Supplementary Material

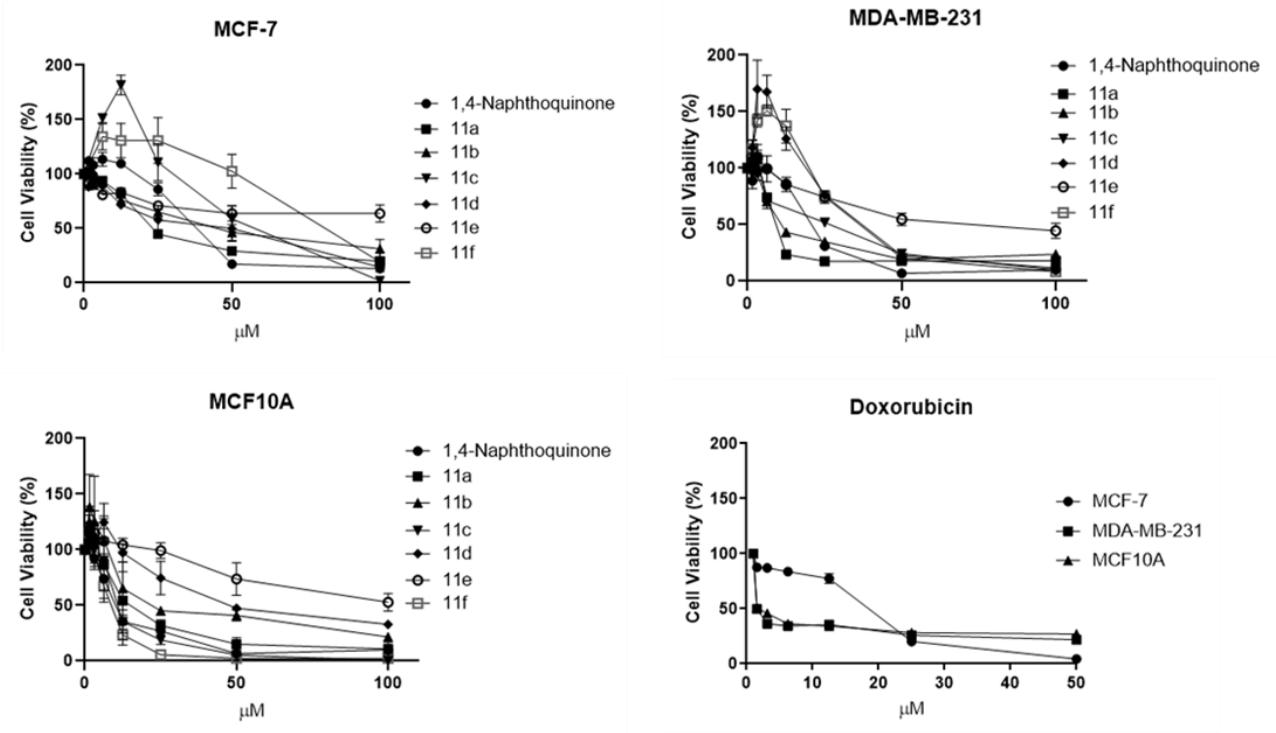

Figure S1. Dose-response curves for compounds 11a-f, 1,4-naphthoquinone, and doxorubicin on breast cancer cells (MCF-7 and MDA-MB-231) and breast cell line (MCF10A).

Ethyl 6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-1-ethyl-4-oxo-1,4-dihydroquinoline-3-carboxylate (11a)

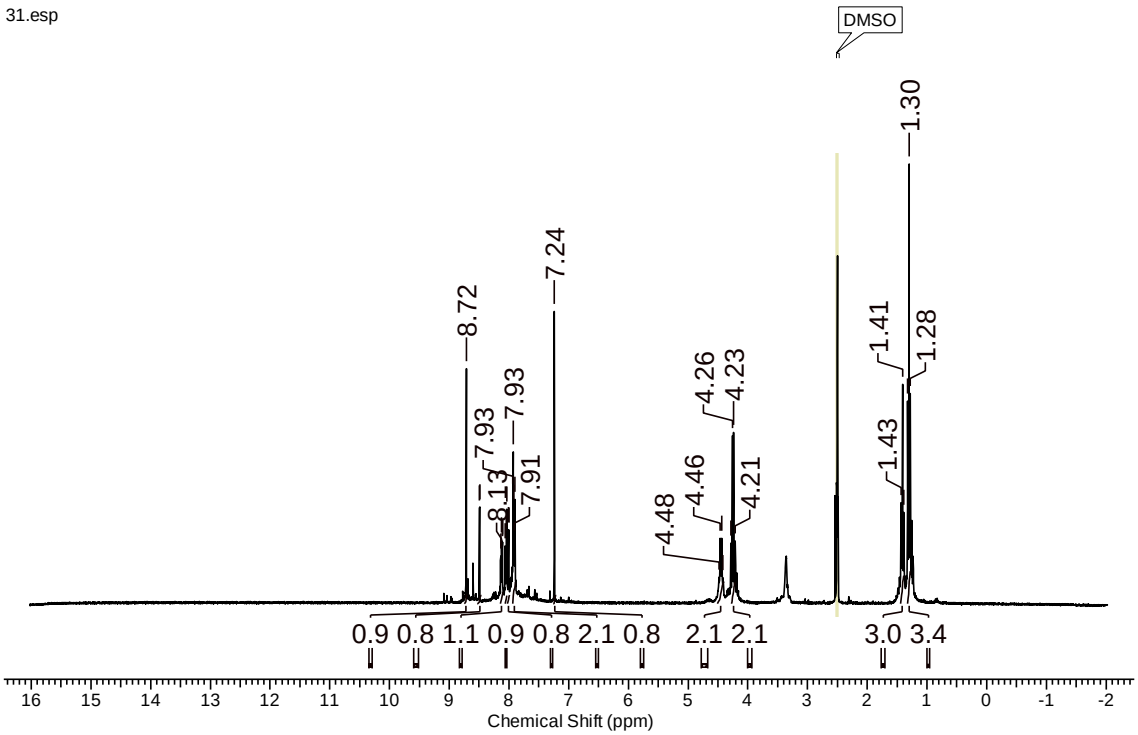

Figure S2. ^{1}H NMR spectrum of derivative **11a** (DMSO-d_6, 300.00 MHz).

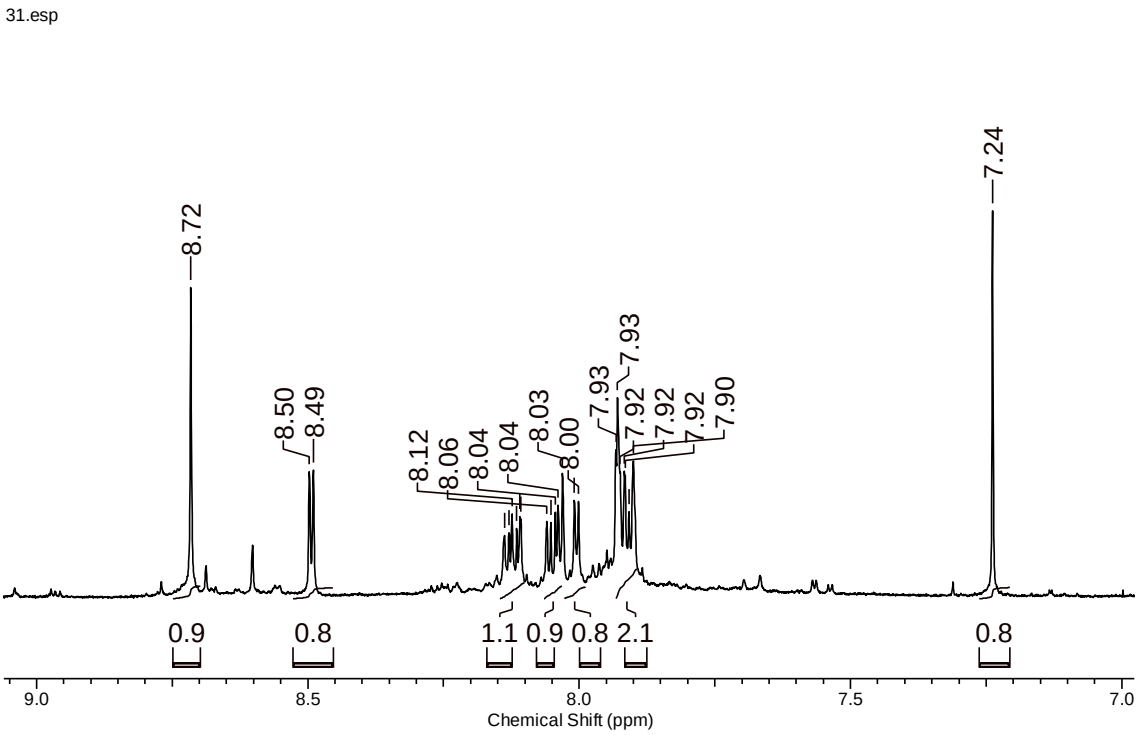

Figure S3. Expansion of the ^{1}H NMR spectrum of derivative **11a** (DMSO-d_6, 300.00 MHz).

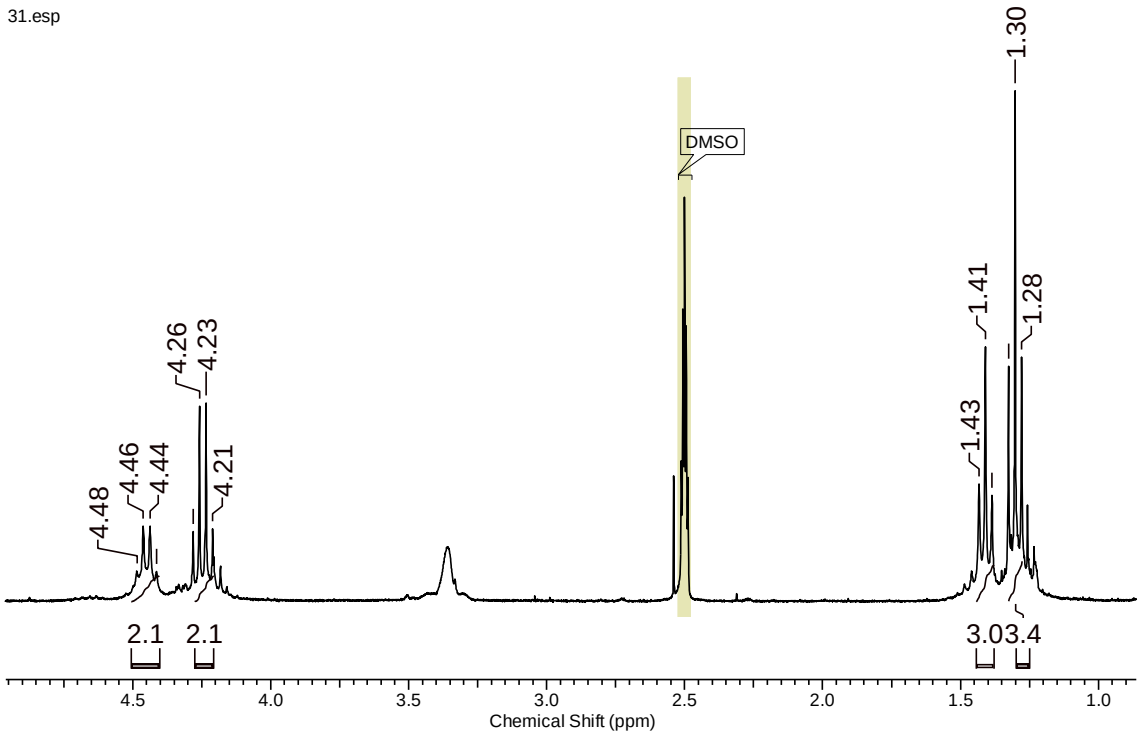

Figure S4. Expansion of the ^{1}H NMR spectrum of derivative **11a** (DMSO-d_6, 300.00 MHz).

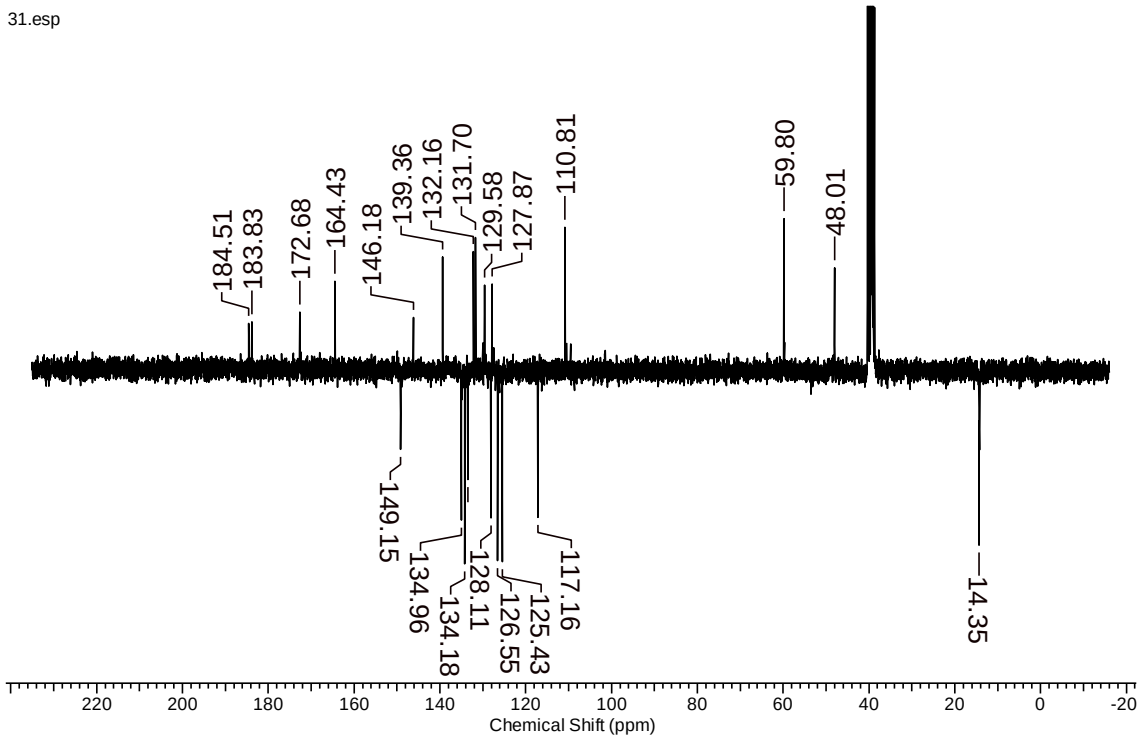

Figure S5. ^{13}C-APT NMR spectrum of derivative **11a** (DMSO-d_6, 75.0 MHz).

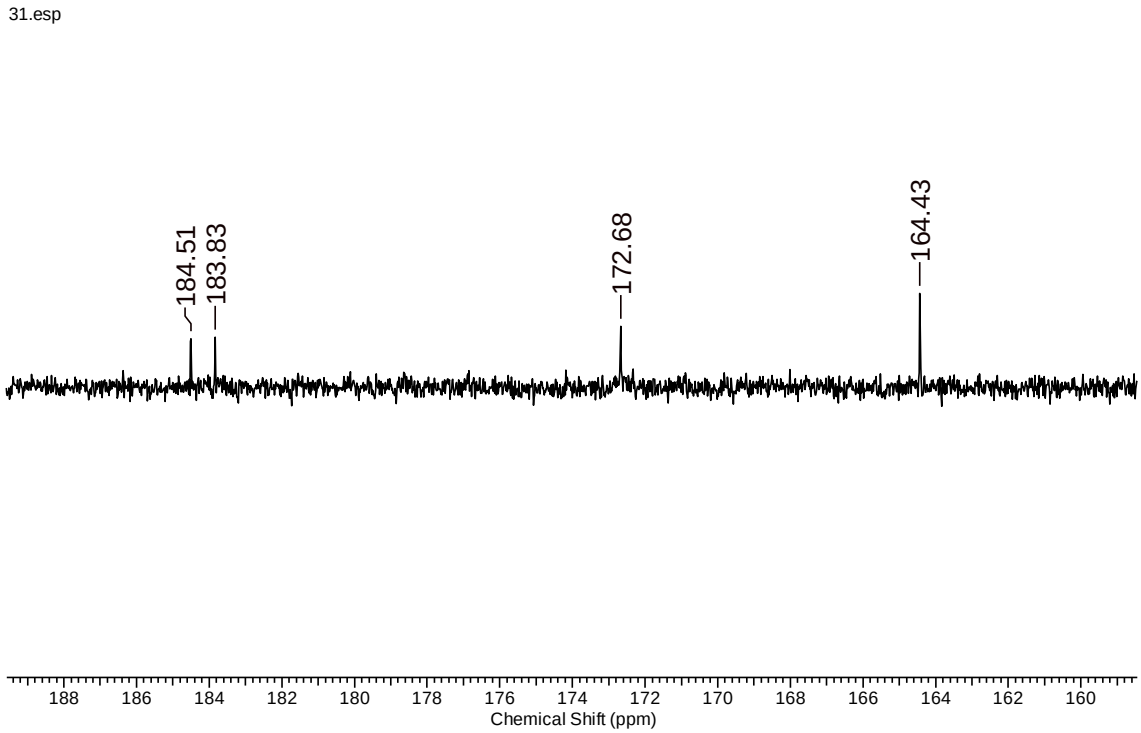

Figure S6. Expansion of the ^{13}C-APT NMR spectrum of derivative **11a** (DMSO-d_6, 75.0 MHz).

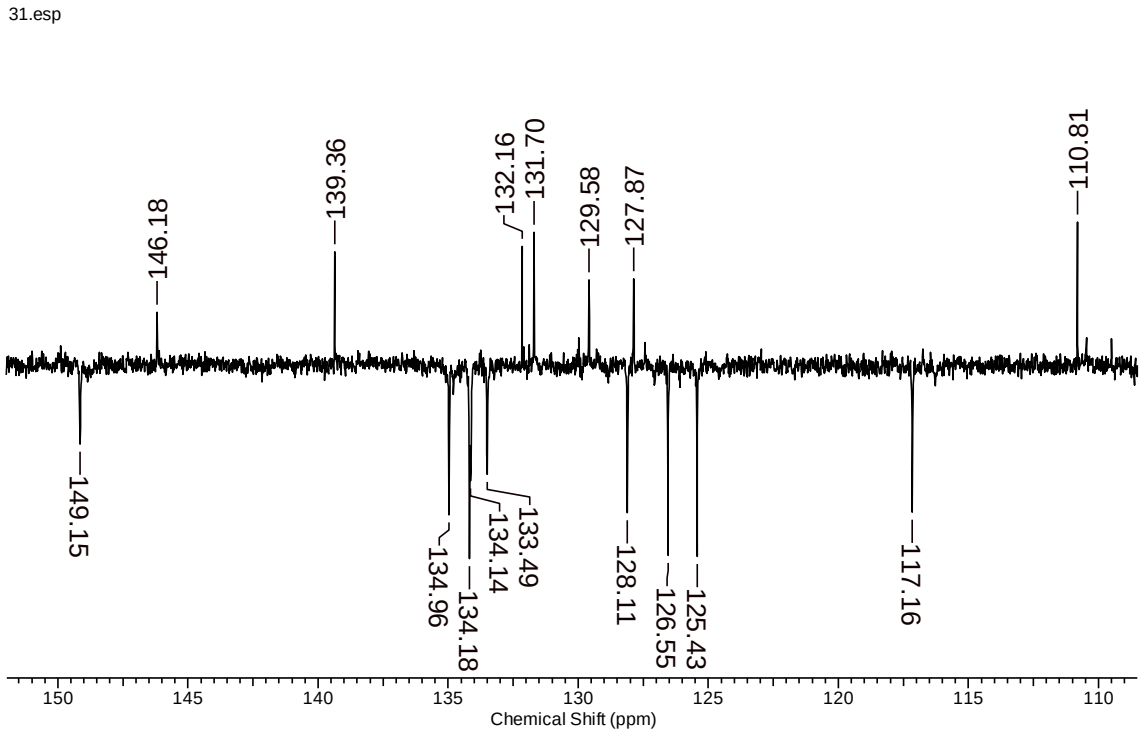

Figure S7. Expansion of the ^{13}C-APT NMR spectrum of derivative **11a** (DMSO-d_6, 75.0 MHz).

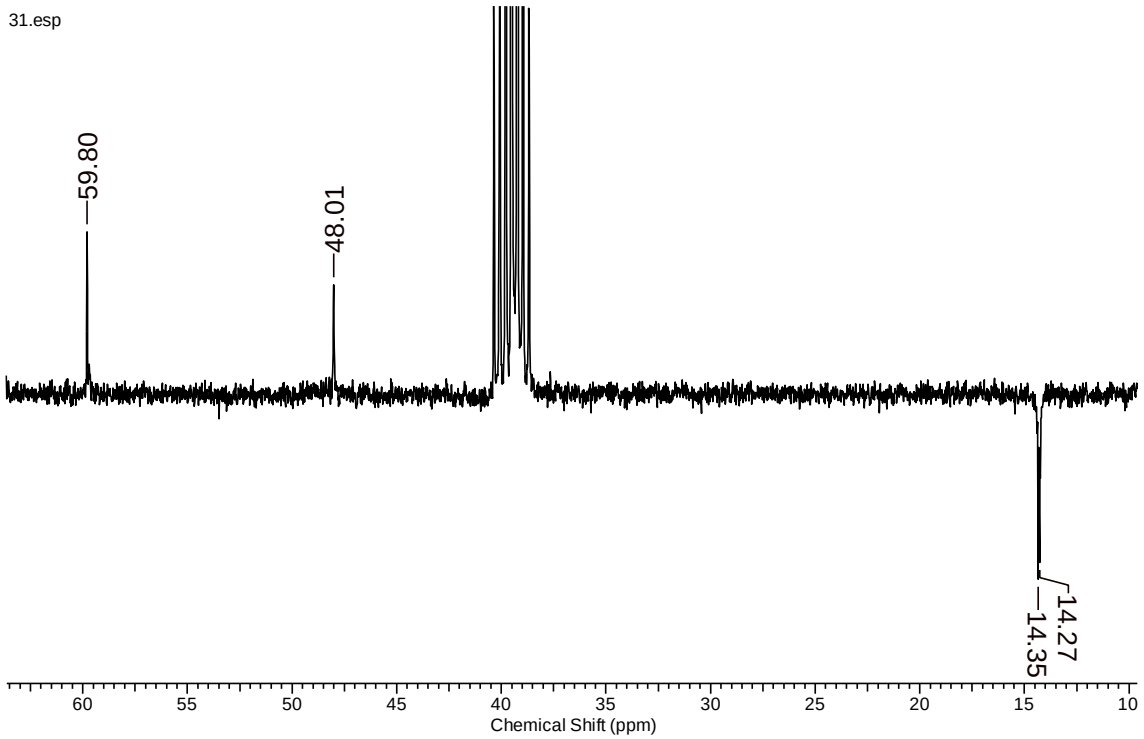

Figure S8. Expansion of the ^{13}C-APT NMR spectrum of derivative **11a** (DMSO-d_6, 75.0 MHz).

Ethyl 1-benzyl-6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-4-oxo-1,4-dihydroquinoline-3-carboxylate (11b)

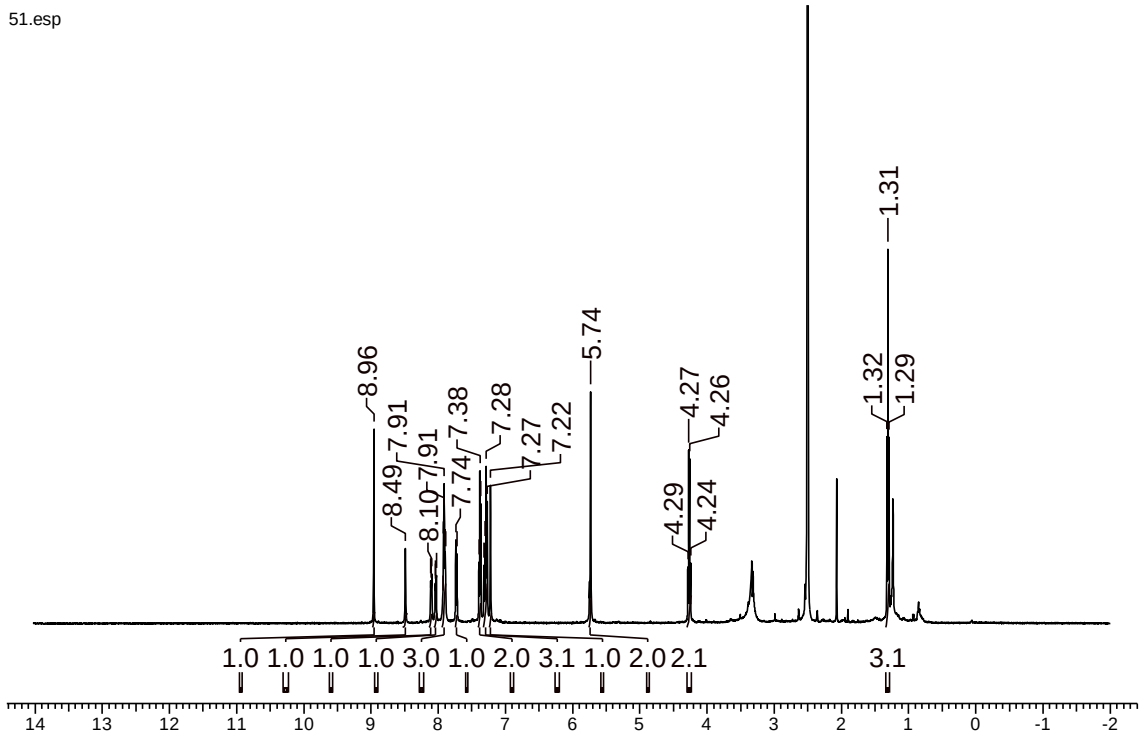

Figure S9. ^{1}H NMR spectrum of derivative **11b** (DMSO-d_6, 500.00 MHz).

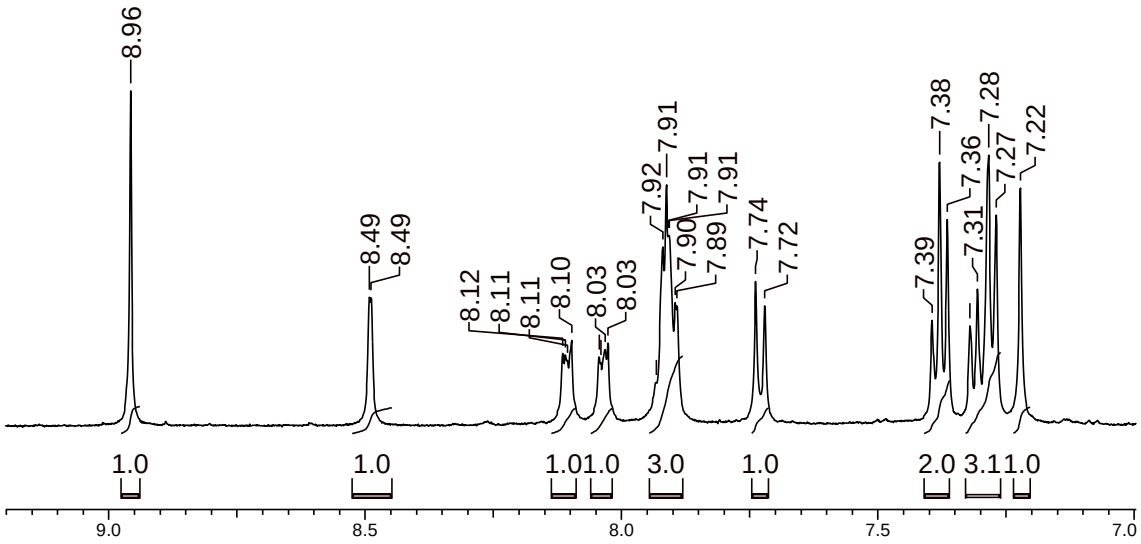

Figure S10. Expansion of the ^{1}H NMR spectrum of derivative **11b** (DMSO-d_6, 500.00 MHz).

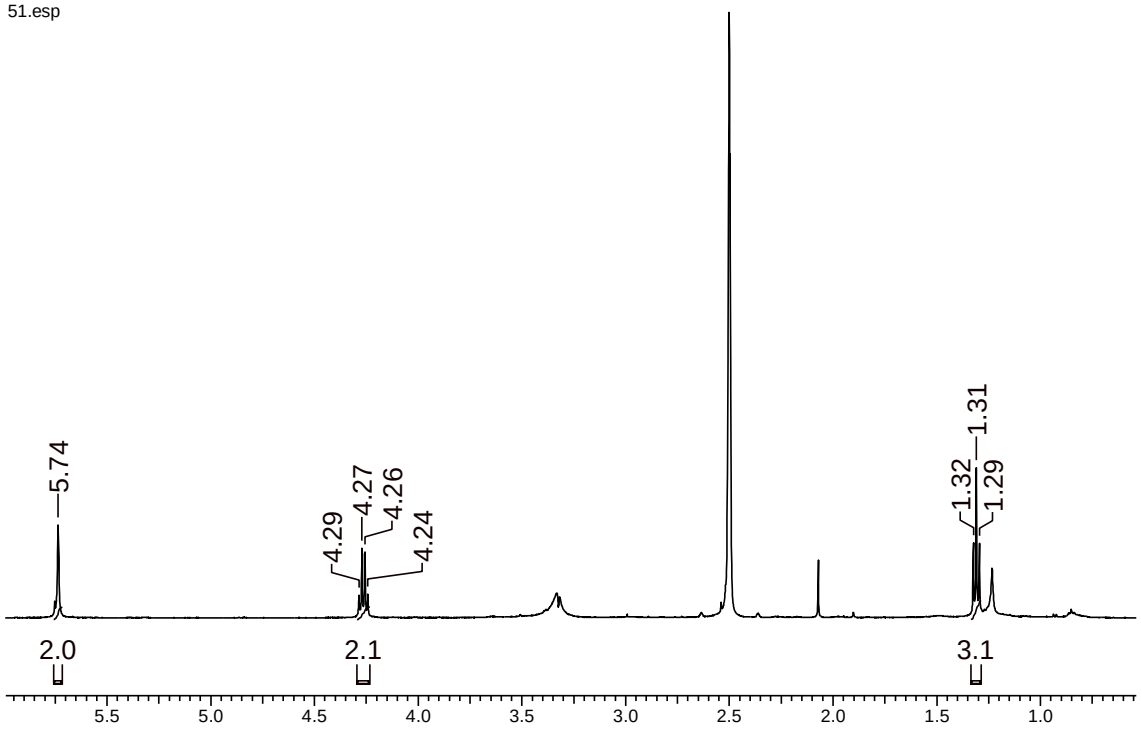

Figure S11. Expansion of the ^{1}H NMR spectrum of derivative **11b** (DMSO-d_6, 500.00 MHz).

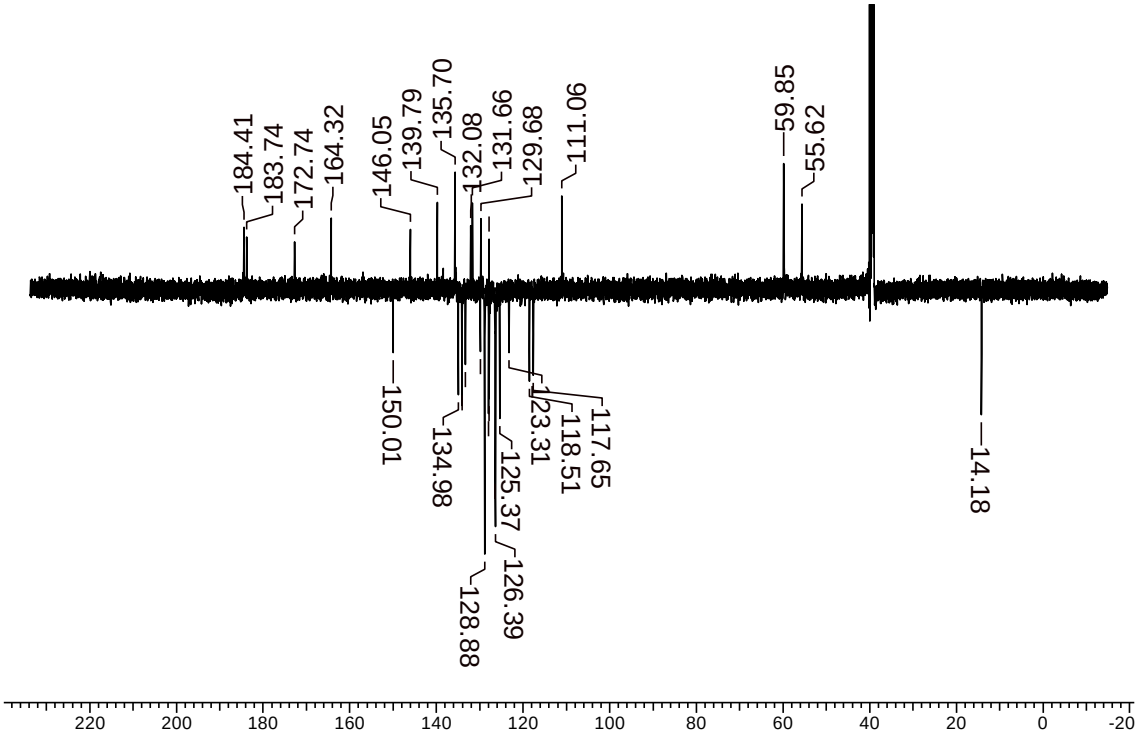

Figure S12. ^{13}C-APT NMR spectrum of derivative **11b** (DMSO-d_6, 125.00 MHz).

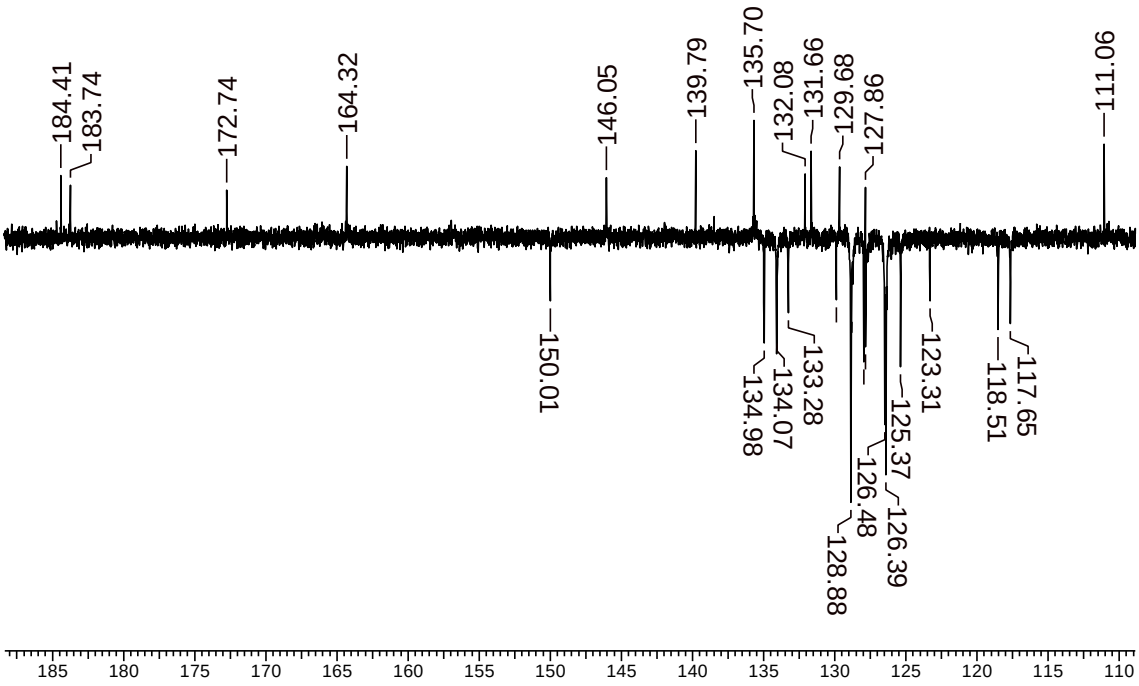

Figure S13. Expansion of the ^{13}C-APT NMR spectrum of derivative **11b** (DMSO-d_6, 125.00 MHz).

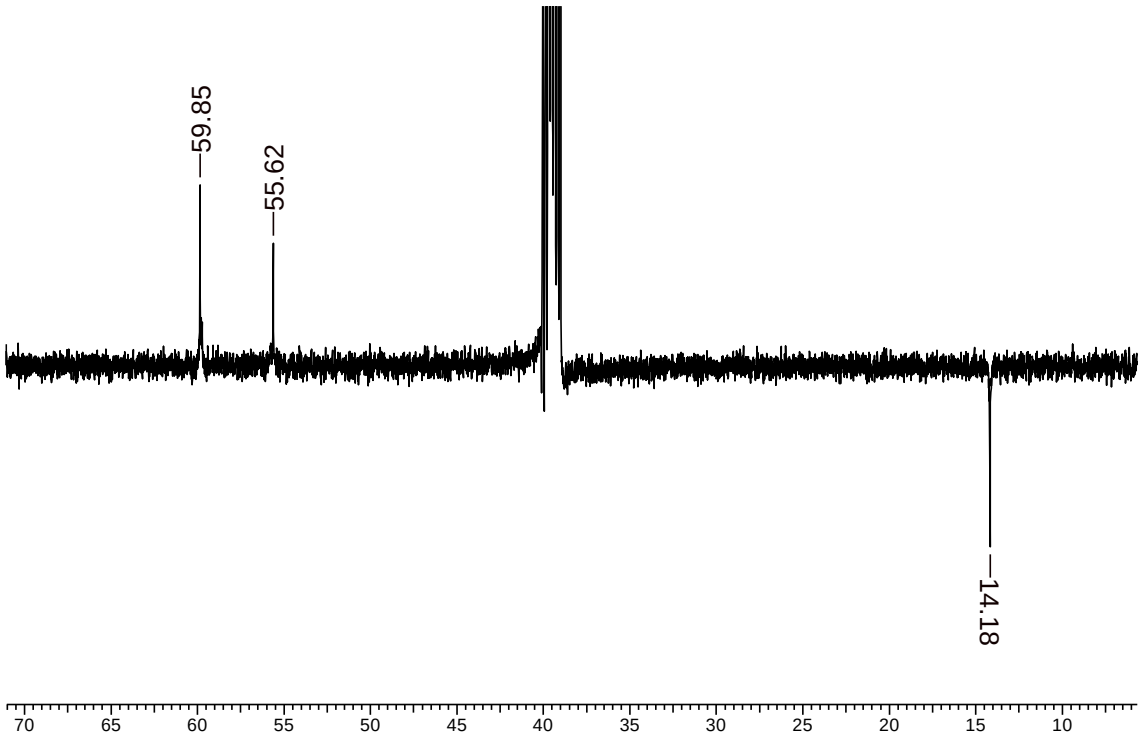

Figure S14. Expansion of the ^{13}C-APT NMR spectrum of derivative **11b** (DMSO-d_6, 125.00 MHz).

Ethyl 6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-4-oxo-1-pentyl-1,4-dihydroquinoline-3-carboxylate (11c)

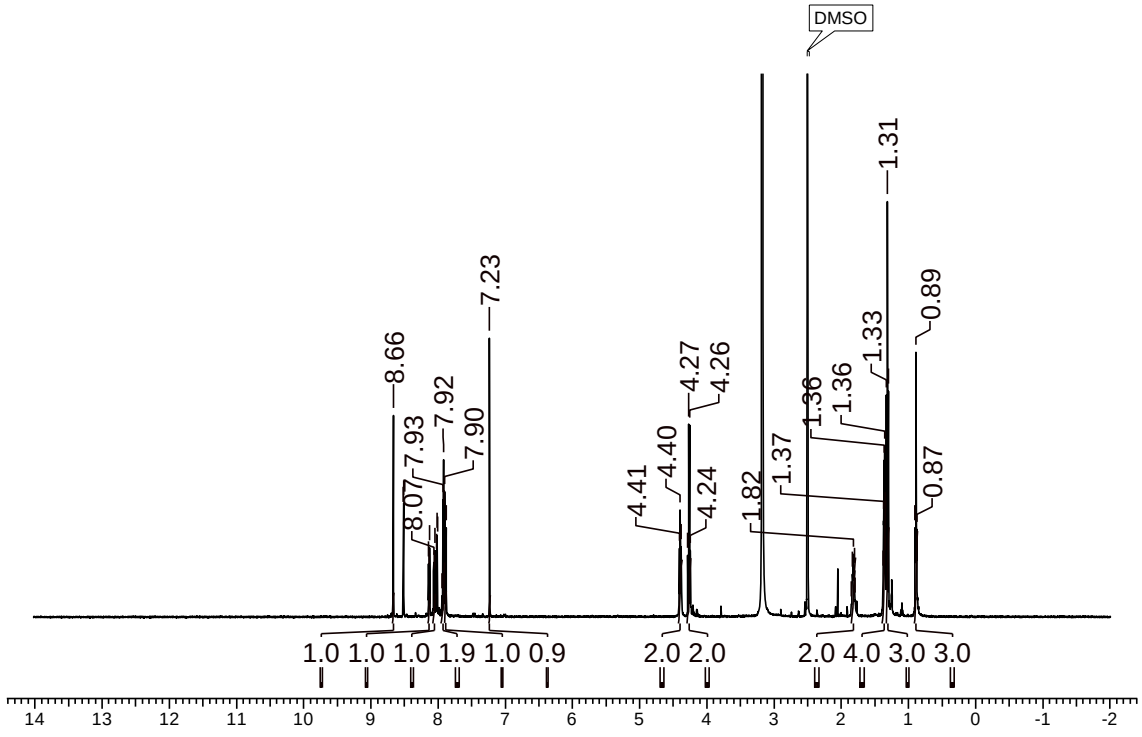

Figure S15. ^{1}H NMR spectrum of derivative **11c** (DMSO-d_6, 500.00 MHz).

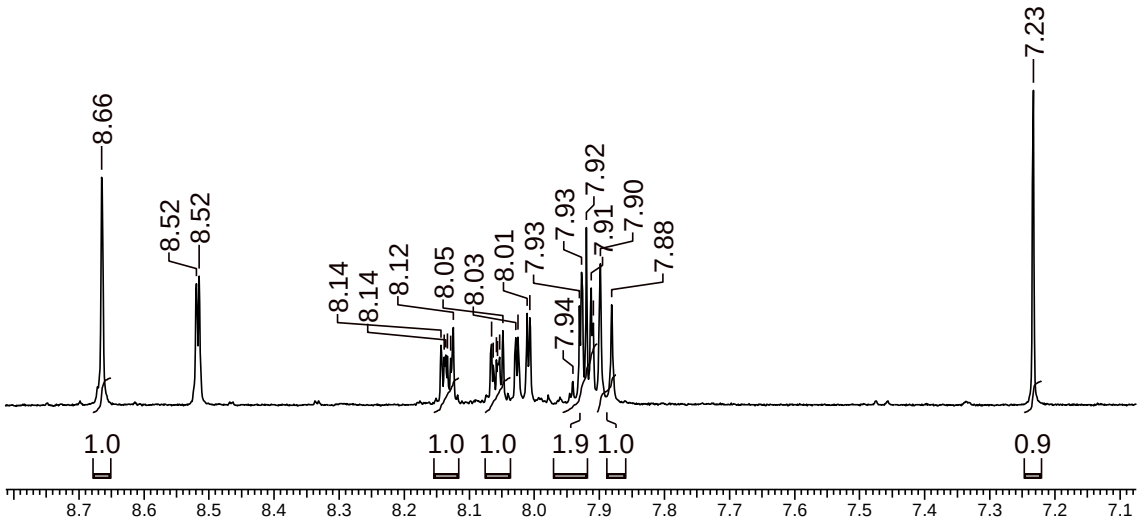

Figure S16. Expansion of the ^{1}H NMR spectrum of derivative **11c** (DMSO-d_6, 500.00 MHz).

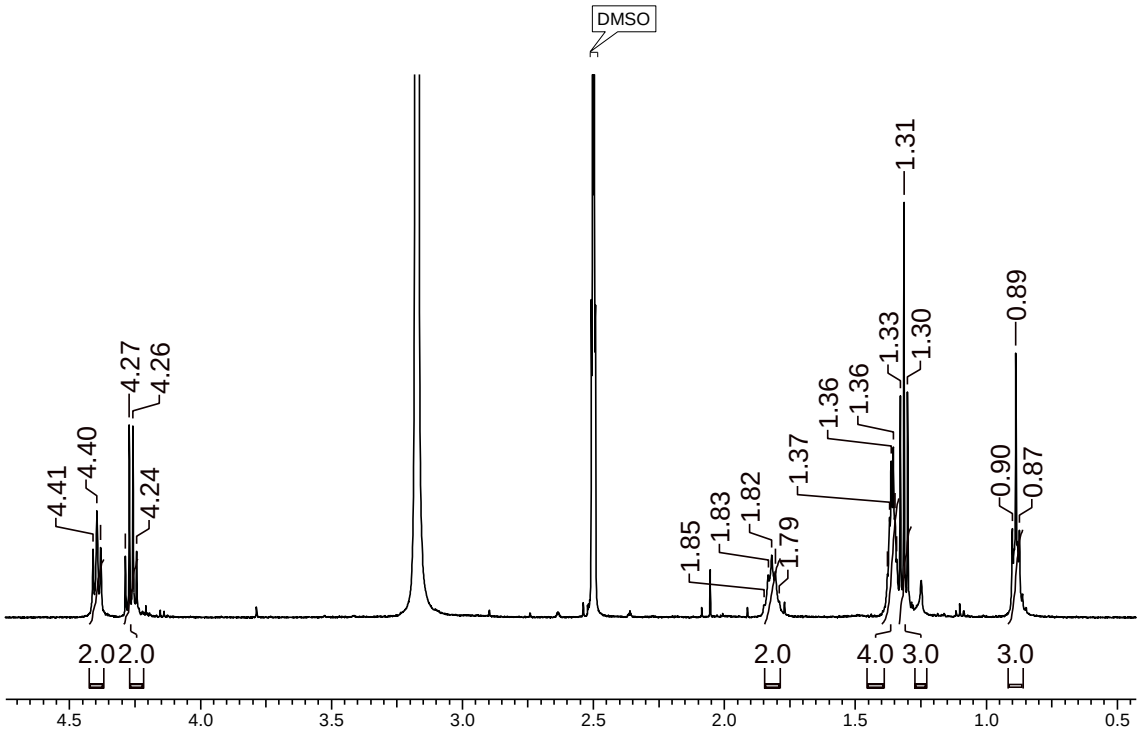

Figure S17. Expansion of the ^{1}H NMR spectrum of derivative **11c** (DMSO-d_6, 500.00 MHz).

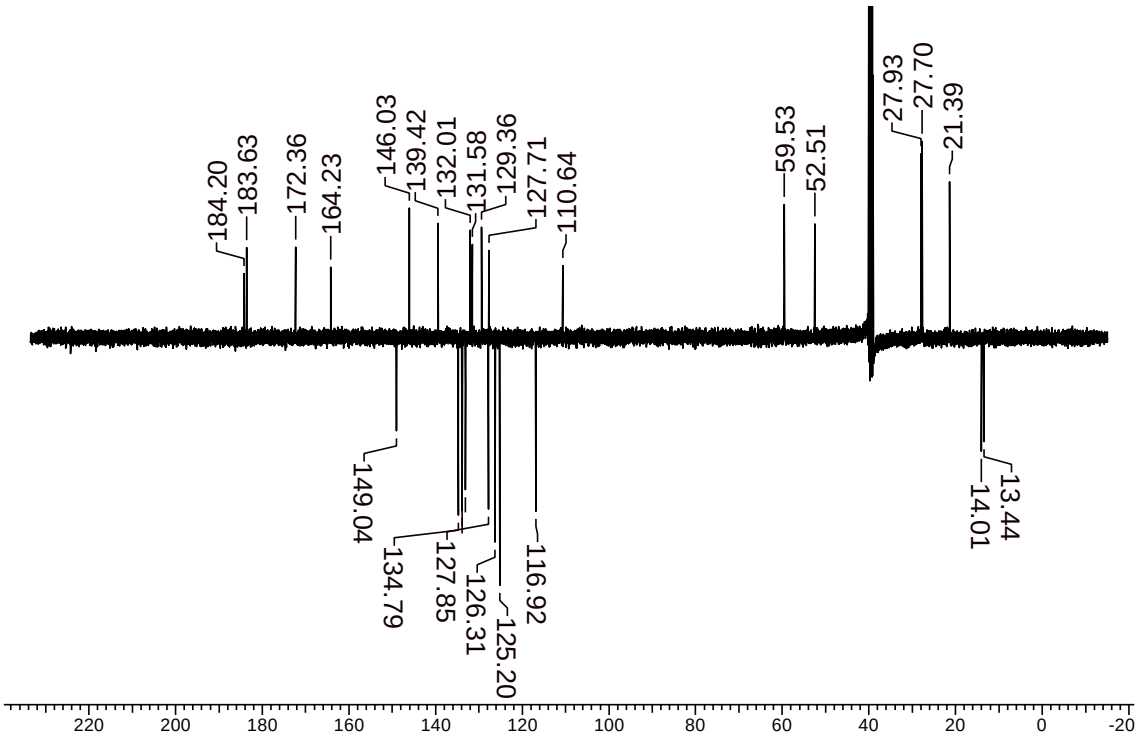

Figure S18. ^{13}C-APT NMR spectrum of derivative **11c** (DMSO-d_6, 125.00 MHz).

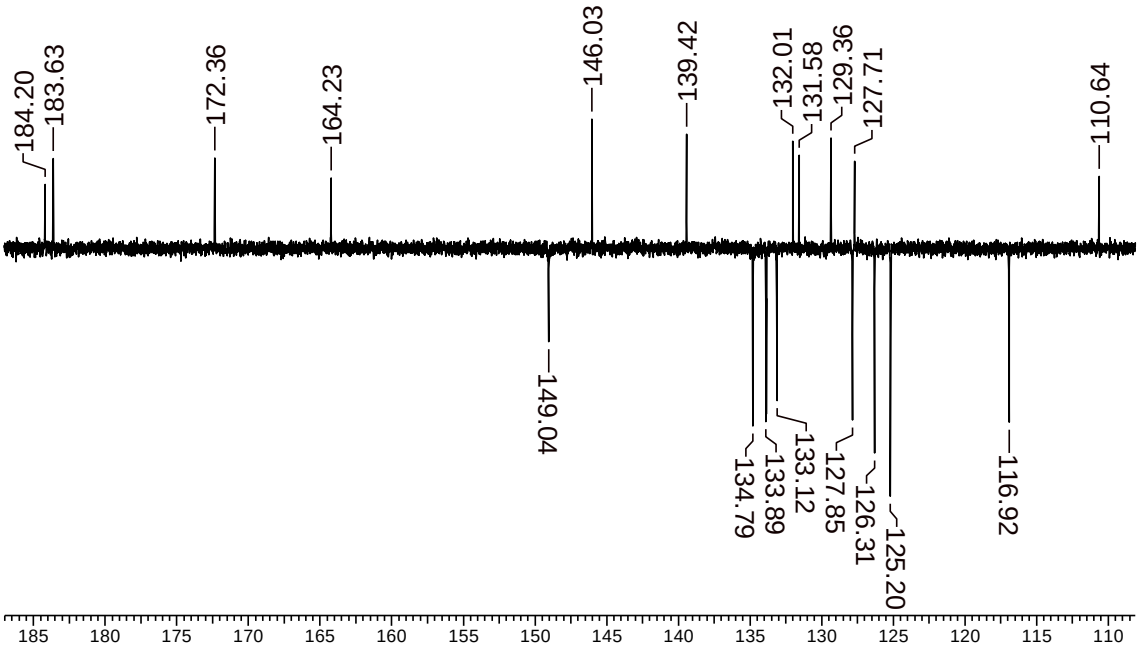

Figure S19. Expansion of the ^{13}C-APT NMR spectrum of derivative **11c** (DMSO-d_6, 125.00 MHz).

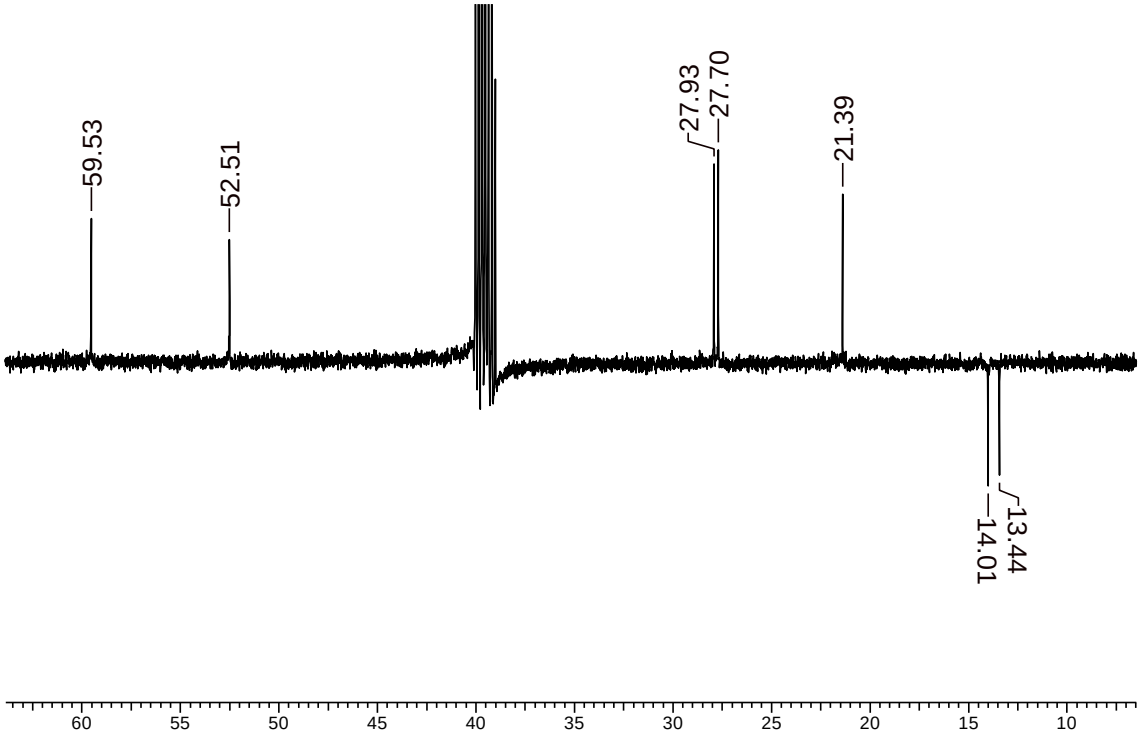

Figure S20. Expansion of the ^{13}C-APT NMR spectrum of derivative **11c** (DMSO-d_6, 125.00 MHz).

6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-1-ethyl-4-oxo-1,4-dihydroquinoline-3-carboxylic acid (11d)

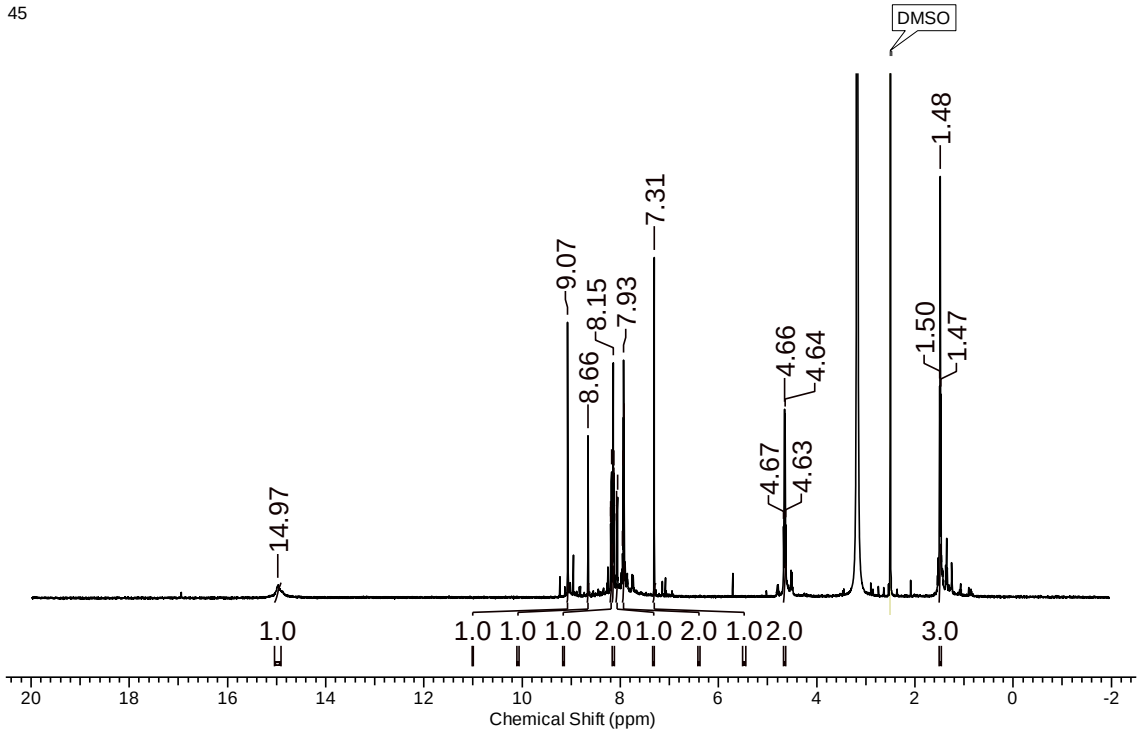

Figure S21. ^{1}H NMR spectrum of derivative **11d** (DMSO-d_6, 500.00 MHz).

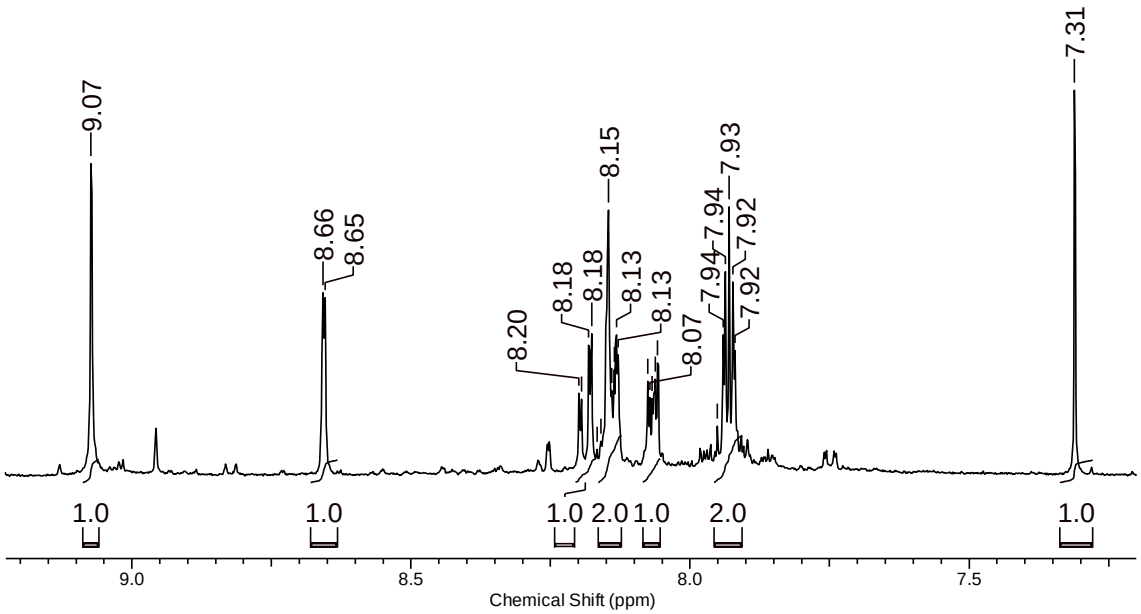

Figure S22. Expansion of the ^{1}H NMR spectrum of derivative **11d** (DMSO-d_6, 500.00 MHz).

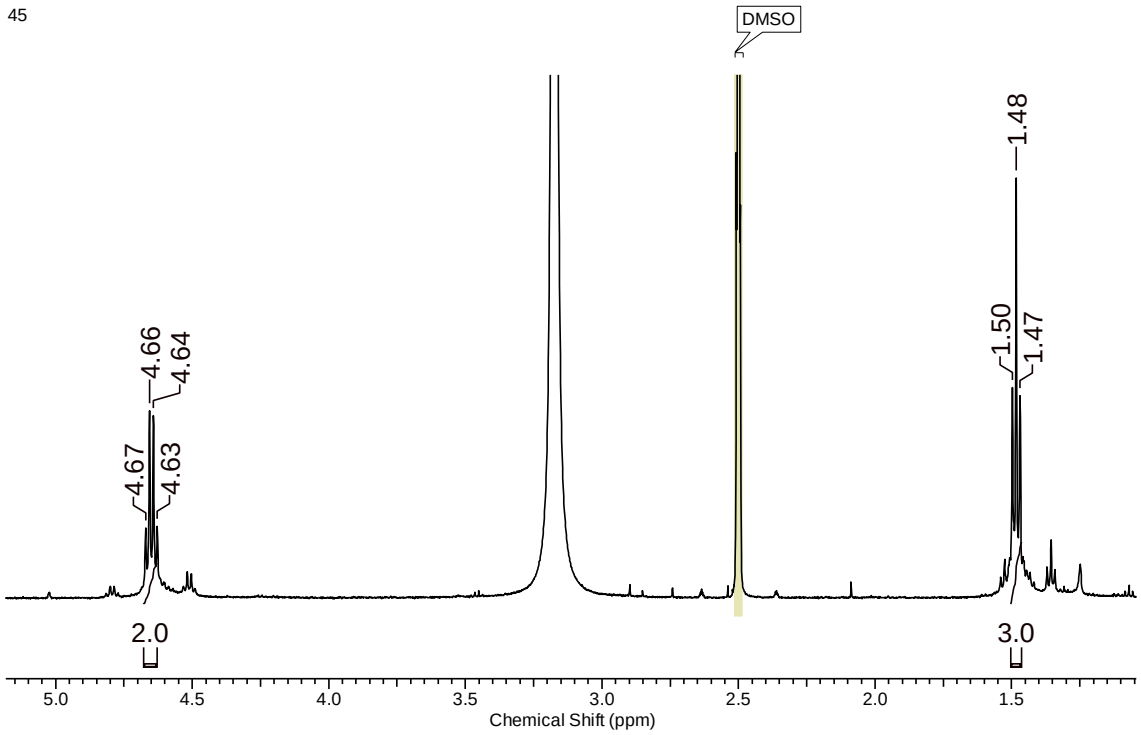

Figure S23. Expansion of the ^{1}H NMR spectrum of derivative **11d** (DMSO-d_6, 500.00 MHz).

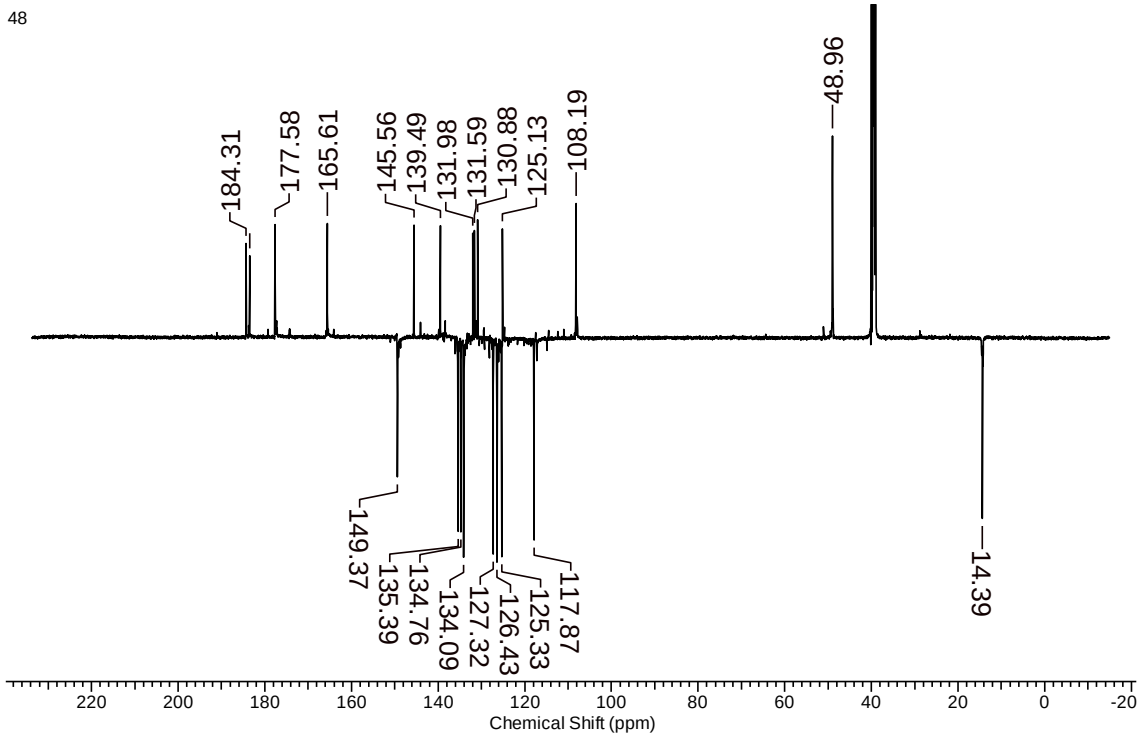

Figure S24. ^{13}C-APT NMR spectrum of derivative **11d** (DMSO-d_6, 125.00 MHz).

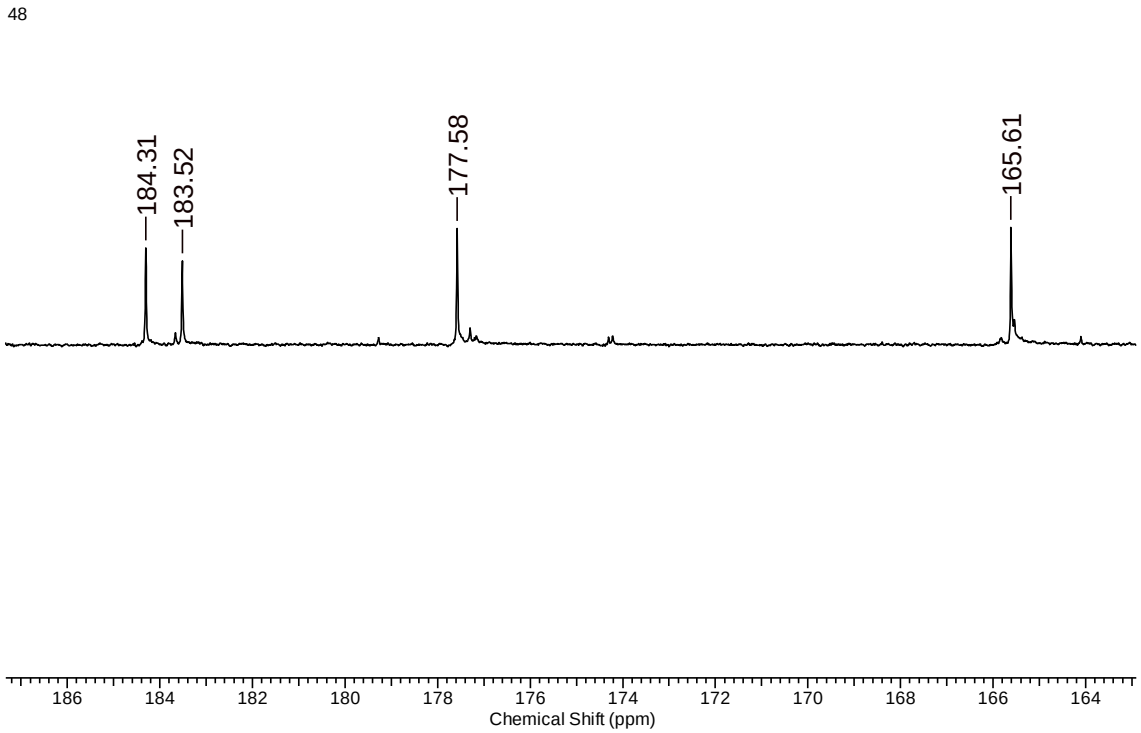

Figure S25. Expansion of the ^{13}C-APT NMR spectrum of derivative **11d** (DMSO-d_6, 125.00 MHz).

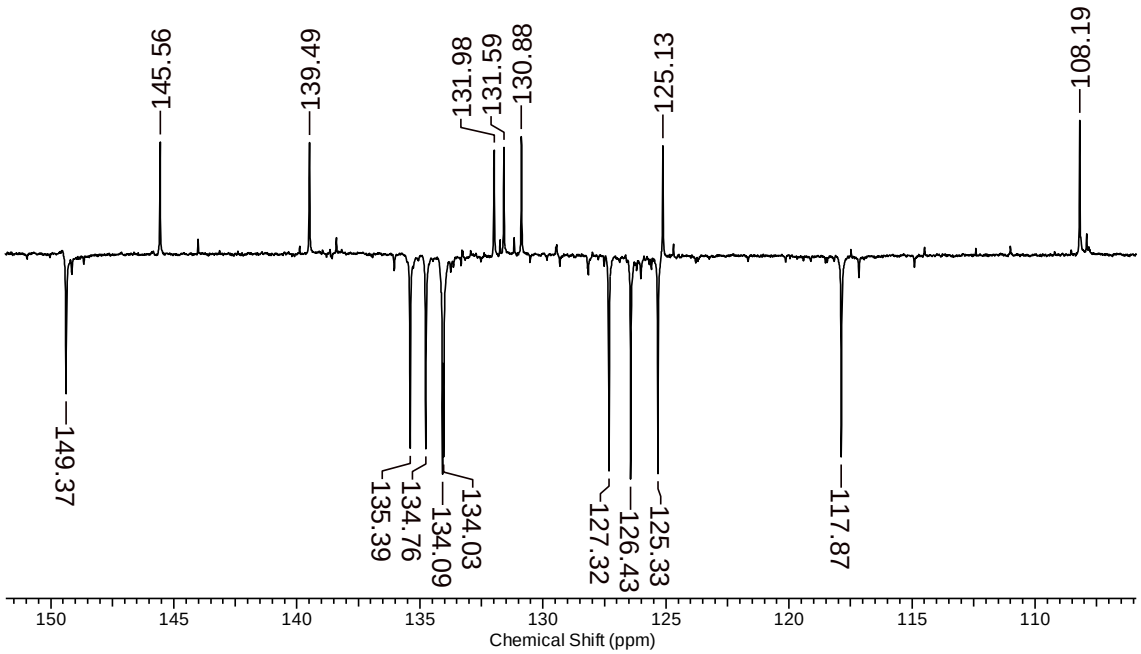

Figure S26. Expansion of the ^{13}C-APT NMR spectrum of derivative **11d** (DMSO-d_6, 125.00 MHz).

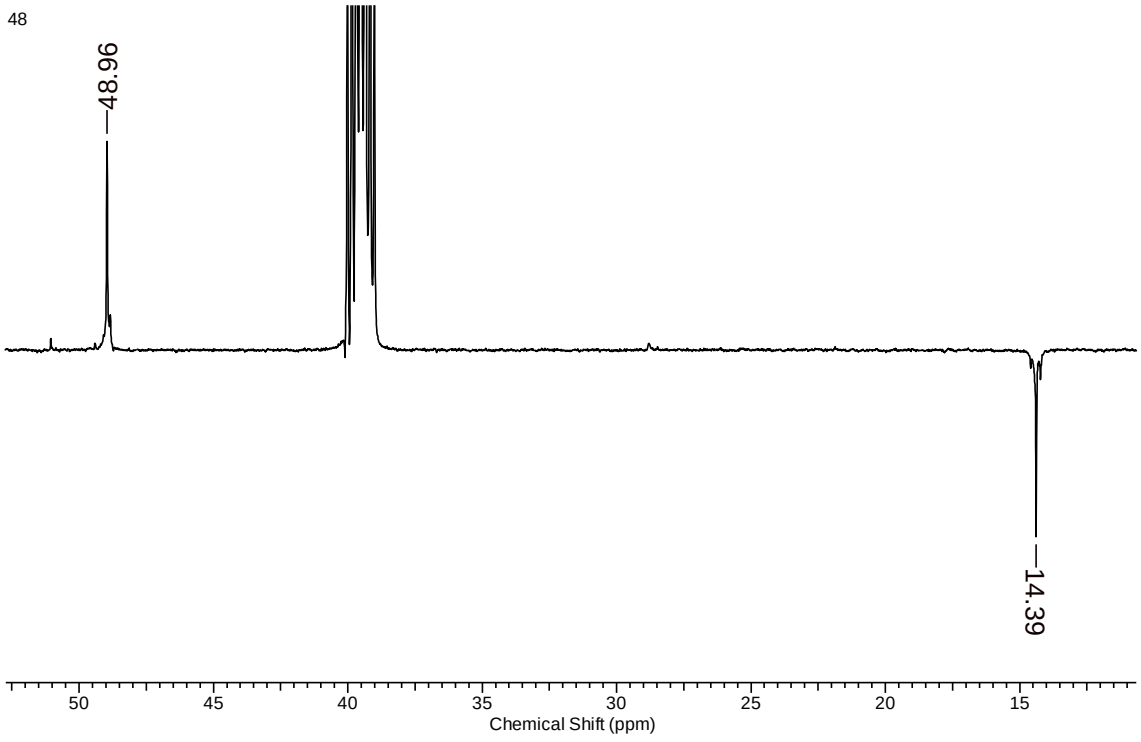

Figure S27. Expansion of the ^{13}C-APT NMR spectrum of derivative **11d** (DMSO-d_6, 125.00 MHz).

1-benzyl-6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-4-oxo-1,4-dihydroquinoline-3-carboxylic acid (11e)

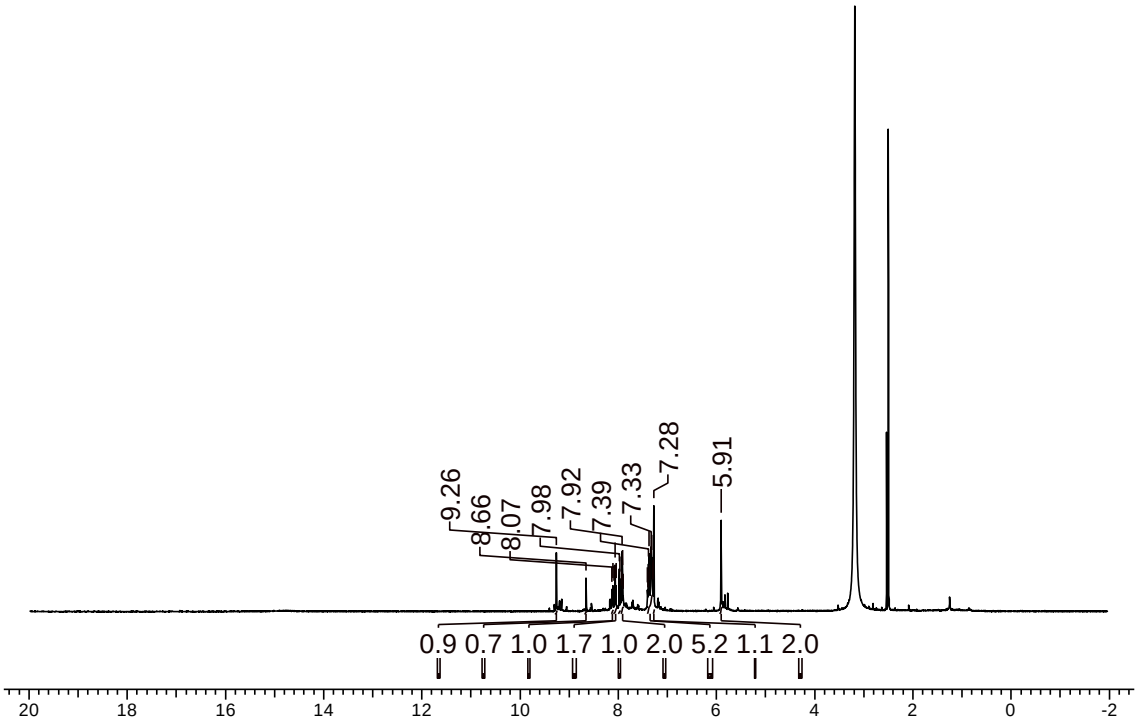

Figure S28. ^{1}H NMR spectrum of derivative **11e** (DMSO-d_6, 500.00 MHz).

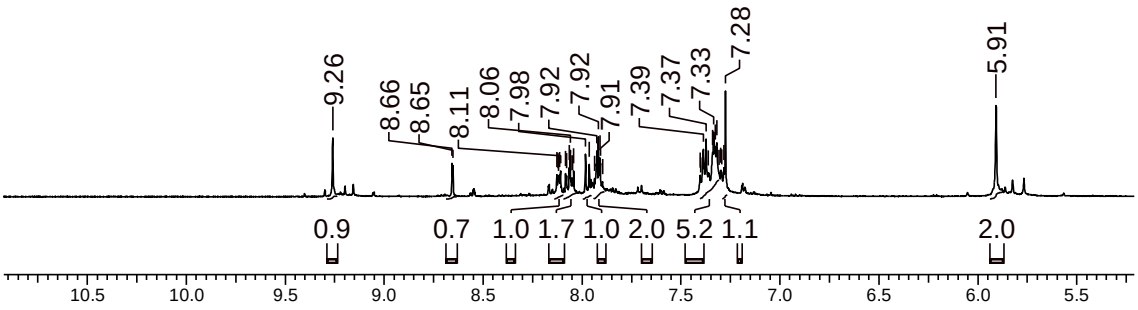

Figure S29. Expansion of the ^{1}H NMR spectrum of derivative **11e** (DMSO-d_6, 500.00 MHz).

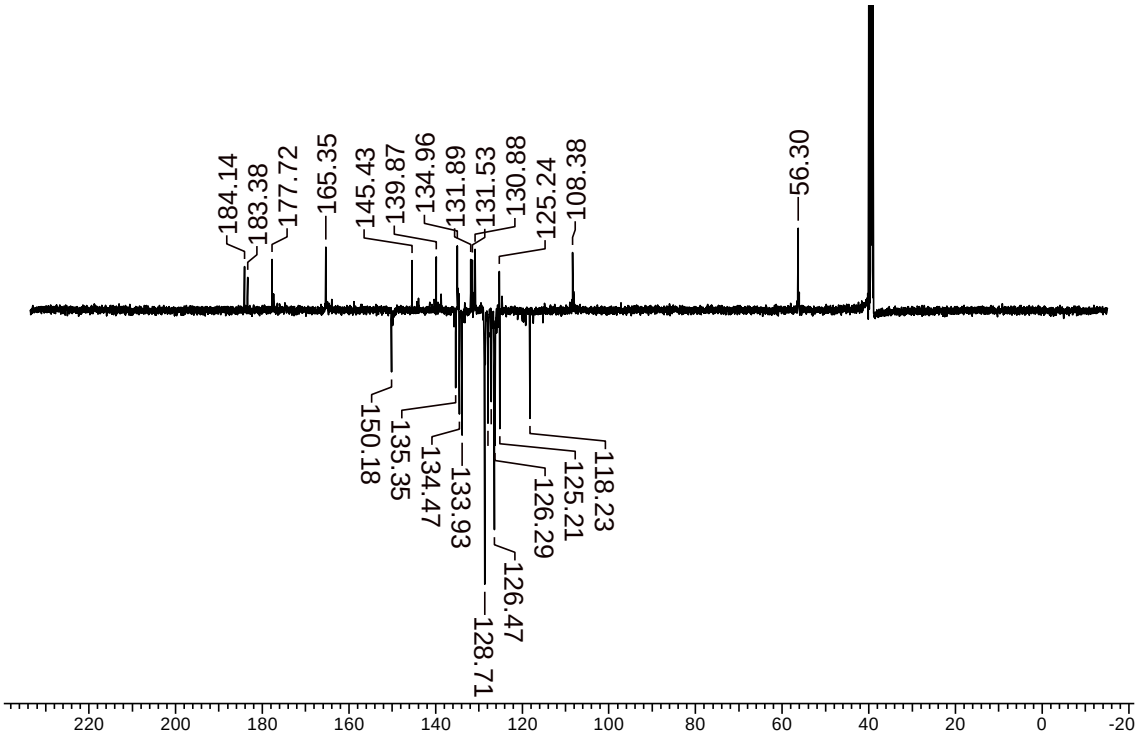

Figure S30. Expansion of the ^{13}C-APT NMR spectrum of derivative **11**e (DMSO-d_6, 125.00 MHz).

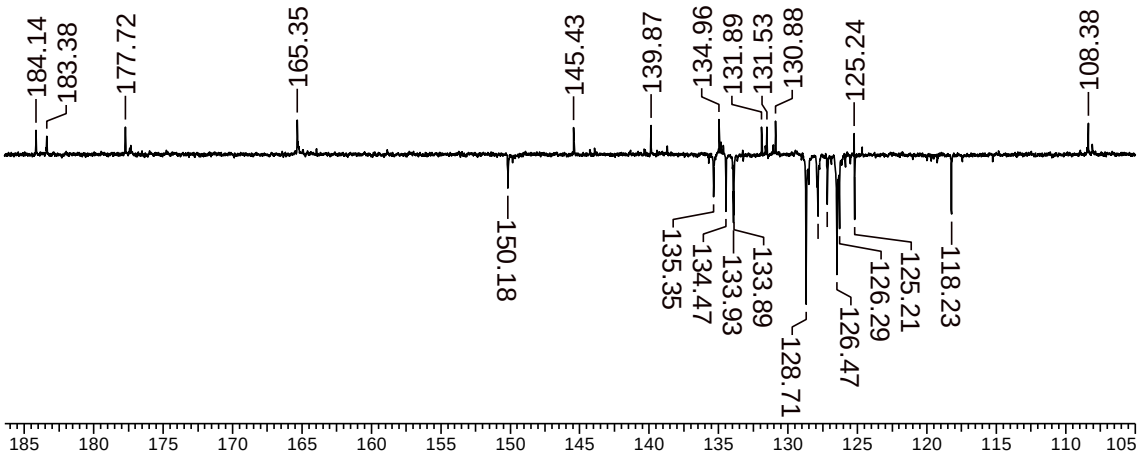

Figure S31. Expansion of the ^{13}C-APT NMR spectrum of derivative **11e** (DMSO-d_6, 125.00 MHz).

6-(1,4-dioxo-1,4-dihydronaphthalen-2-yl)-4-oxo-1-pentyl-1,4-dihydroquinoline-3-carboxylic acid (11f)

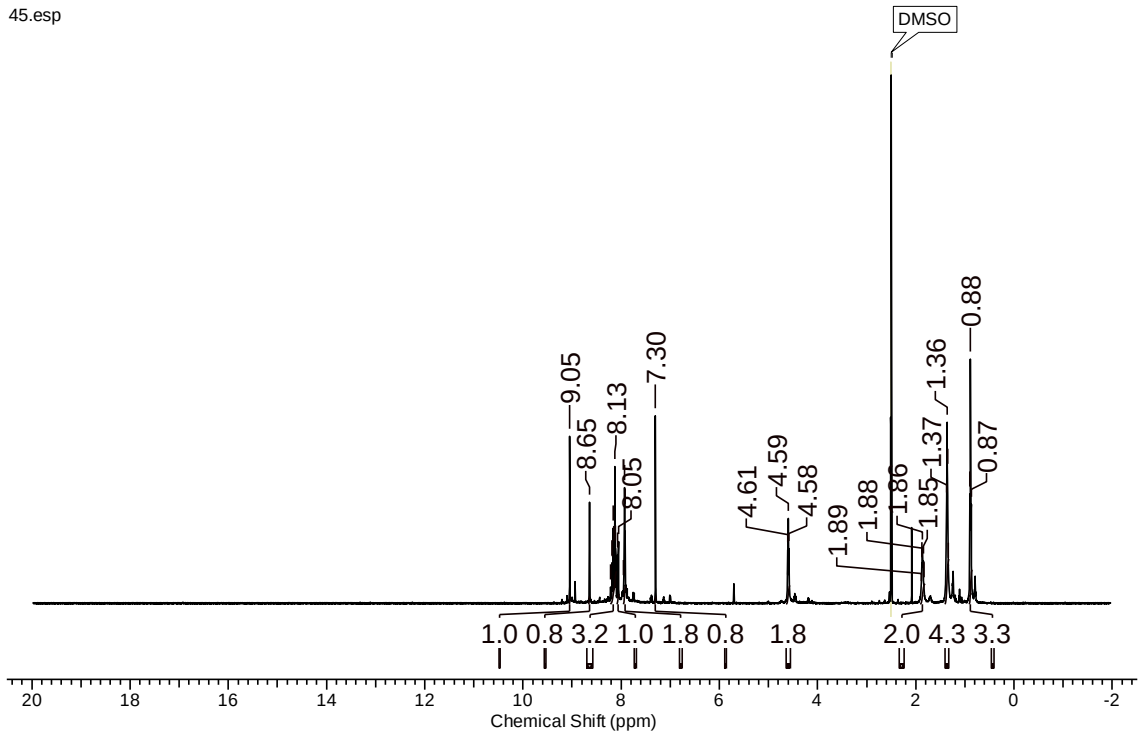

Figure S32. ^{1}H NMR spectrum of derivative **11f** (DMSO-d_6, 500.00 MHz).

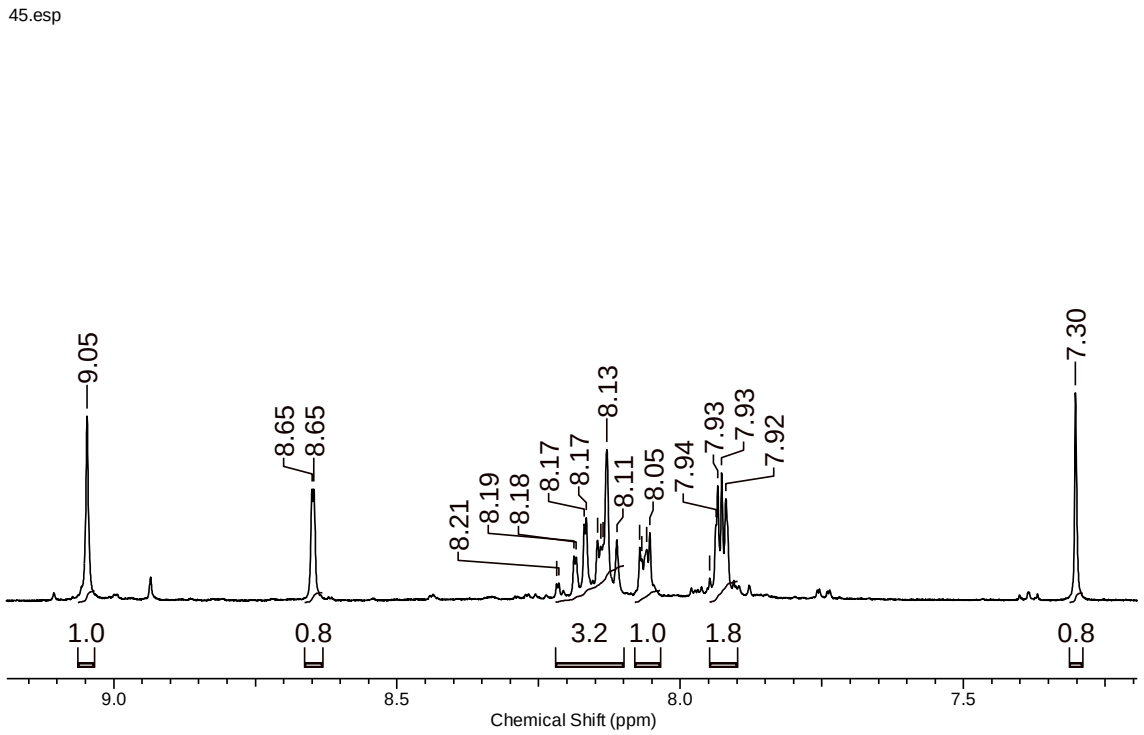

Figure S33. Expansion of the ^{1}H NMR spectrum of derivative **11f** (DMSO-d_6, 500.00 MHz).

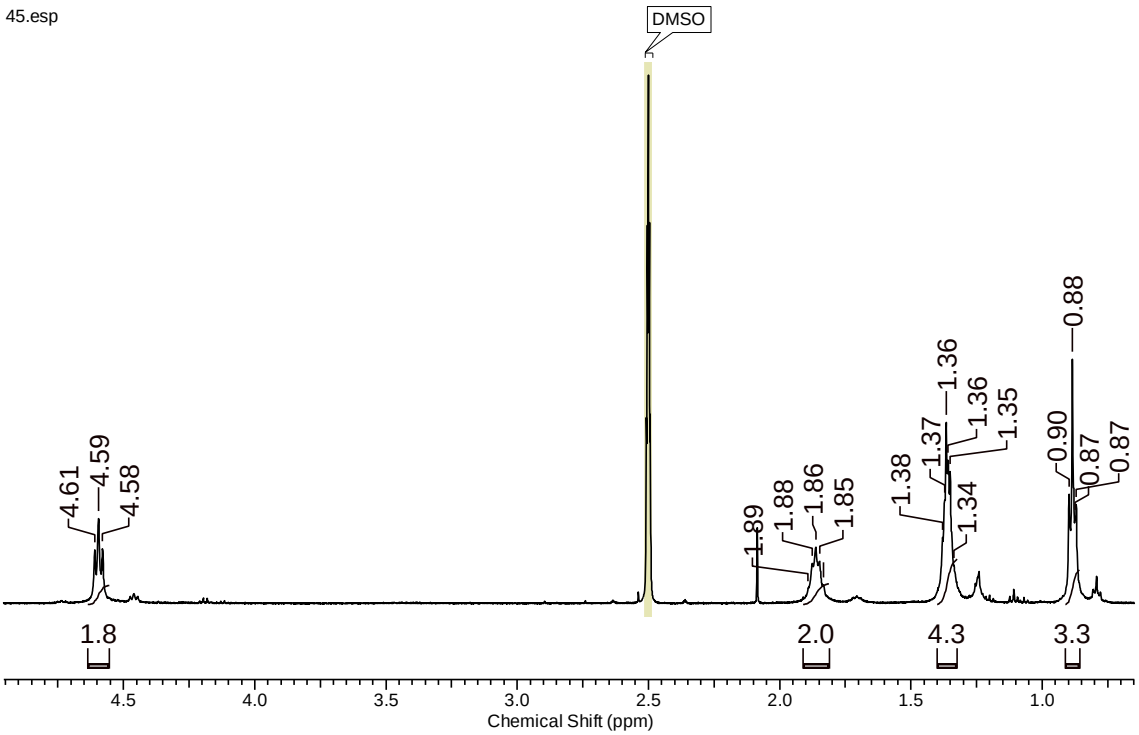

Figure S34. Expansion of the ^{1}H NMR spectrum of derivative **11f** (DMSO-d_6, 500.00 MHz).

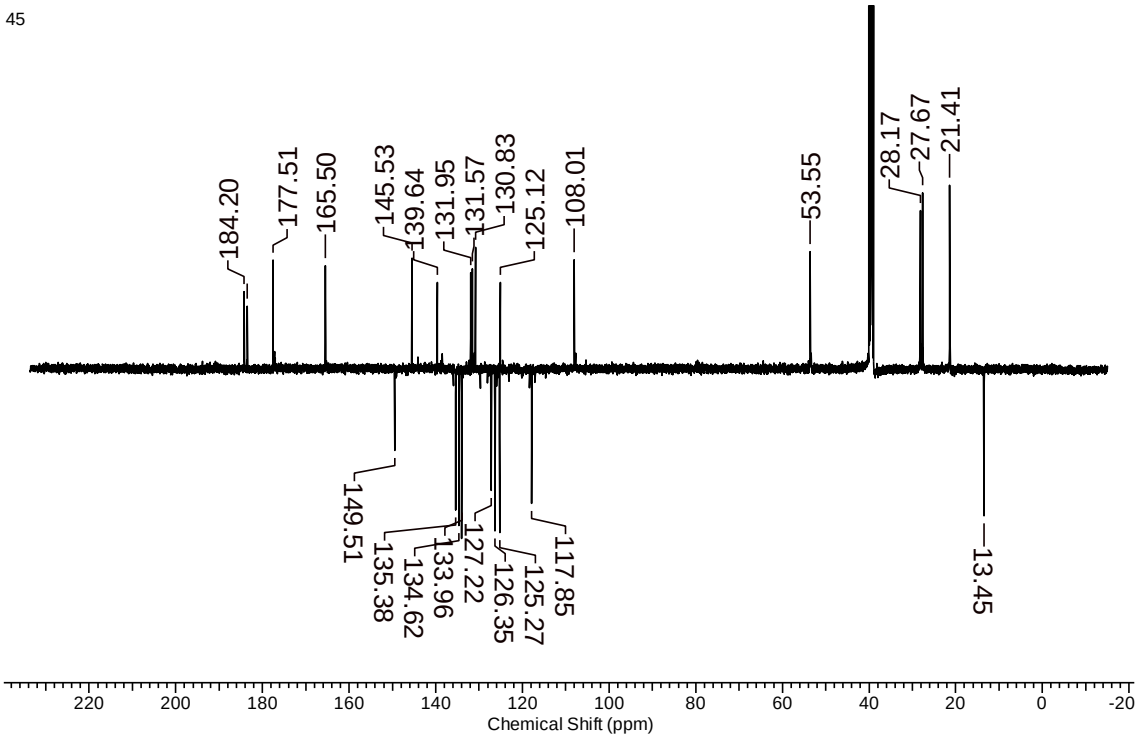

Figure S35. ^{13}C-APT NMR spectrum of derivative **11f** (DMSO-d_6, 125.00 MHz).

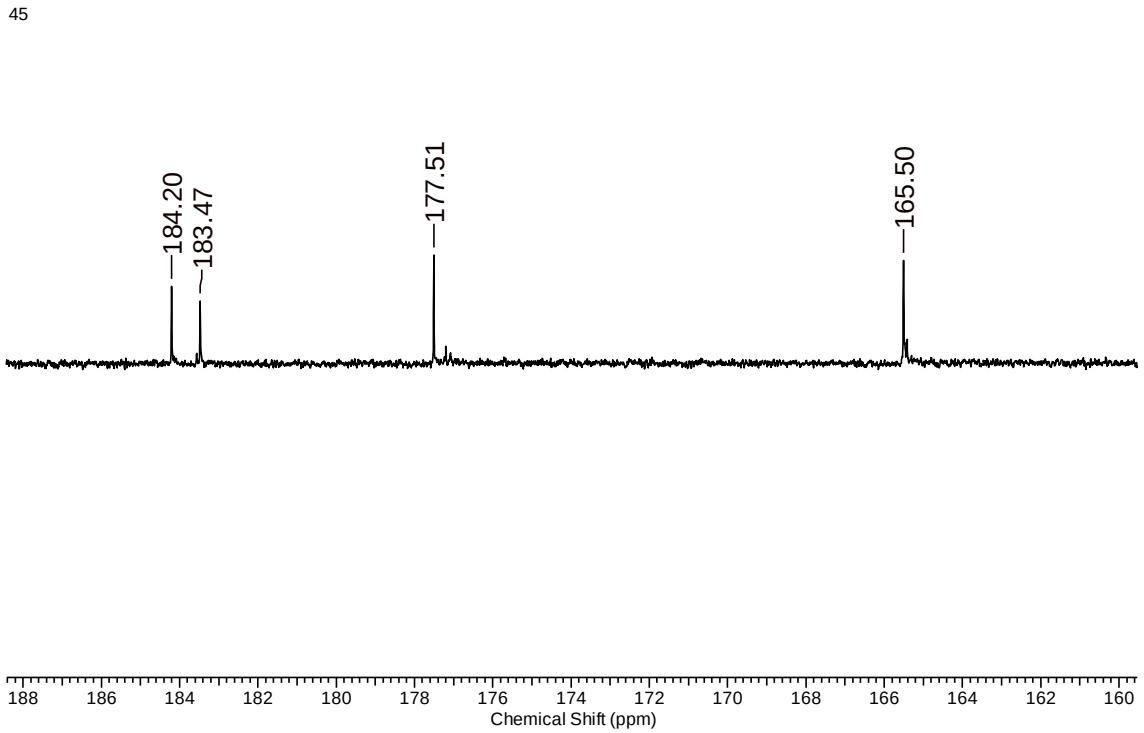

Figure S36. Expansion of the ^{13}C-APT NMR spectrum of derivative **11f** (DMSO-d_6, 125.00 MHz).

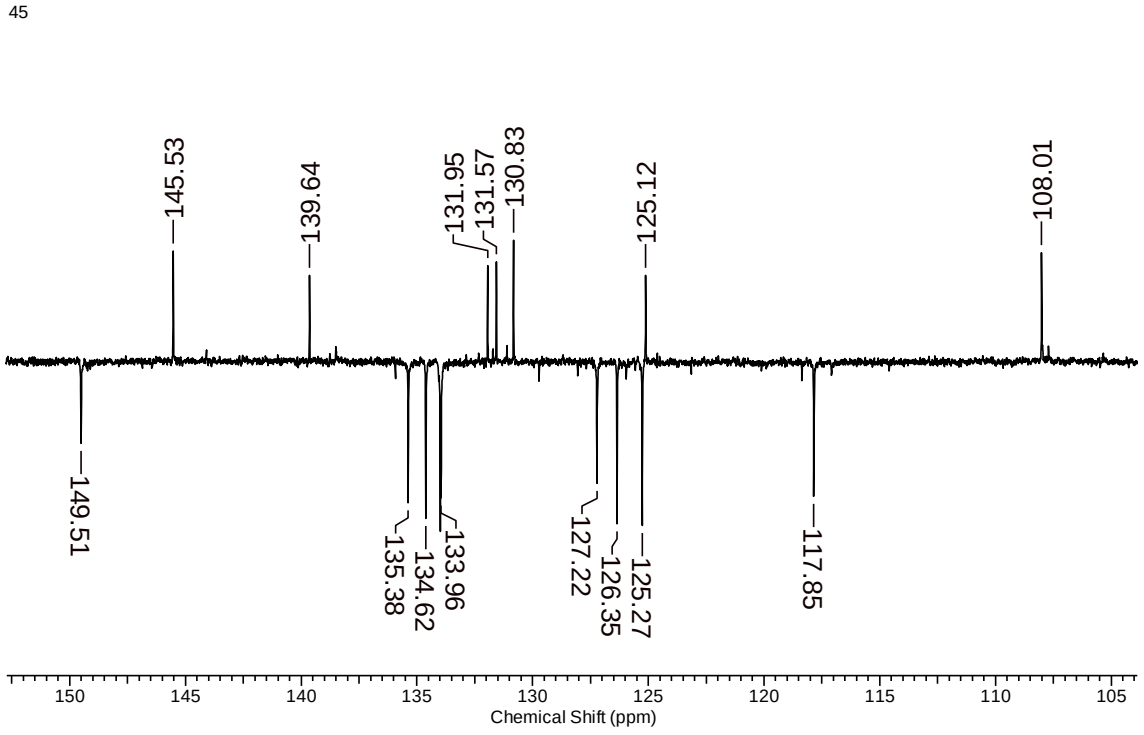

Figure S37. Expansion of the ^{13}C-APT NMR spectrum of derivative **11f** (DMSO-d_6, 125.00 MHz).

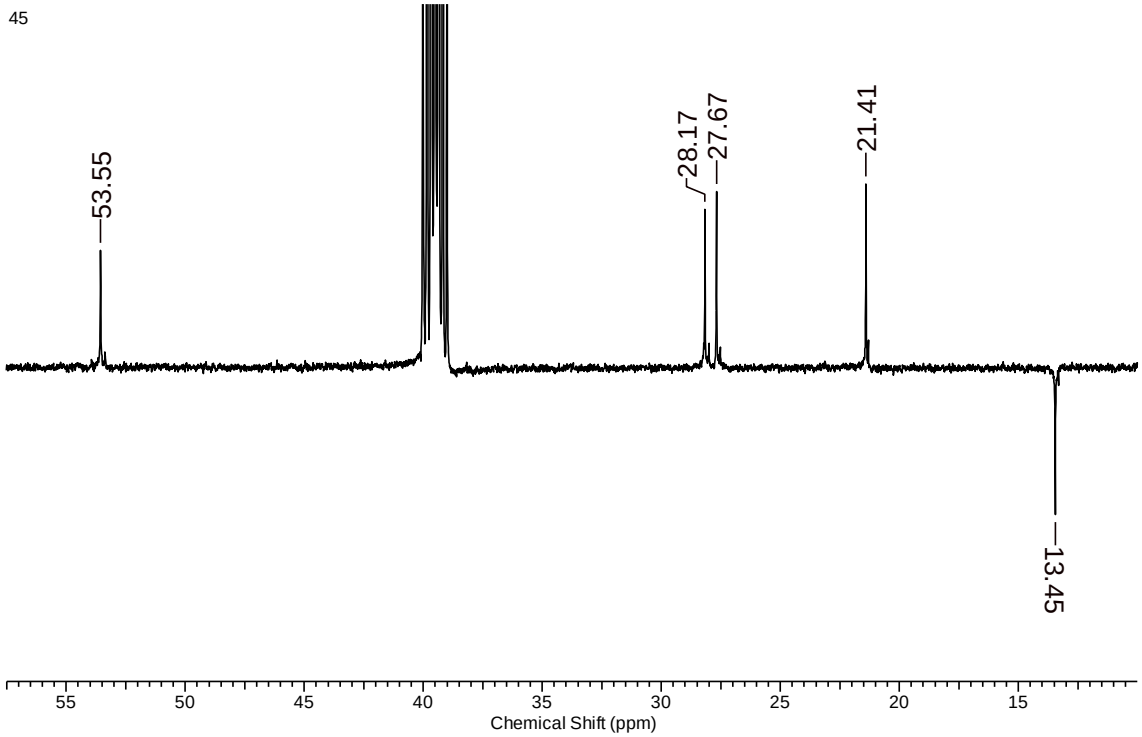

Figure S38. Expansion of the ^{13}C-APT NMR spectrum of derivative **11f** (DMSO-d_6, 125.00 MHz).