

Iron(III)chloride and Diorganyl Diselenides-Mediated 6-*endo-dig* Cyclization of Arylpropiolates and Arylpropiolamides Leading to 3-Organoselenenyl-2*H*-Coumarins and 3-Organoselenenyl-Quinolinones

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SUPPORTING INFORMATION

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Materials and Methods

Proton nuclear magnetic resonance spectra (^1H NMR) were obtained on a NMR spectrometer at 400 MHz. Spectra were recorded in CDCl_3 solutions. Chemical shifts are reported in ppm, referenced to the solvent peak of CDCl_3 or tetramethylsilane (TMS) as the external reference. Data are reported as follows: chemical shift (δ), multiplicity, coupling constant (J) in Hertz and integrated intensity. Carbon-13 nuclear magnetic resonance spectra (^{13}C NMR) were obtained on a 400 NMR spectrometer at 100 MHz. Spectra were recorded in CDCl_3 solutions. Chemical shifts are reported in ppm, referenced to the solvent peak of CDCl_3 . Abbreviations to denote the multiplicity of a particular signal are s (singlet), d (doublet), t (triplet), q (quartet), quint (quintet), sex (sextet), dt (double triplet), td (triple doublet) and m (multiplet). High resolution mass spectra were recorded on a mass spectrometer using electrospray ionization (ESI). Column chromatography was performed using Silica Gel (230-400 mesh) following the methods described by Still.^[1] Thin layer chromatography (TLC) was performed using Gel GF₂₅₄, 0.25 mm thickness. For visualization, TLC plates were either placed under ultraviolet light, or stained with iodine vapor, or acidic vanillin. Most reactions were monitored by TLC for disappearance of starting material. The following solvents were dried and purified by distillation from the reagents indicated: tetrahydrofuran from sodium with a benzophenone ketyl indicator. All other solvents were ACS or HPLC grade unless otherwise noted. Air- and moisture-sensitive reactions were conducted in flame-dried or oven dried glassware equipped with tightly fitted rubber septa and under a positive atmosphere of dry nitrogen or argon. Reagents and solvents were handled using standard syringe techniques. The FeCl_3 was used in 99.99% purity purchased from commercial suppliers.

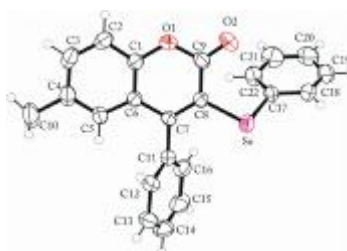
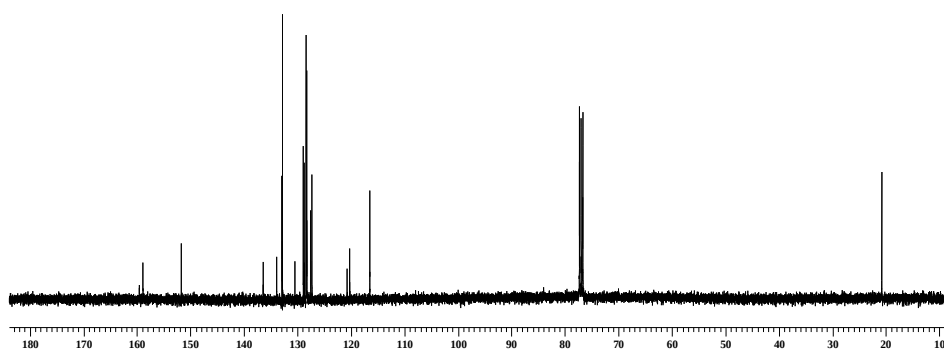
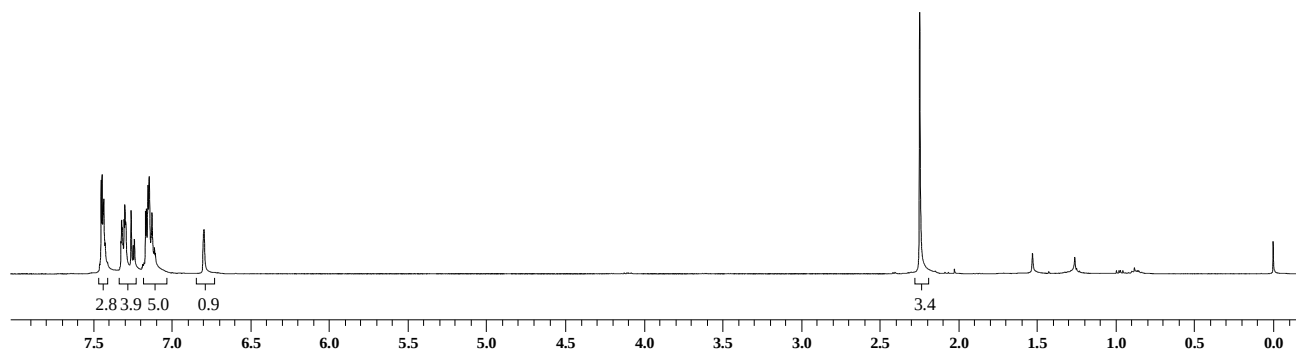
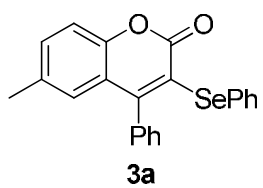
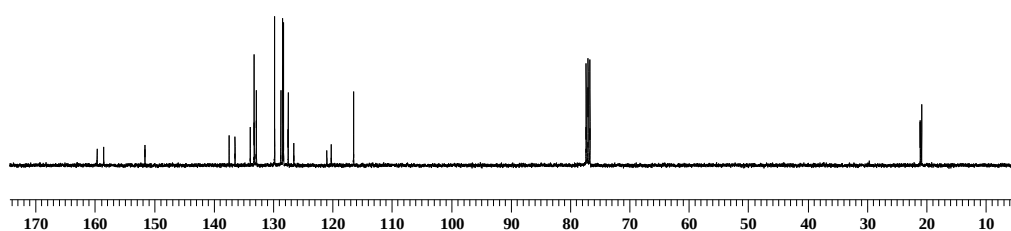
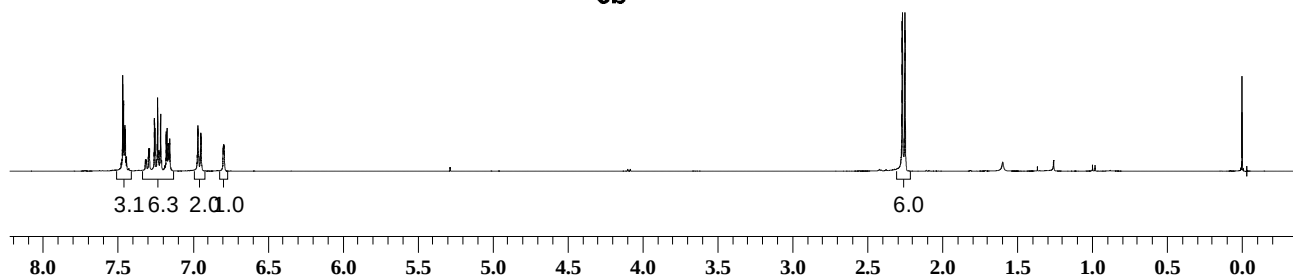
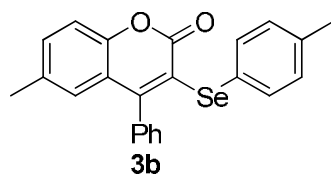
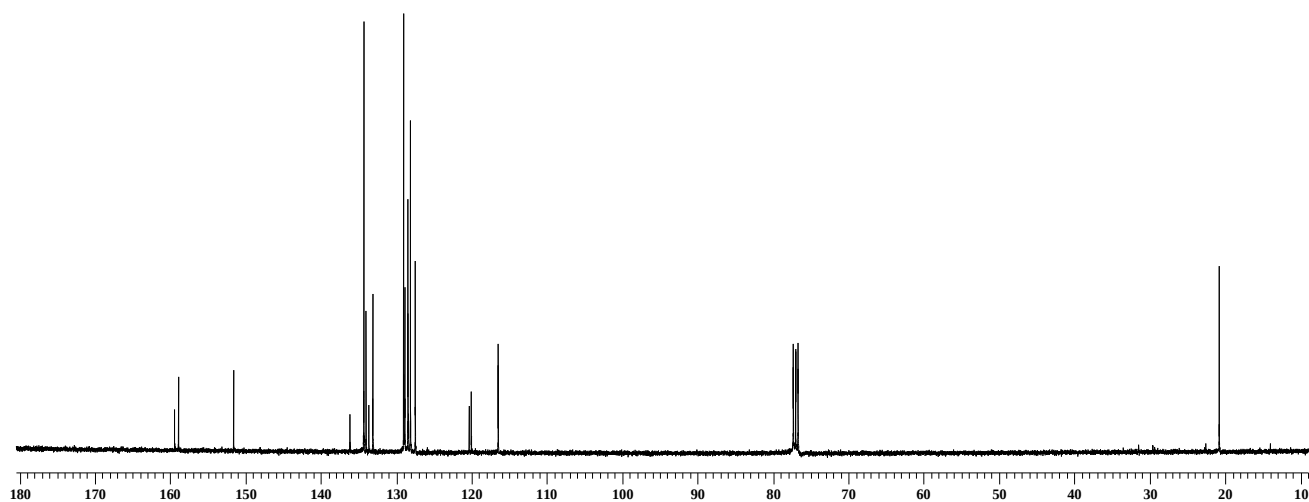
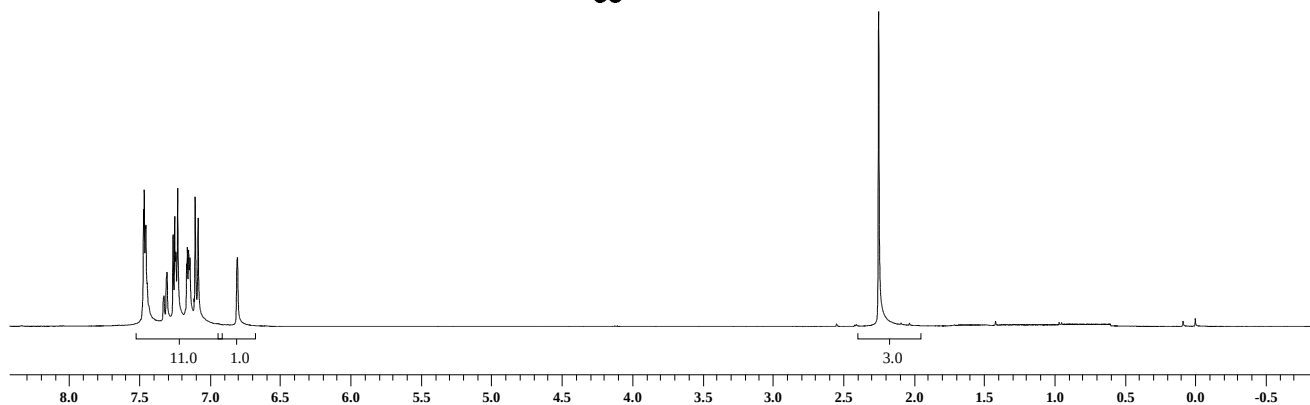
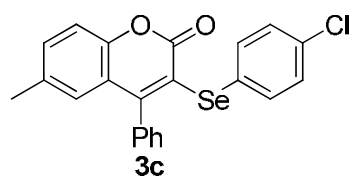


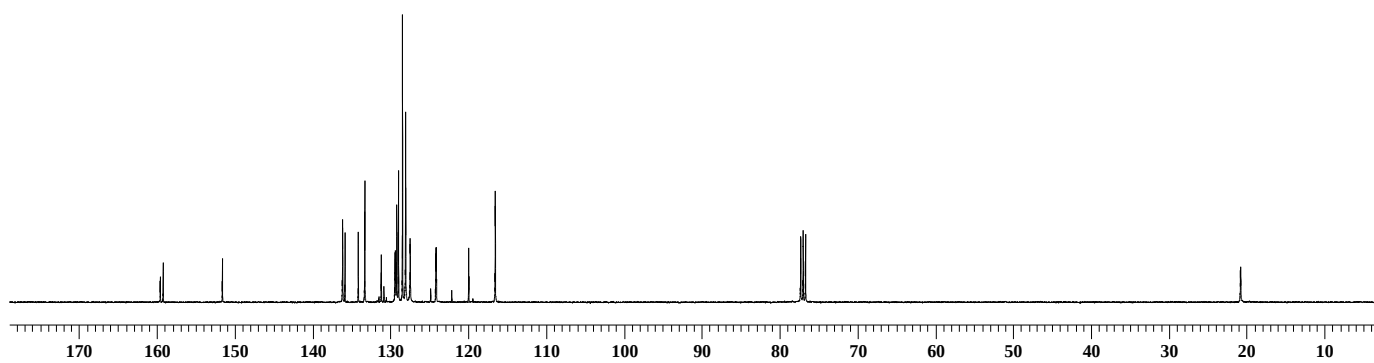
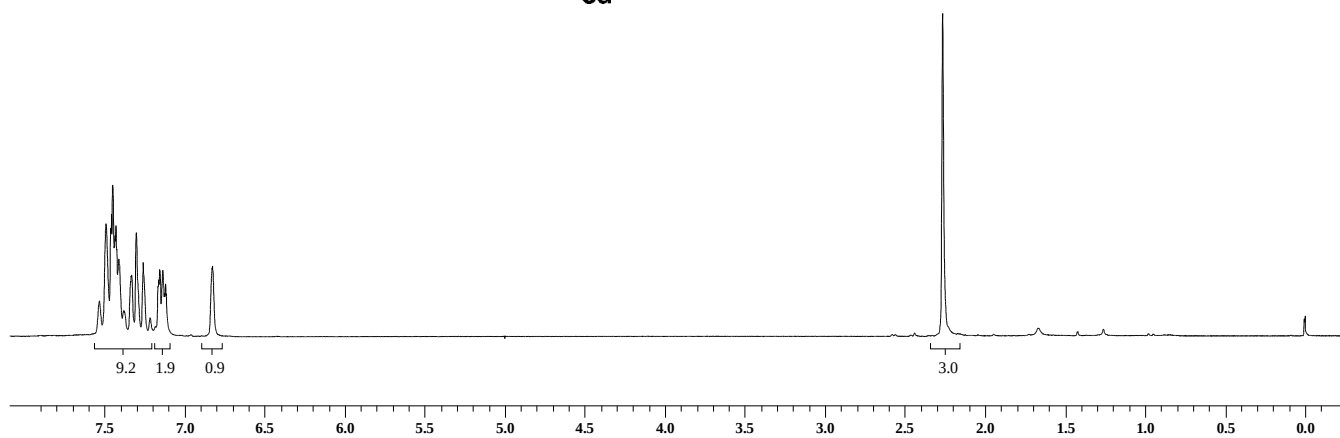
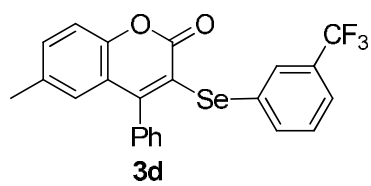
Figure 1. ORTEP view of compound **3a** (CCDC 1022079)

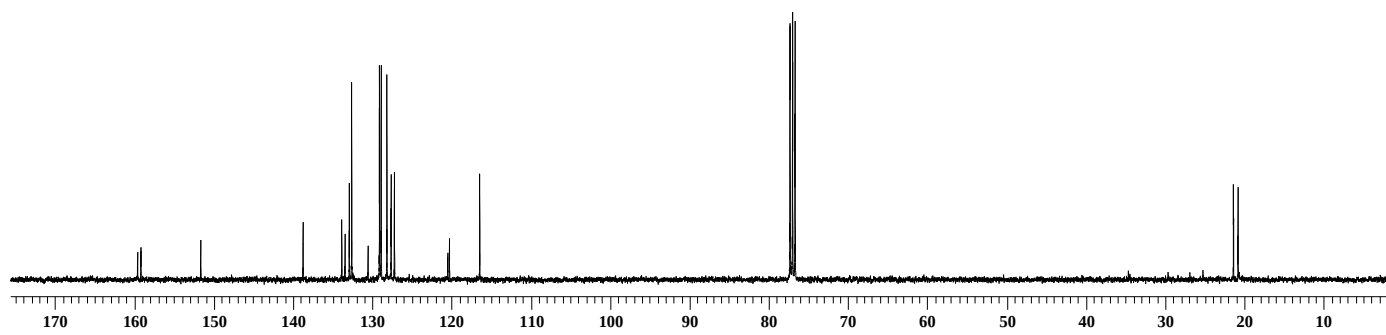
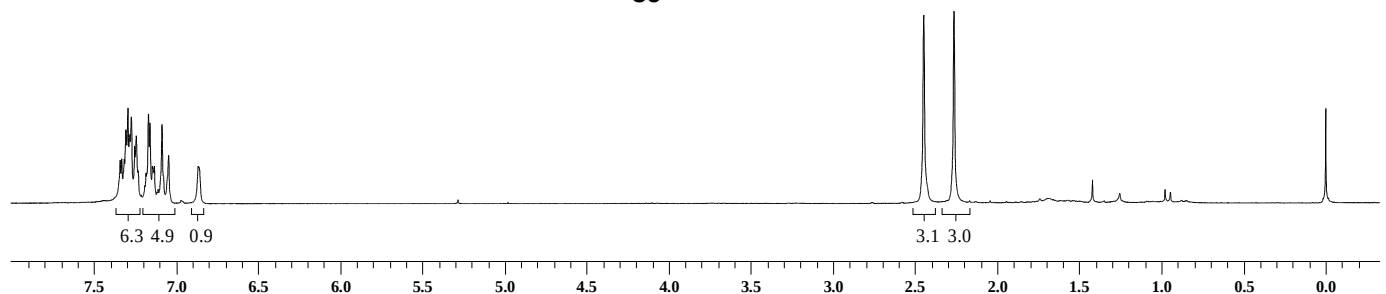
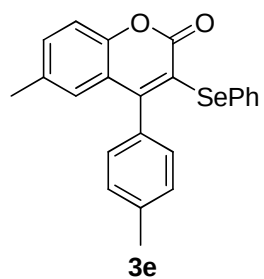
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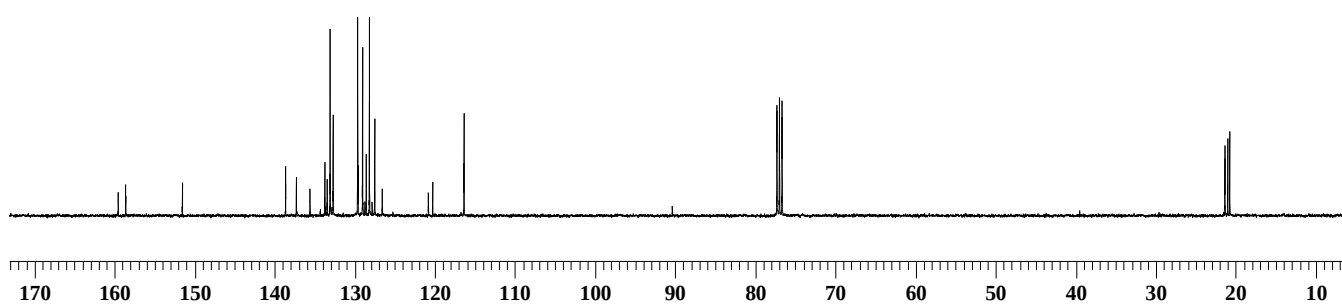
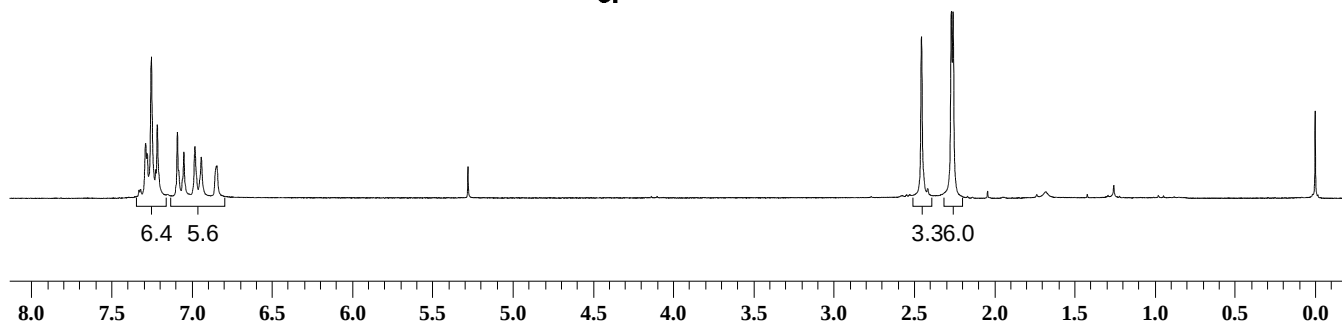
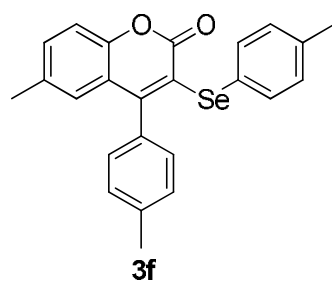


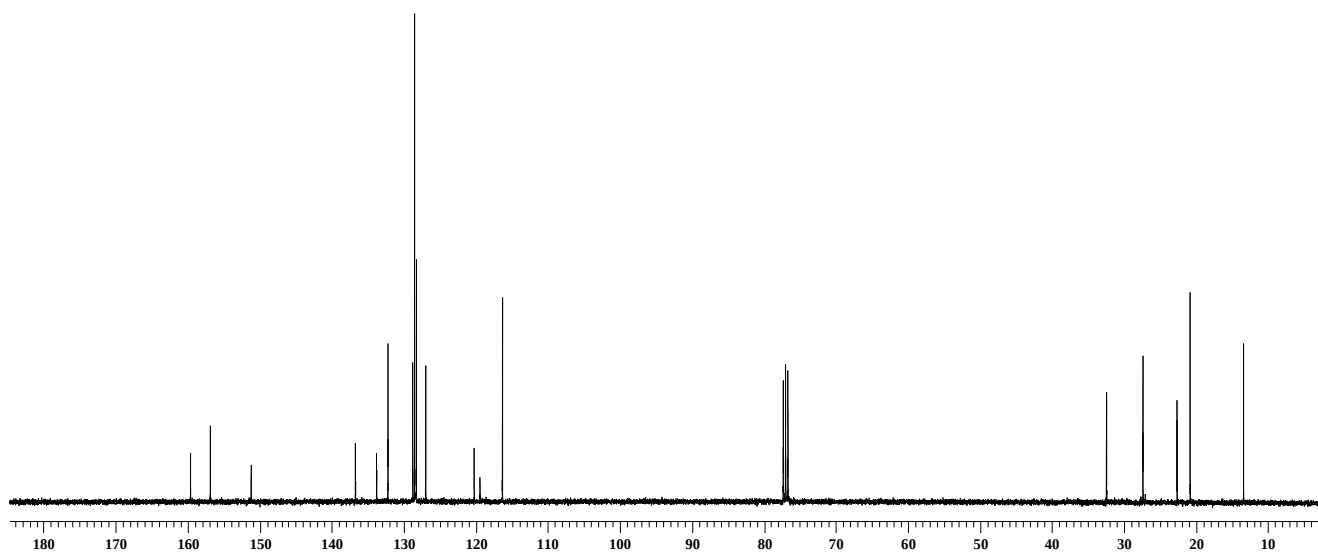
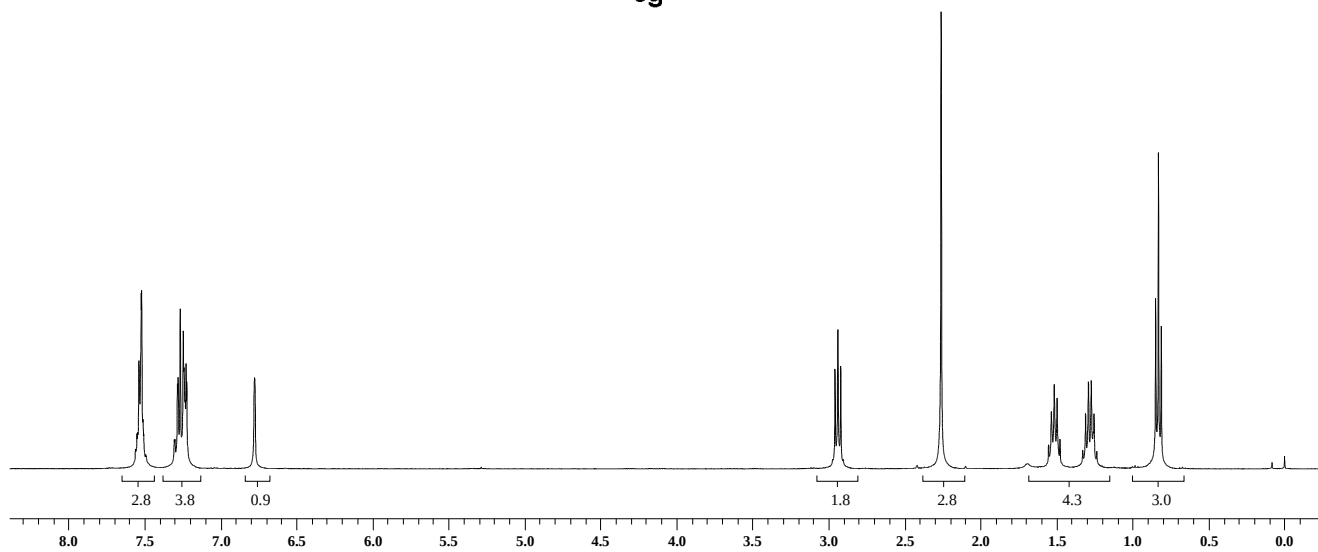
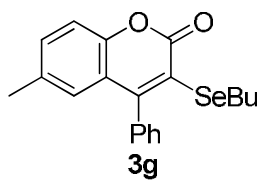


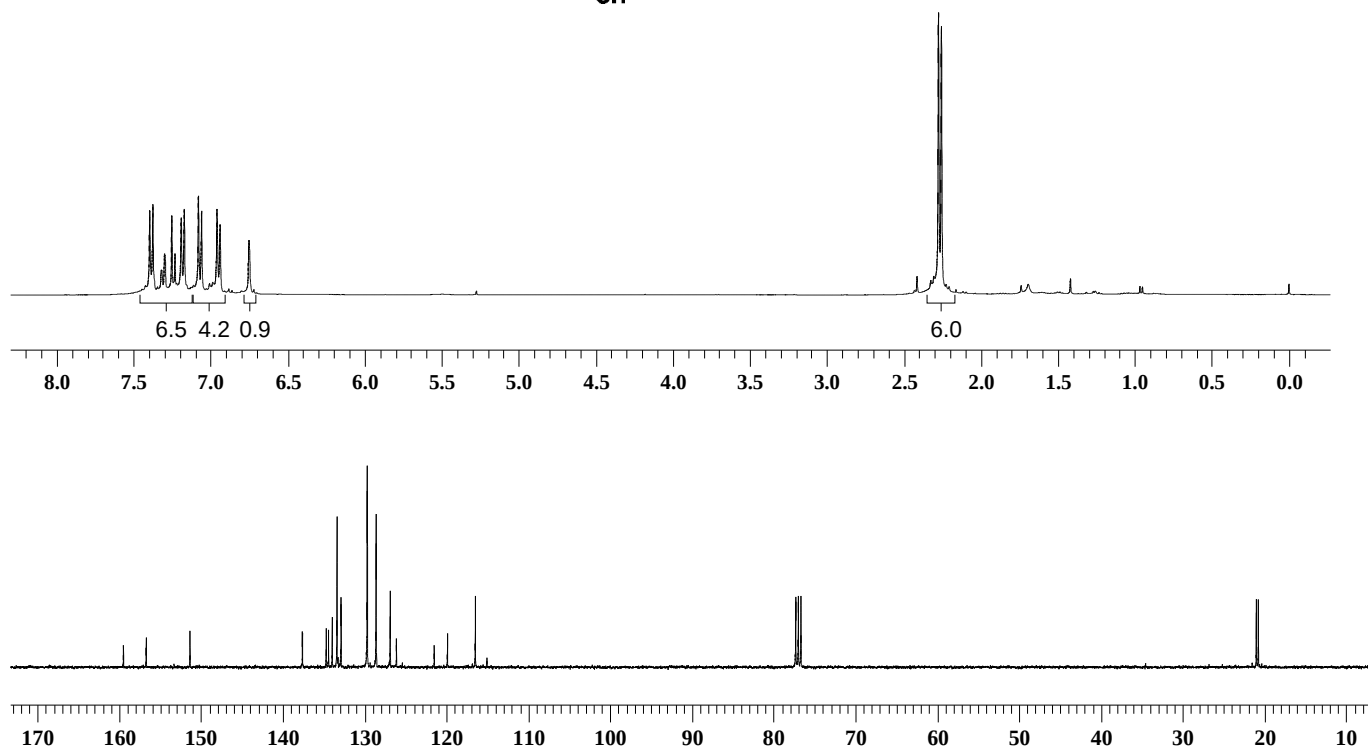
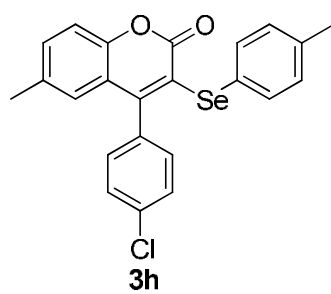


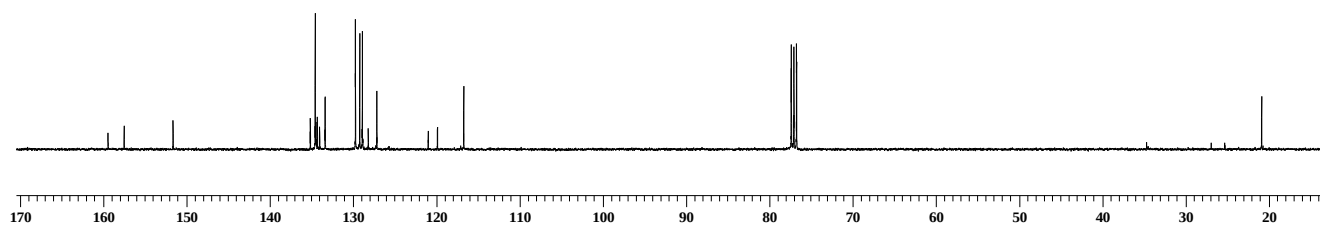
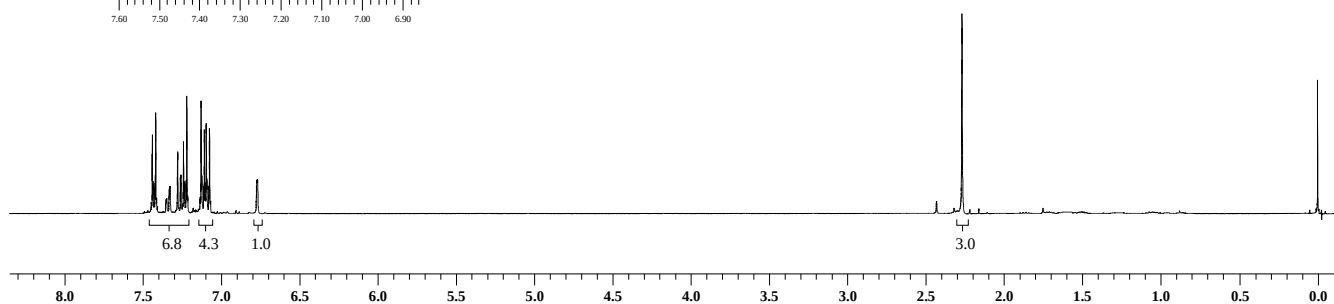
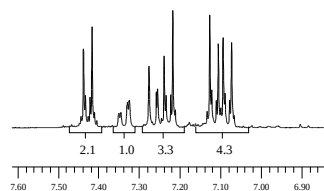
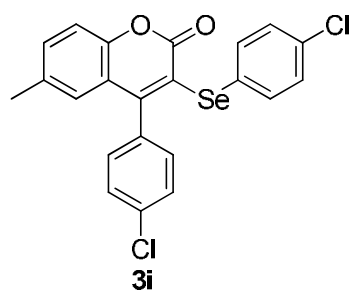


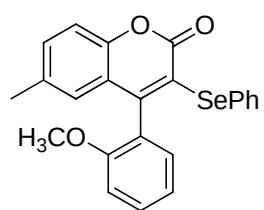




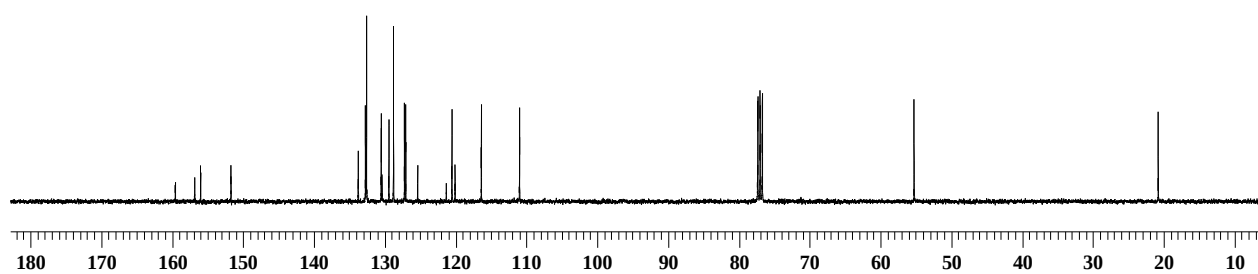
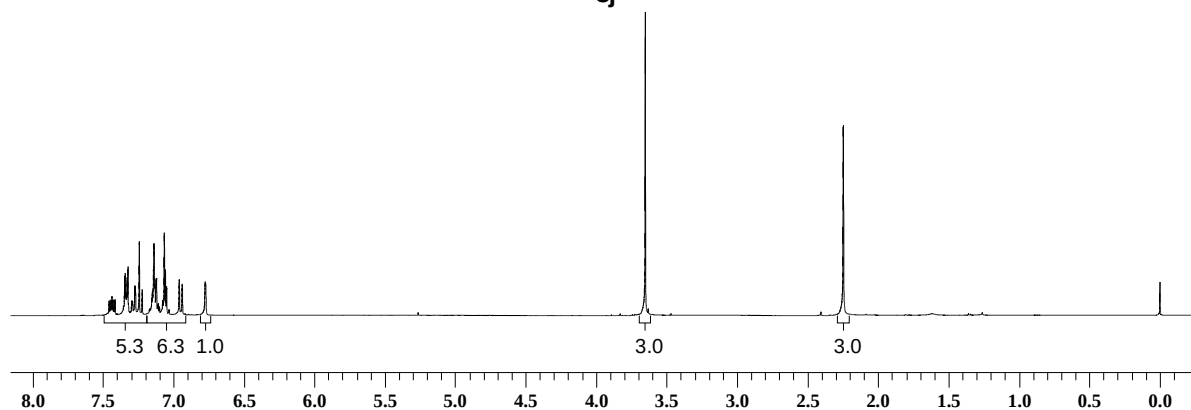


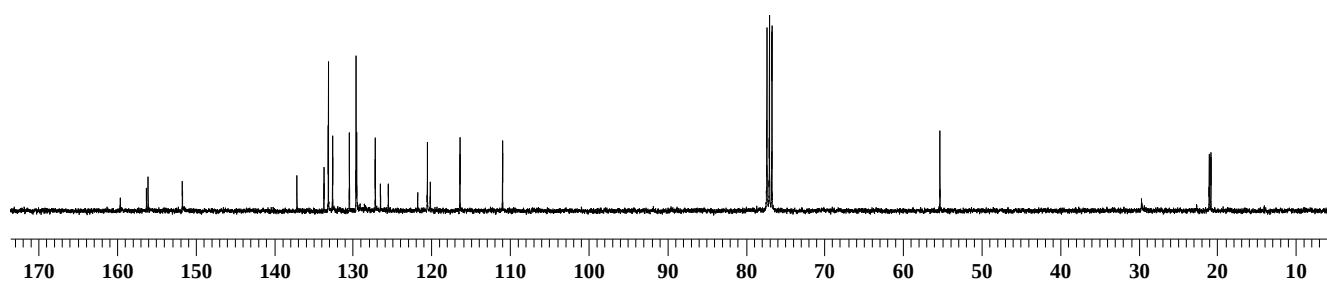
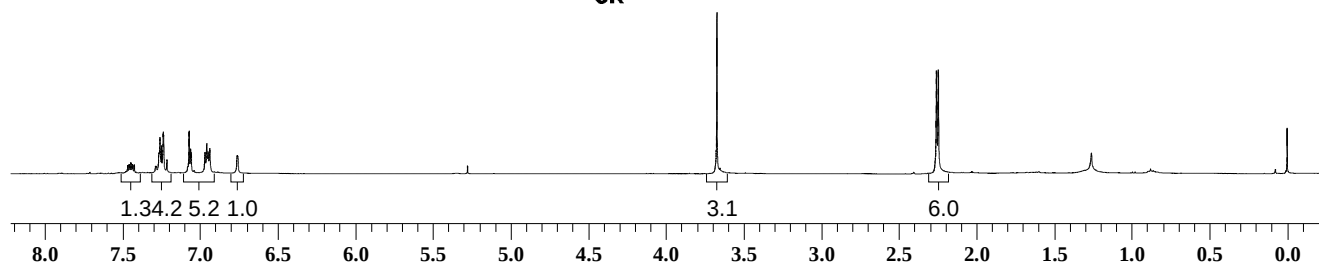
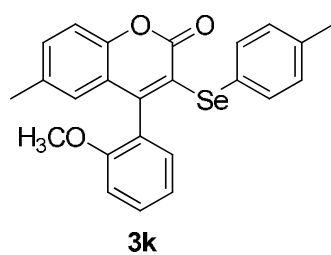


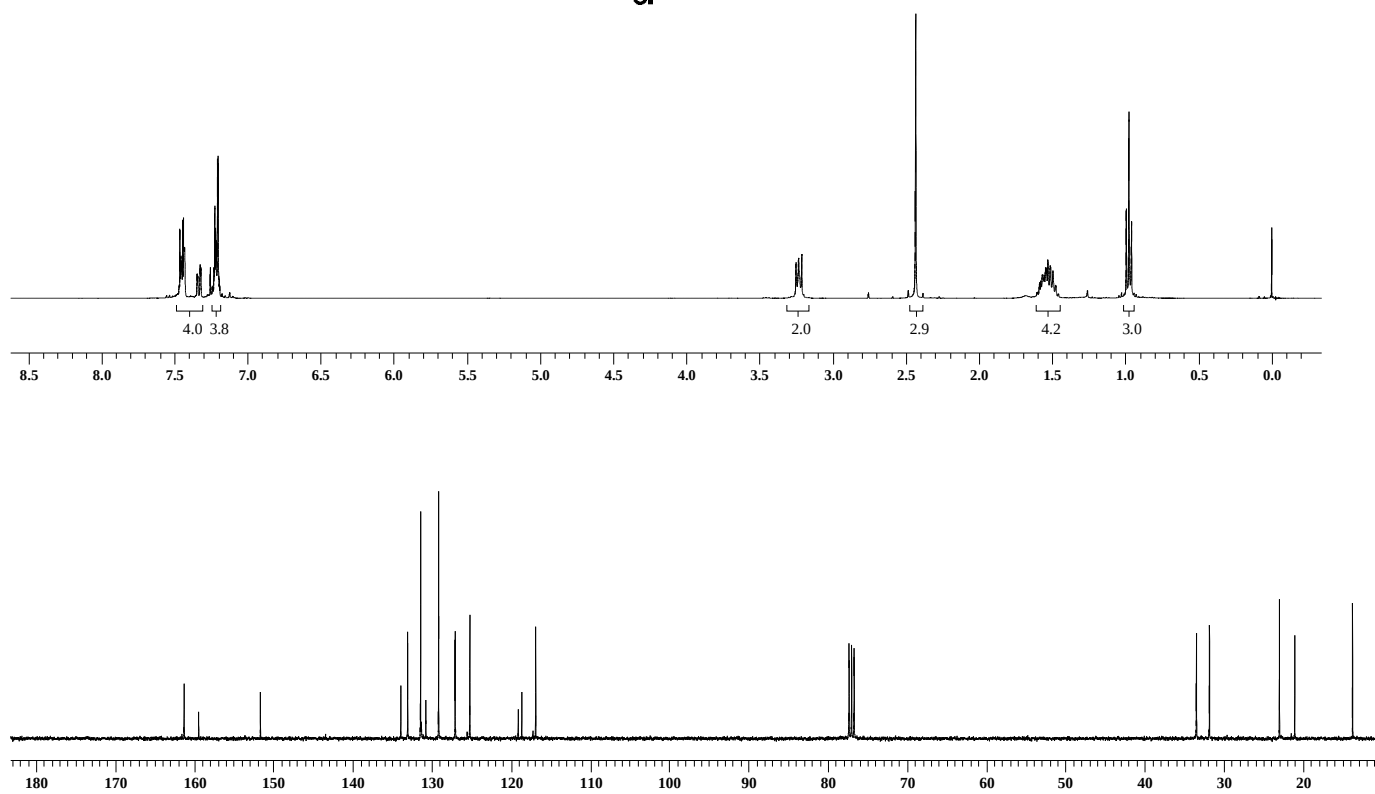
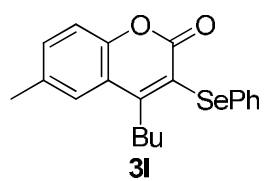


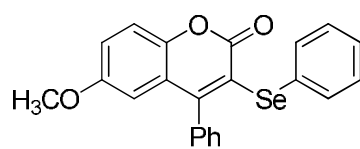


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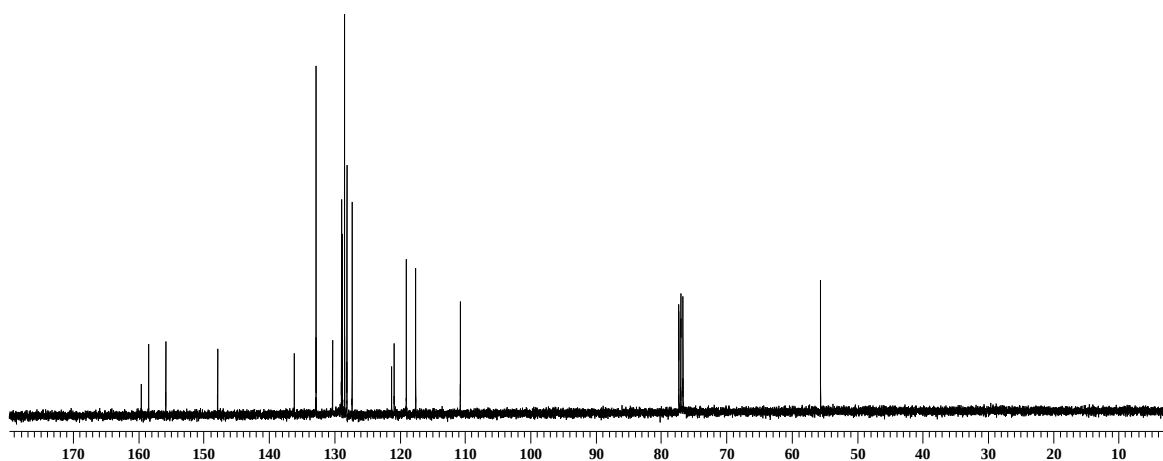
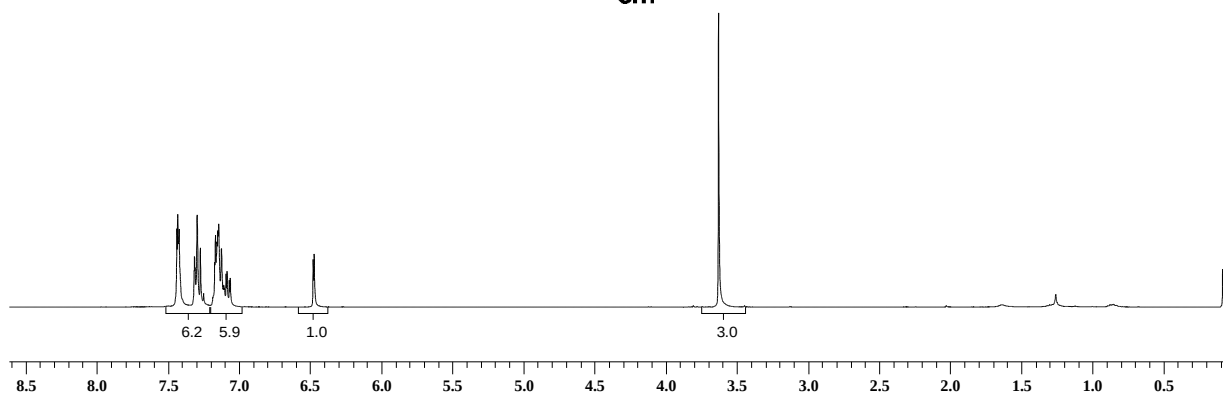


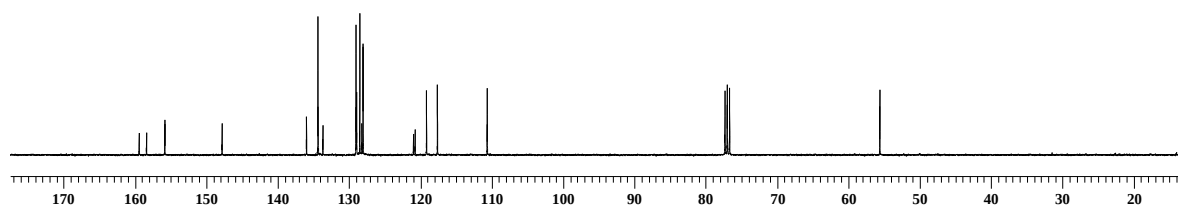
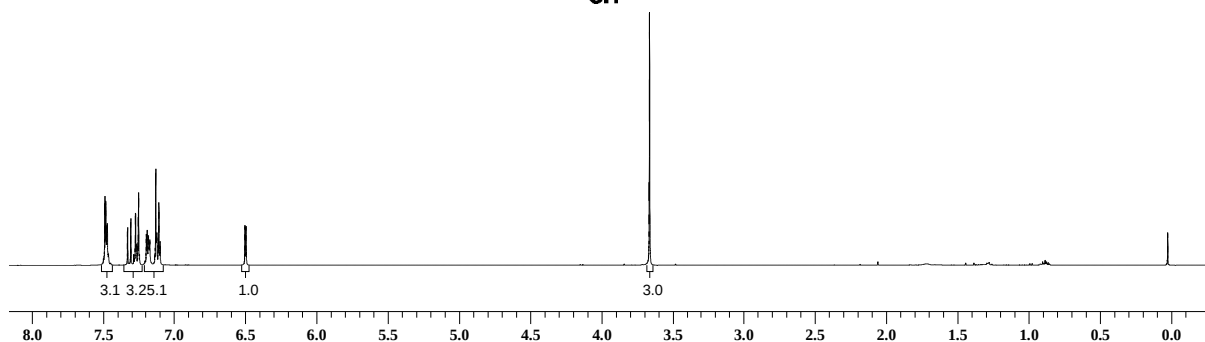
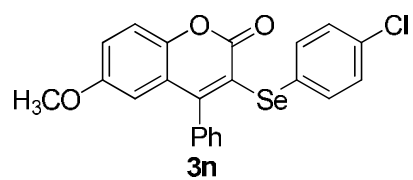


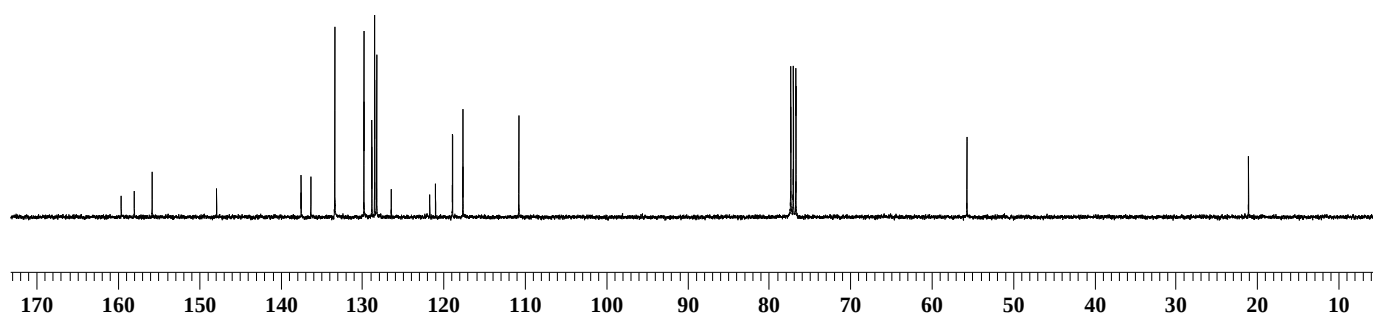
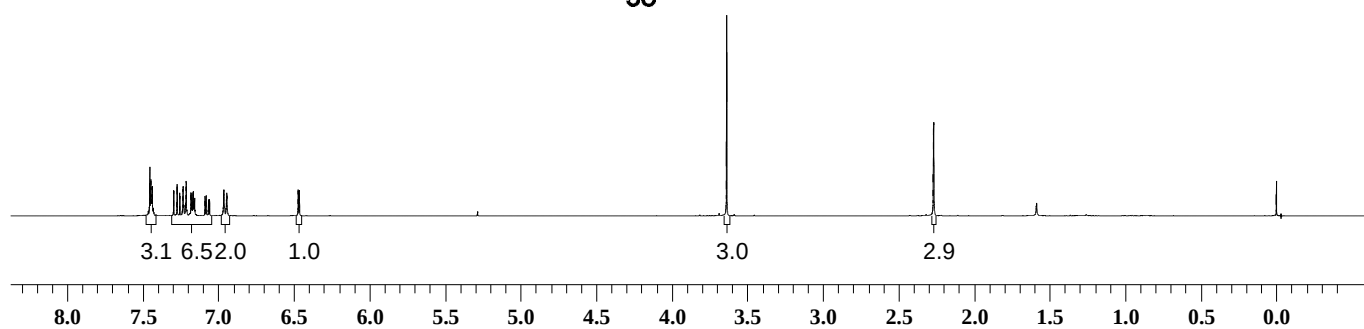
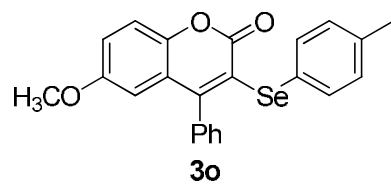


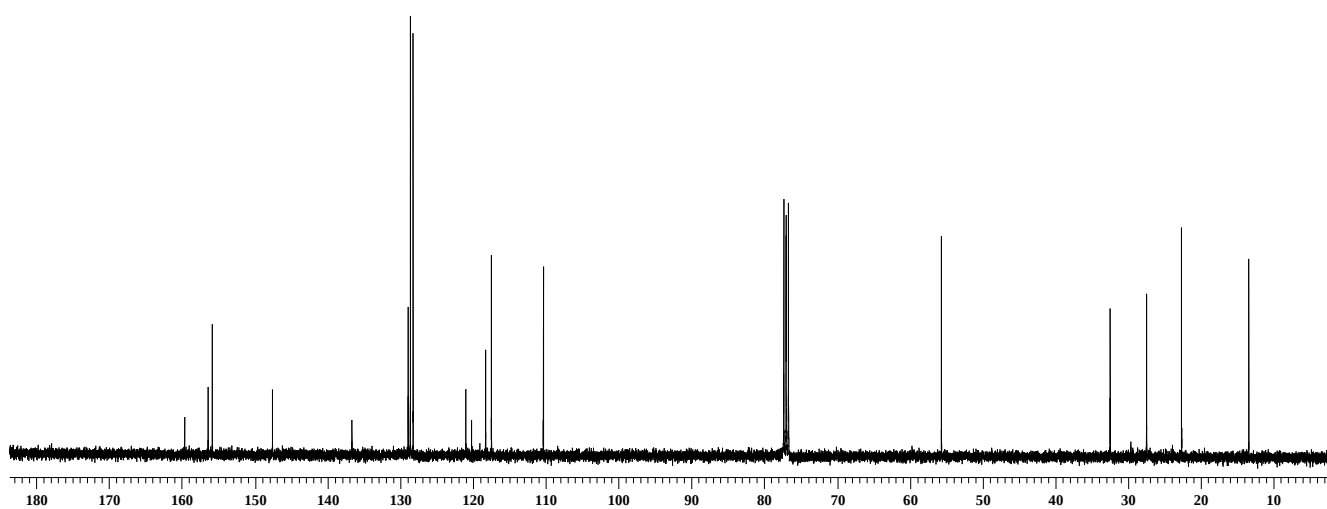
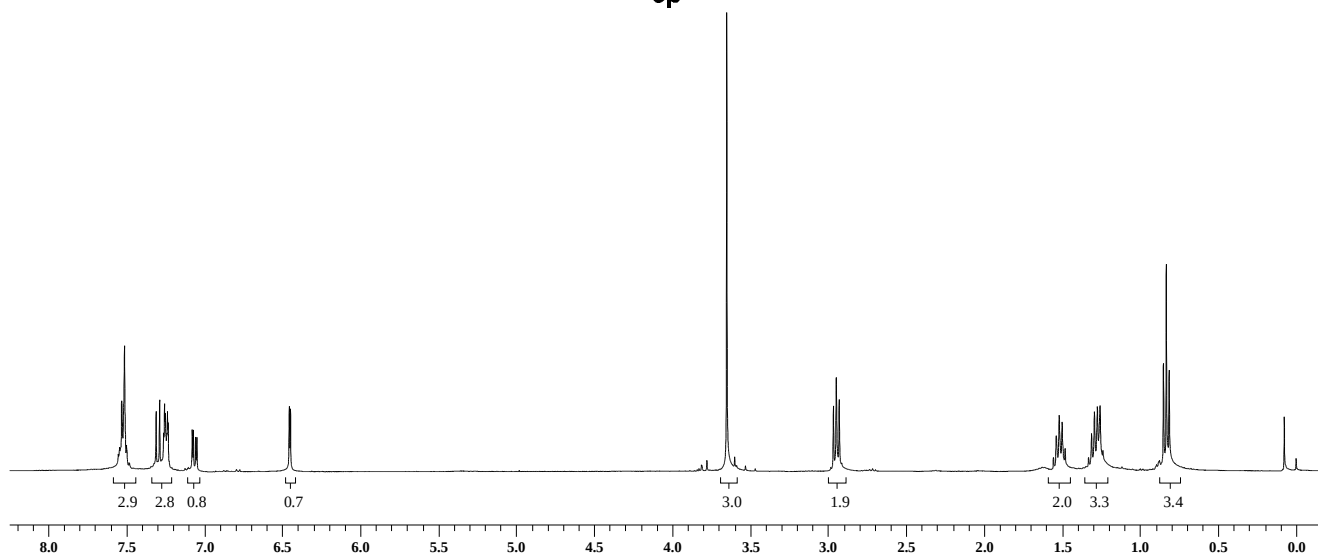
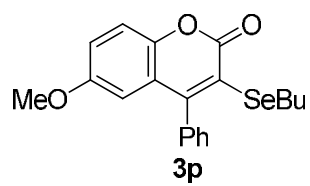


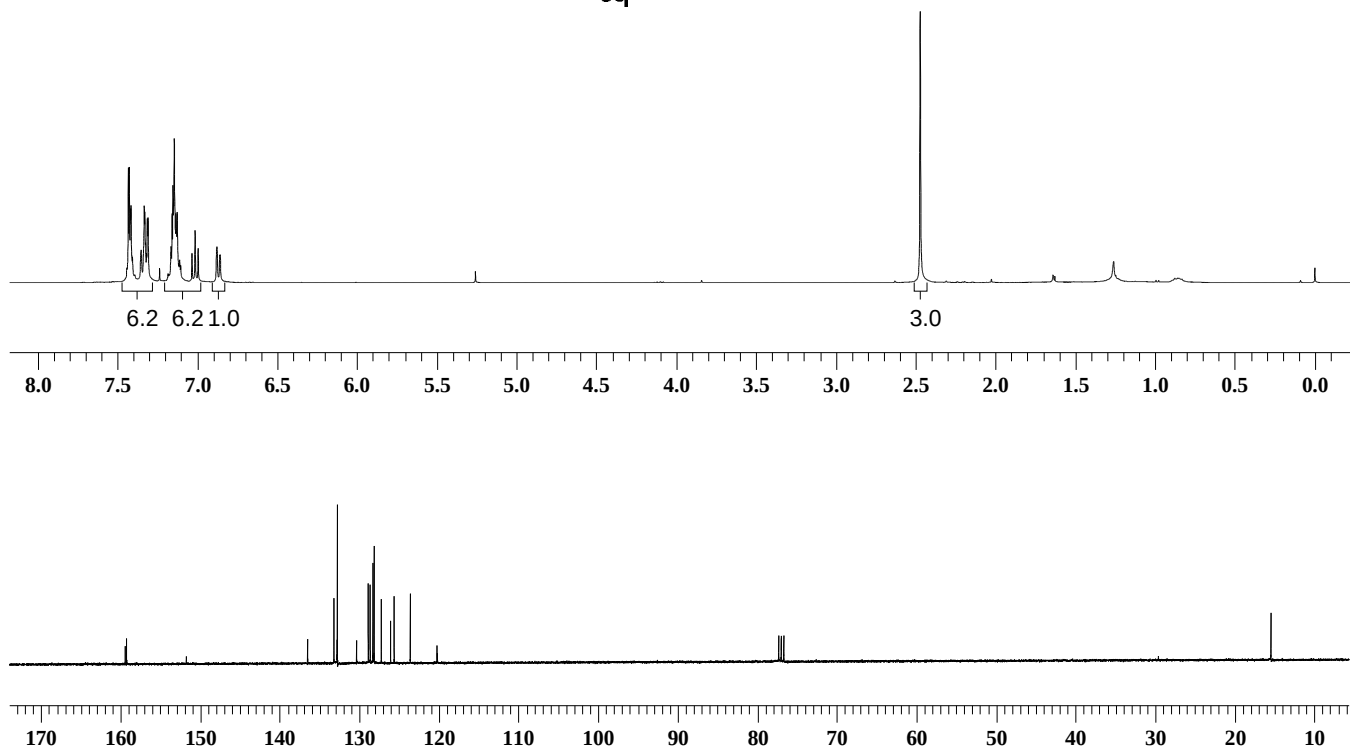
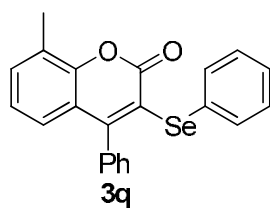
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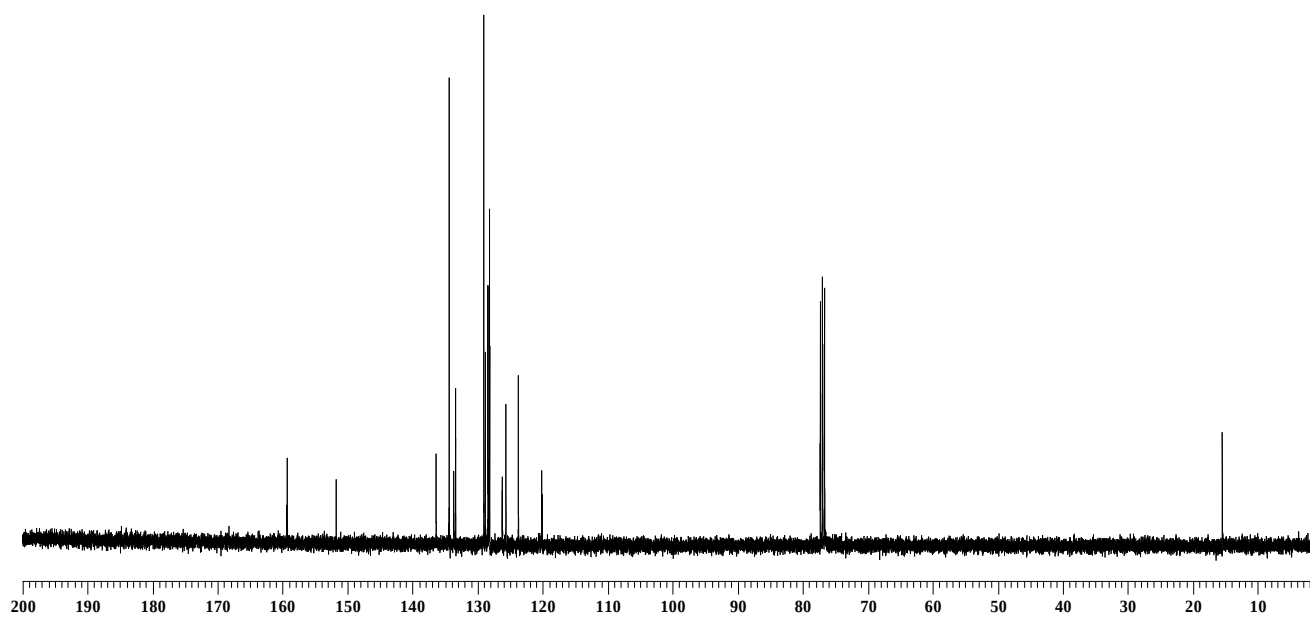
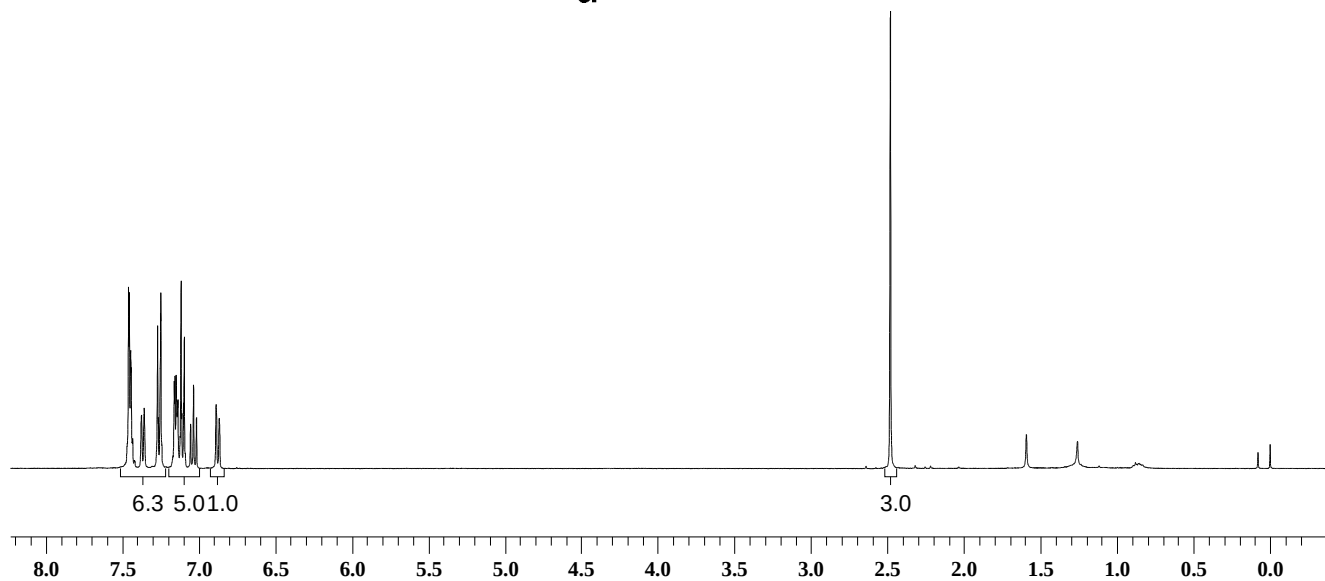
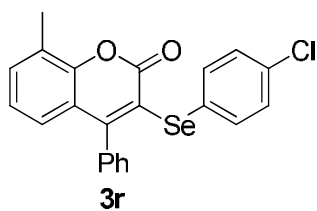


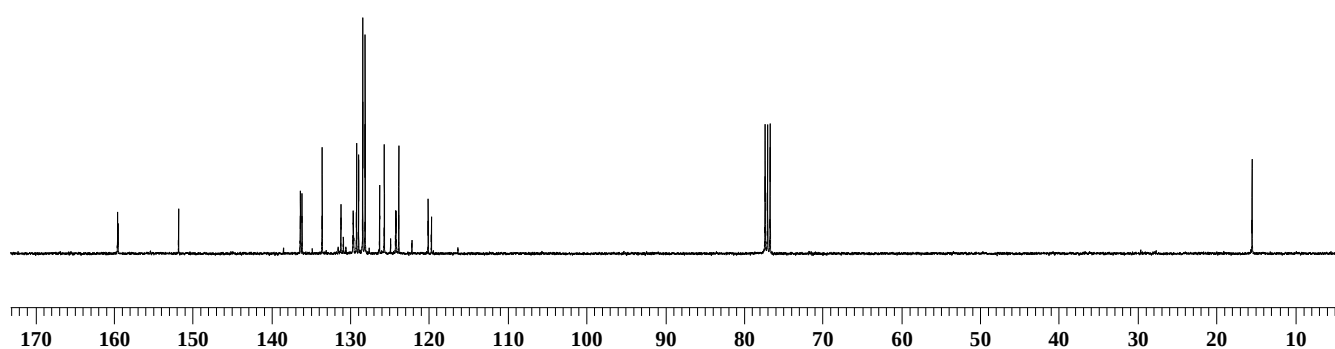
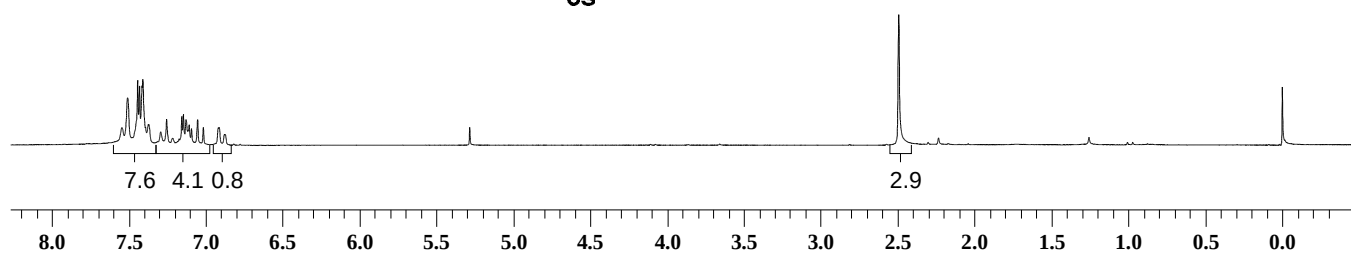
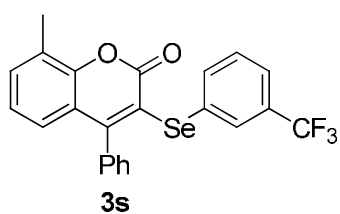


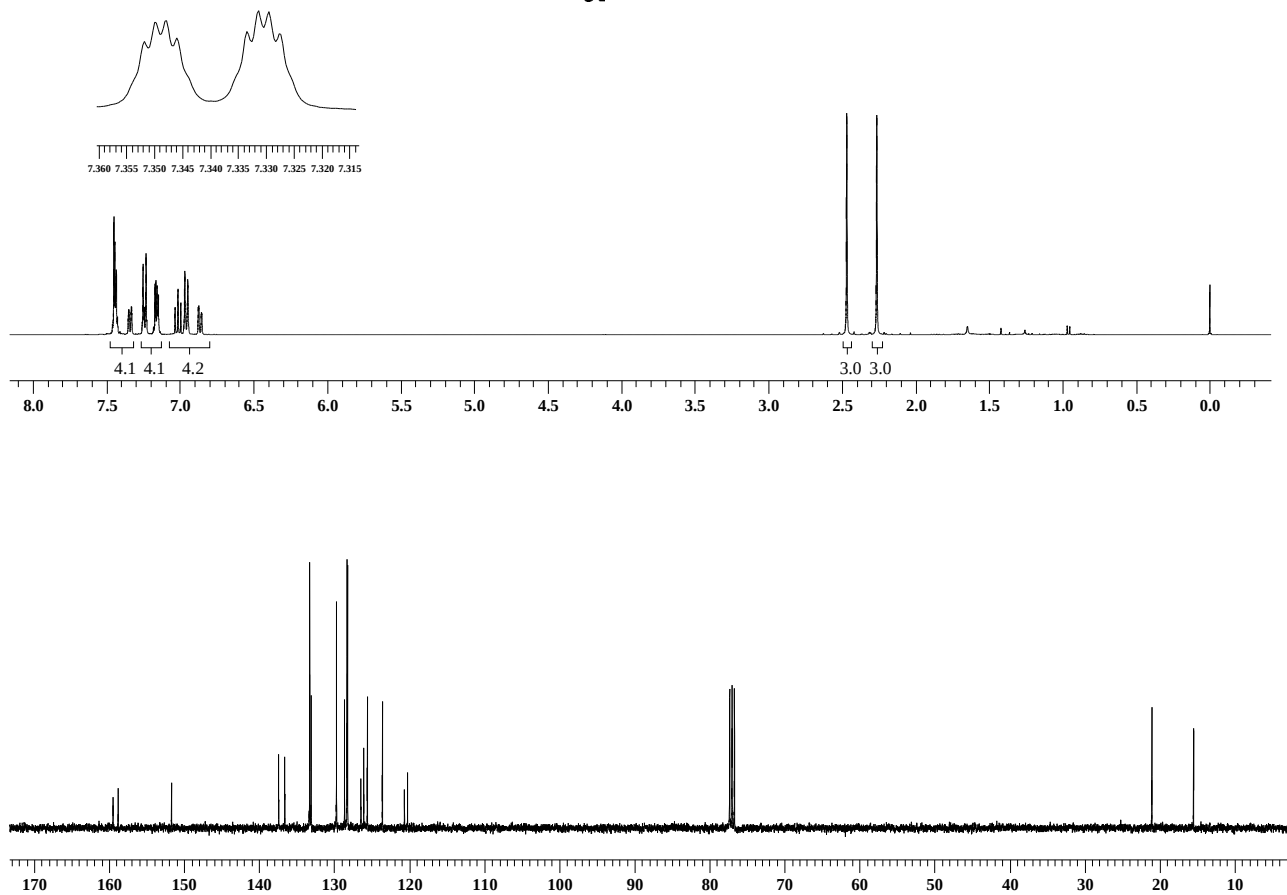
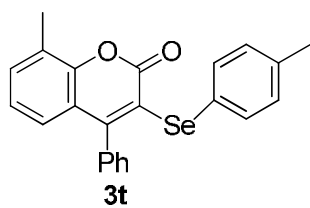


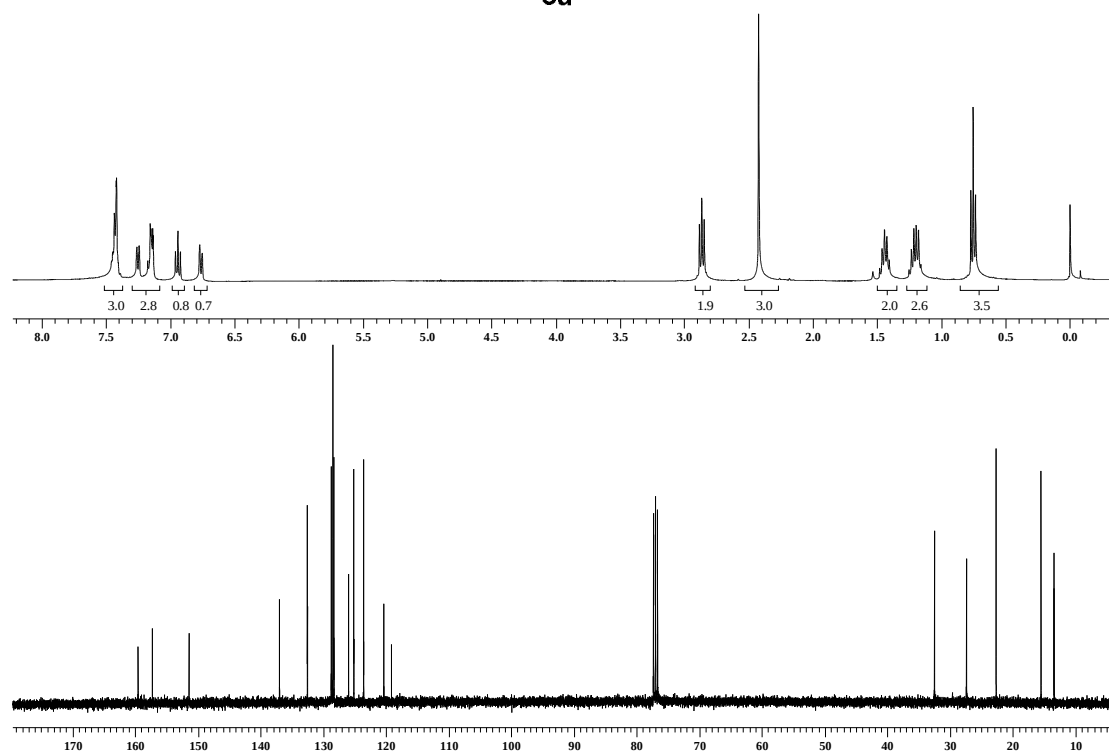


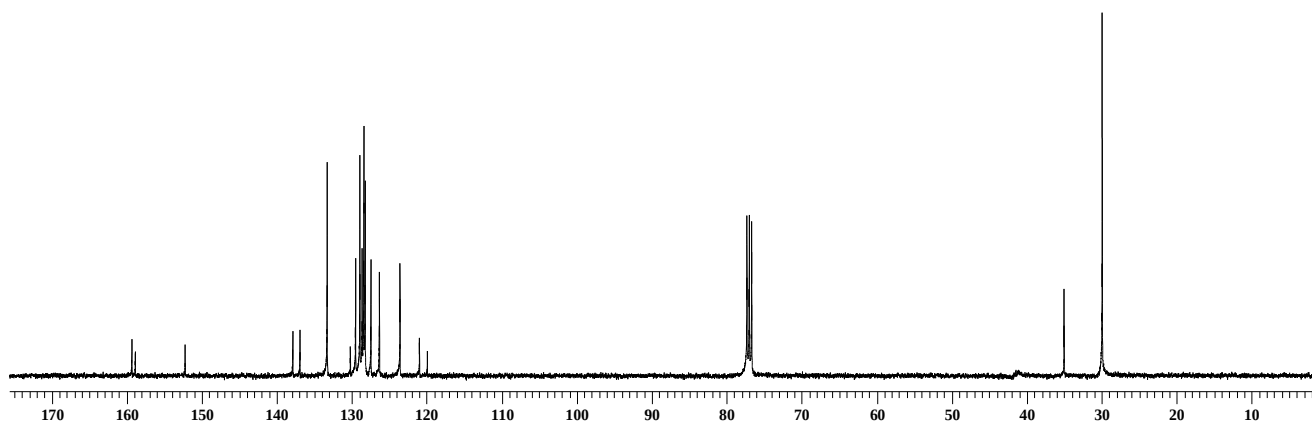
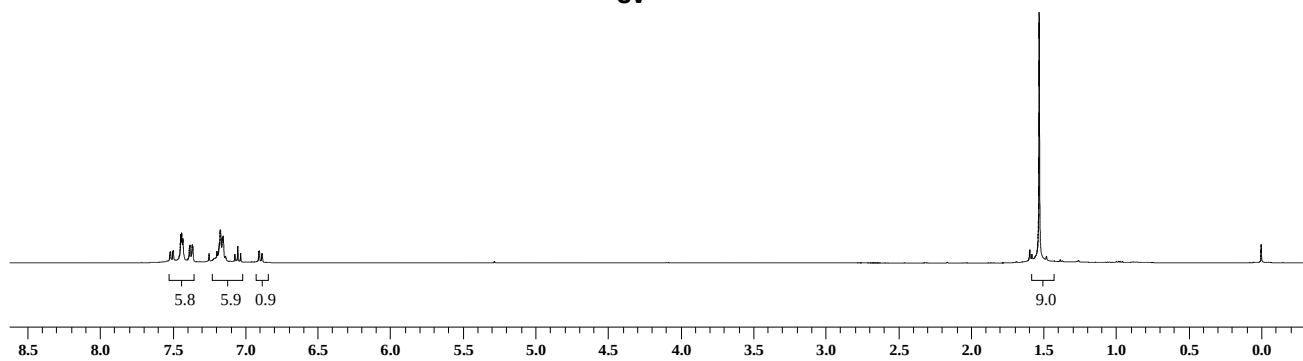
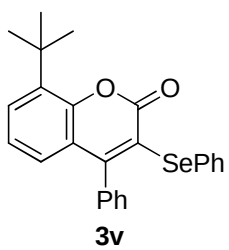


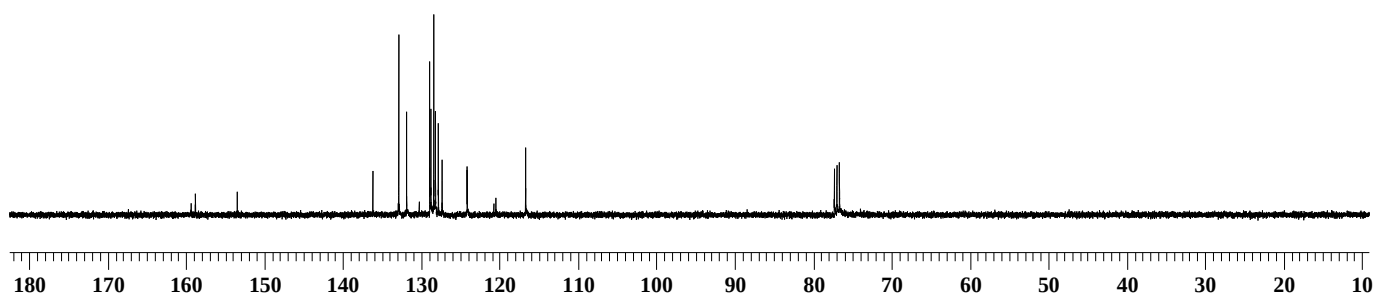
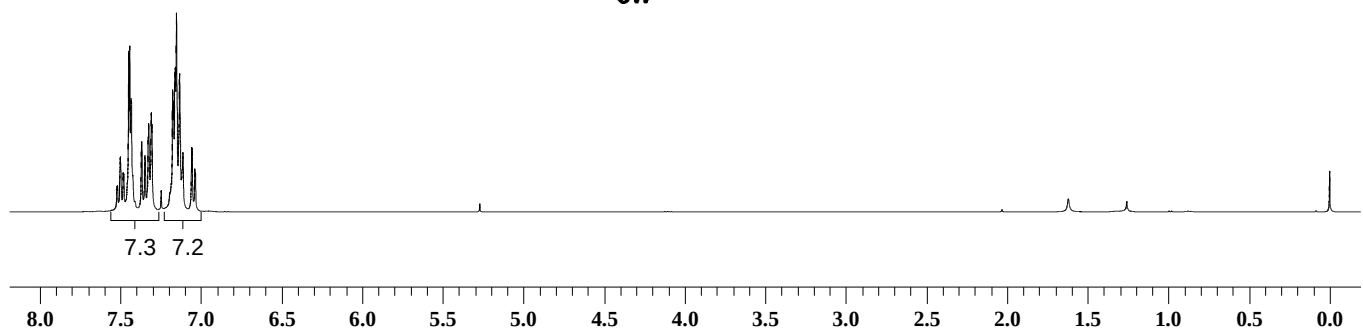
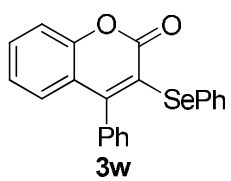


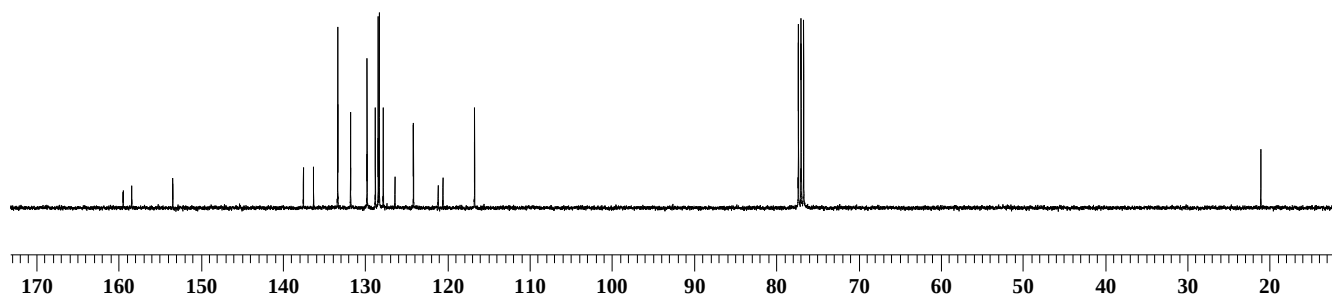
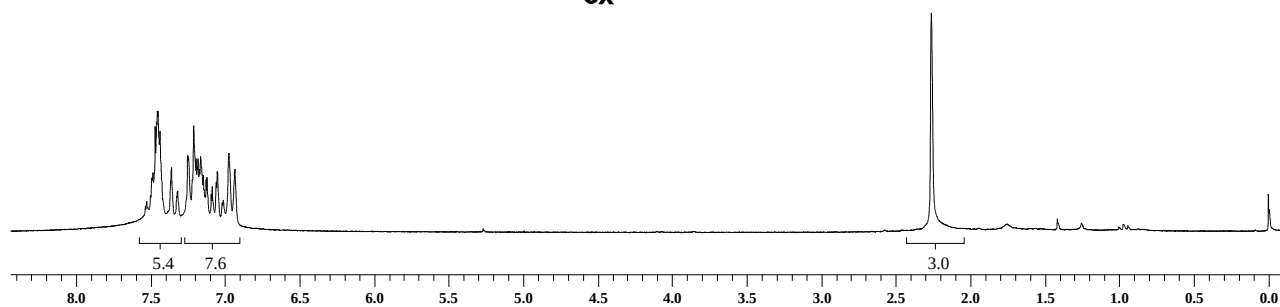
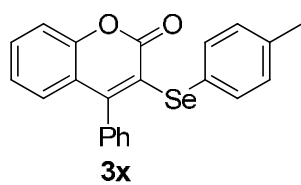


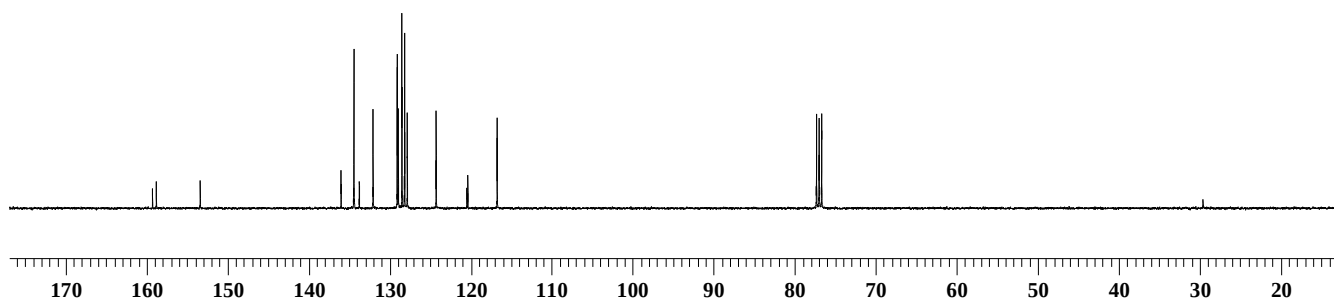
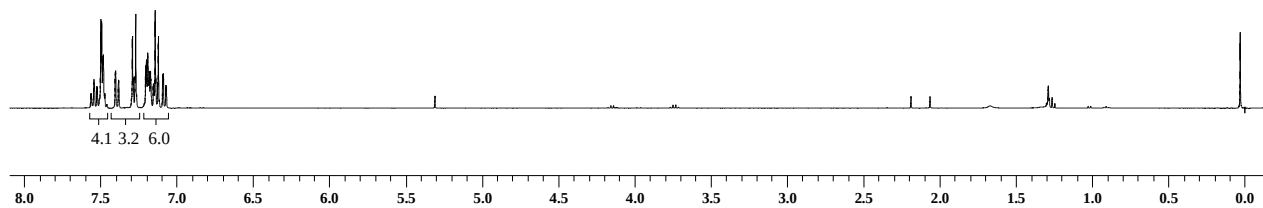
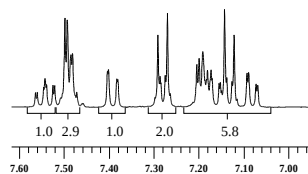
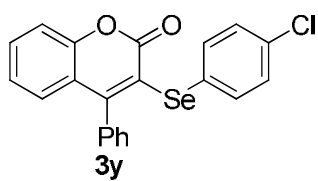


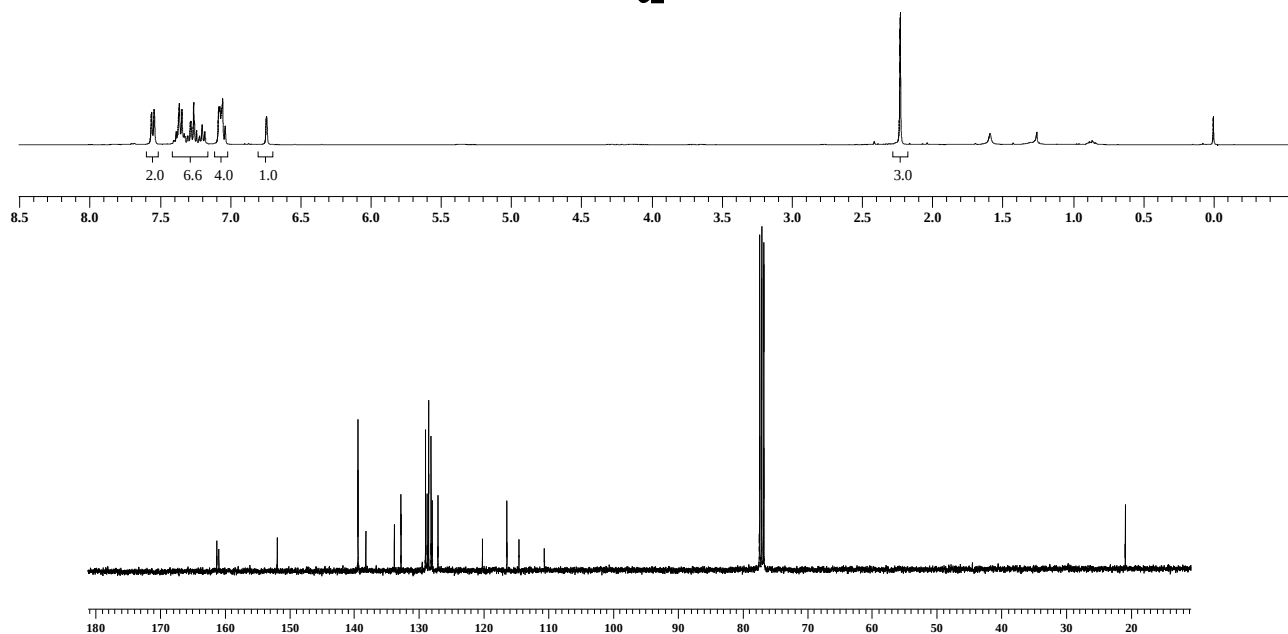
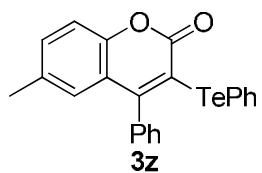


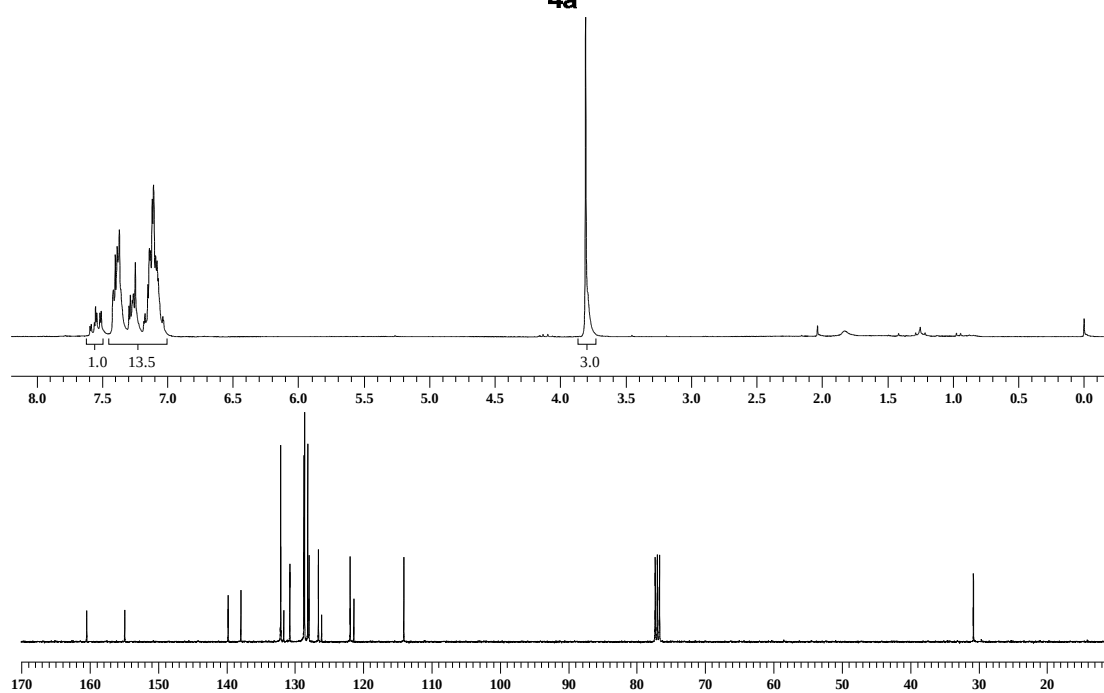
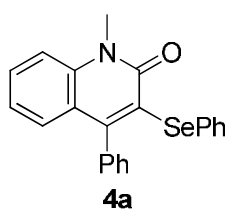


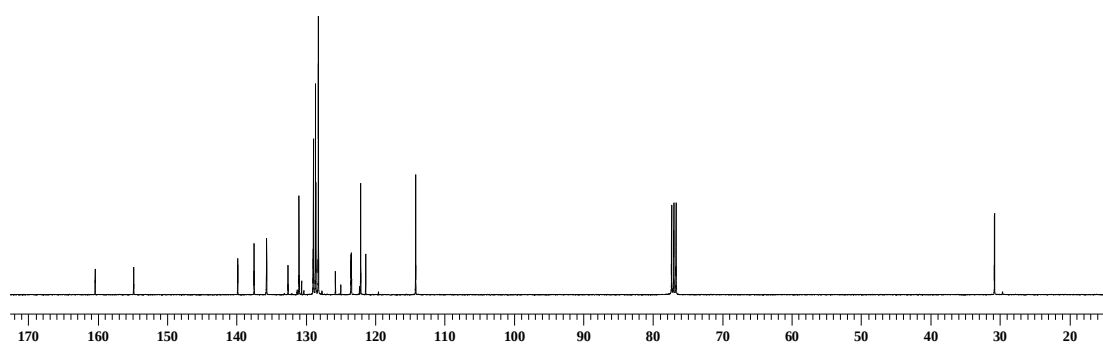
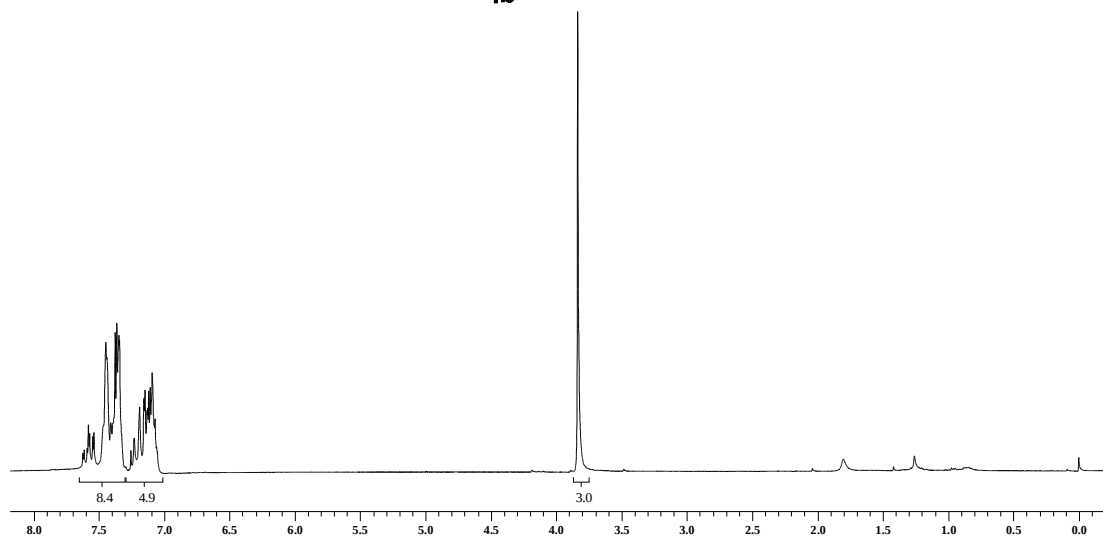
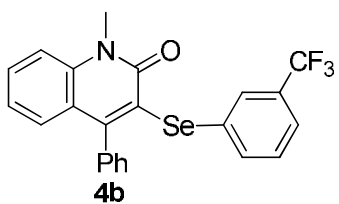


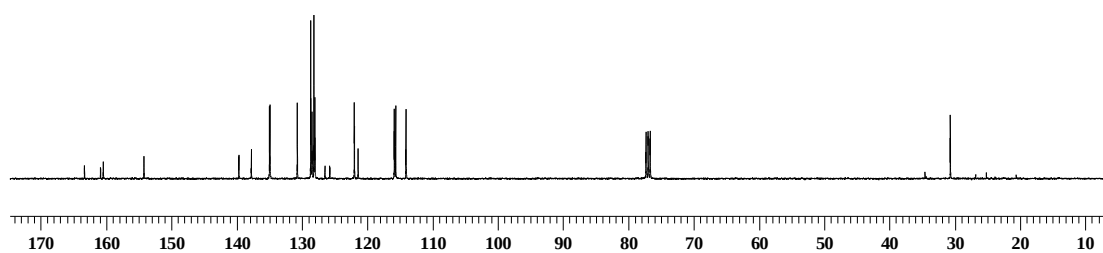
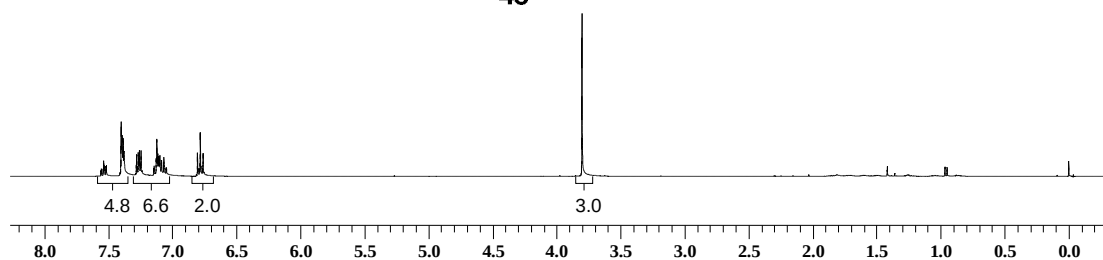
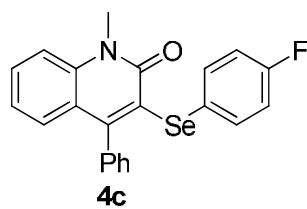


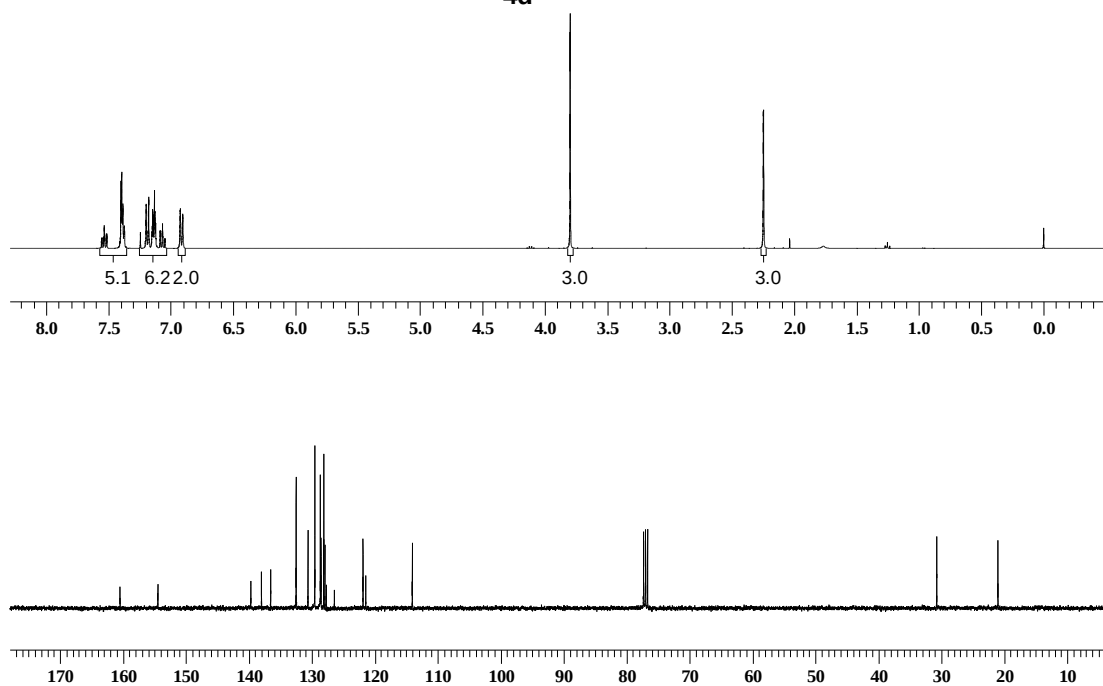
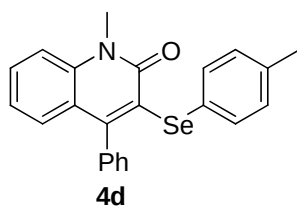


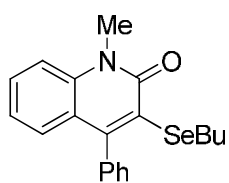




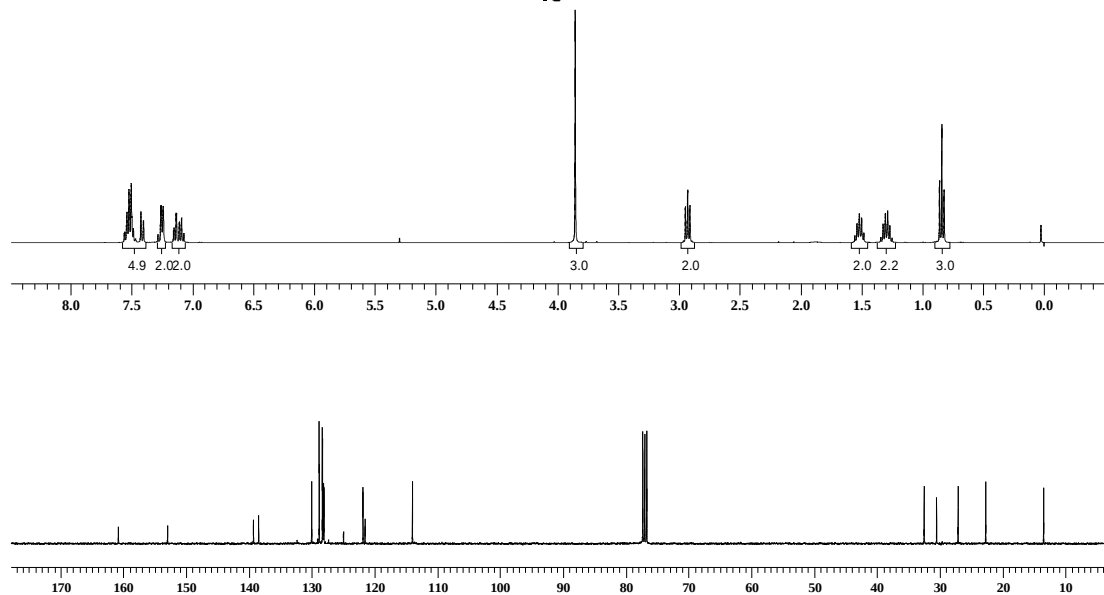


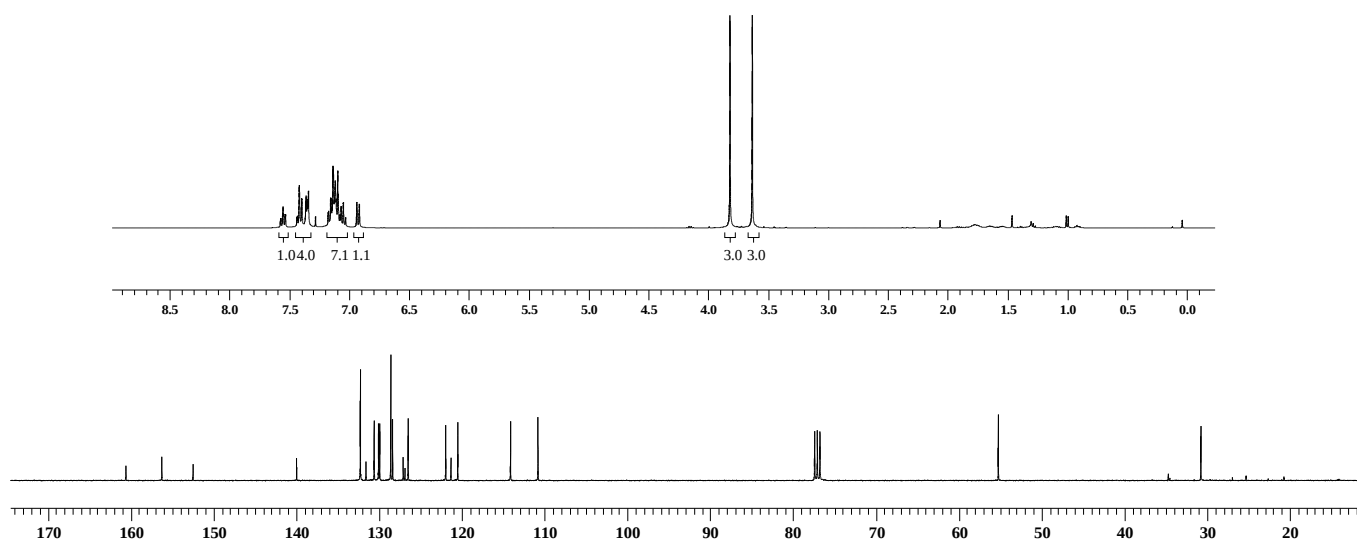
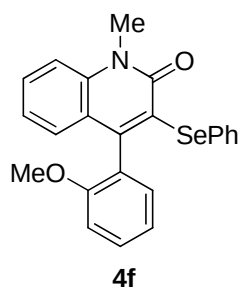


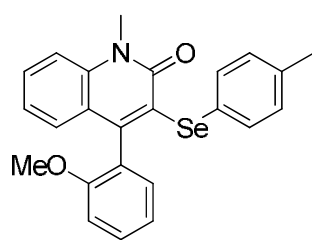




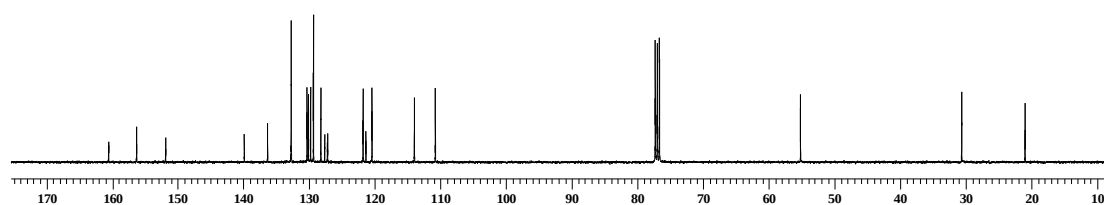
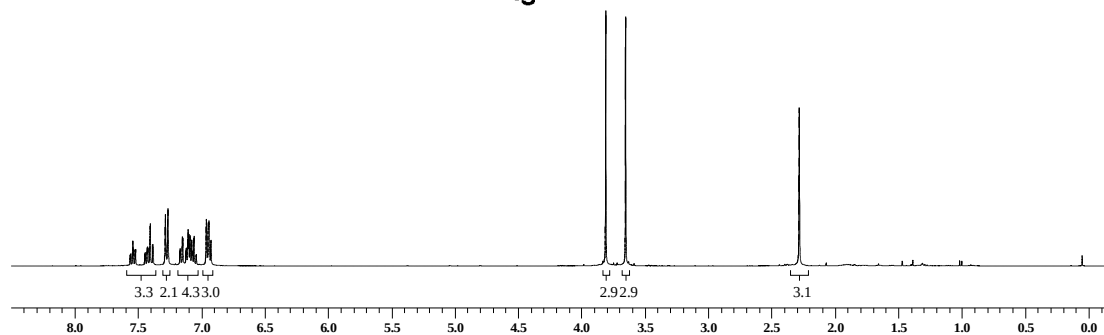
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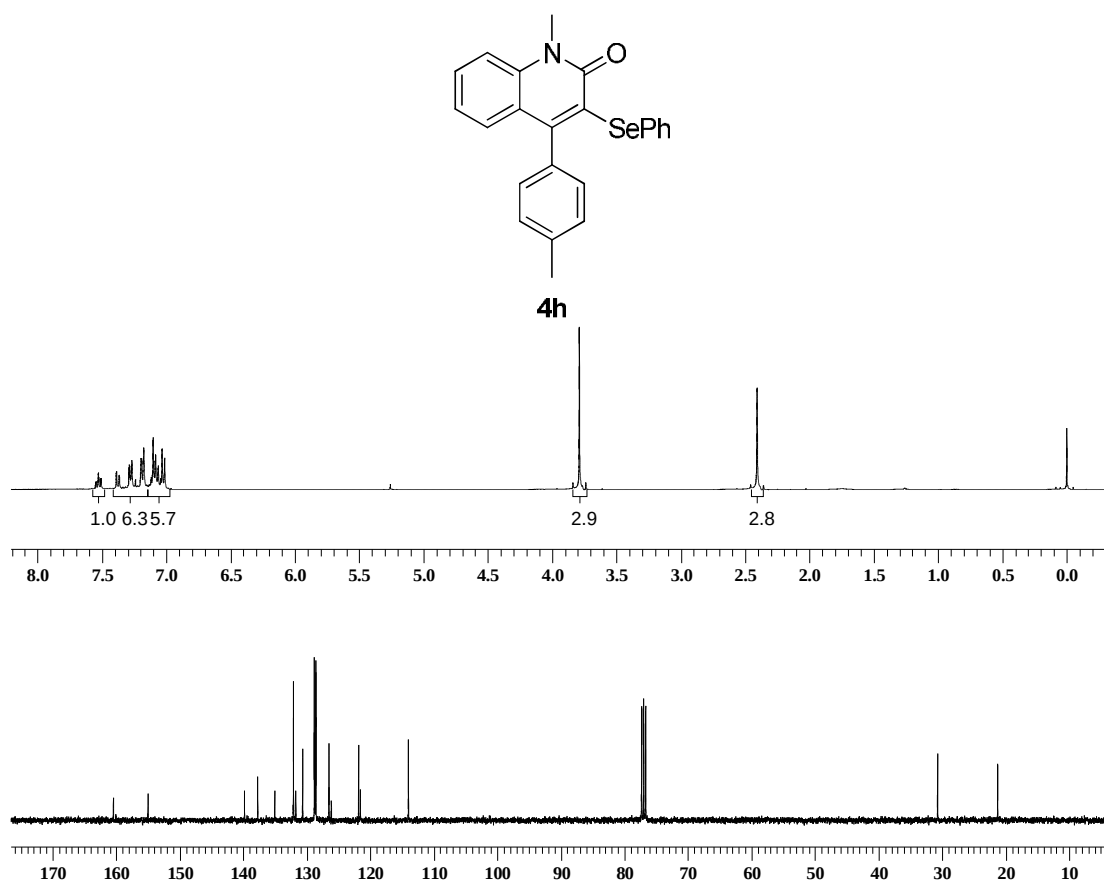


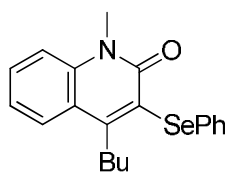




4g







4i

