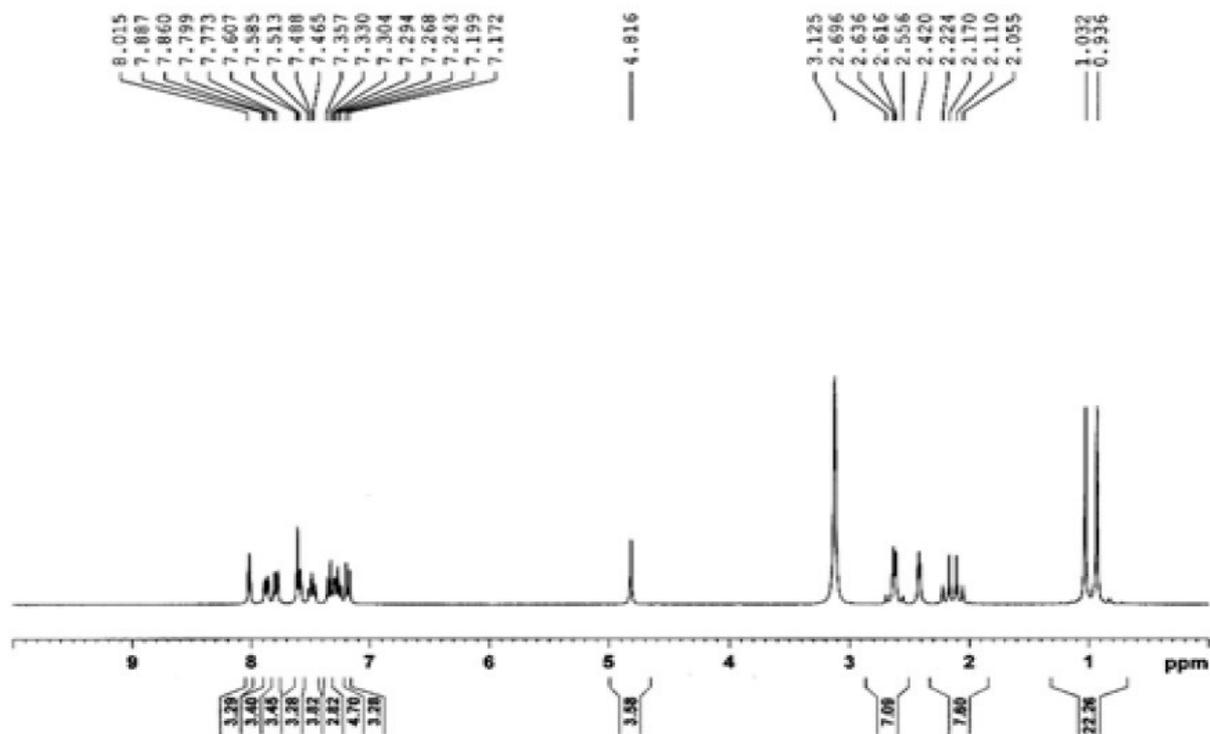


Fig. 7. ^1H NMR: 10,10-Dimethyl-7-(3-nitrophenyl)-10,11-dihydrochromeno[4,3-b] chromene-6,8(7H,9H)-dione (Table 4, entry 5)

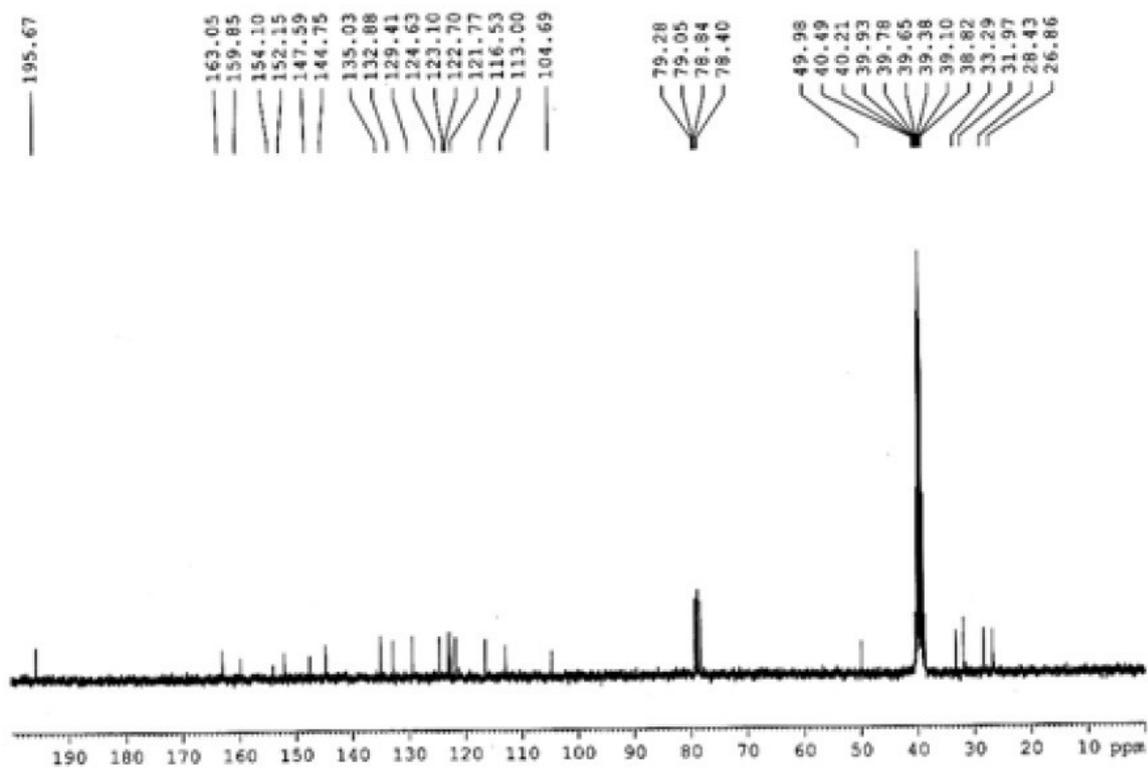


Fig. 8. ^{13}C NMR: 10,10-Dimethyl-7-(3-nitrophenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 5)

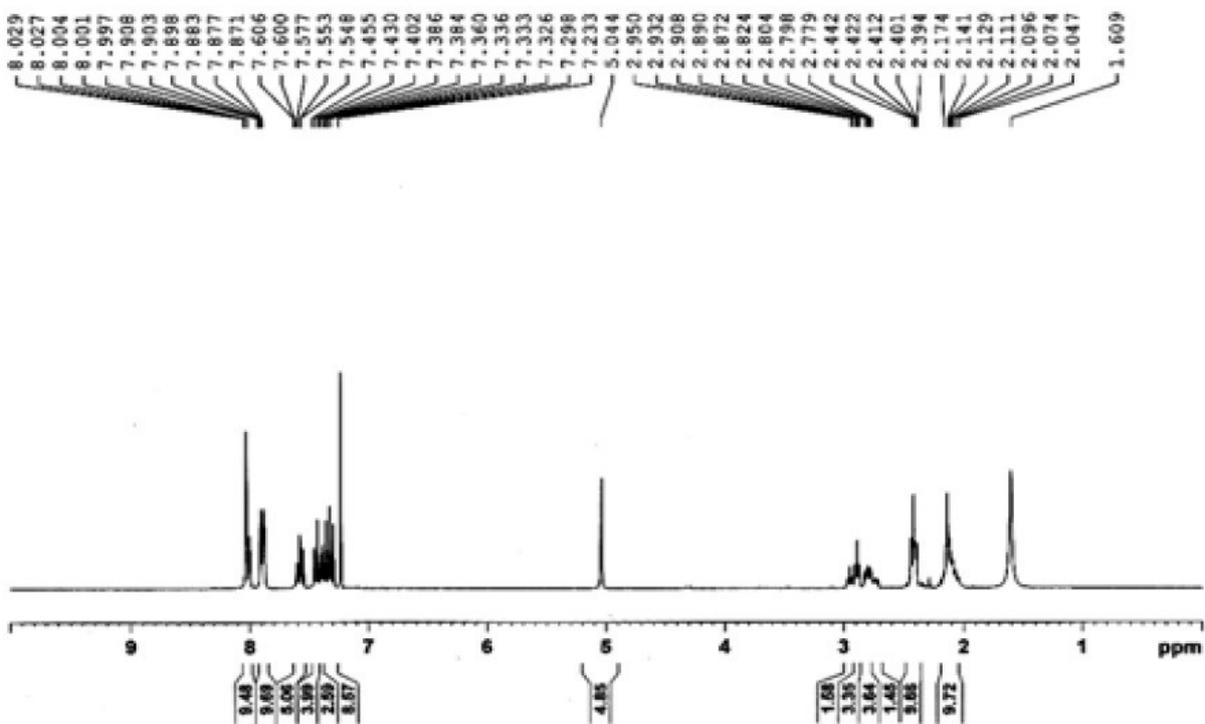


Fig. 9. ^1H NMR: 7-(3-nitrophenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 6)

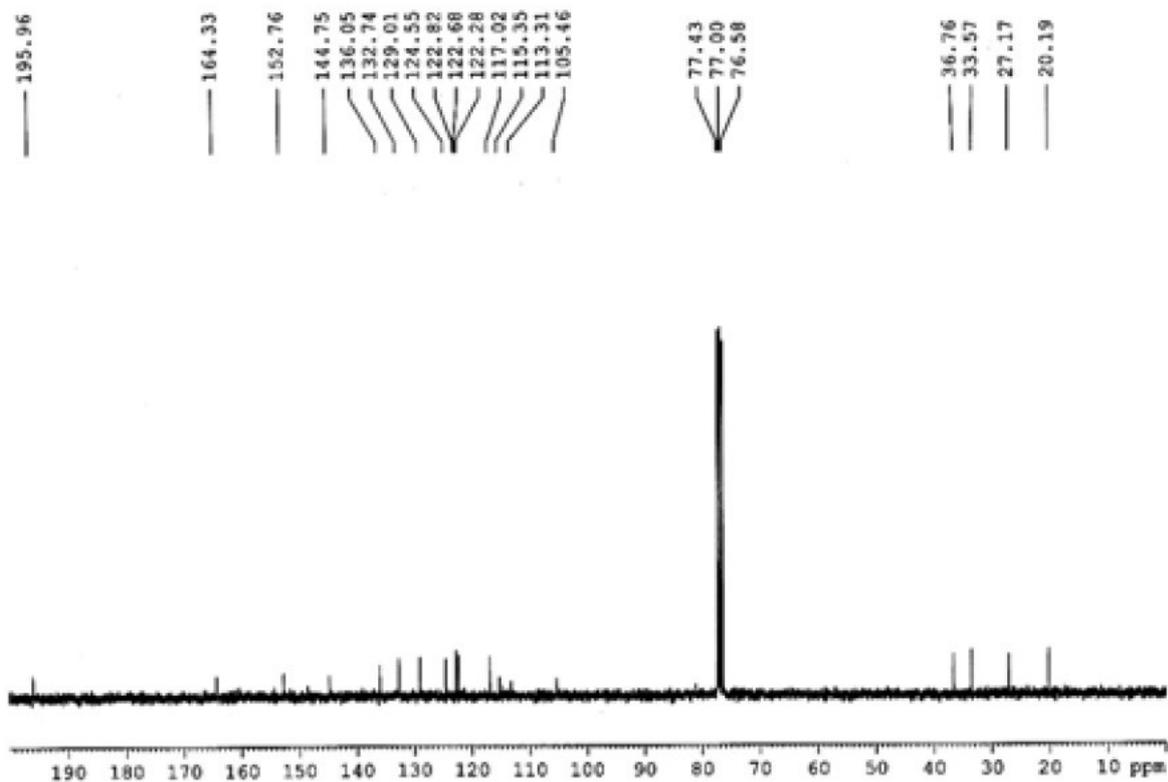


Fig. 10. ^{13}C NMR: 7-(3-nitrophenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 6)

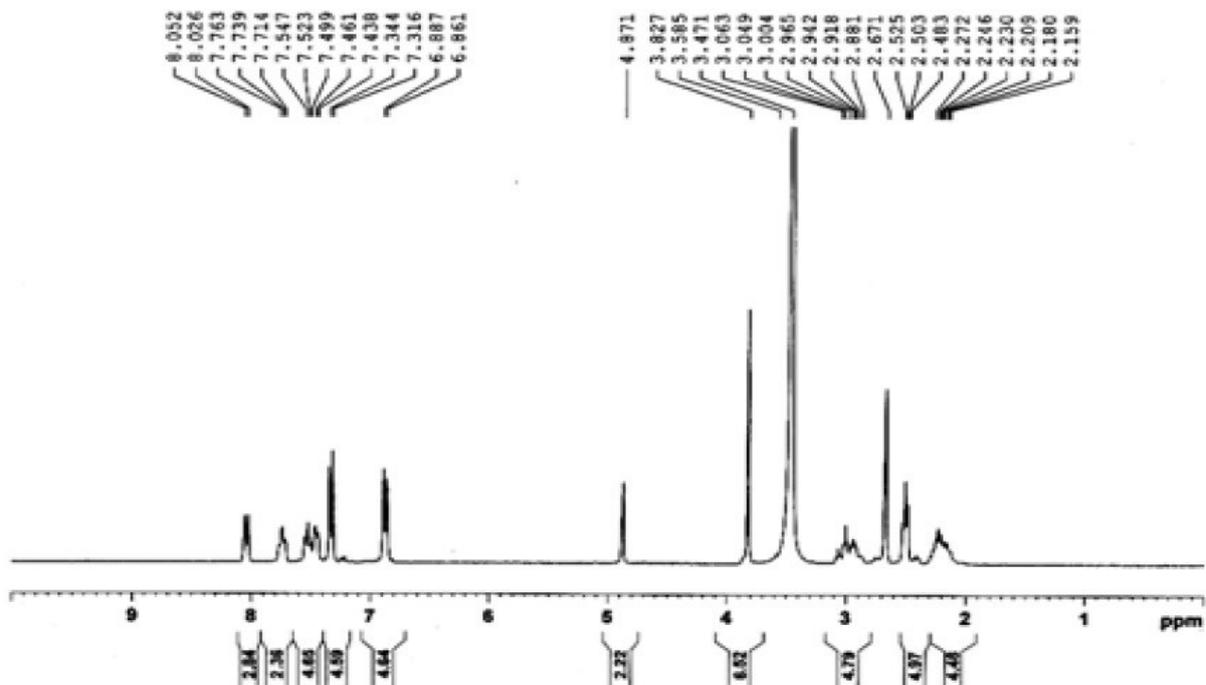


Fig. 11. ^1H NMR: 7-(4-methoxyphenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 7)

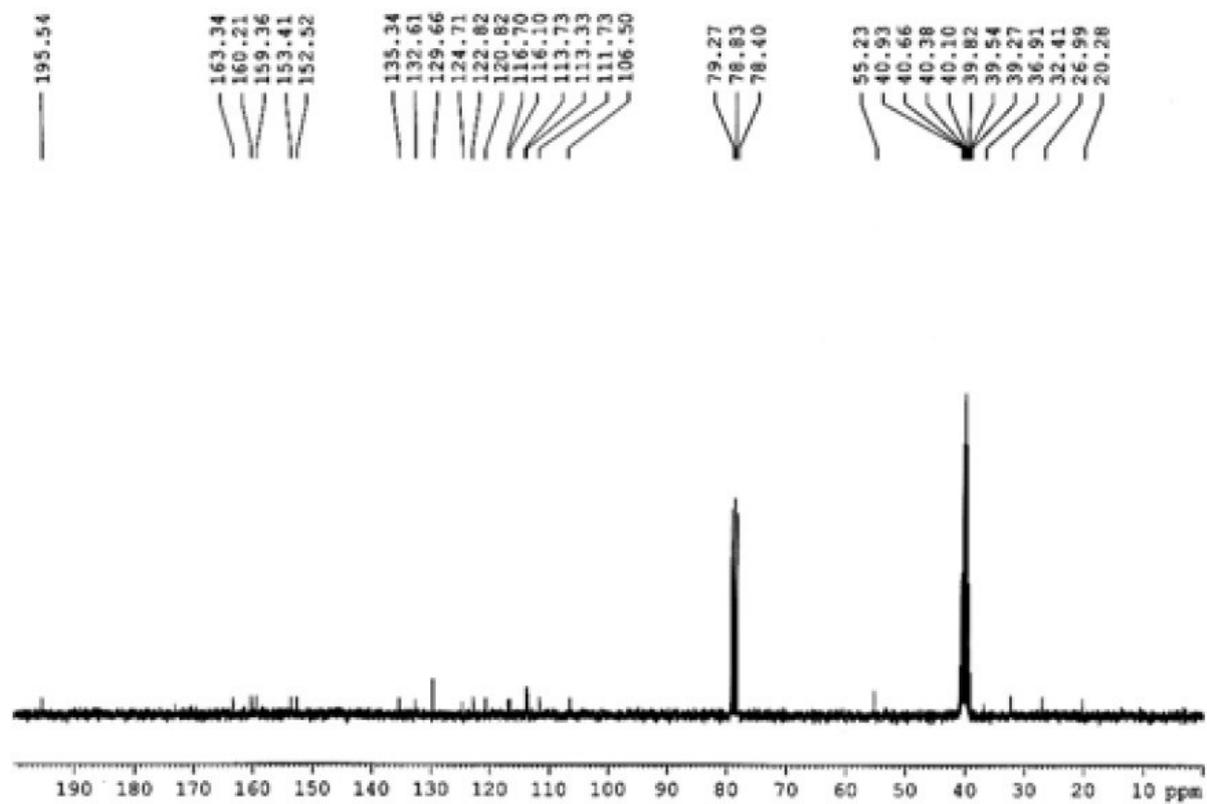


Fig. 12. ^{13}C NMR: 7-(4-methoxyphenyl)-10,11-dihydrochromeno[4,3-b]chromene-6,8(7H,9H)-dione (Table 4, entry 7)