

Eu₂O₃ modified CeO₂ nanoparticles as heterogeneous catalyst for an efficient green multicomponent synthesis of novel phenyldiazenyl-acridinedione-carboxylic acid derivatives in aqueous medium

P. Sagar Vijay Kumar,^a L. Suresh,^a T. Vinodkumar,^a and G.V.P. Chandramouli^{a,*}

^aDepartment of Chemistry, National Institute of Technology, Warangal, 506 004, Telangana, India.

Tel.: +91-870-246-2660, Fax: +91-870-245-9547

*E-mail: gypc2000@gmail.com

Supplementary Information

Fig. S1- S36. ¹H, ¹³C NMR and Mass spectra of the obtained compounds.....S2 – S19

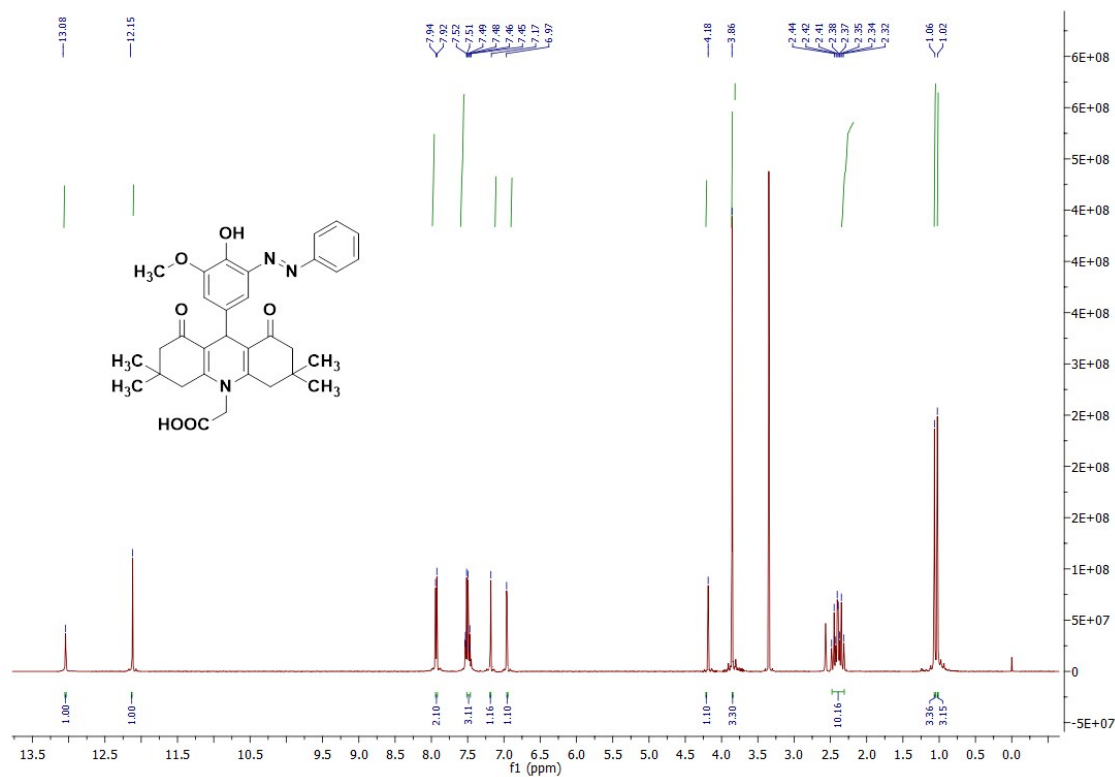


Fig. S1 ¹H NMR spectra of compound 4a

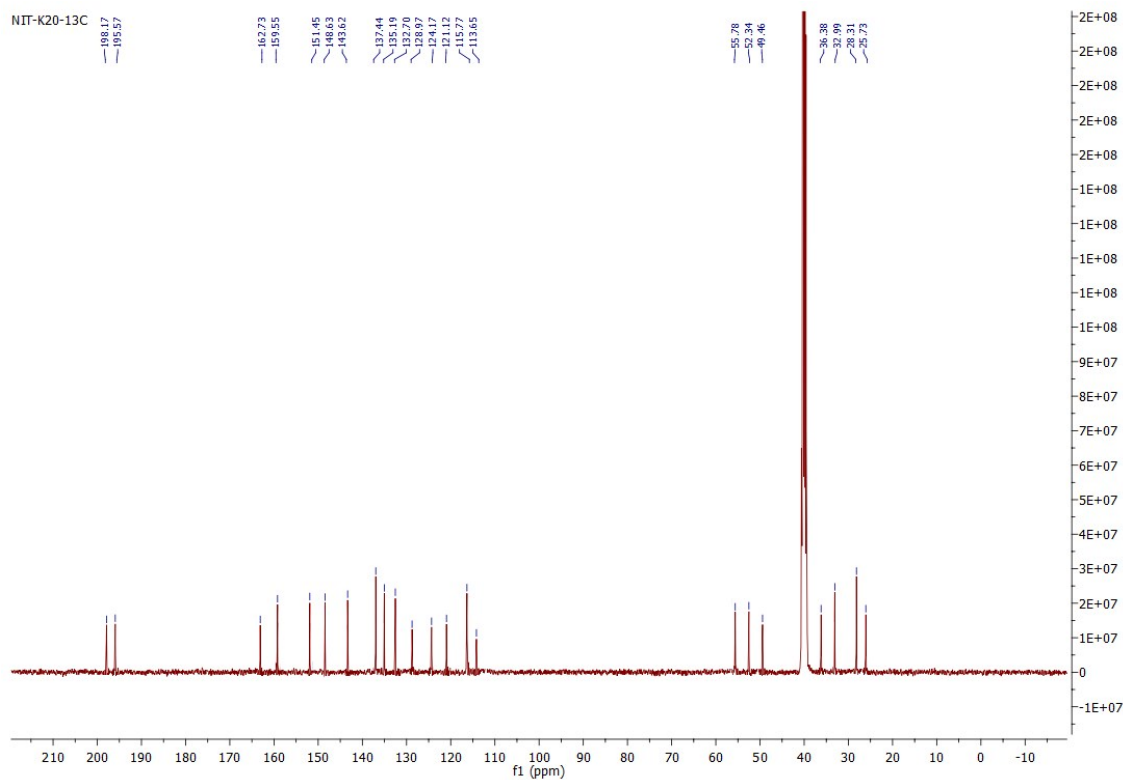


Fig. S2 ¹³C NMR spectra of compound 4a

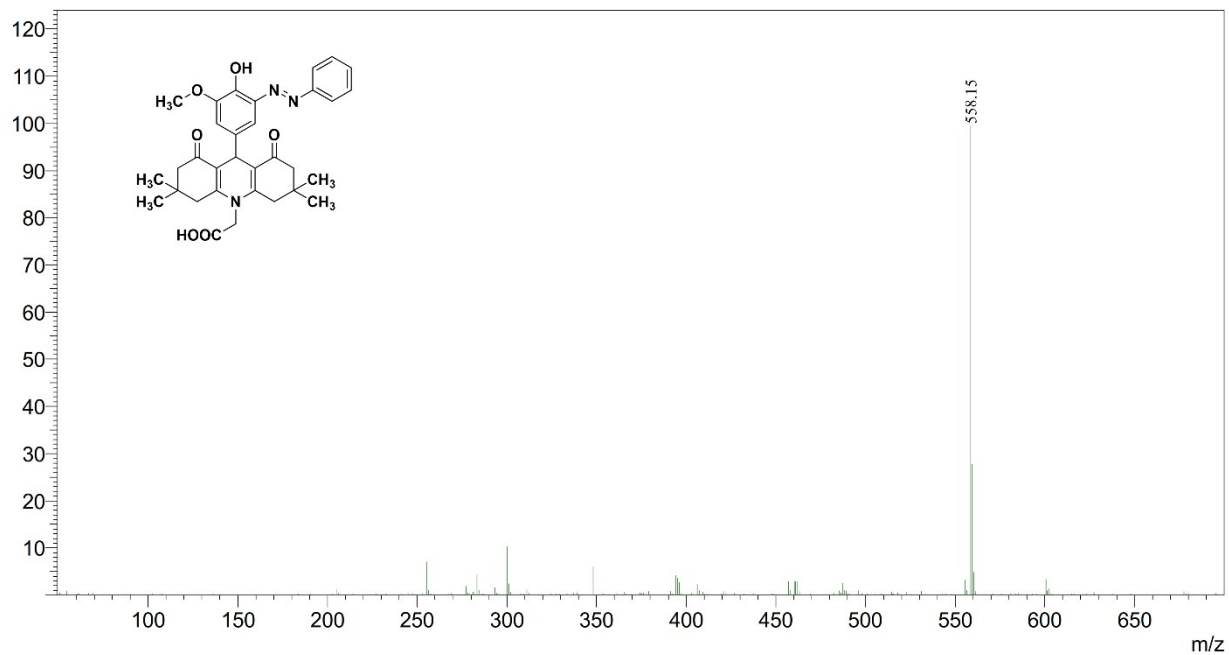


Fig. S3 Mass spectrum of compound **4a**

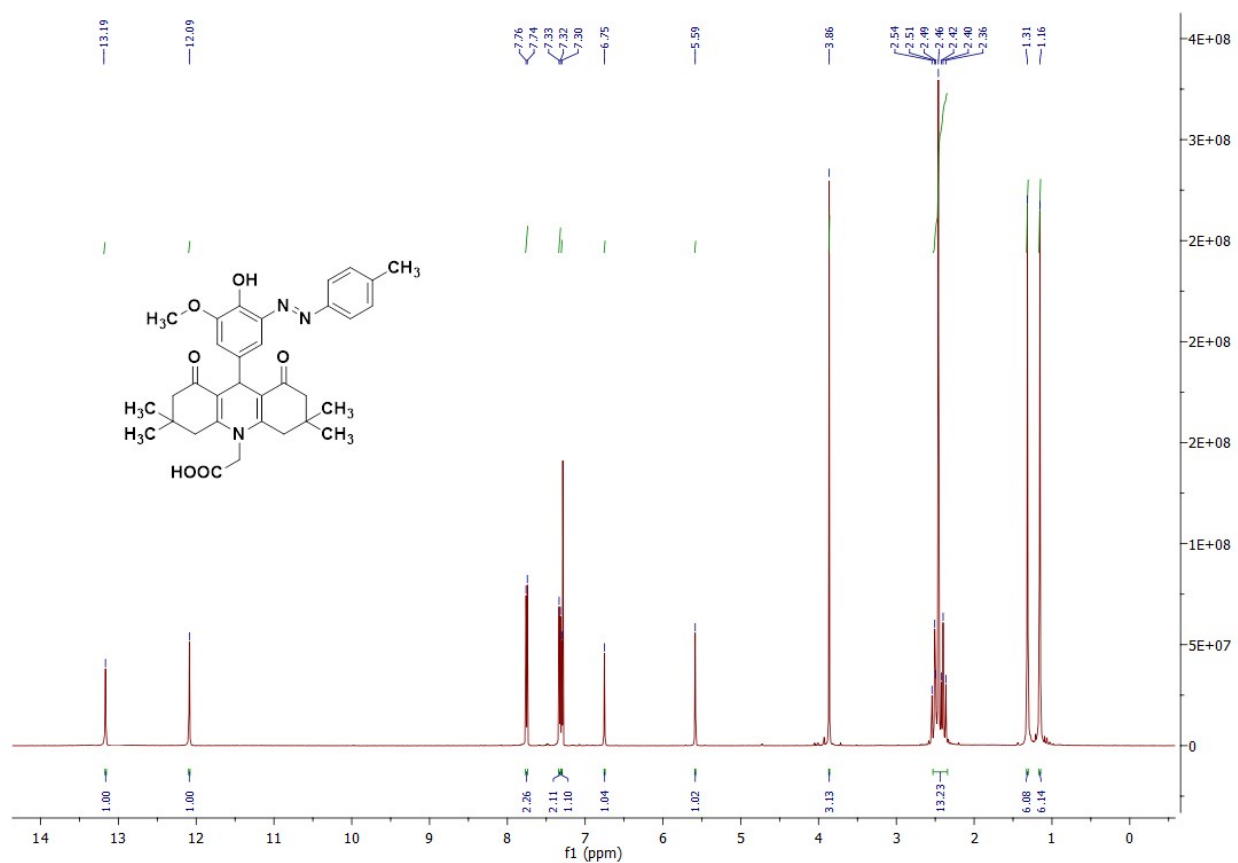


Fig. S4 ¹H NMR spectra of compound **4b**

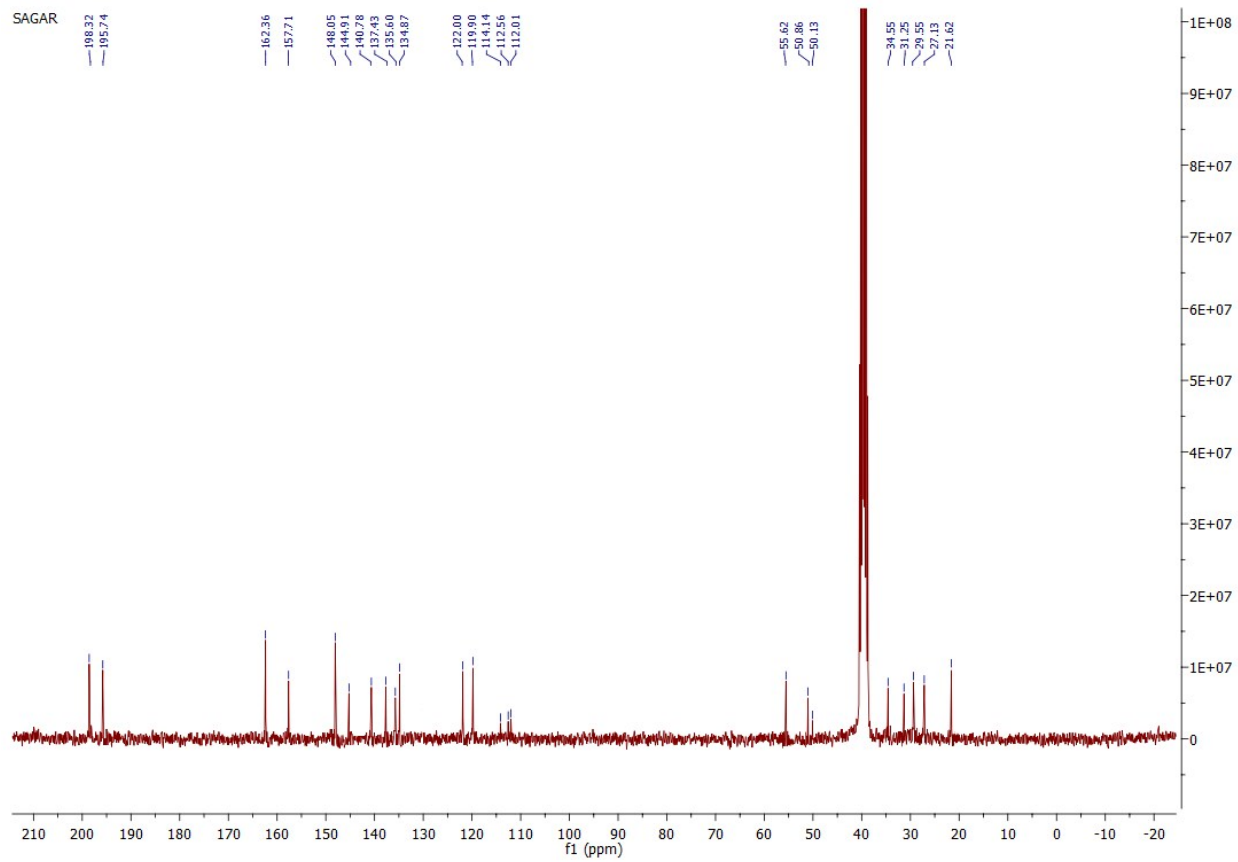


Fig. S5 ^{13}C NMR spectra of compound **4b**

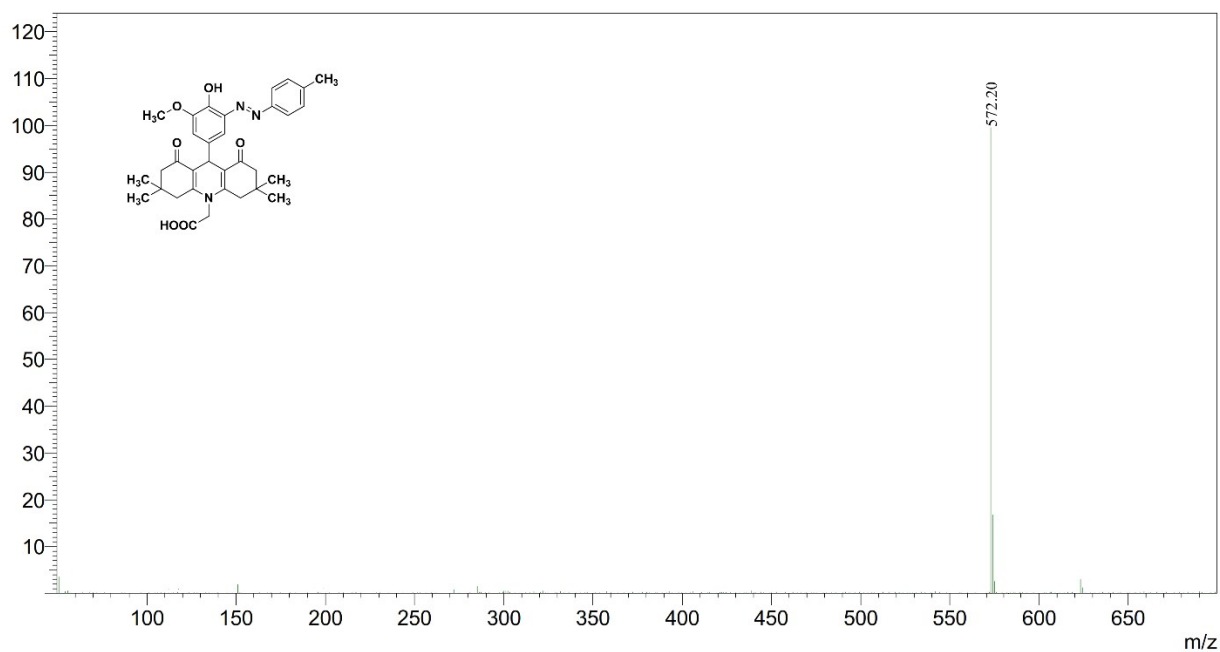


Fig. S6 Mass spectrum of compound **4b**

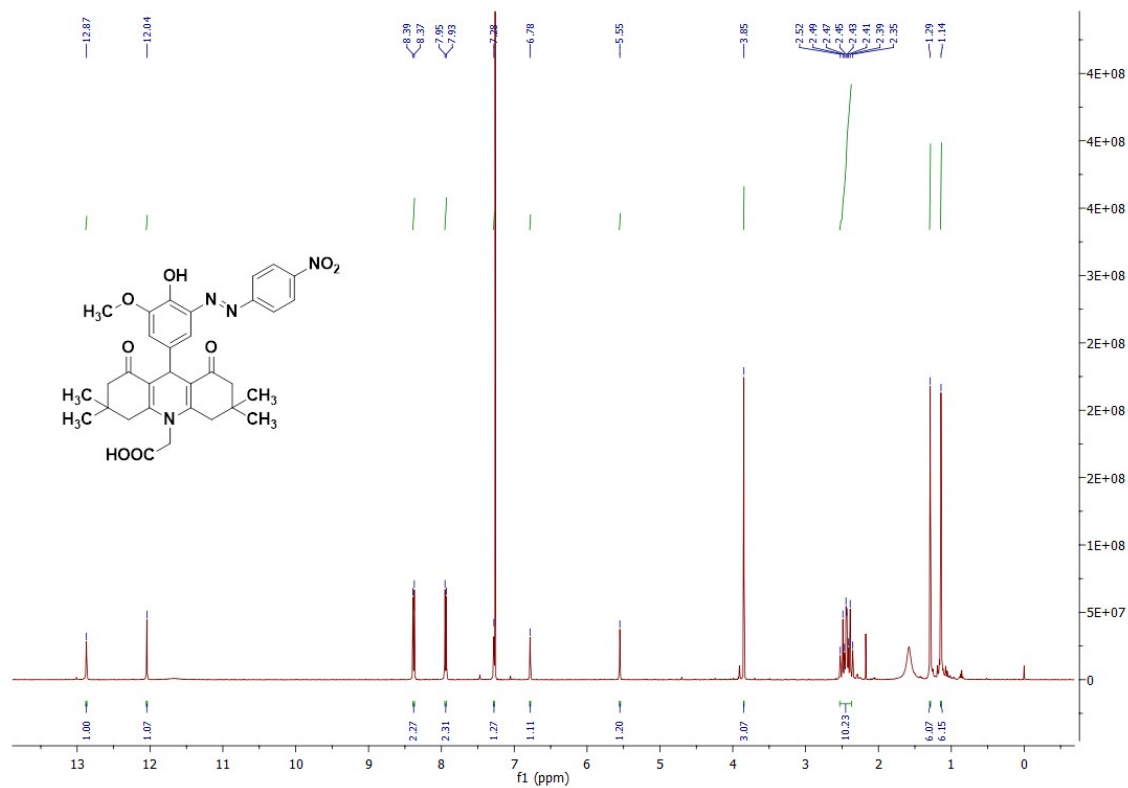


Fig. S7 ¹H NMR spectra of compound 4c

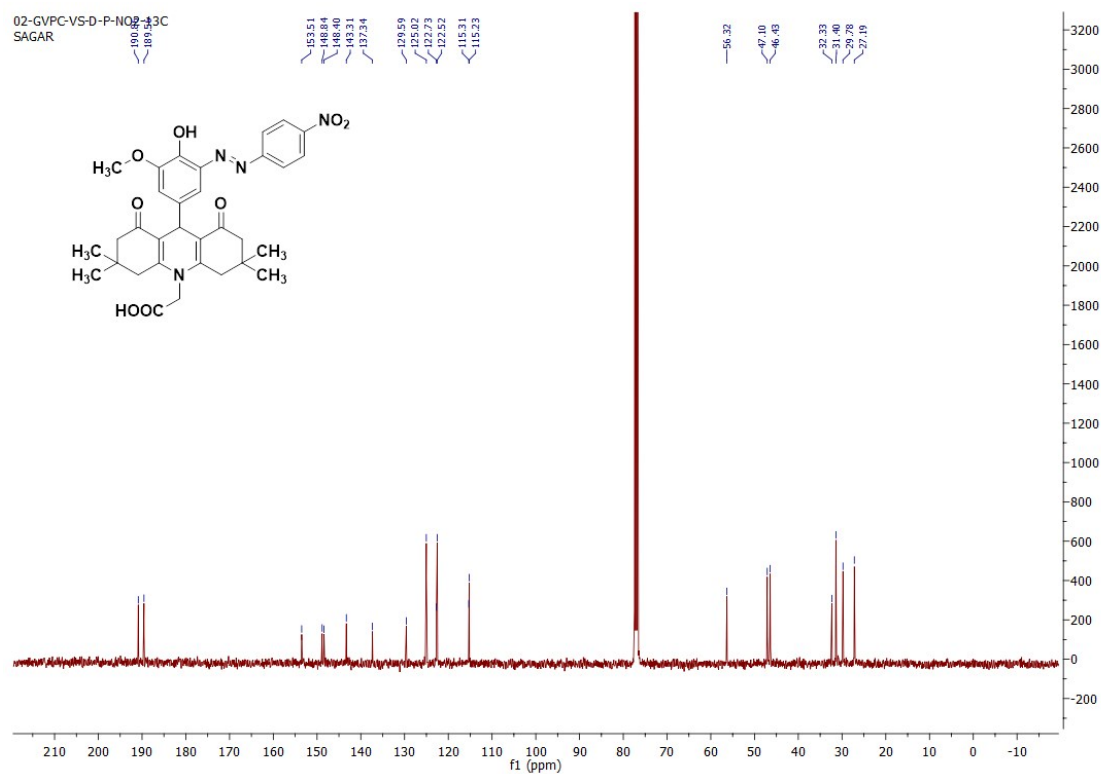


Fig. S8 ¹³C NMR spectra of compound 4c

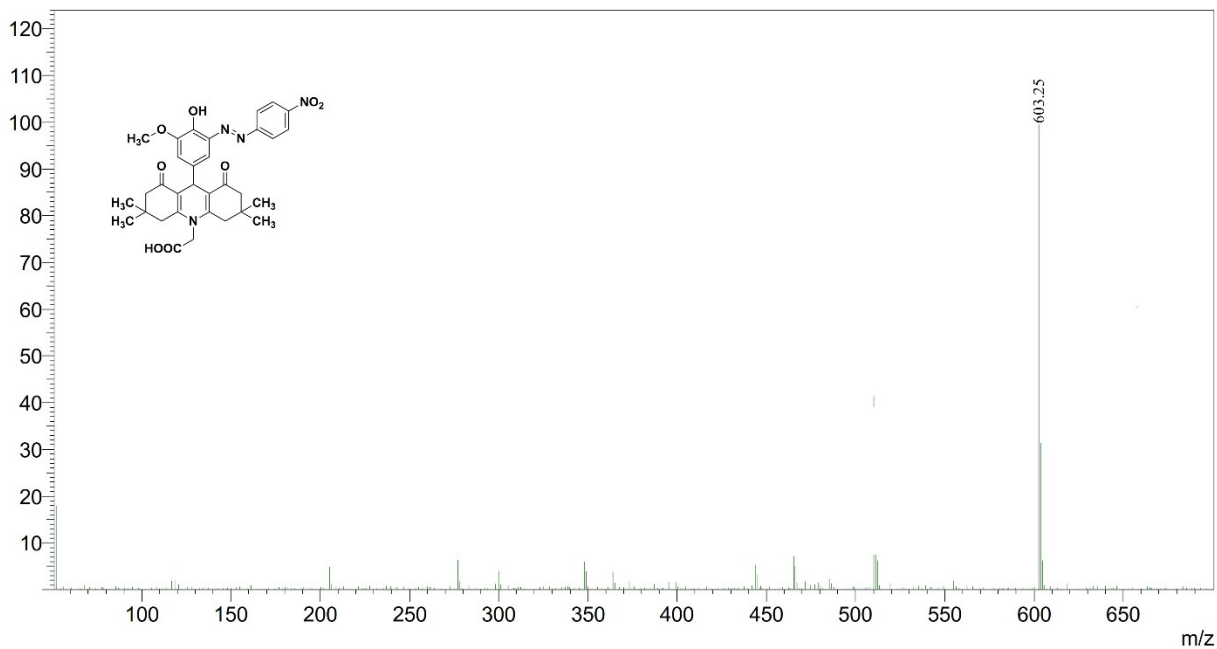


Fig. S9 Mass spectrum of compound **4c**

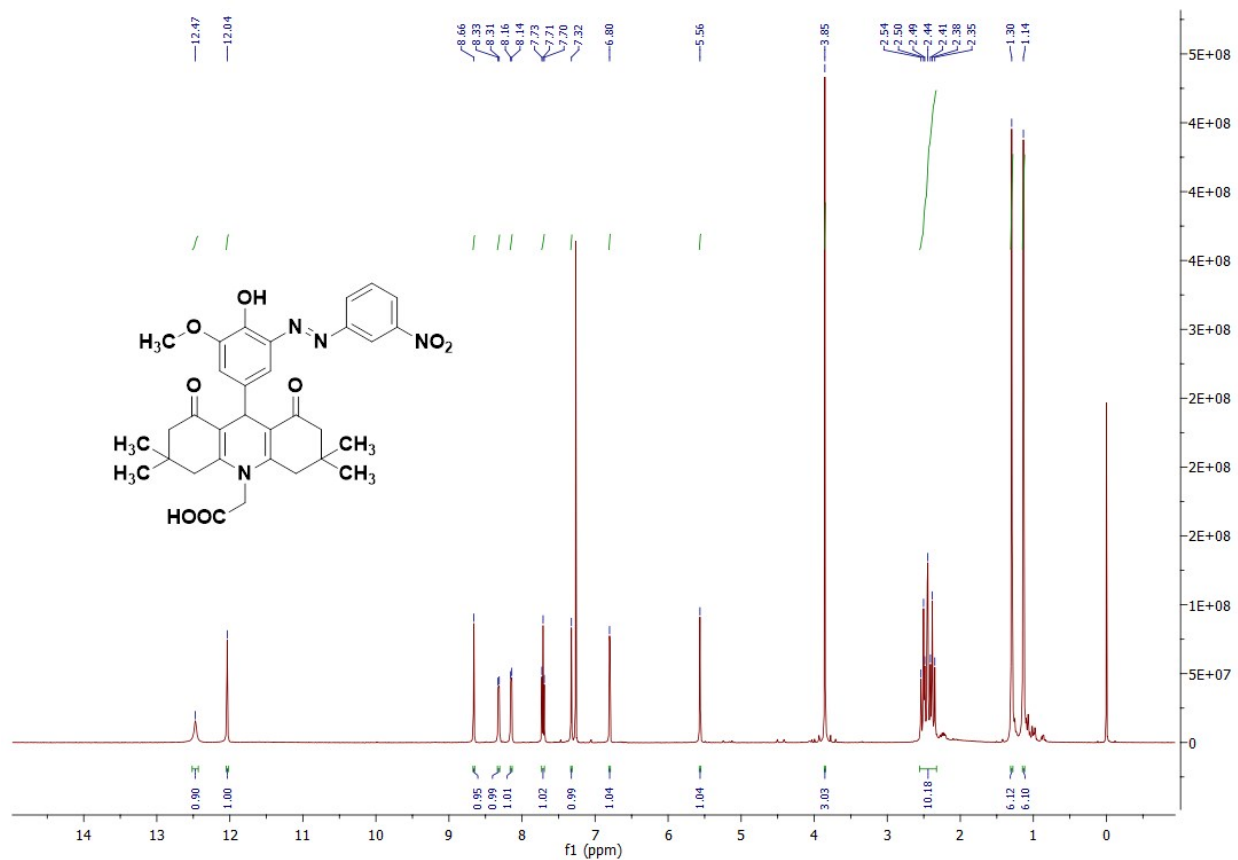


Fig. S10 ^1H NMR spectra of compound **4d**

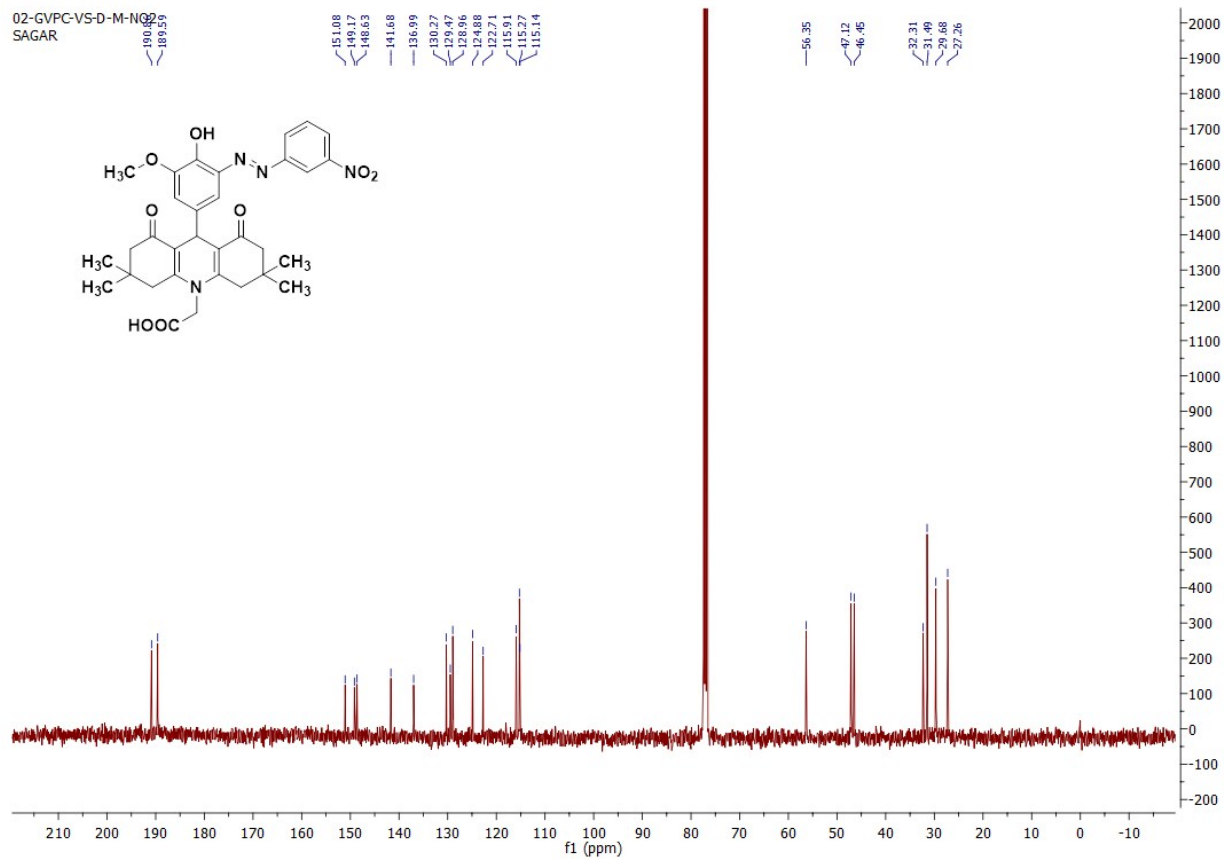


Fig. S11 ¹³C NMR spectra of compound **4d**

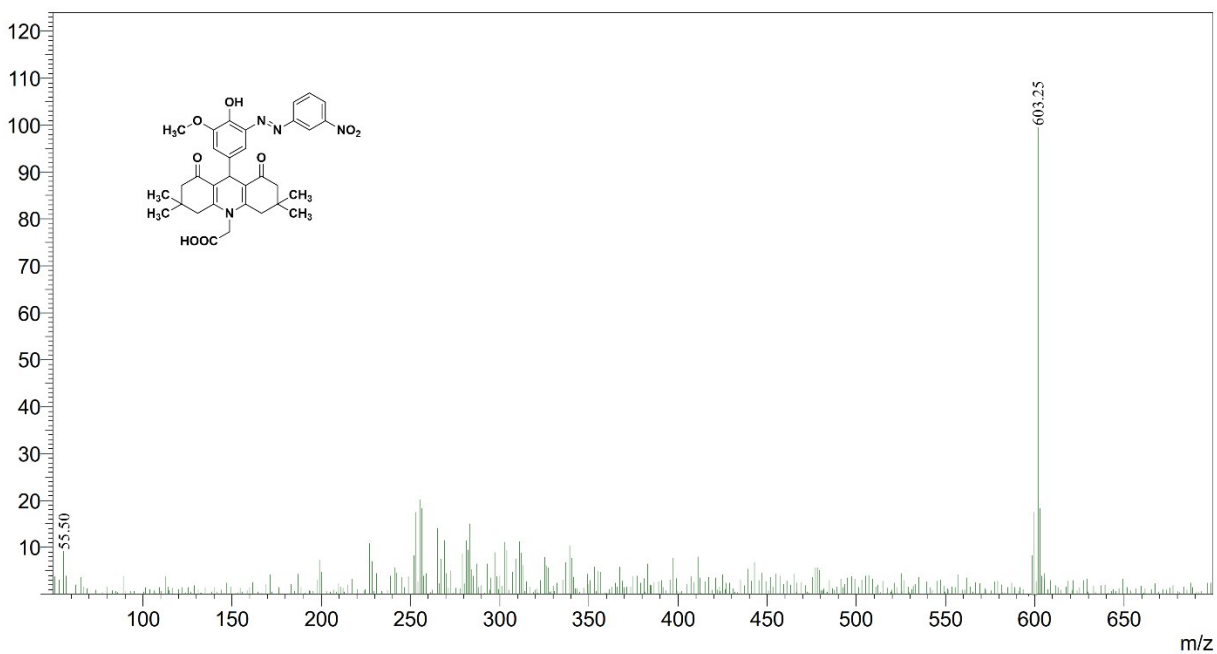


Fig. S12 Mass spectrum of compound **4d**

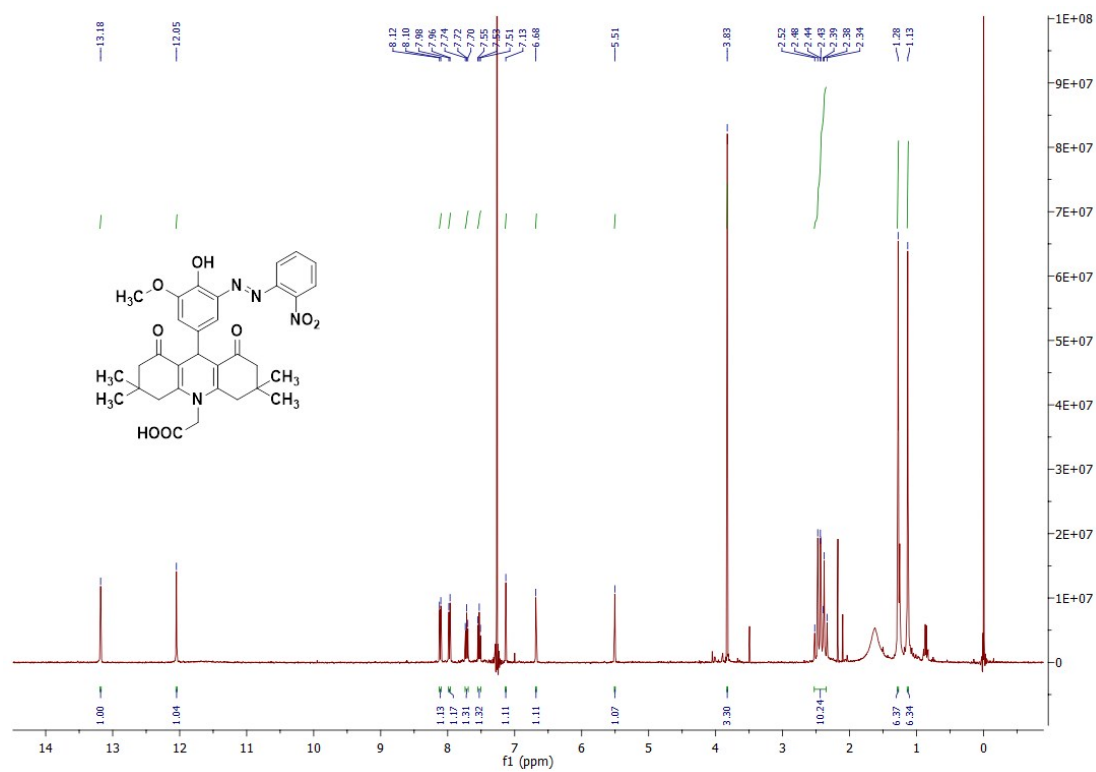


Fig. S13 ^1H NMR spectra of compound **4e**

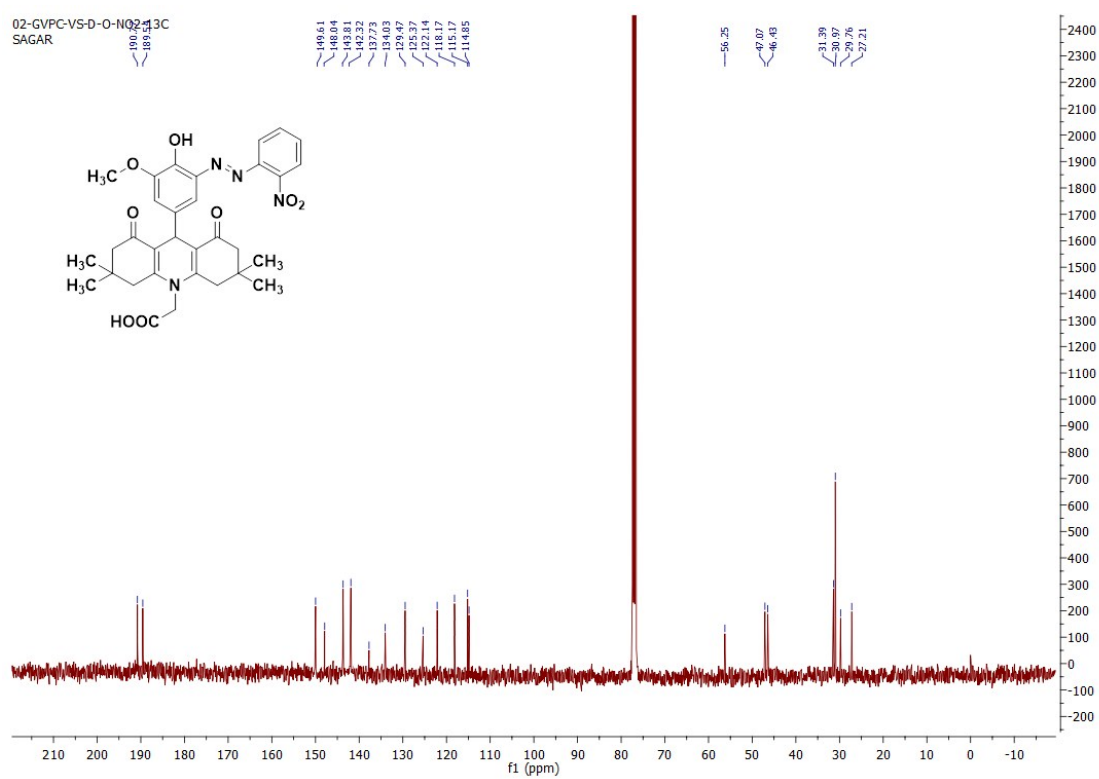


Fig. S14 ^{13}C NMR spectra of compound **4e**

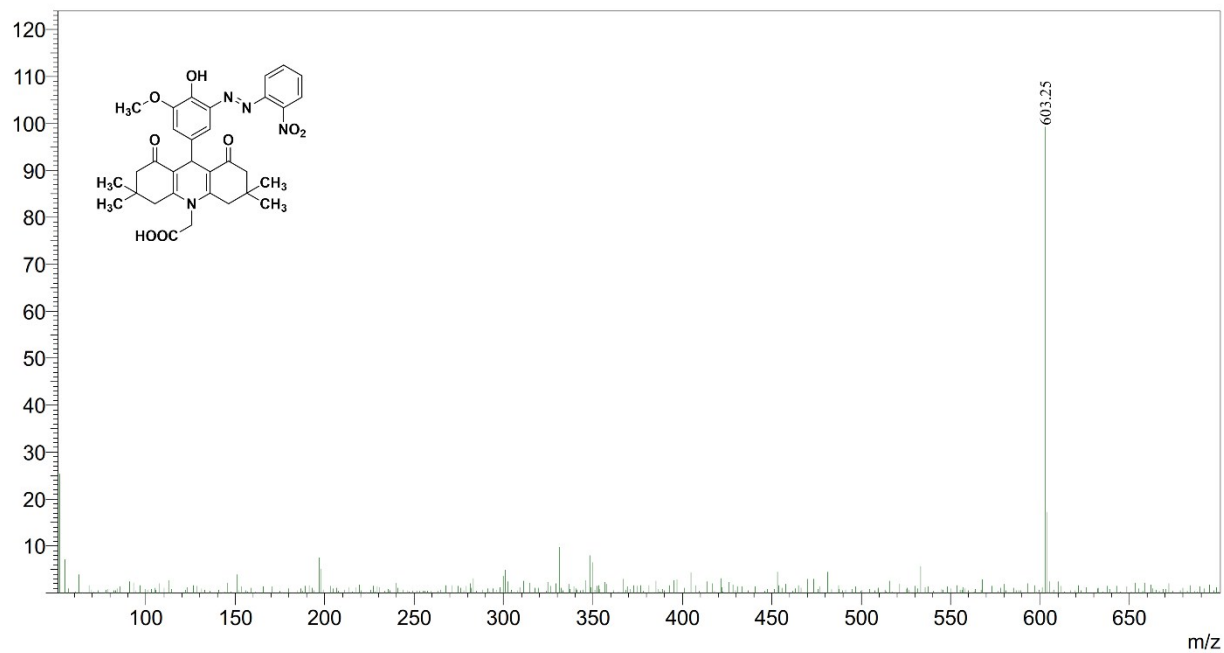


Fig. S15 Mass spectrum of compound **4e**

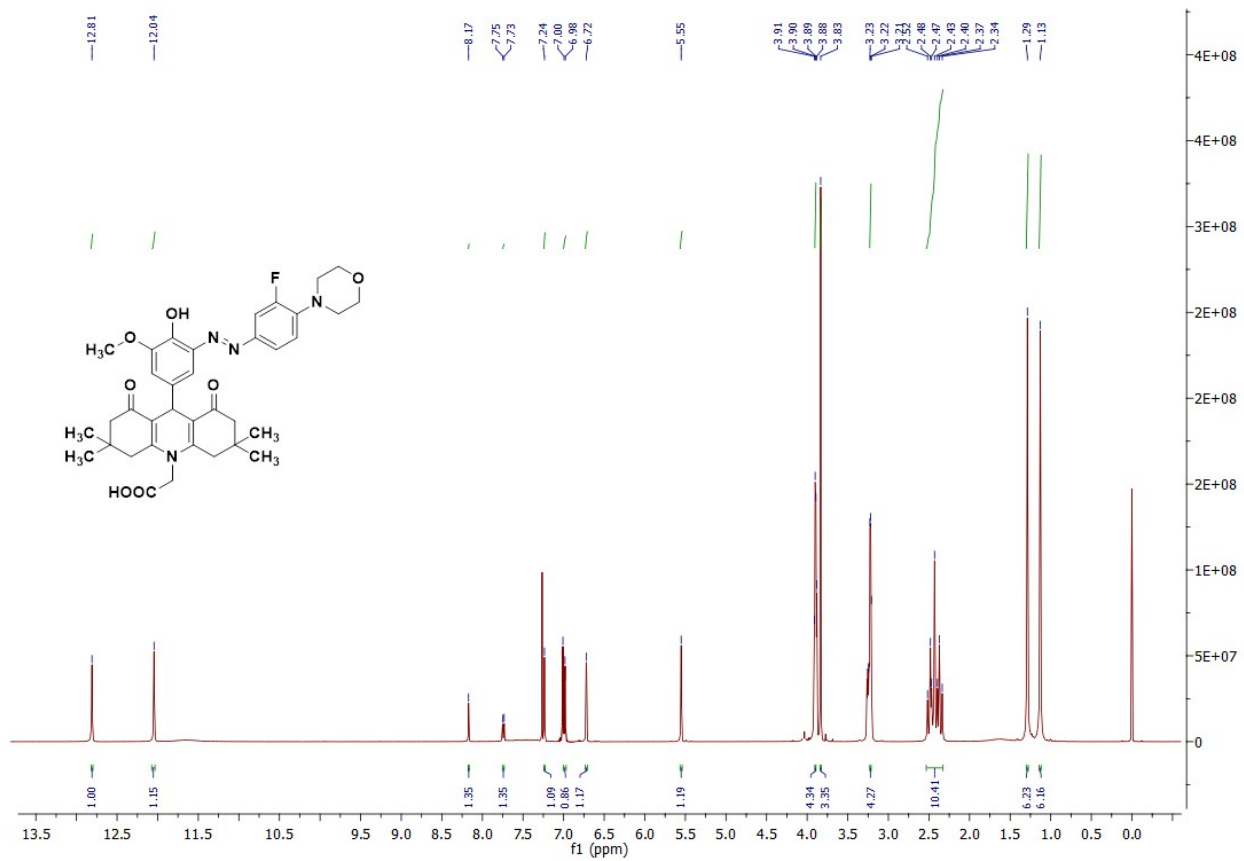


Fig. S16 ^1H NMR spectra of compound **4f**

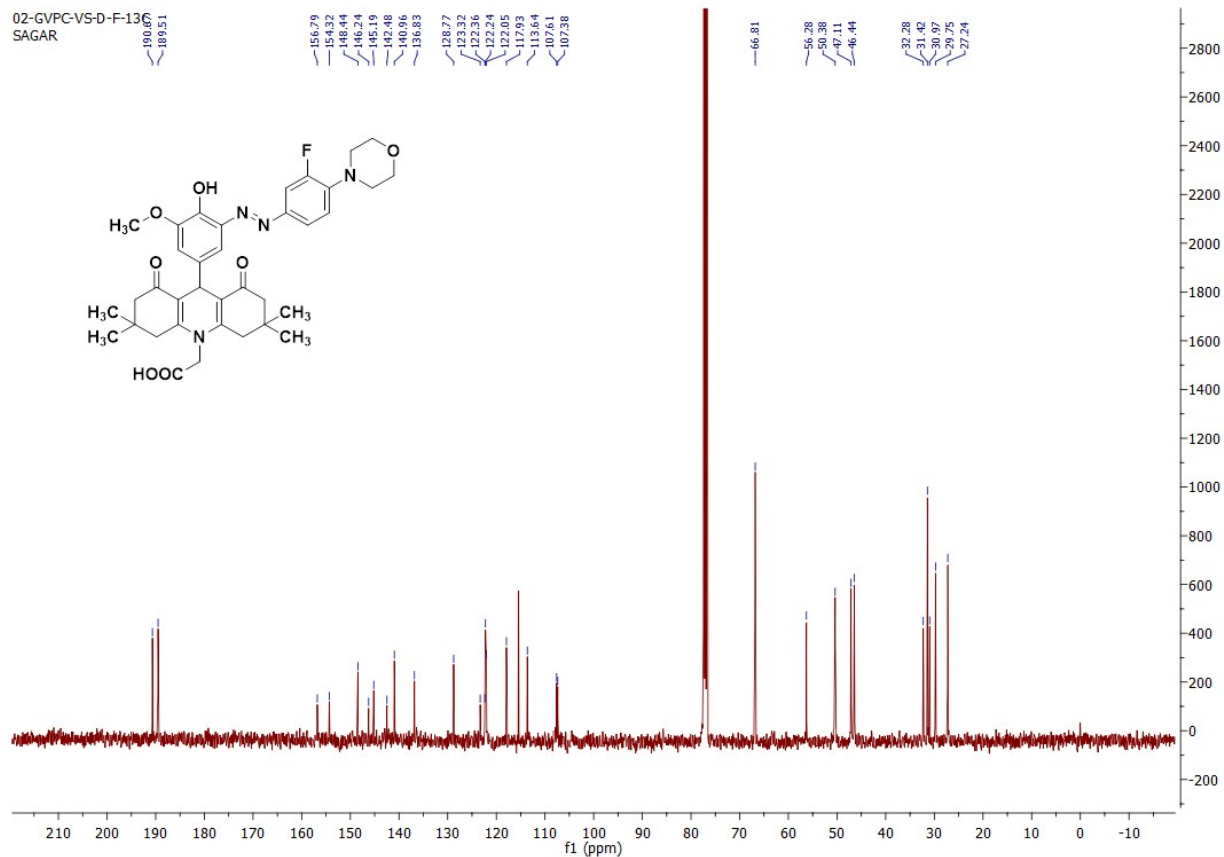


Fig. S17 ^{13}C NMR spectra of compound **4f**

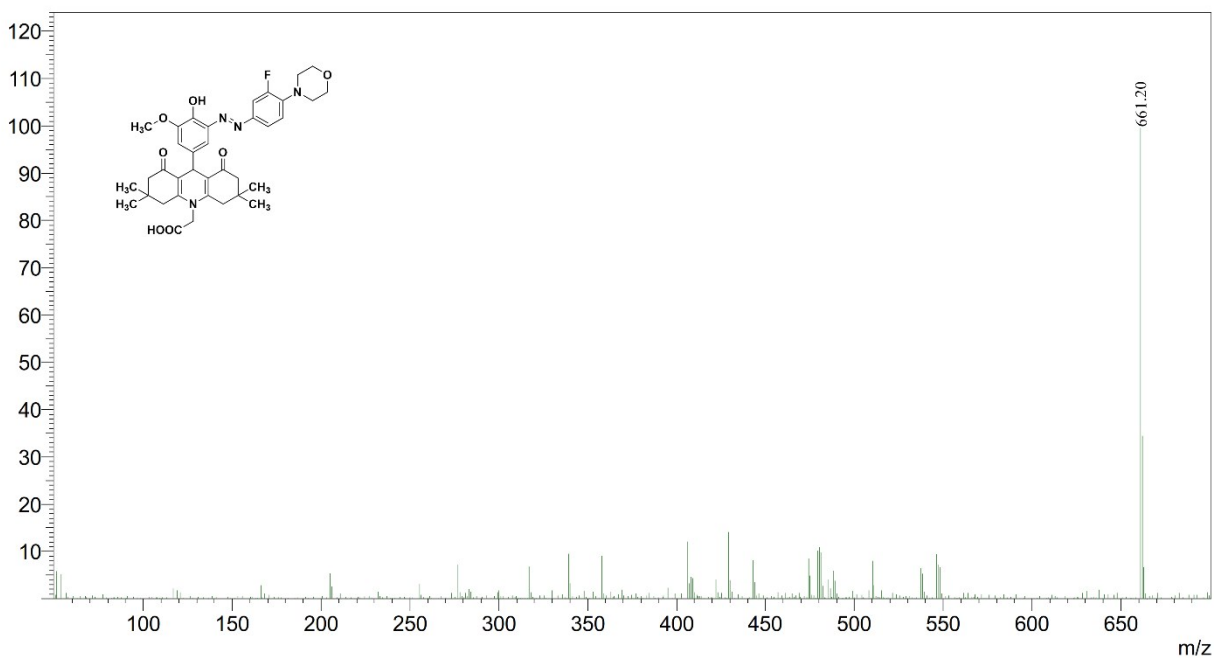


Fig. S18 Mass spectrum of compound **4f**

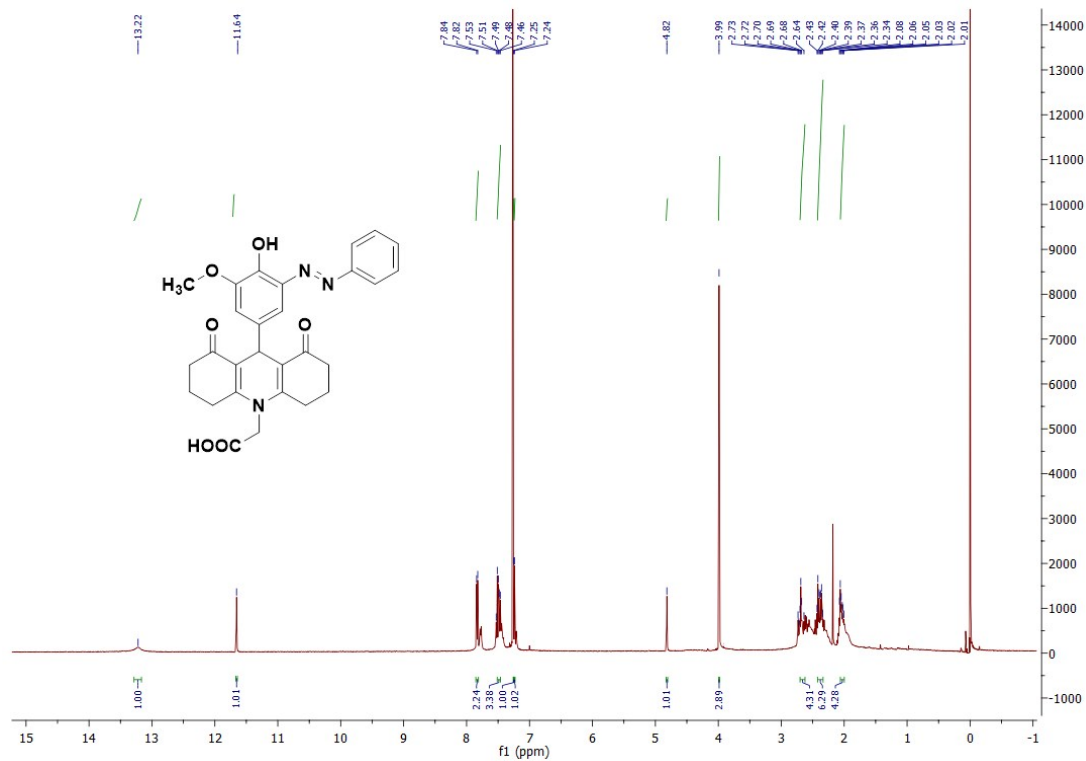


Fig. S19 ¹H NMR spectra of compound **4g**

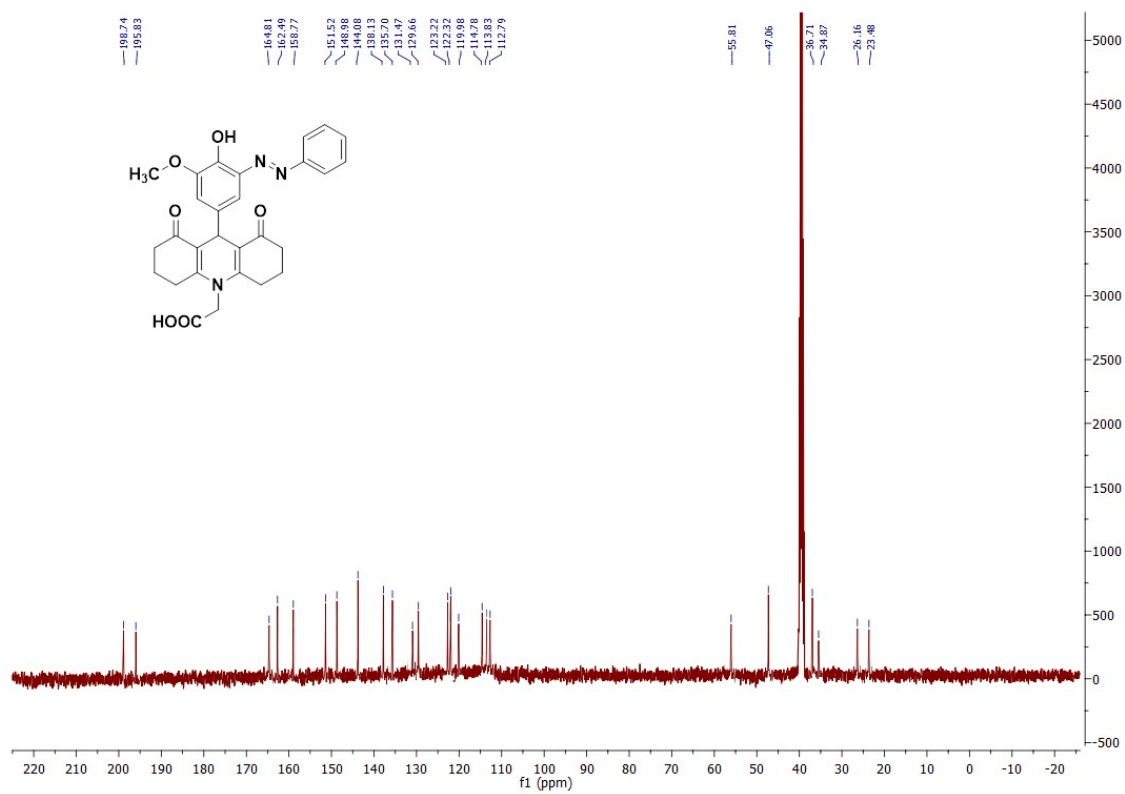


Fig. S20 ¹³C NMR spectra of compound **4g**

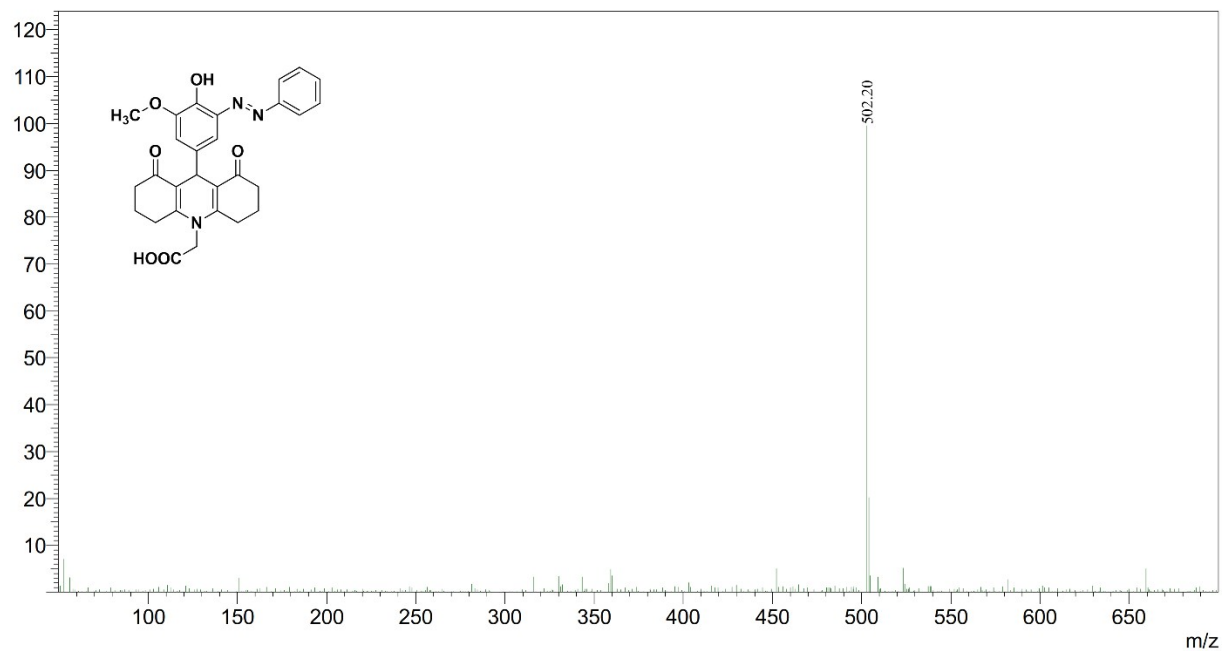


Fig. S21 Mass spectrum of compound **4g**

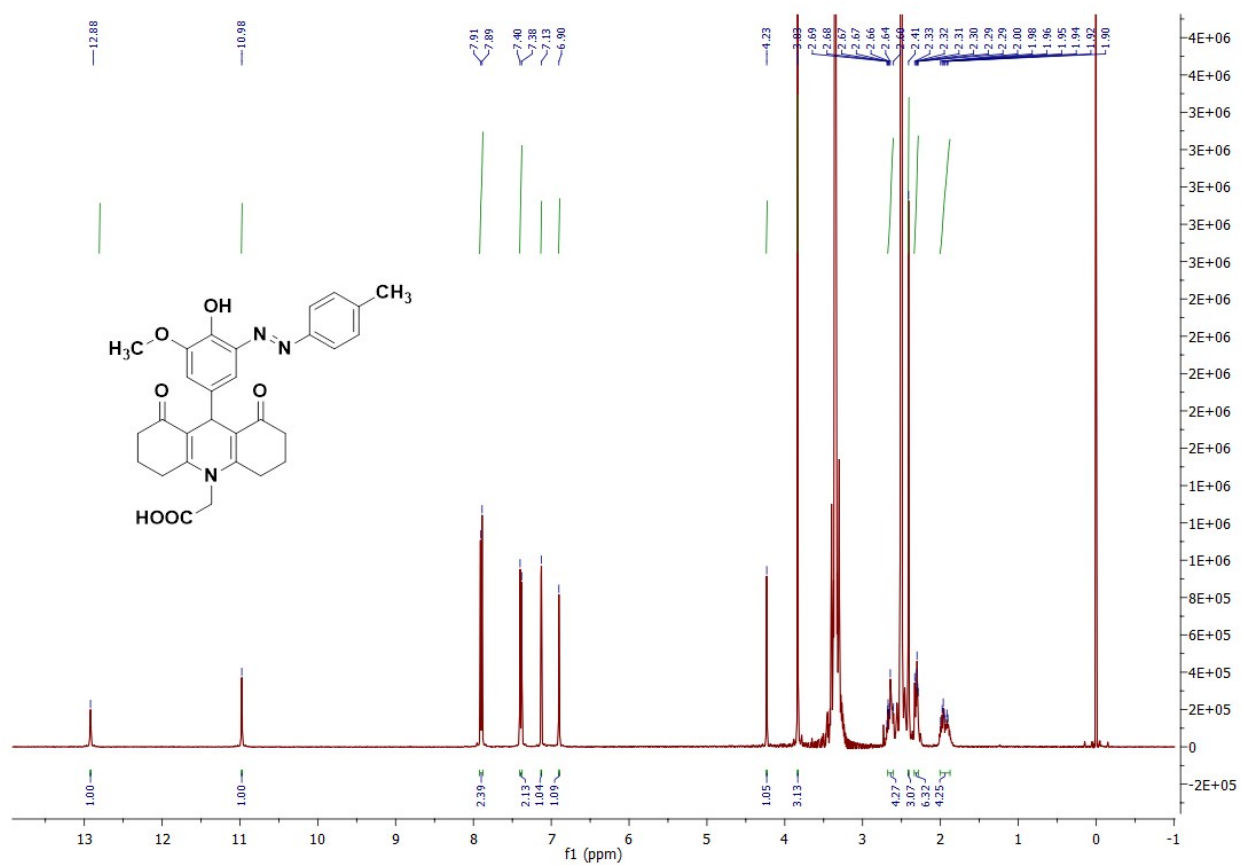


Fig. S22 ¹H NMR spectra of compound **4h**

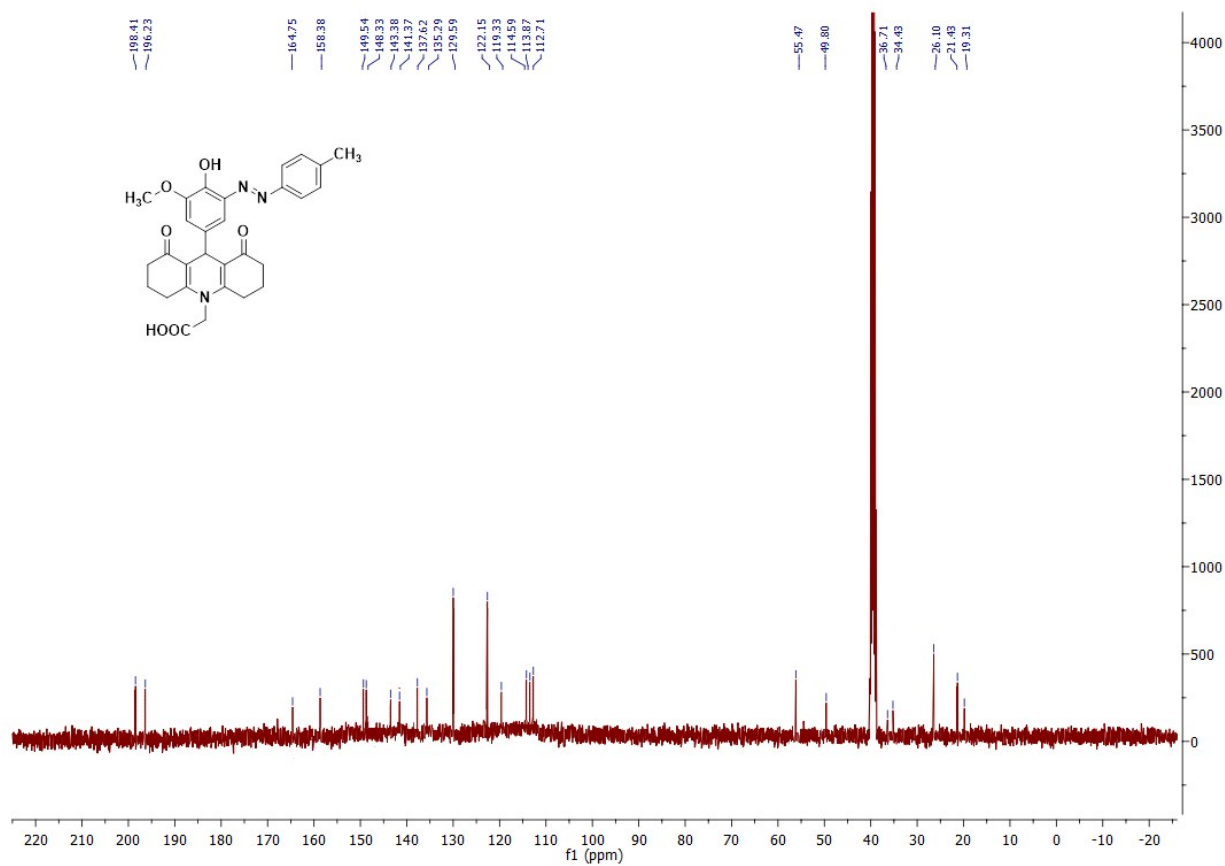


Fig. S23 ^{13}C NMR spectra of compound **4h**

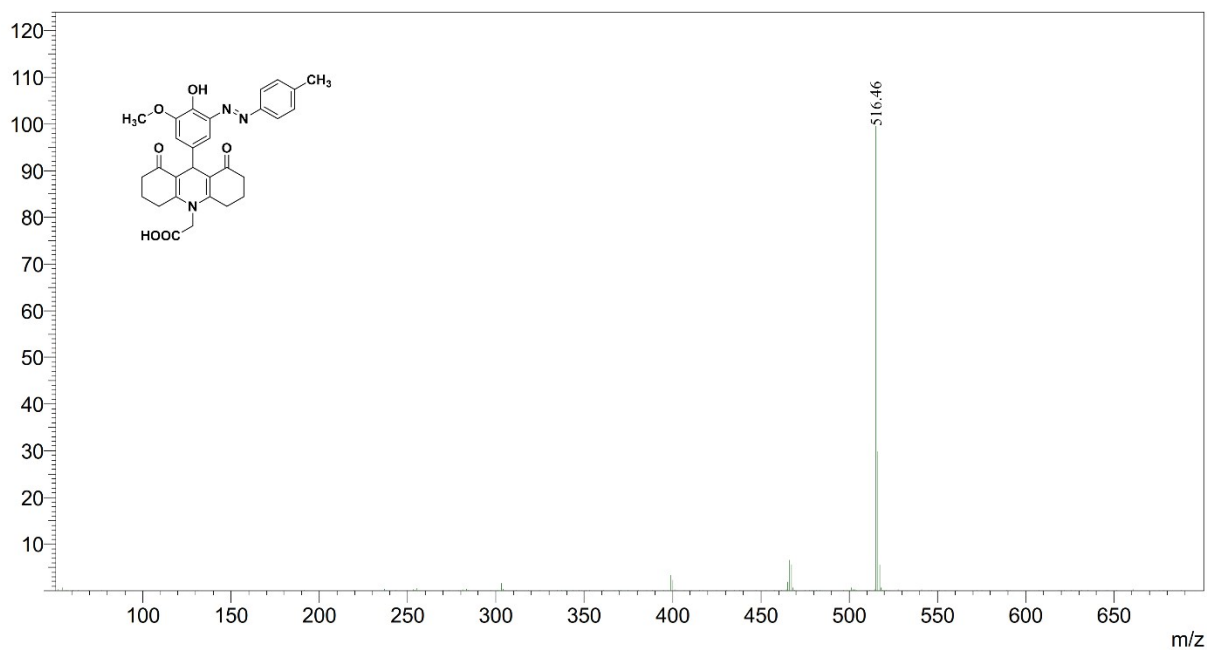


Fig. S24 Mass spectrum of compound **4h**

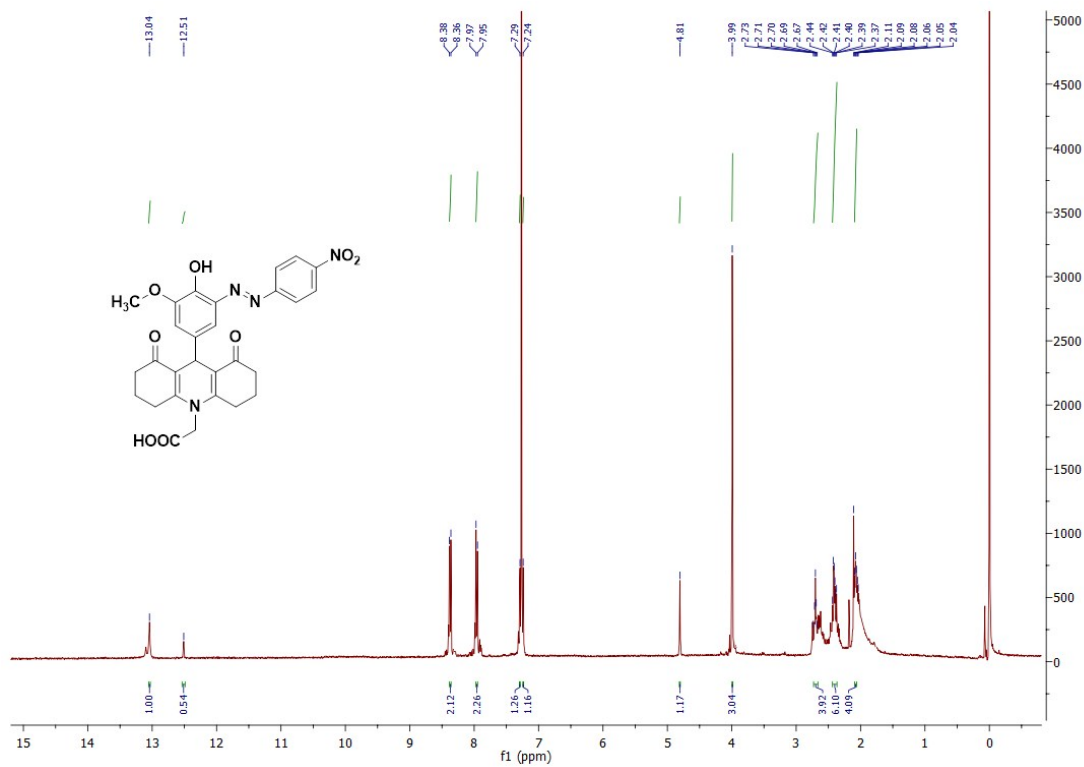


Fig. S25 ¹H NMR spectra of compound **4i**

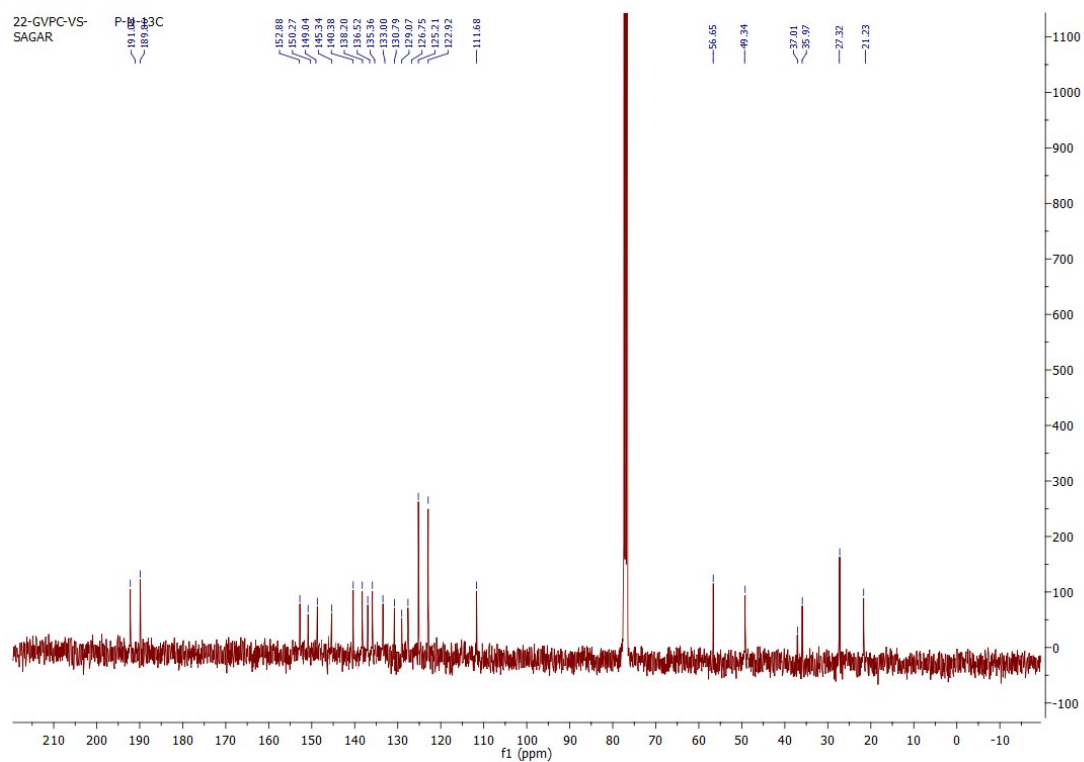


Fig. S26 ¹³C NMR spectra of compound **4i**

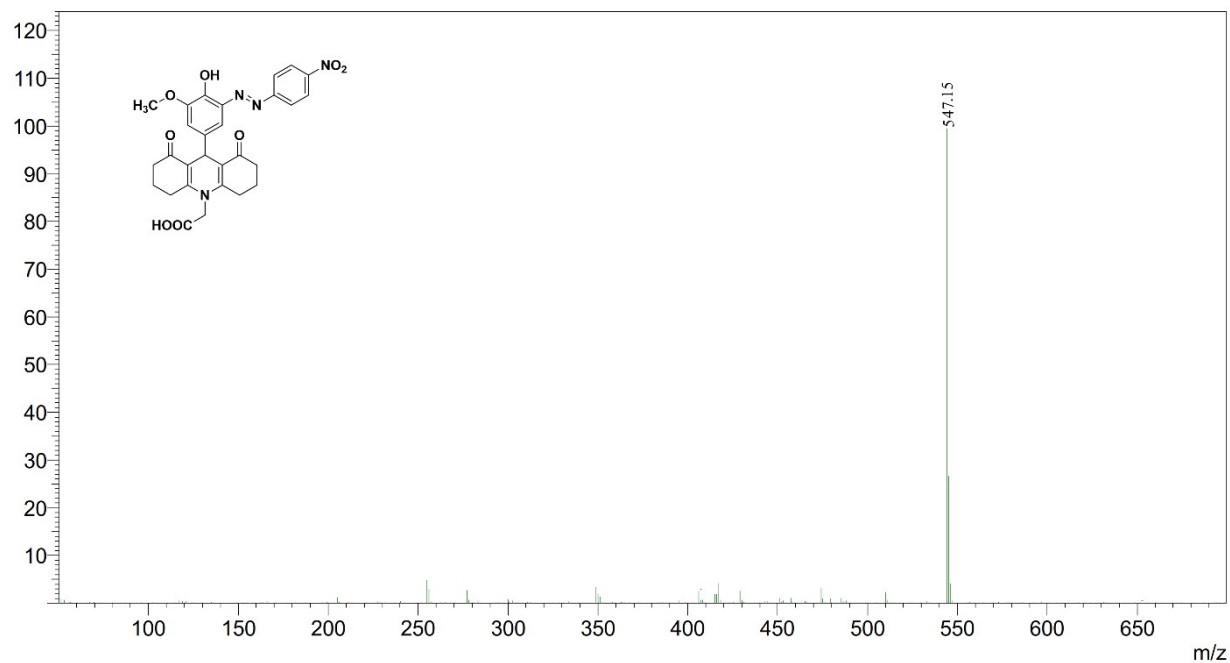


Fig. S27 Mass spectrum of compound 4i

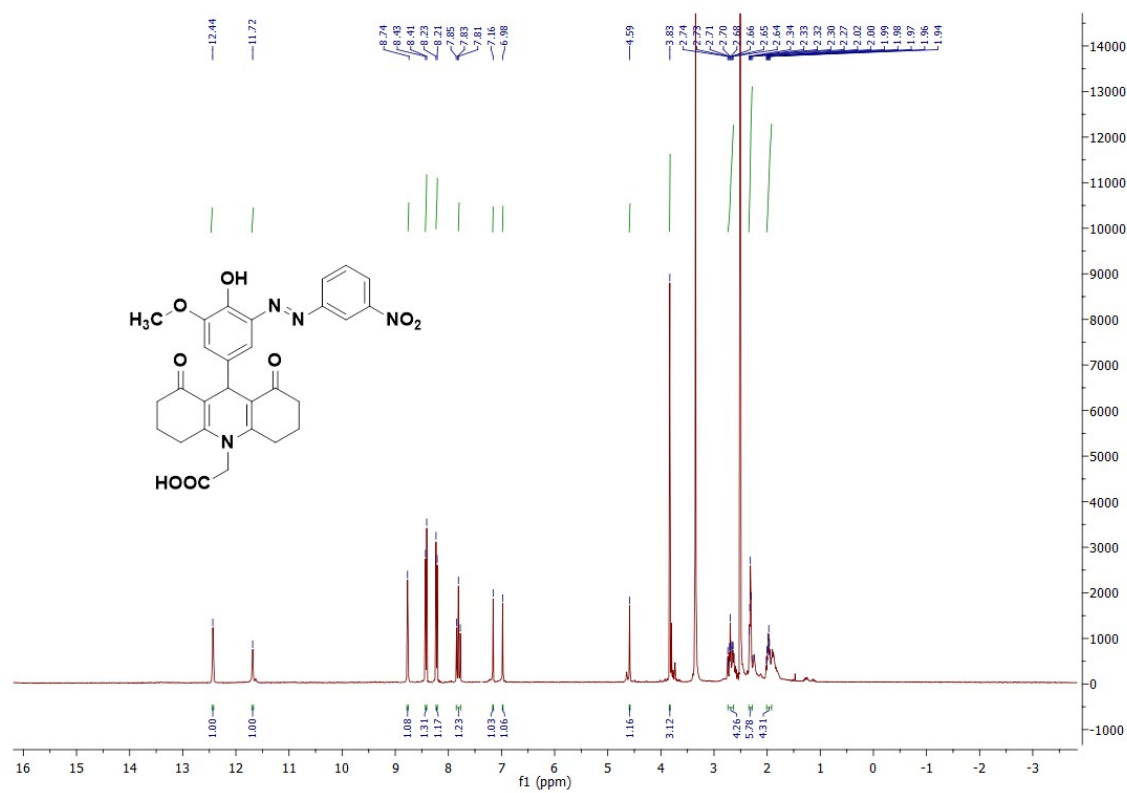


Fig. S28 ¹H NMR spectra of compound 4j

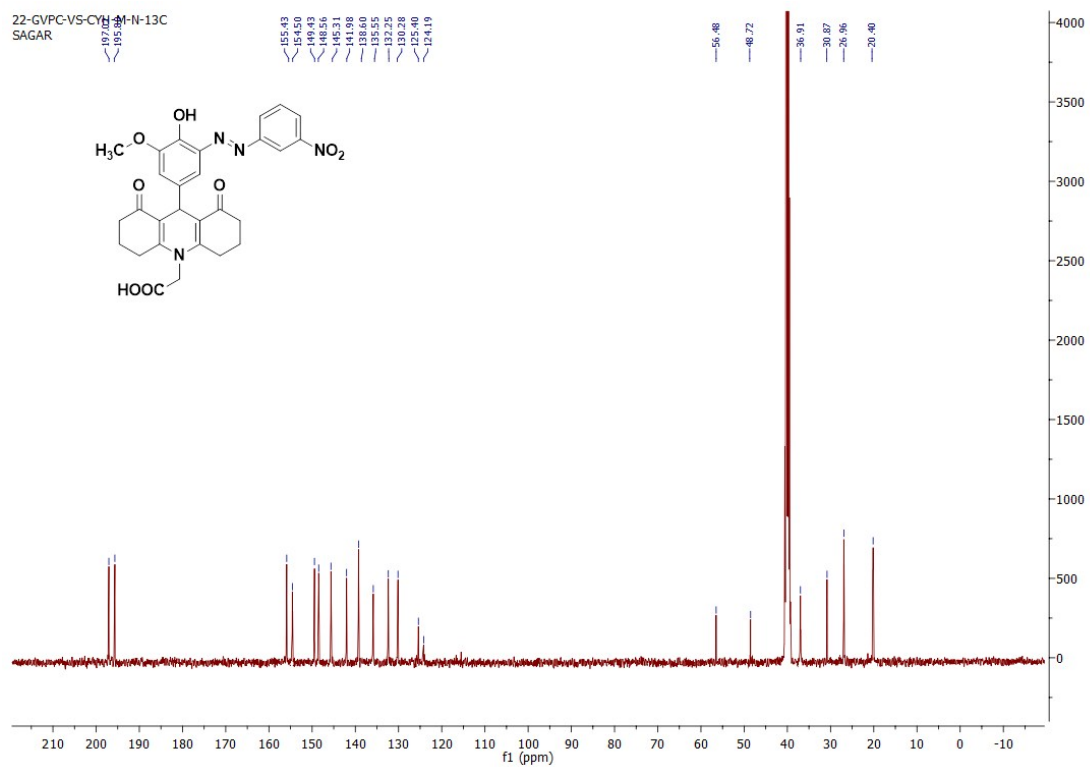


Fig. S29 ^{13}C NMR spectra of compound **4j**

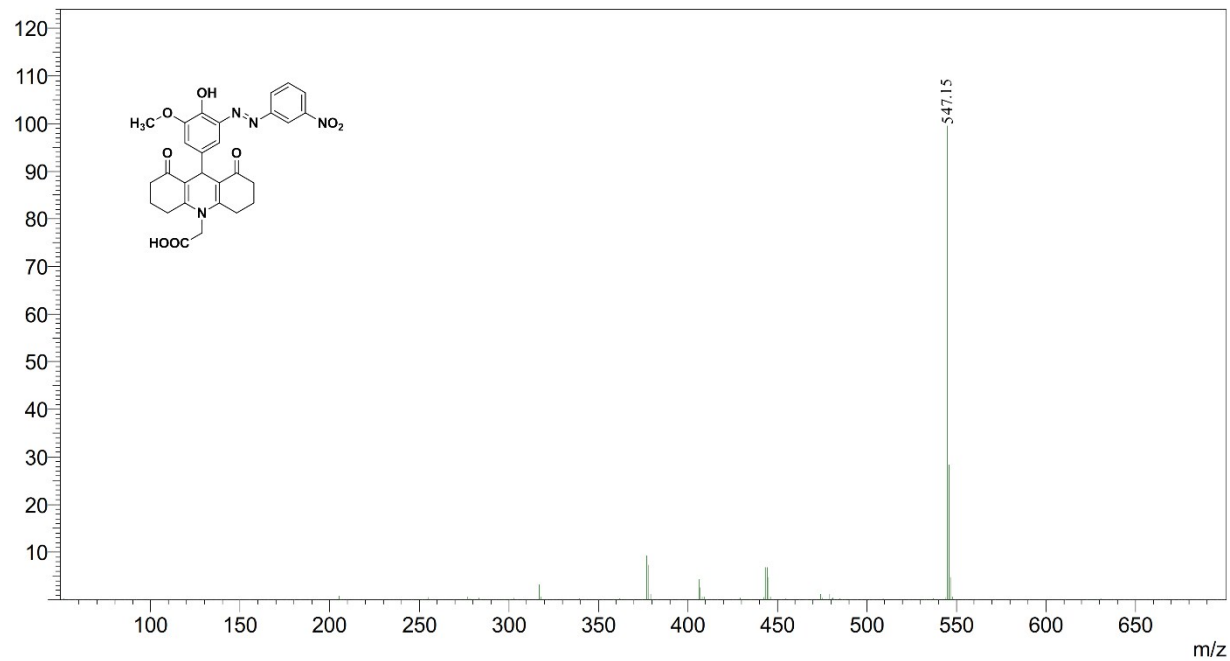


Fig. S30 Mass spectrum of compound **4j**

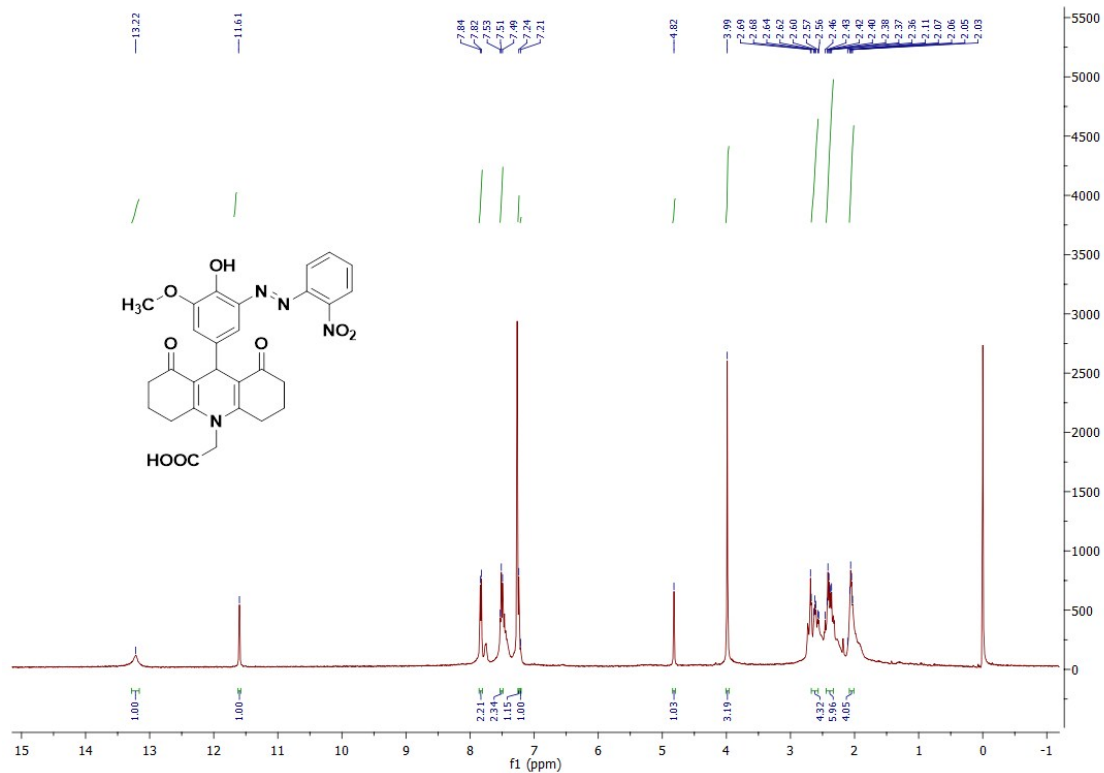


Fig. S31 ^1H NMR spectra of compound **4k**

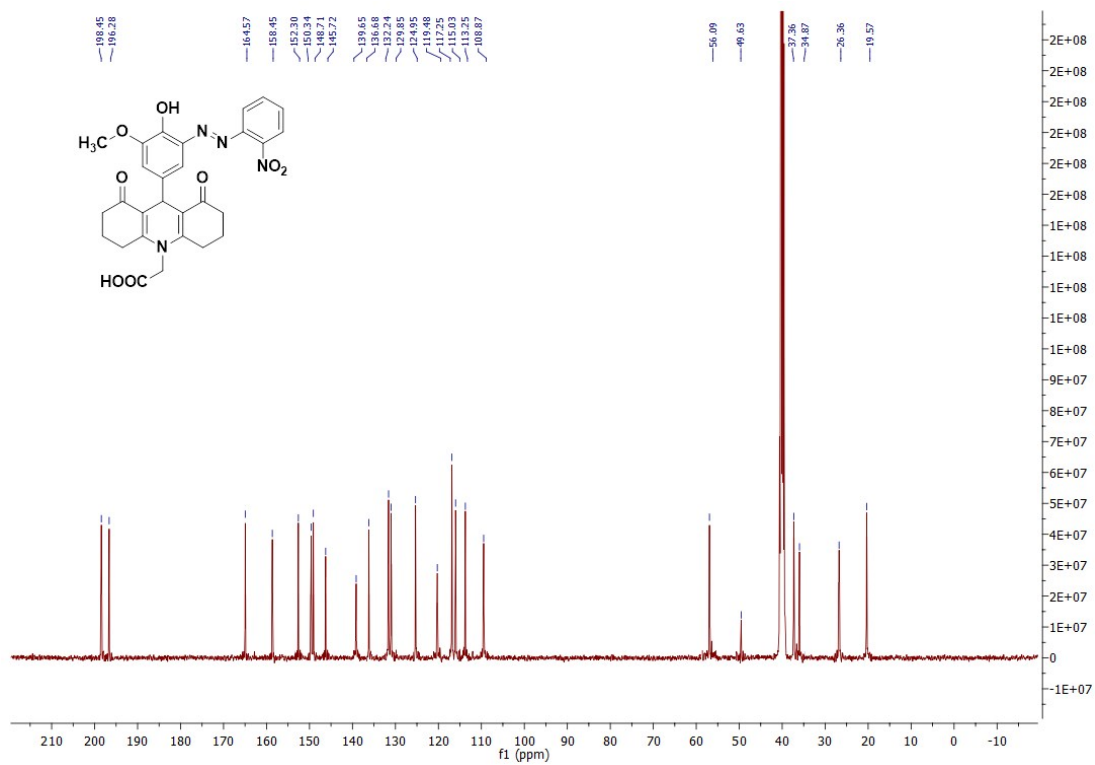


Fig. S32 ^{13}C NMR spectra of compound **4k**

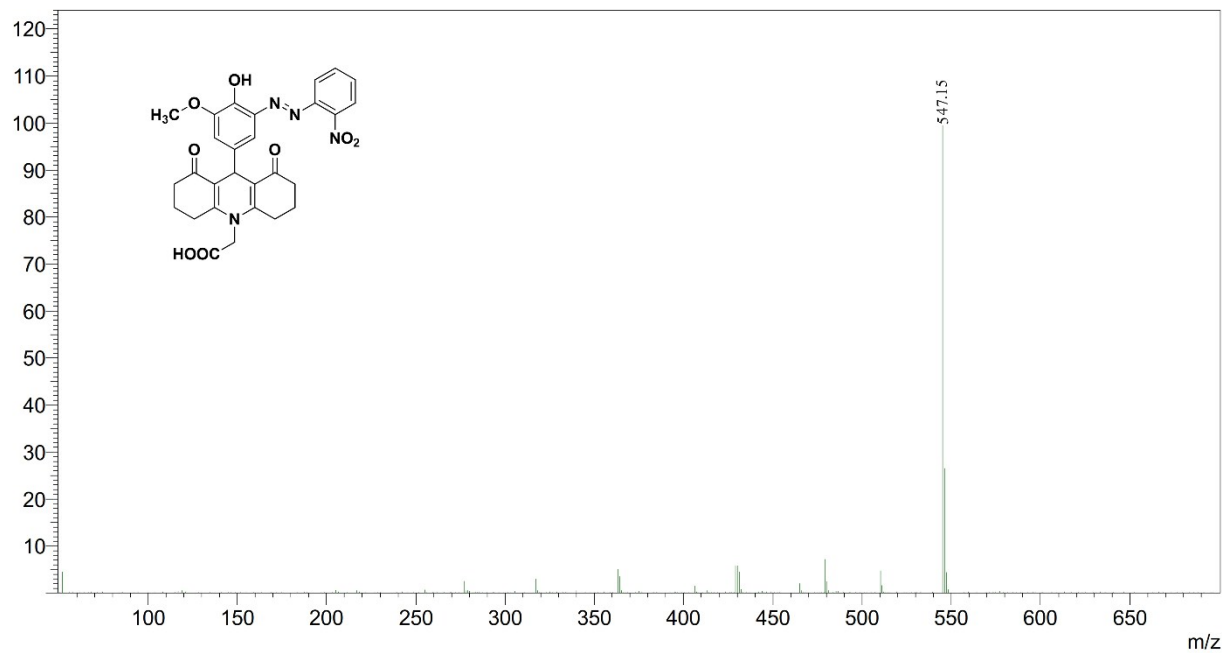


Fig. S33 Mass spectrum of compound 4k

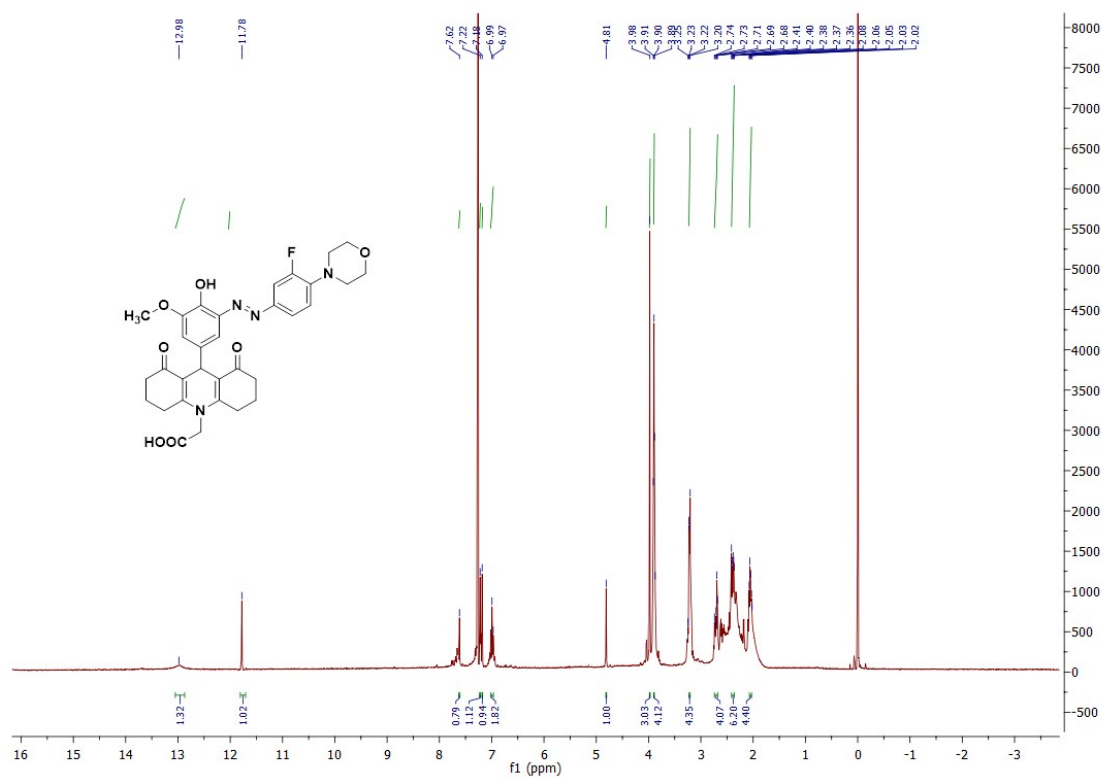


Fig. S34 ¹H NMR spectra of compound 4l

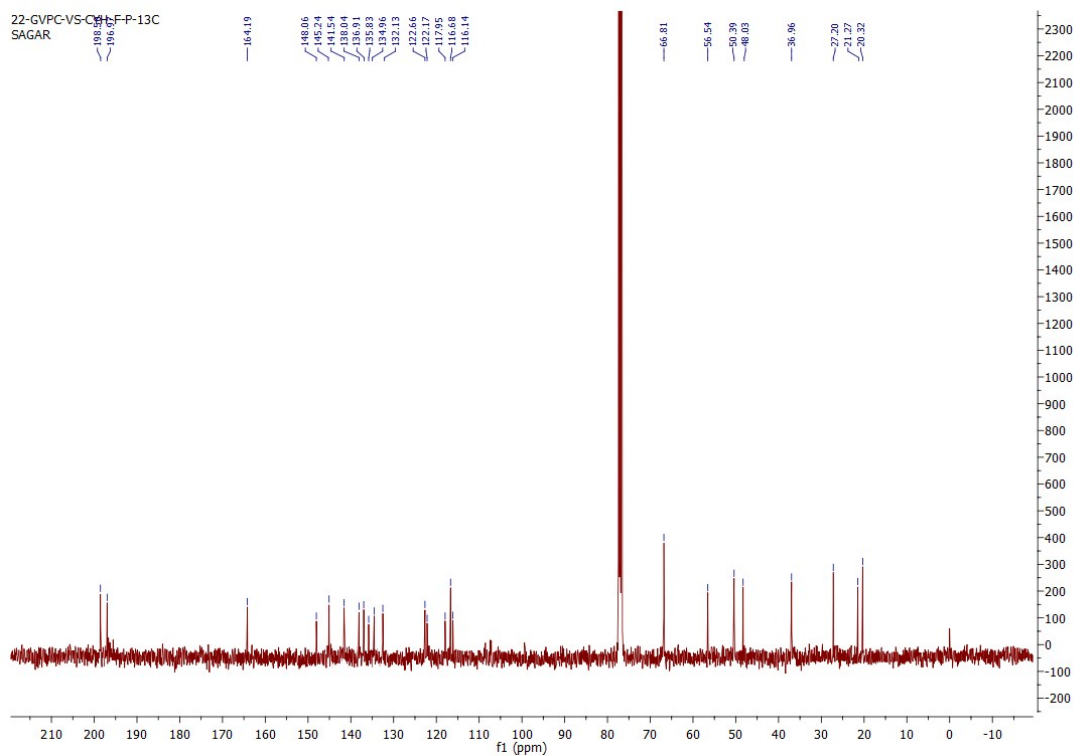


Fig. S35 ^{13}C NMR spectra of compound **4l**

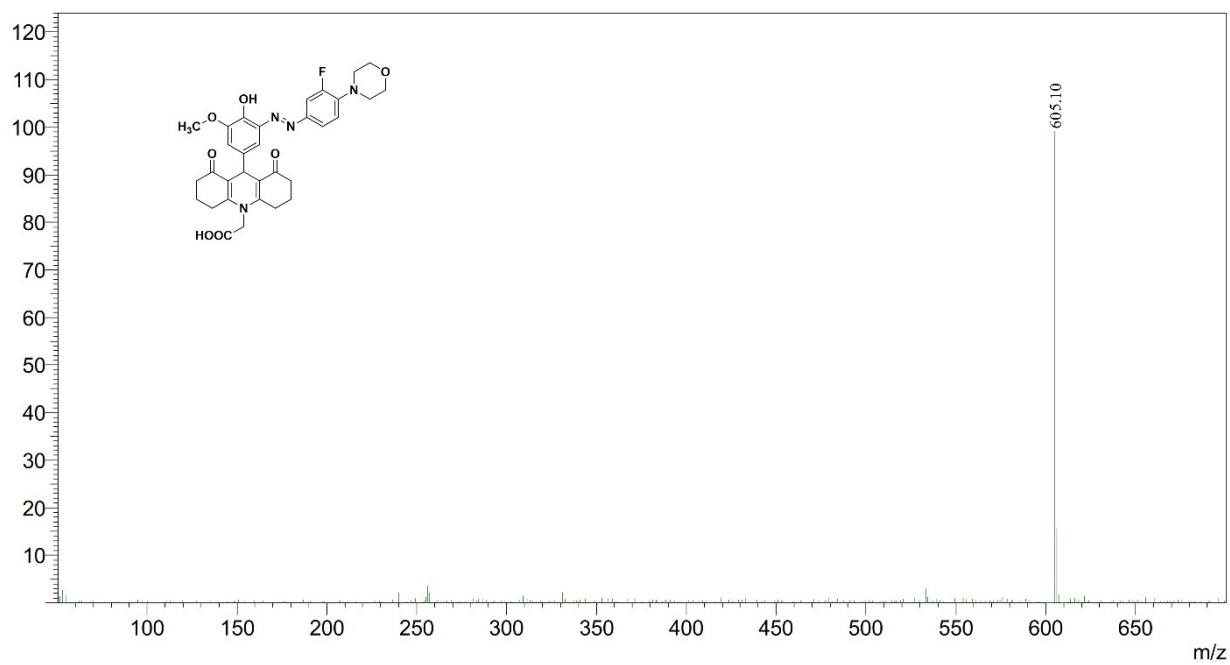


Fig. S36 Mass spectrum of compound **4l**