

Supplementary Material

Synthesis and antimicrobial studies of tetrazol-5-yl-methoxy-8,9-dihydropyrano[2,3-*f*]chromene-2,10-diones and their coumarin derivatives

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24. ¹³ C NMR spectrum of 11l	S13

Spectral Data:

Compound-11a:

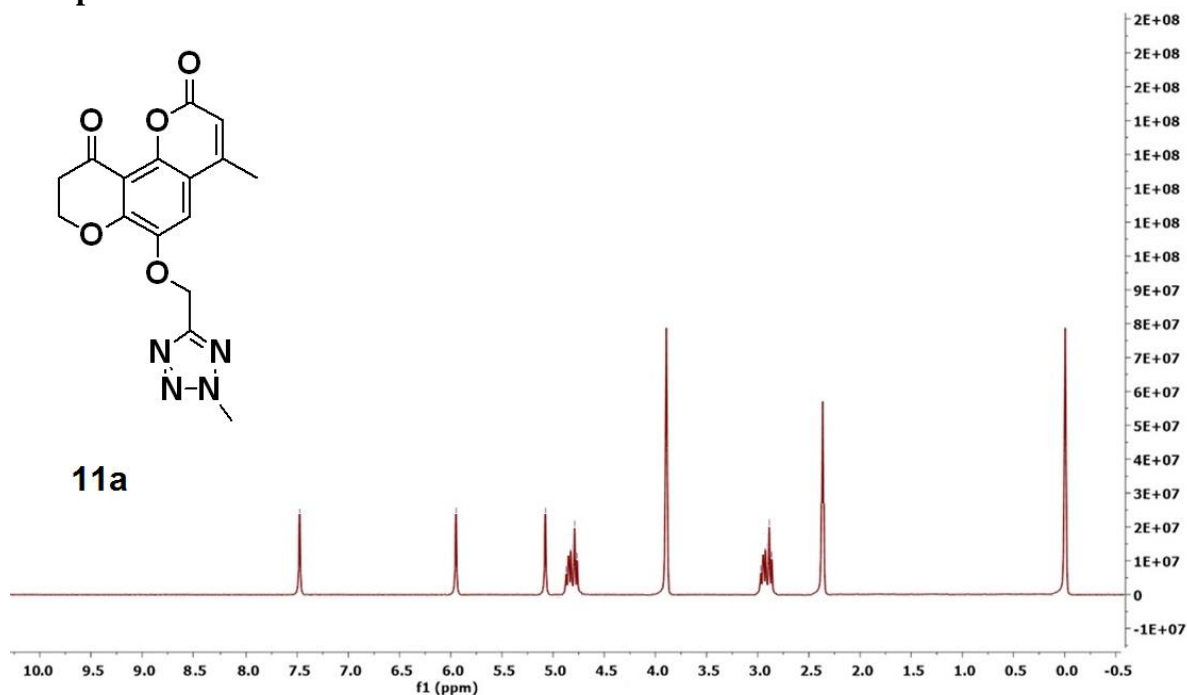


Figure 1S. ¹H NMR (300 MHz, DMSO-D6) spectrum of 4-methyl-6-((2-methyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione 11(a)

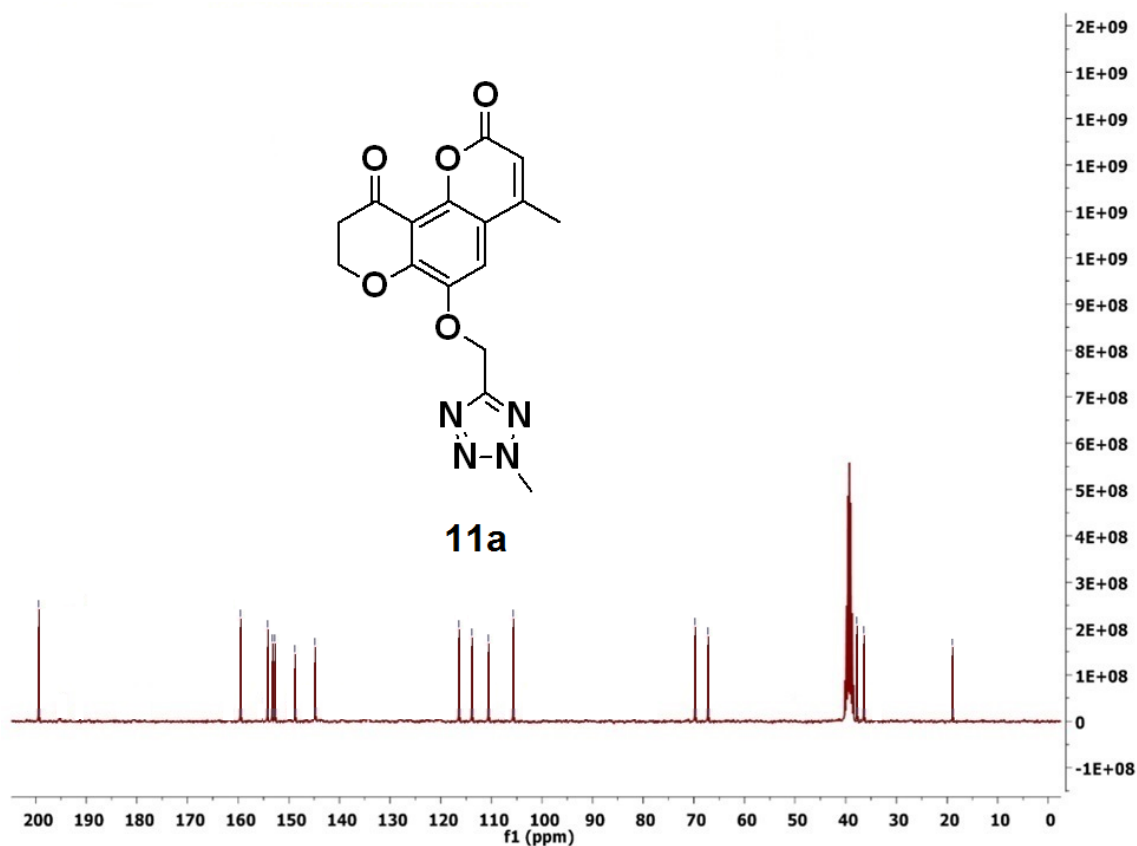


Figure 2S. ¹³C NMR (75 MHz, DMSO-D6) spectrum of 4-methyl-6-((2-methyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione, 11(a)

Compound-11b:

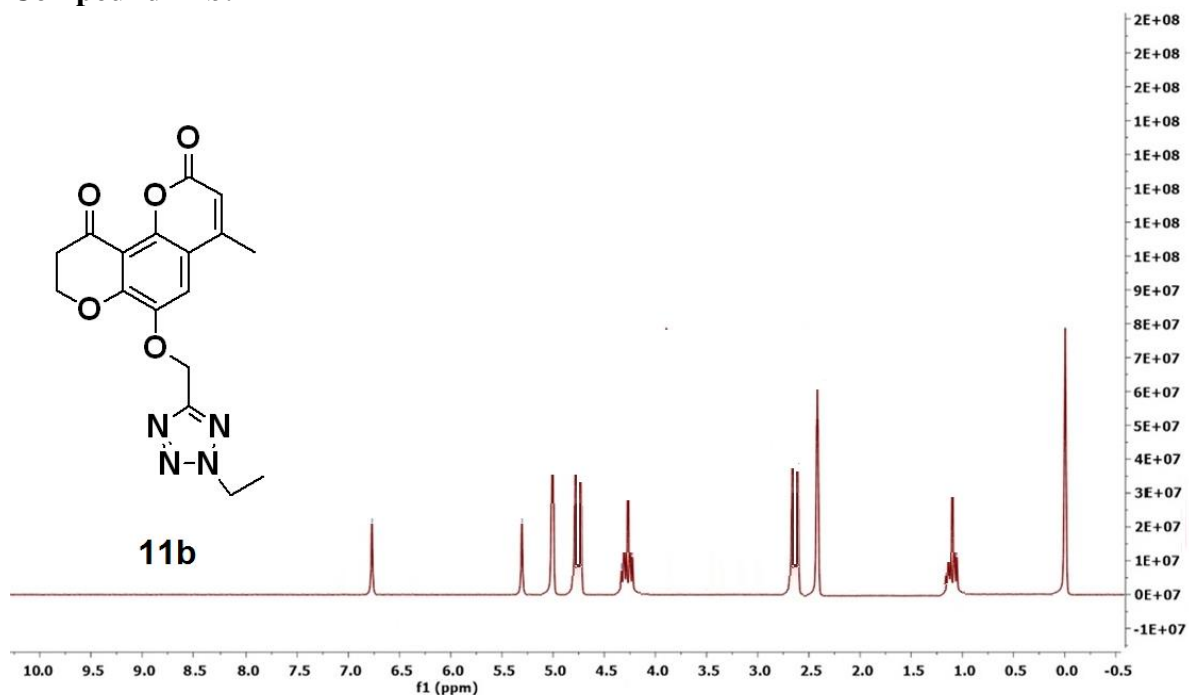


Figure 3S. ^1H NMR (300 MHz, DMSO- D_6) spectrum of 6-((2-ethyl-2*H*-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11b)

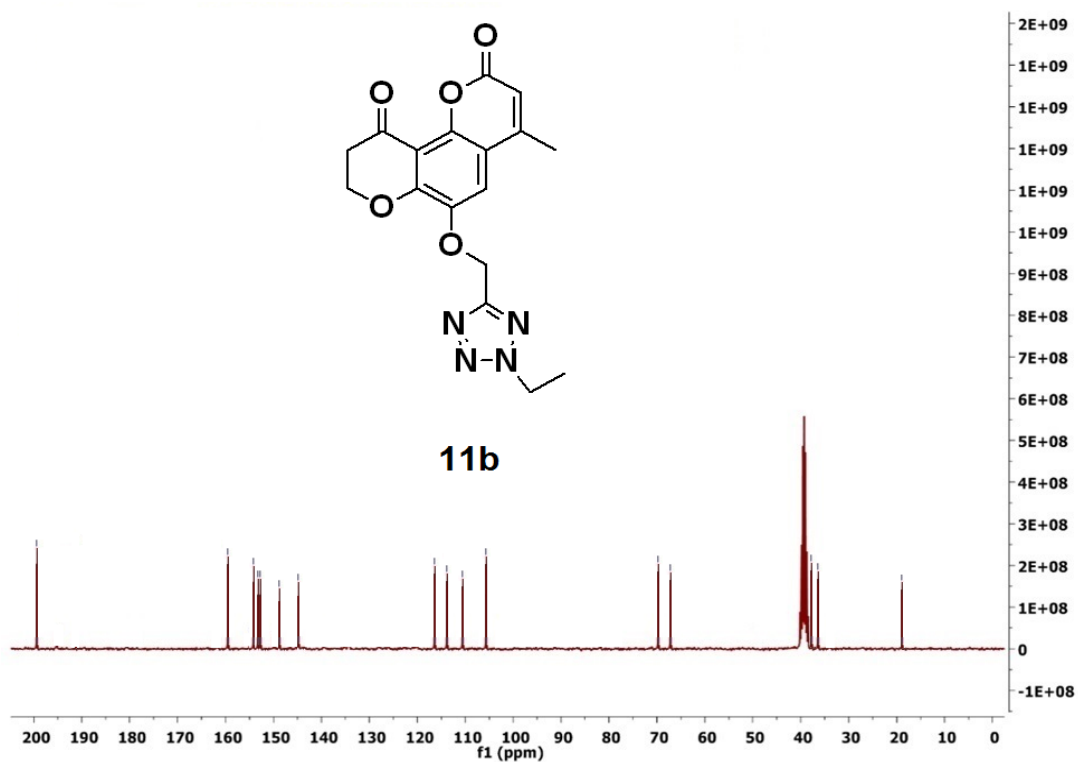


Figure 4S. ^{13}C NMR (75 MHz, DMSO- D_6) spectrum of 6-((2-ethyl-2*H*-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11b)

Compound-11c:

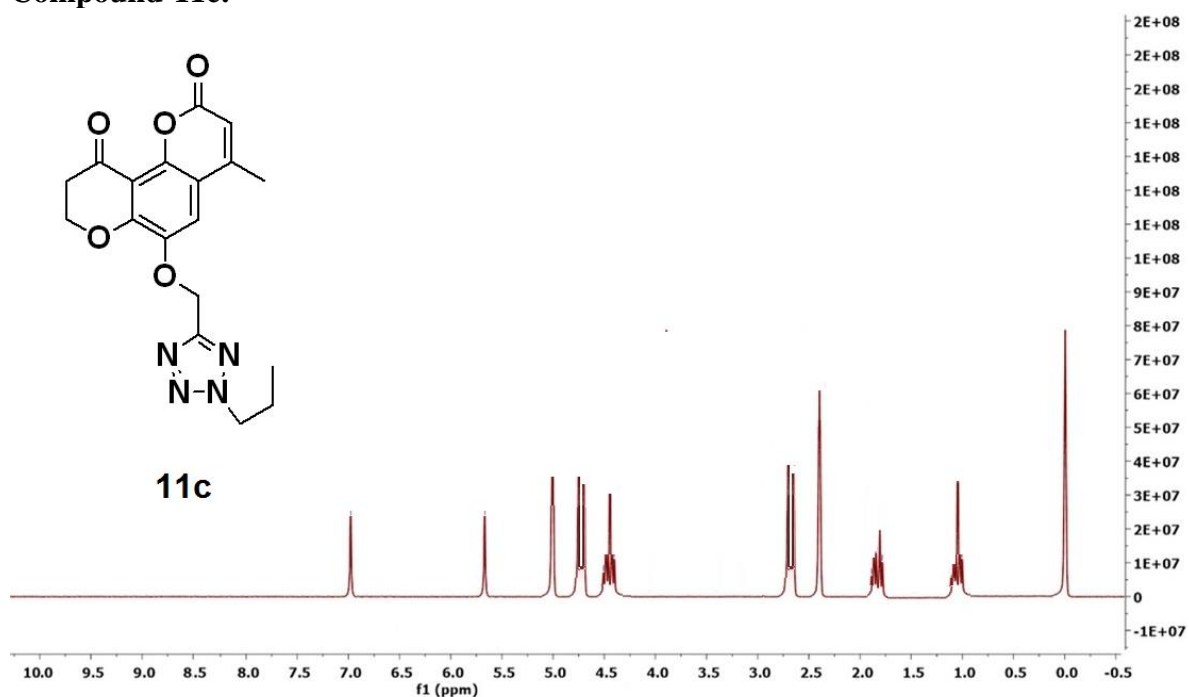


Figure 5S. ¹H NMR (300 MHz, DMSO-D₆) spectrum of 4-methyl-6-((2-propyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11c)

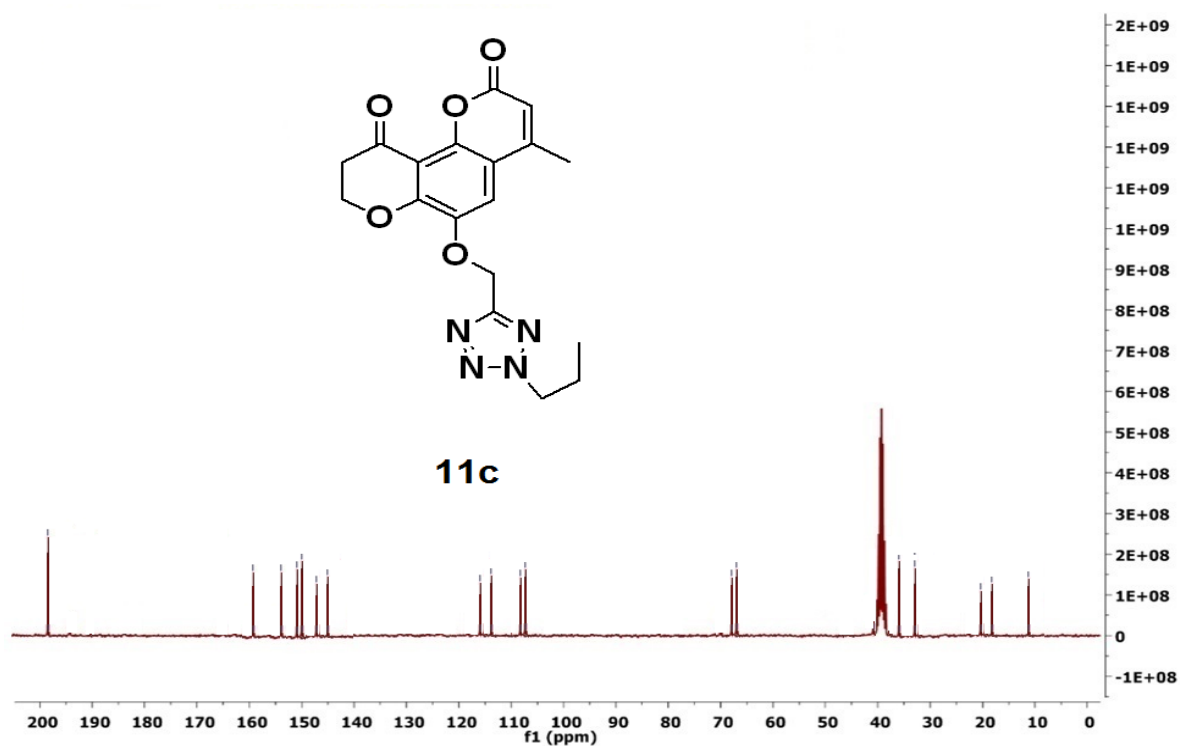


Figure 6S. ¹³C NMR (75 MHz, DMSO-D₆) spectrum of 4-methyl-6-((2-propyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11c)

Compound-11d:

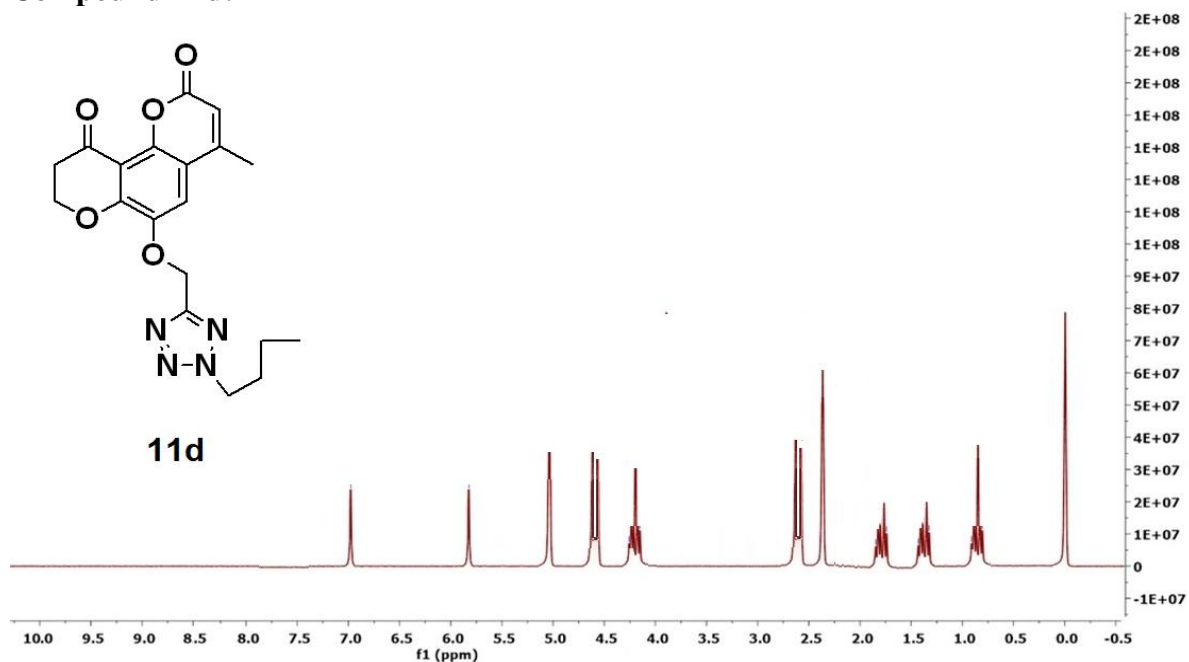


Figure 7S. ¹H NMR (300 MHz, DMSO-D6) spectrum of 6-((2-butyl-2*H*-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11d)

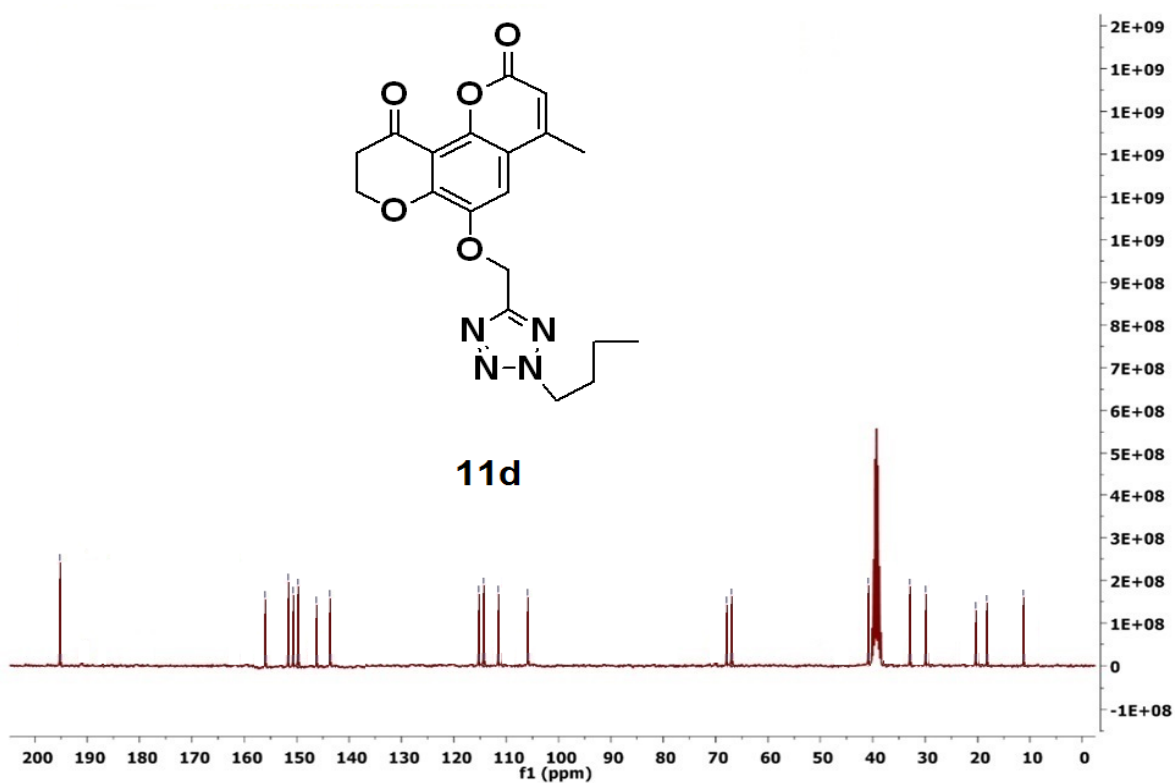


Figure 8S. ¹³C NMR (75 MHz, DMSO-D6) spectrum of 6-((2-butyl-2*H*-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11d)

Compound-11e:

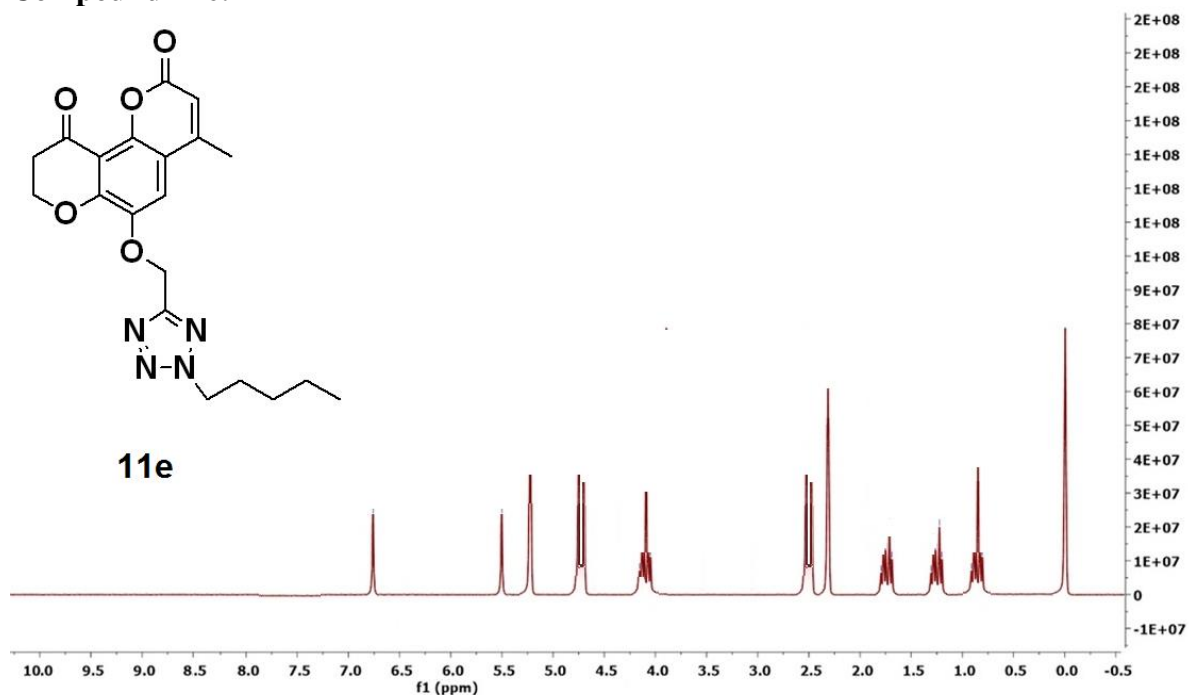


Figure 9S. ¹H NMR (300 MHz, DMSO-D₆) spectrum of 4-methyl-6-((2-pentyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (5e)

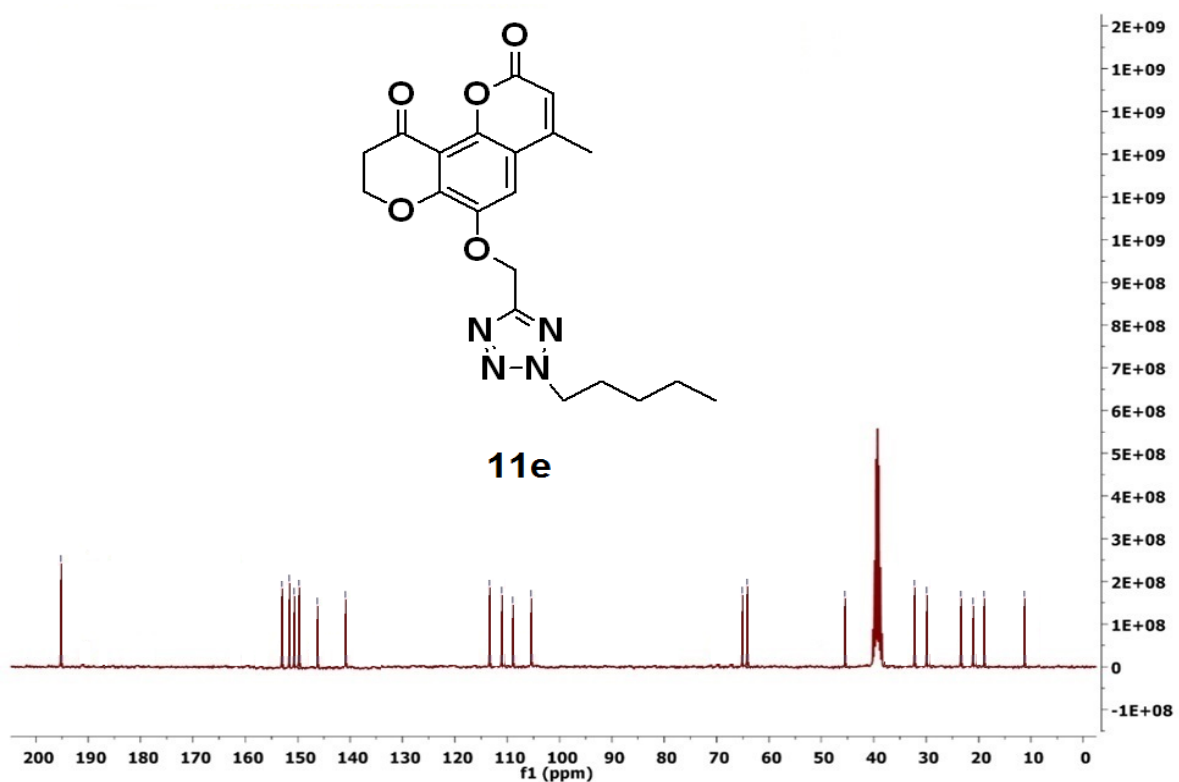


Figure 10S. ¹³C NMR (75 MHz, DMSO-D₆) spectrum of 4-methyl-6-((2-pentyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (5e)

Compound-11f:

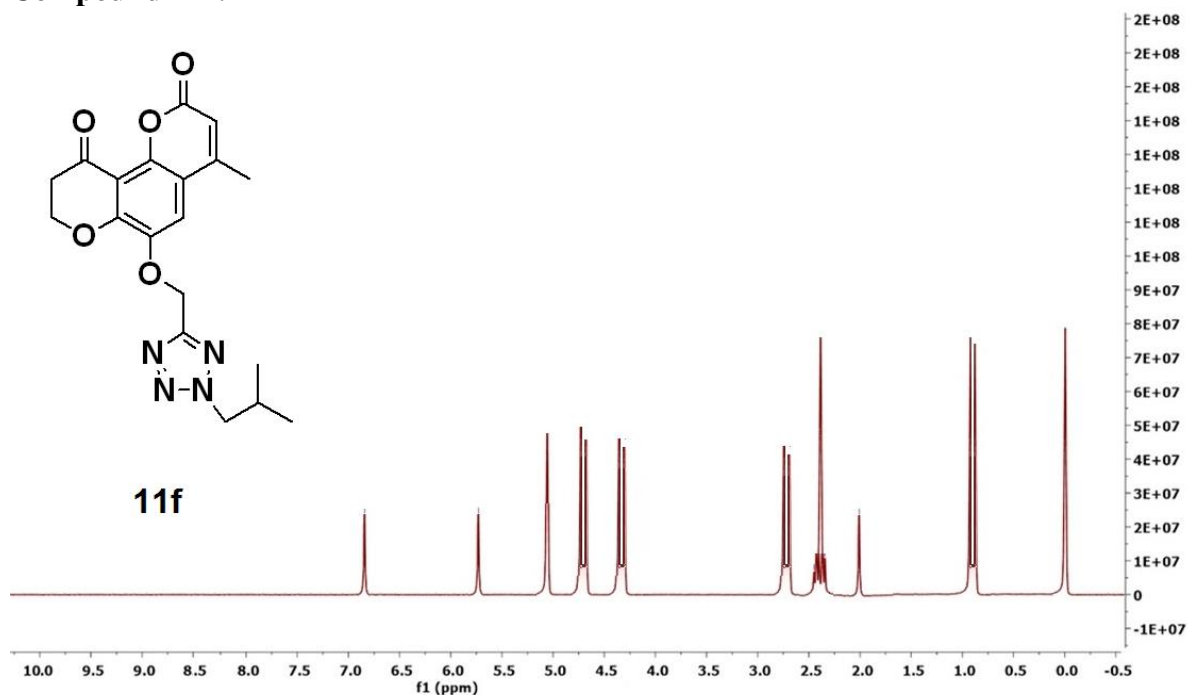


Figure 11S. ¹H NMR (300 MHz, DMSO-D6) spectrum of 6-((2-isobutyl-2H-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11f)

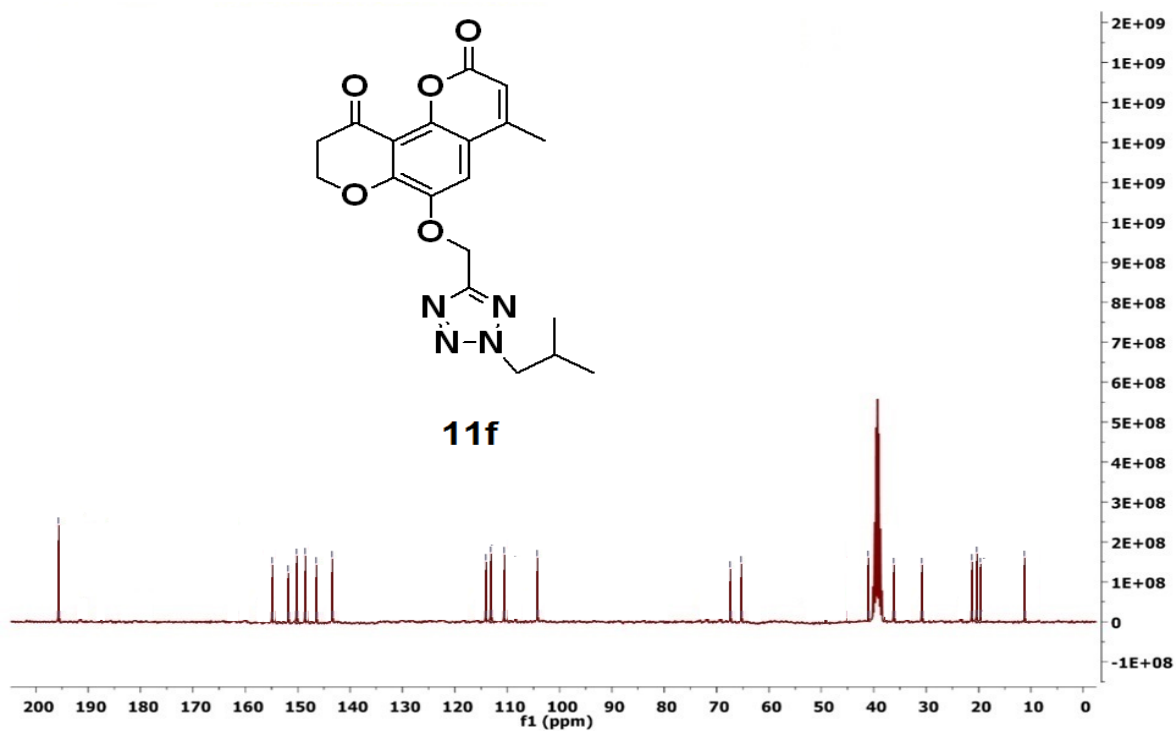


Figure 12S. ¹³C NMR (75 MHz, DMSO-D6) spectrum of 6-((2-isobutyl-2H-tetrazol-5-yl)methoxy)-4-methyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11f)

Compound-11g:

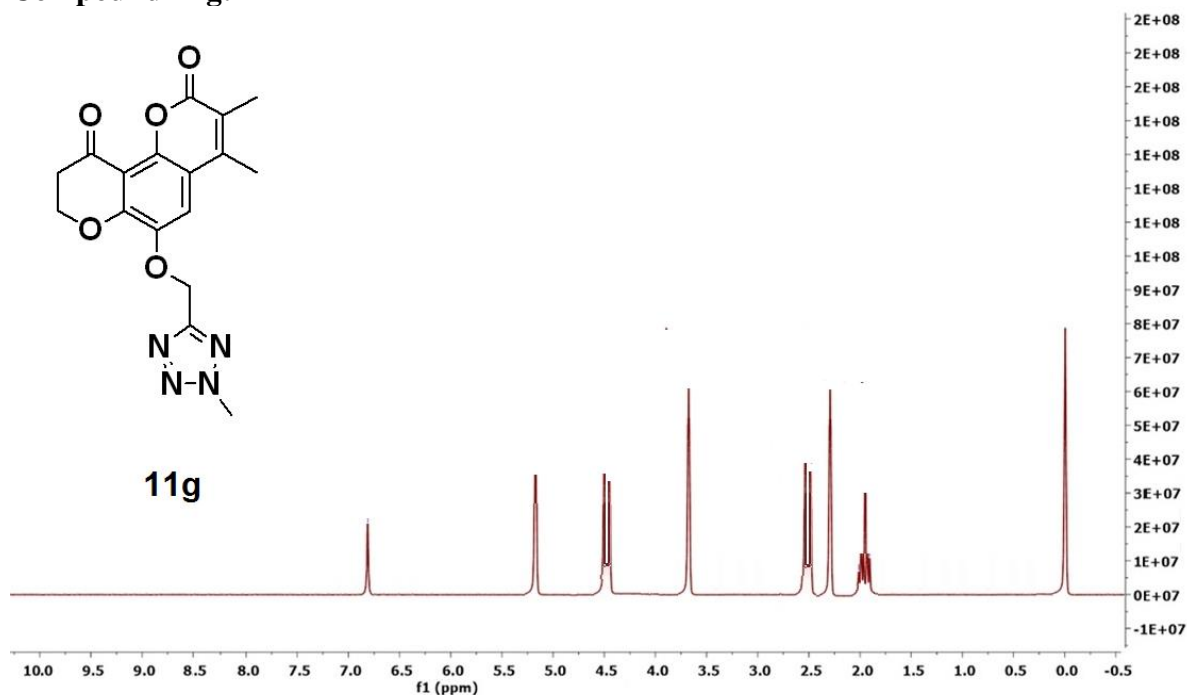


Figure 13S. ¹H NMR (300 MHz, DMSO-D₆) spectrum of 3,4-dimethyl-6-((2-methyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11g)

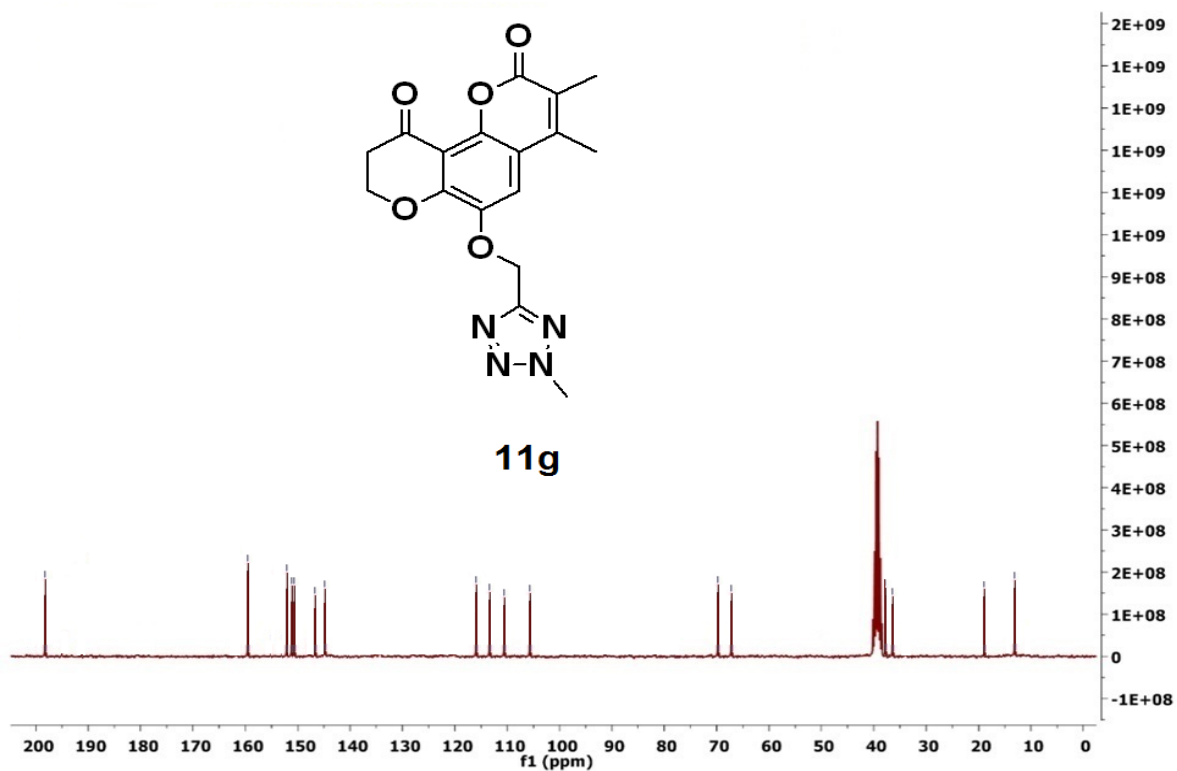


Figure 14S. ¹³C NMR (75 MHz, DMSO-D₆) spectrum of 3,4-dimethyl-6-((2-methyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11g)

Compound-11h:

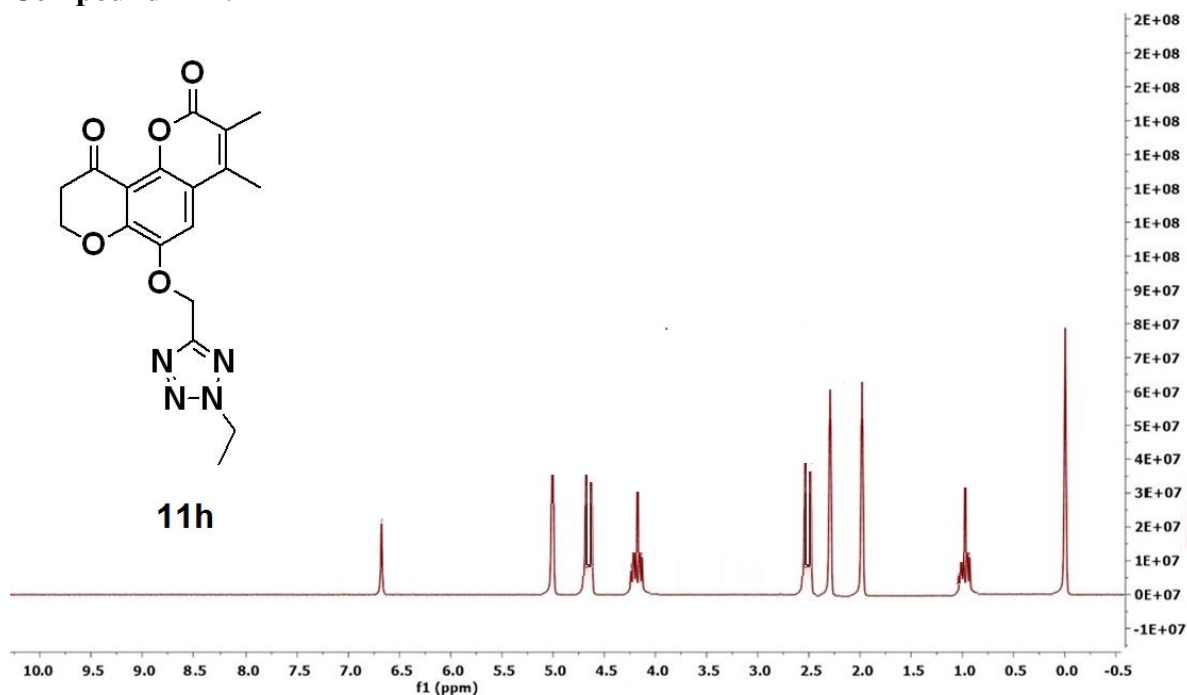


Figure 15S. ^1H NMR (300 MHz, DMSO- D_6) spectrum of 6-((2-ethyl-2*H*-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11h)

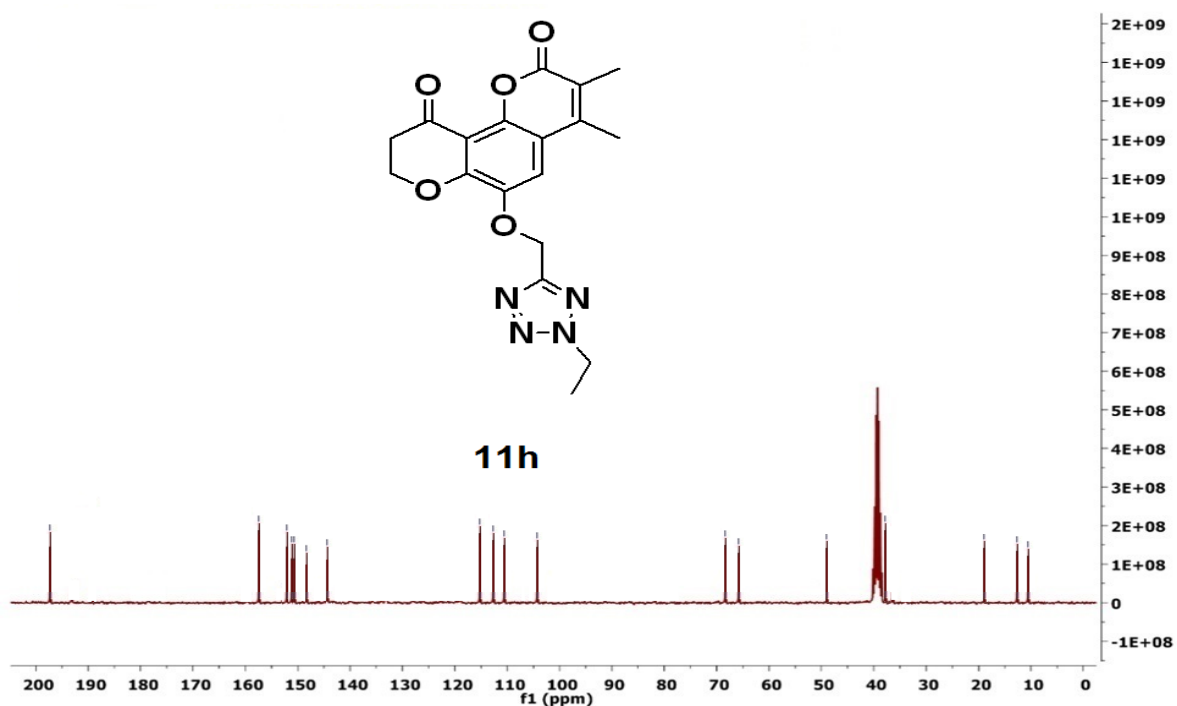


Figure 16S. ^{13}C NMR (75 MHz, DMSO- D_6) spectrum of 6-((2-ethyl-2*H*-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11h)

Compound-11i:

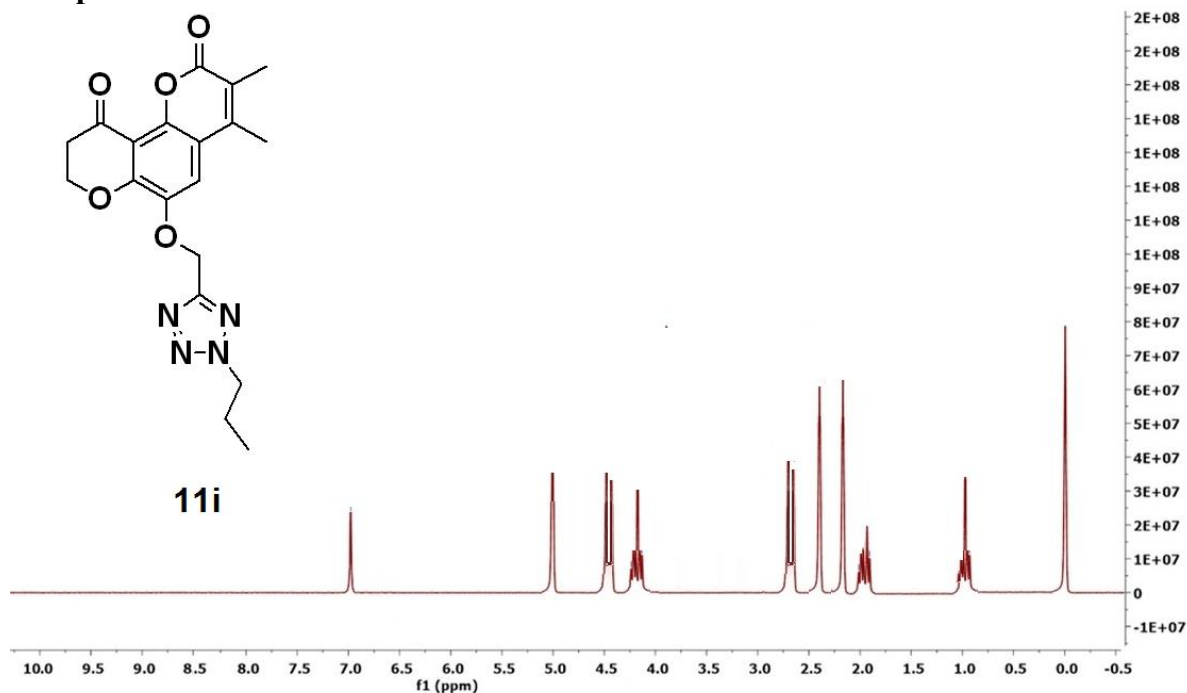


Figure 17S. ^1H NMR (300 MHz, DMSO-D6) spectrum of 3,4-dimethyl-6-((2-propyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11i)

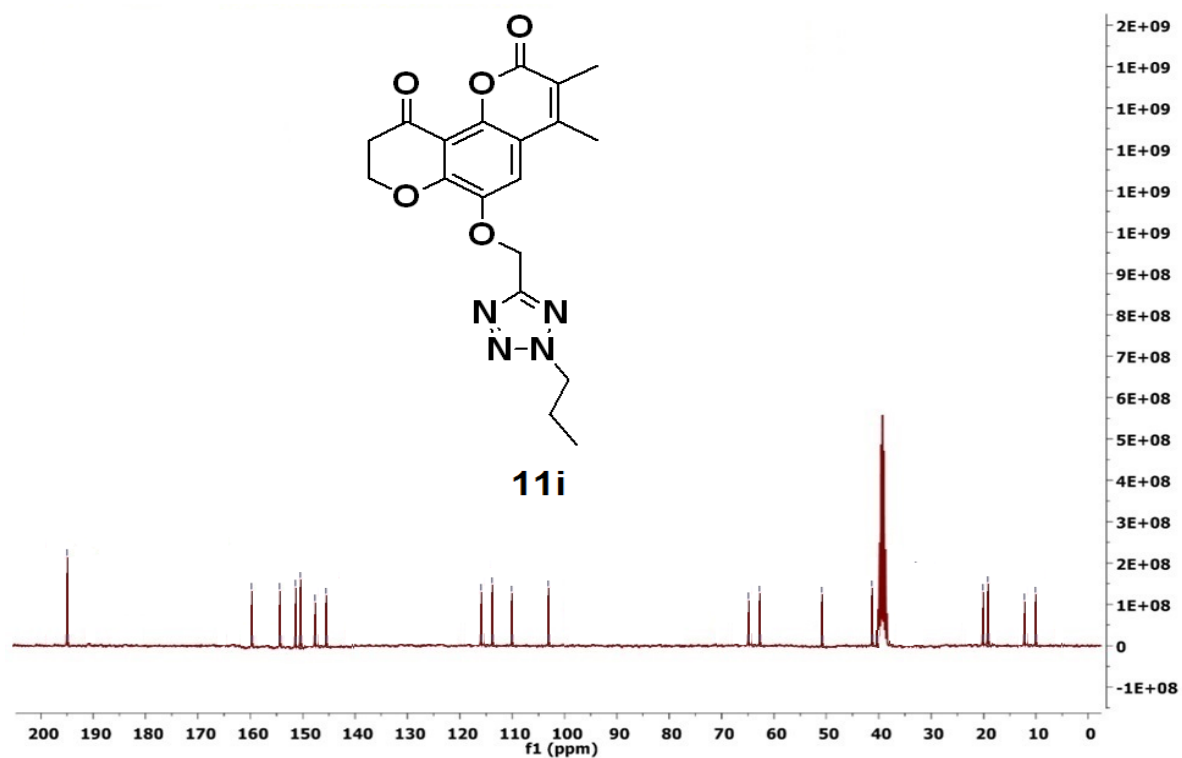


Figure 18S. ^{13}C NMR (75 MHz, DMSO-D6) spectrum of 3,4-dimethyl-6-((2-propyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydropyrano[2,3-*f*]chromene-2,10-dione (11i)

Compound-11j:

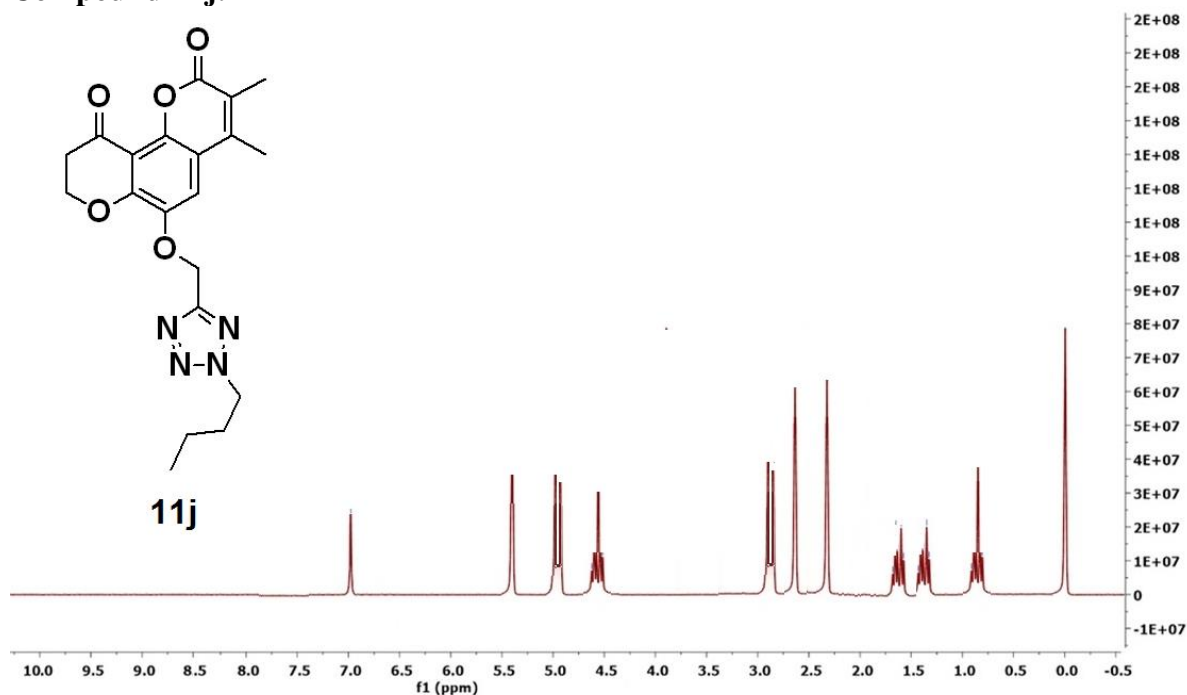


Figure 19S. ¹H NMR (300 MHz, DMSO-D6) spectrum of 6-((2-butyl-2H-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11j)

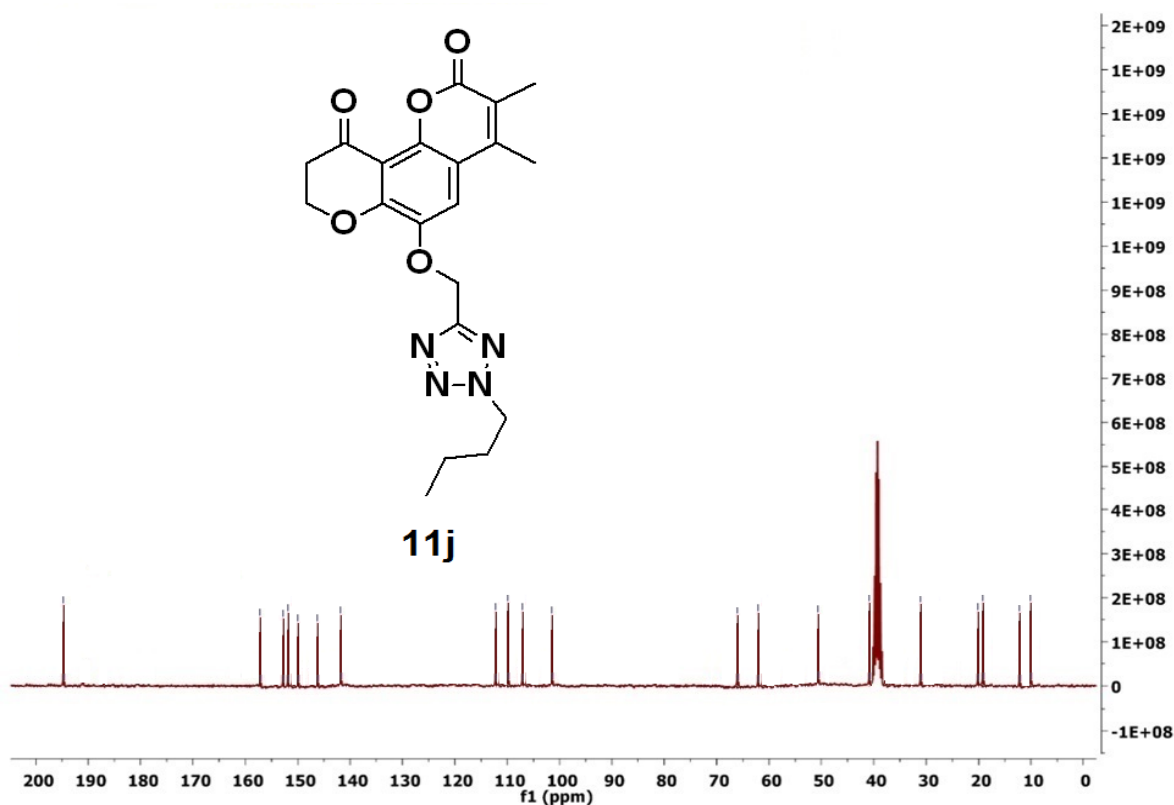


Figure 20S. ¹³C NMR (75 MHz, DMSO-D6) spectrum of 6-((2-butyl-2H-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11j)

Compound-11k:

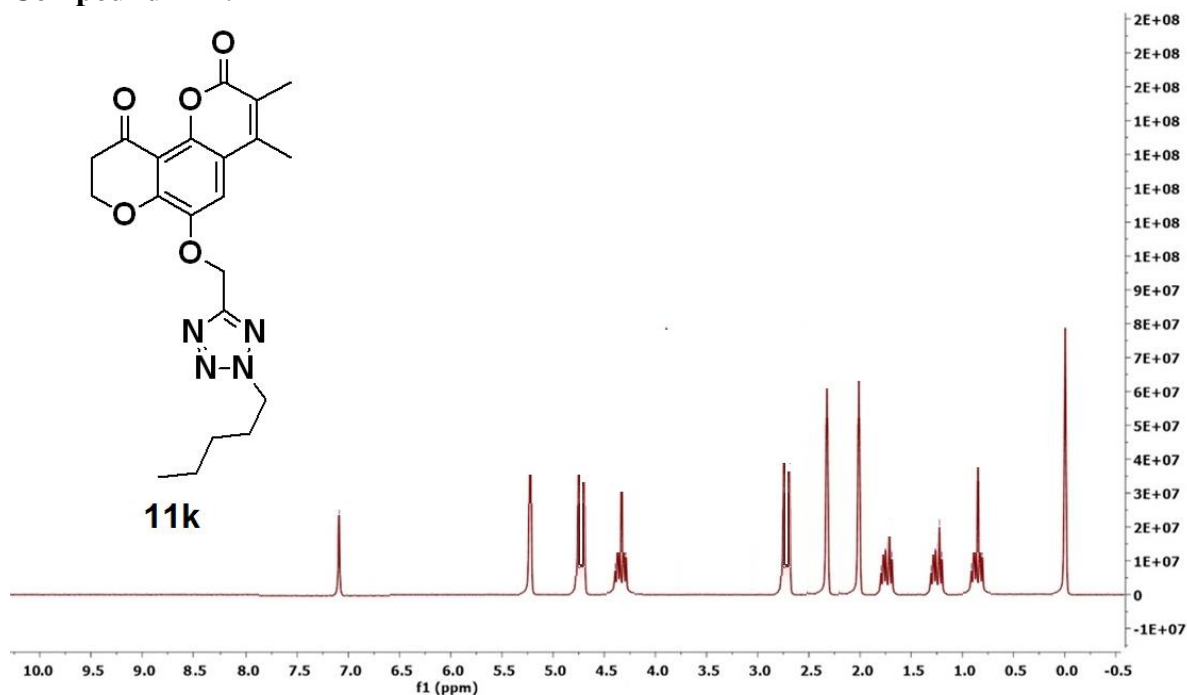


Figure 21S. ¹H NMR (300 MHz, DMSO-D₆) spectrum of 3,4-dimethyl-6-((2-pentyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydroprano[2,3-*f*]chromene-2,10-dione (11k)

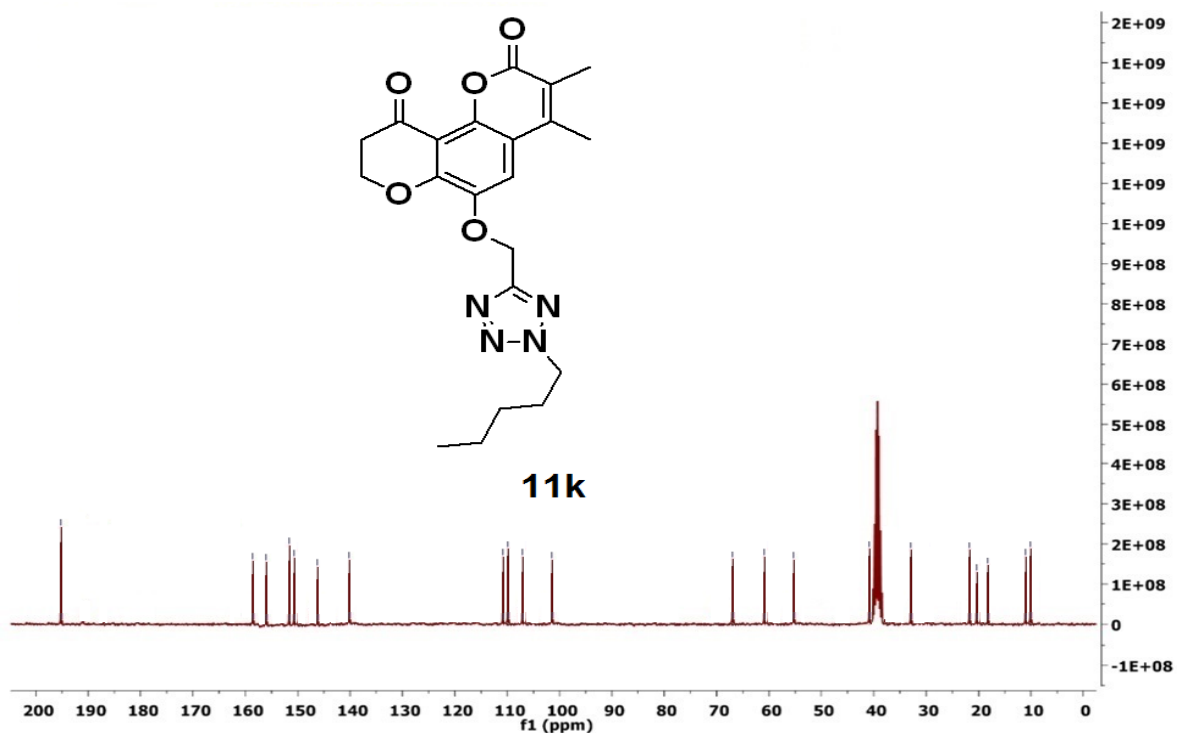


Figure 22S. ¹³C NMR (75 MHz, DMSO-D₆) spectrum of 3,4-dimethyl-6-((2-pentyl-2*H*-tetrazol-5-yl)methoxy)-8,9-dihydroprano[2,3-*f*]chromene-2,10-dione (11k)

Compound-11l:

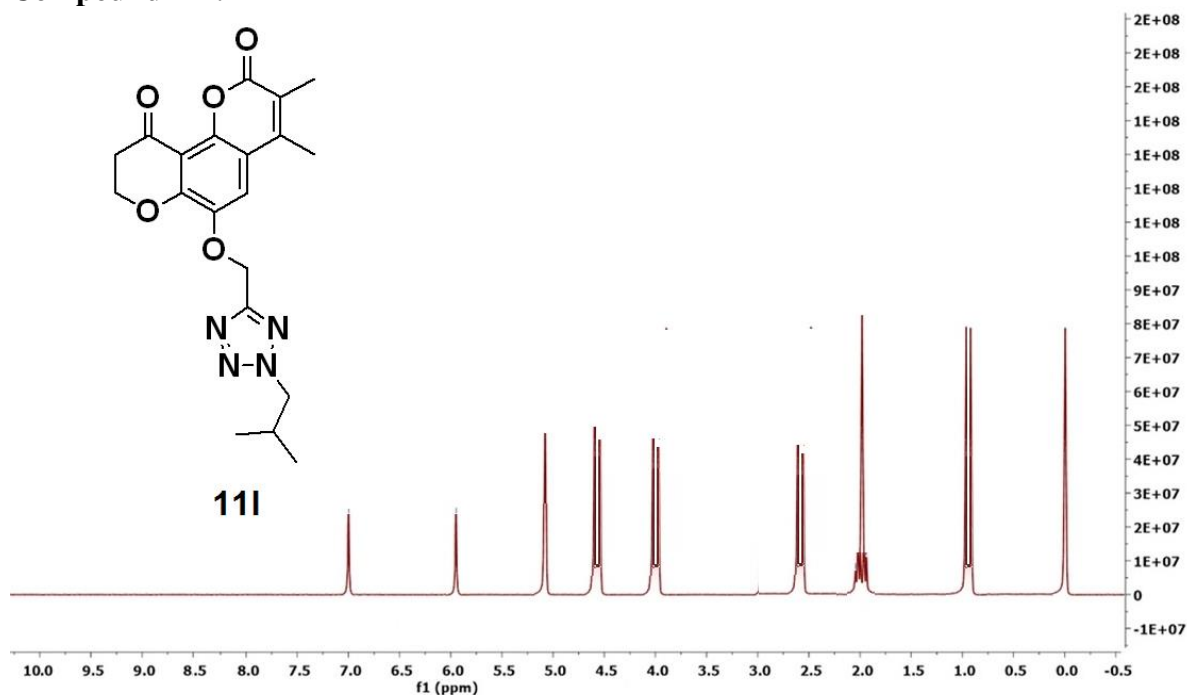


Figure 23S. ¹H NMR (300 MHz, DMSO-D6) spectrum of 6-((2-isobutyl-2H-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11l)

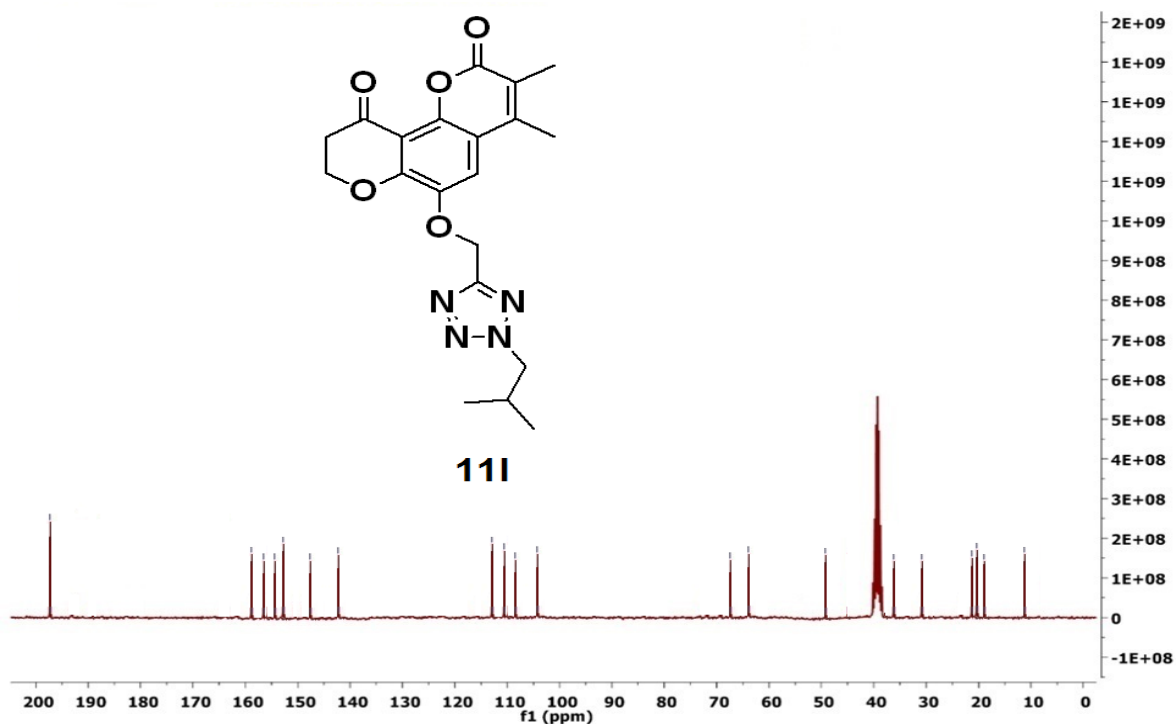


Figure 24S. ¹³C NMR (75 MHz, DMSO-D6) spectrum of 6-((2-isobutyl-2H-tetrazol-5-yl)methoxy)-3,4-dimethyl-8,9-dihydropyrano[2,3-f]chromene-2,10-dione (11l)