

Supporting Information

for

Total Synthesis of Pyrrolo[2,3-c]quinoline Alkaloid:

Trigonoine B

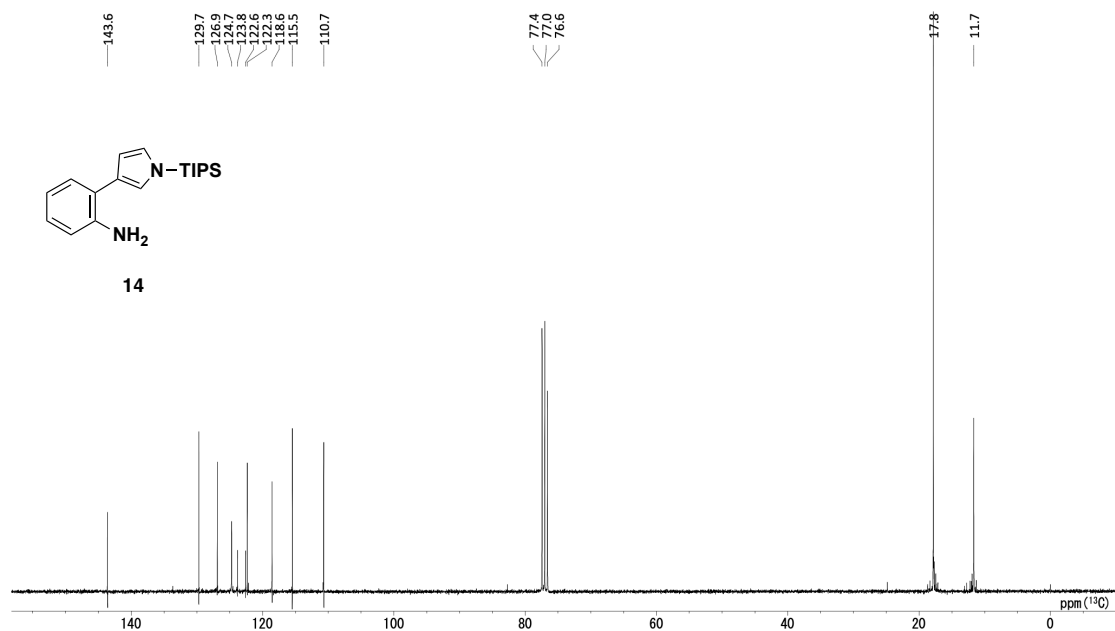
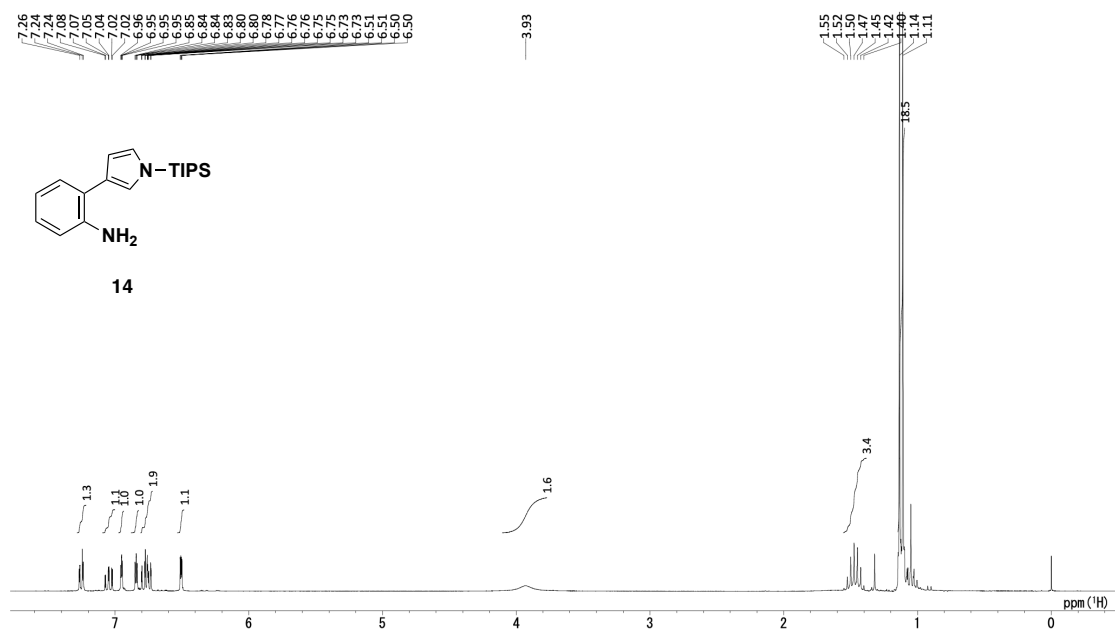
Takashi Nishiyama, Erina Hamada, Daishi Ishii, Yuuto Kihara, Nanase Choshi, Natsumi Nakanishi, Mari Murakami, Kimiko Taninaka, Noriyuki Hatae, and Tominari Choshi

Bellstein J. Org. Chem. **2021**

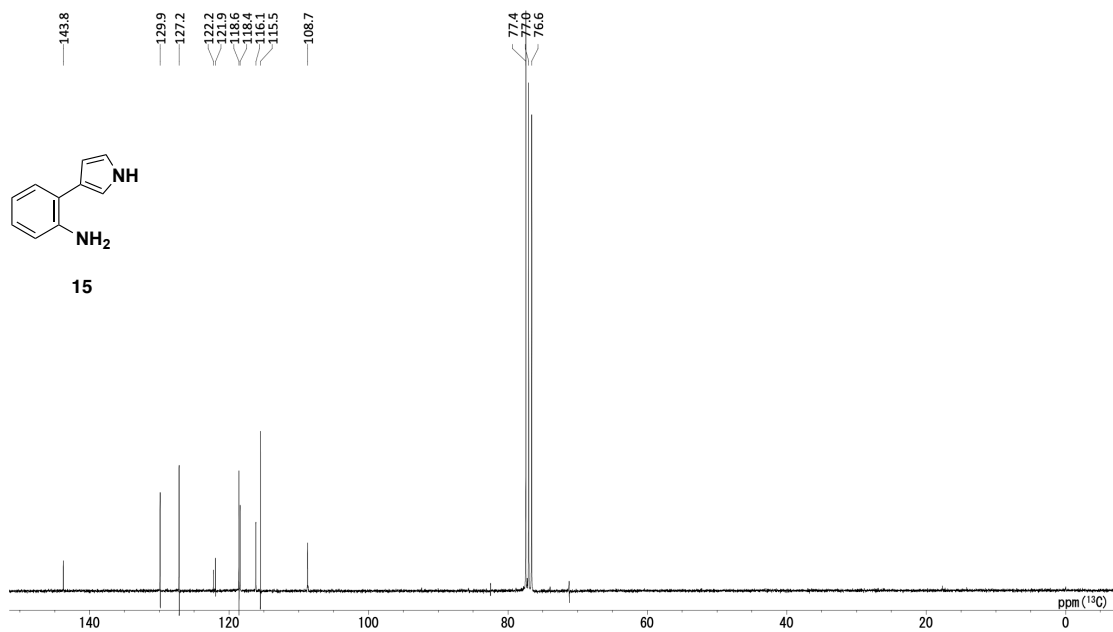
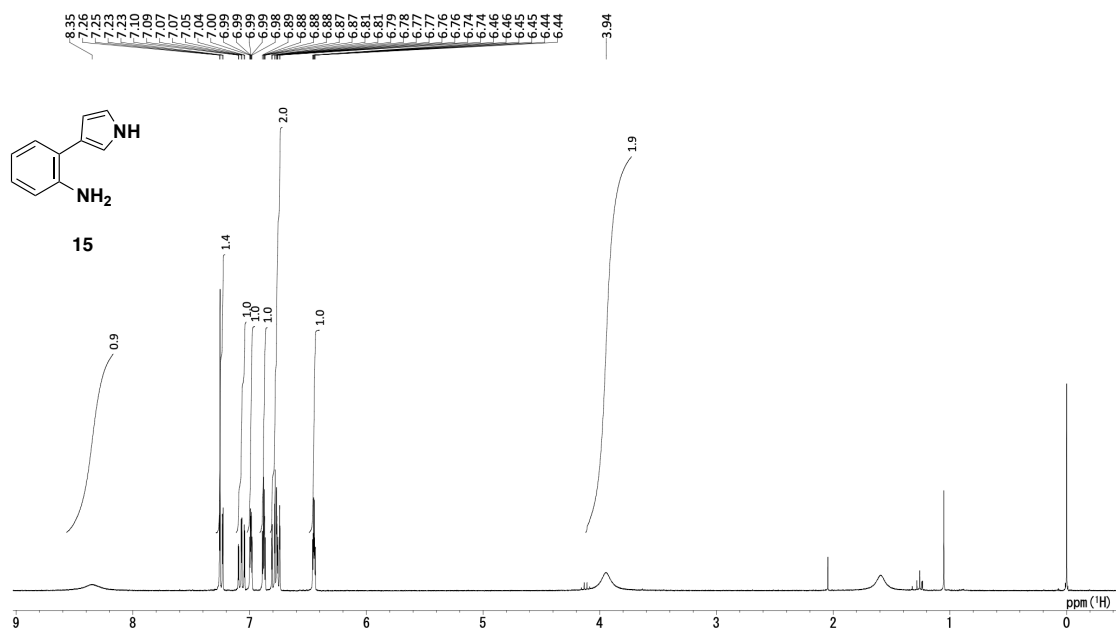
^1H NMR and ^{13}C NMR spectra of all new compounds

- 2-(1-Triisopropylsilyl-1*H*-pyrrol-3-yl)aniline (**14**)
- 2-(1*H*-Pyrrol-3-yl)aniline (**15**)
- *N*-Phenyl-*N'*-[2-(1*H*-pyrrol-3-yl)phenyl]urea (**16a**)
- *N*-Phenyl-*N'*-[2-(1-(triisopropylsilyl)-1*H*-pyrrol-3-yl)phenyl]urea (**16b**)
- *N*-Phenyl-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**17b**)
- *N*-Phenyl-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**18**)
- *N*-Benzyl-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**19a**)
- *N*-(2-Bromophenyl)-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**19b**)
- *N*-[3-(2-Bromophenyl)propyl]-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**19c**)
- *N*-[3-(2-Bromophenyl)-3-oxopropyl]-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**19d**)
- *N*-Benzyl-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**20a**)
- *N*-[3-(2-Bromophenyl)propyl]-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**20c**)
- *N*-[3-(2-Bromophenyl)-3-oxopropyl]-*N'*-[2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**20d**)
- *N*-Benzyl-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**22a**)
- *N*-(2-Bromophenyl)-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**22b**)
- *N*-[3-(2-bromophenyl)propyl]-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**22c**)
- 4-[1,2,3,4-Tetrahydroquinolin-1-yl]-3*H*-pyrrolo[2,3-*c*]quinoline (**23**)
- 5-Methoxy-2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)aniline (**25**)
- *N*-[3-(2-Bromophenyl)propyl]-*N'*-[5-methoxy-2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**27a**)
- *N*-[3-(2-Iodophenyl)propyl]-*N'*-[5-methoxy-2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]urea (**27b**)
- *N*-[3-(2-Bromophenyl)propyl]-*N'*-[5-methoxy-2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**28a**)
- *N*-[3-(2-Iodophenyl)propyl]-*N'*-[5-methoxy-2-(1-triisopropylsilyl-1*H*-pyrrol-3-yl)phenyl]carbodiimide (**28b**)
- *N*-[3-(2-Bromophenyl)propyl]-7-methoxy-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**30a**)
- *N*-[3-(2-Iodophenyl)propyl]-7-methoxy-3*H*-pyrrolo[2,3-*c*]quinolin-4-amine (**30b**)
- 7-Methoxy-4-(1,2,3,4-tetrahydroquinolin-1-yl)-3*H*-pyrrolo[2,3-*c*]quinoline (**31**)
- Trigonoine B (**1**)

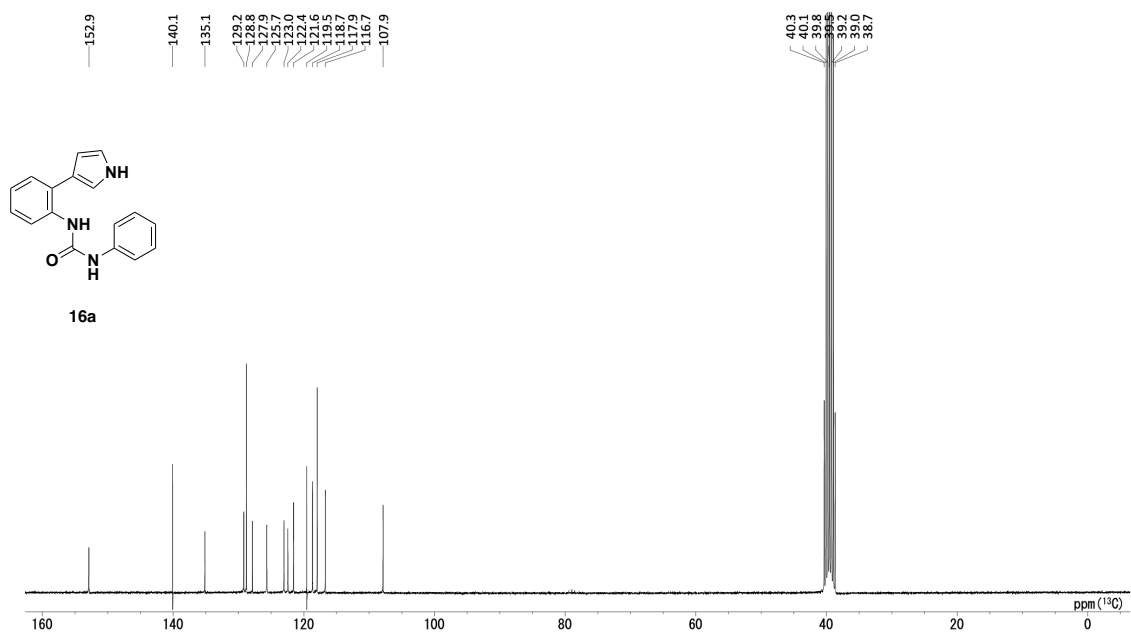
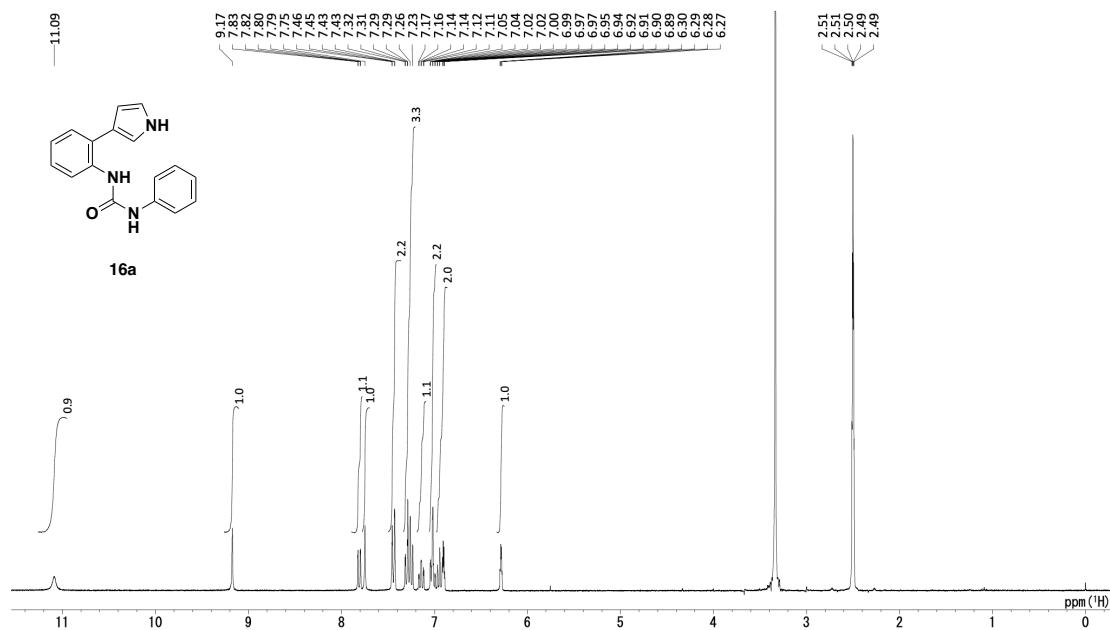
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **14**



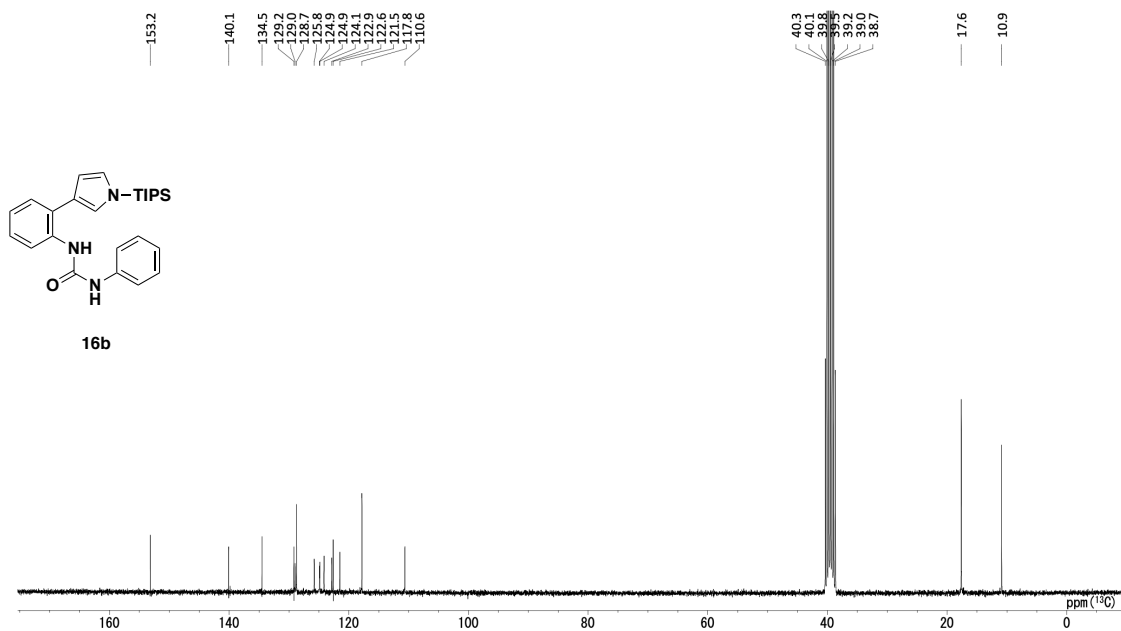
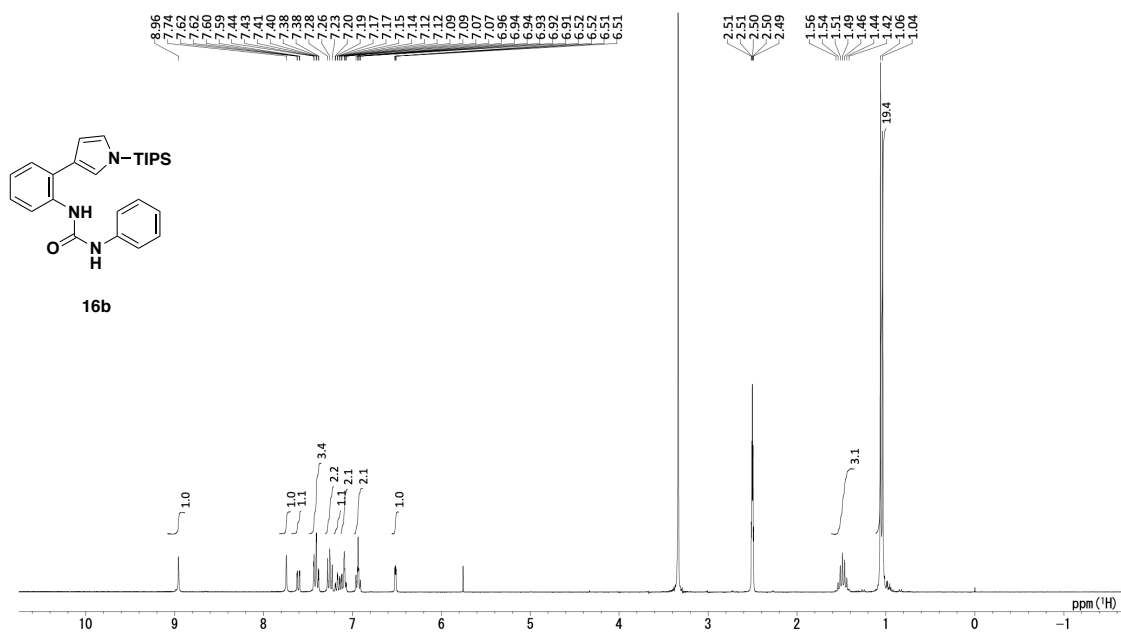
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **15**



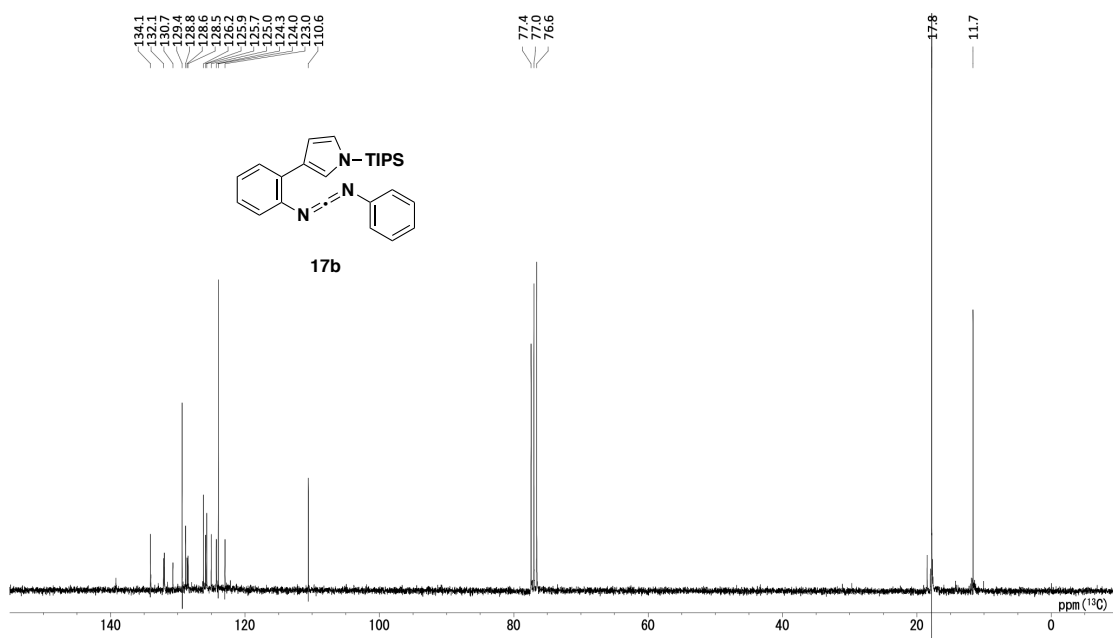
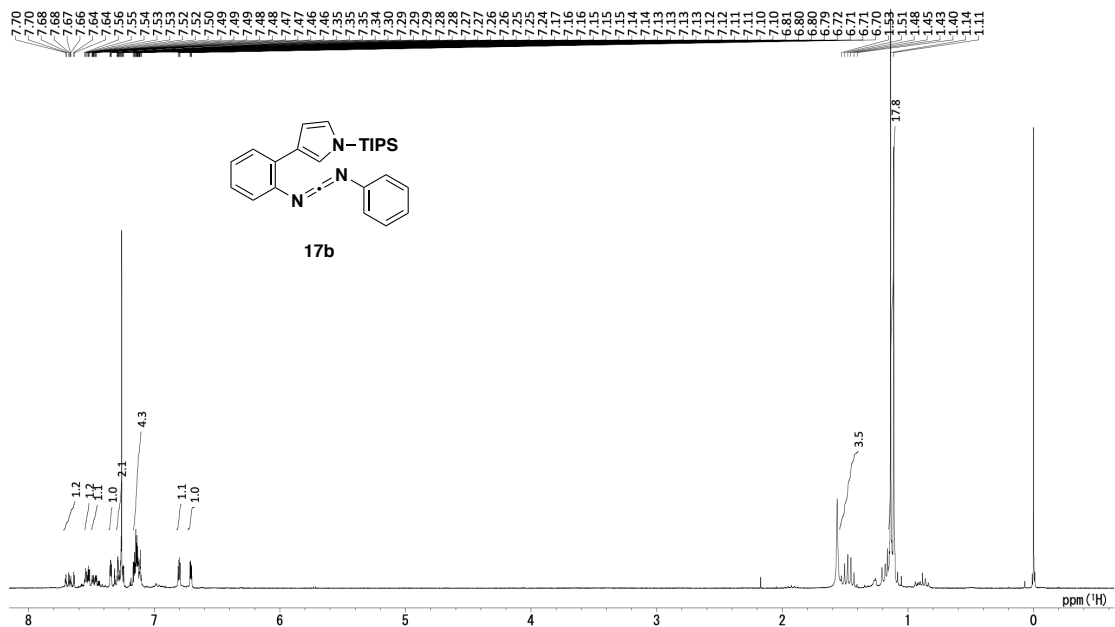
^1H NMR (300 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (75 MHz, $\text{DMSO-}d_6$) spectra of **16a**



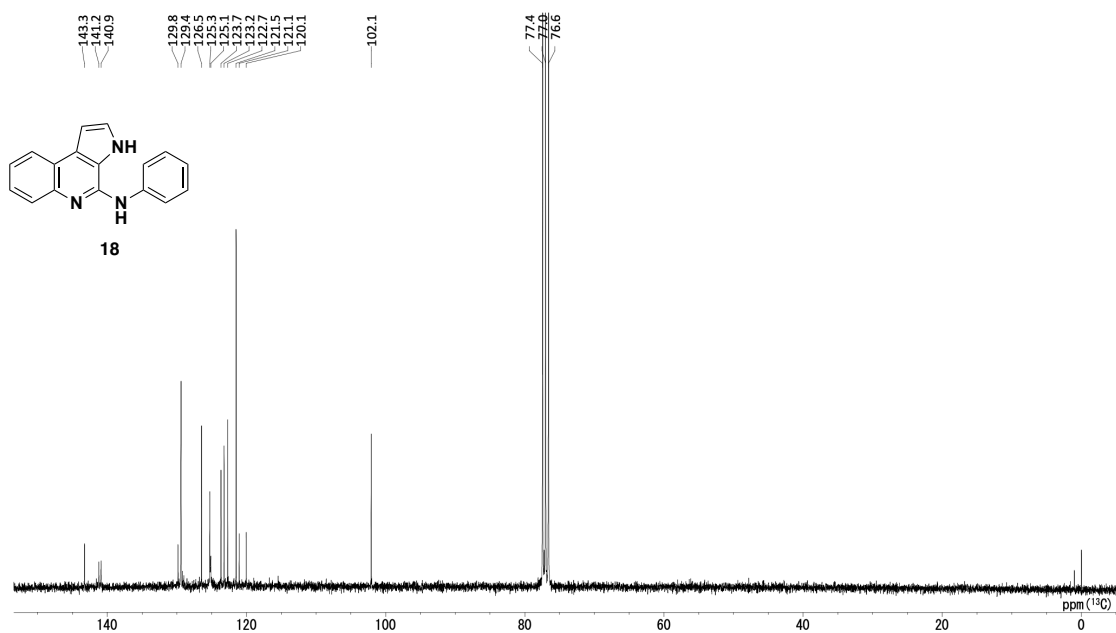
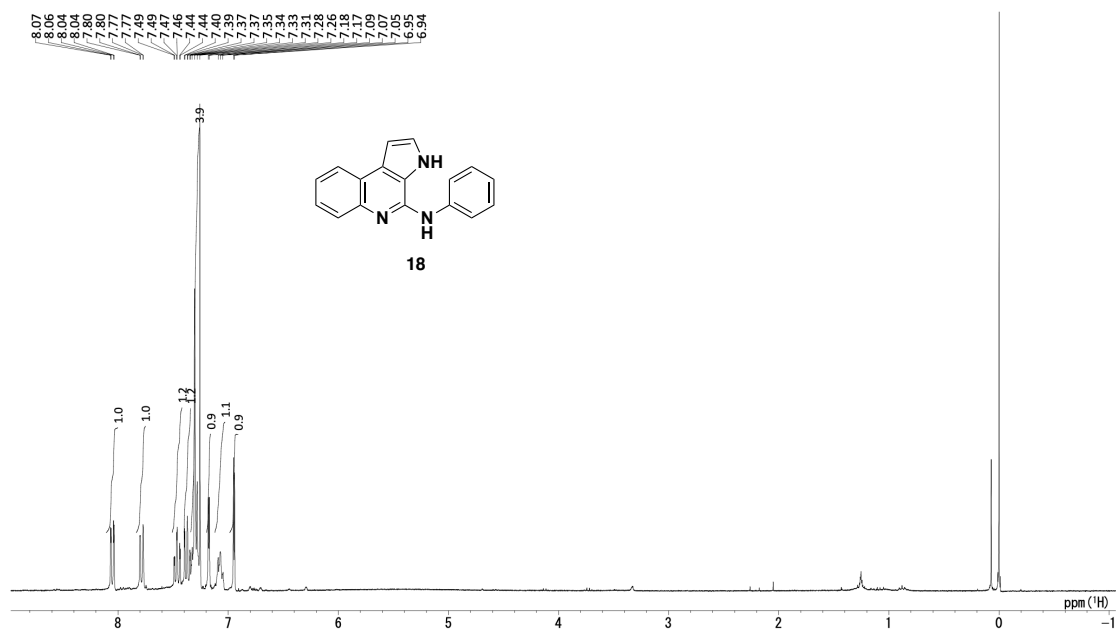
^1H NMR (300 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (75 MHz, $\text{DMSO-}d_6$) spectra of **16b**



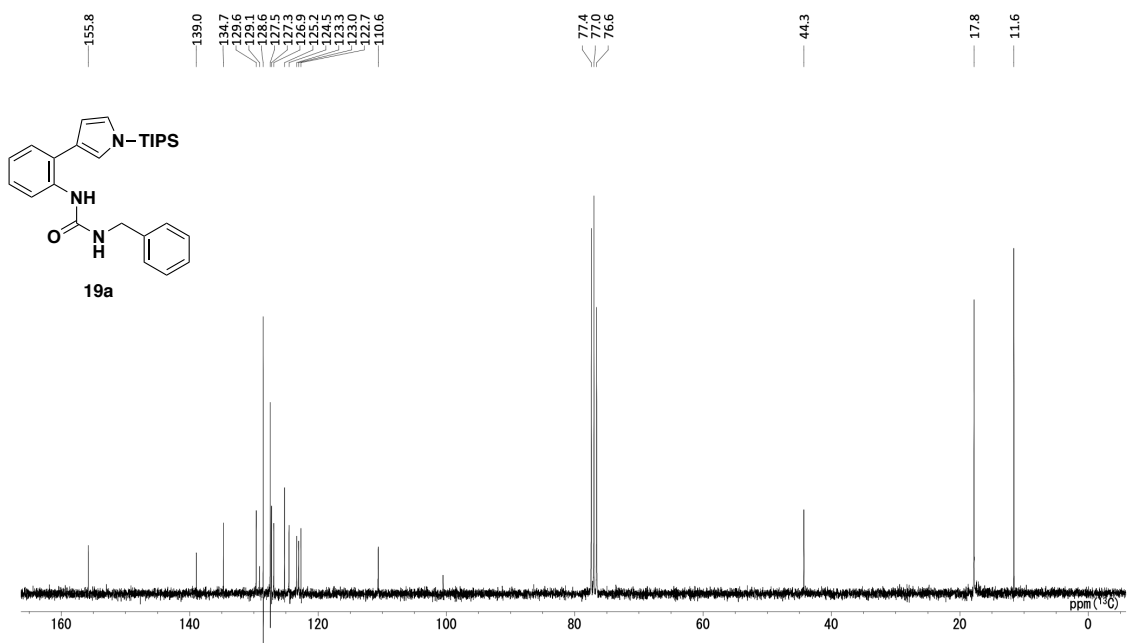
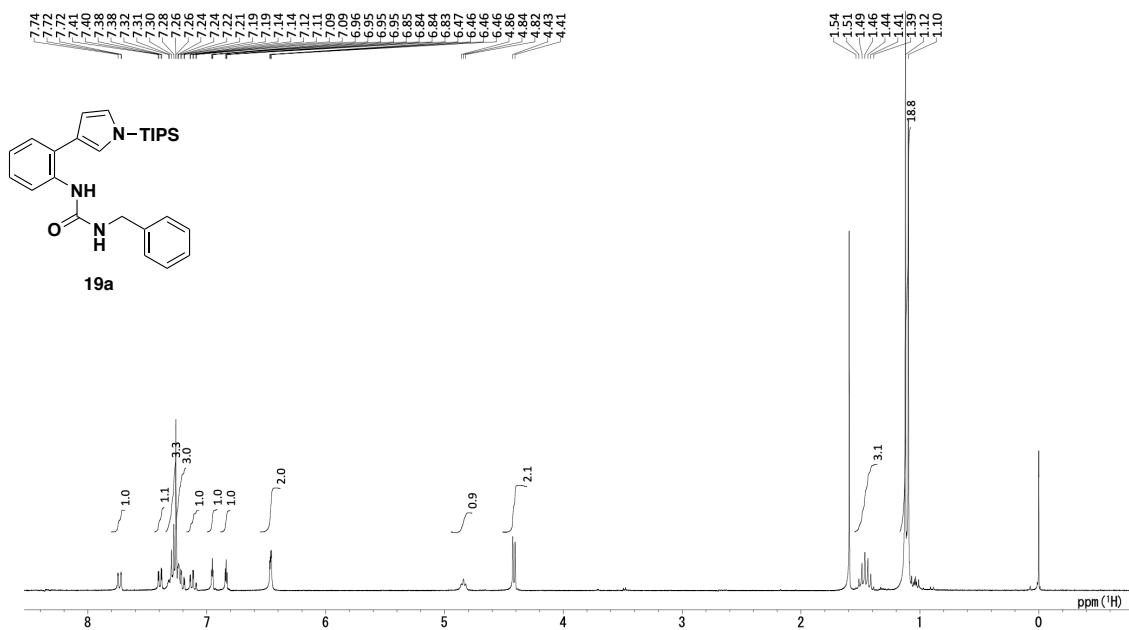
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **17b**



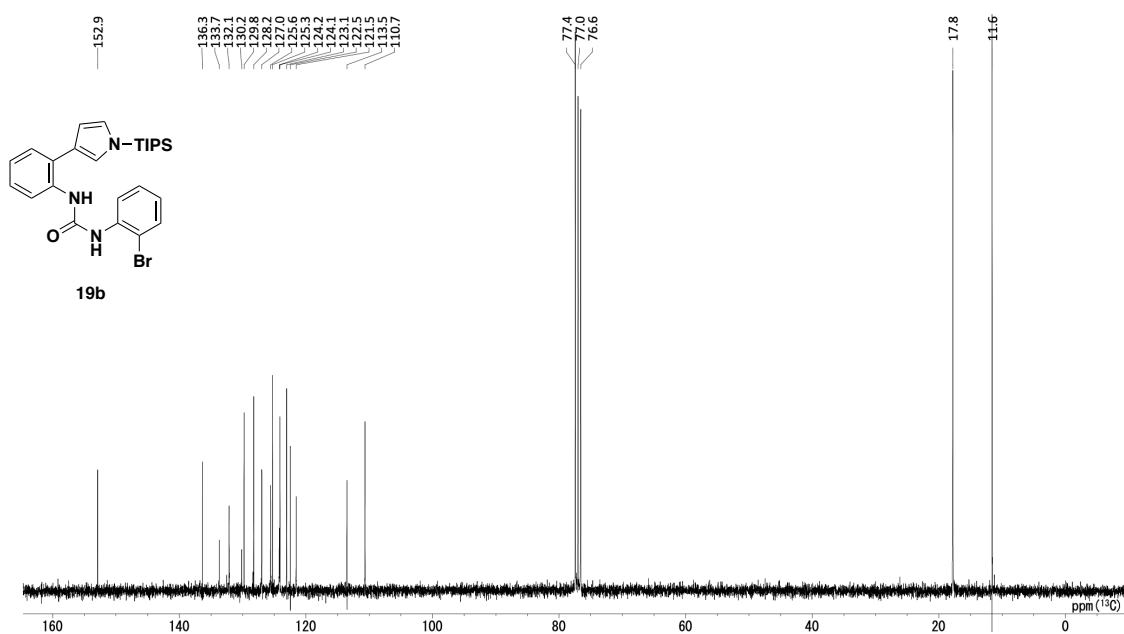
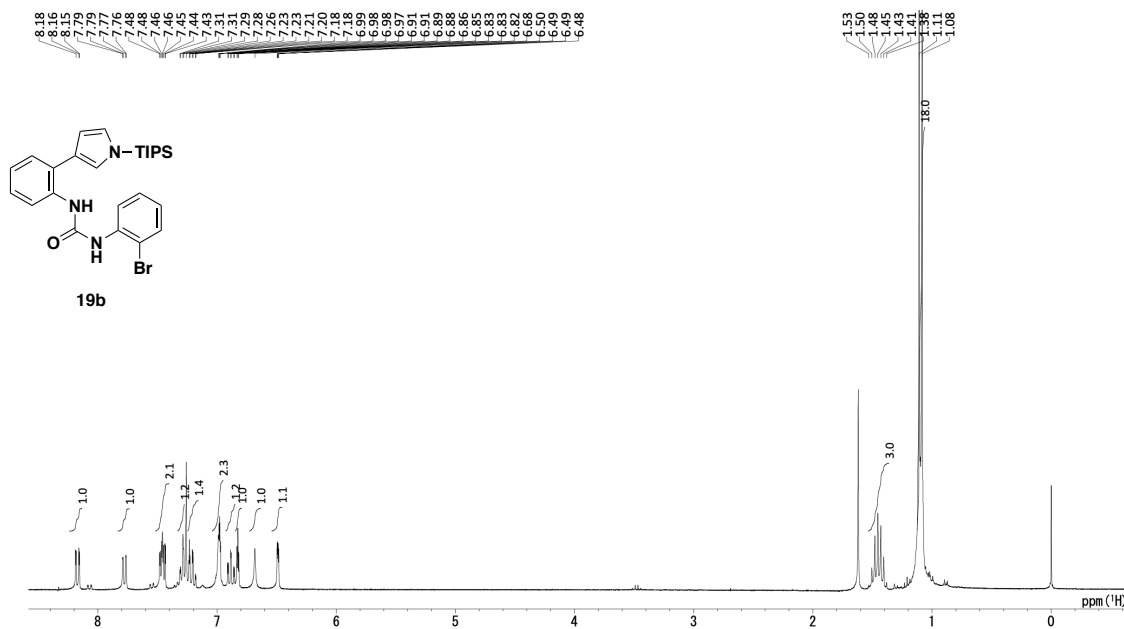
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **18**



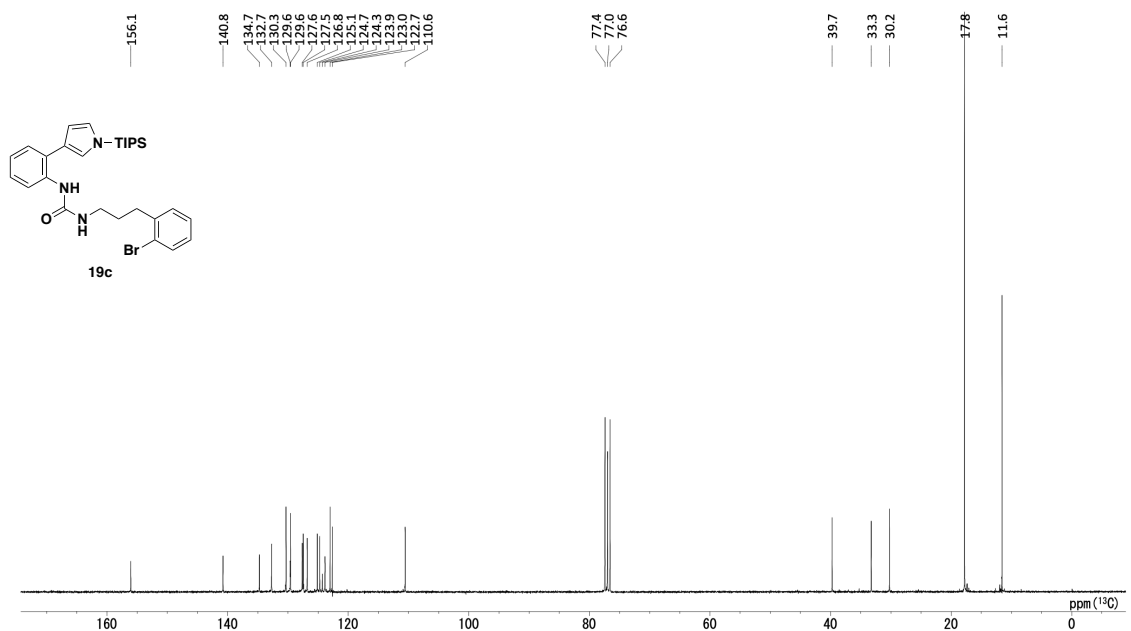
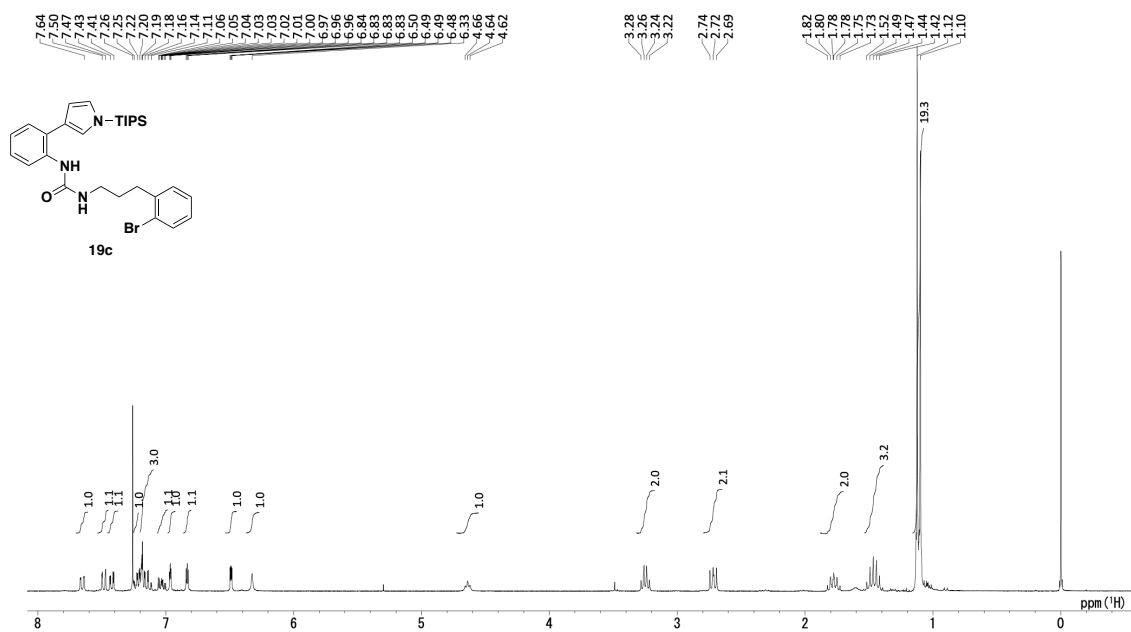
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **19a**



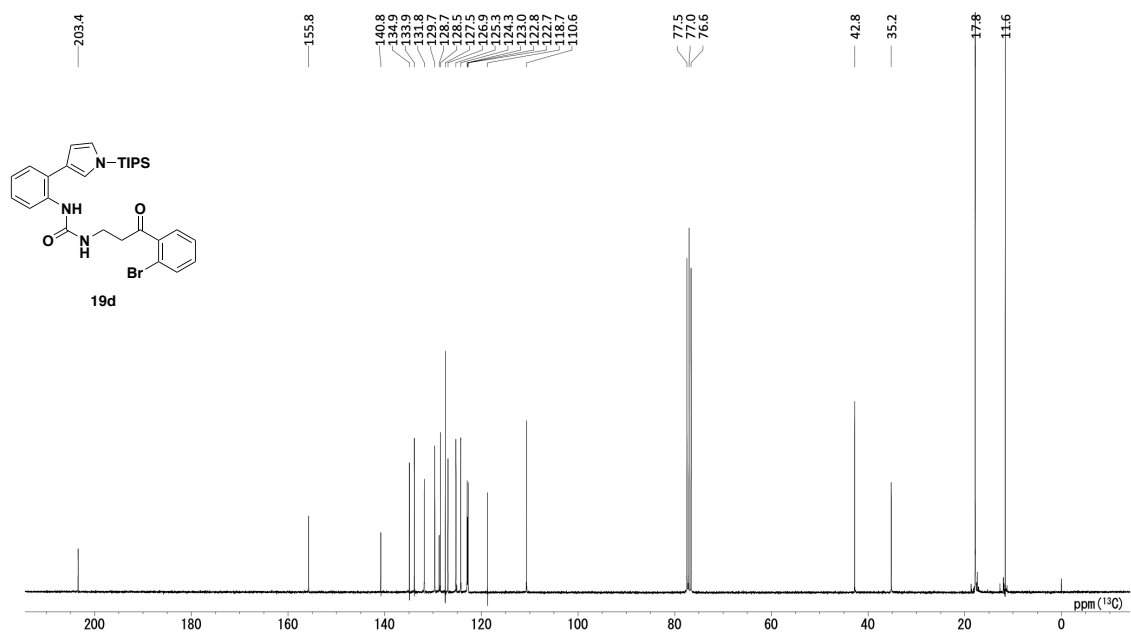
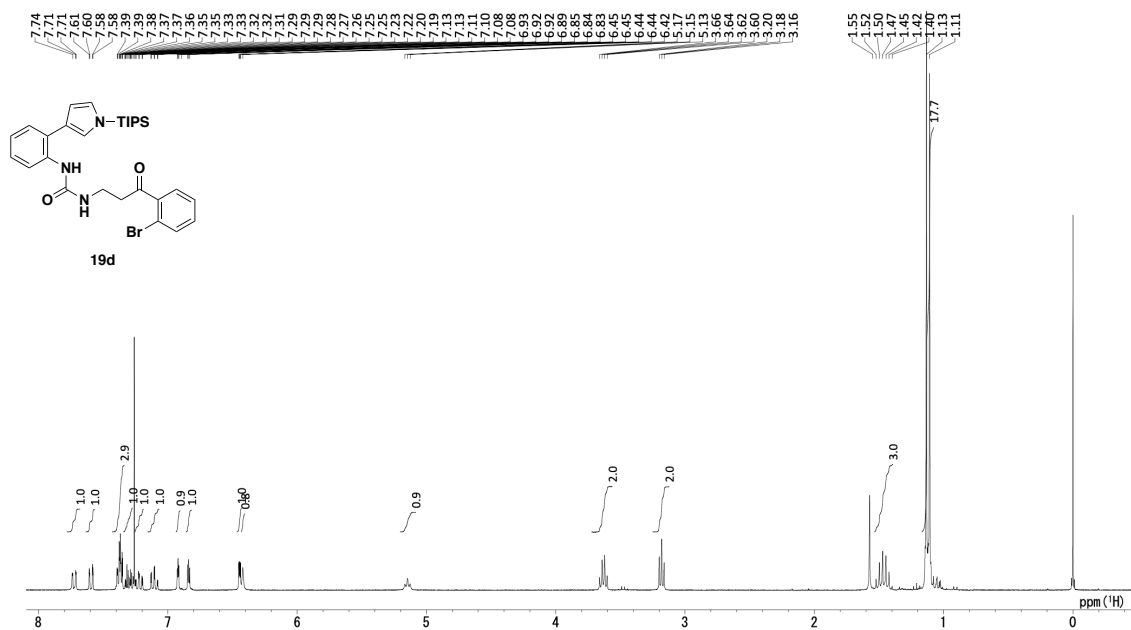
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **19b**



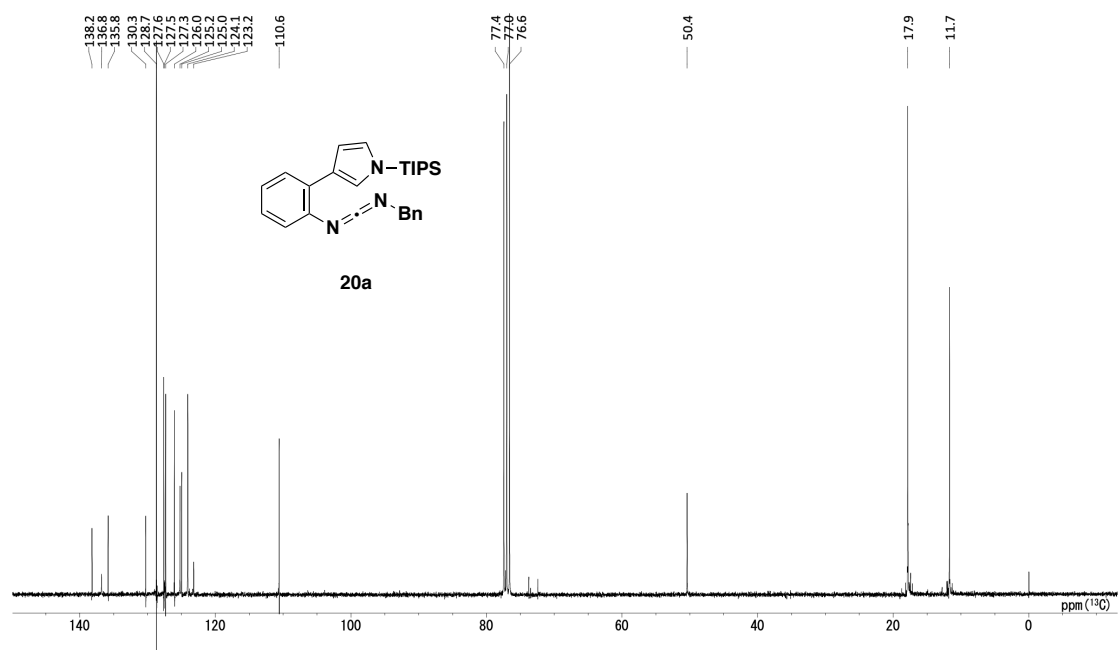
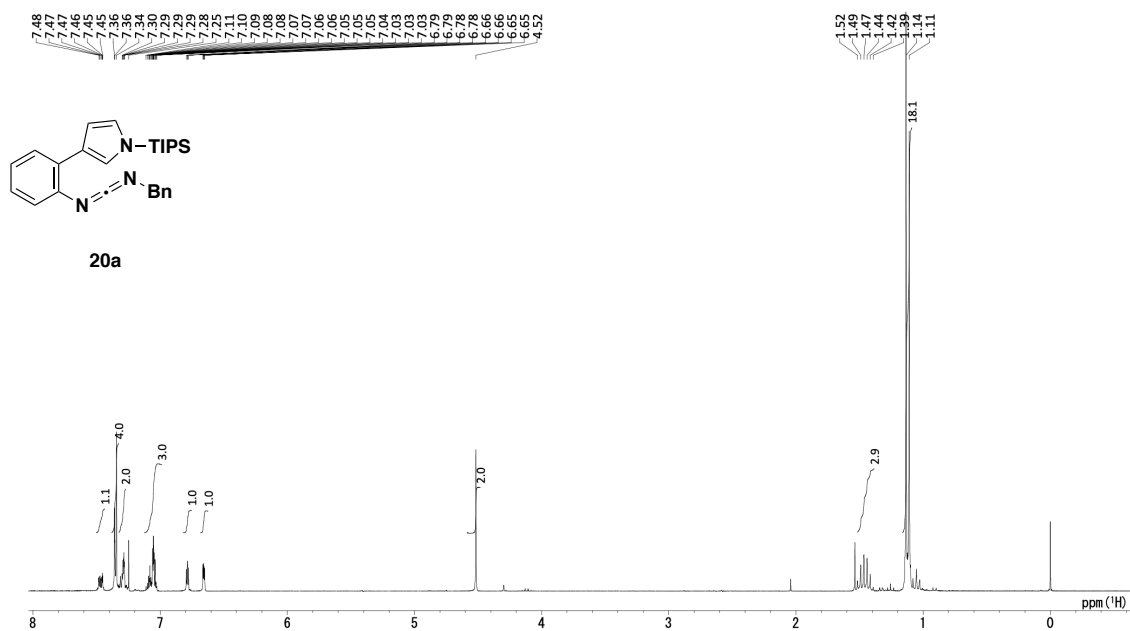
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **19c**



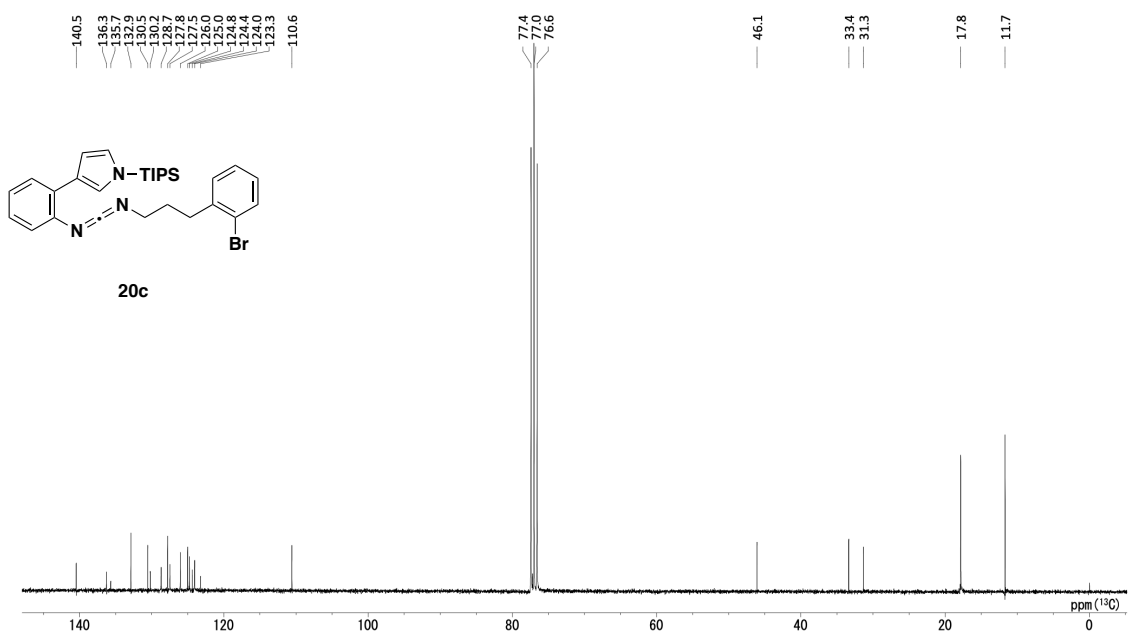
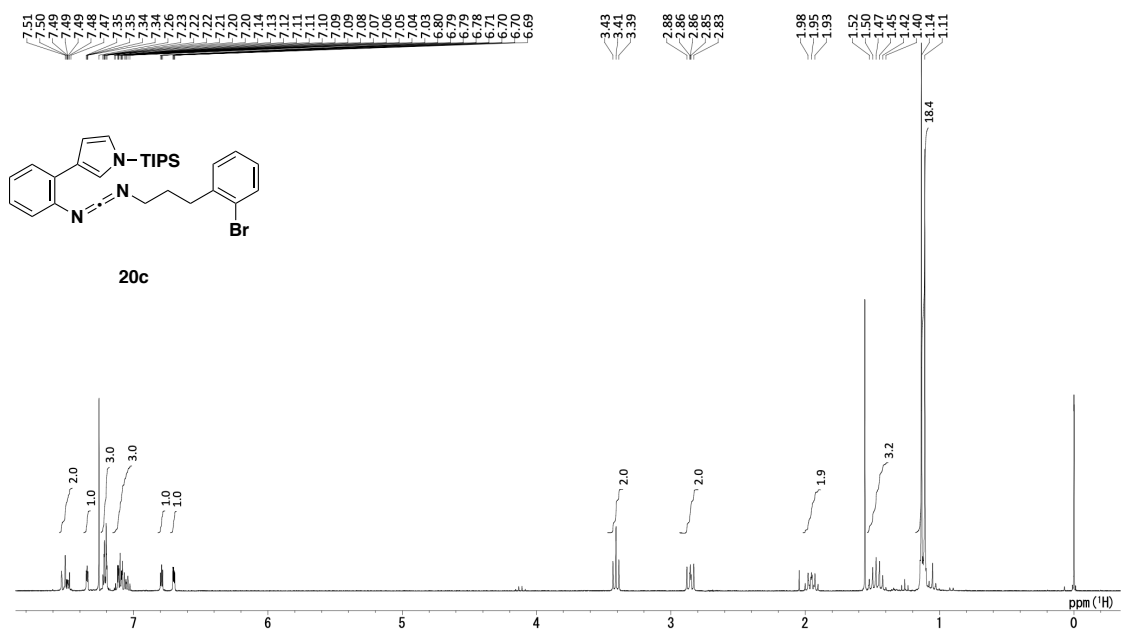
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **19d**



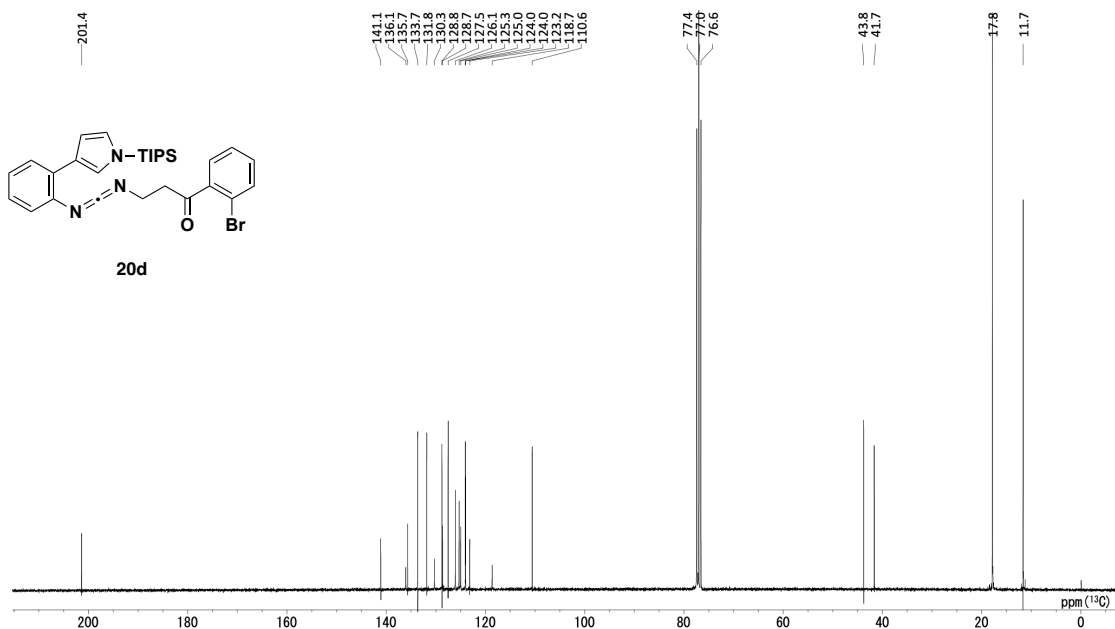
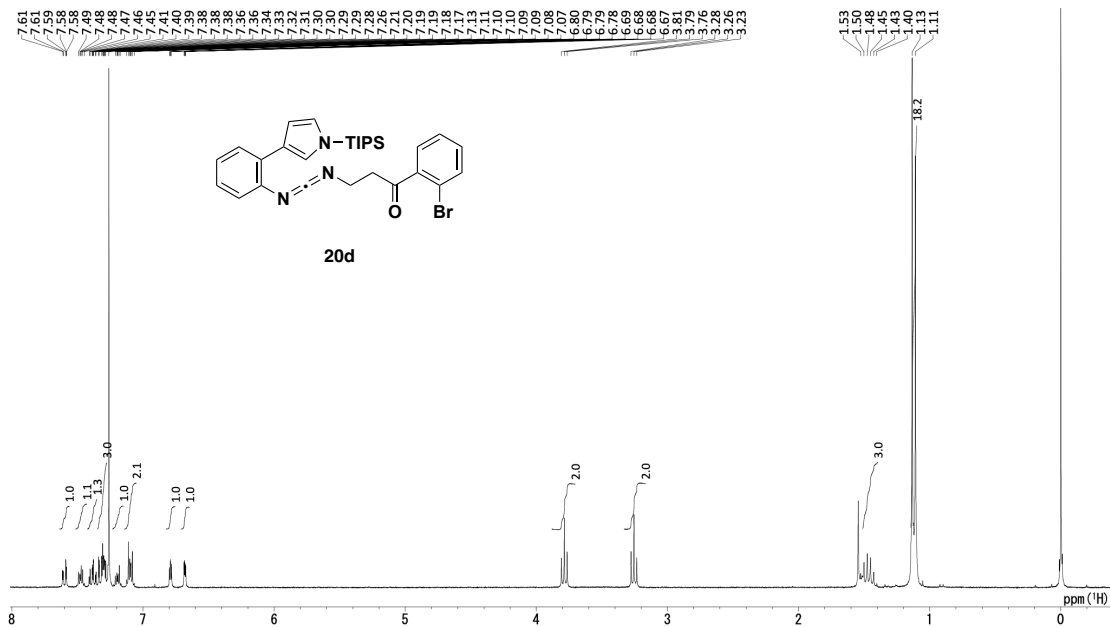
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **20a**



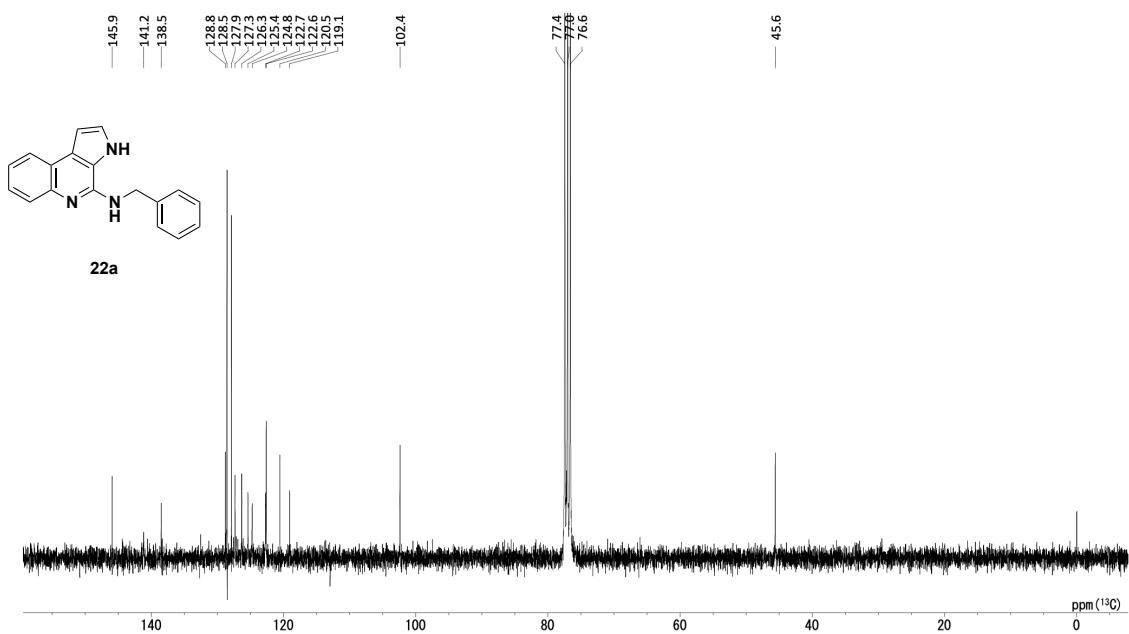
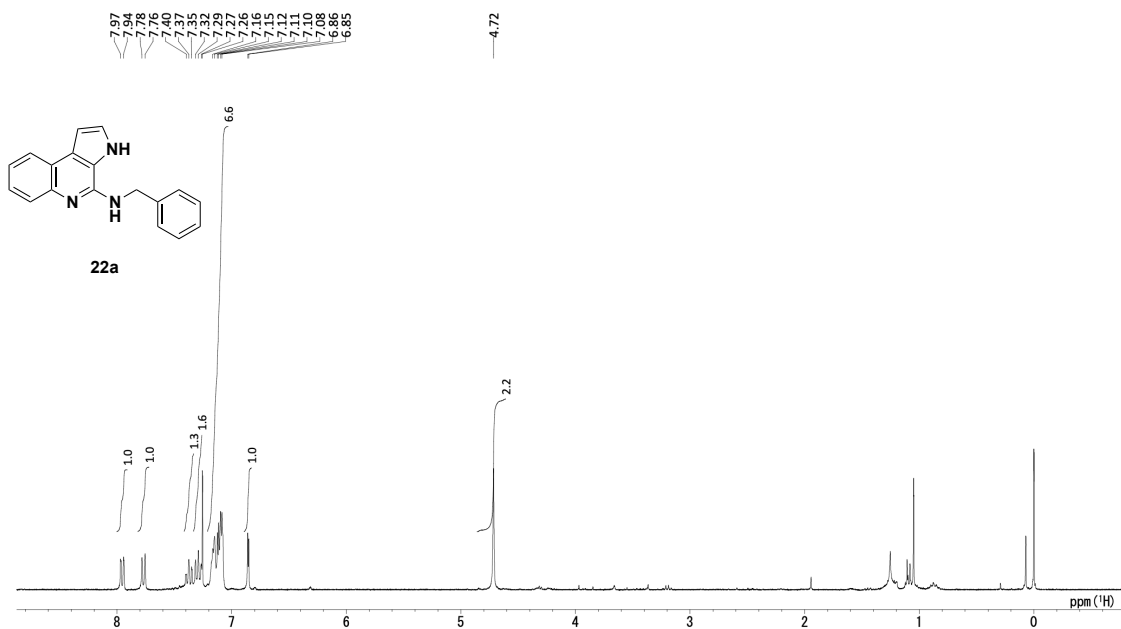
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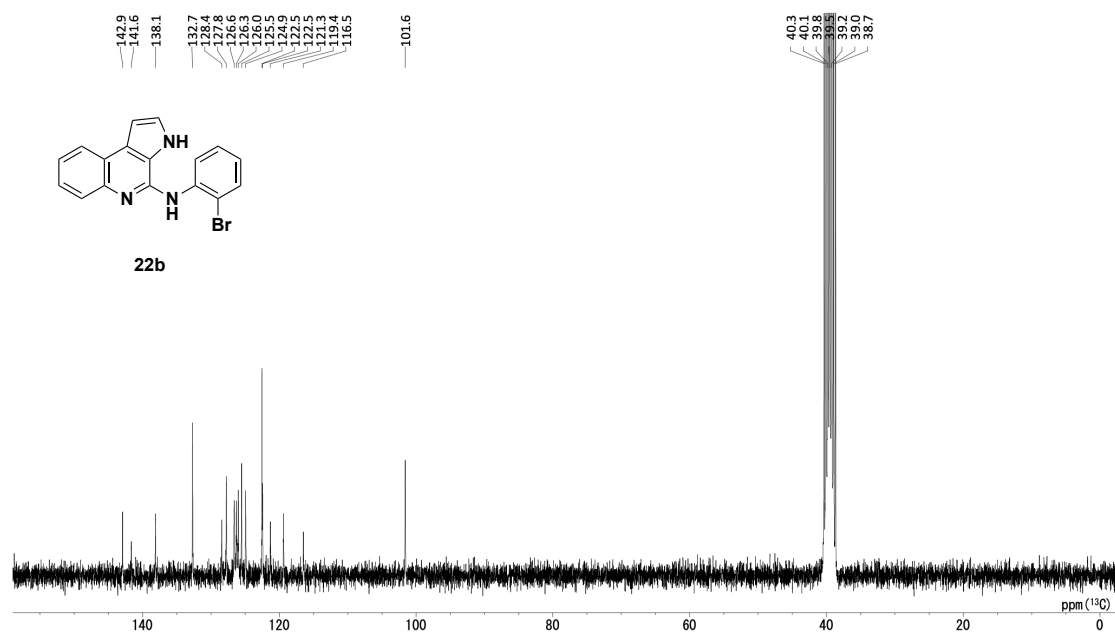
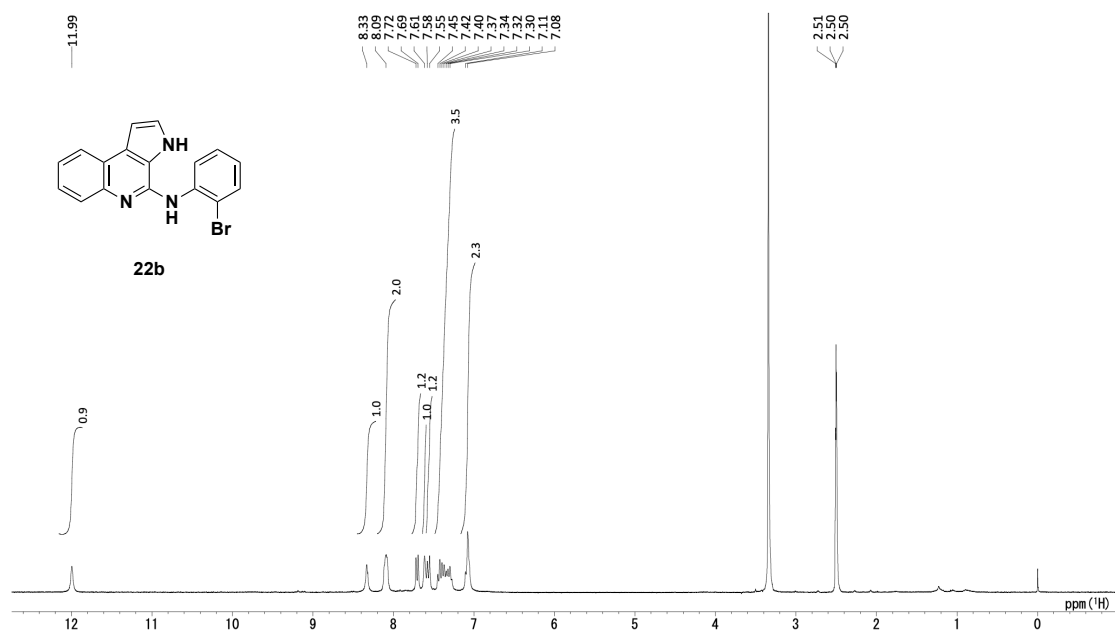
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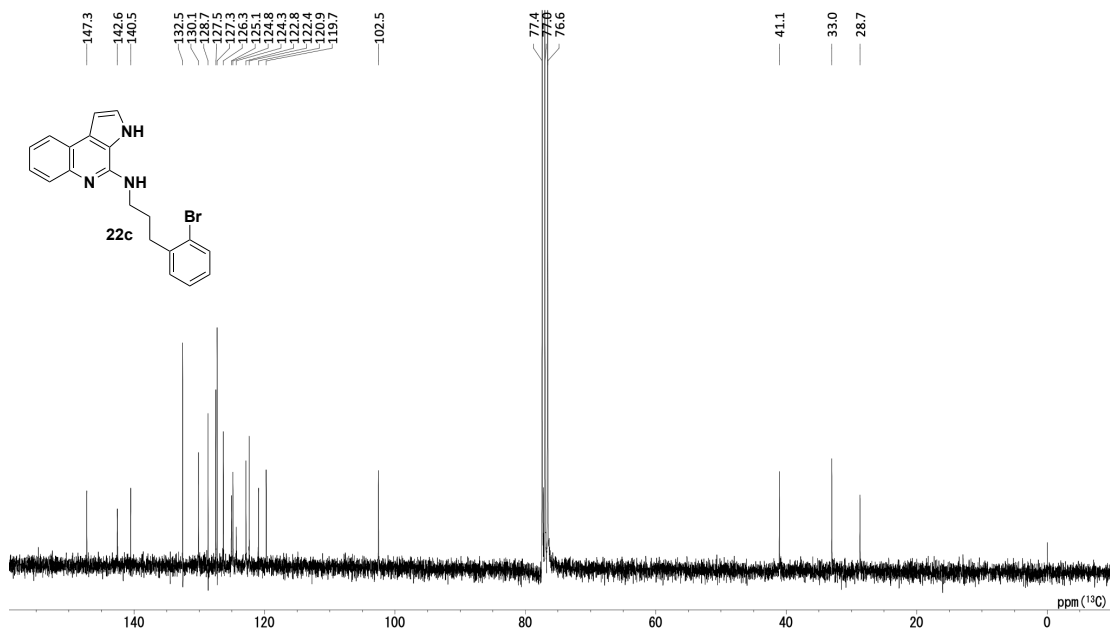
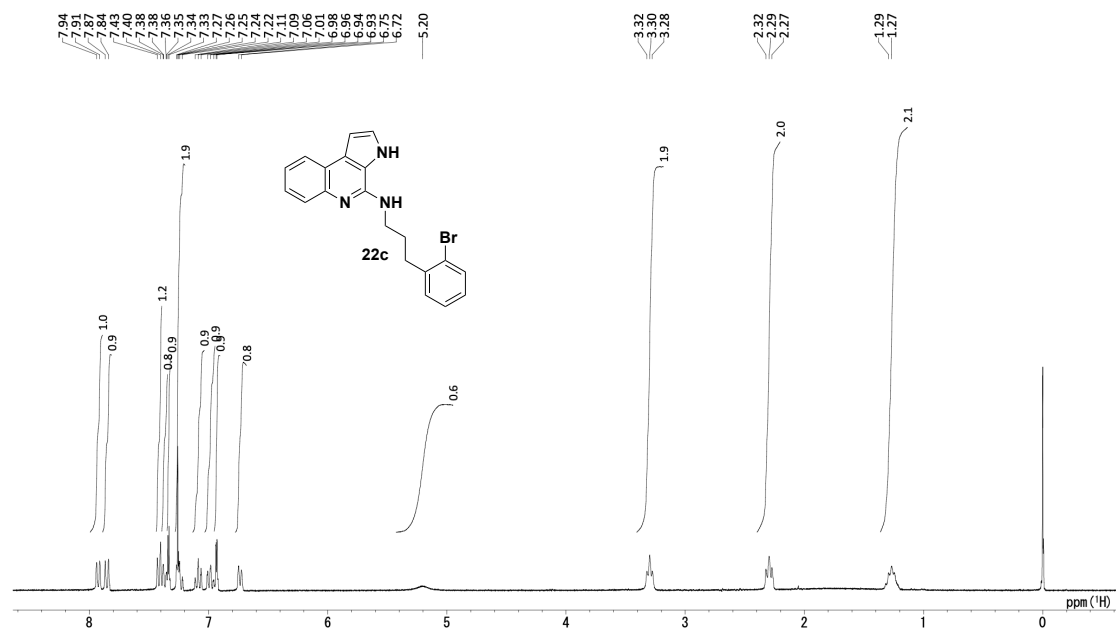
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **22a**



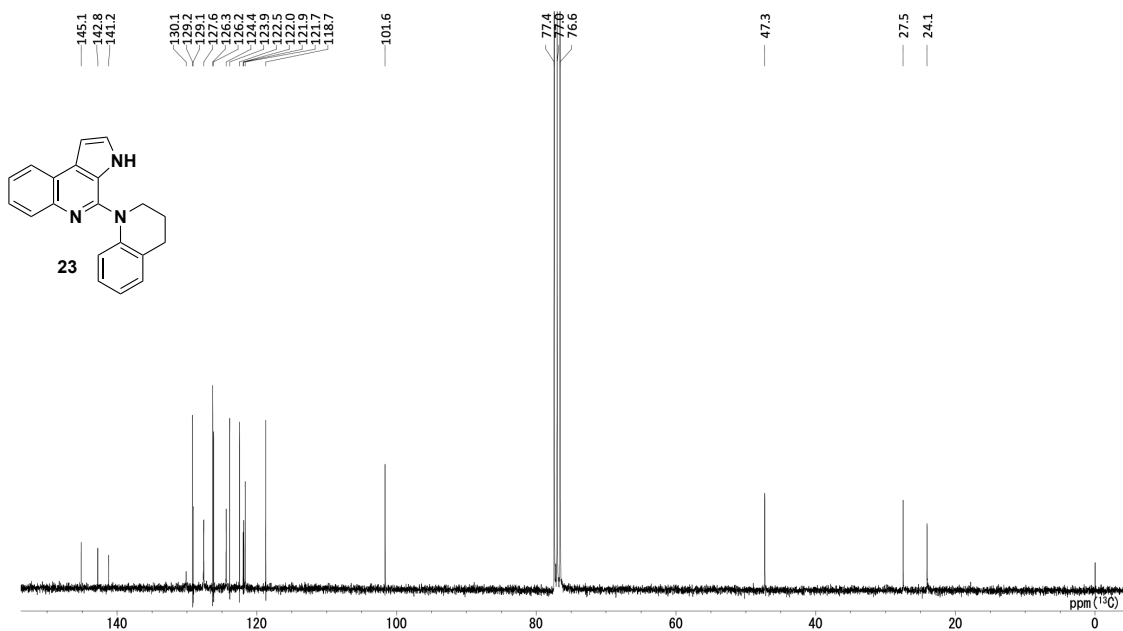
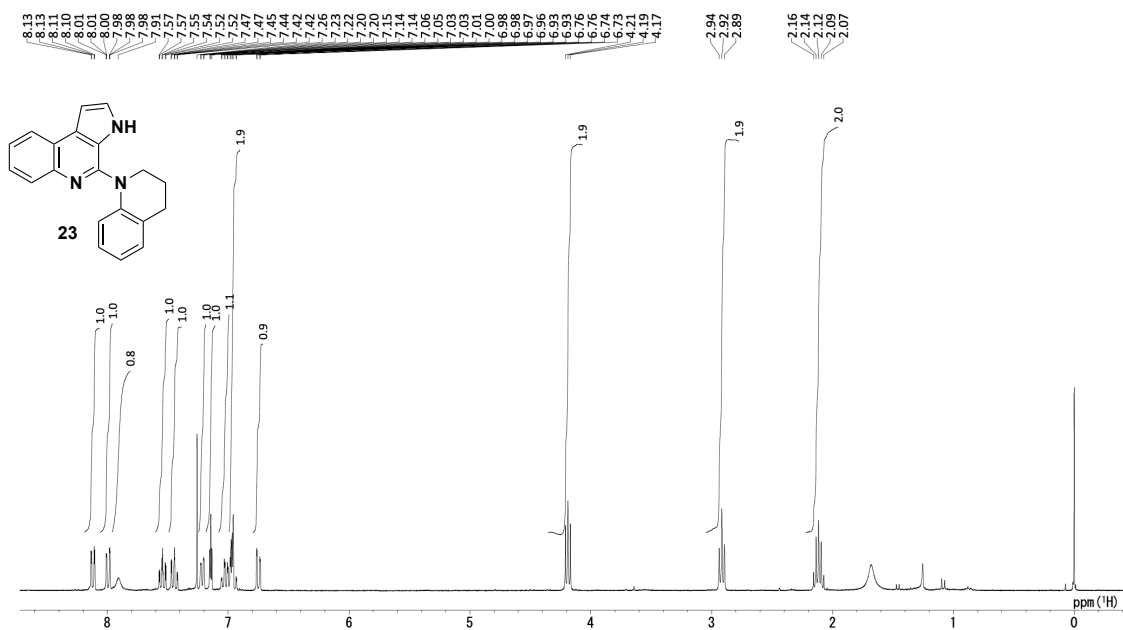
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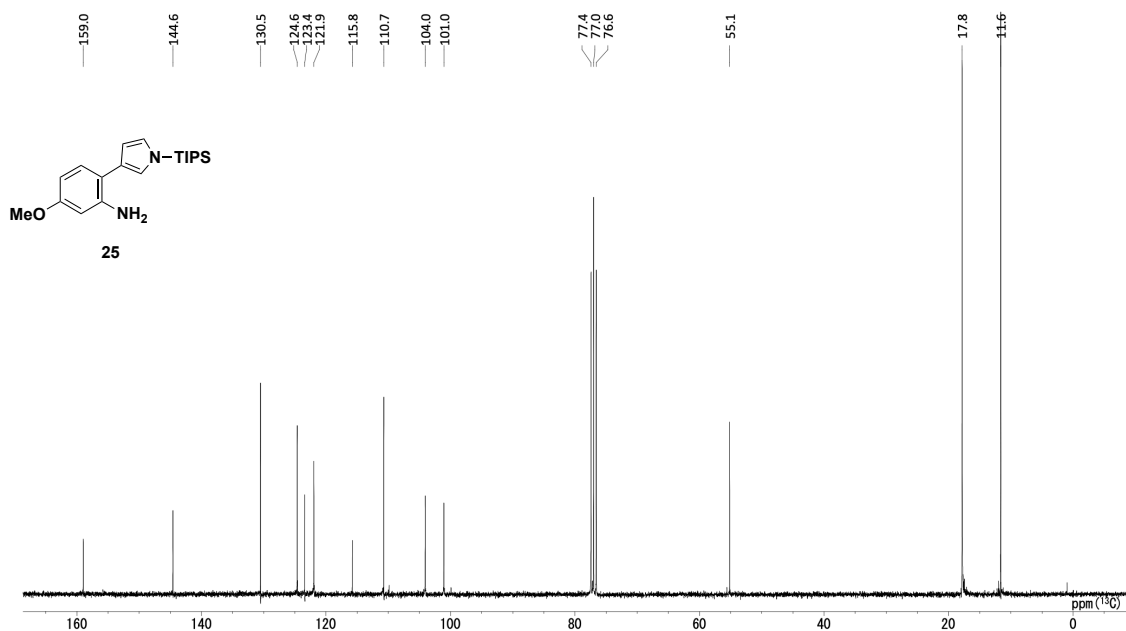
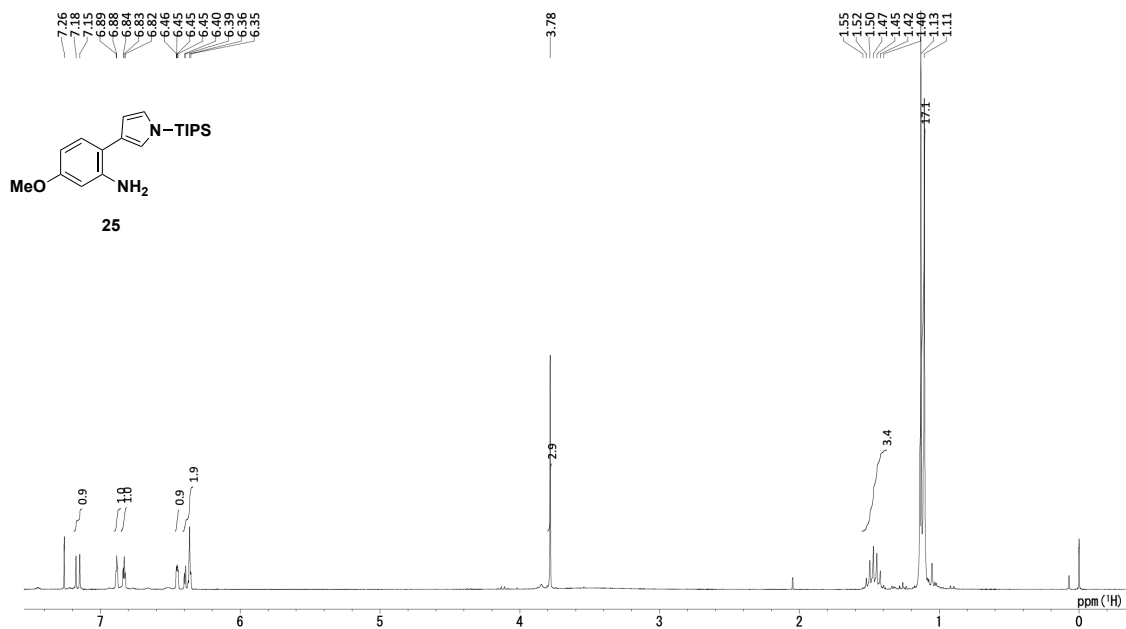
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **22c**



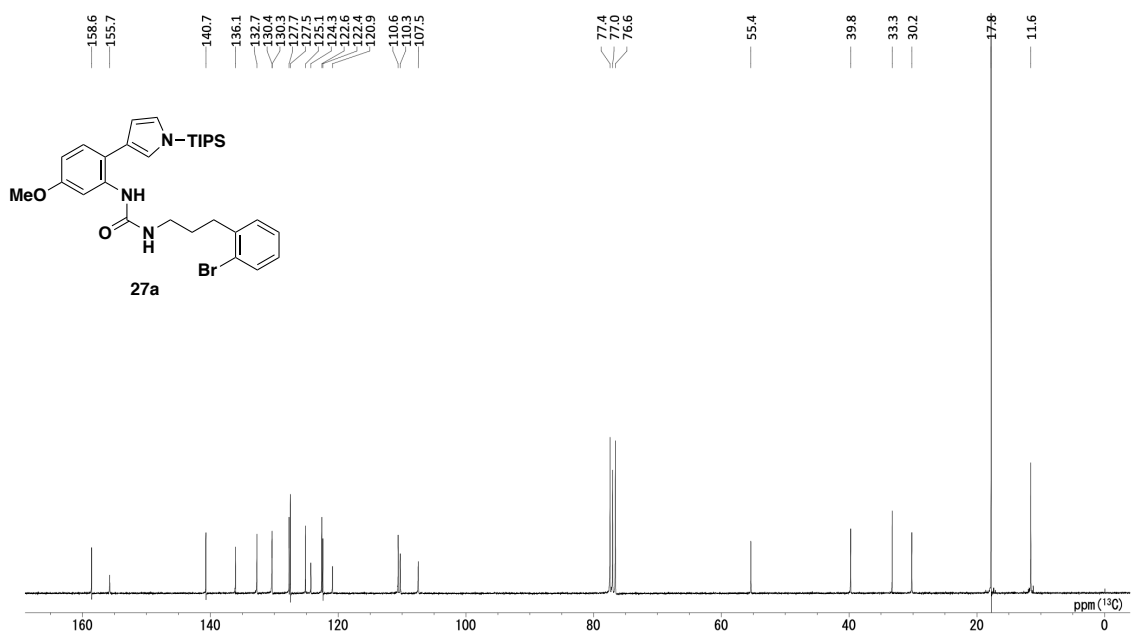
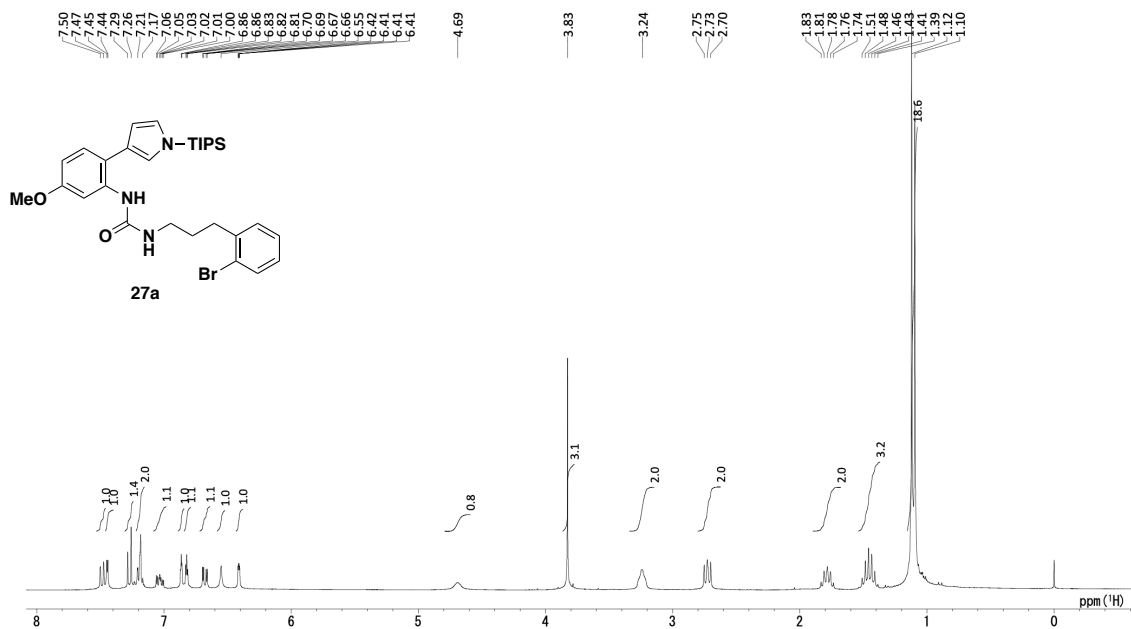
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **23**



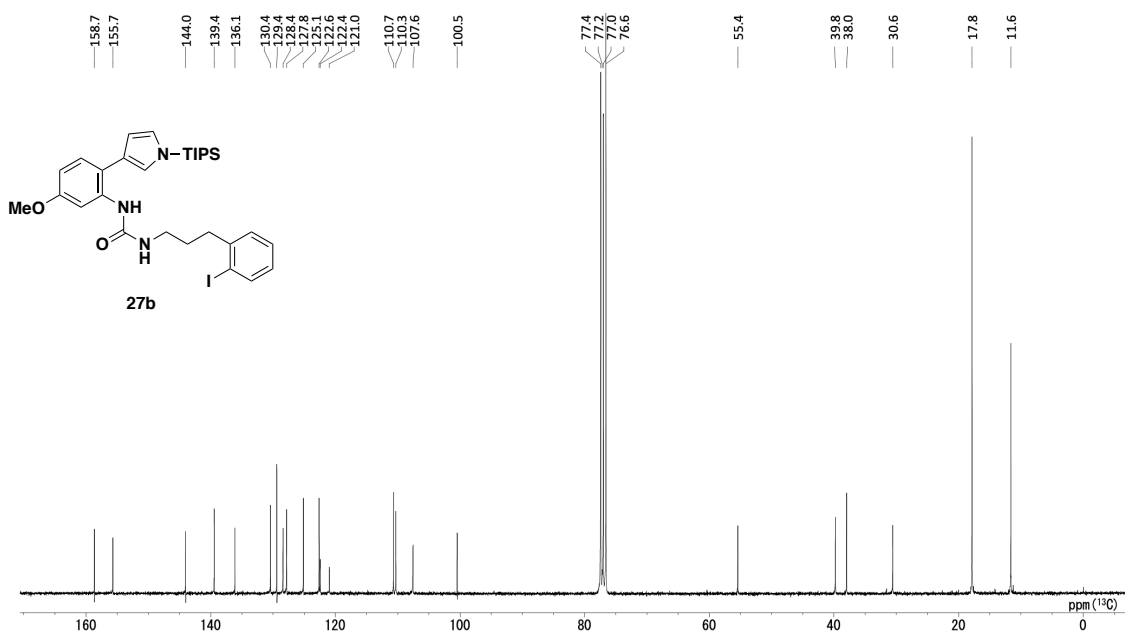
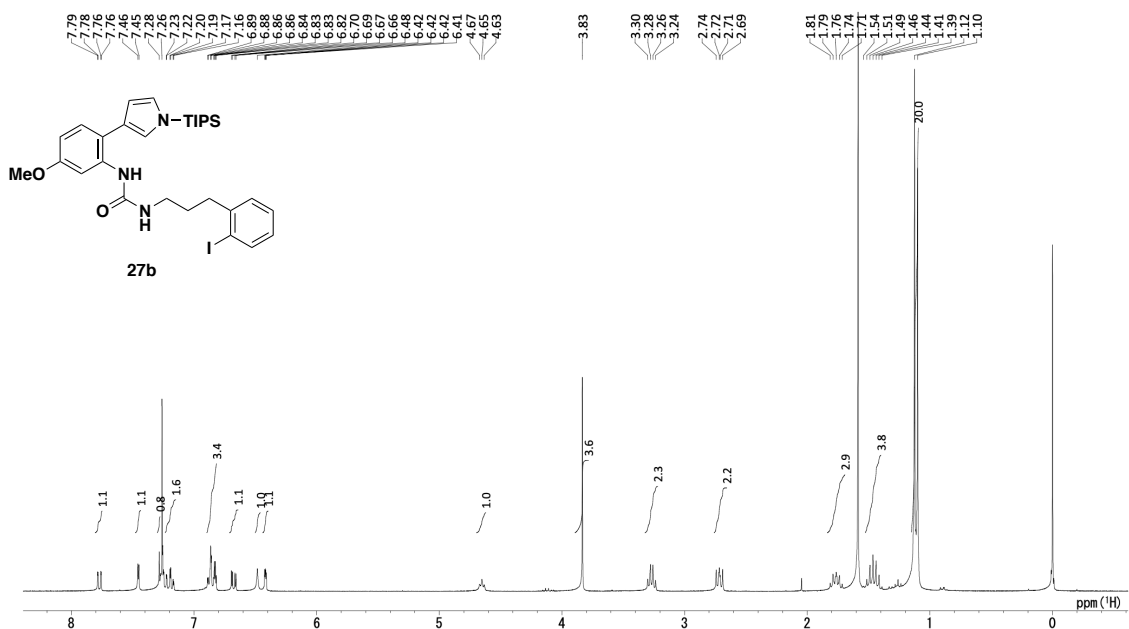
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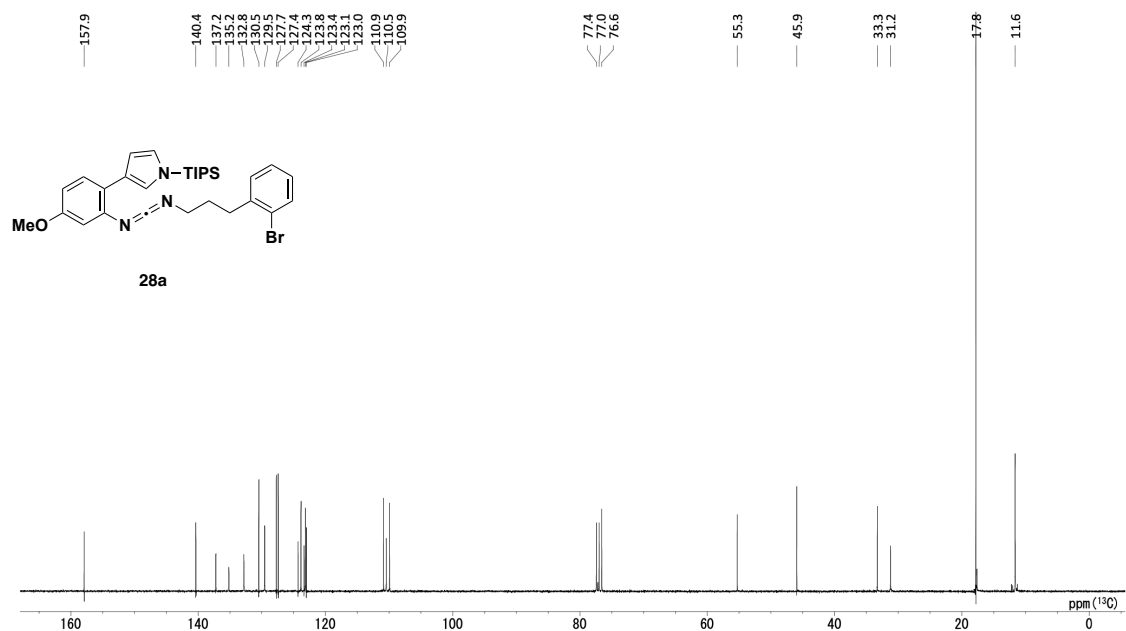
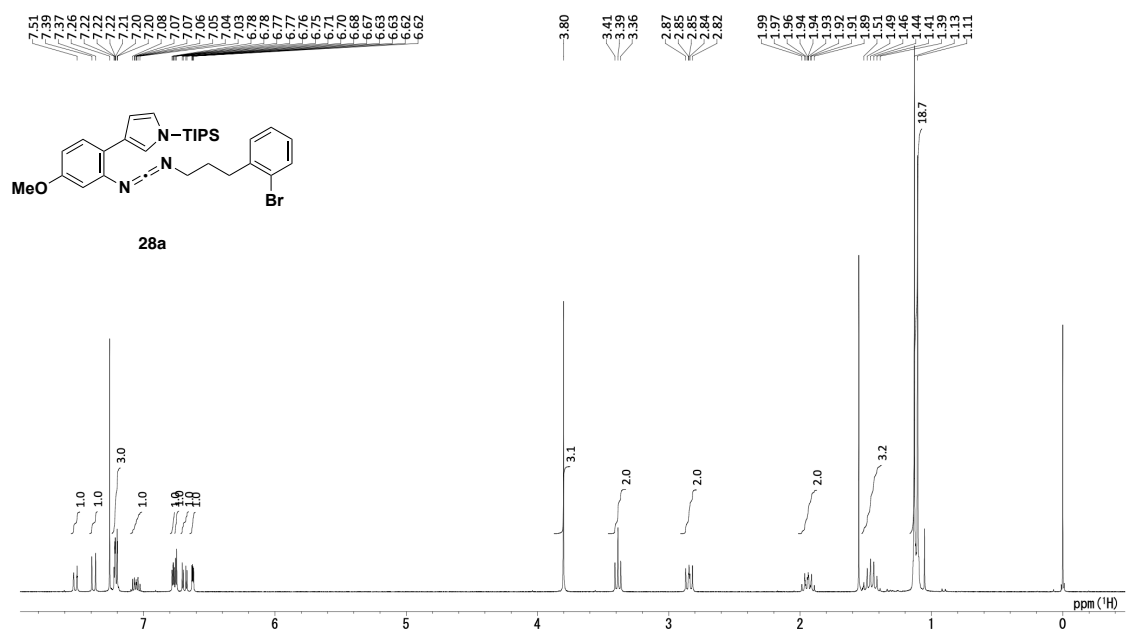
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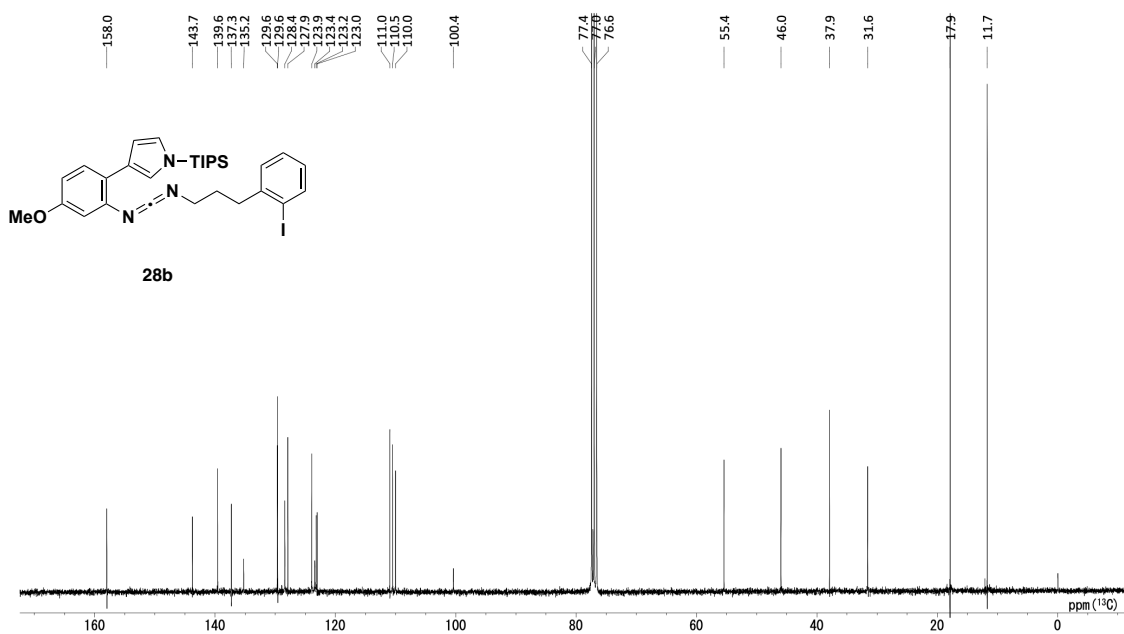
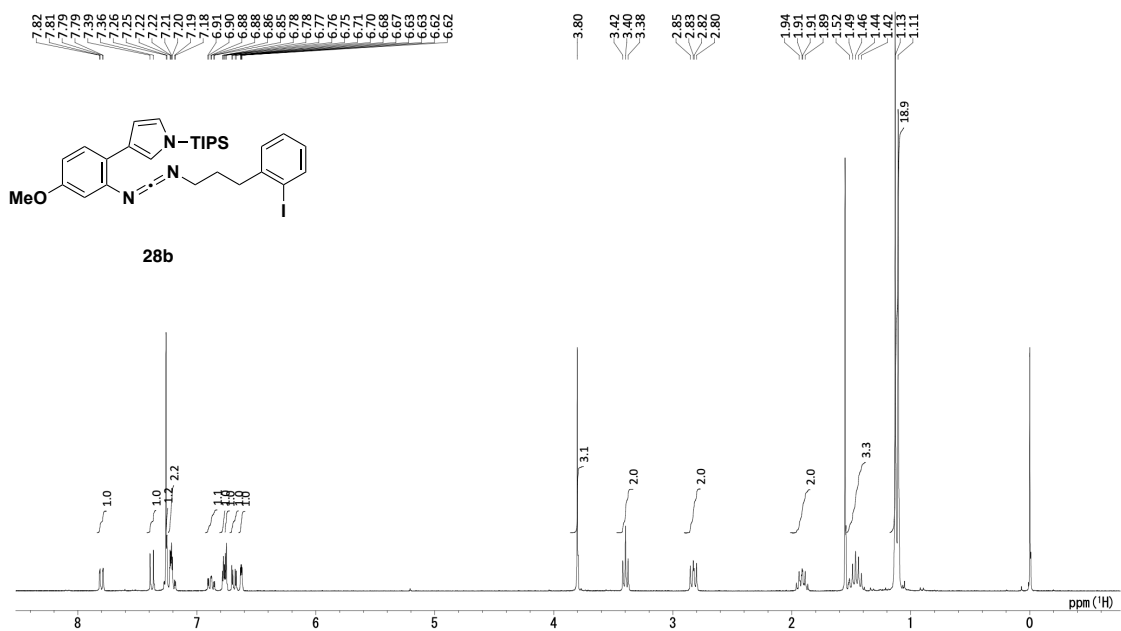
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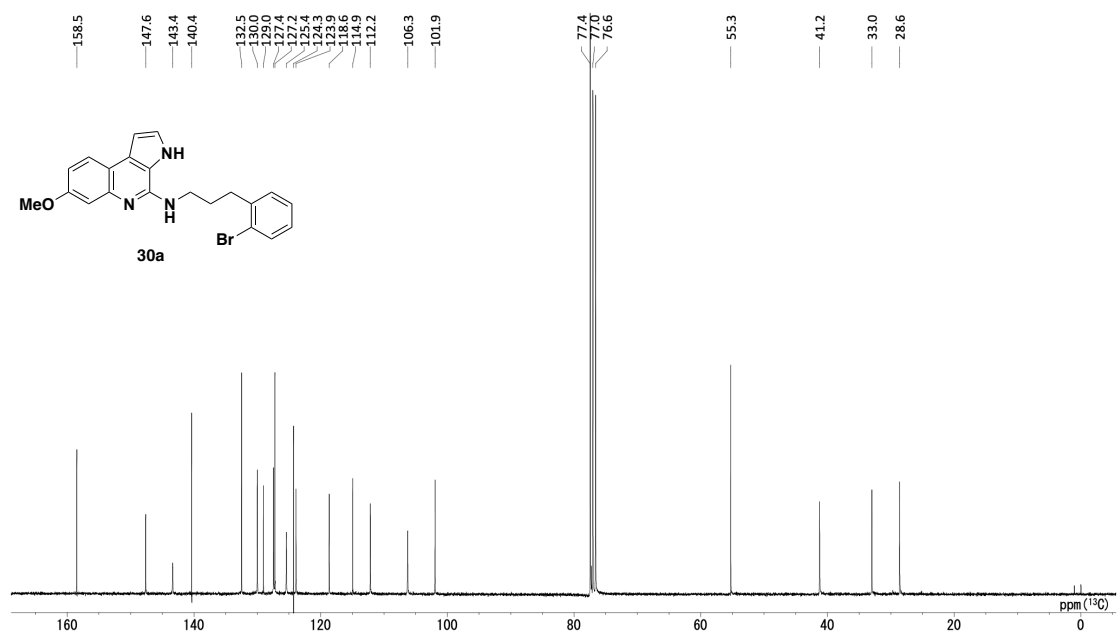
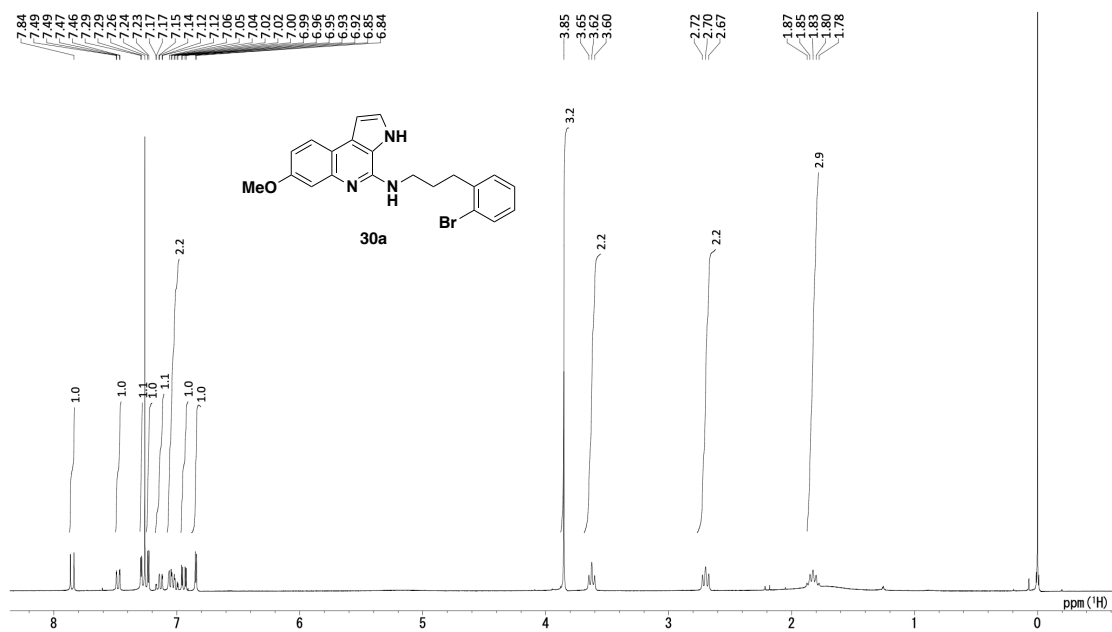
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **28a**



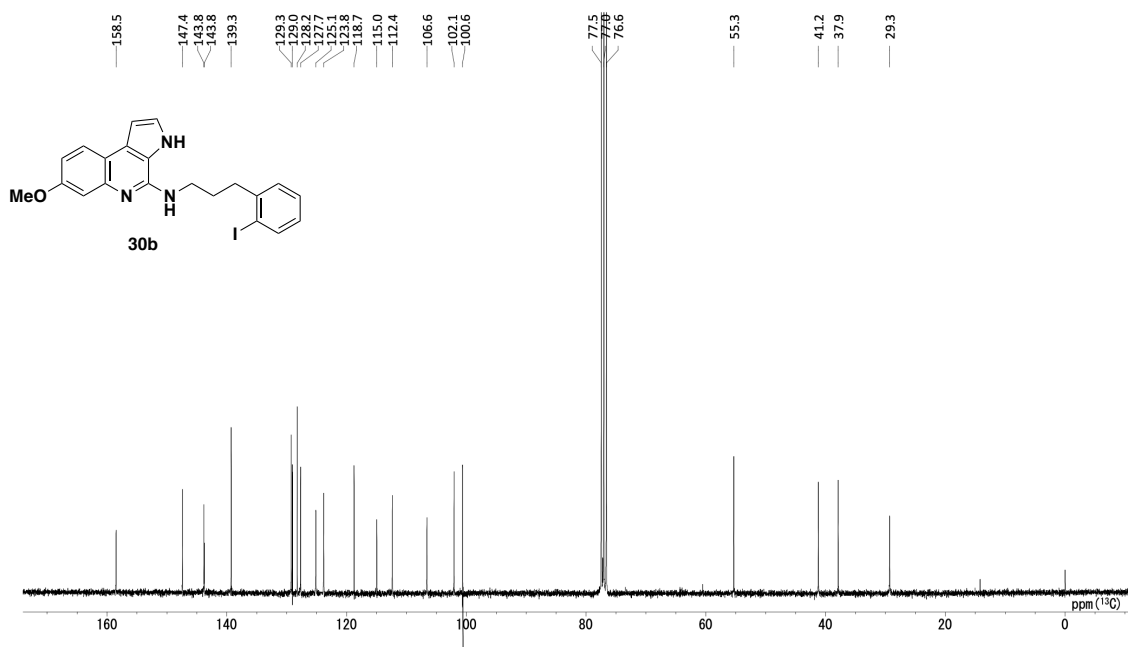
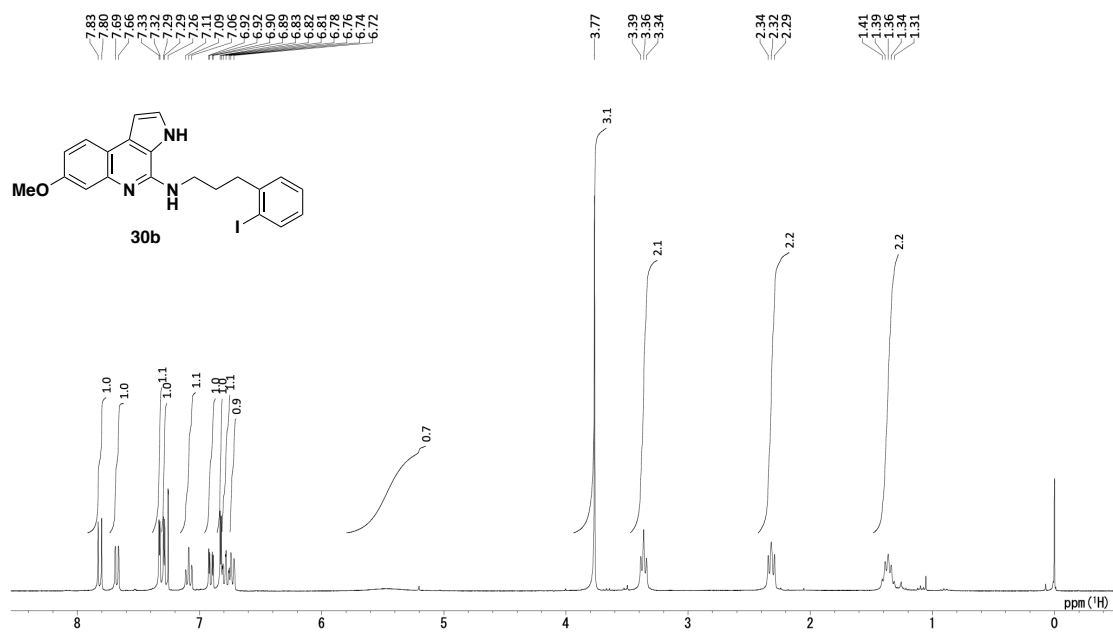
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **28b**



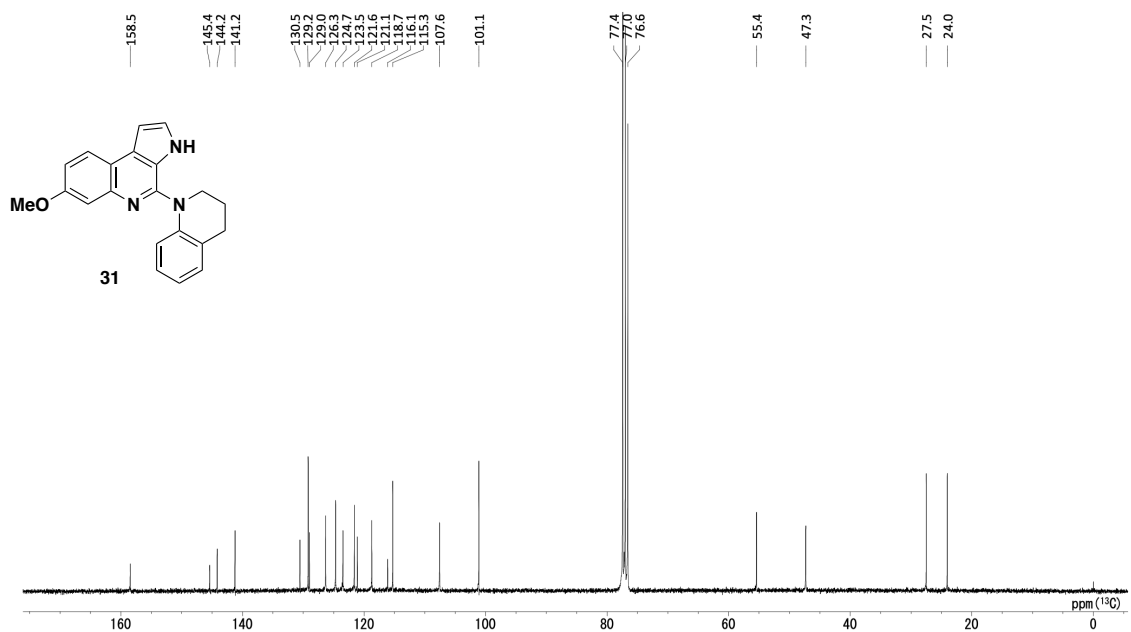
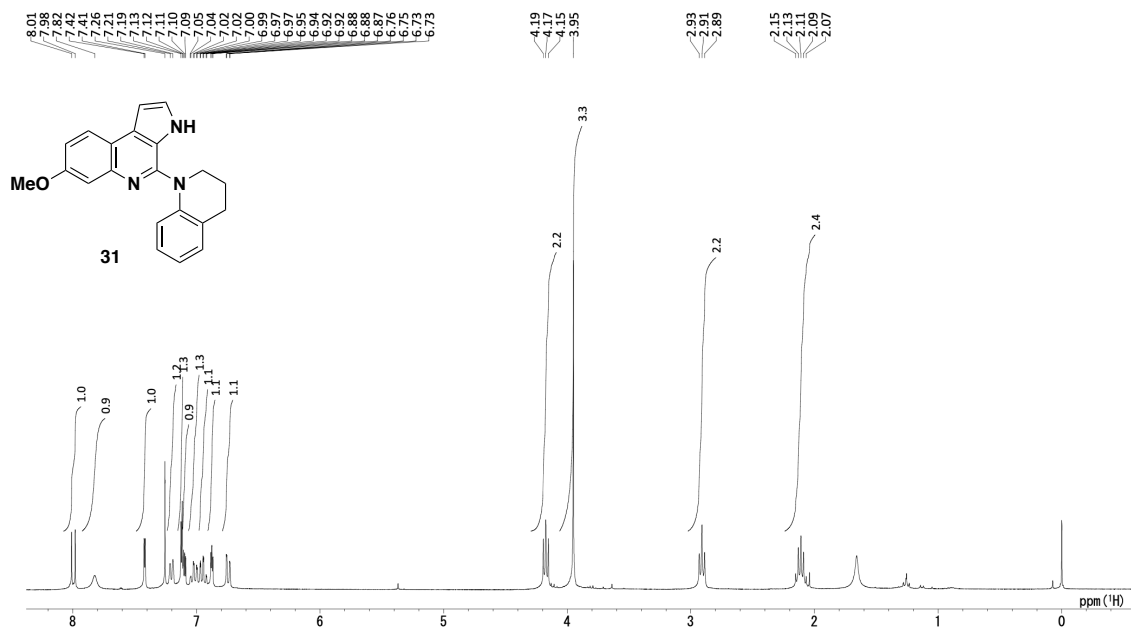
^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **30a**



^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **30b**



^1H NMR (300 MHz, CDCl_3) and ^{13}C NMR (75 MHz, CDCl_3) spectra of **31**



^1H NMR (300 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (75 MHz, $\text{DMSO-}d_6$) spectra of **1**

