

# Intermolecular Diels-Alder Cycloaddition for the Construction of Bicyclo[2.2.2]-diazaoctane Structures: Formal Synthesis of Brevianamide B and Premalbrancheamide

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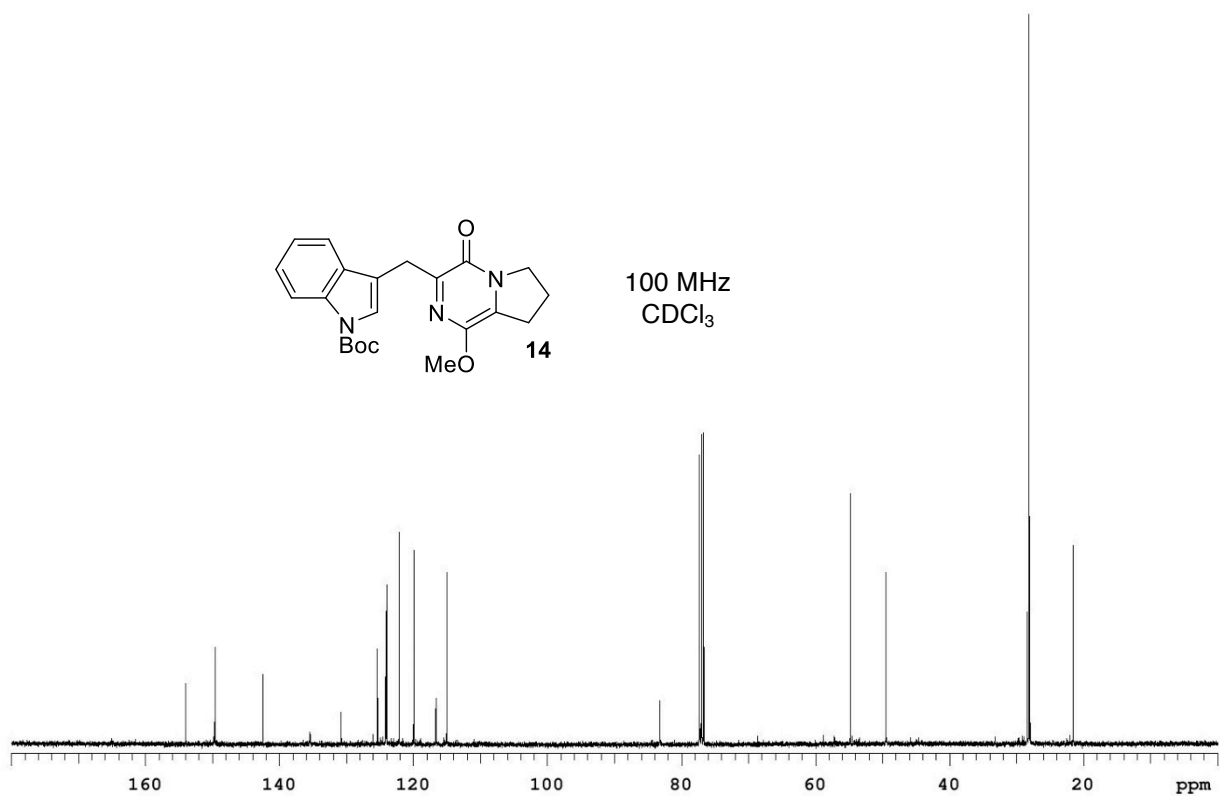
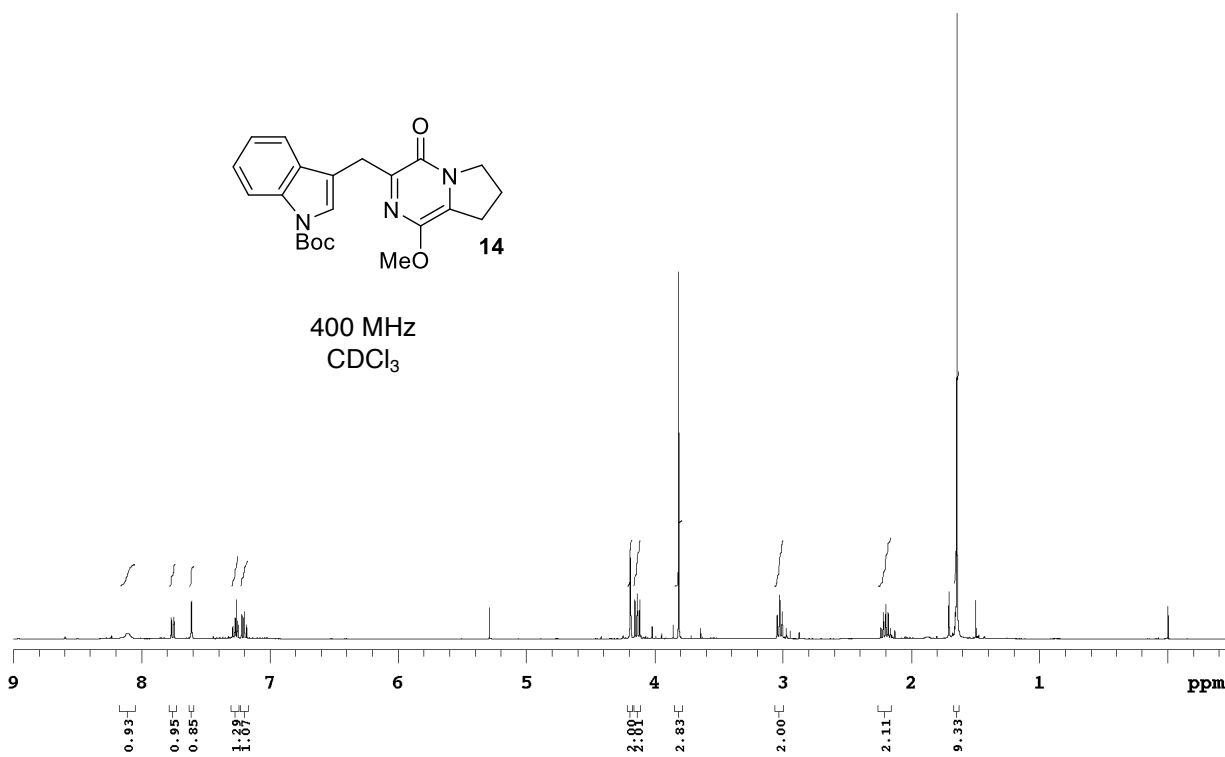
## Supporting Information

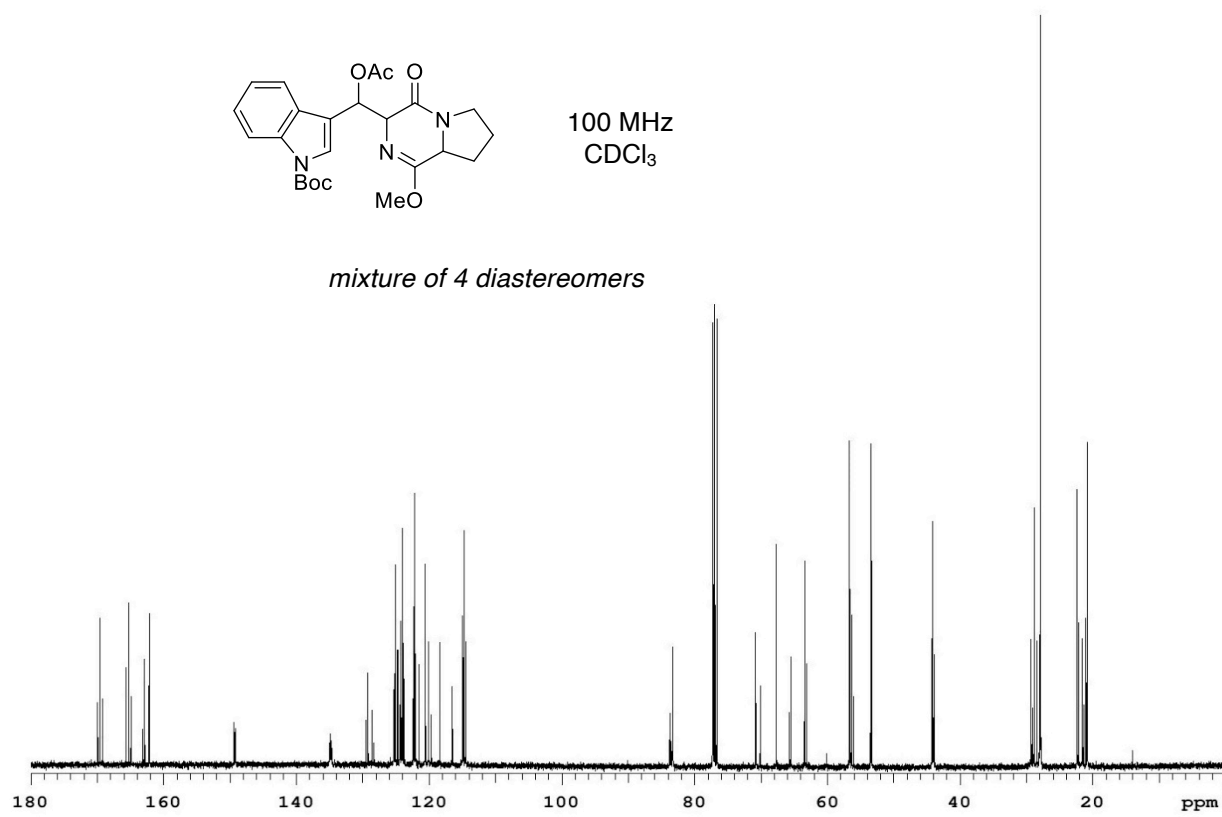
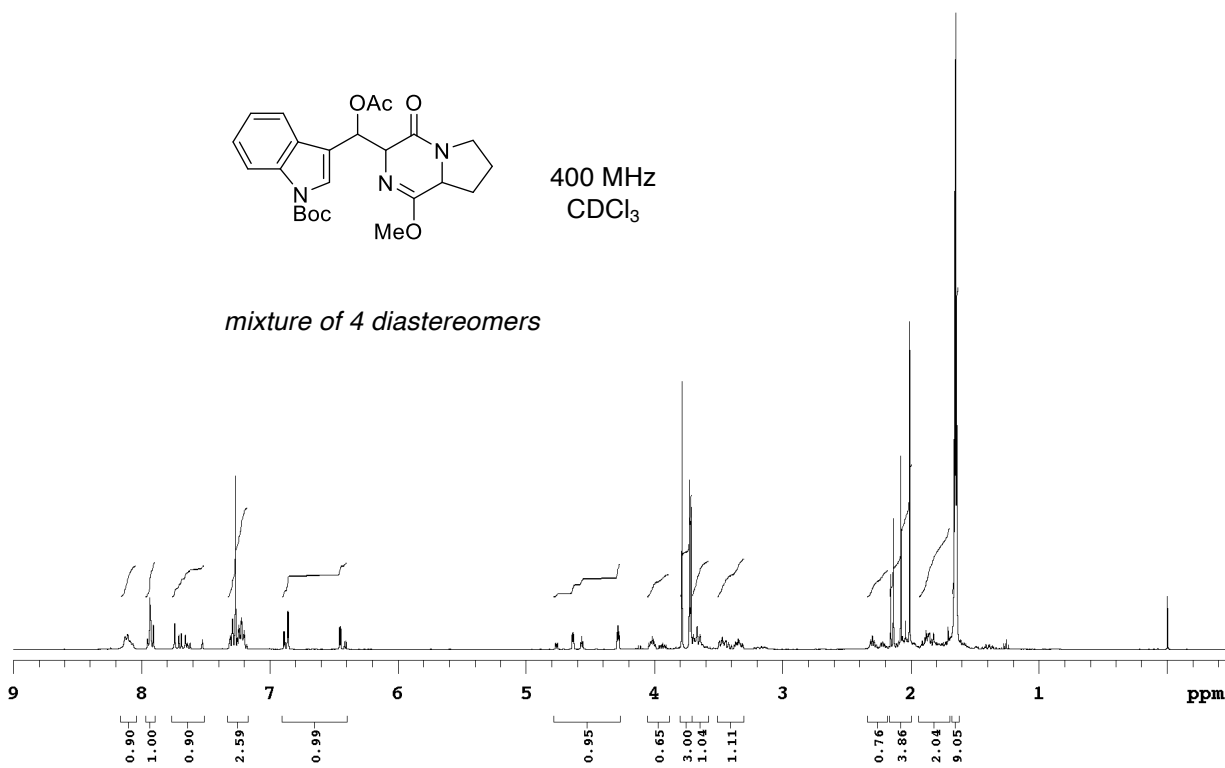
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|---|----------|
| 1. General Information                            | S1       |
| 2. <sup>1</sup> H and <sup>13</sup> C NMR Spectra | S2 – S16 |

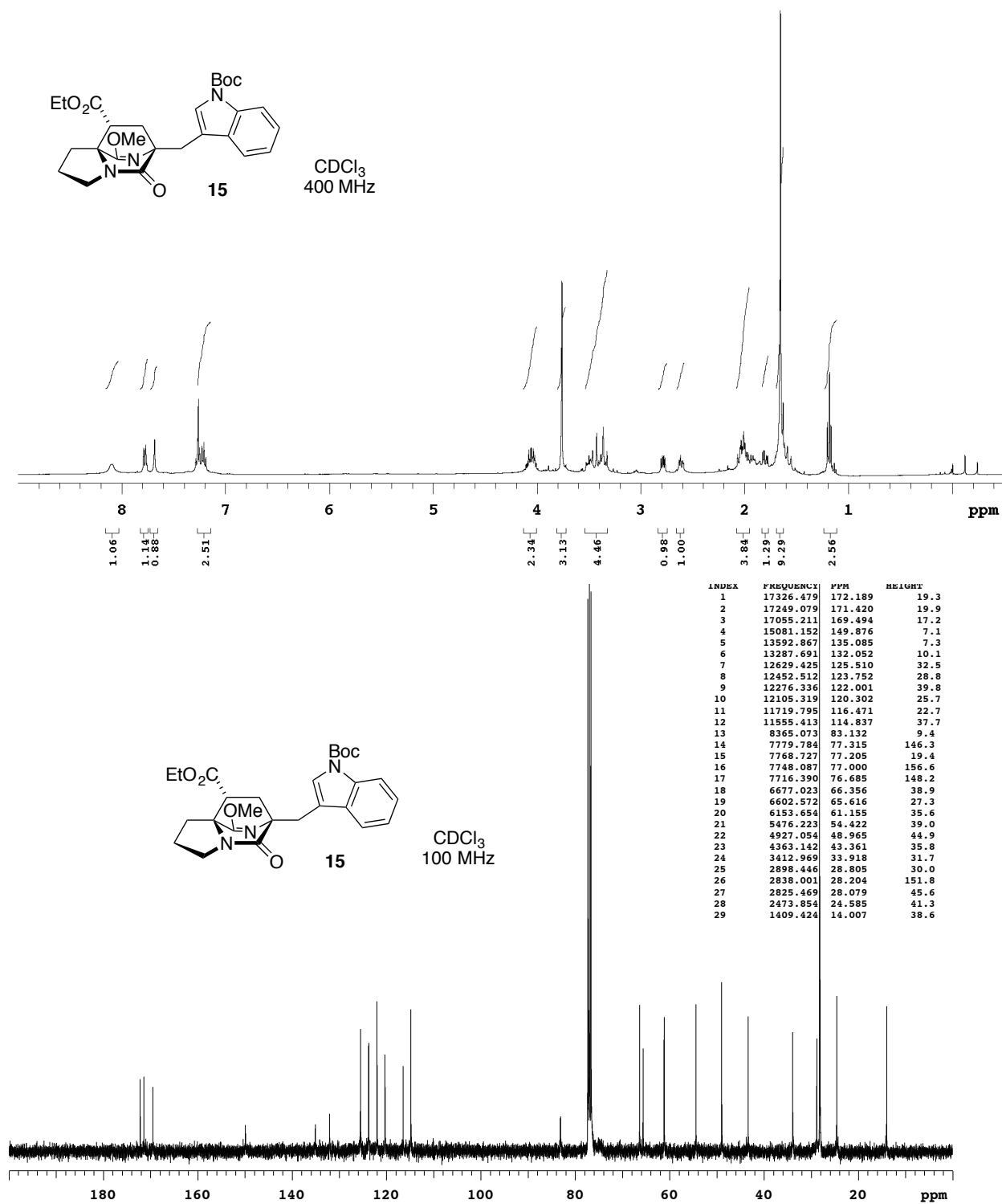
**General Information.** All reactions were carried out under an atmosphere of nitrogen in flame-dried or oven-dried glassware with magnetic stirring unless otherwise indicated. Acetonitrile, THF, toluene, and Et<sub>2</sub>O were degassed with argon and purified by passage through a column of molecular sieves and a bed of activated alumina<sup>1</sup>. Dichloromethane was distilled from CaH<sub>2</sub> prior of use. All reagents were used as received unless otherwise noted. Flash column chromatography<sup>2</sup> was performed using silica gel (230-400 mesh). Analytical thin layer chromatography was performed on 60Å glass plates. Visualization was accomplished with UV light, anisaldehyde, ceric ammonium molybdate (CAM), potassium permanganate, or ninhydrin, followed by heating. Film (or KBR pellet) infrared spectra were recorded using a FTIR spectrophotometer. Optical rotations were determined by a digital polarimeter at 25 °C. <sup>1</sup>H NMR spectra were recorded on a 400 MHz spectrometer and are reported in ppm using solvent as an internal standard (CDCl<sub>3</sub> at 7.26 ppm) or tetramethylsilane (0.00 ppm). Proton-decoupled <sup>13</sup>C NMR spectra were recorded on a 400 MHz spectrometer and are reported in ppm using solvent as an internal standard (CDCl<sub>3</sub> at 77.0 ppm). All compounds were judged to be homogeneous (>95% purity) by <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy unless otherwise noted as mixtures. Mass spectra data analysis was obtained through positive electrospray ionization (ICR-MS w/NaCl).

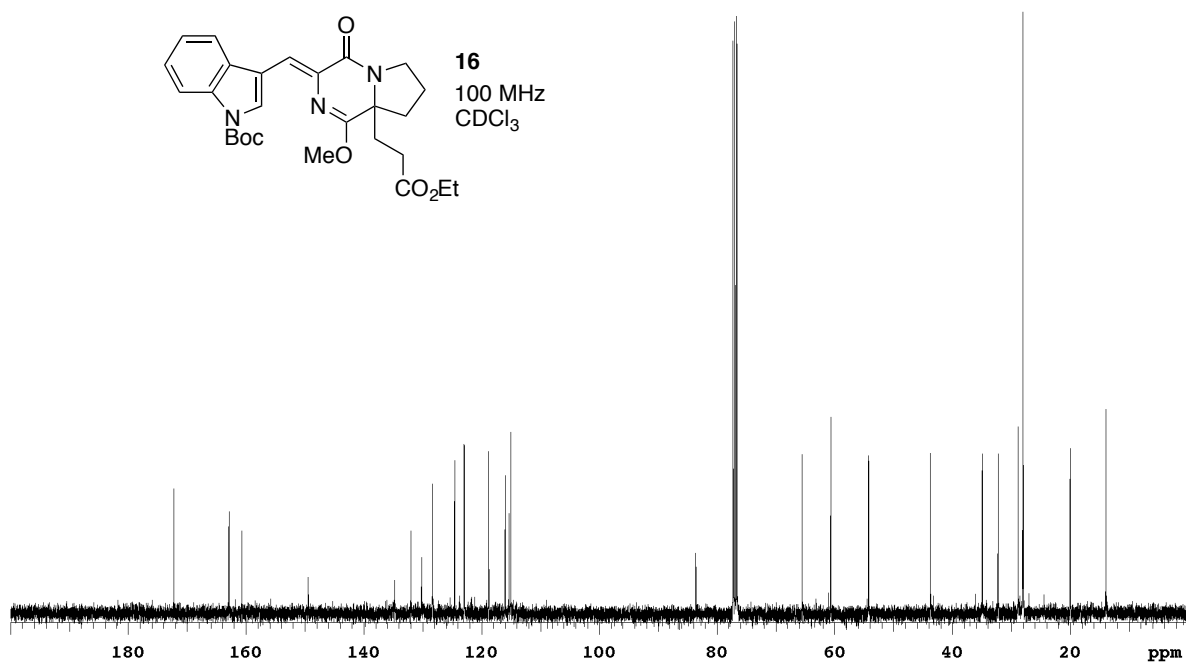
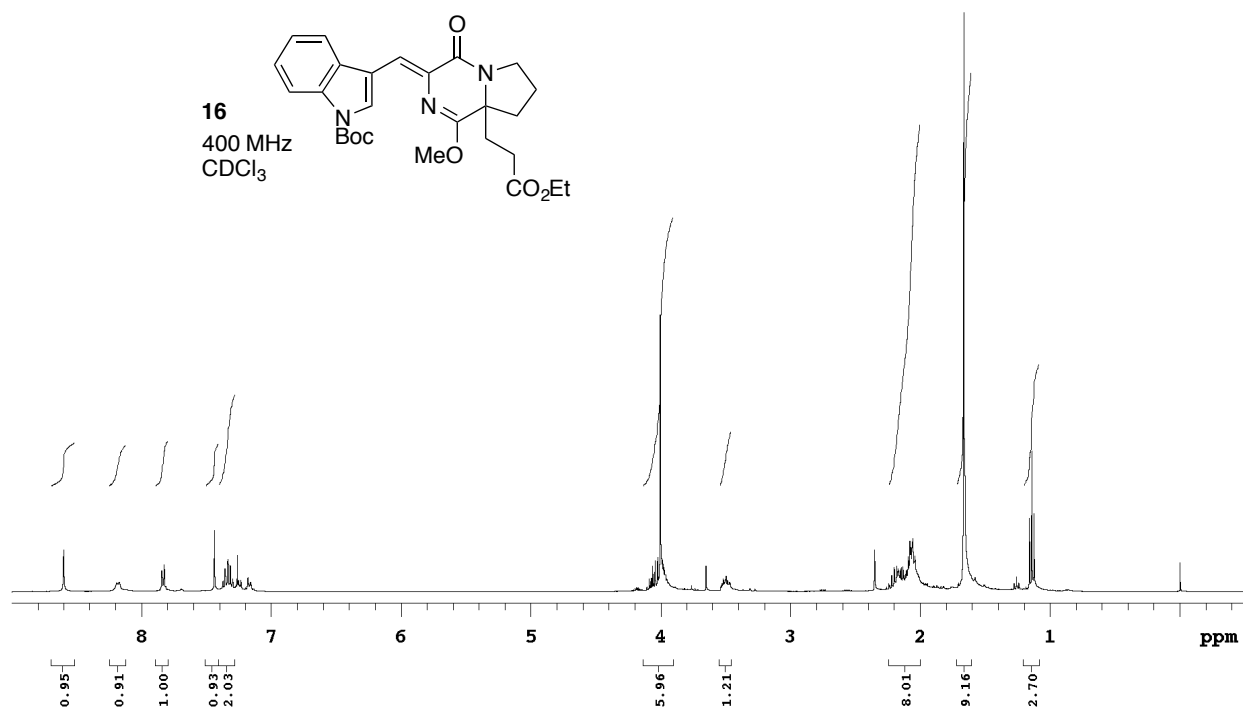
<sup>1</sup> Pangborn, A.B.; Giardello, M.A.; Grubbs, R.H.; Rosen, R.K.; Timmers, F. J., *Organometal.* **1996**, *15*, 1518-1520.

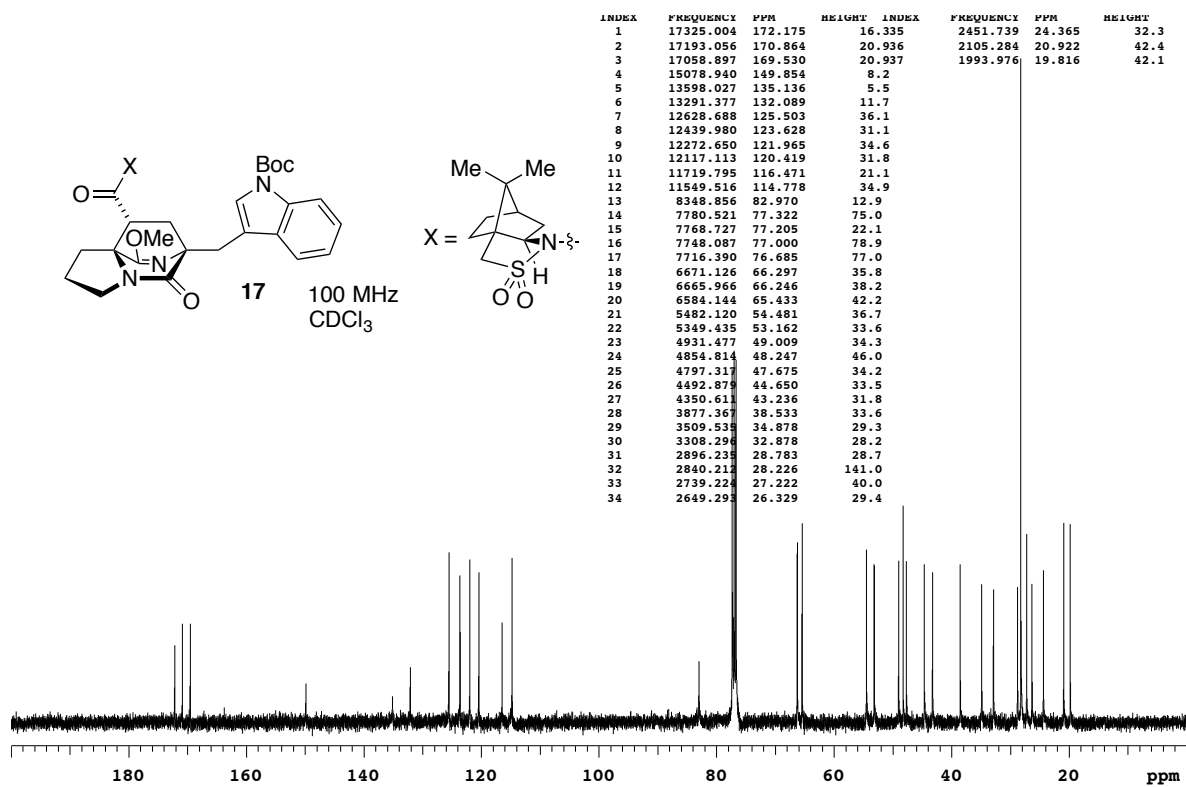
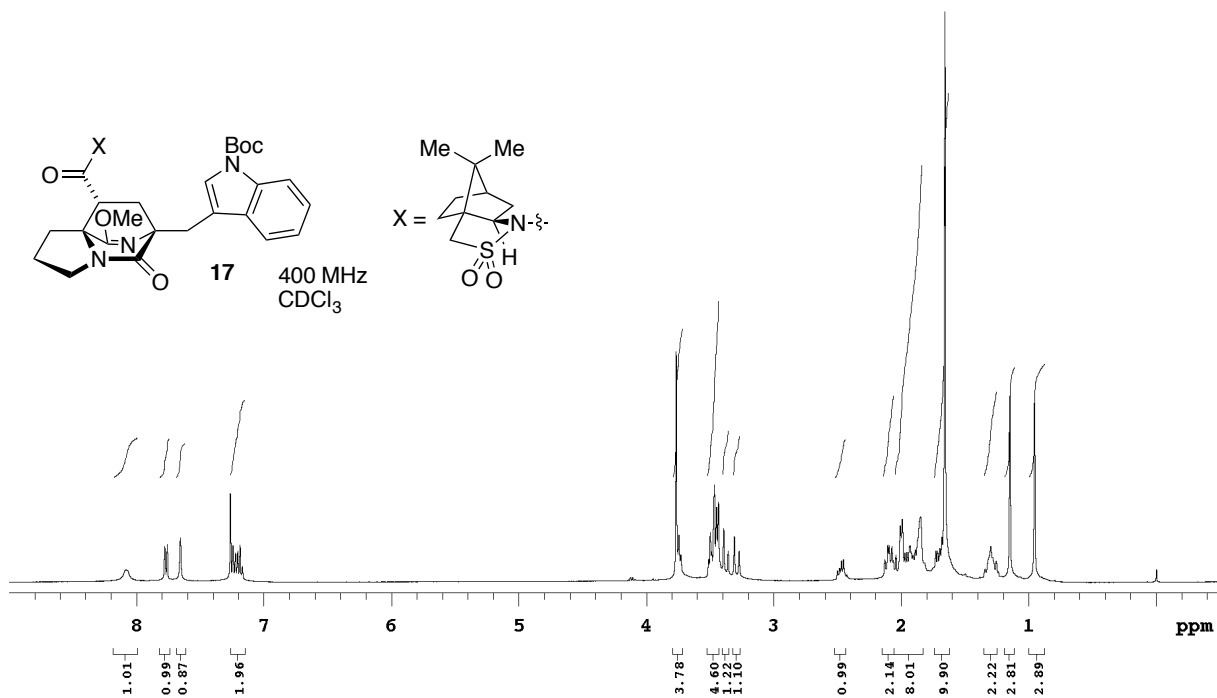
<sup>2</sup> Still, W.C.; Kahn, M.; Mitra, A. *J. Org. Chem.* **1978**, *43*, 2923-2925.

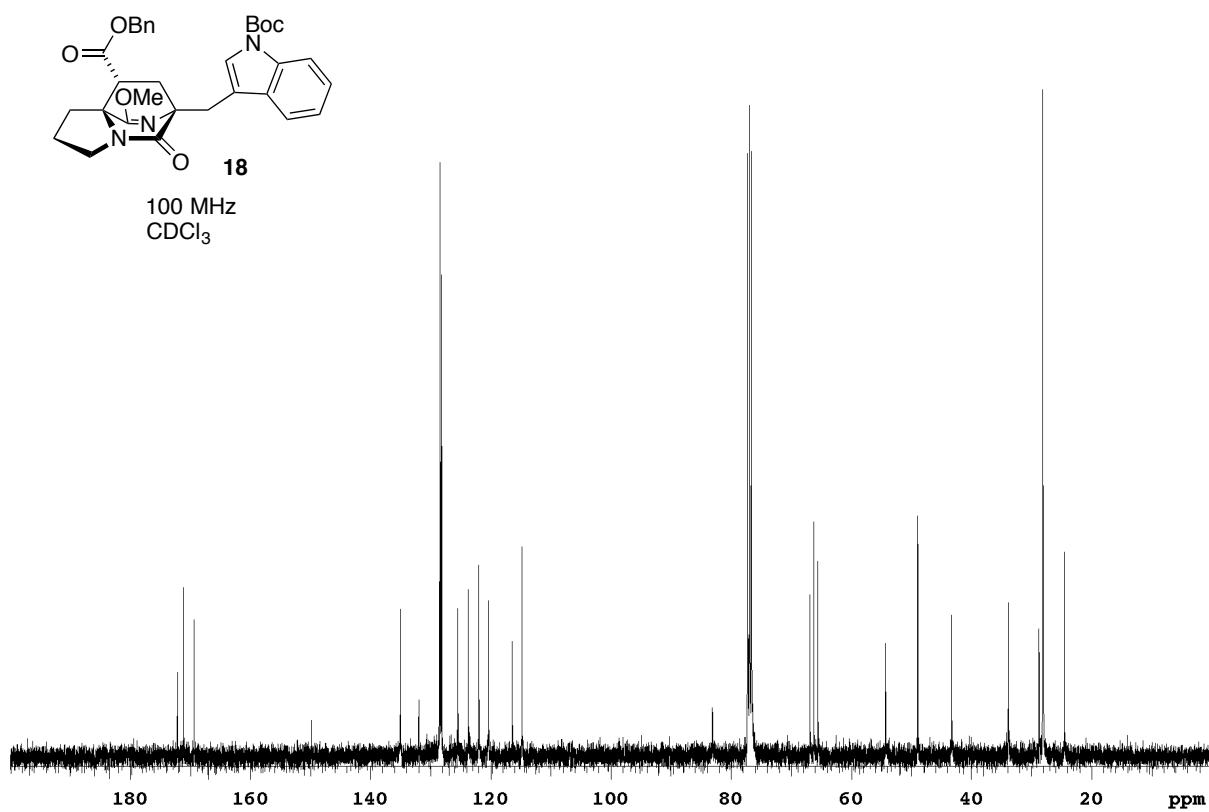
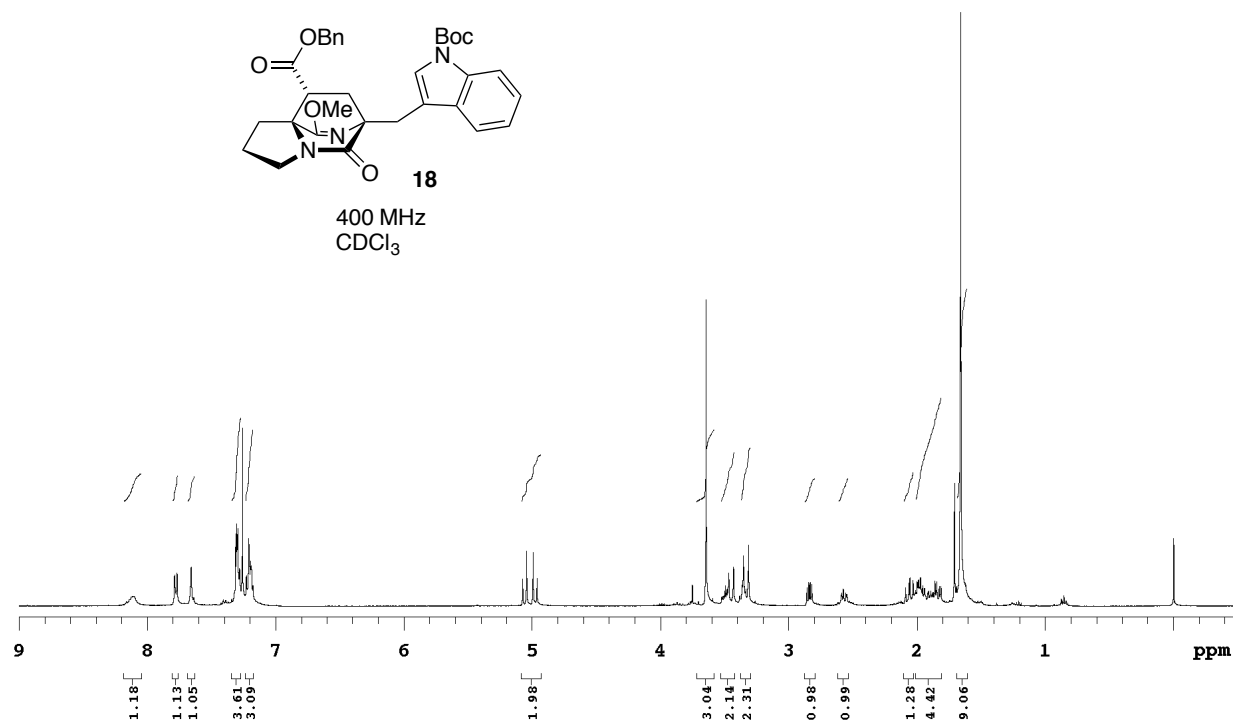


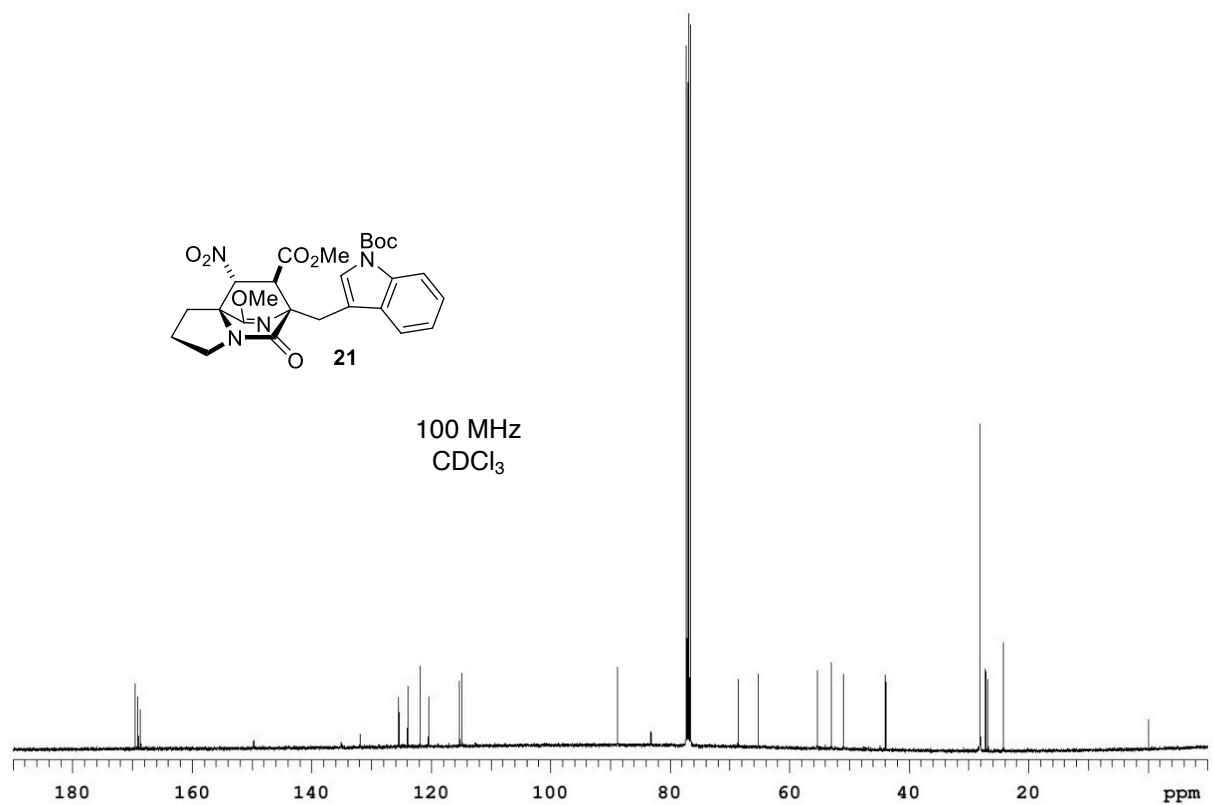
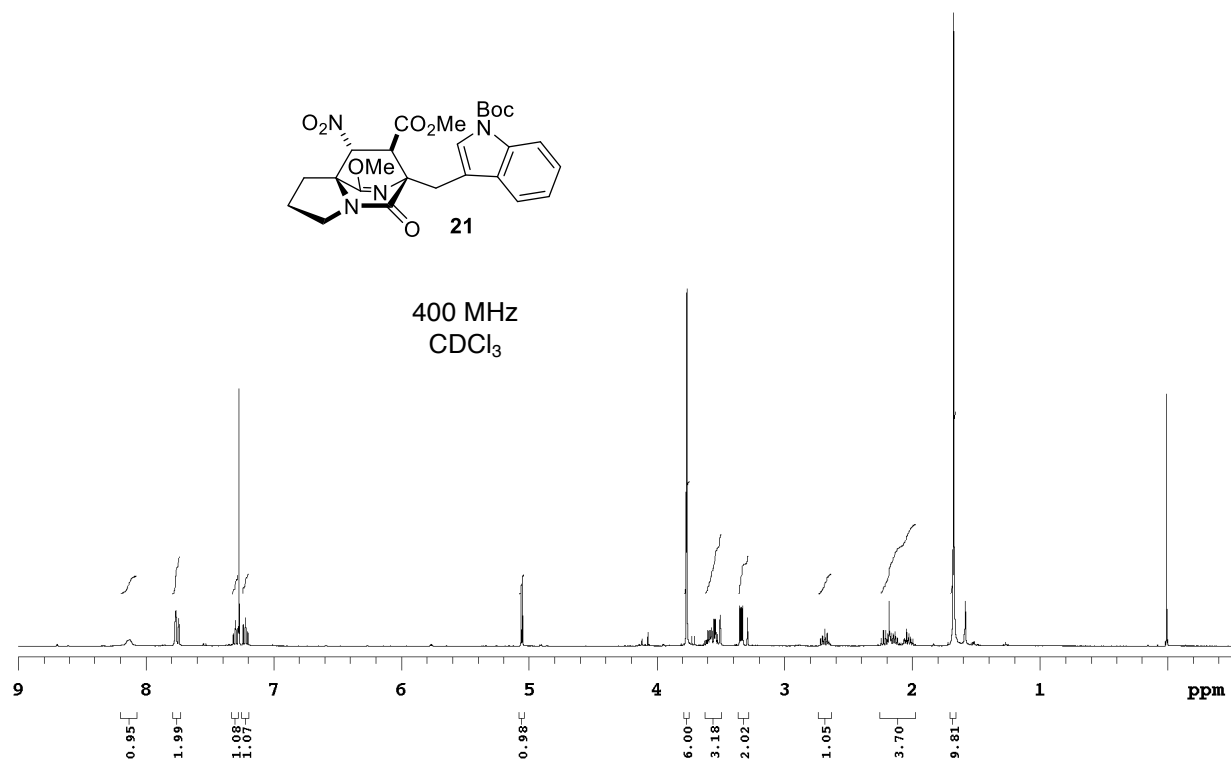




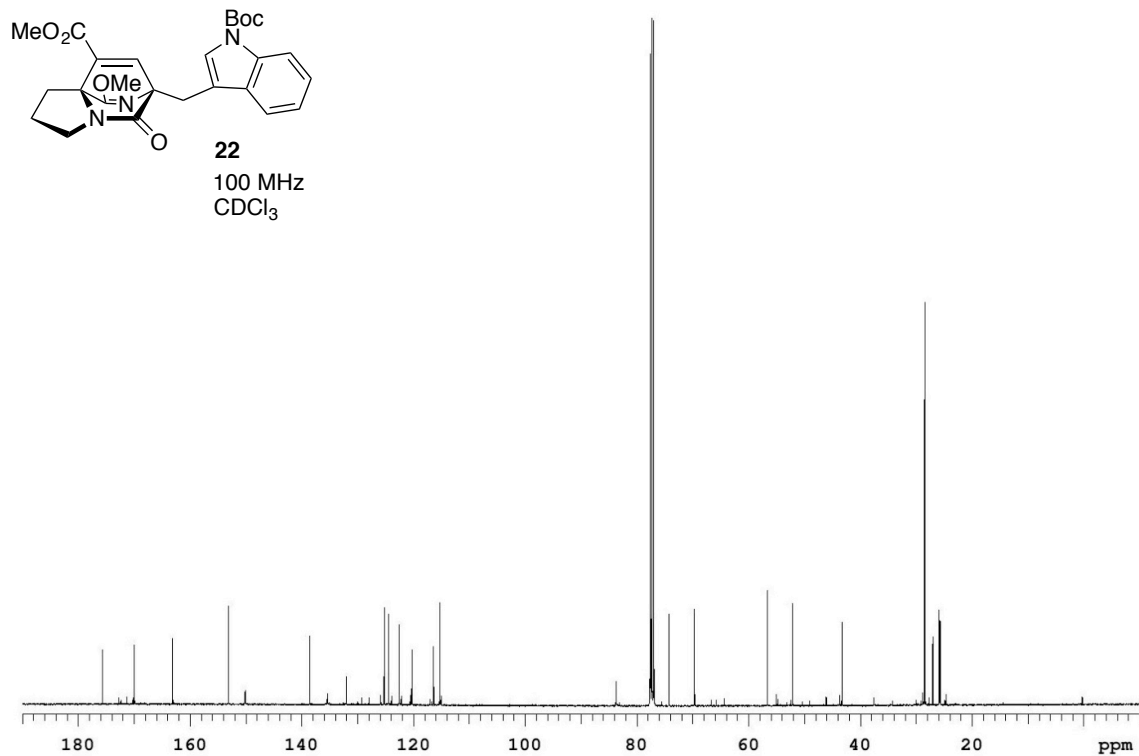
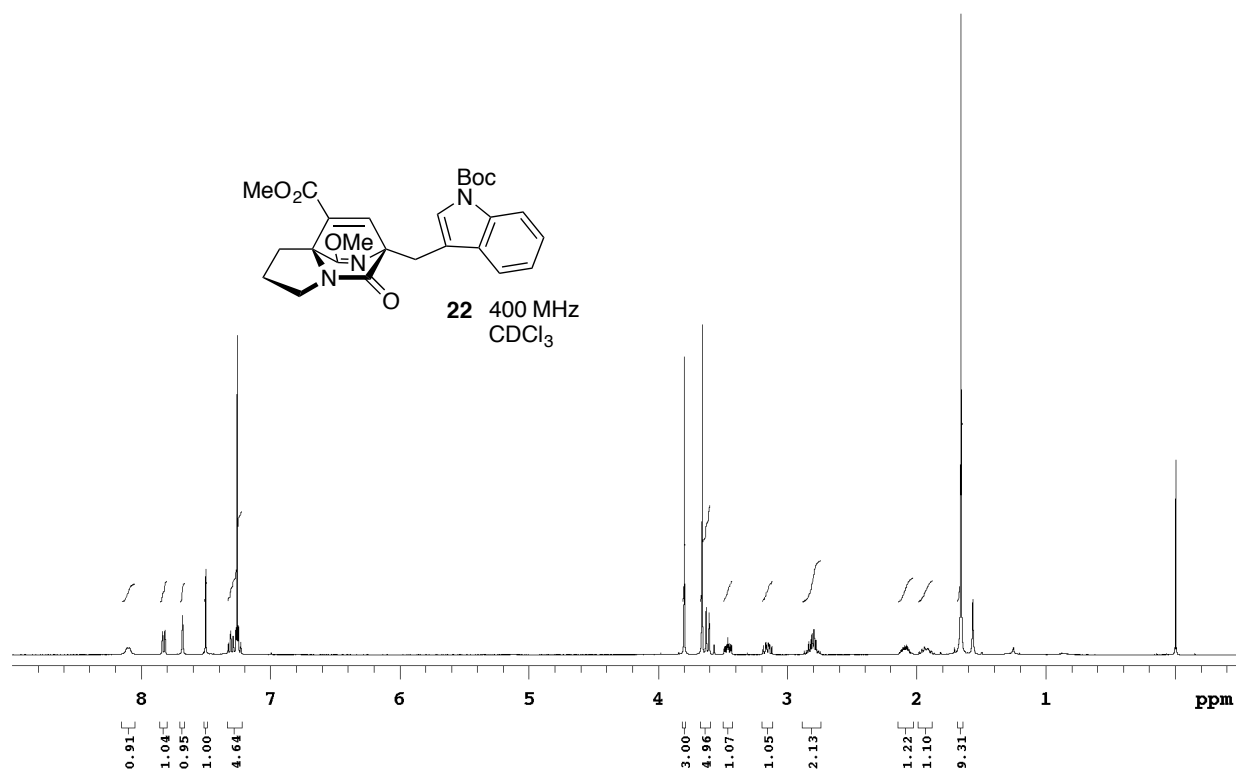




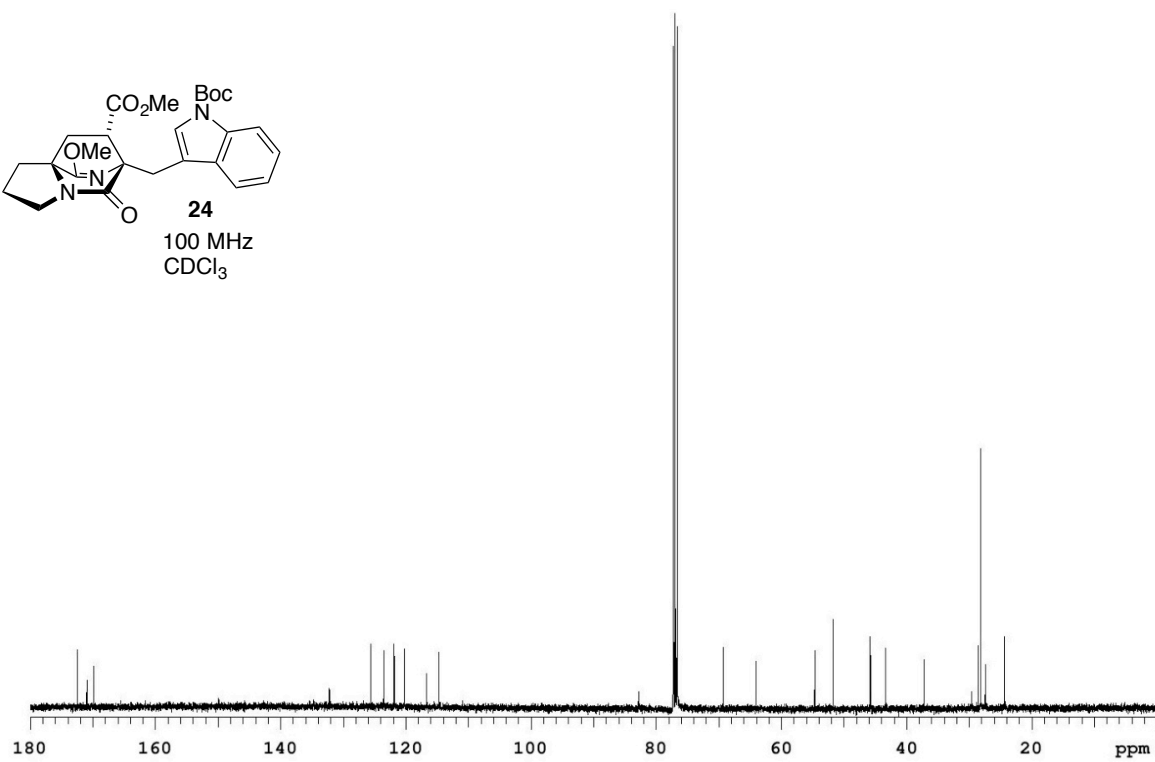
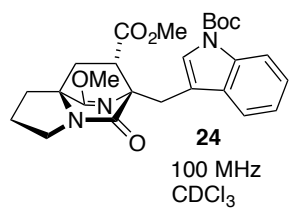
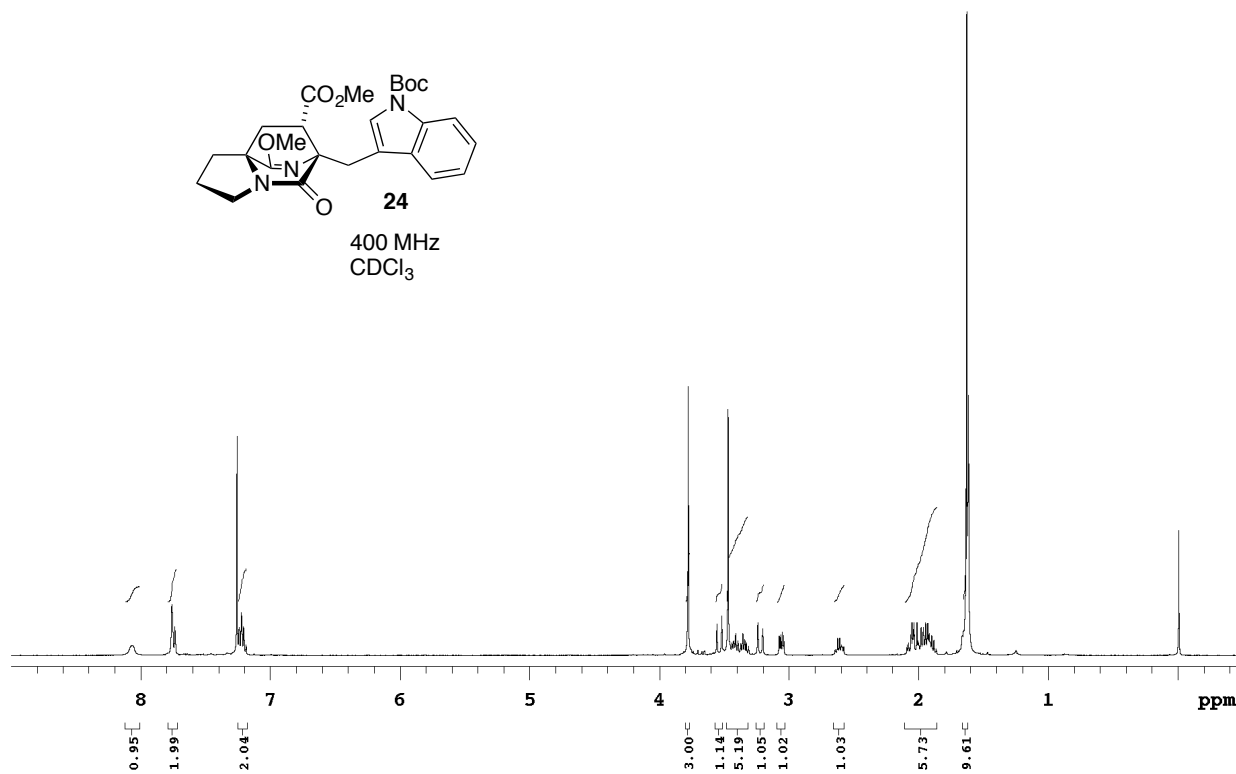
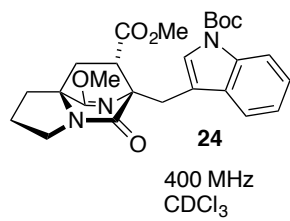


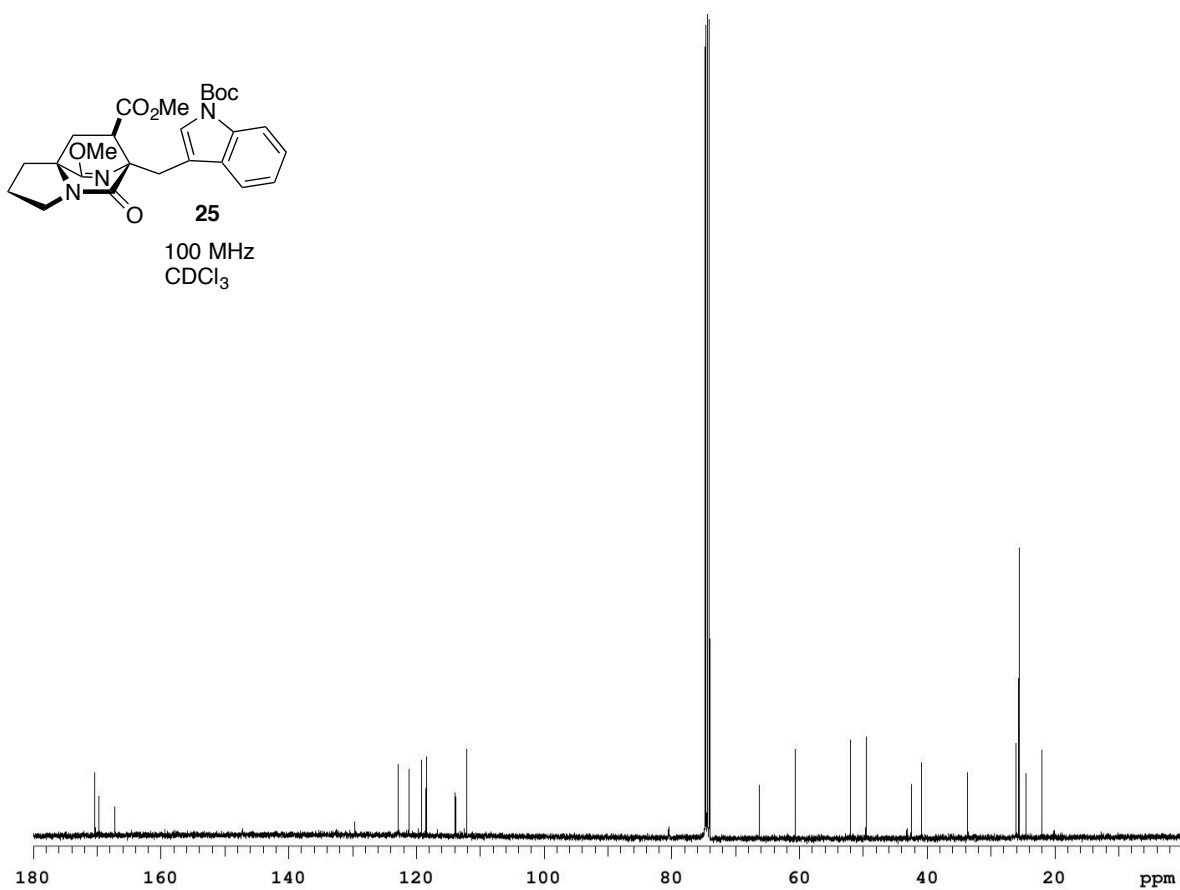
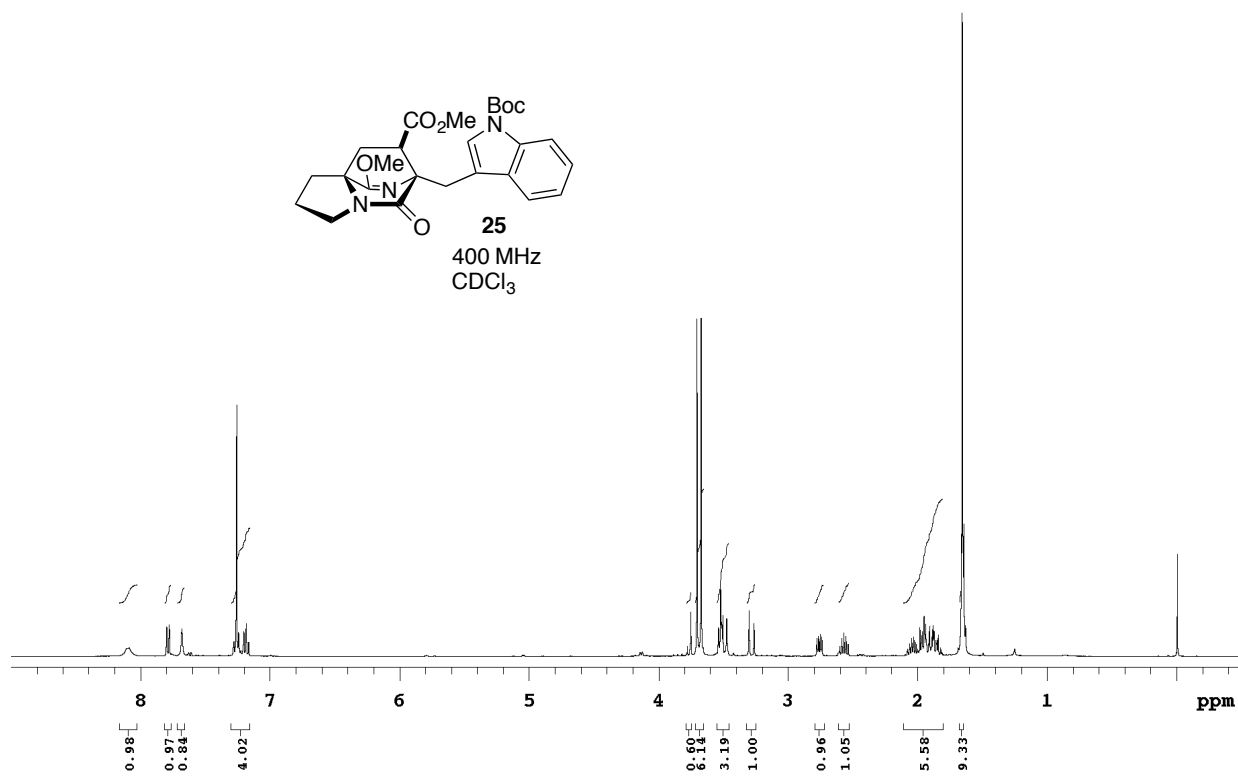


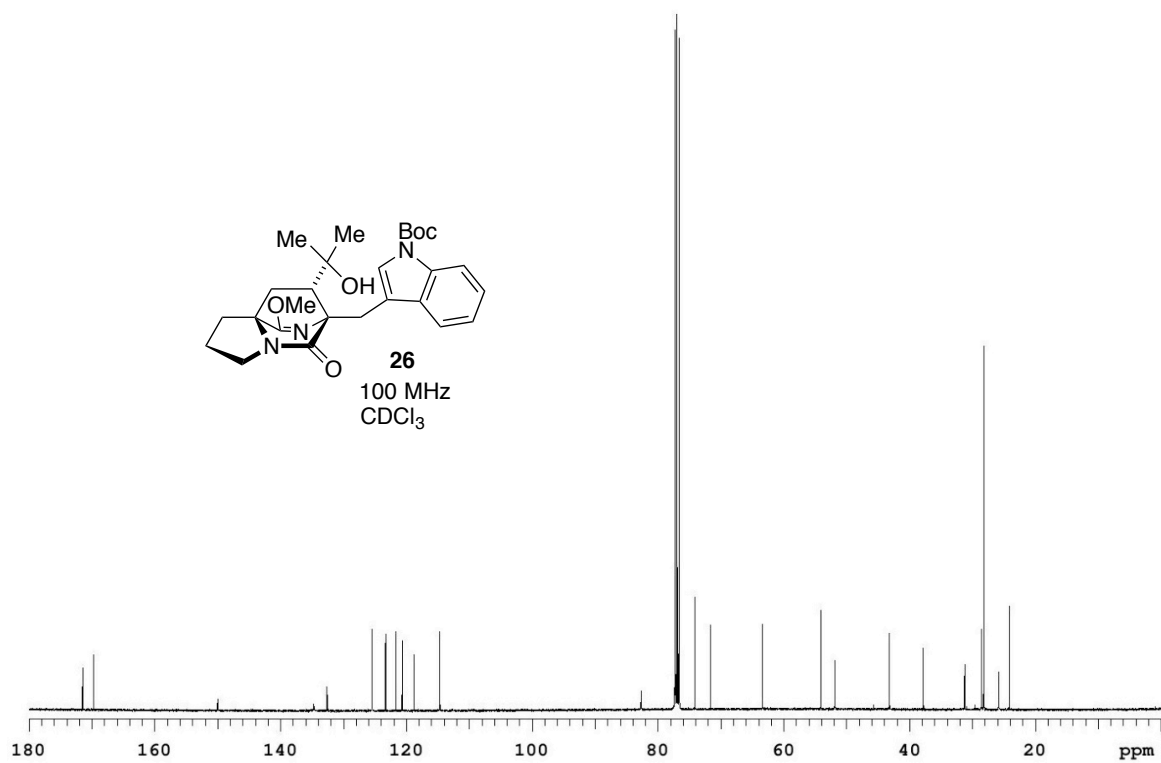
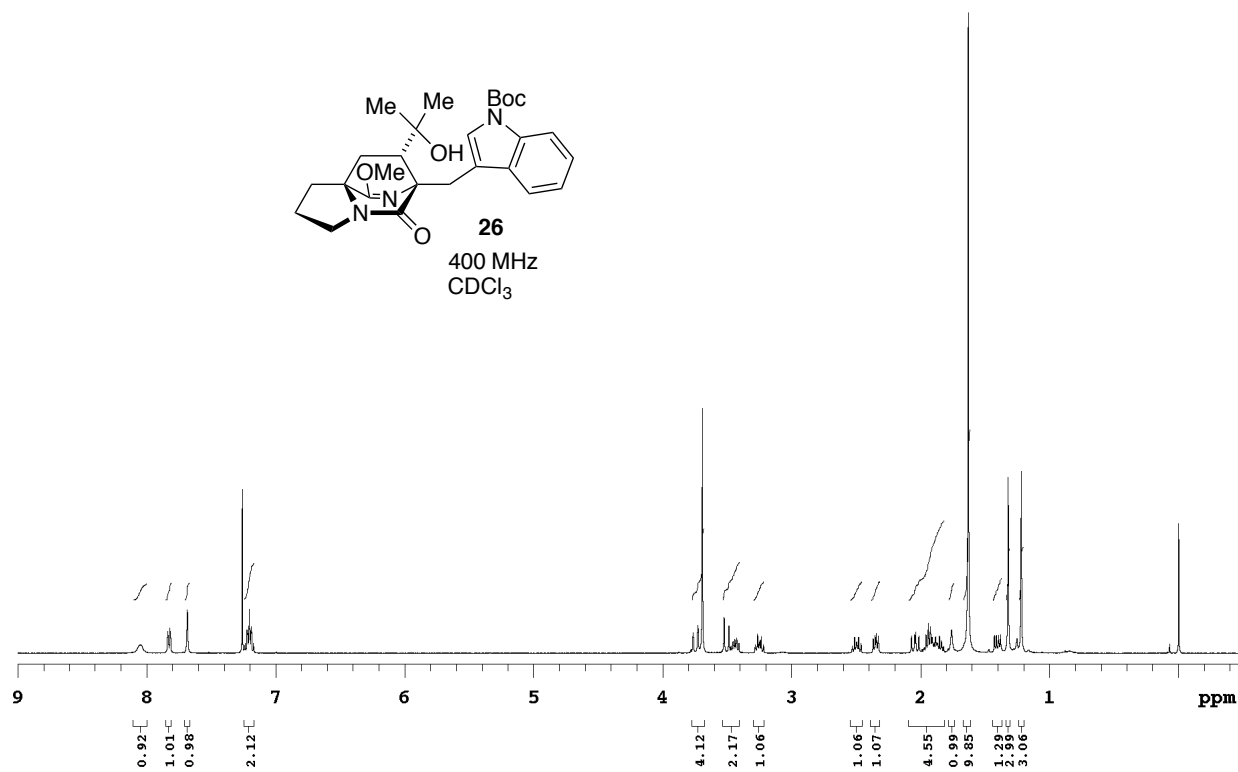


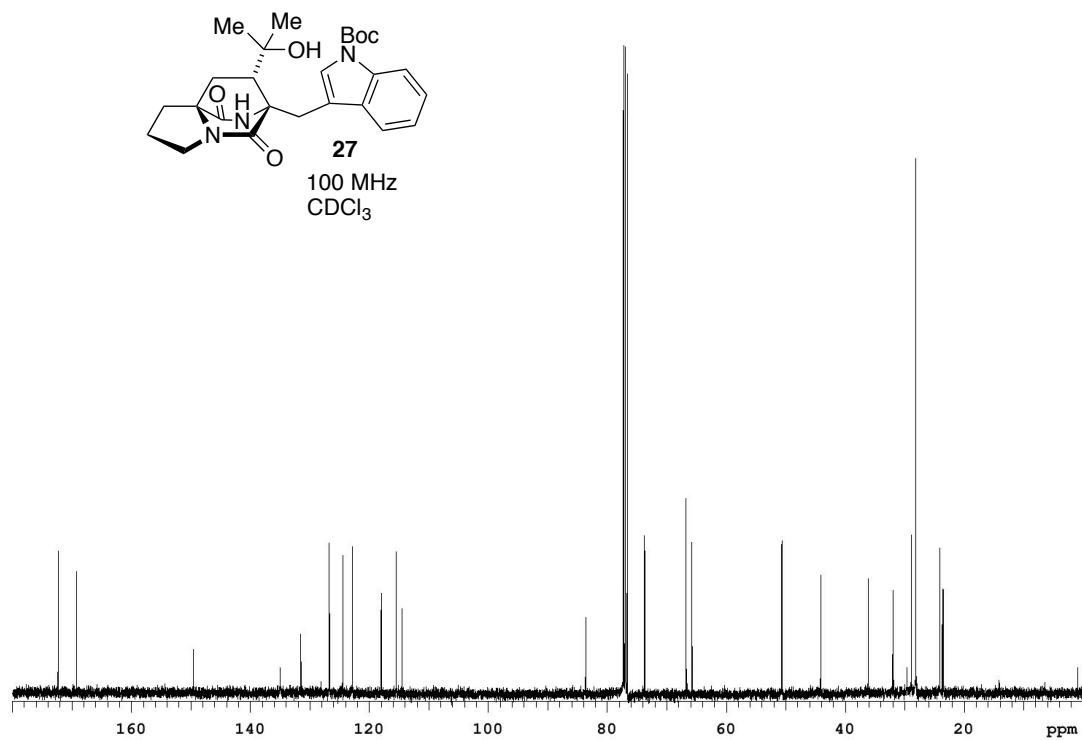
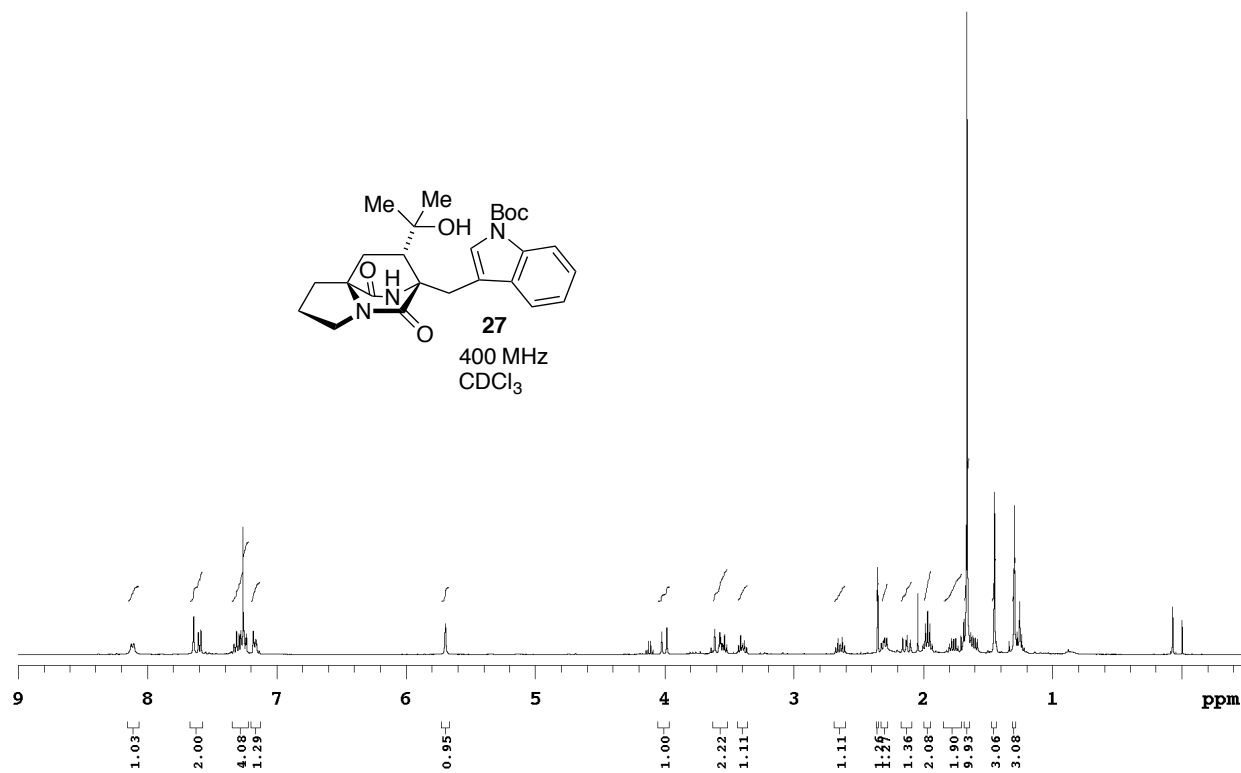


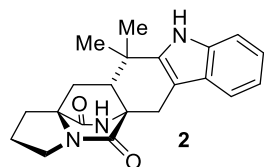




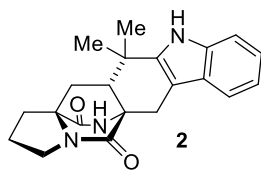
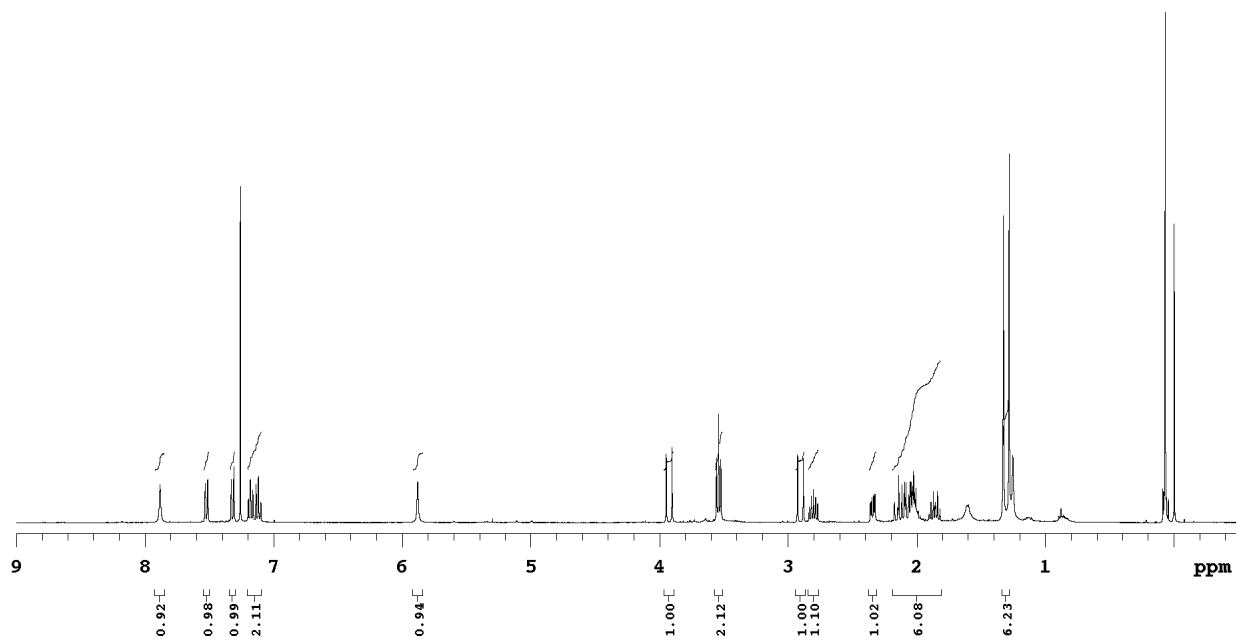








400 MHz  
CDCl<sub>3</sub>



100 MHz  
CDCl<sub>3</sub>

