

Supporting Information

Asymmetric Total Synthesis of Fawcettimine-Type *Lycopodium* Alkaloid, Lycopoclavamine-A

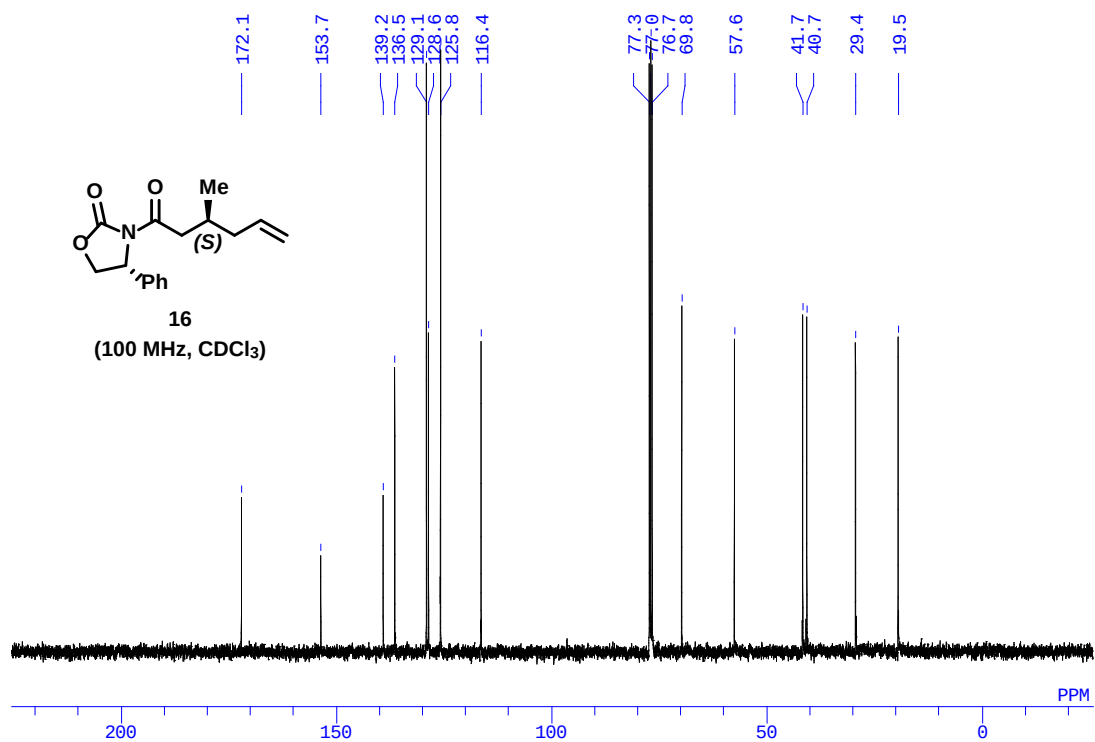
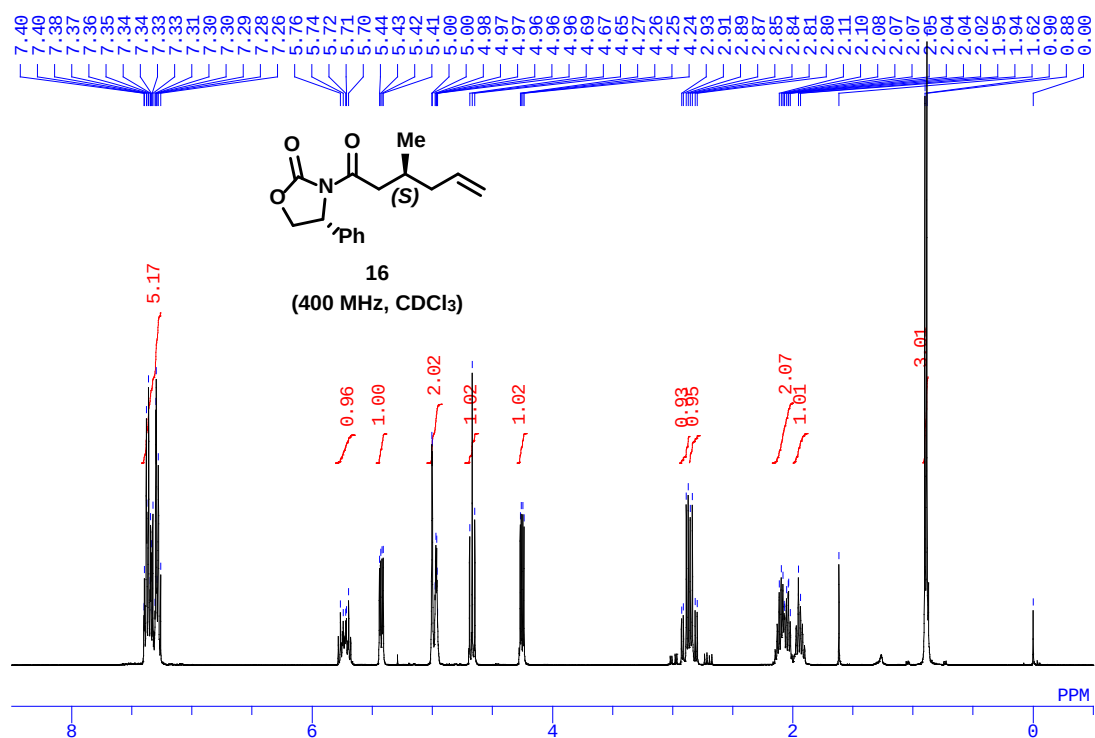
Hiroki Kaneko, Shunsuke Takahashi, Noriyuki Kogure, Mariko Kitajima, and Hiromitsu Takayama*

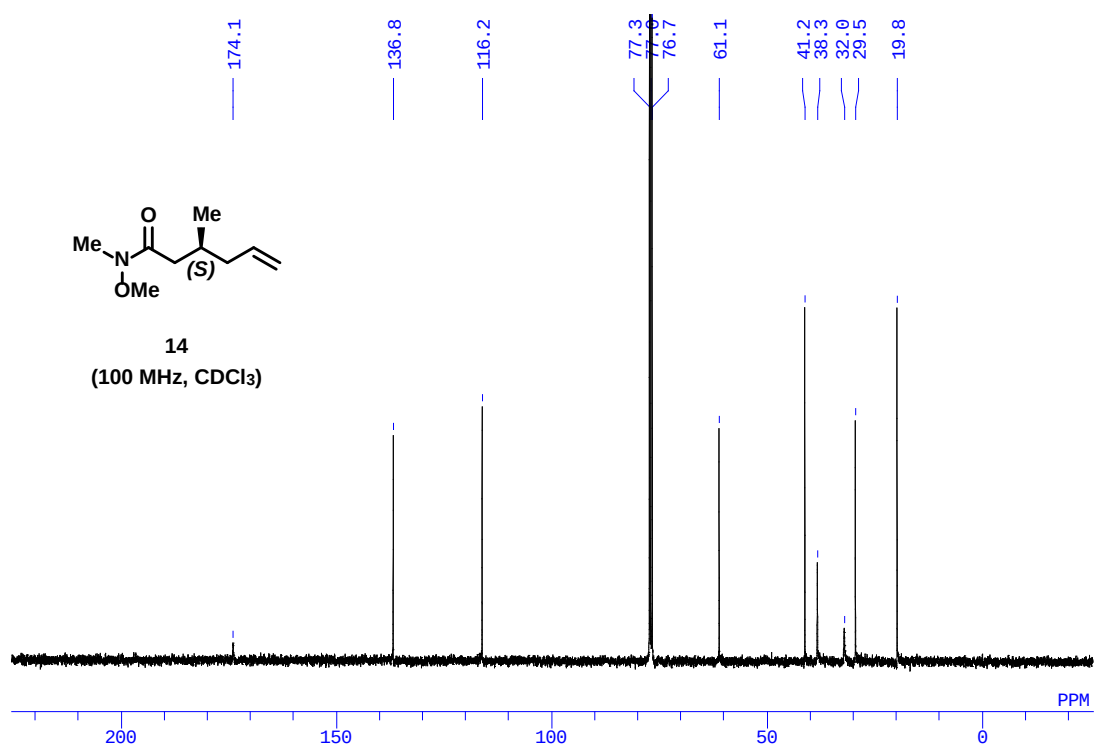
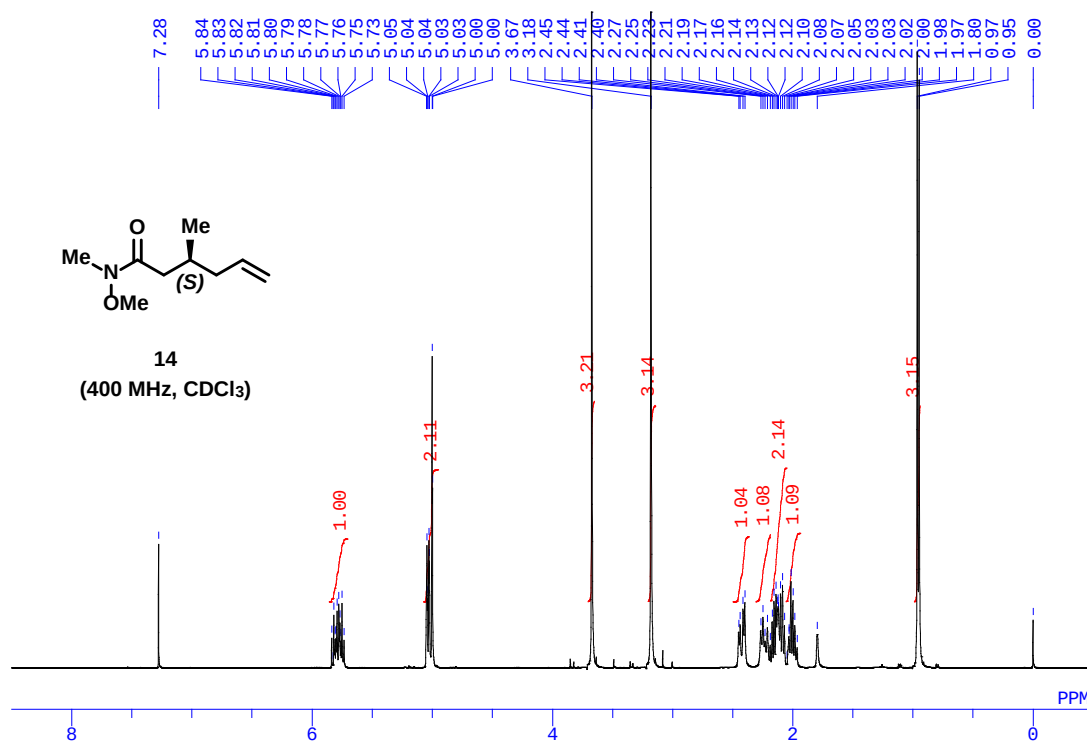
Graduate School of Pharmaceutical Sciences, Chiba University, 1-8-1 Inohana, Chuo-ku, Chiba 260-8675, Japan

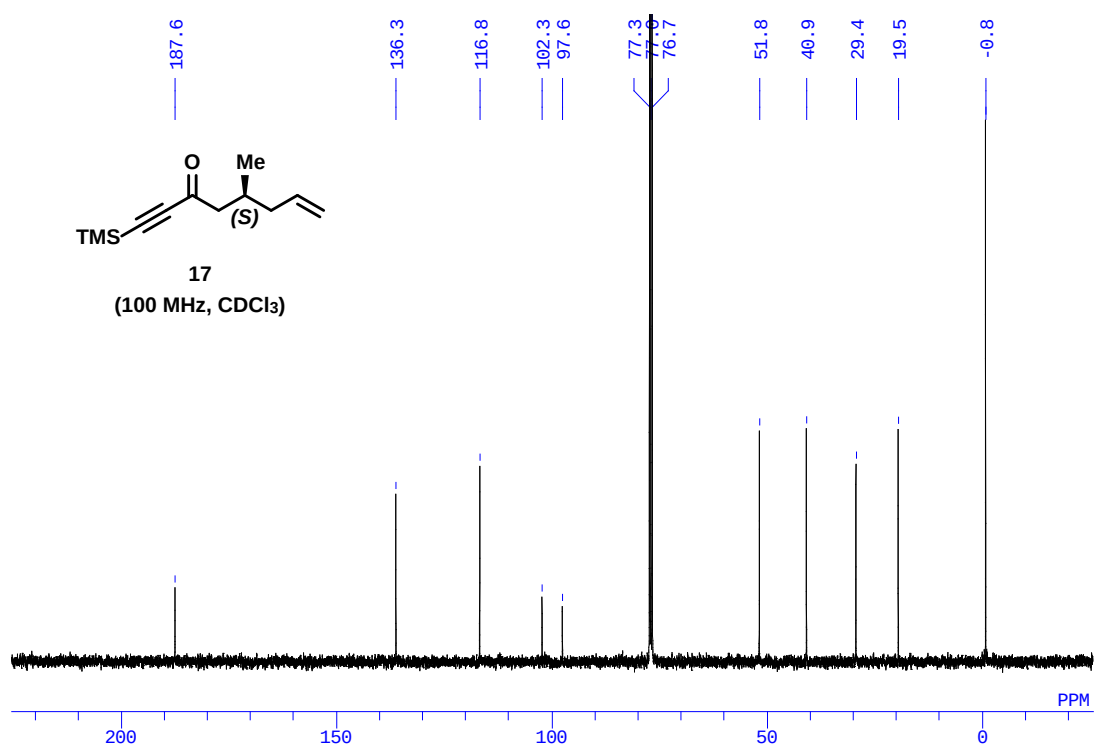
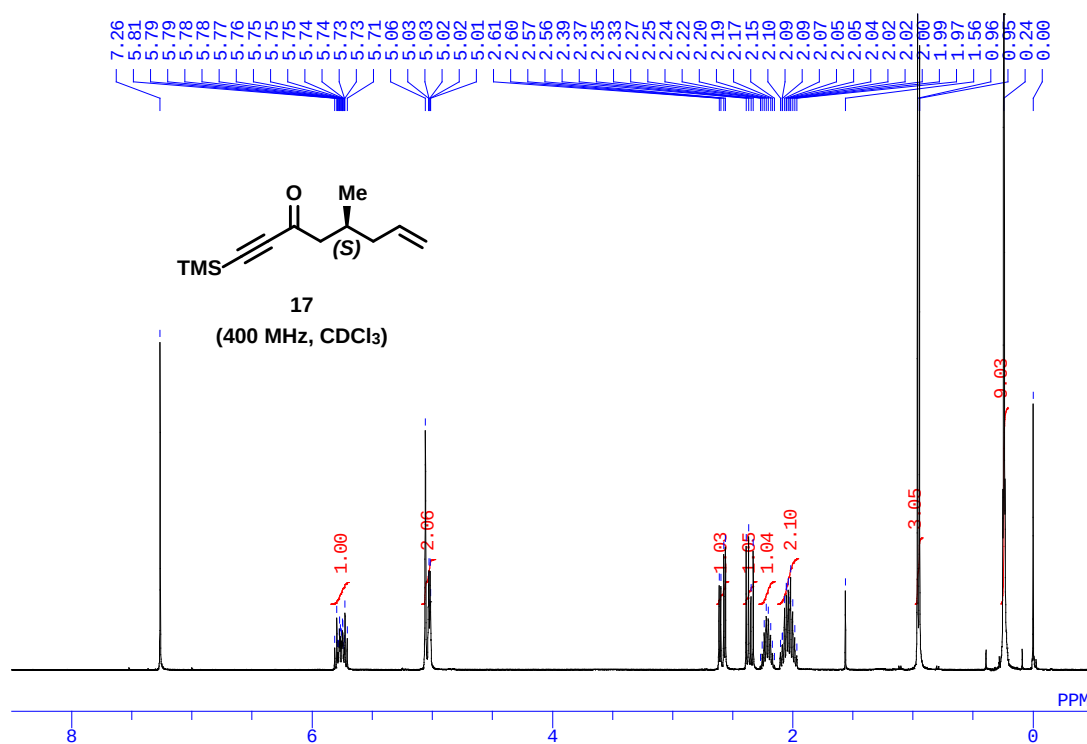
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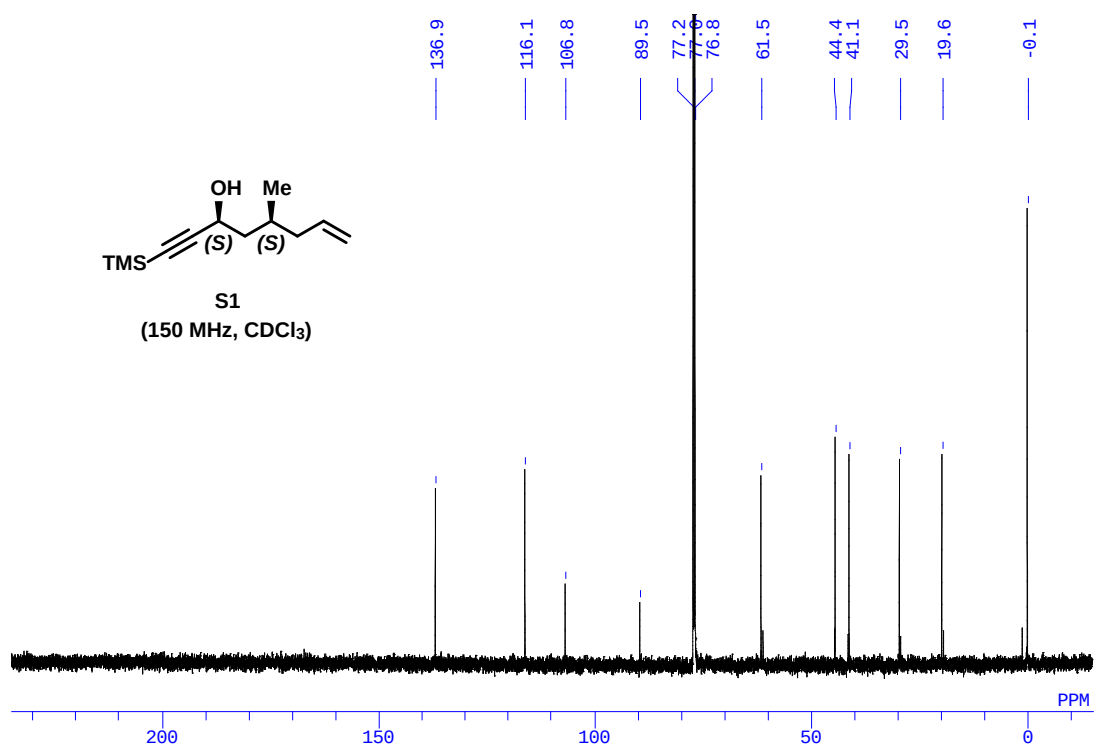
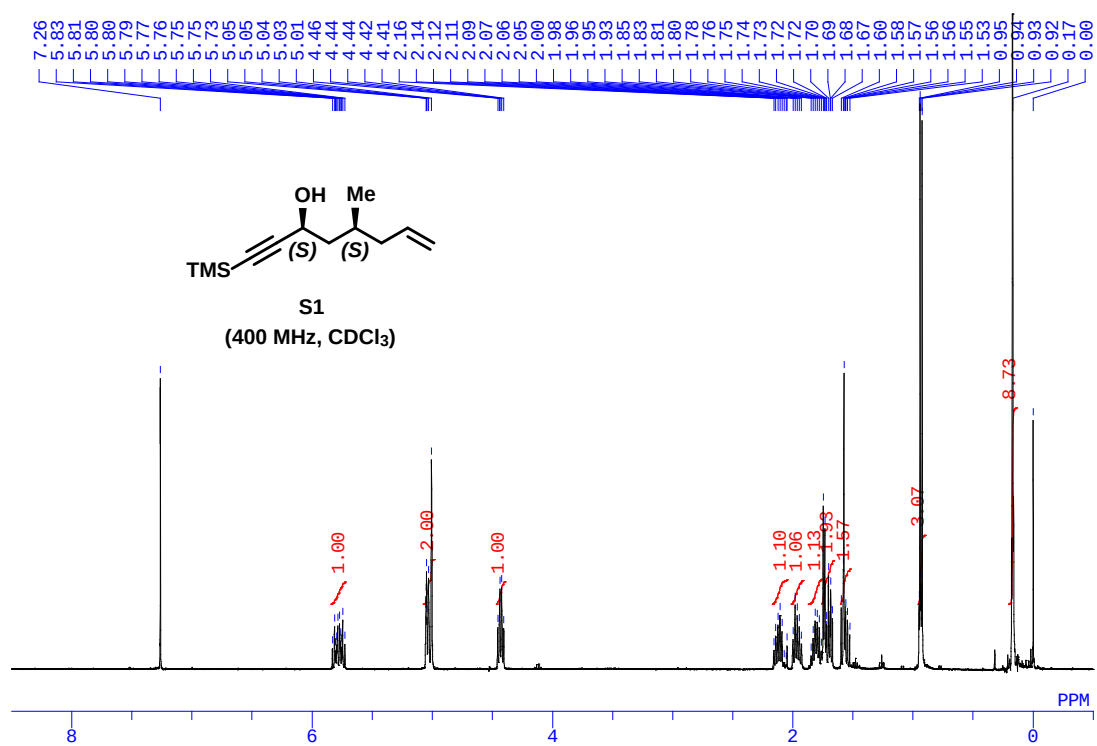
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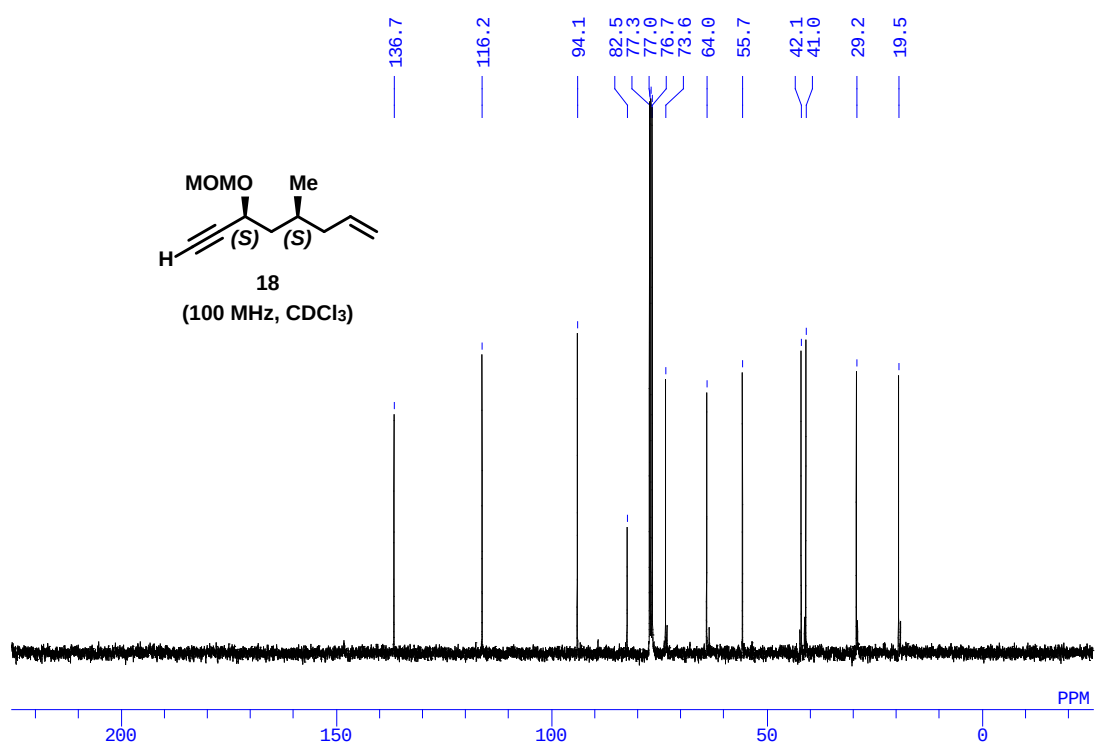
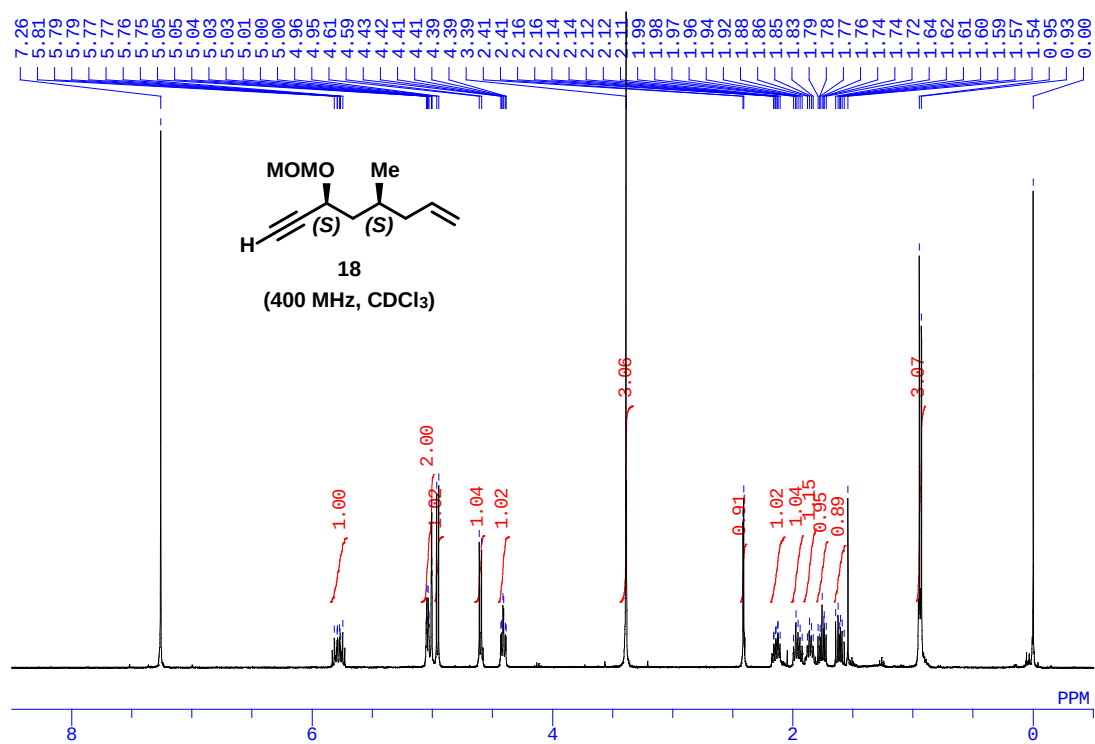
^1H and ^{13}C $\{^1\text{H}\}$ NMR spectra

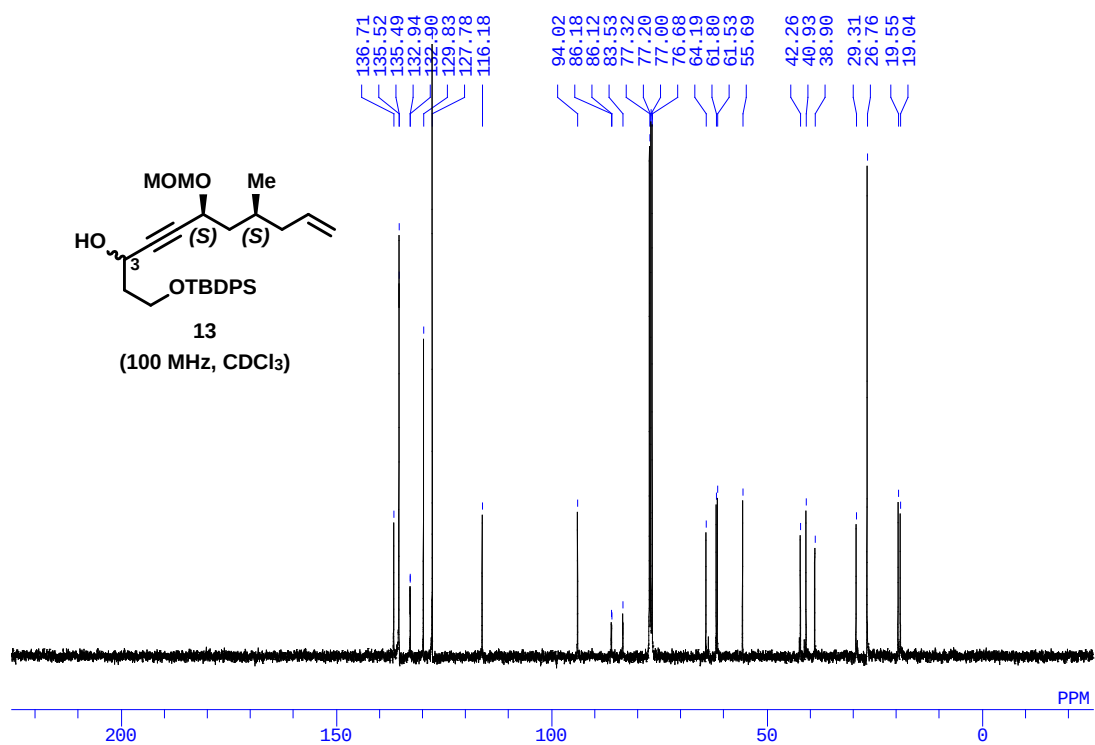
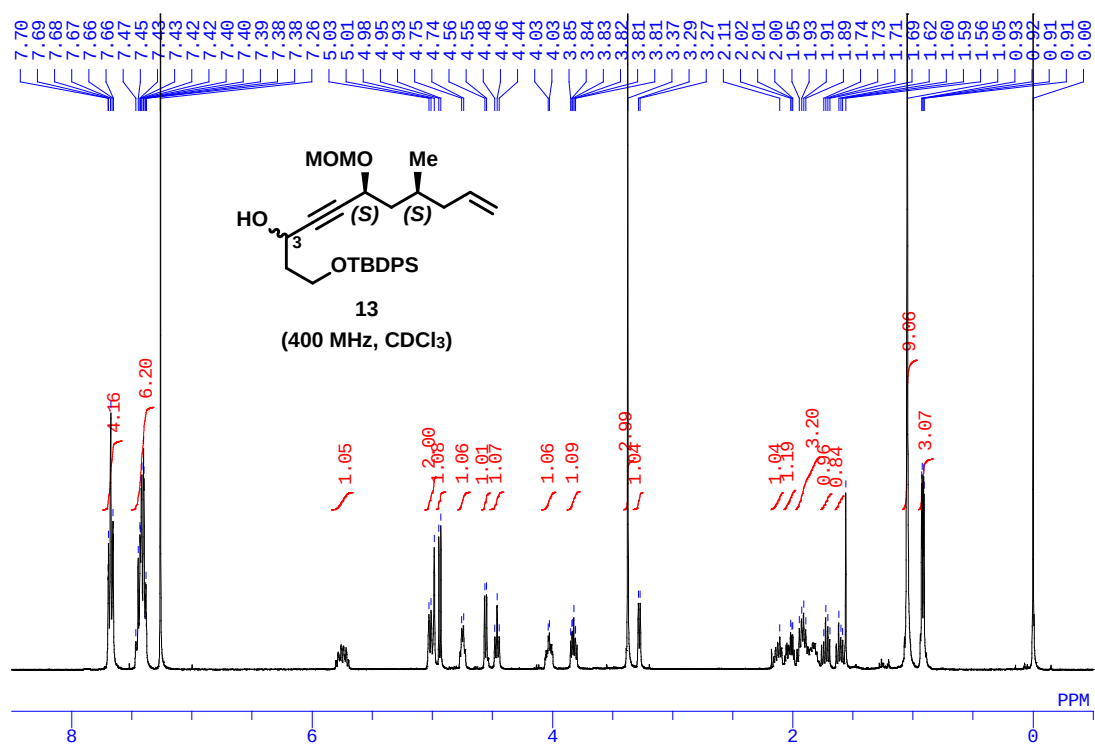


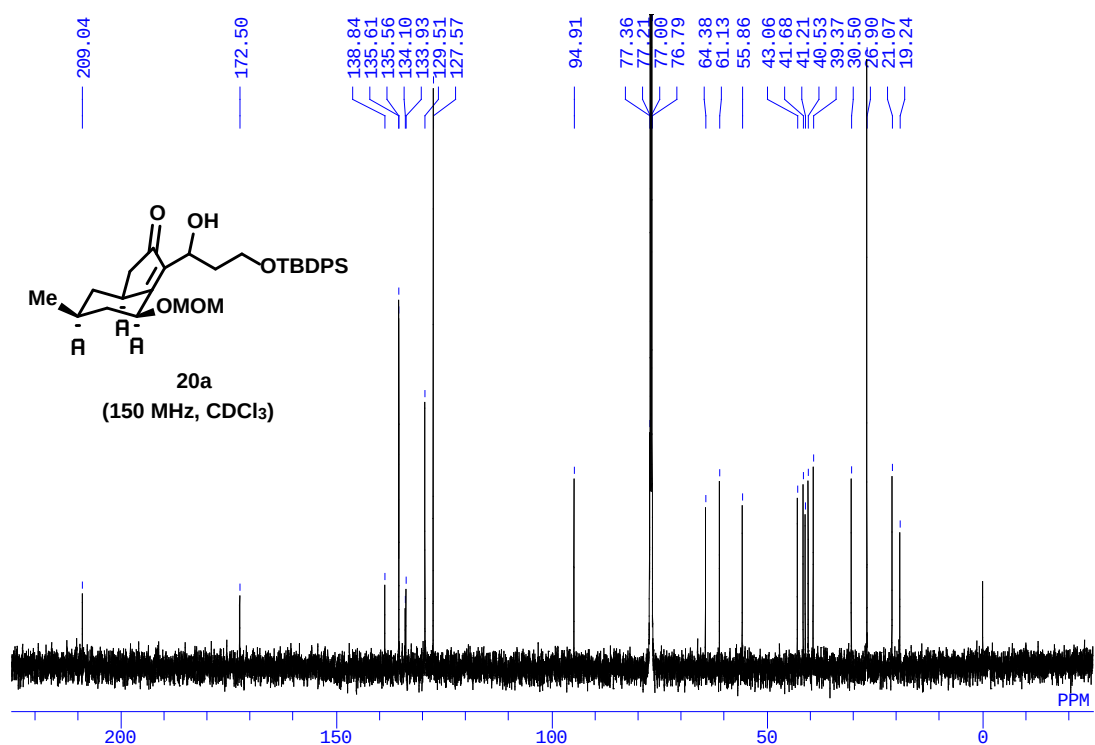
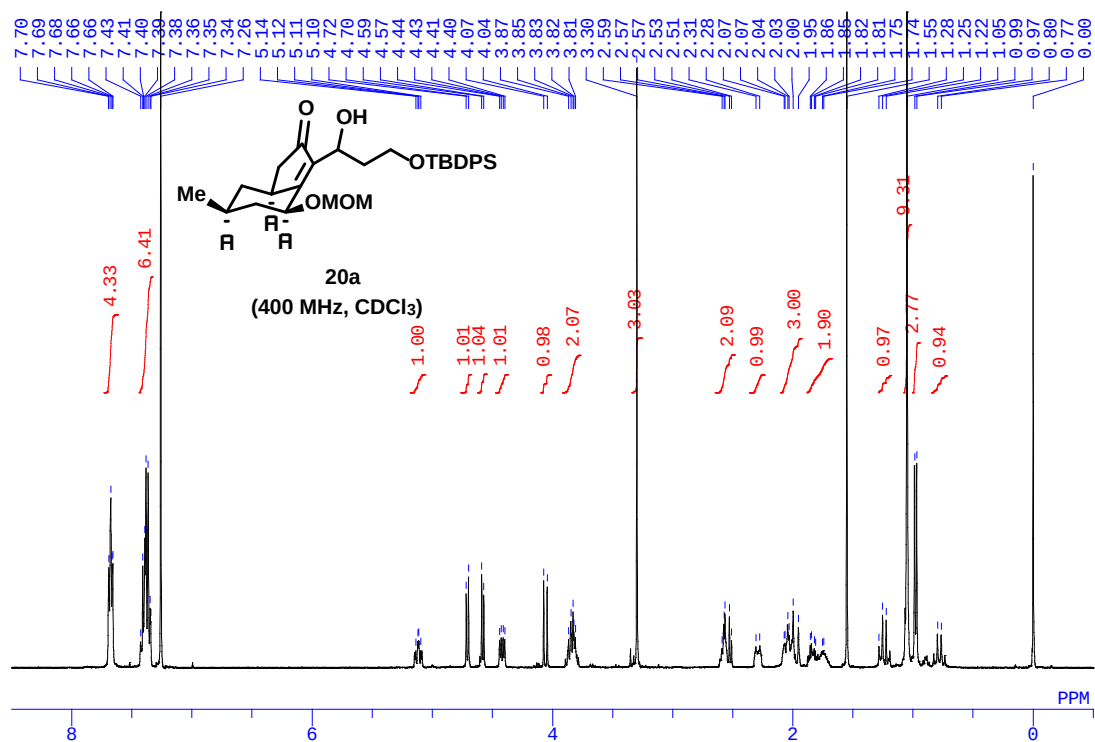


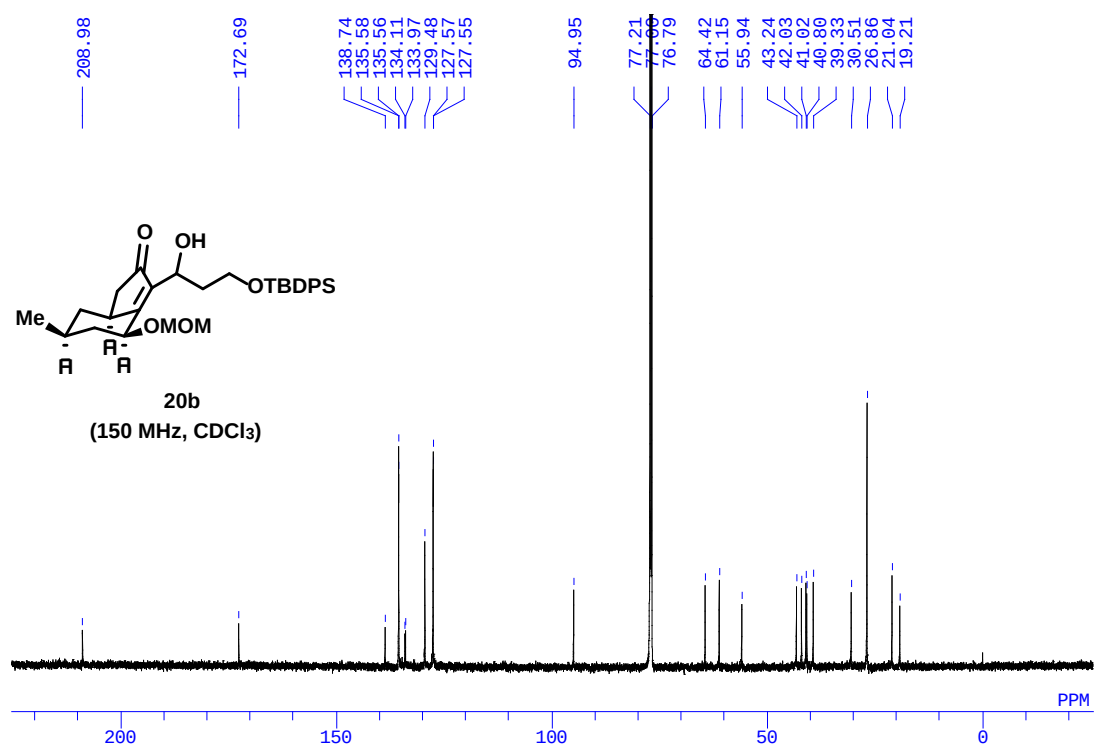
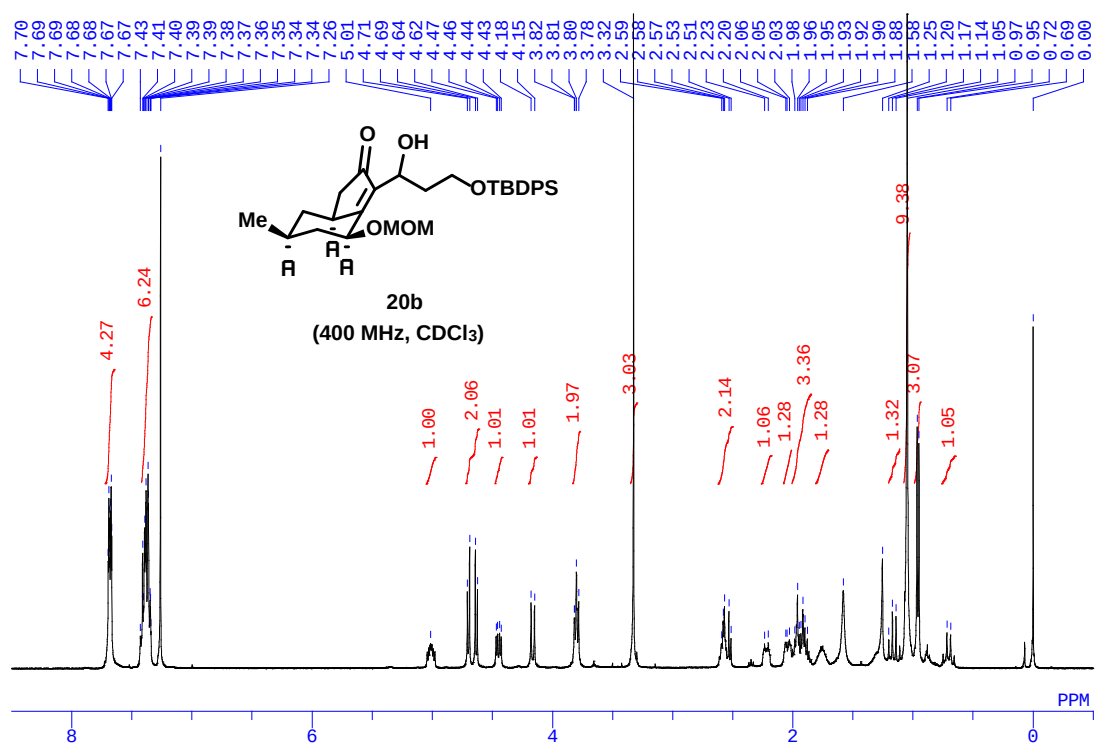


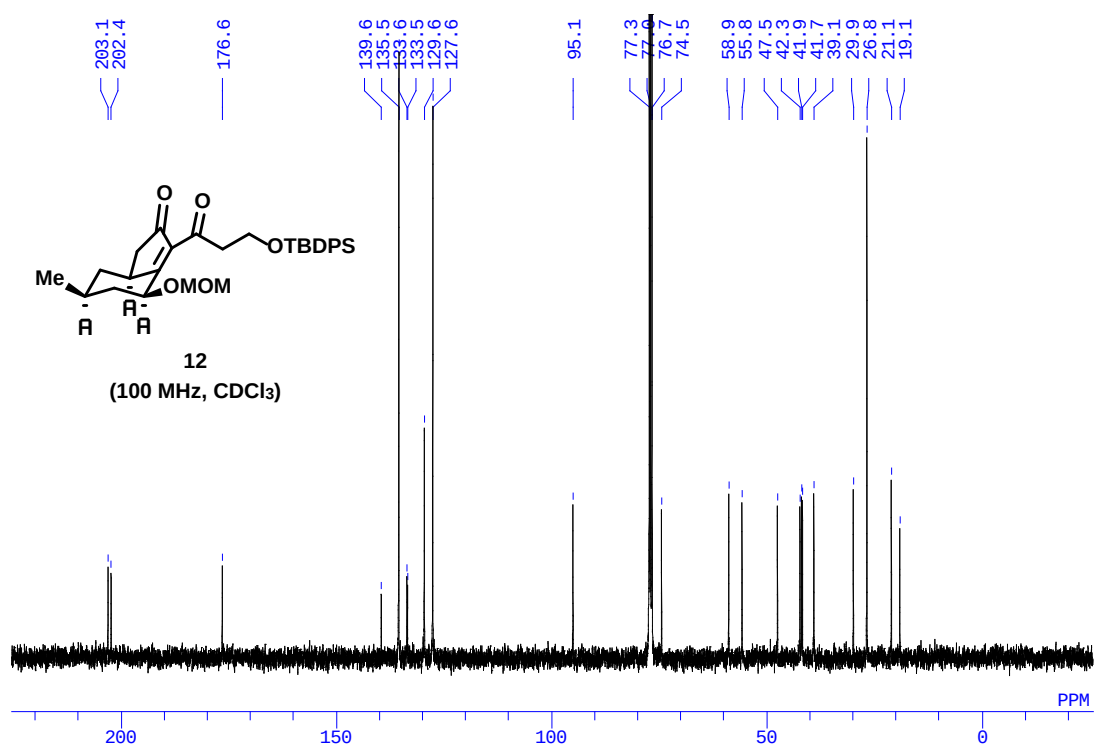
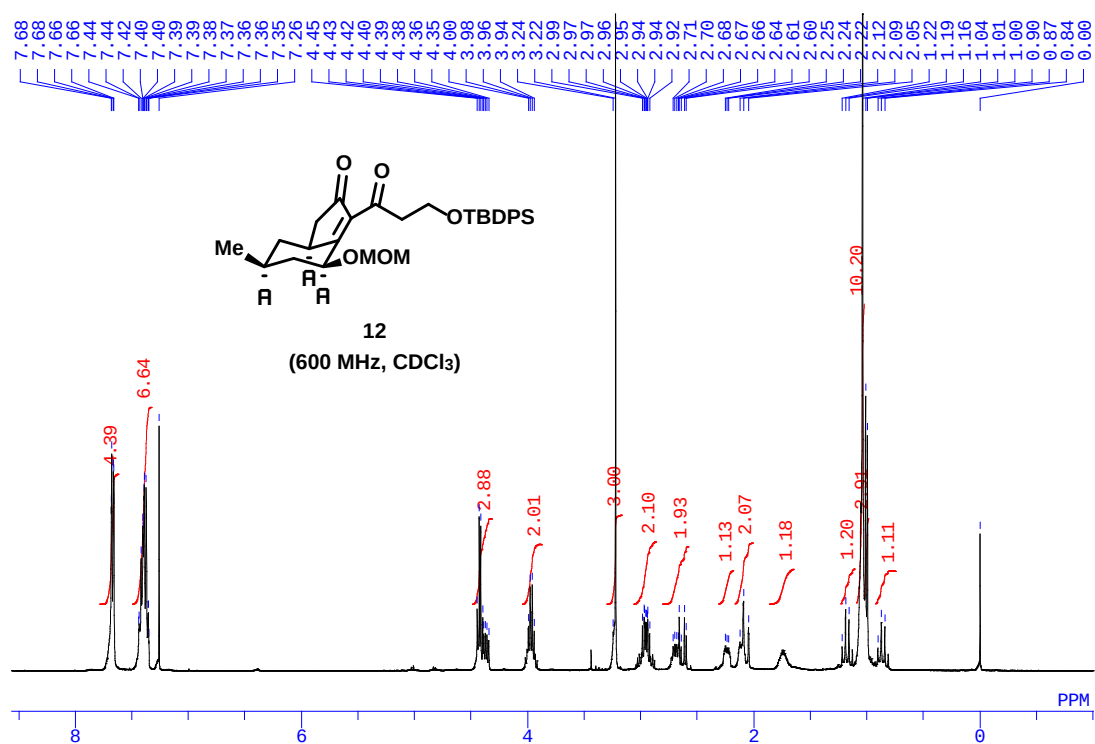


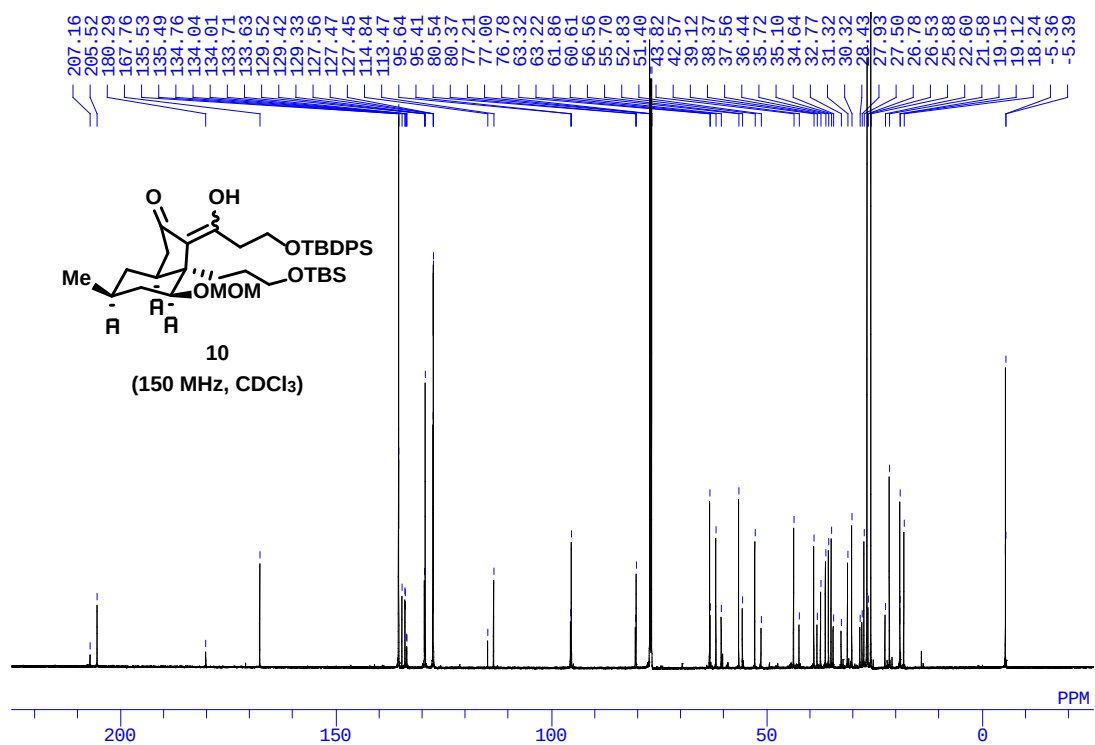
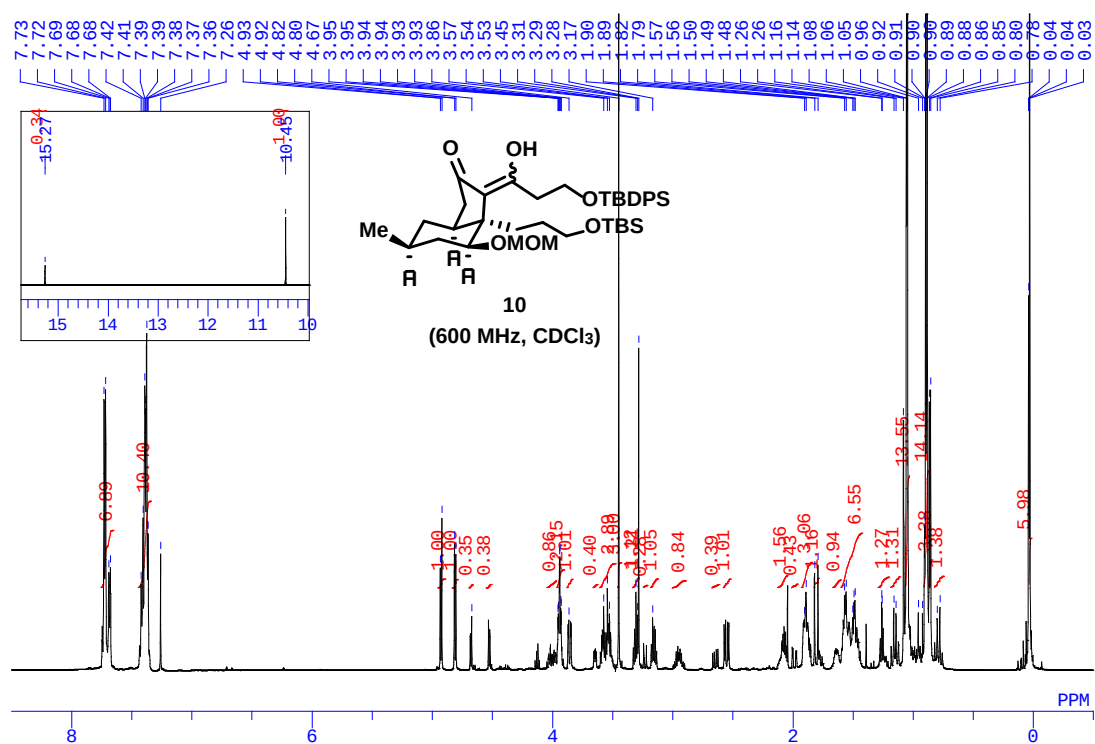


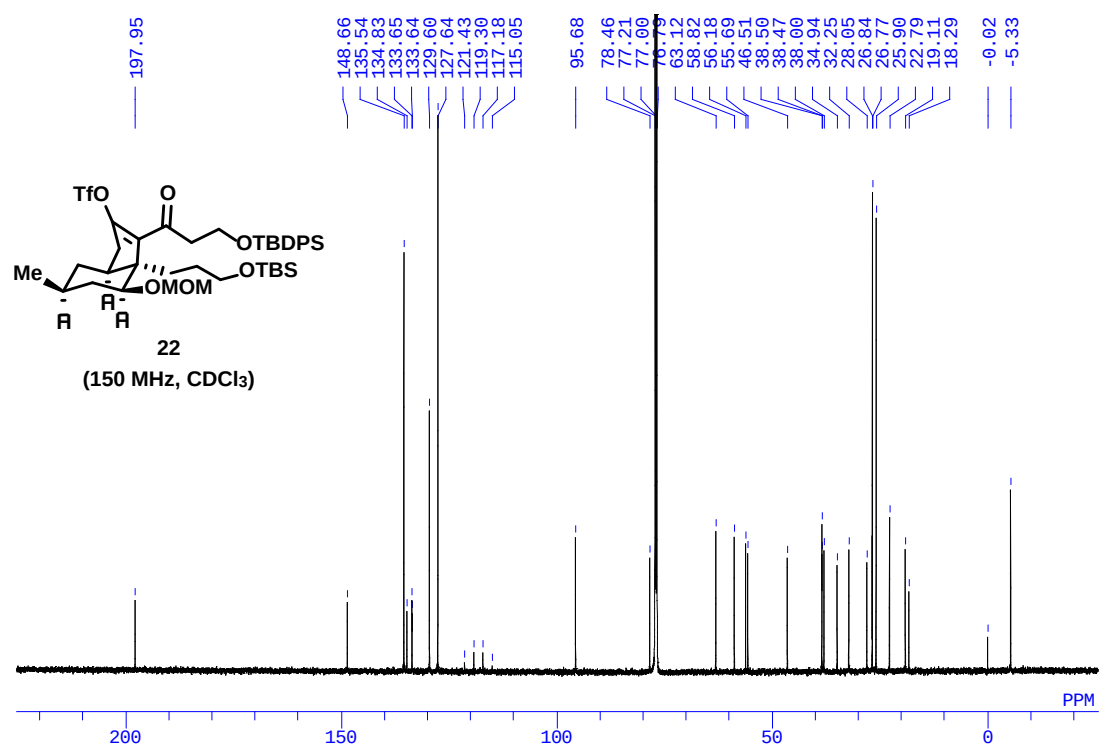
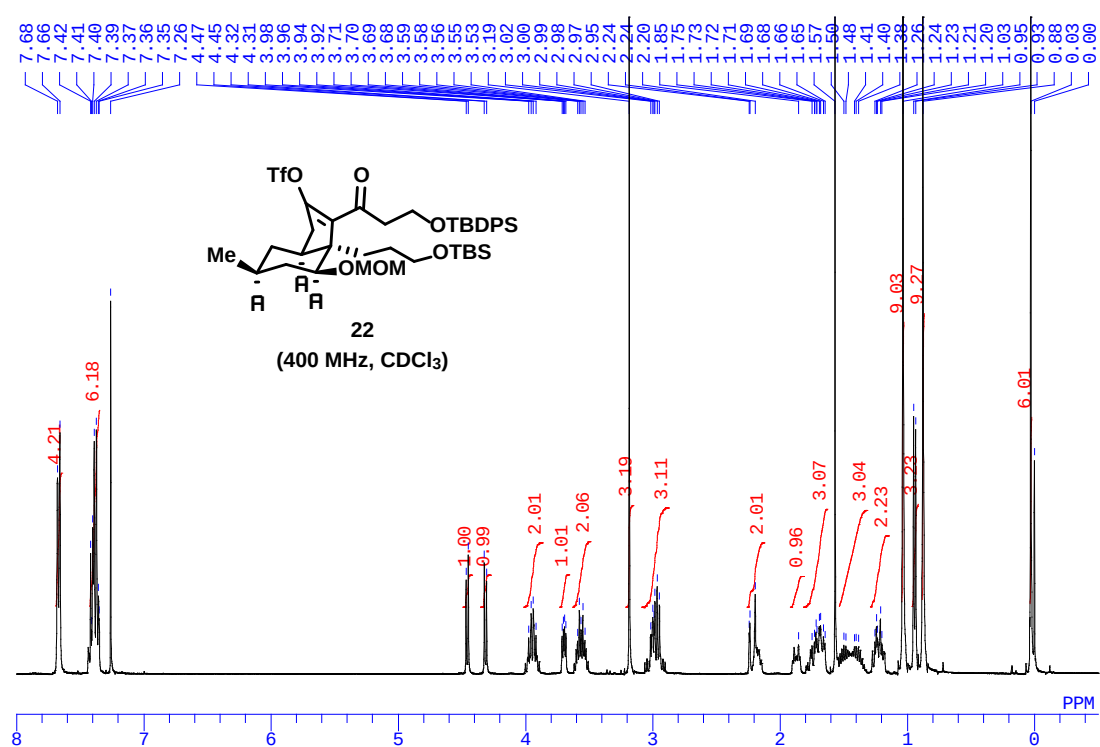


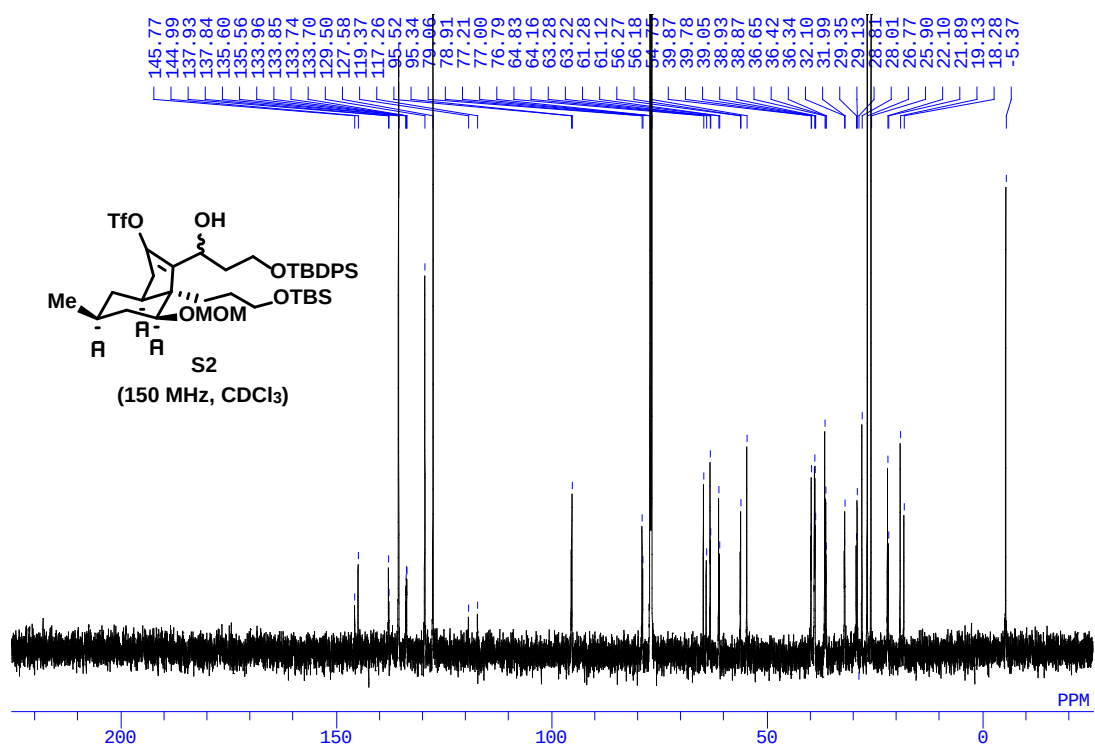
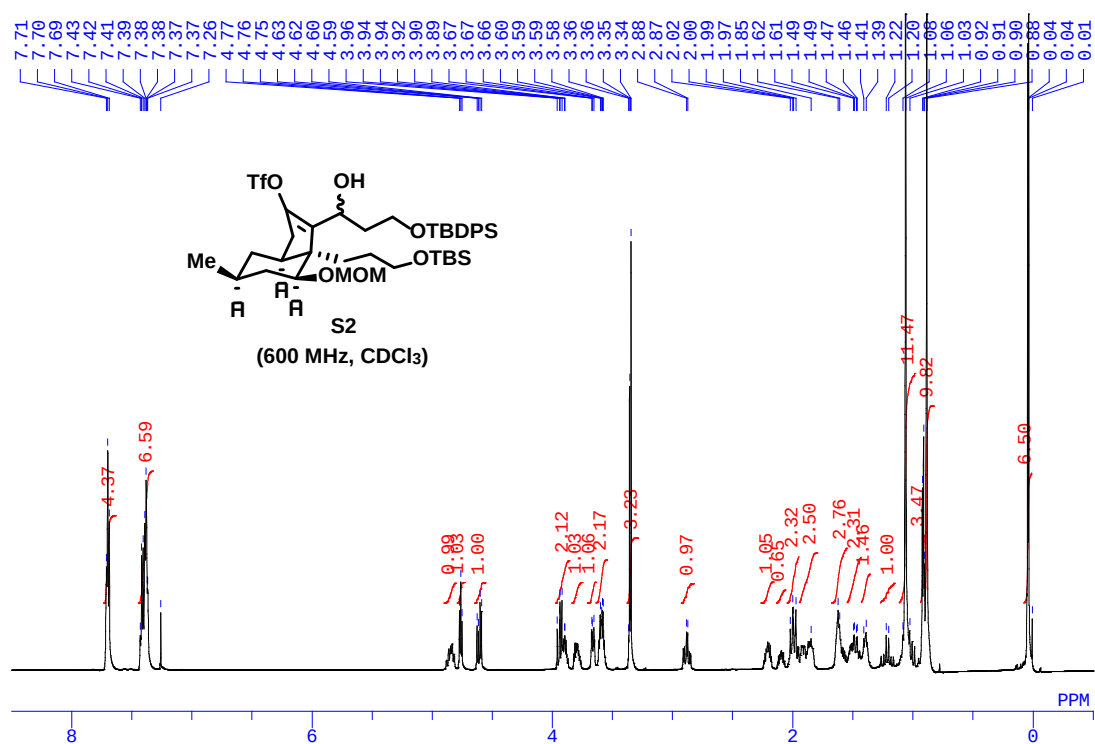


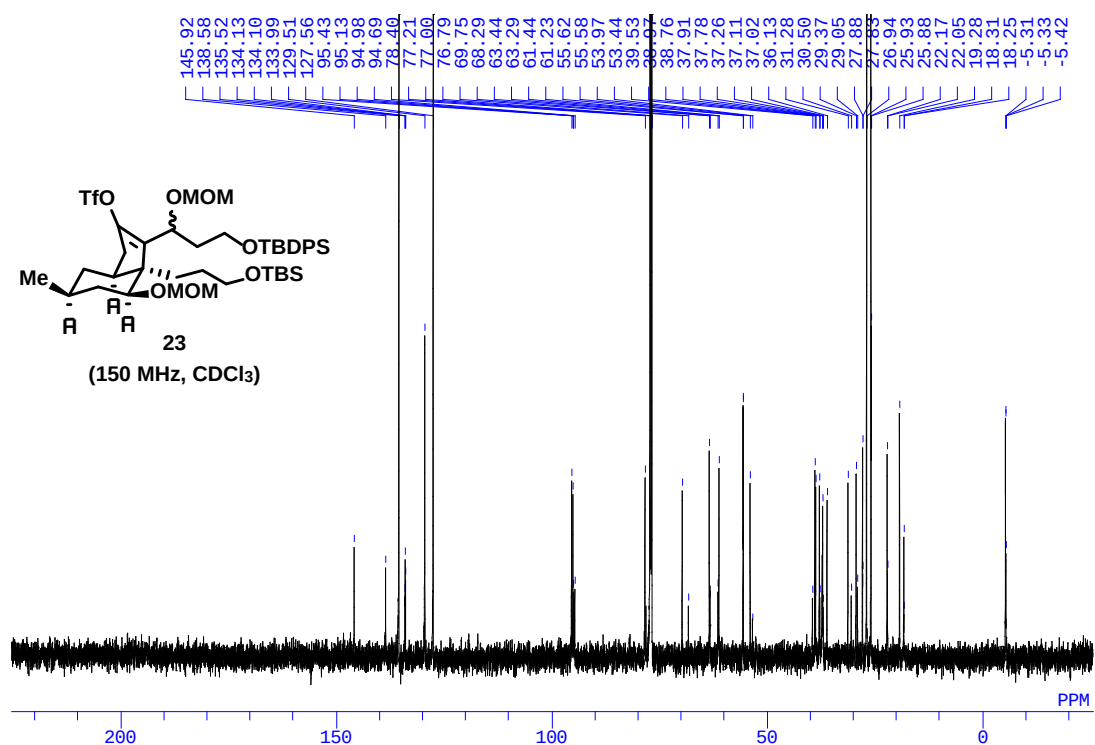
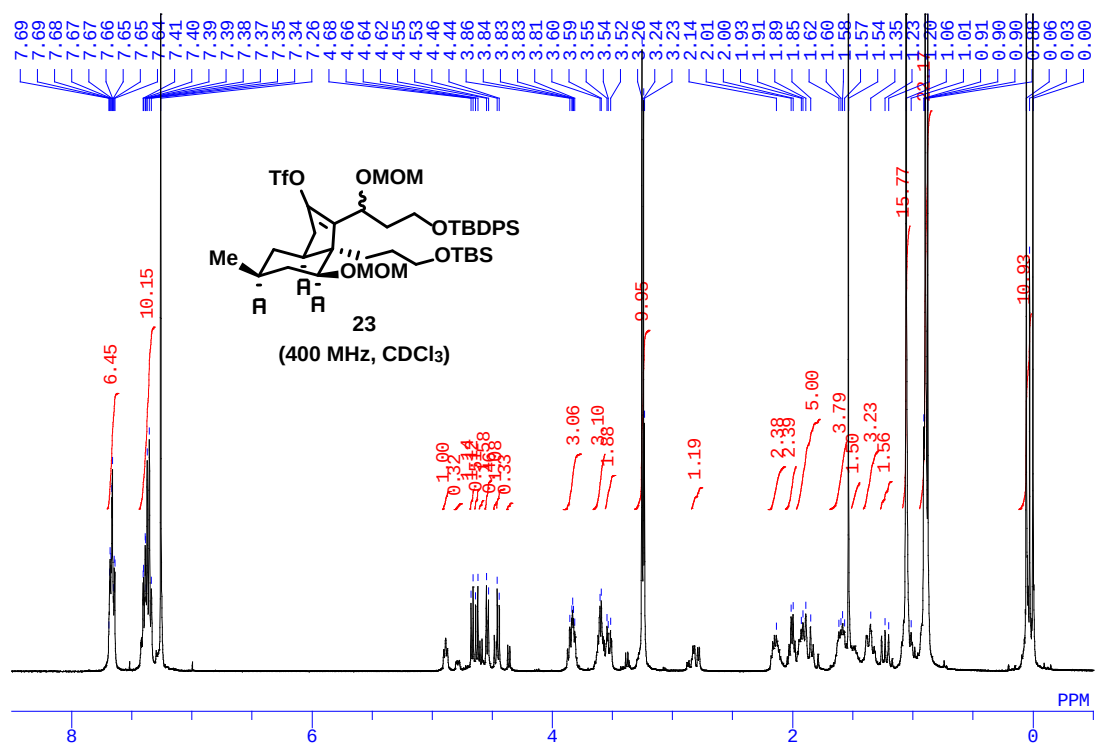


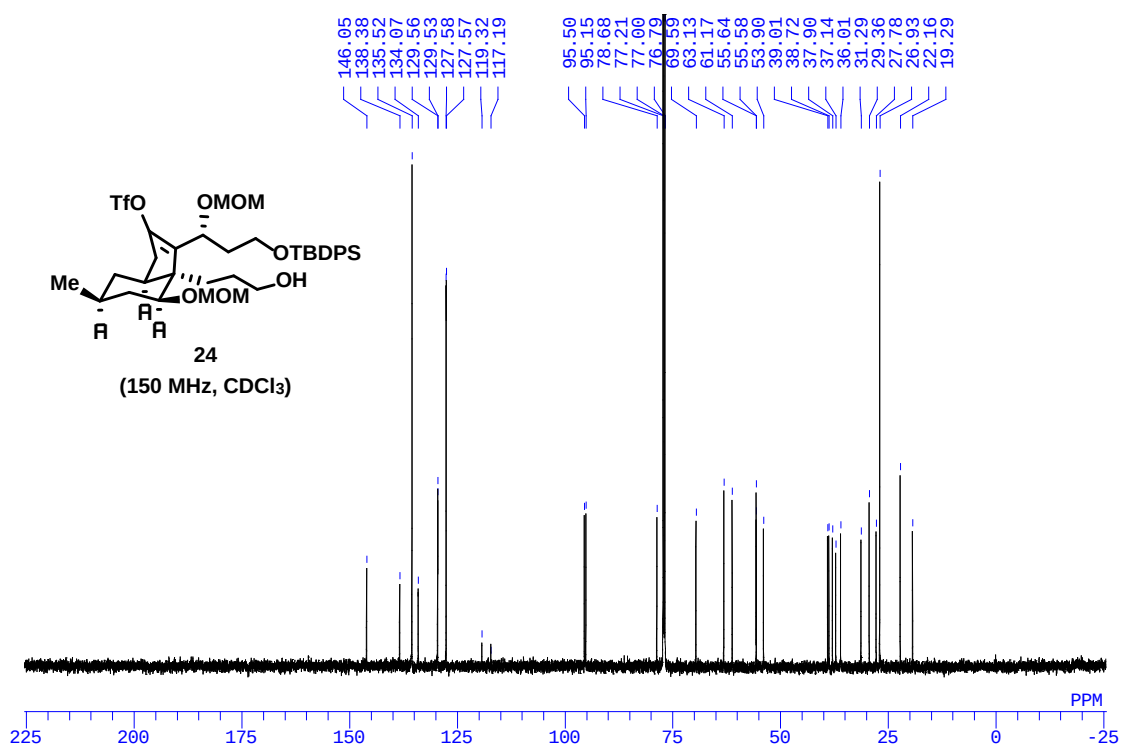
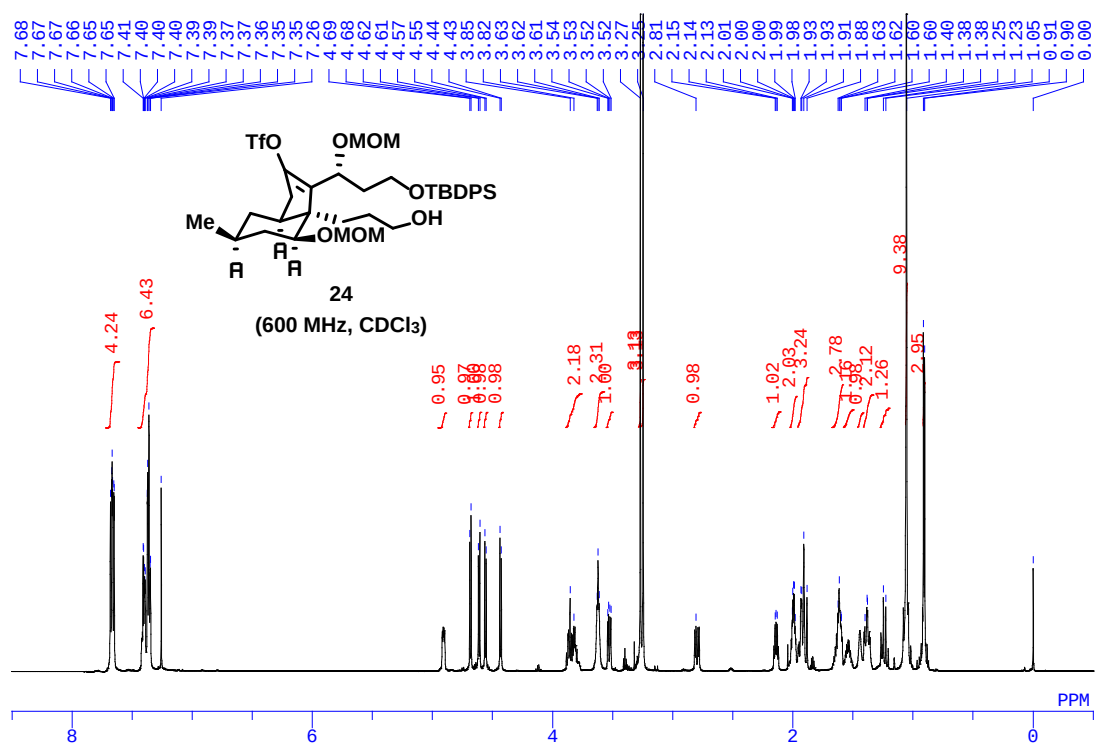


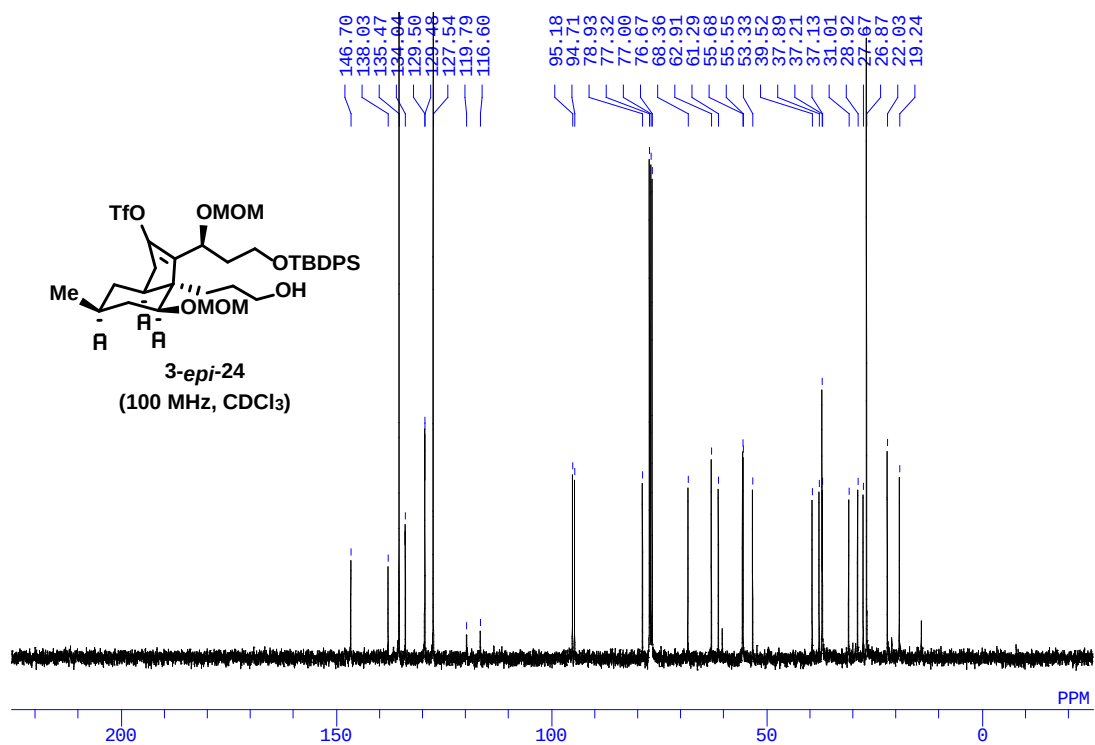
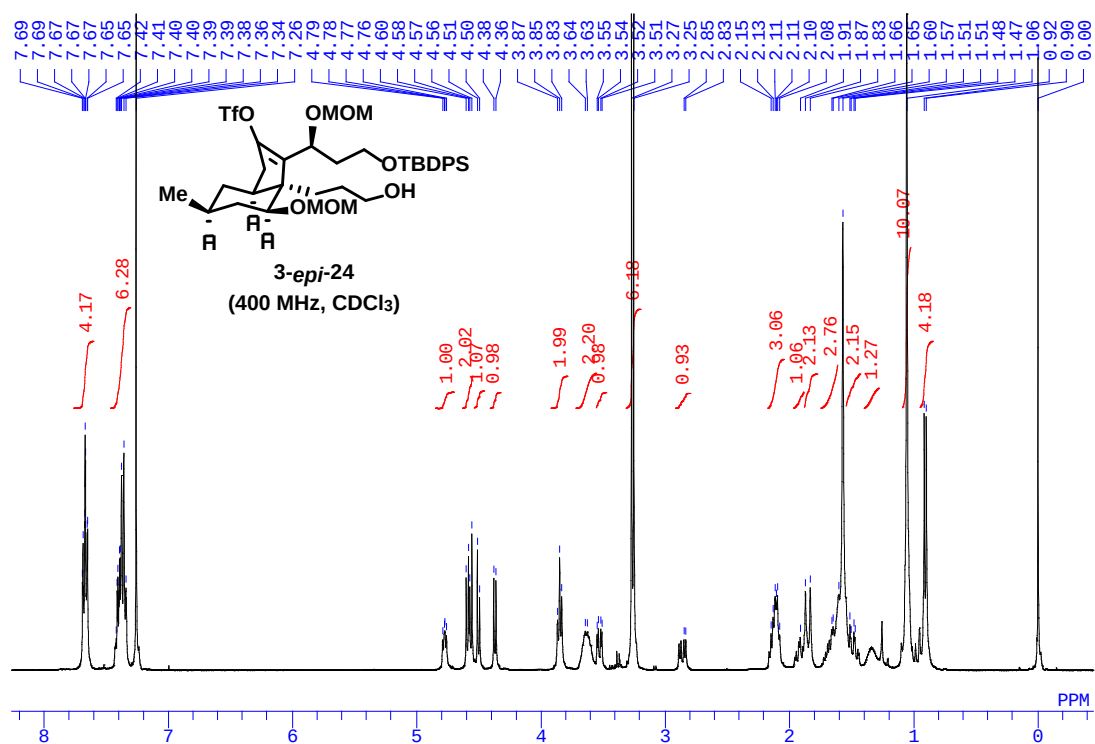


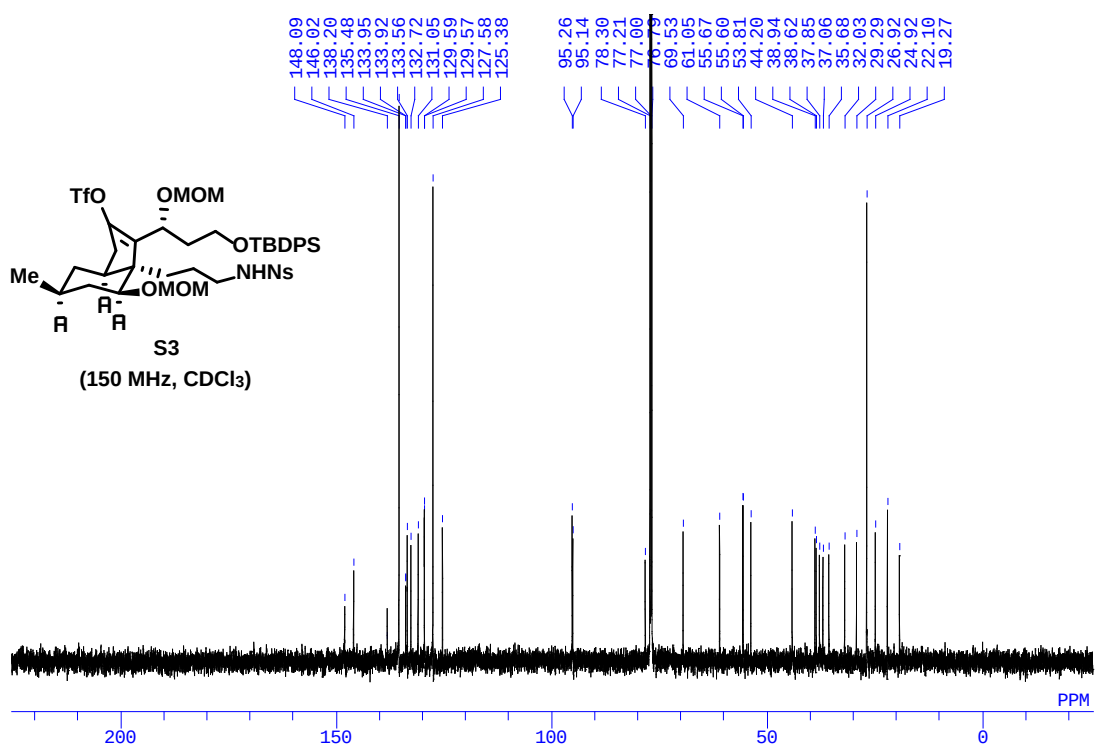


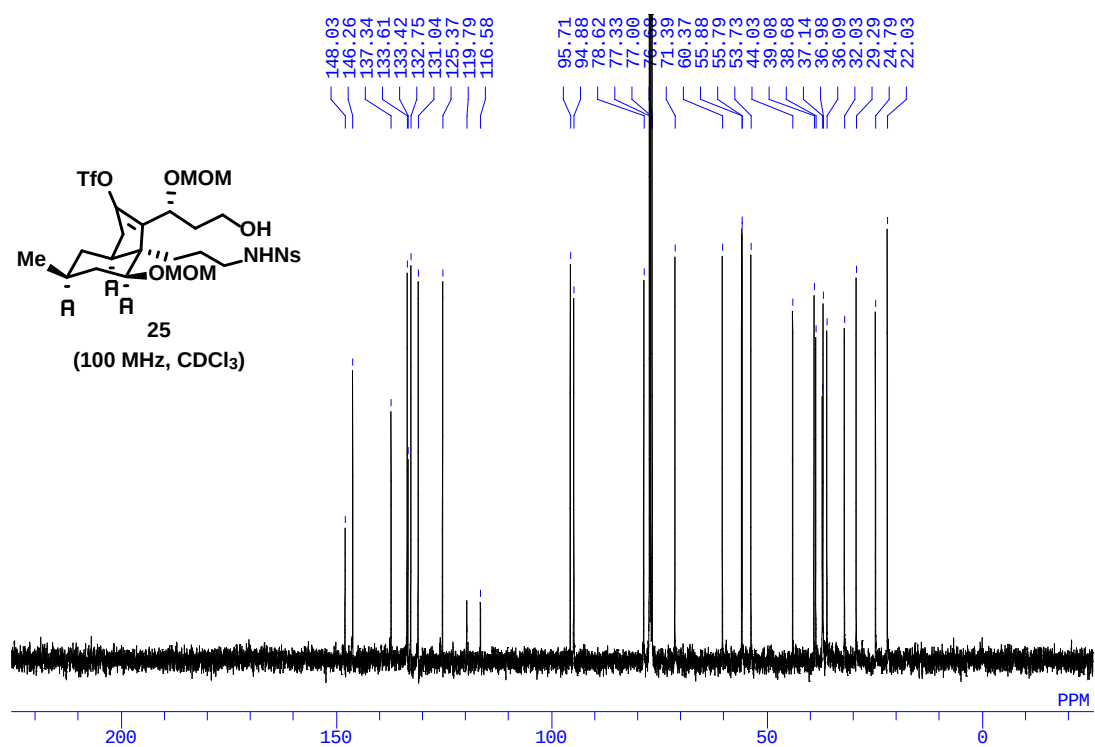
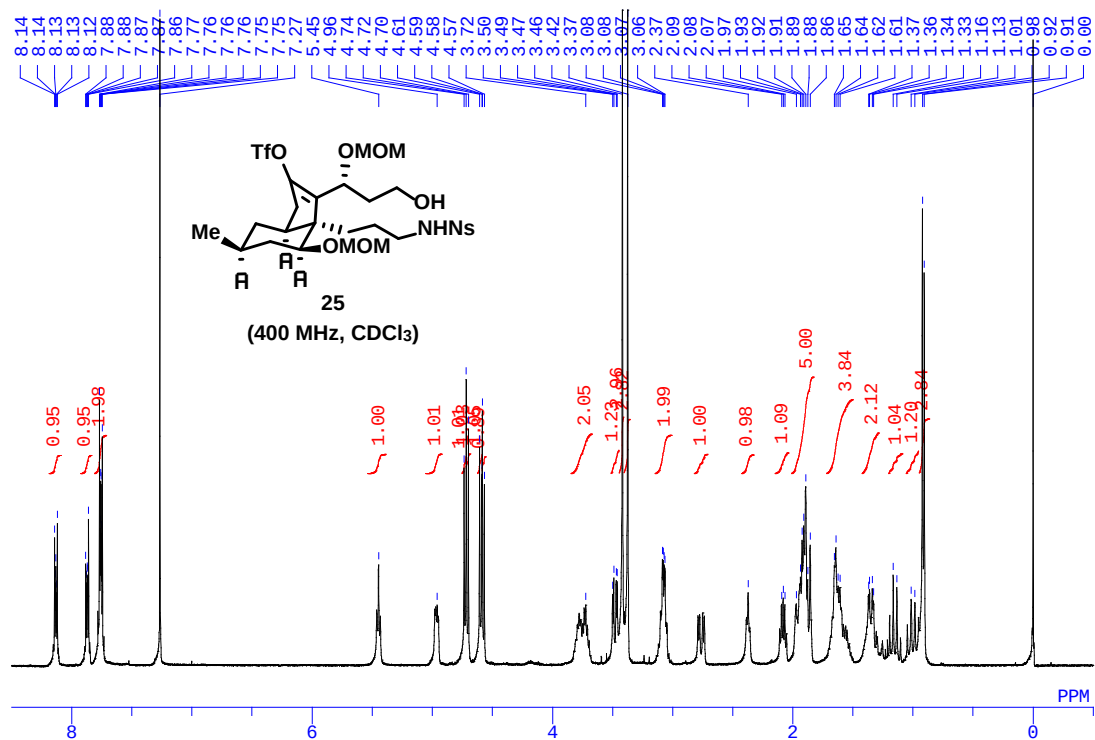


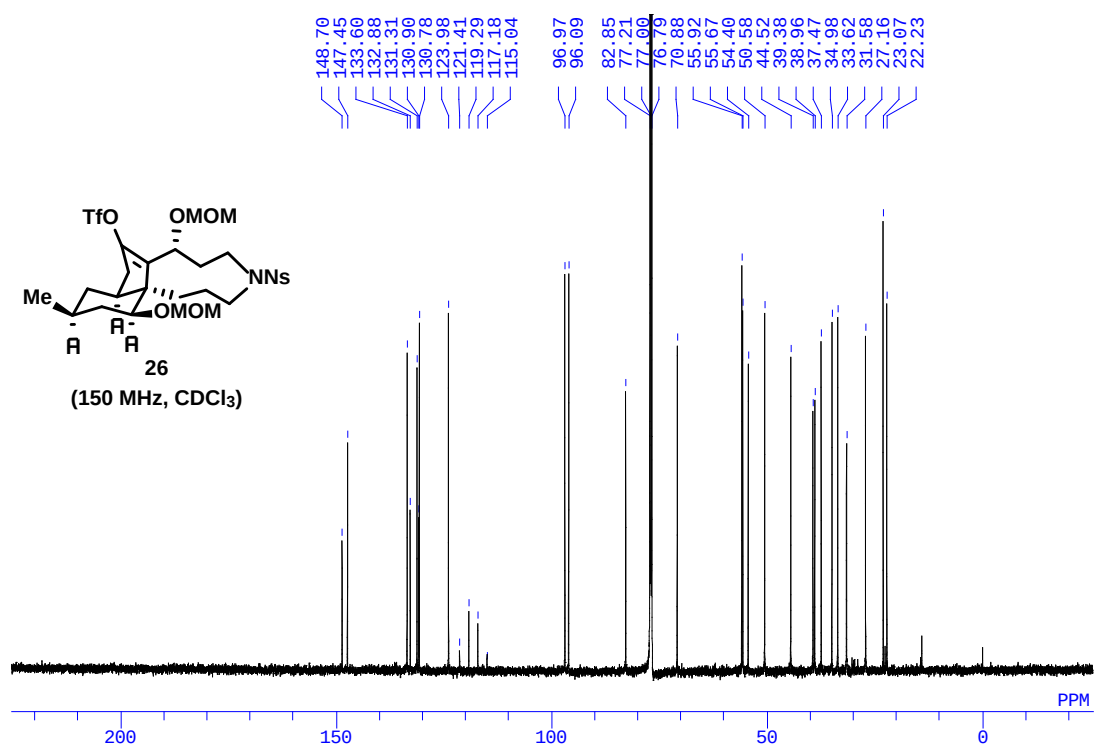
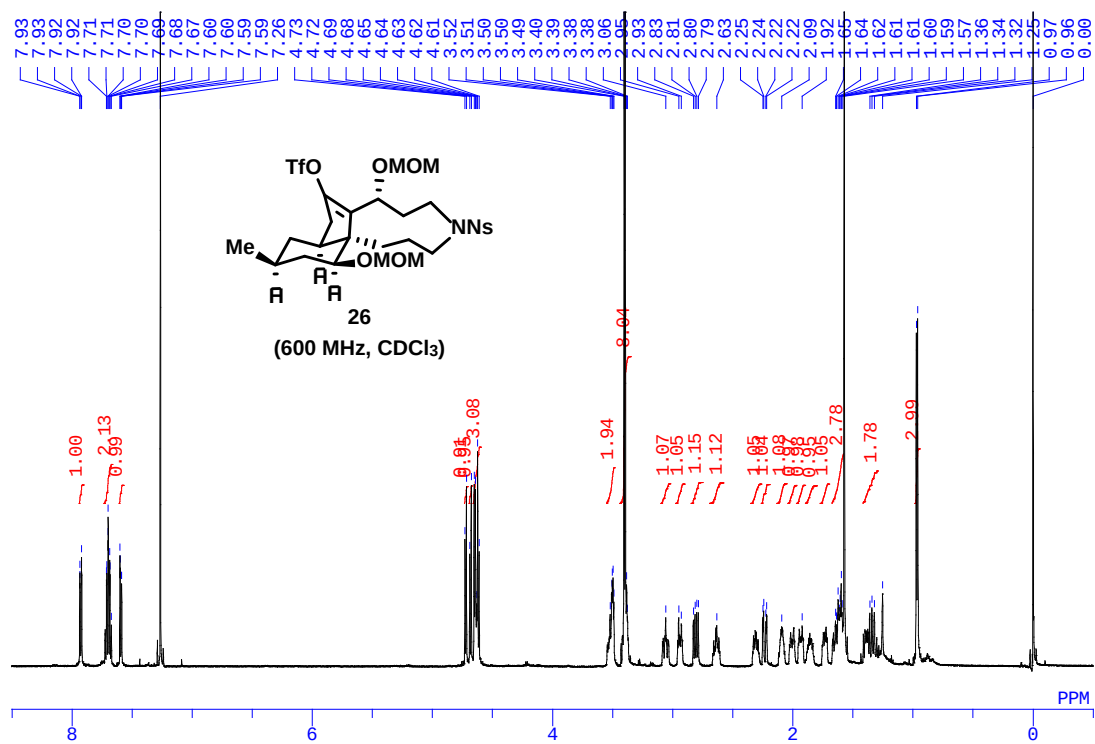


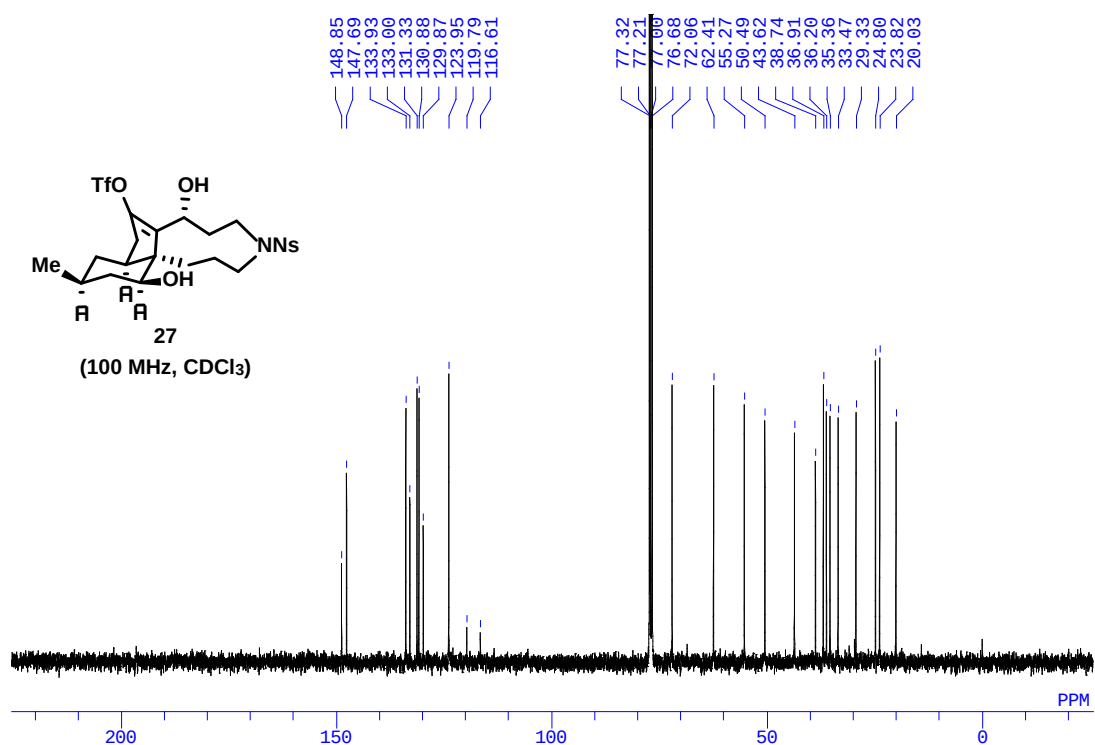
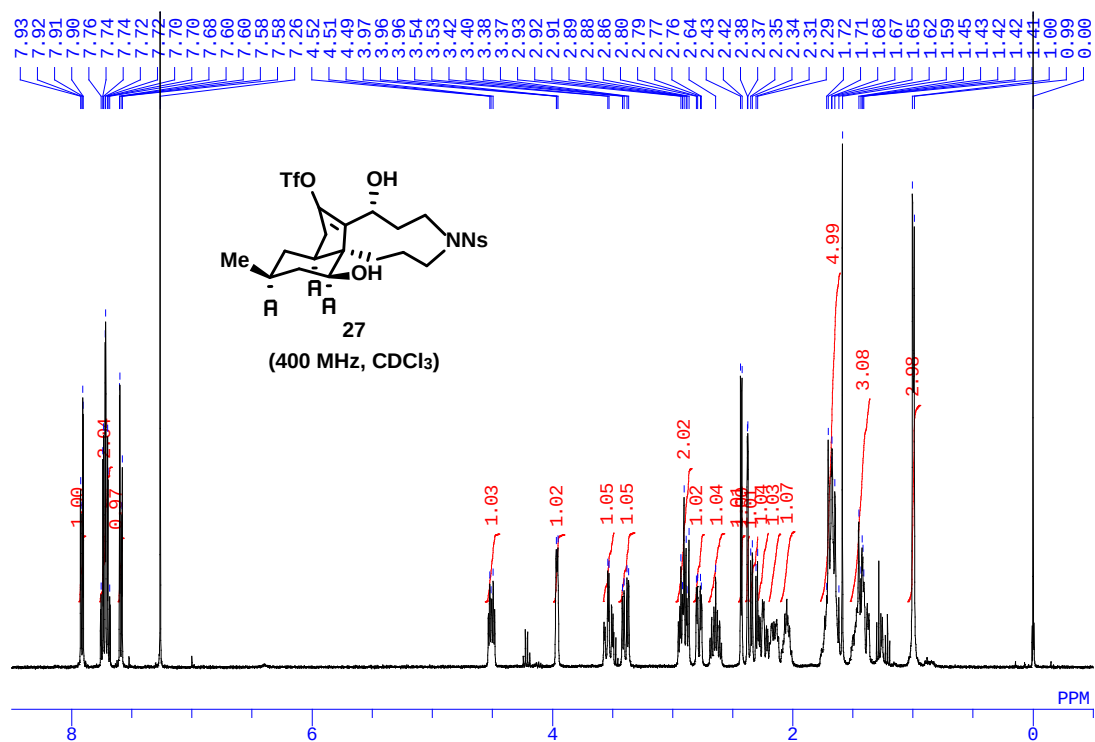


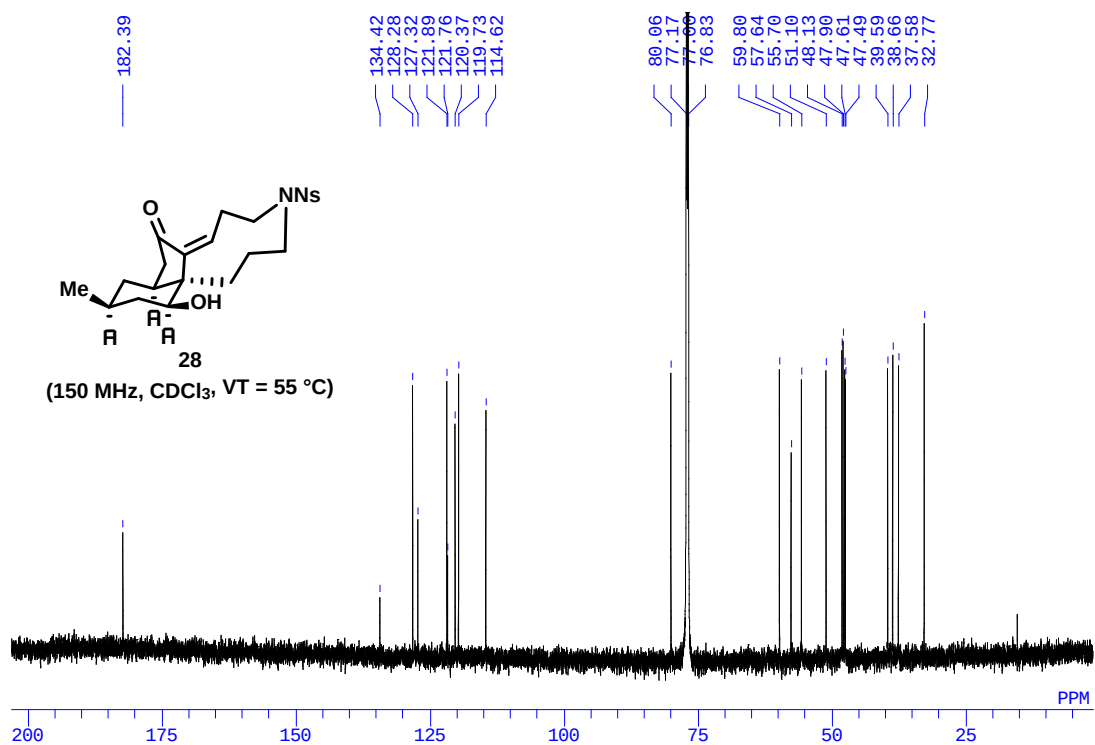
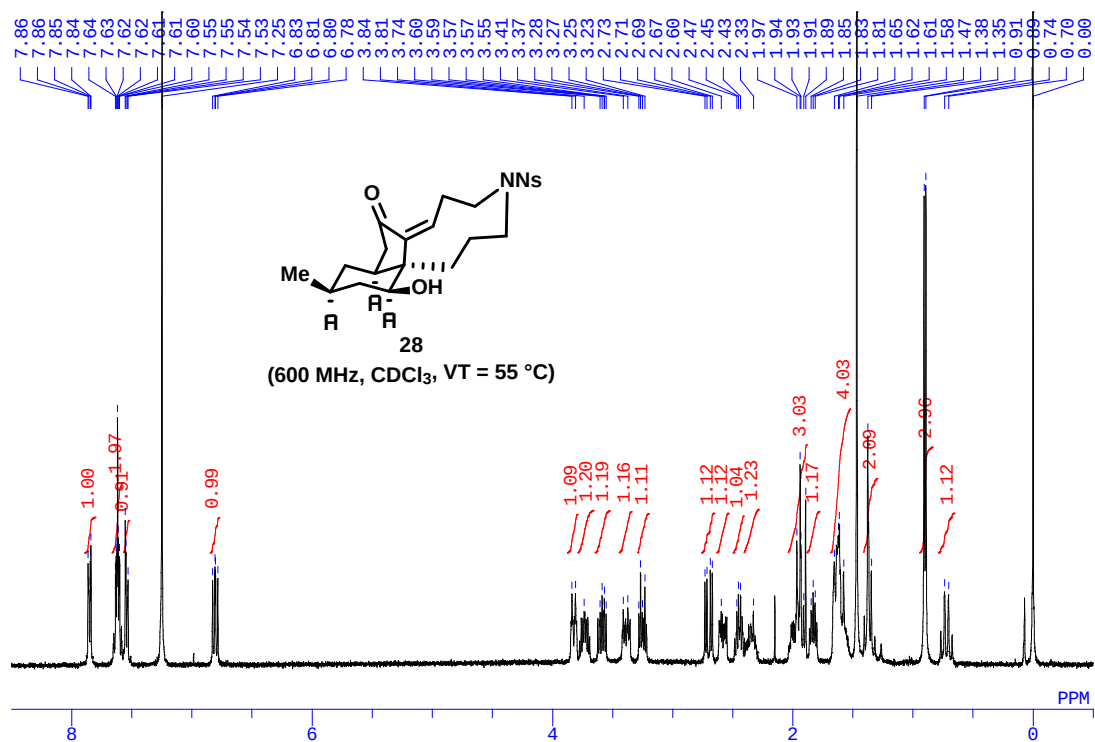


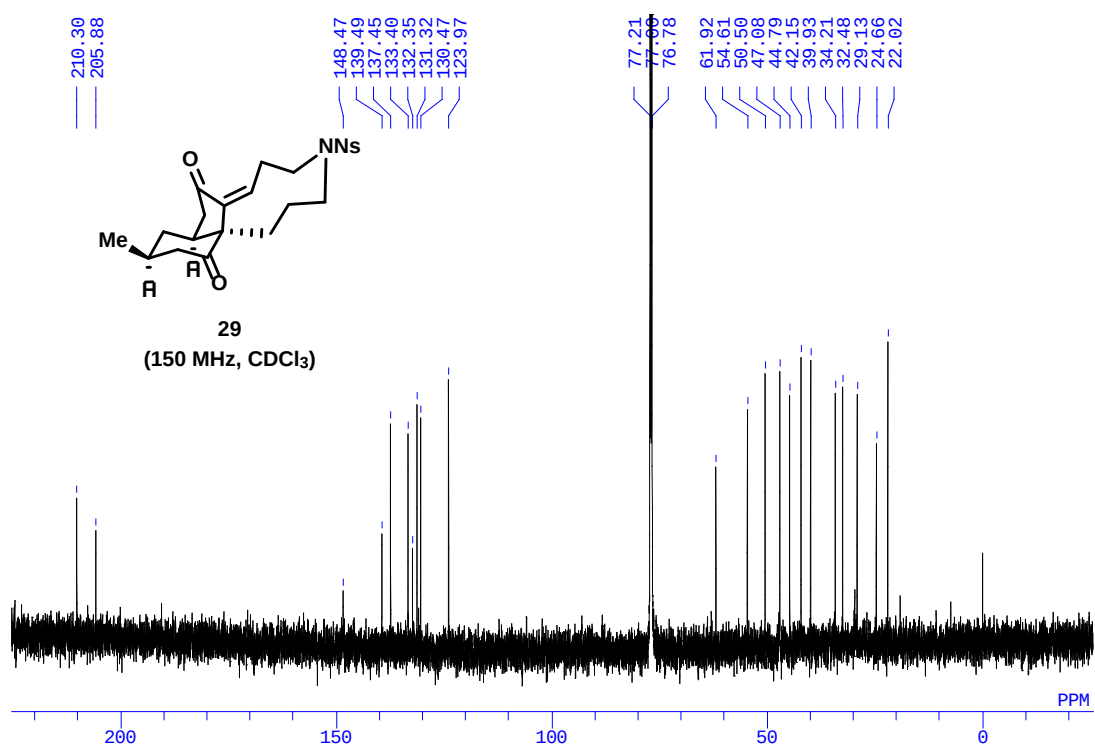
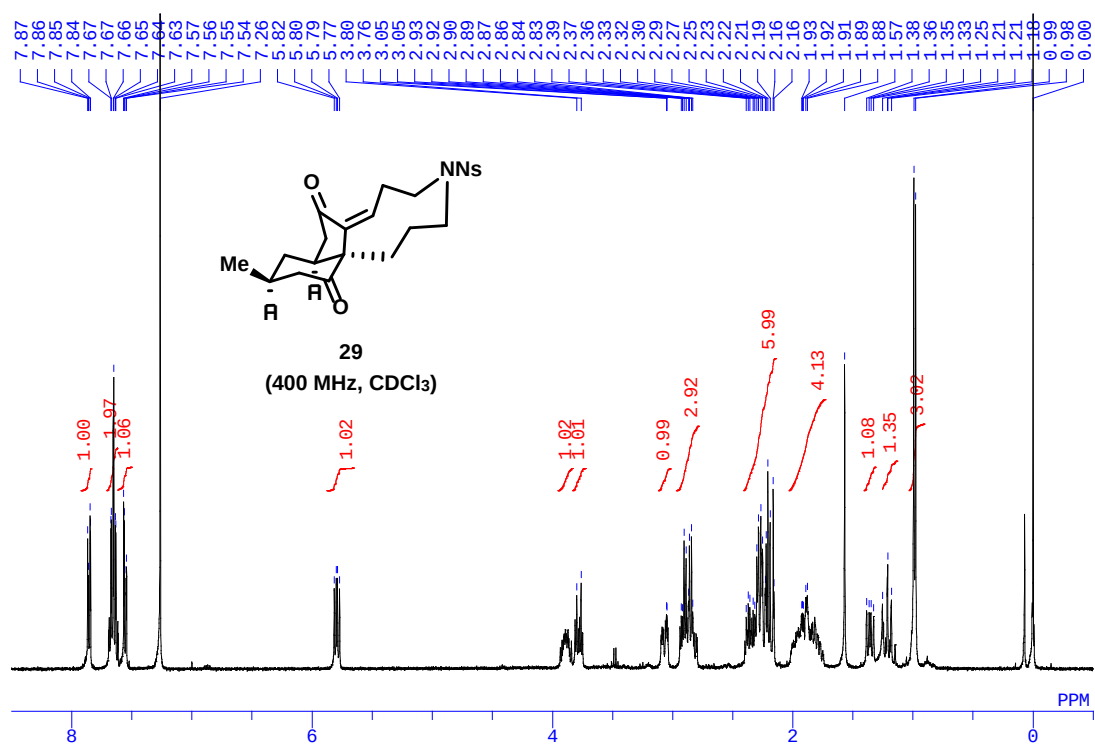


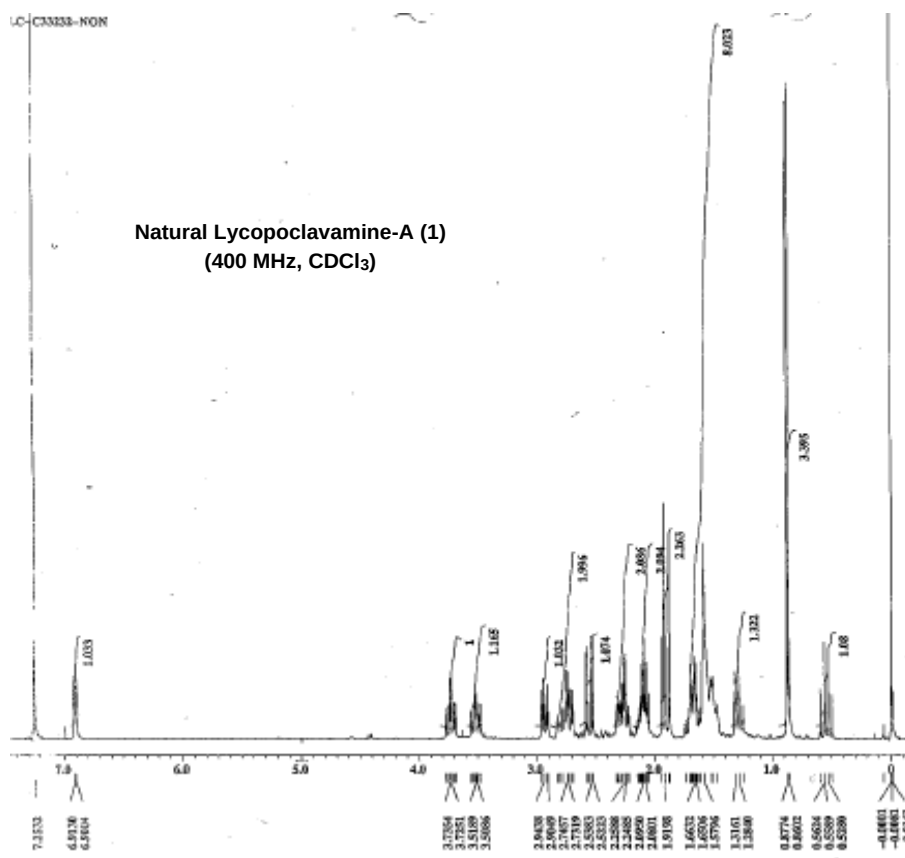
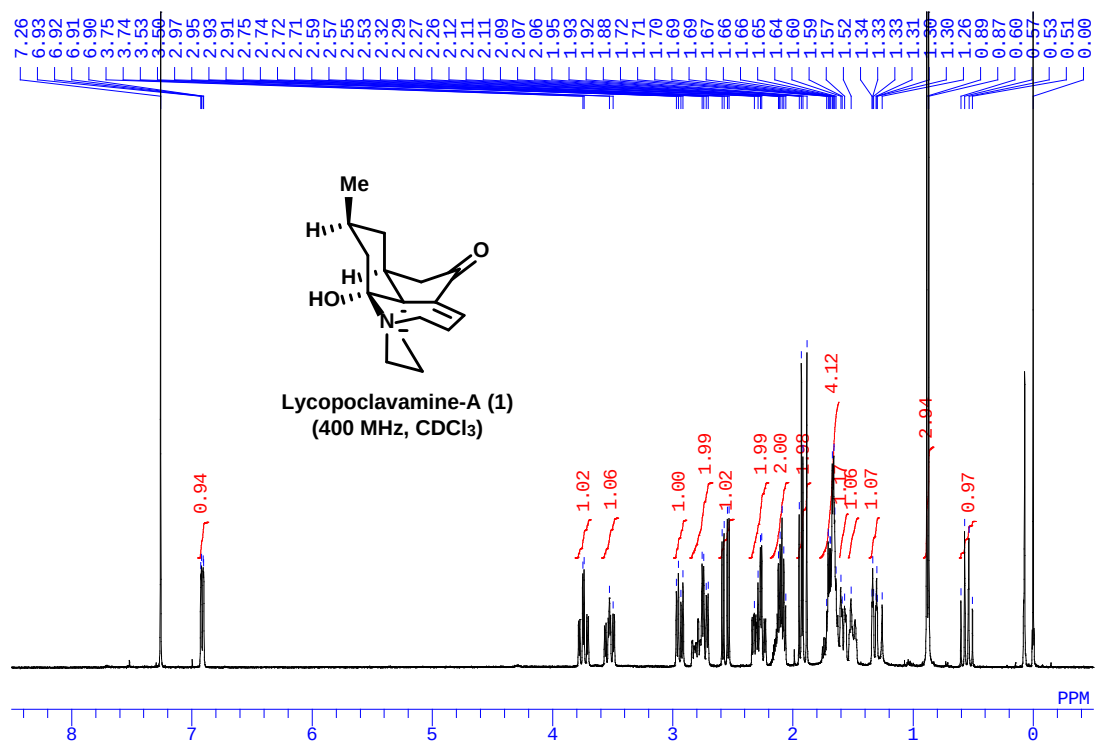


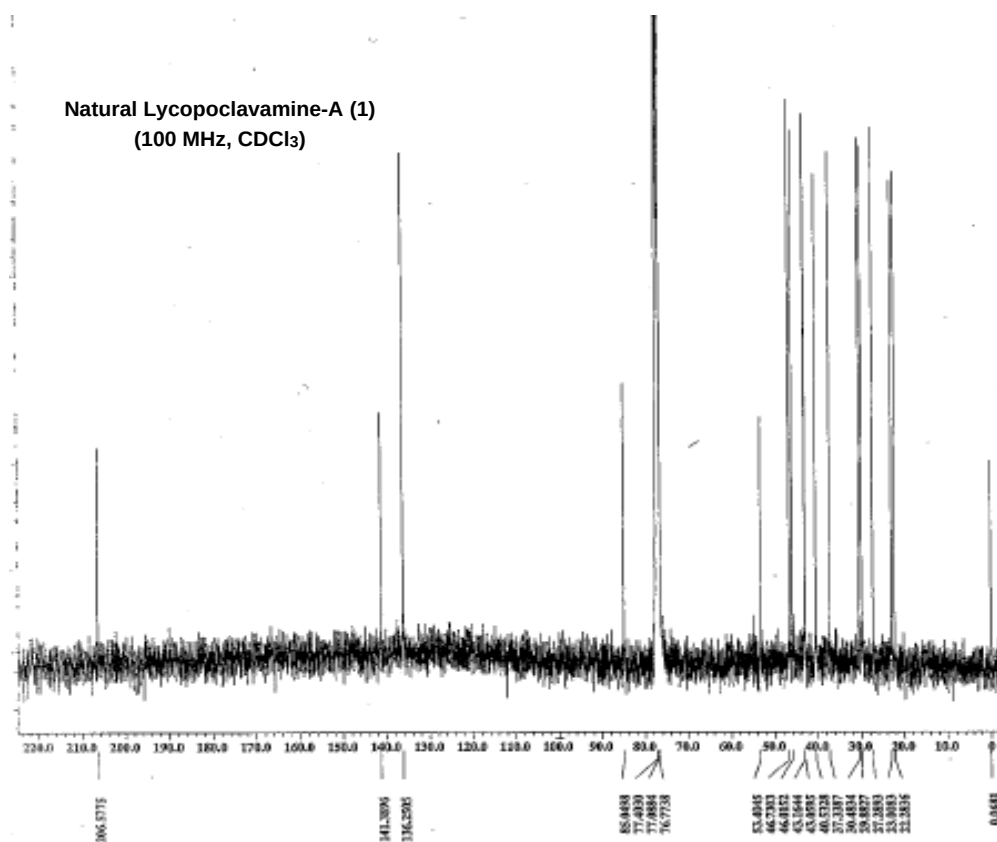
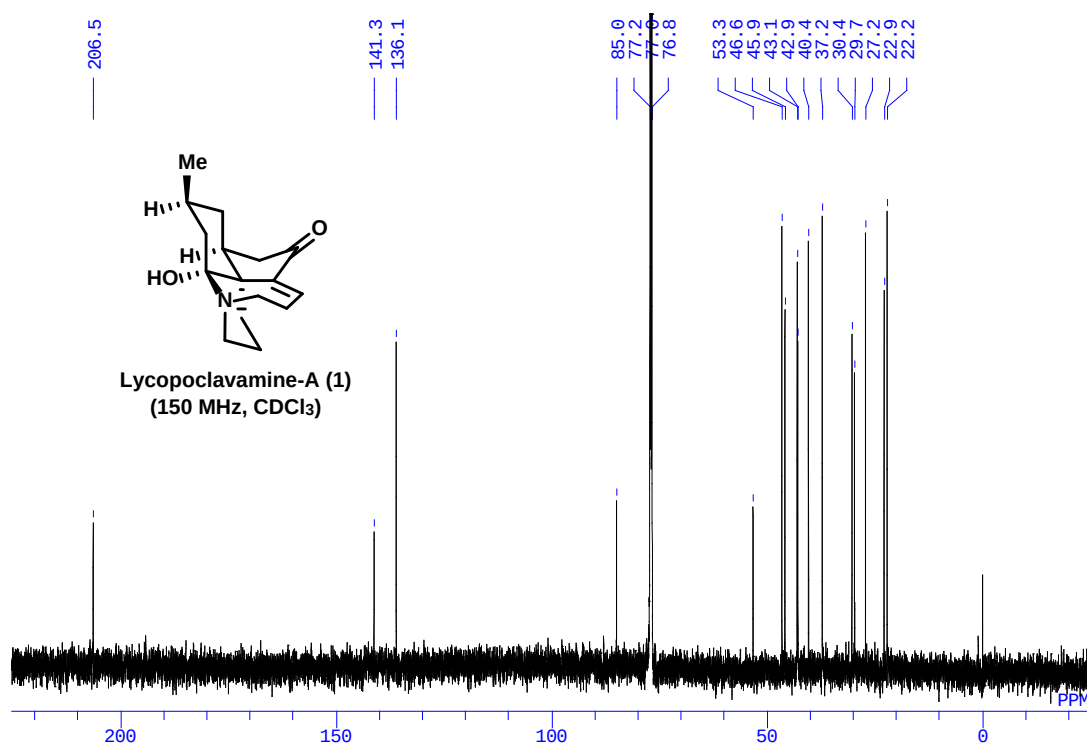


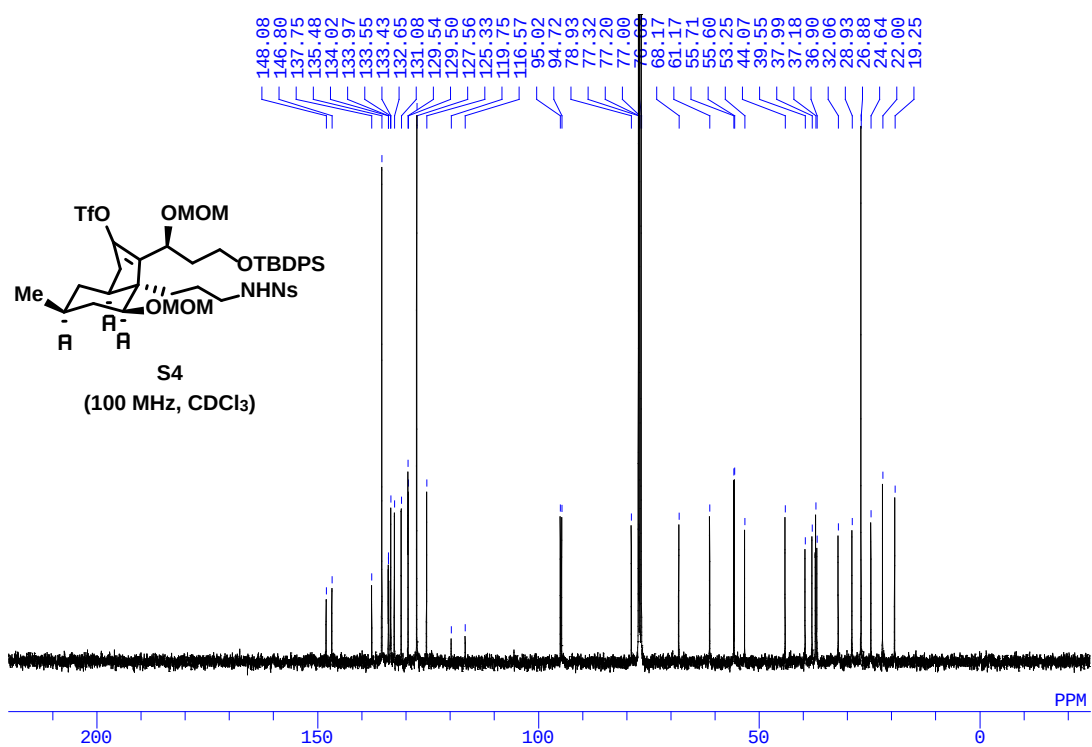


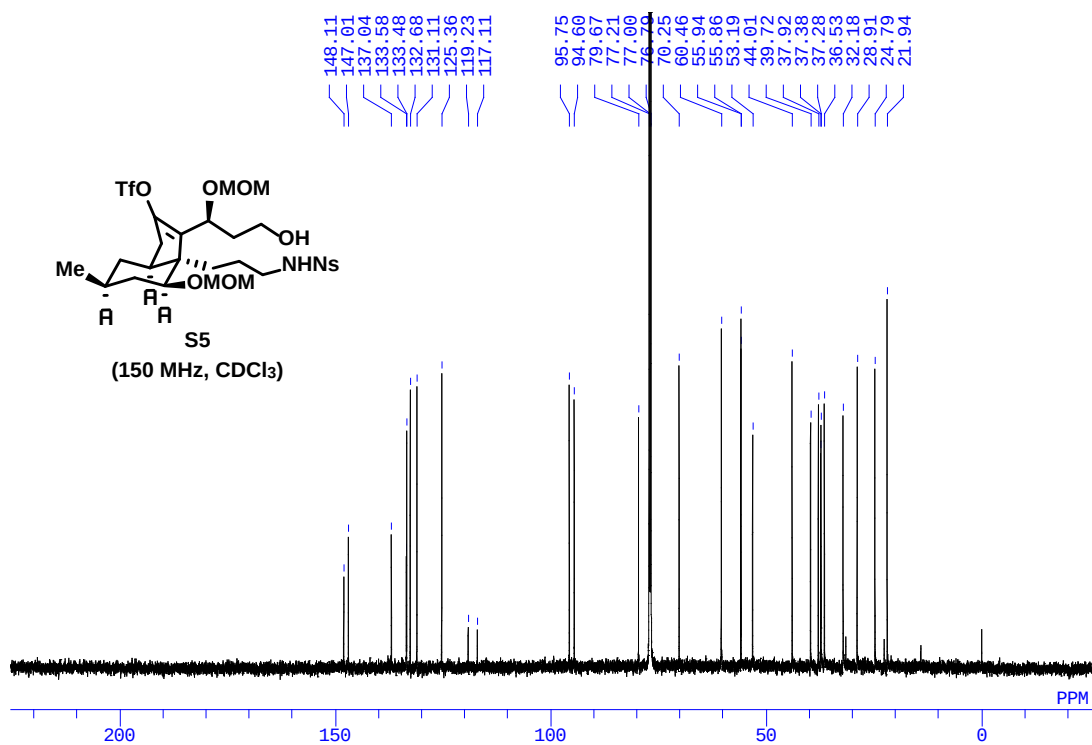
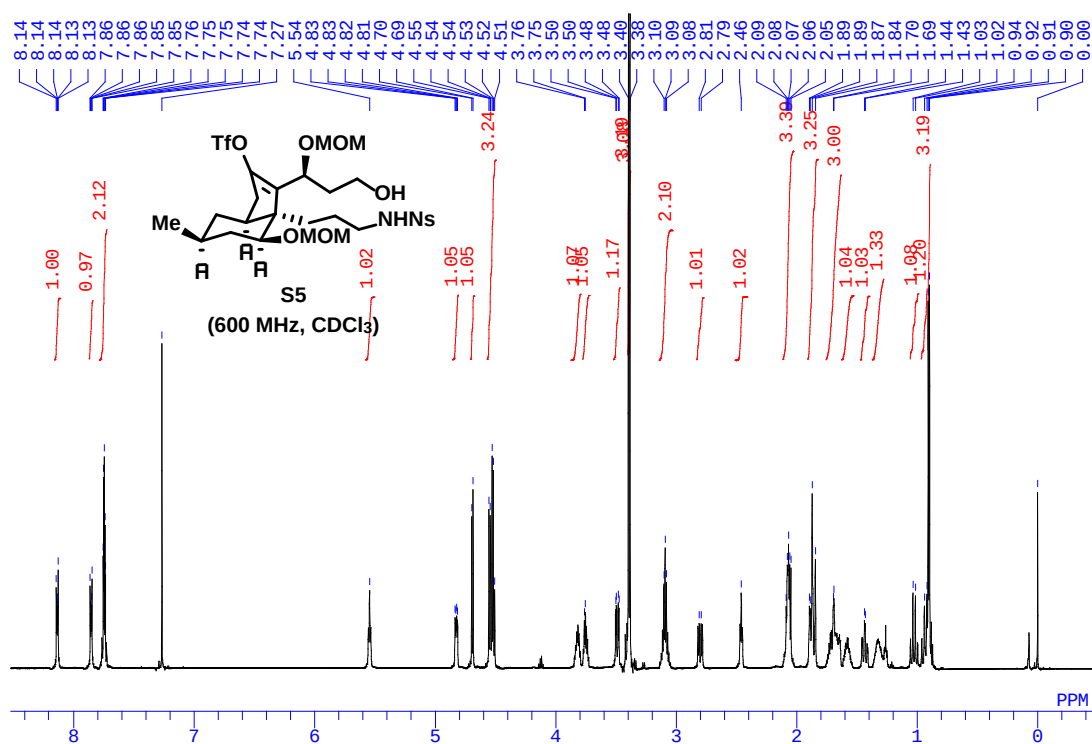


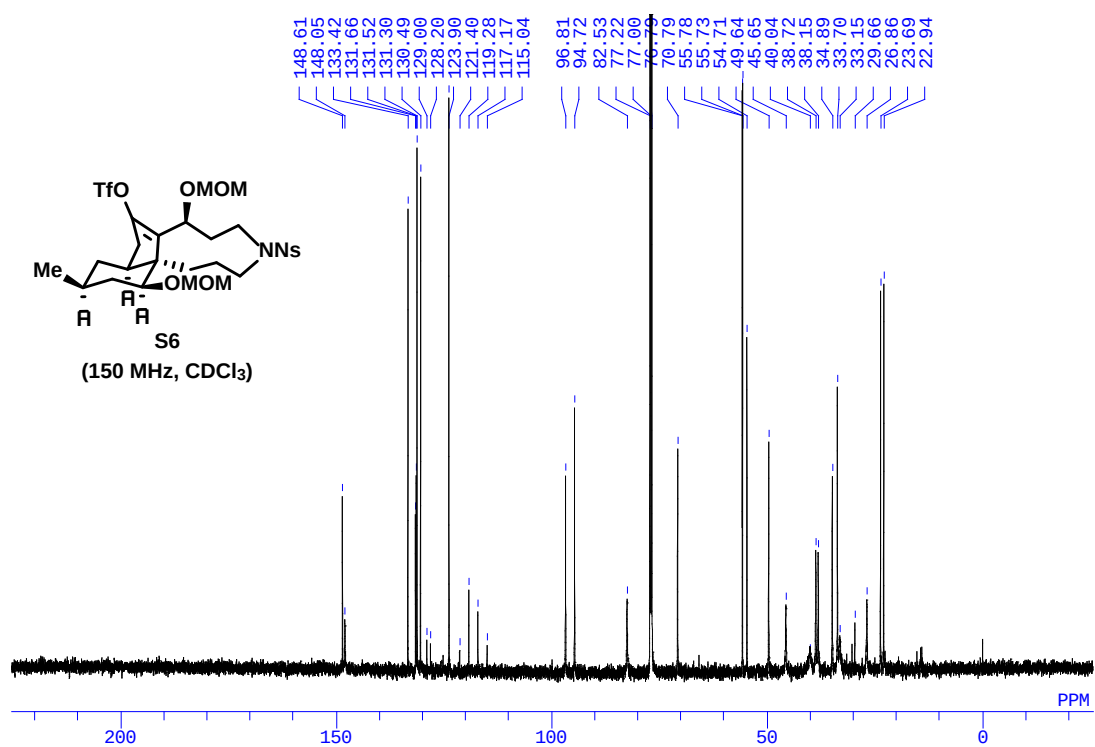
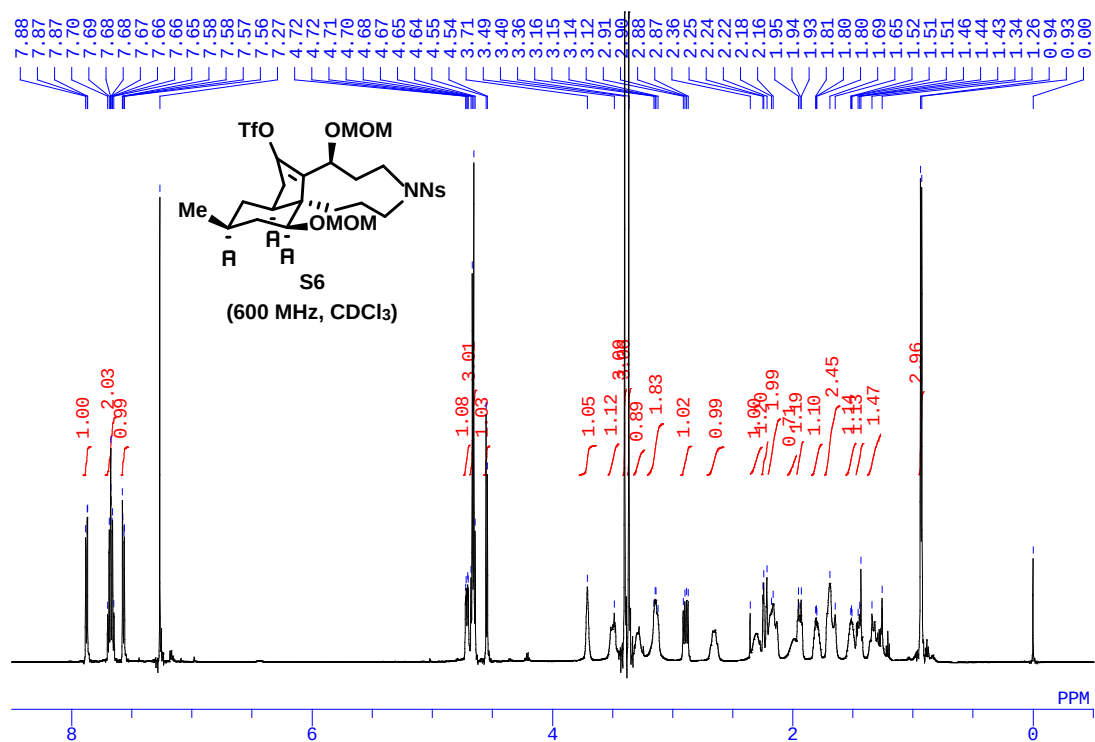


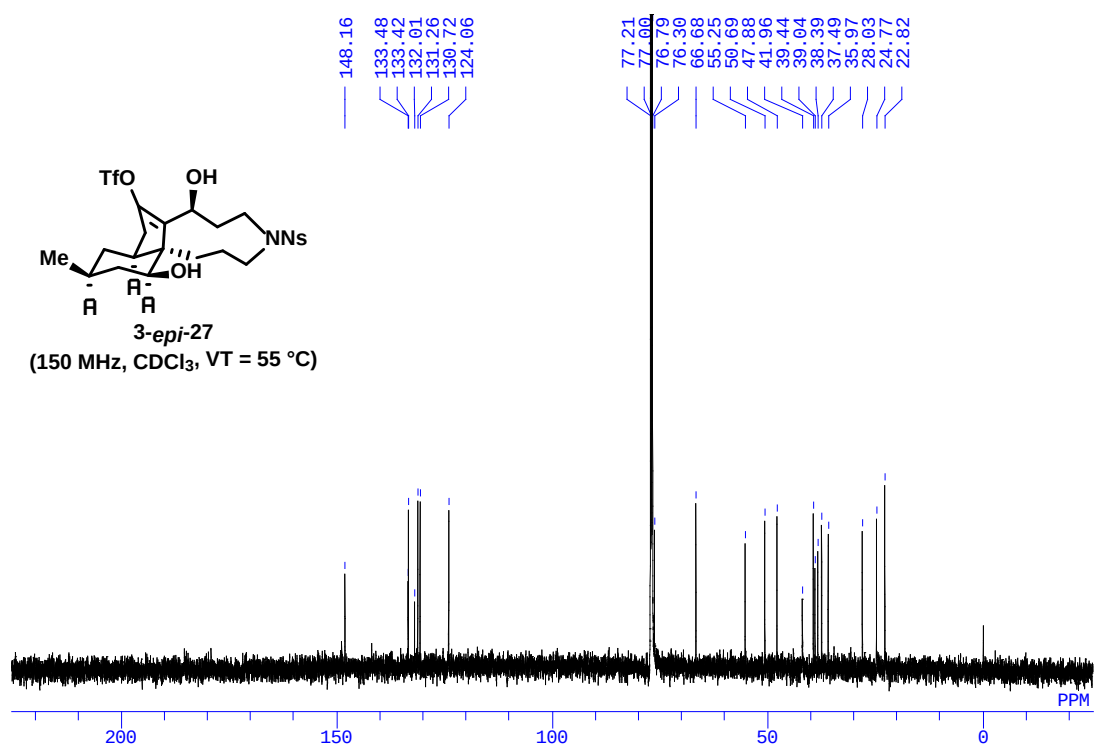
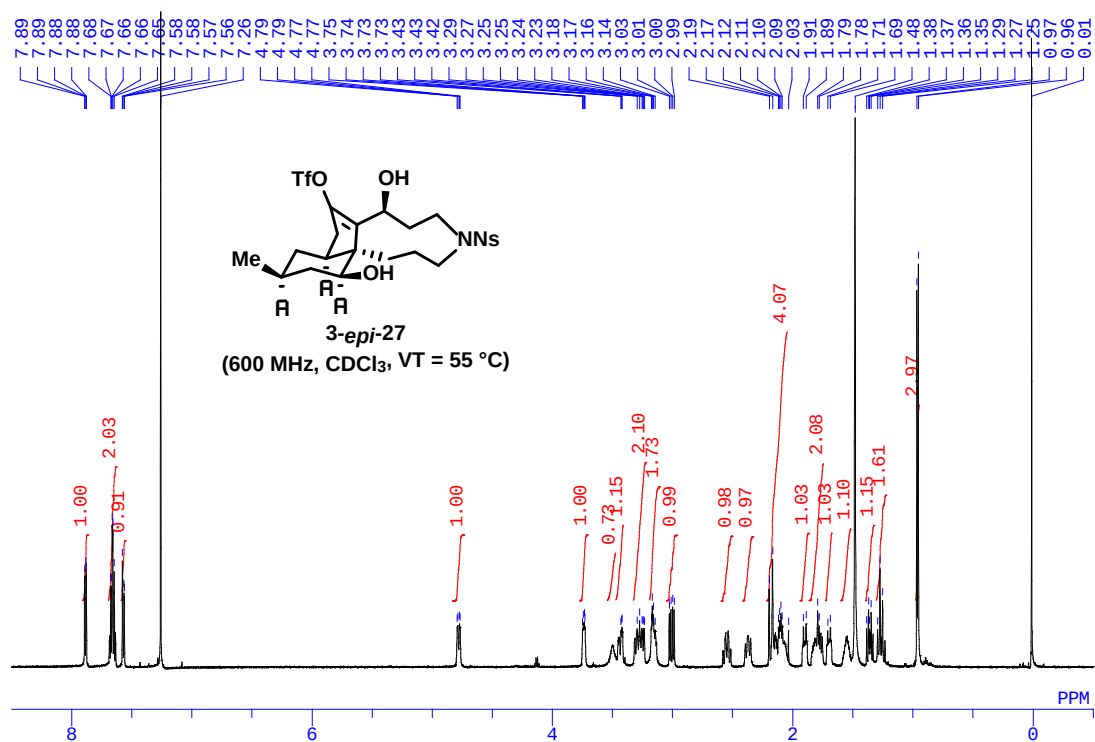


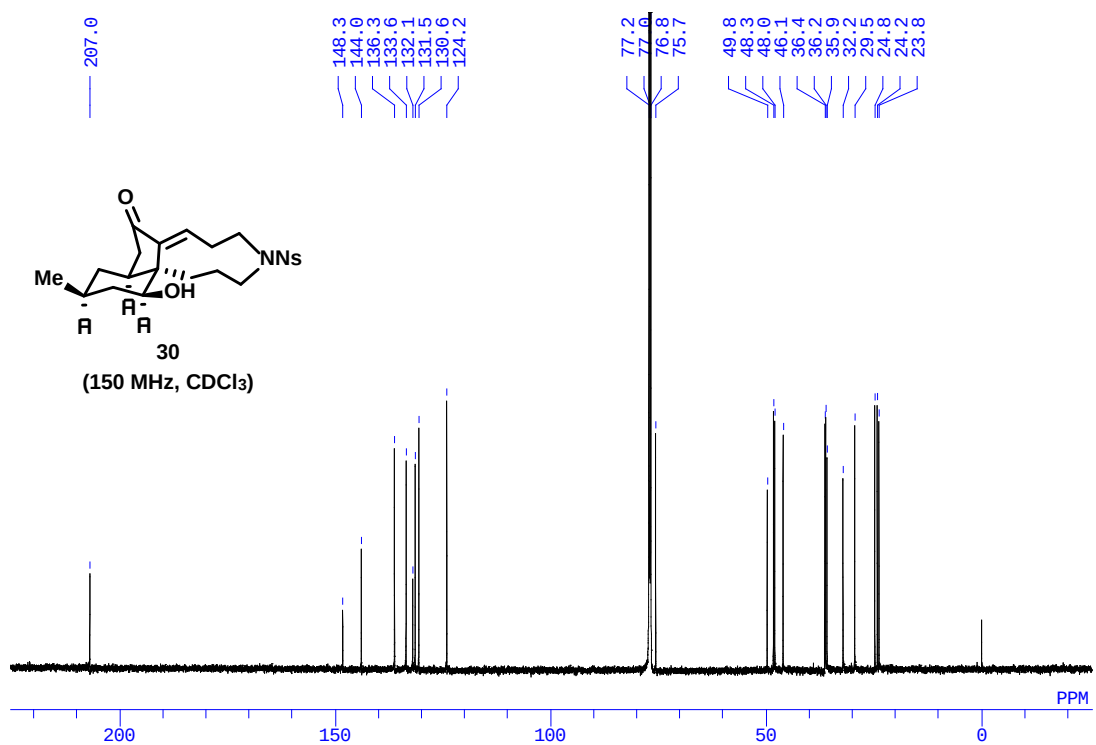


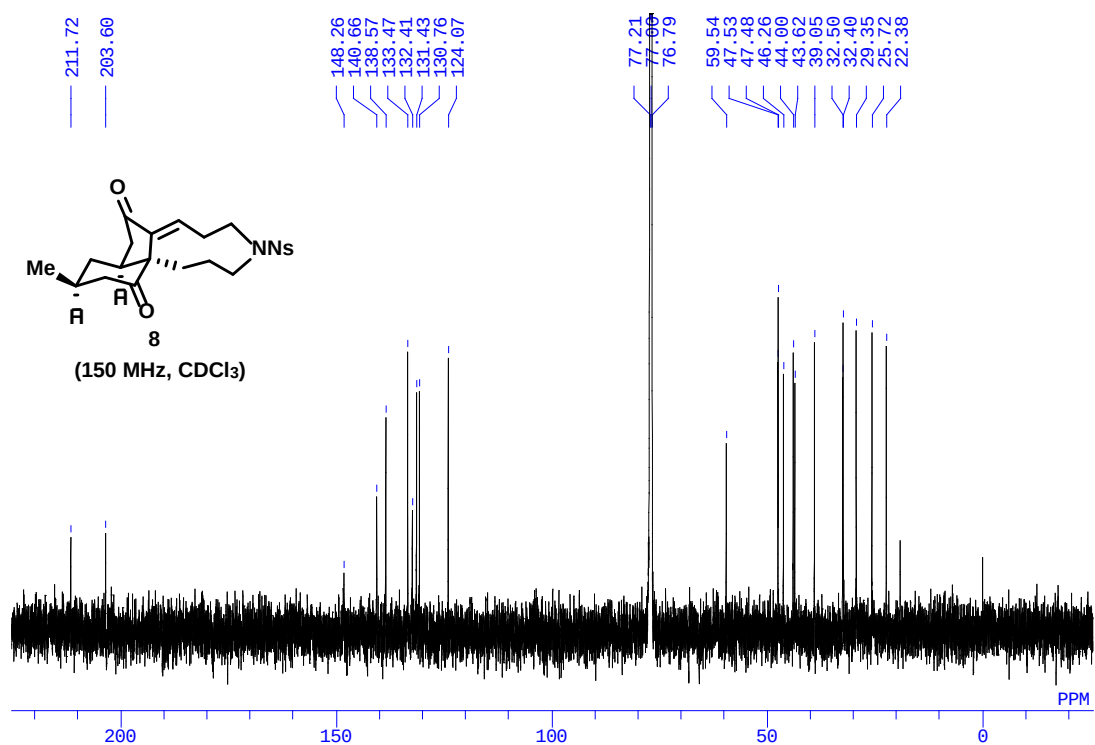
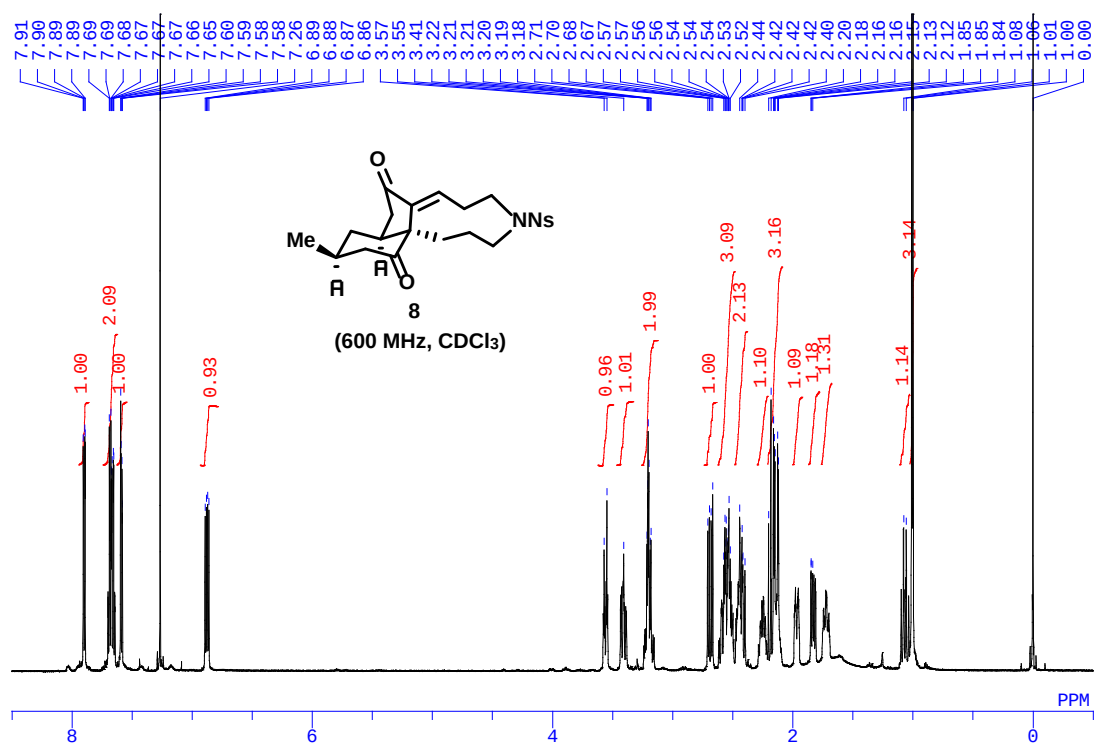












X-ray crystallographic analysis for 3-*epi*-27

3-*epi*-27 was crystallized from AcOEt/*n*-hexane by the vapor diffusion method. The ORTEP drawing is shown in Figure S1. The crystal structure has been deposited at the Cambridge Crystallographic Centre (deposition number: CCDC 1895333). X-Ray data were collected on a Rigaku R-Axis RAPID imaging plate diffractometer using a graphite monochromator with Cu-K α radiation ($\lambda = 1.54187$ Å) at 93 K. Crystal Data: C₂₃H₂₉F₃N₂O₉S₂, $M = 598.61$, $a = 14.4545(4)$ Å, $b = 14.4545(4)$ Å, $c = 11.1066(3)$ Å, $\alpha = \beta = 90^\circ$, $\gamma = 120^\circ$, $V = 2009.64(10)$ Å³, space group: P3₁, $Z = 3$. Refine extinction method: SHELXL.

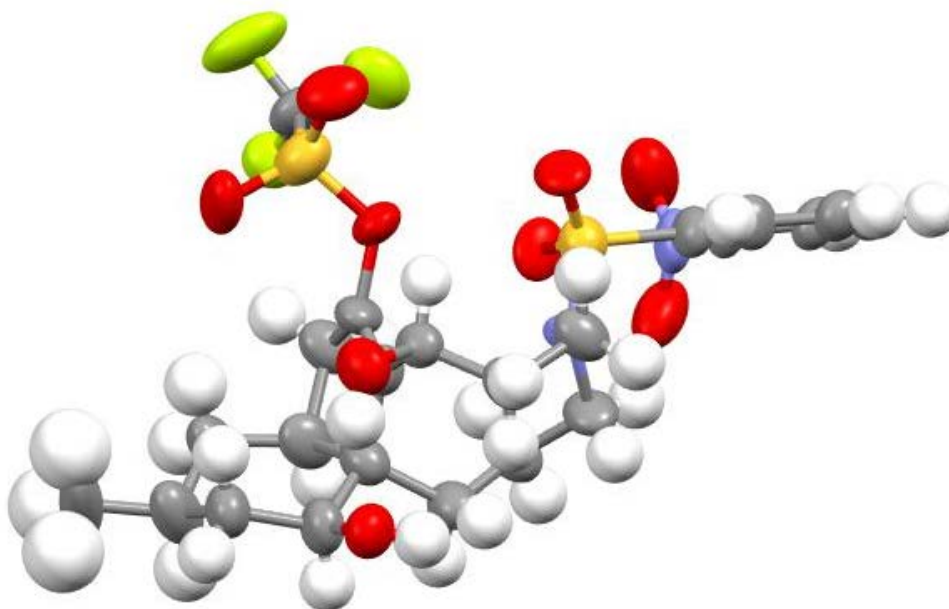


Fig. S1. ORTEP drawing of **3-*epi*-27** showing thermal ellipsoids at the 50% probability level.