

Supporting information

Palladium-Catalyzed Carbonylative Synthesis of Isocoumarins and Phthalides by using Phenyl Formate as a Carbon Monoxide Source

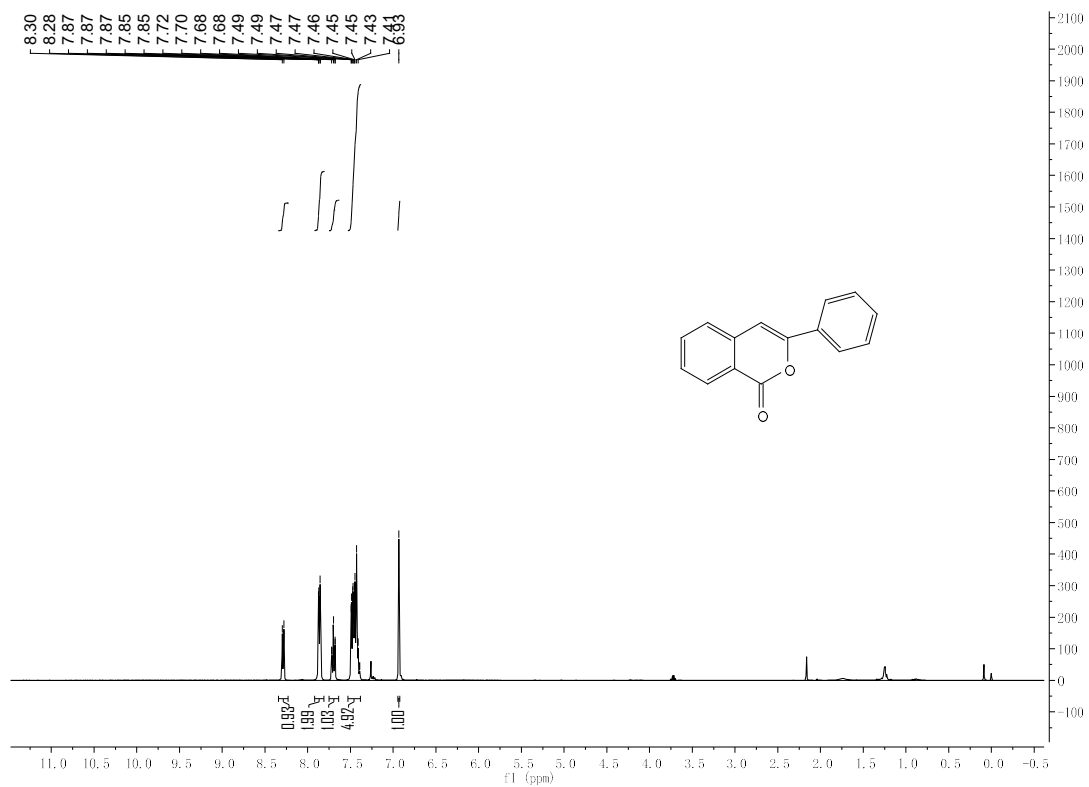
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College of Pharmaceutical Sciences, Soochow University, Suzhou, 215123, China.

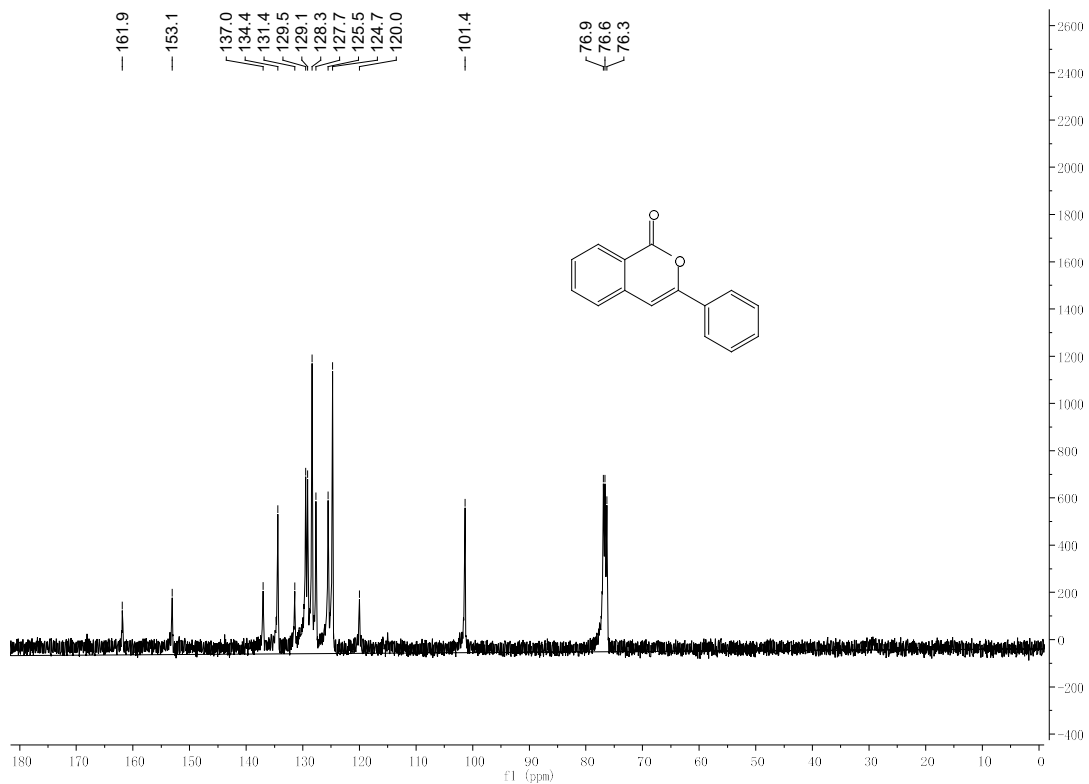
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Table of Contents

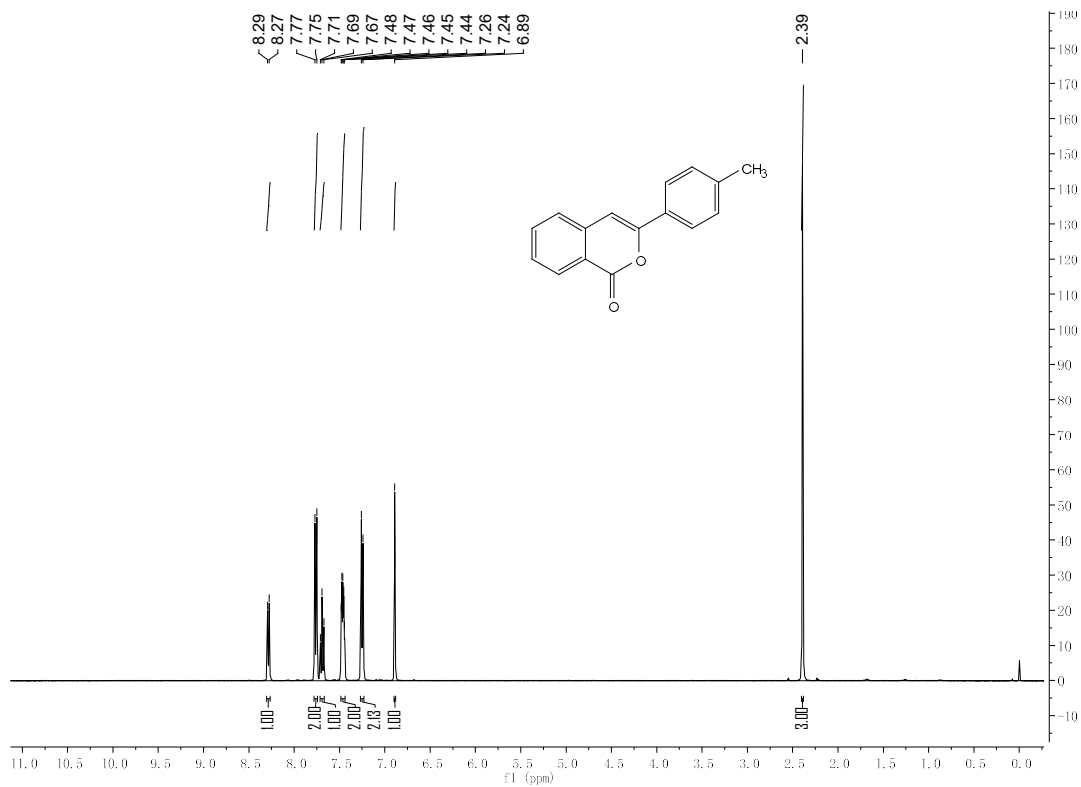
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|---|---------|
| Copies of ^1H and ^{13}C NMR Spectra for Compounds 3a-3s ----- | S2-S20 |
| Copies of ^1H and ^{13}C NMR Spectra for Compounds 5a-5i ----- | S21-S29 |



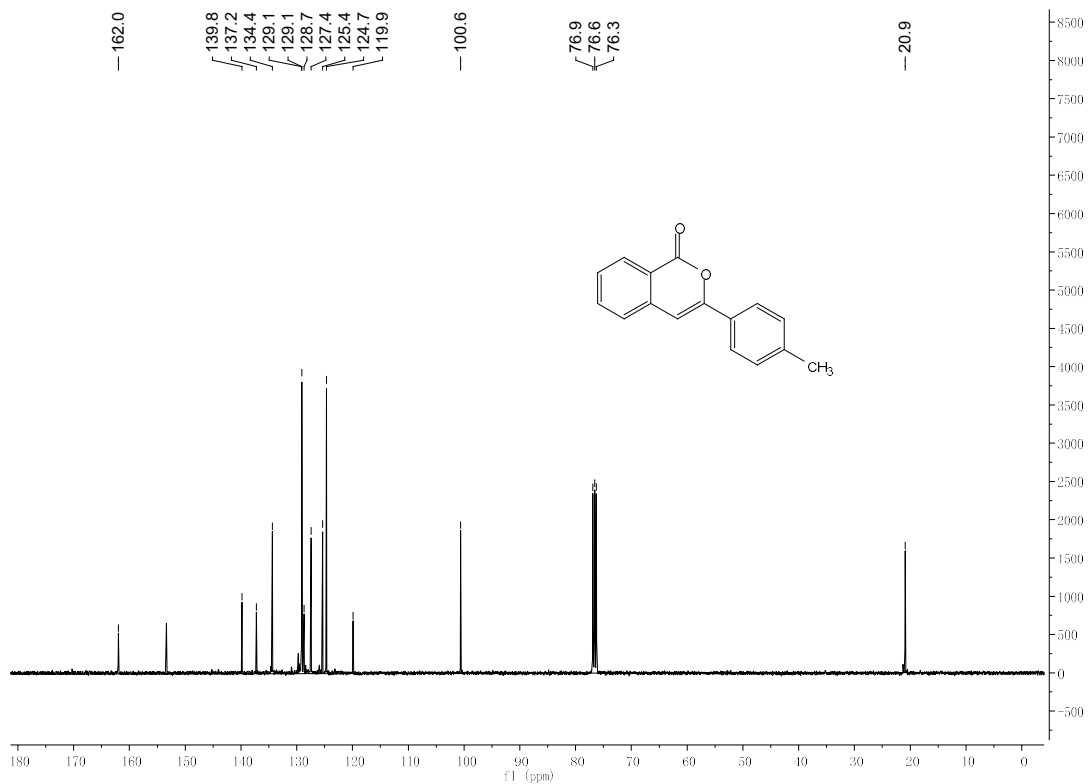
¹H NMR Spectrum of Compound 3a



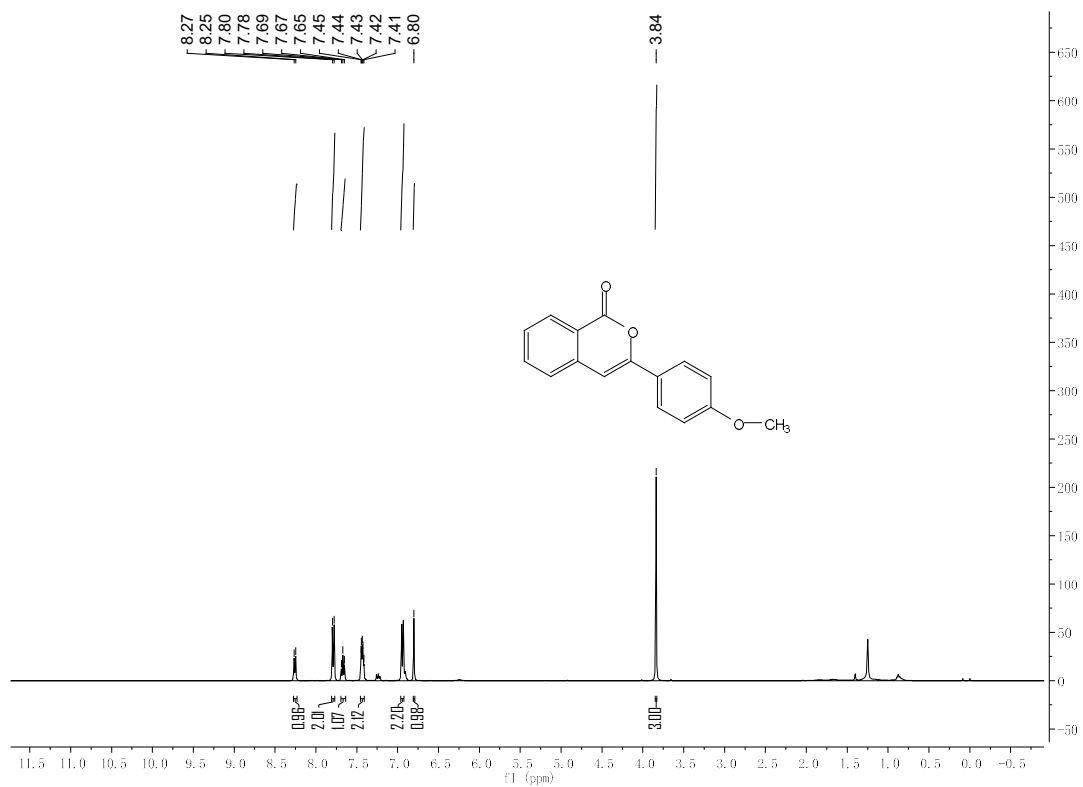
¹³C NMR Spectrum of Compound 3a



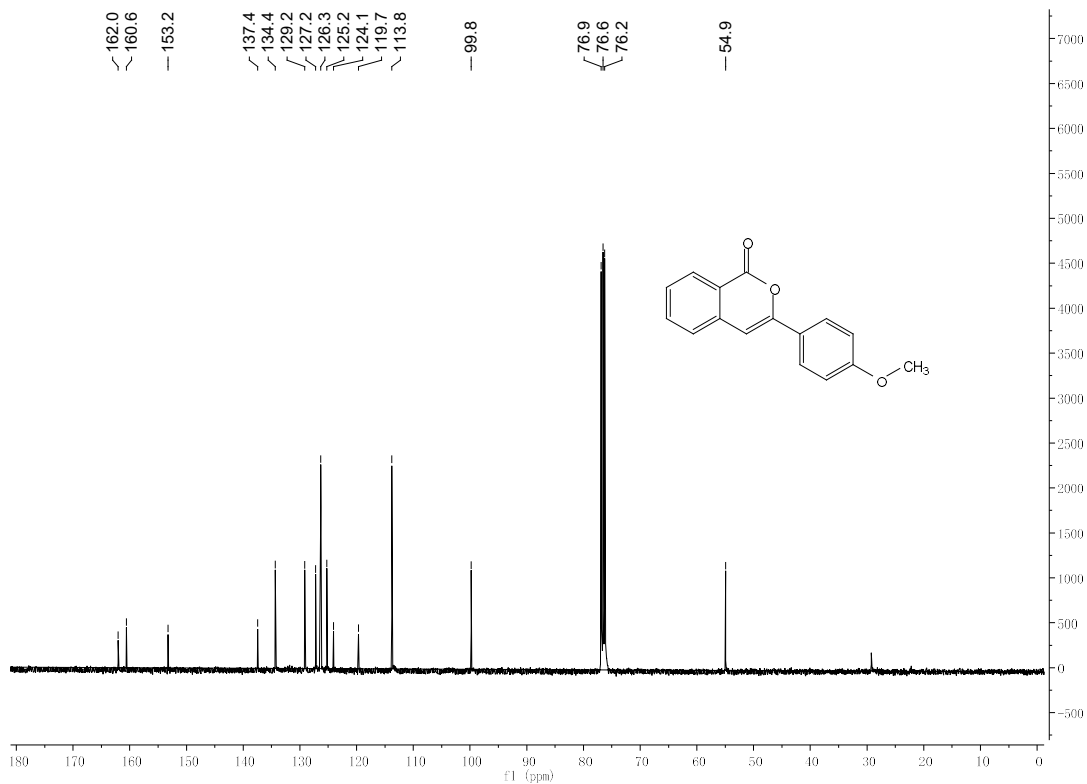
¹H NMR Spectrum of Compound 3b



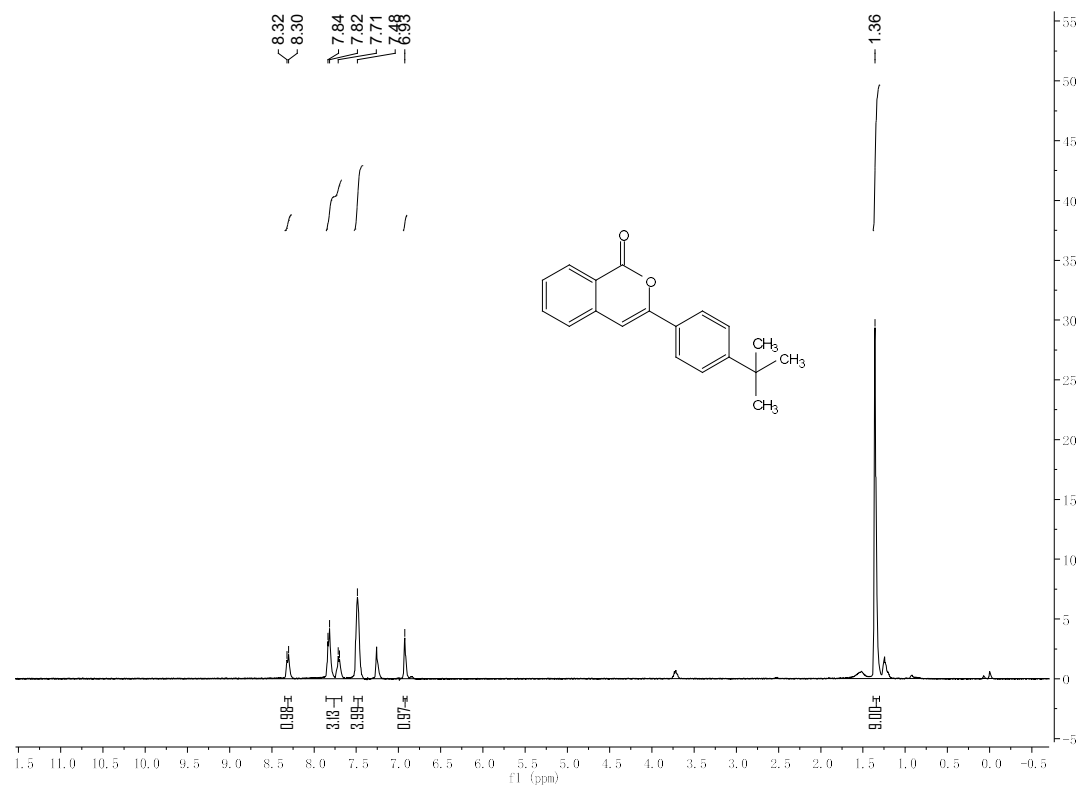
¹³C NMR Spectrum of Compound 3b



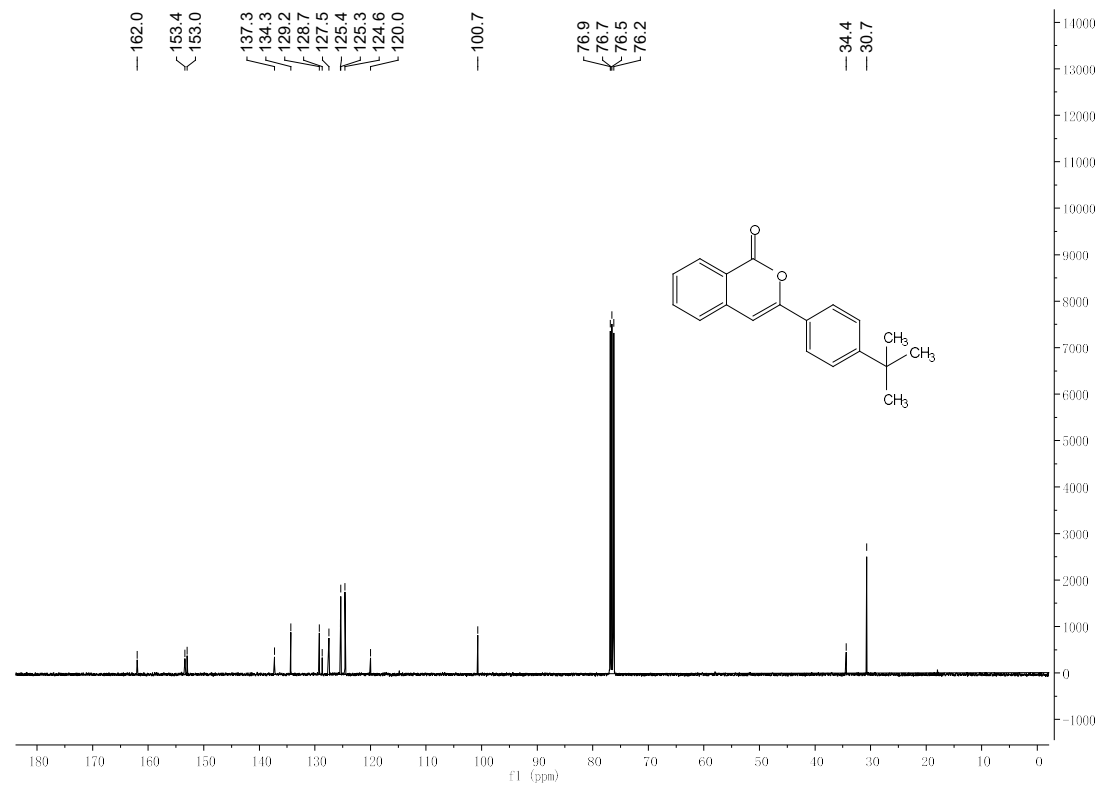
¹H NMR Spectrum of Compound 3c



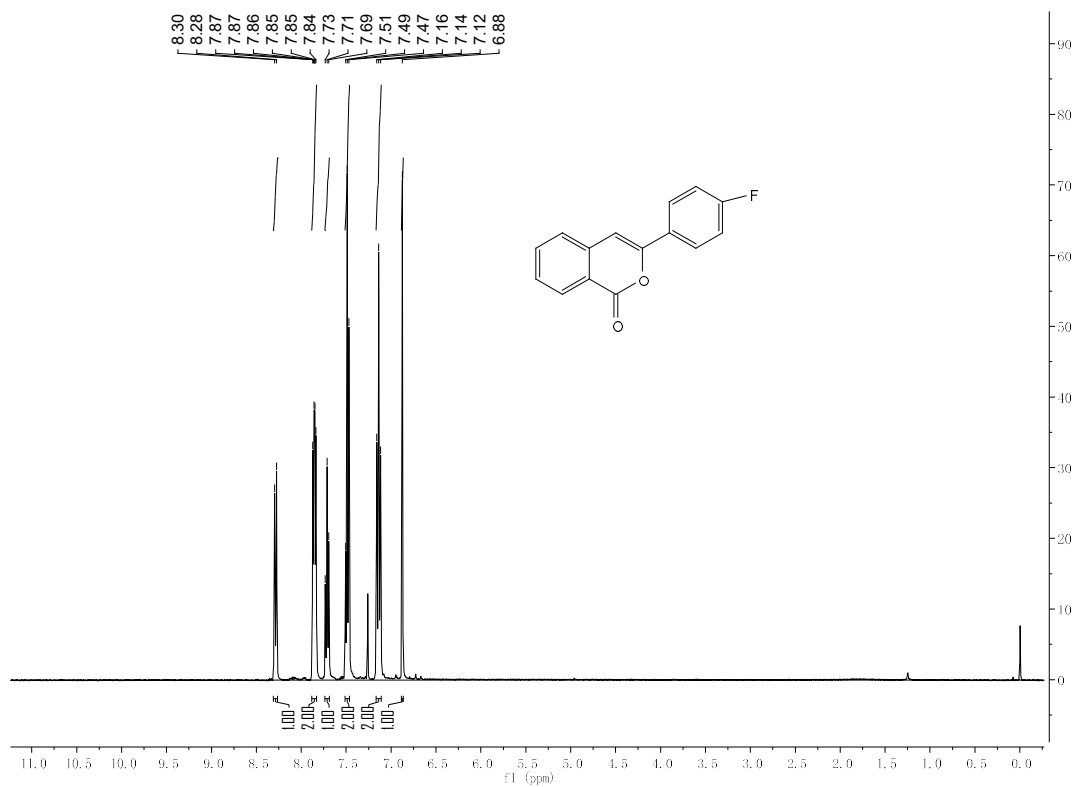
¹³C NMR Spectrum of Compound 3c



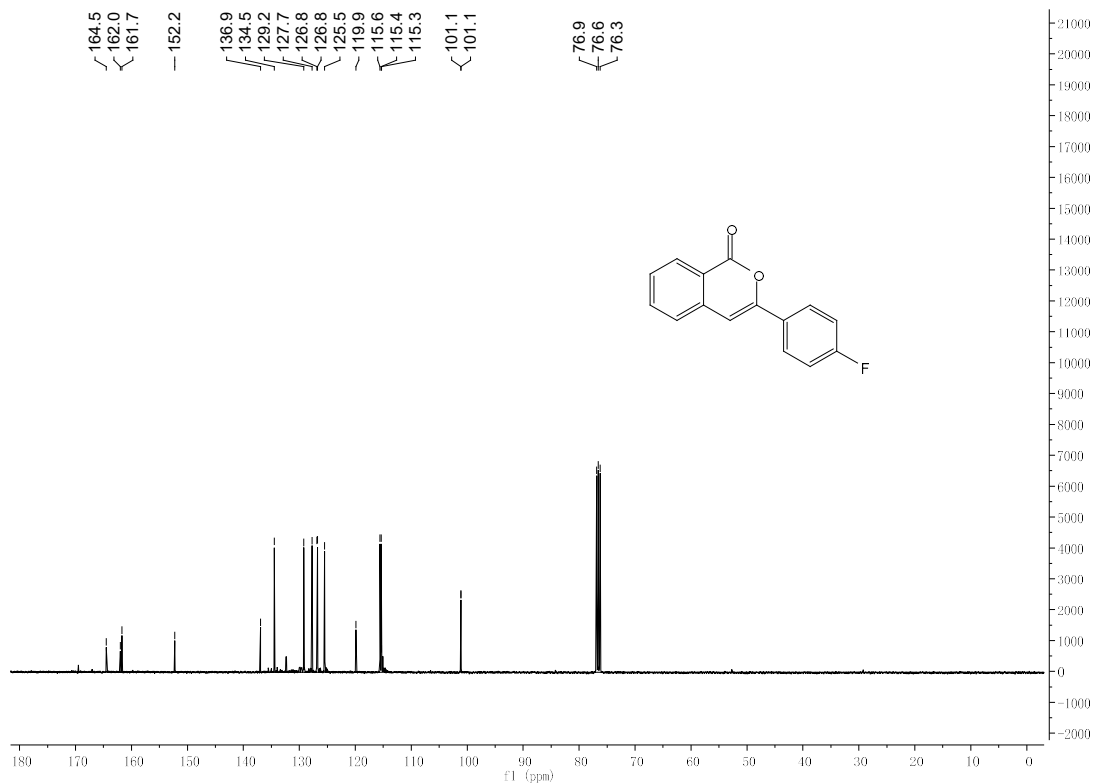
¹H NMR Spectrum of Compound 3d



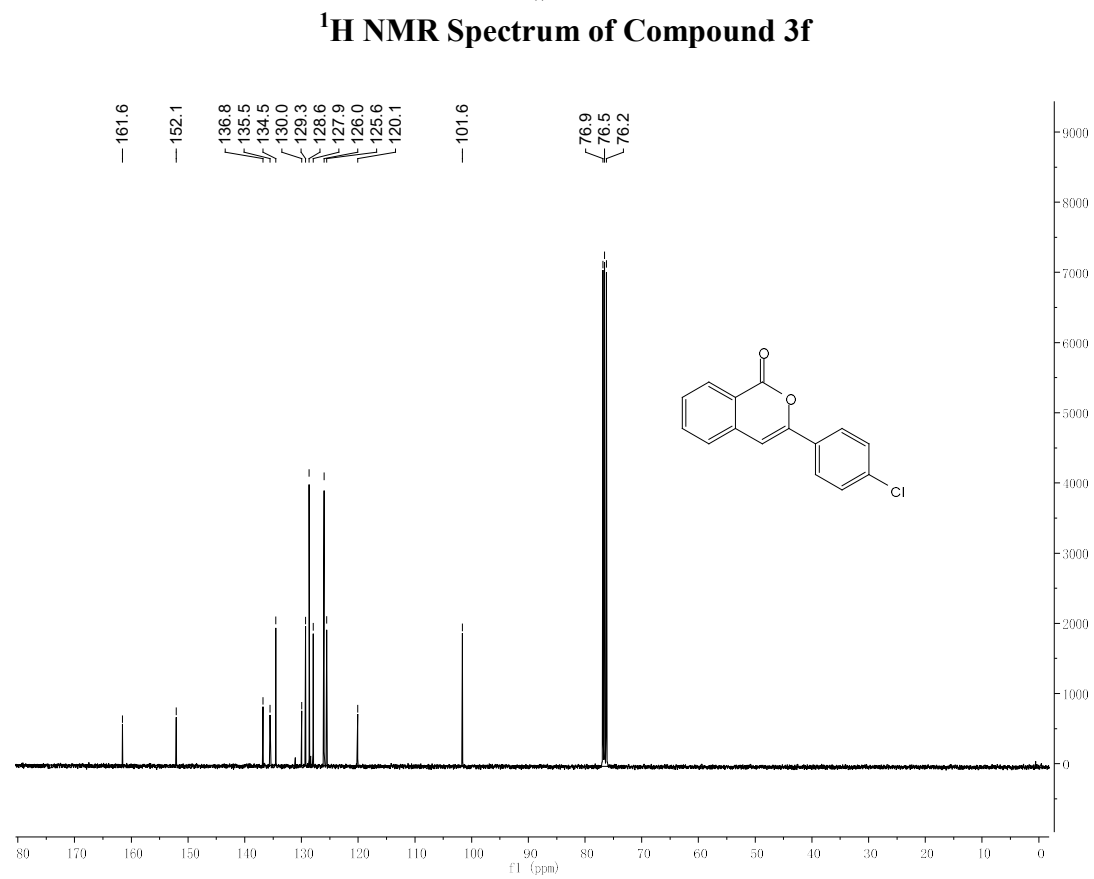
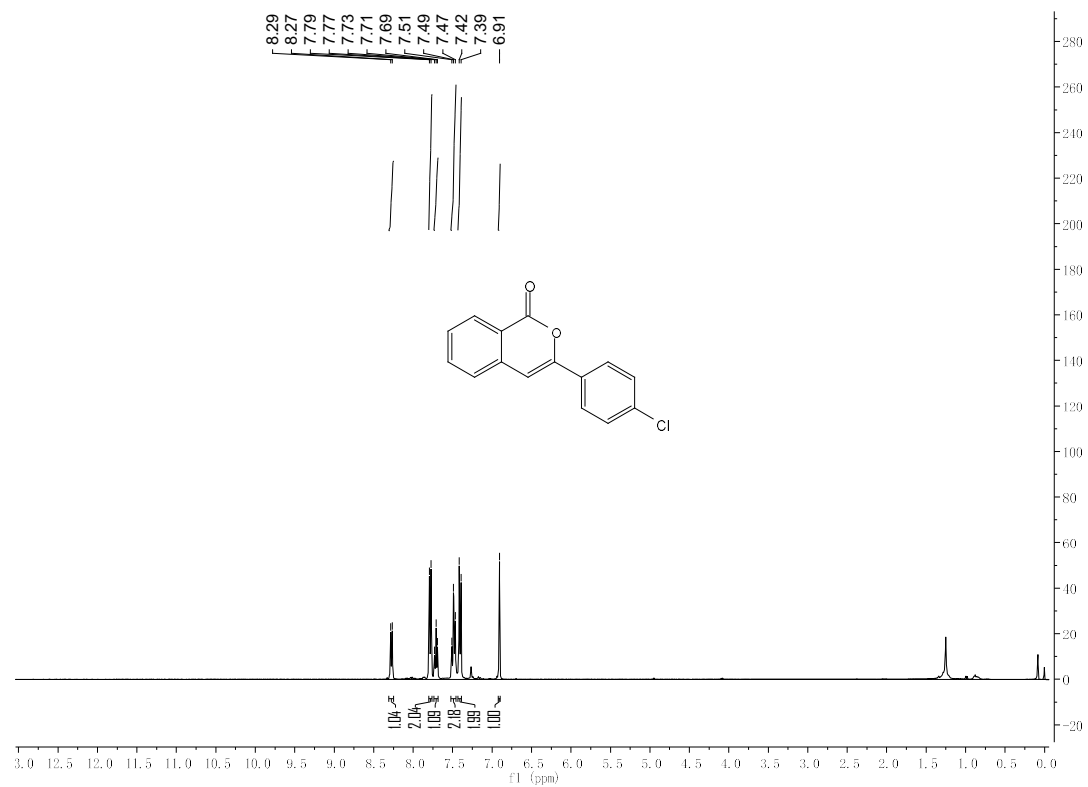
¹³C NMR Spectrum of Compound 3d

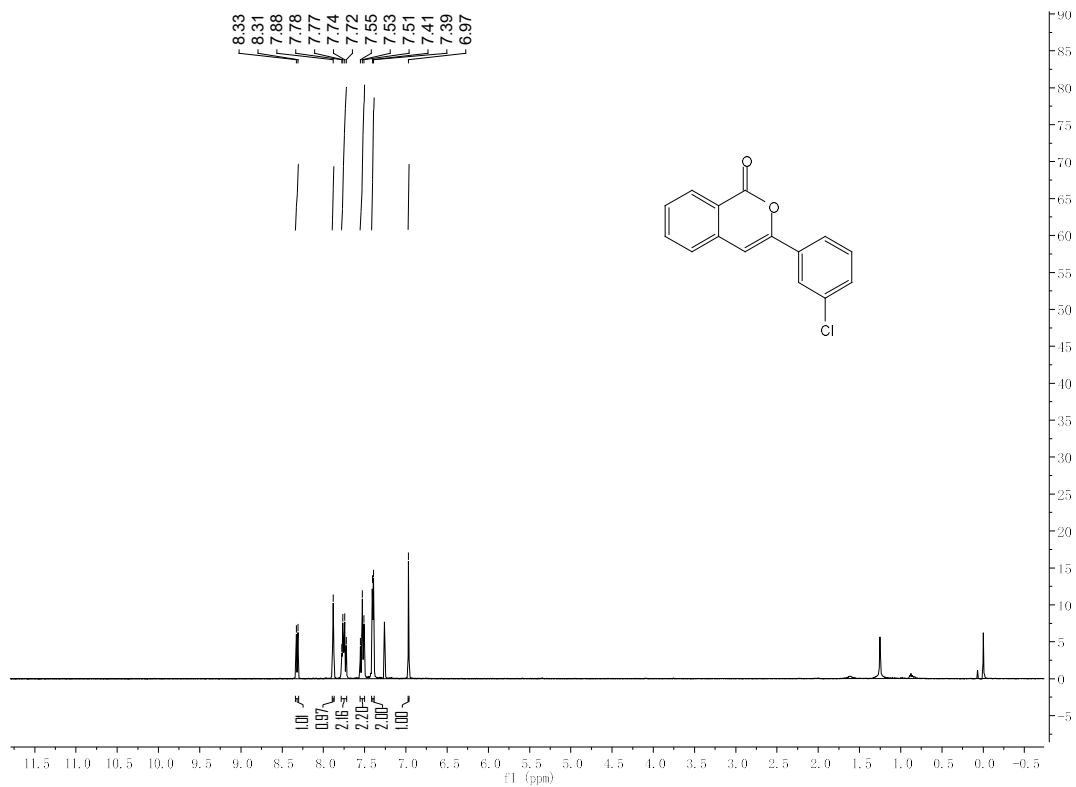


¹H NMR Spectrum of Compound 3e

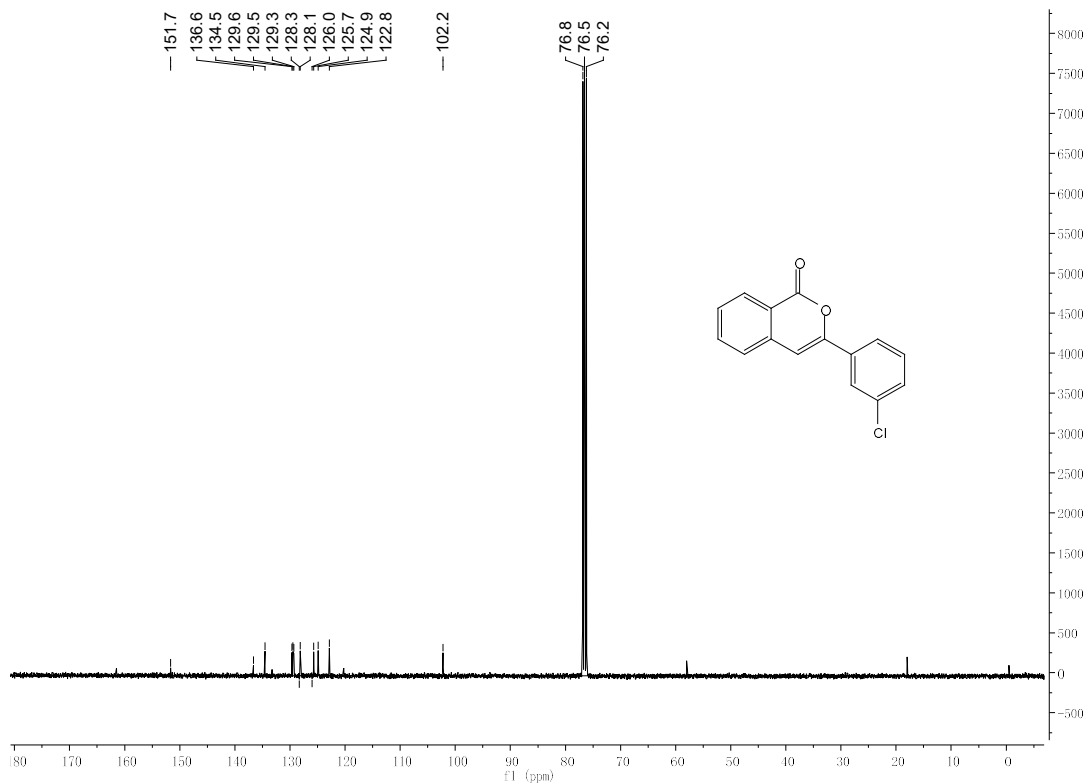


¹³C NMR Spectrum of Compound 3e

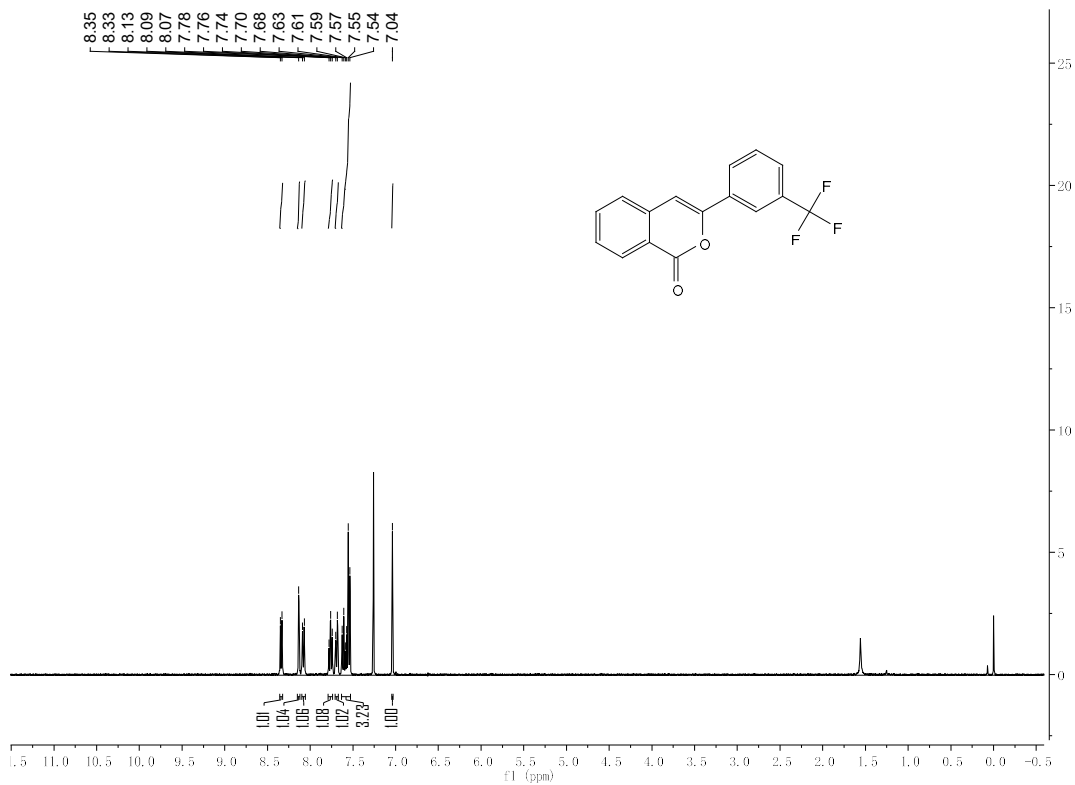




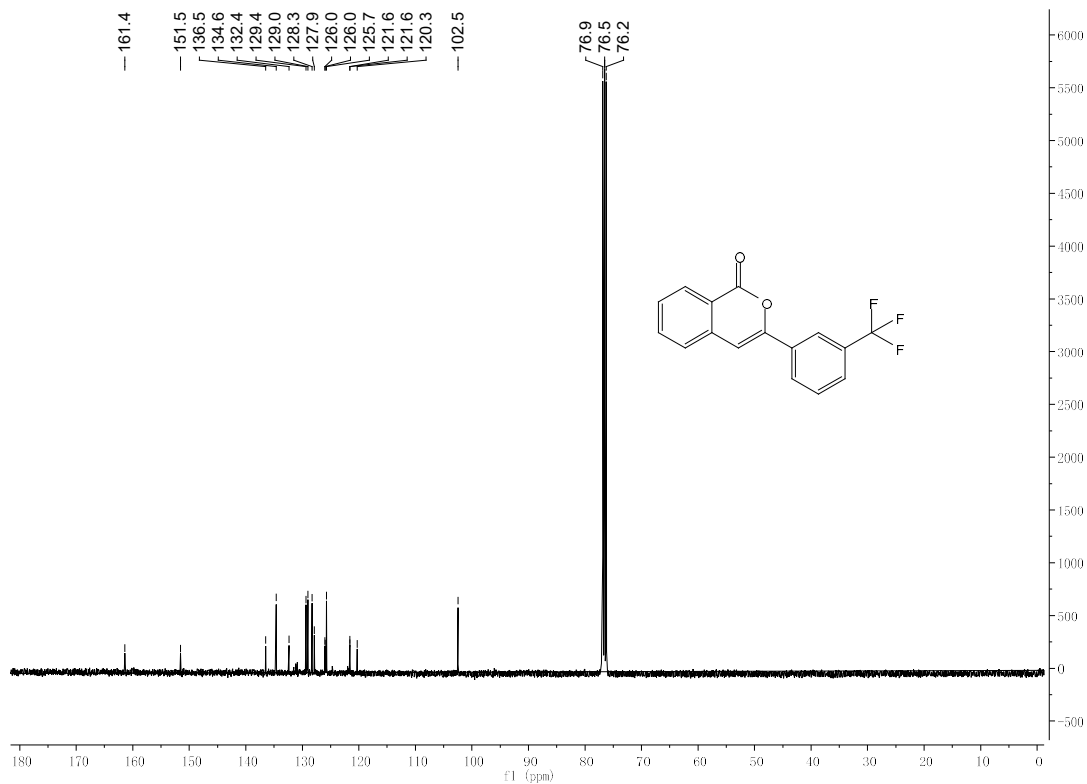
¹H NMR Spectrum of Compound 3g



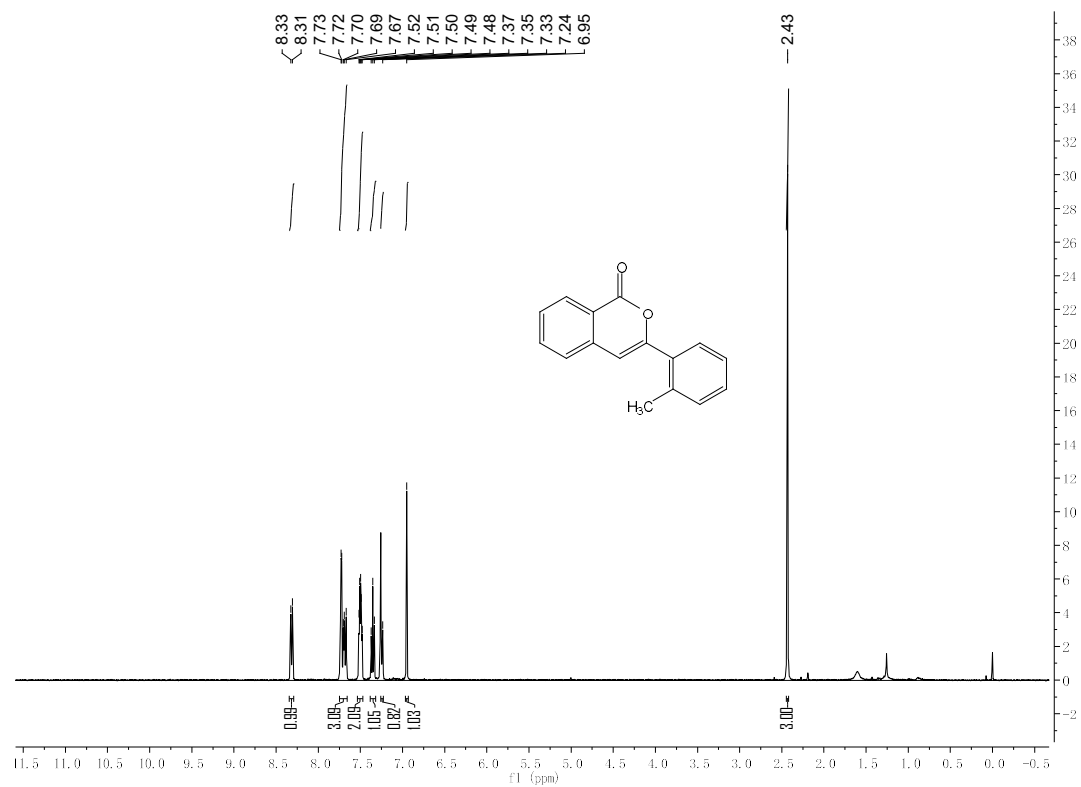
¹³C NMR Spectrum of Compound 3g



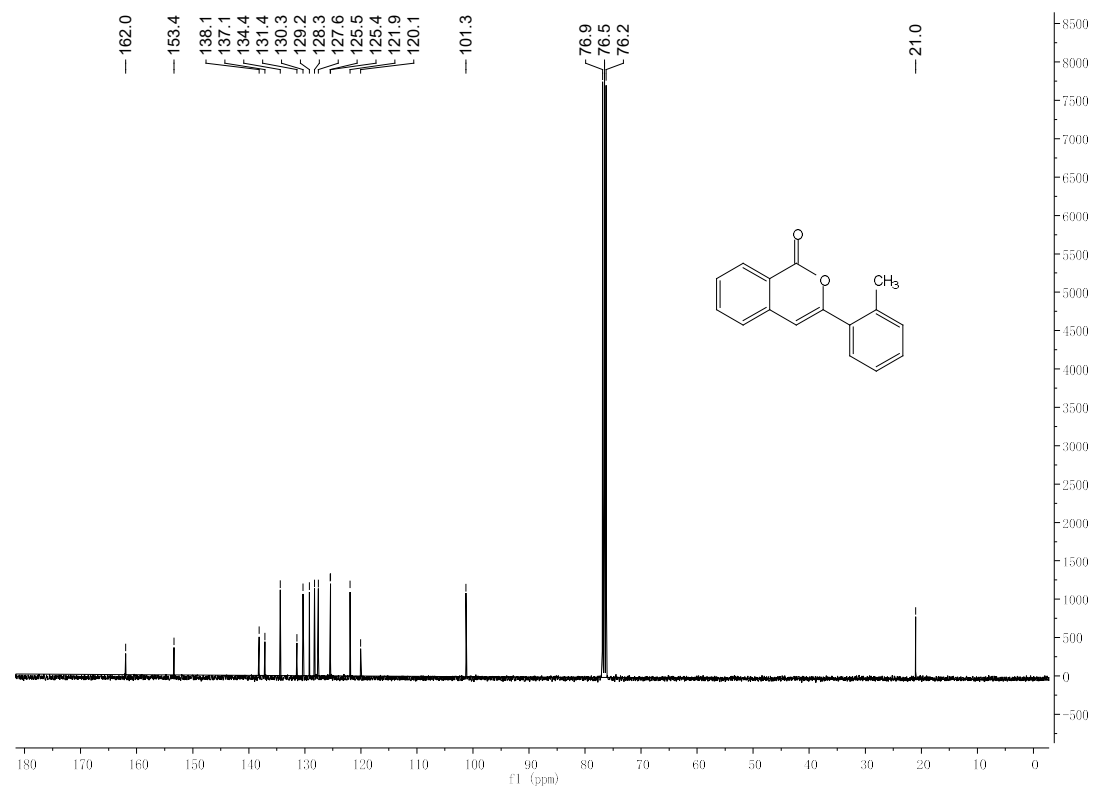
¹H NMR Spectrum of Compound 3h



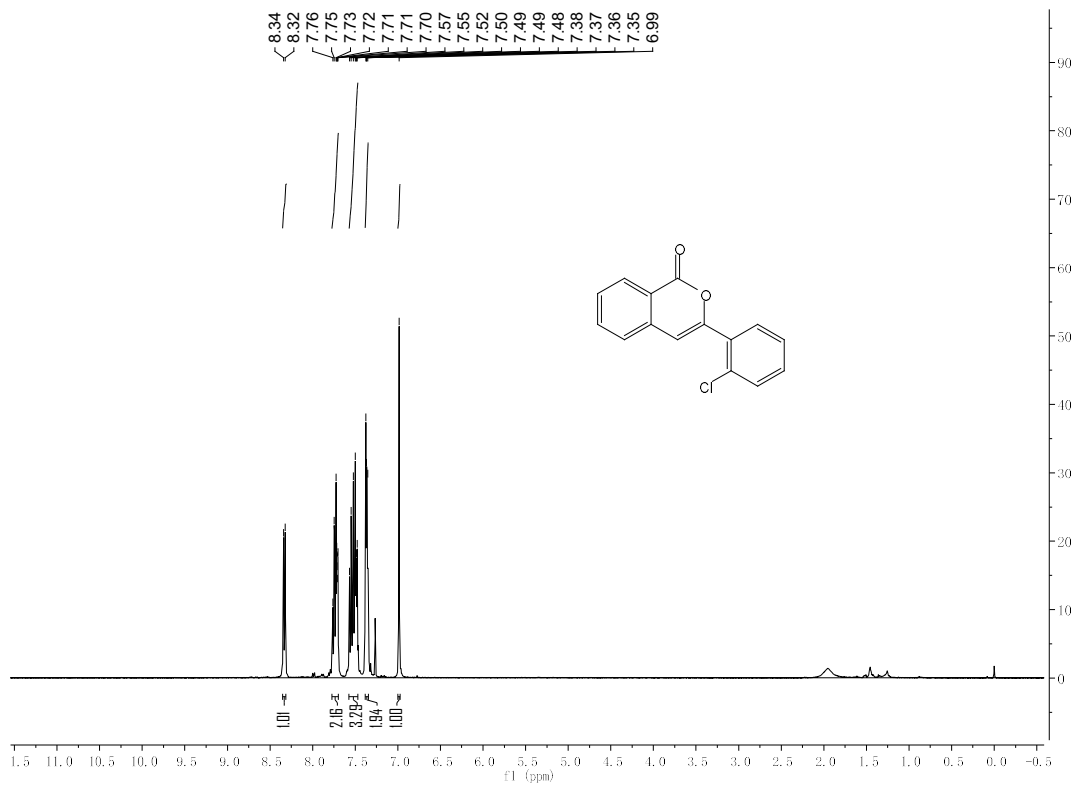
¹³C NMR Spectrum of Compound 3h



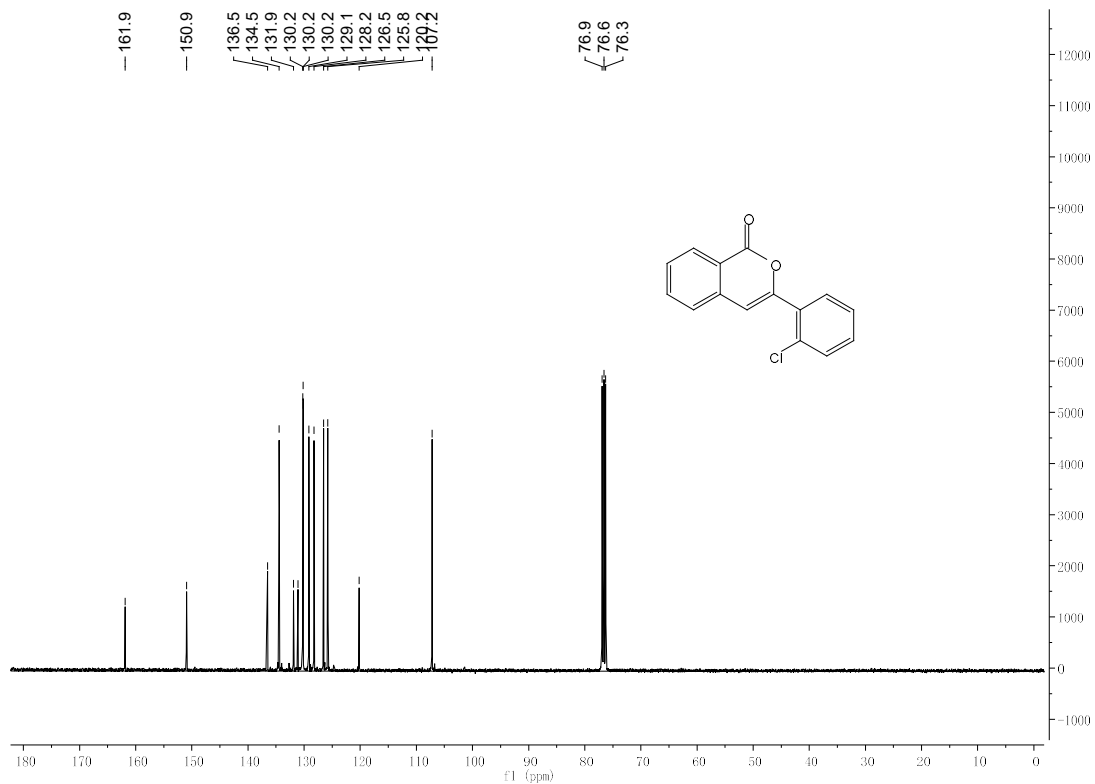
¹H NMR Spectrum of Compound 3i



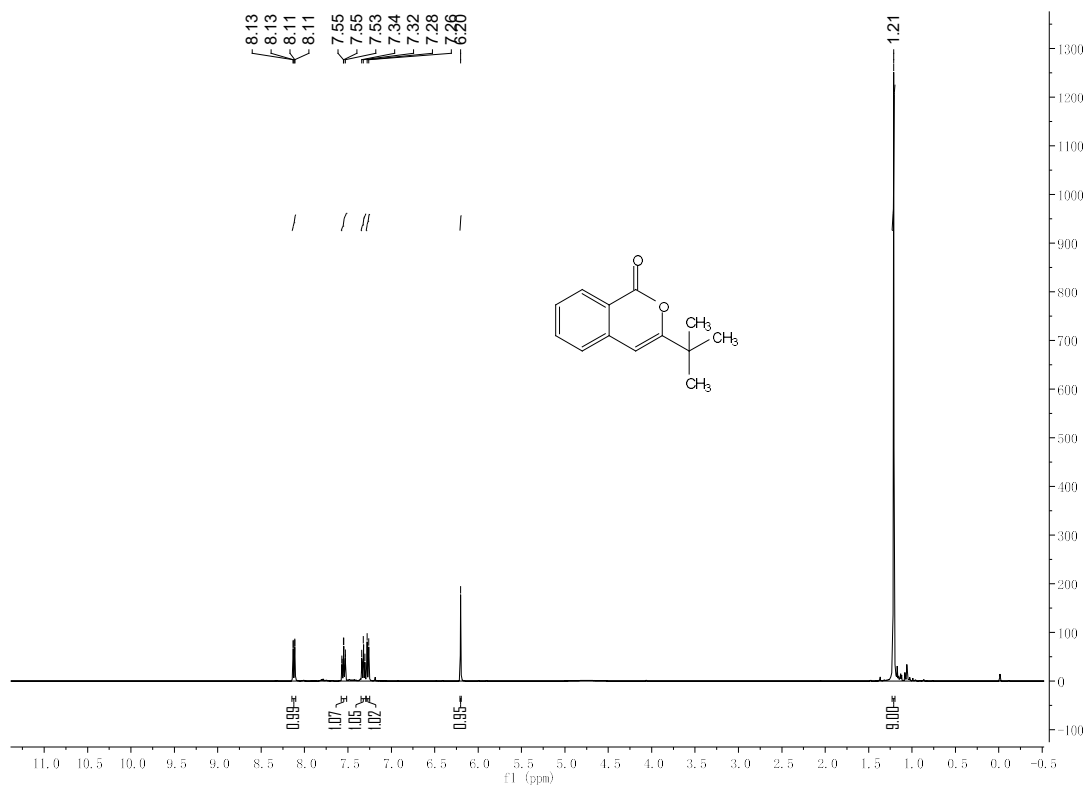
¹³C NMR Spectrum of Compound 3i



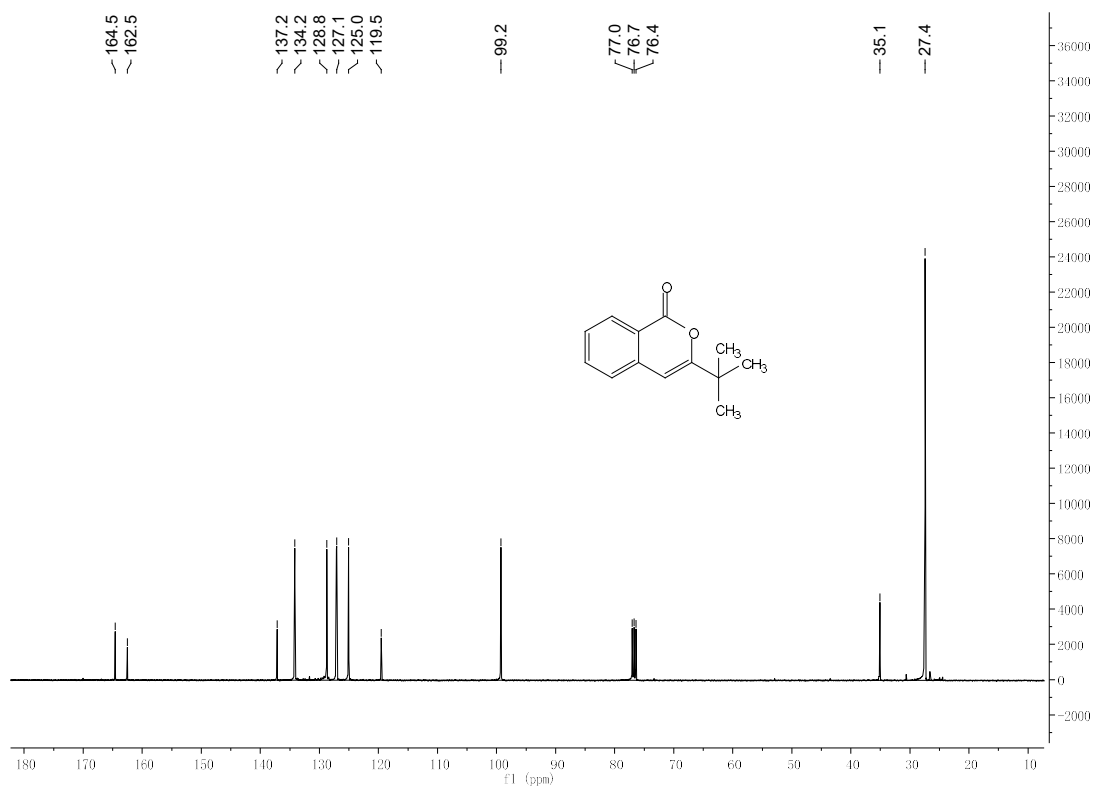
¹H NMR Spectrum of Compound 3j



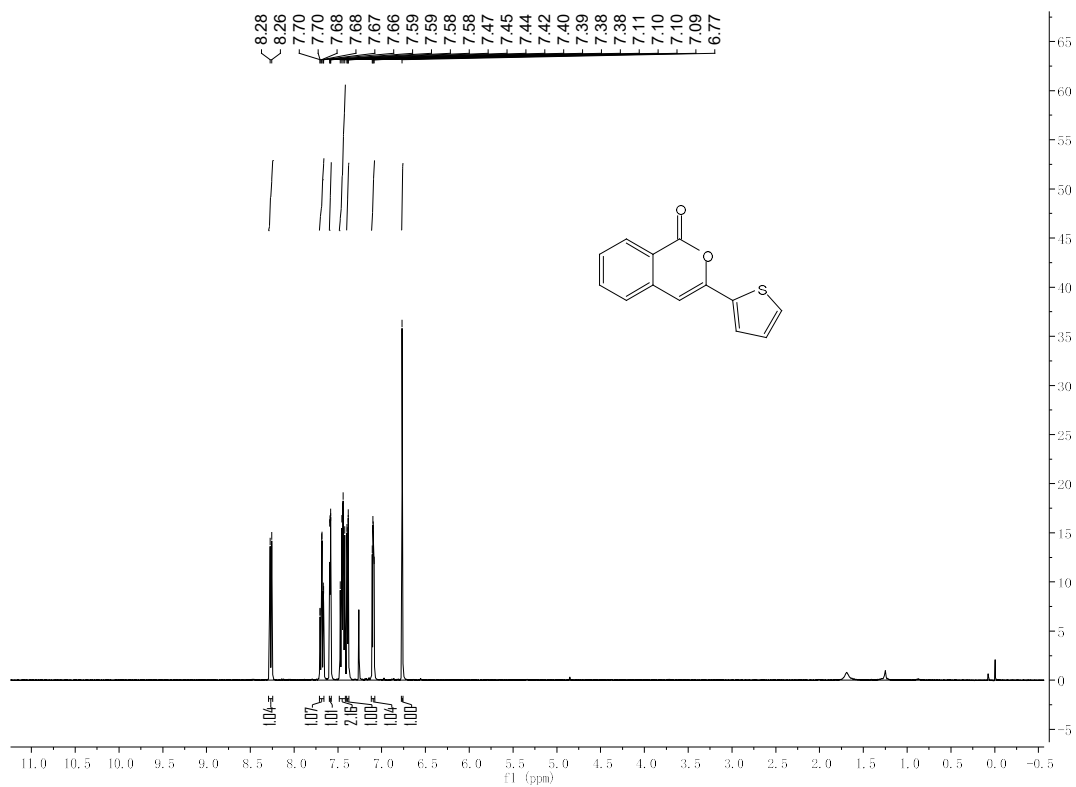
¹³C NMR Spectrum of Compound 3j



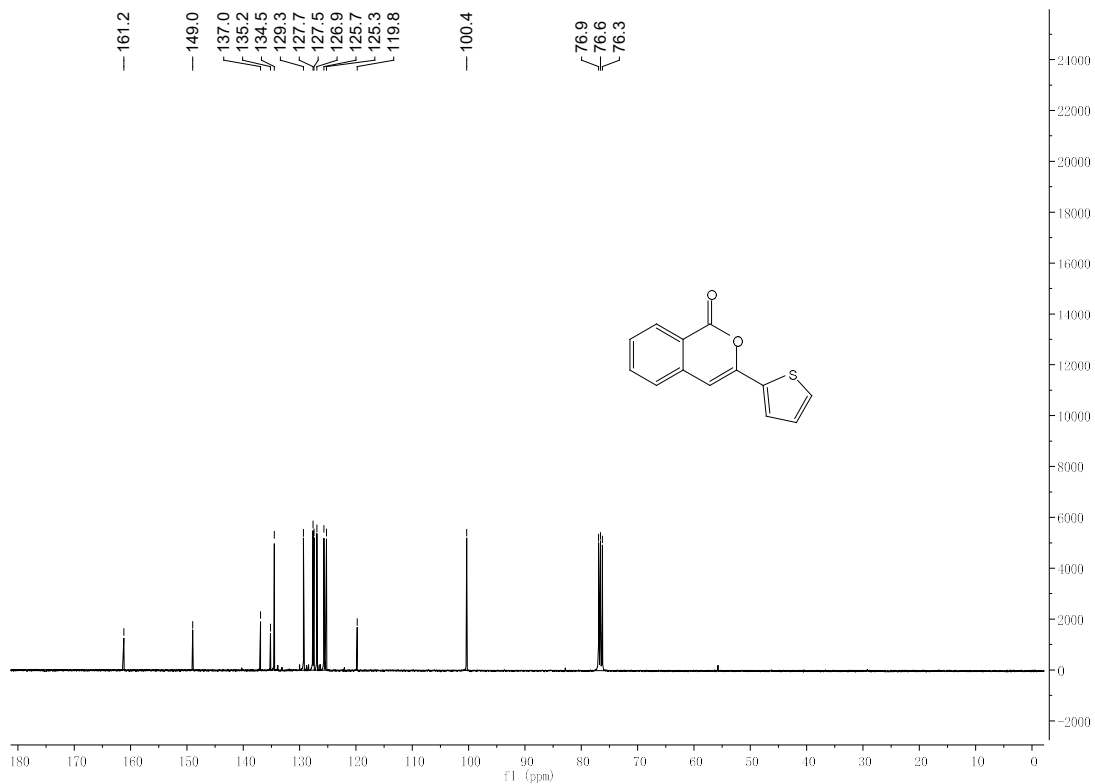
¹H NMR Spectrum of Compound 3k



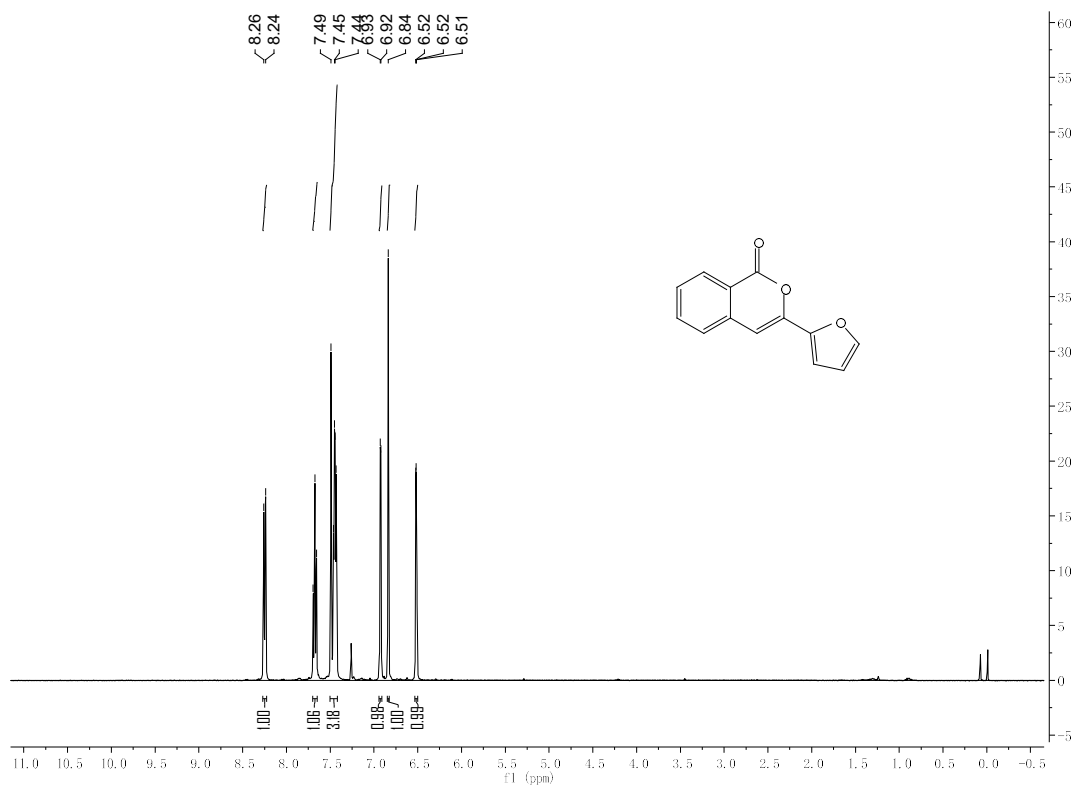
¹³C NMR Spectrum of Compound 3k



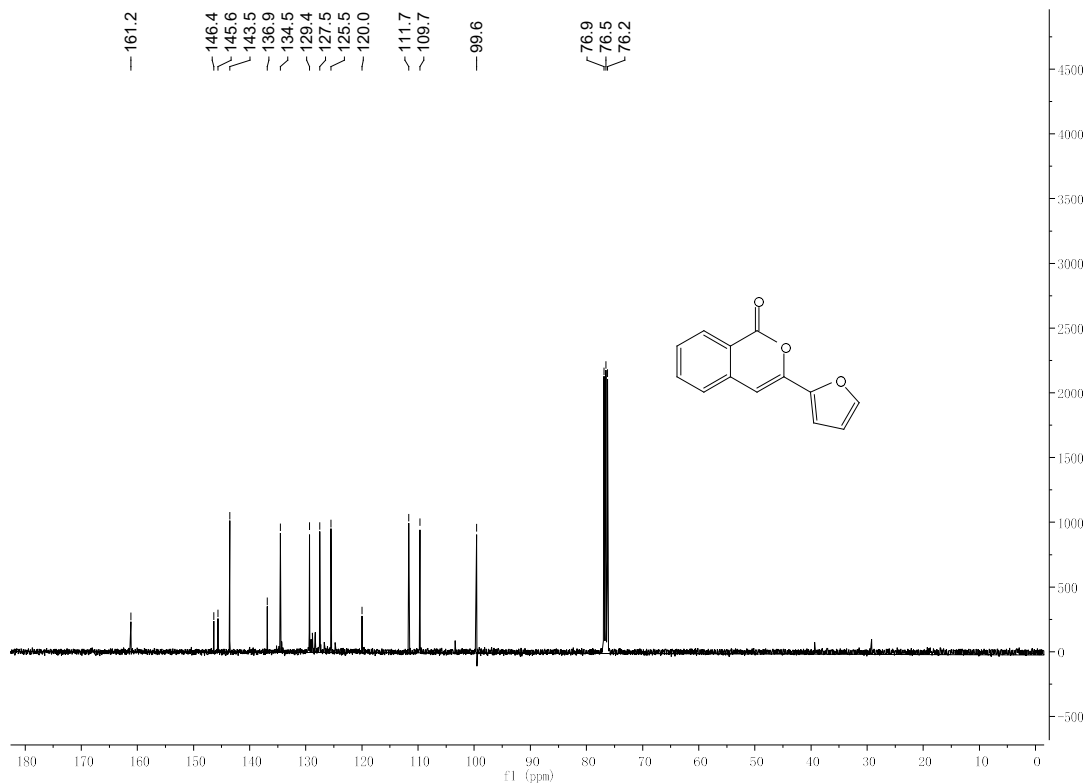
¹H NMR Spectrum of Compound 31



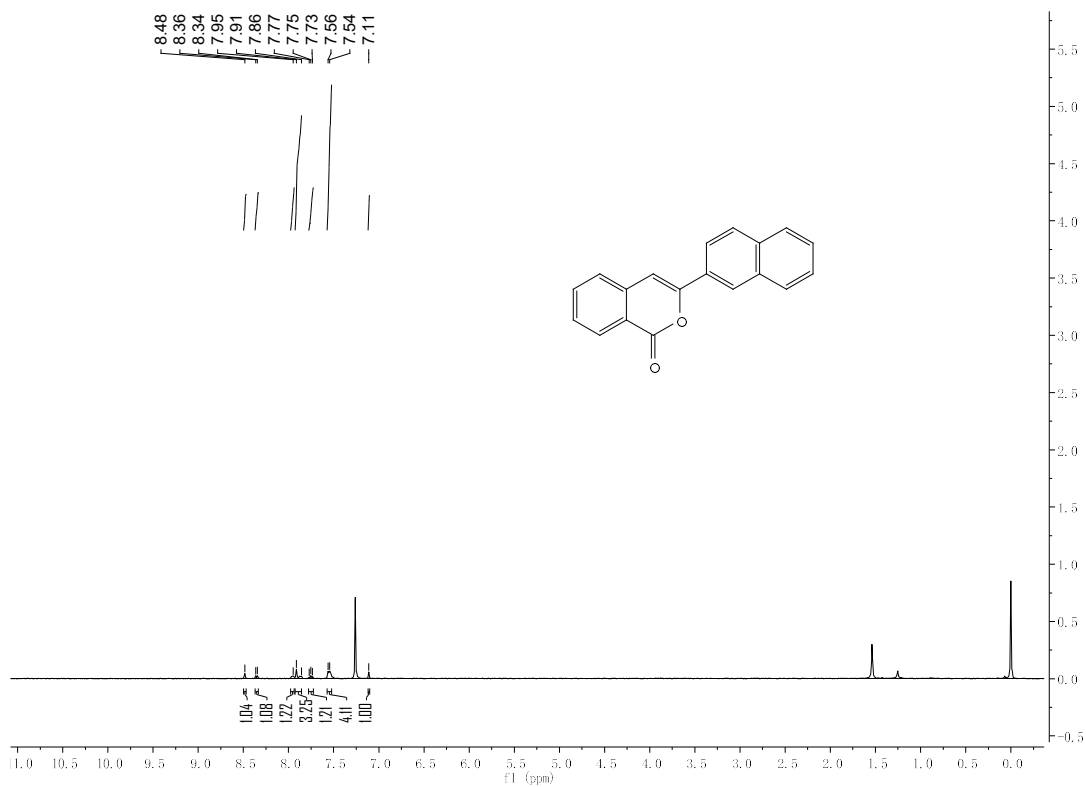
¹³C NMR Spectrum of Compound 31



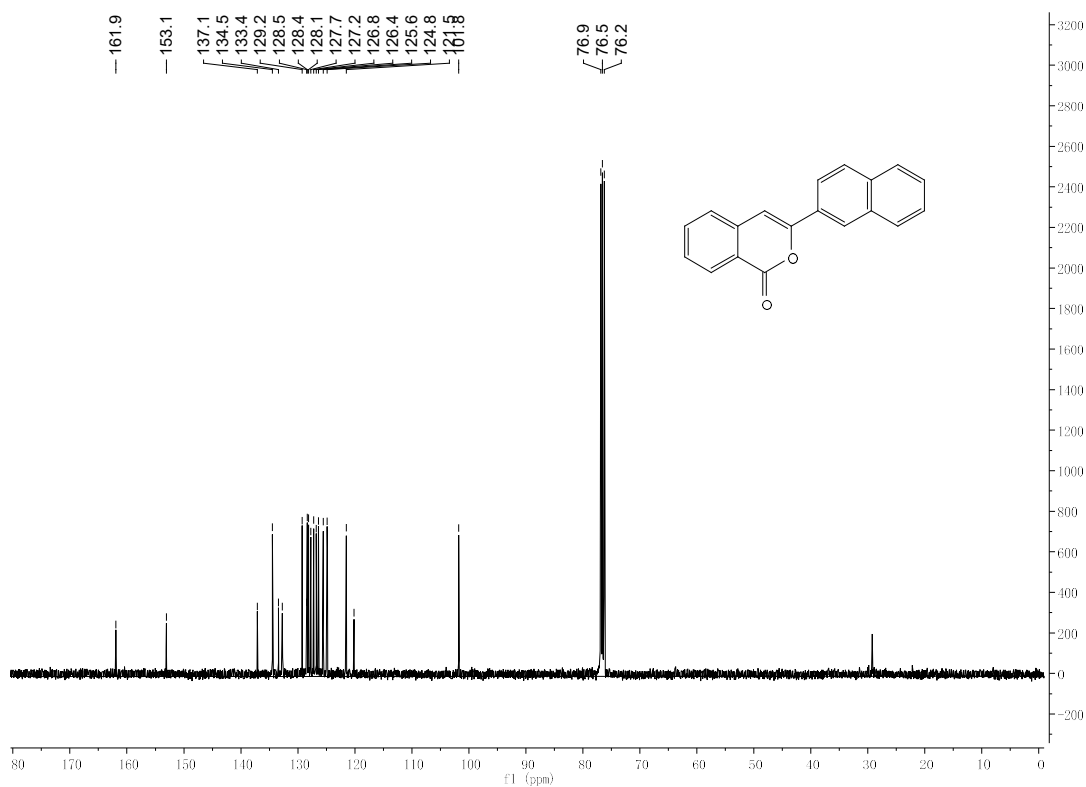
¹H NMR Spectrum of Compound 3m



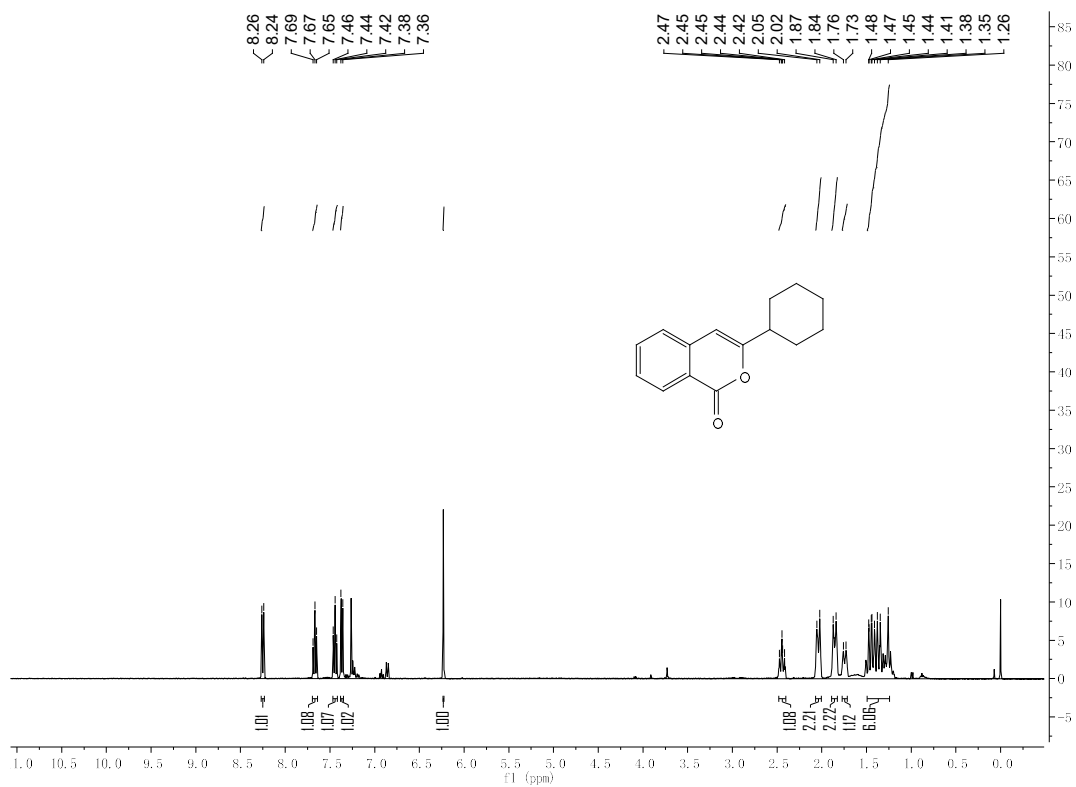
¹³C NMR Spectrum of Compound 3m



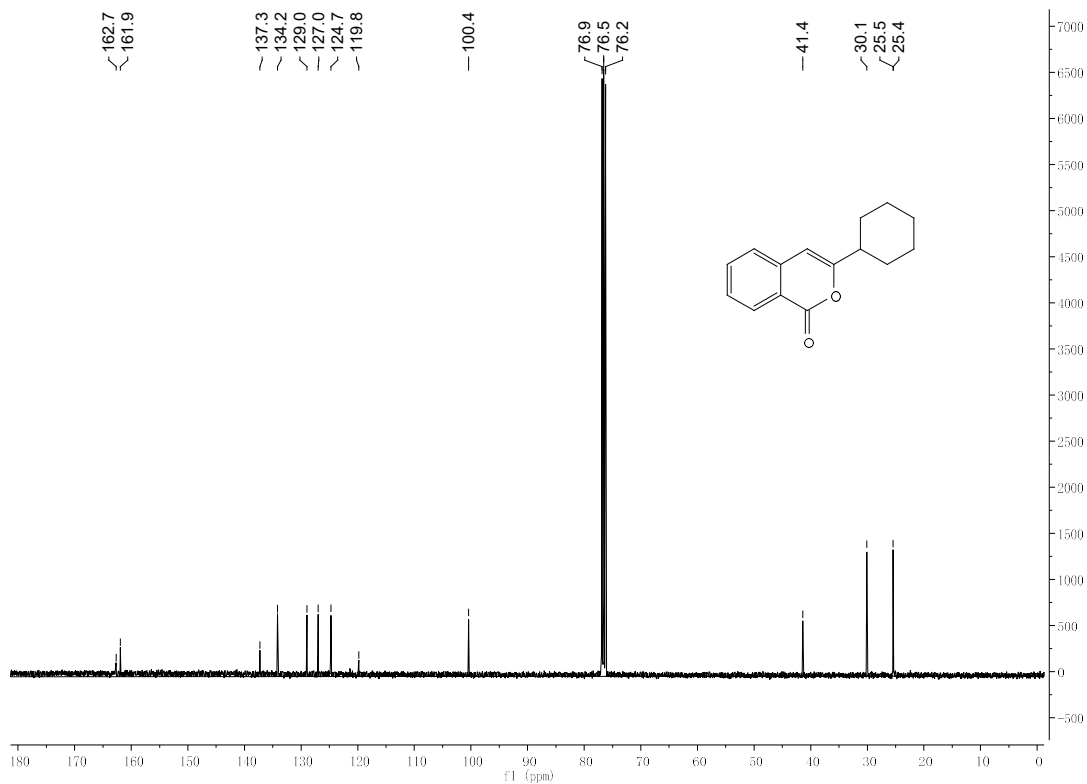
¹H NMR Spectrum of Compound 3n



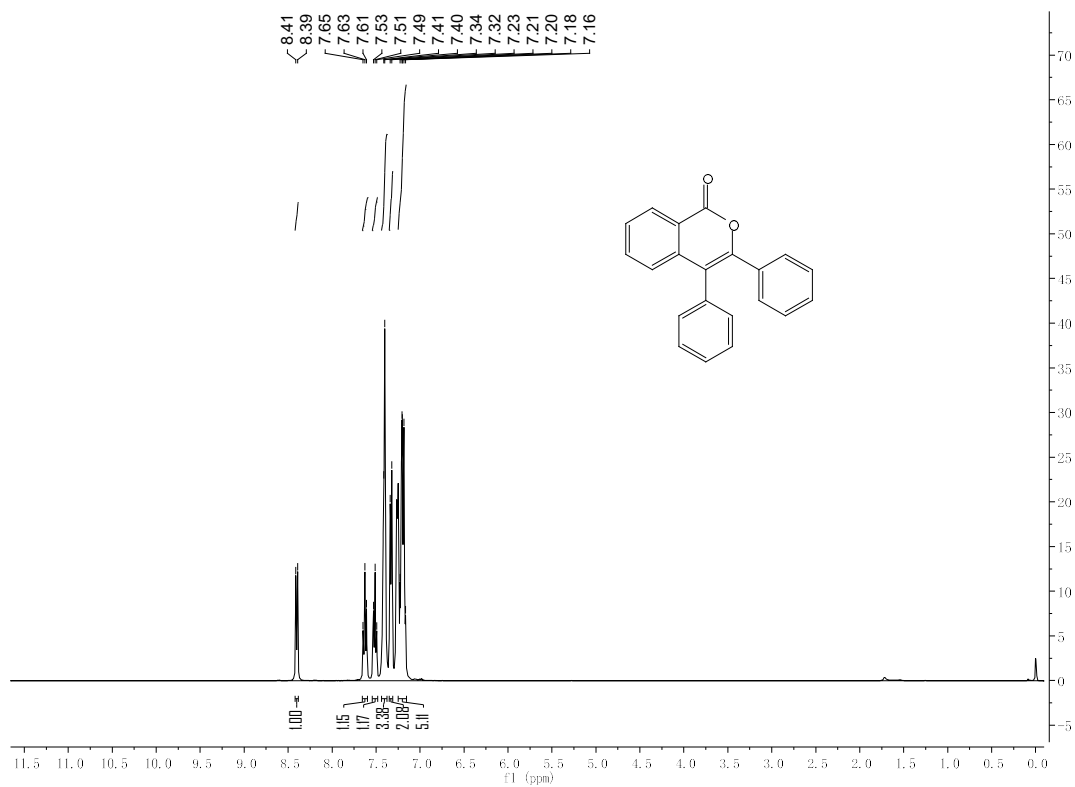
¹³C NMR Spectrum of Compound 3n



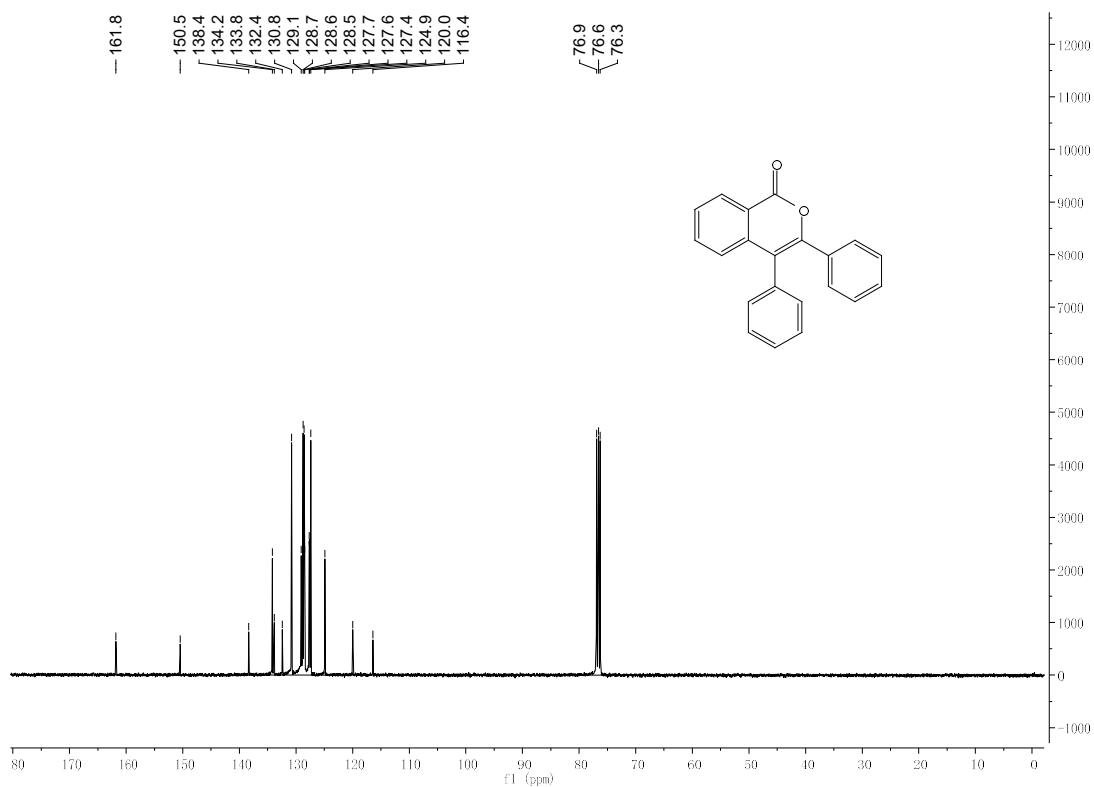
¹H NMR Spectrum of Compound 30



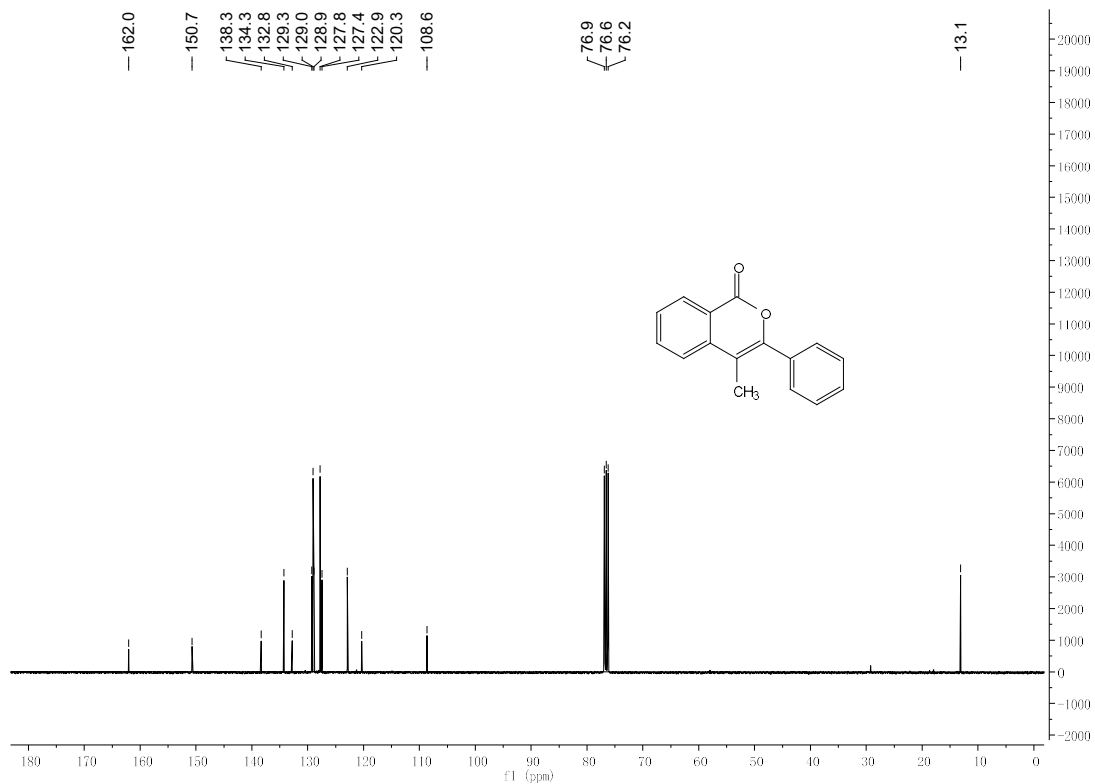
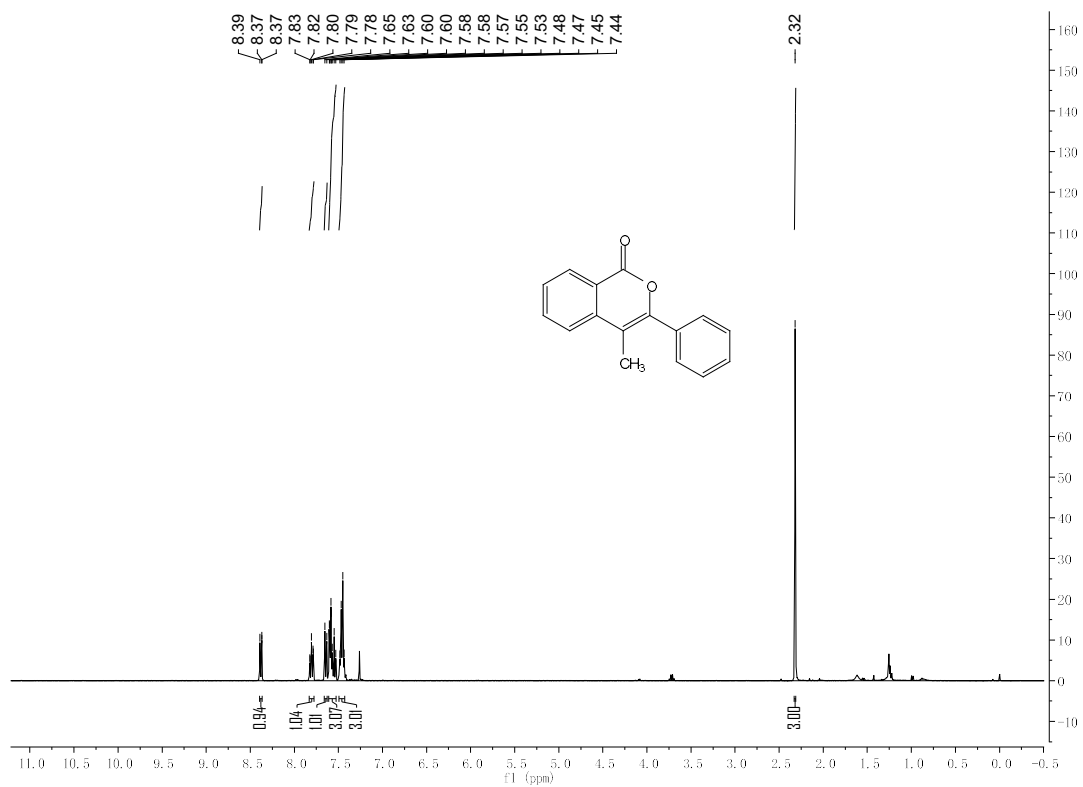
¹³C NMR Spectrum of Compound 30

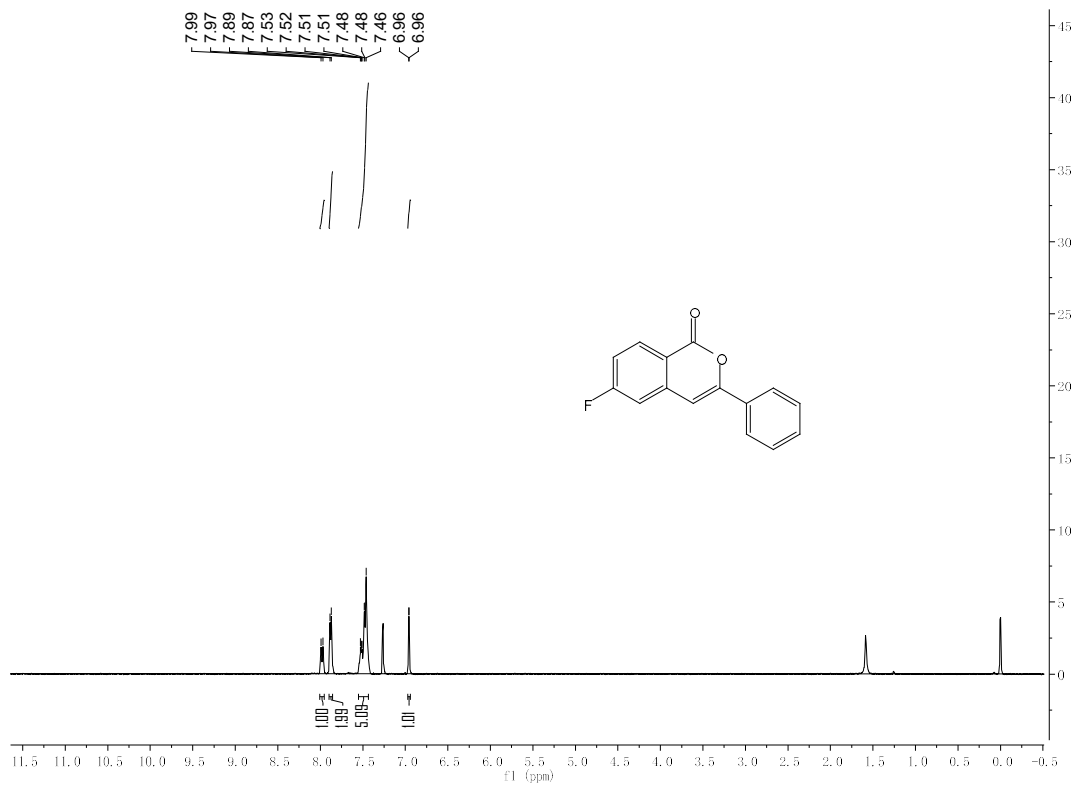


¹H NMR Spectrum of Compound 3p

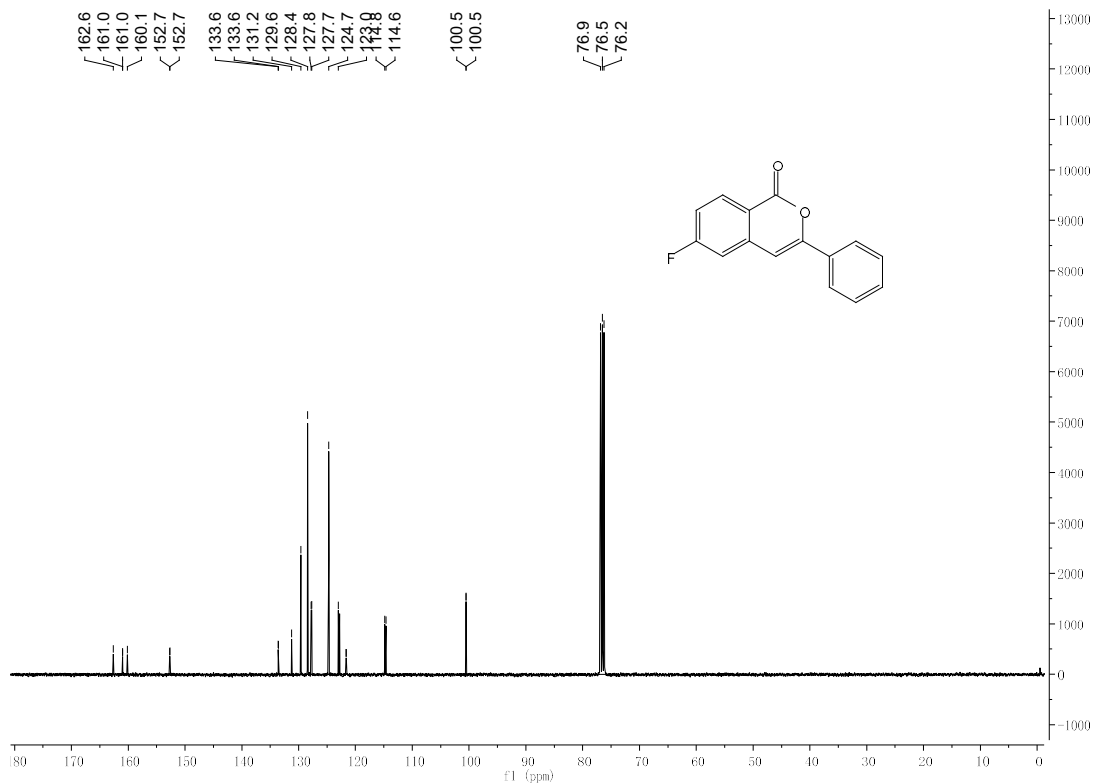


¹³C NMR Spectrum of Compound 3p

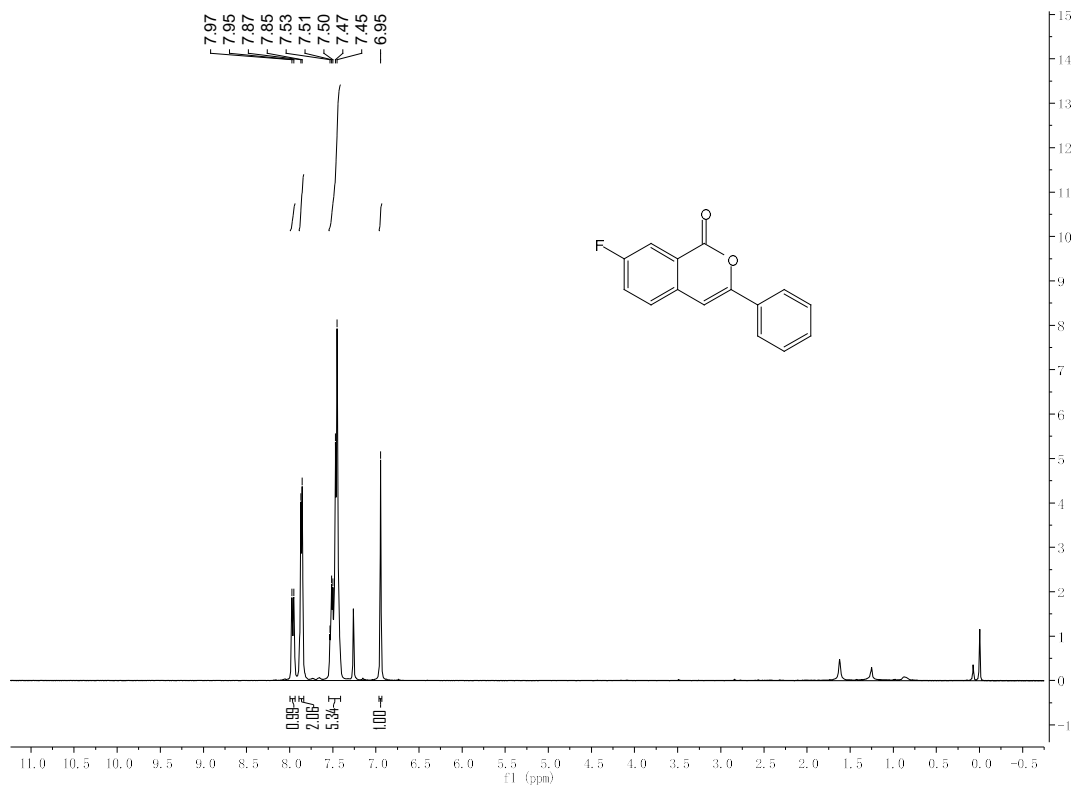




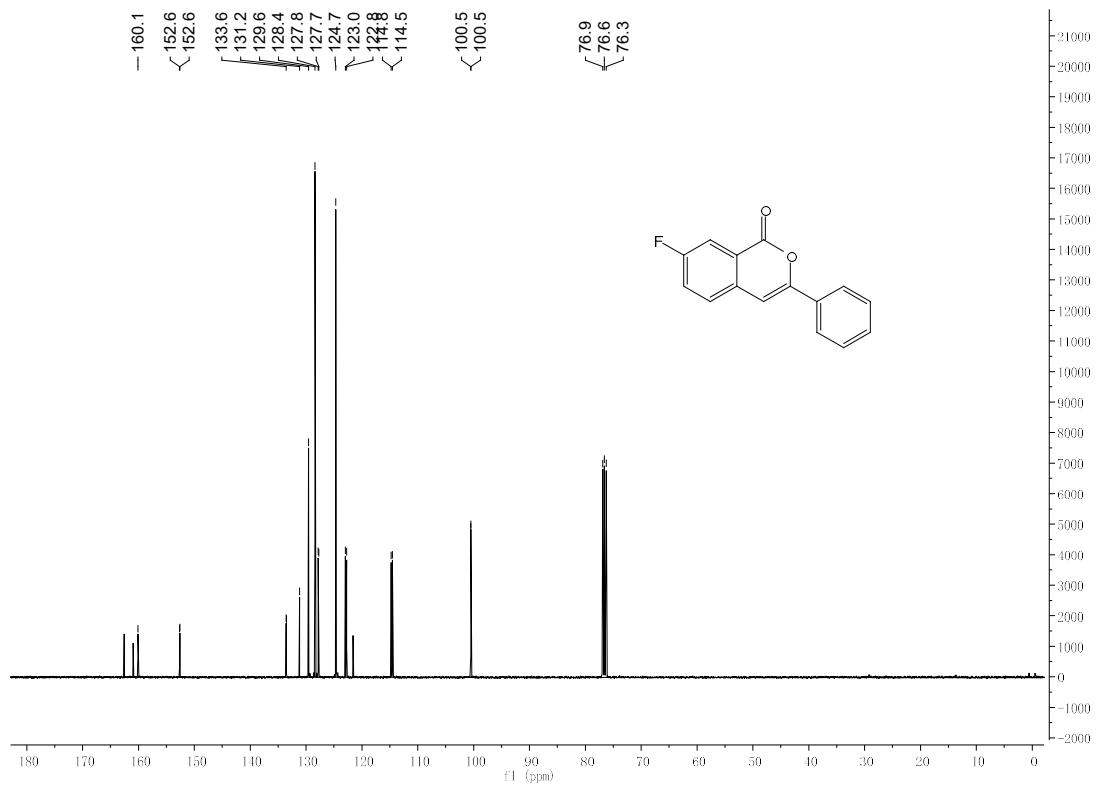
¹H NMR Spectrum of Compound 3r



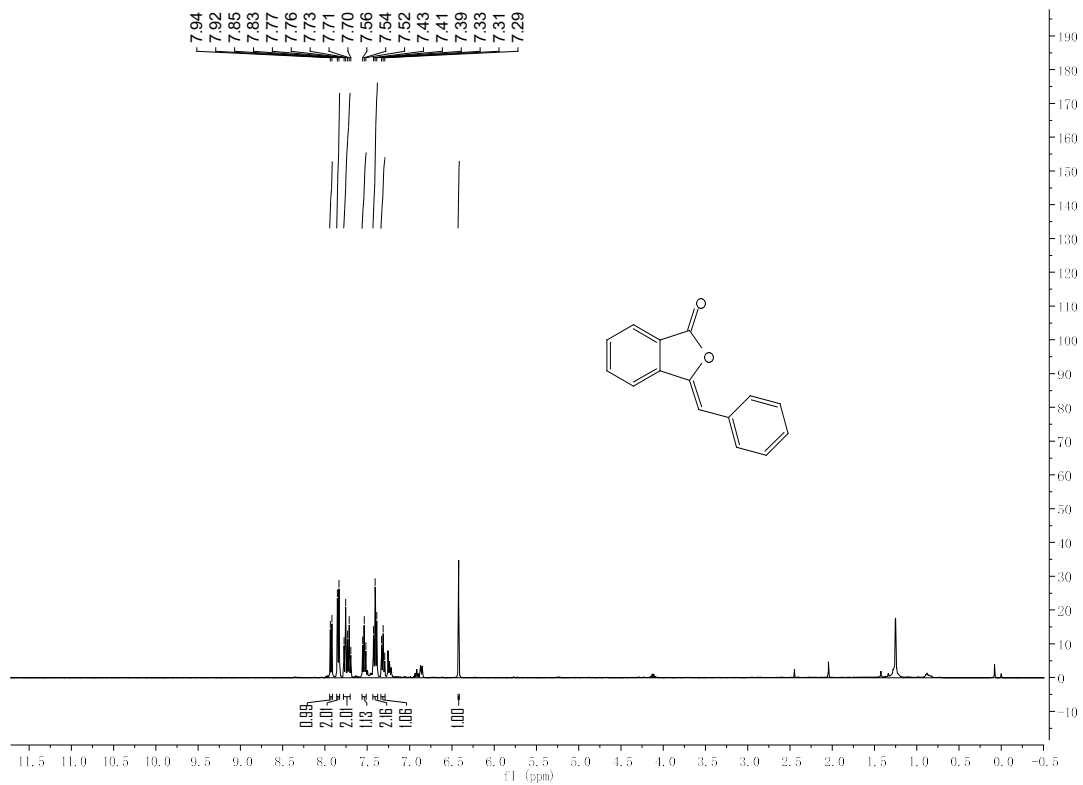
¹³C NMR Spectrum of Compound 3r



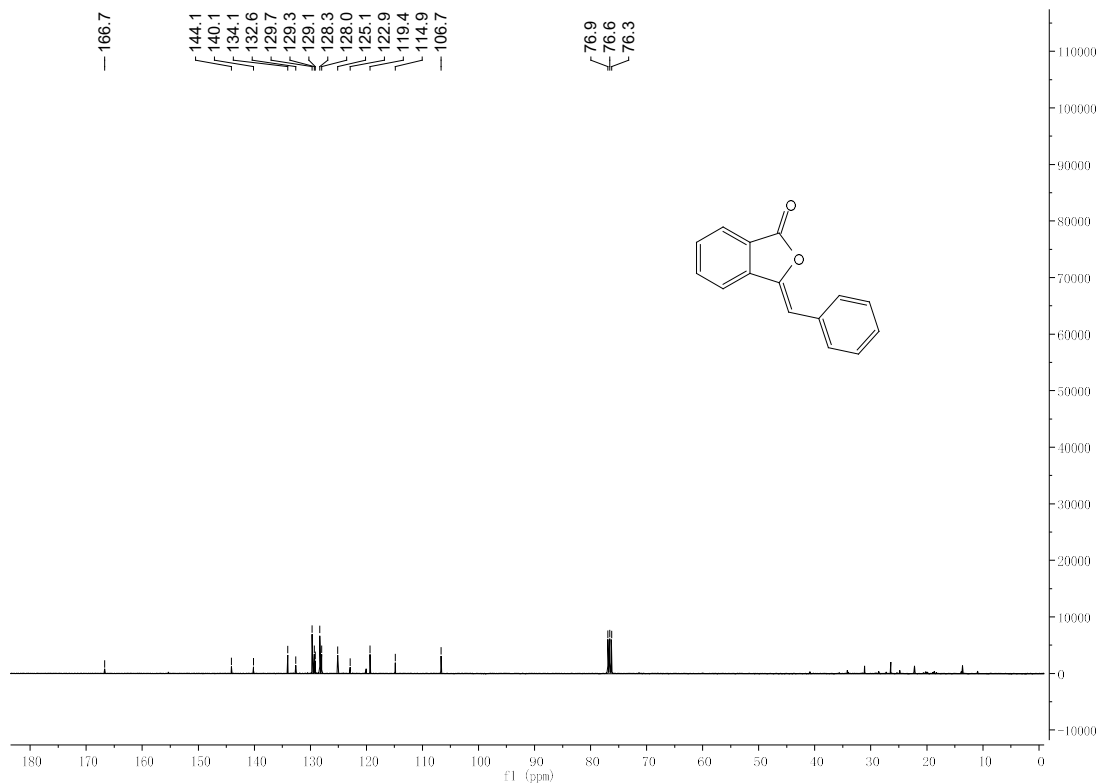
¹H NMR Spectrum of Compound 3s



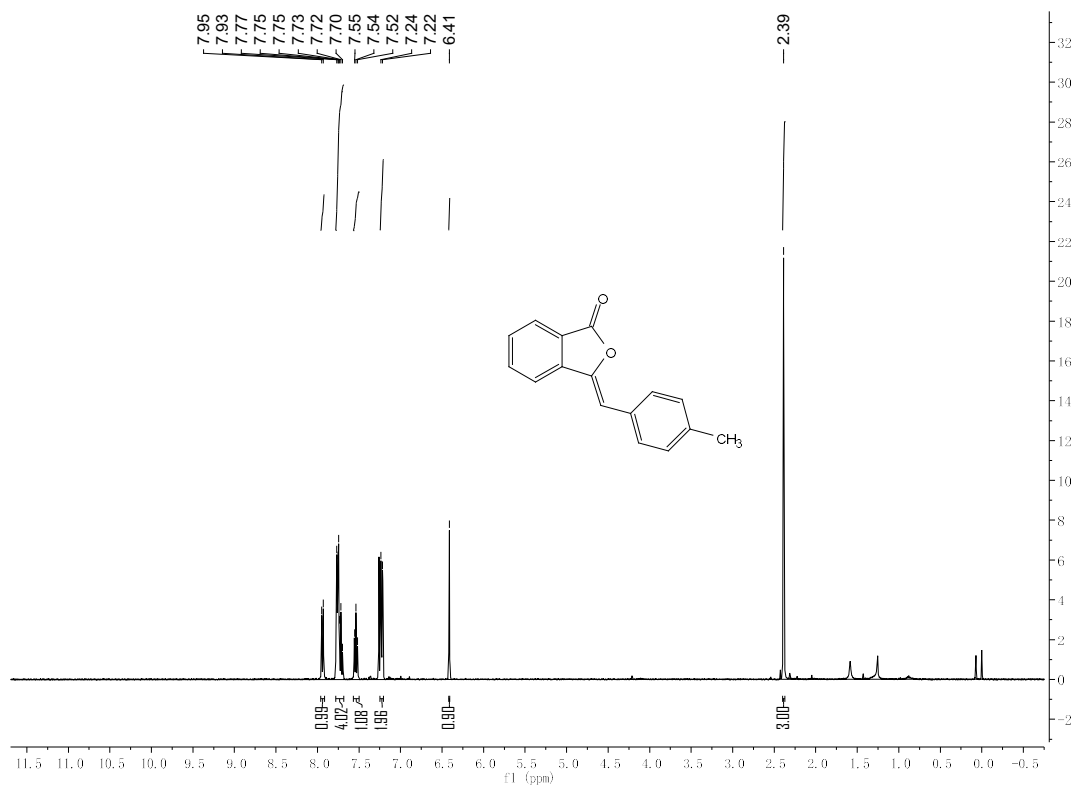
¹³C NMR Spectrum of Compound 3s



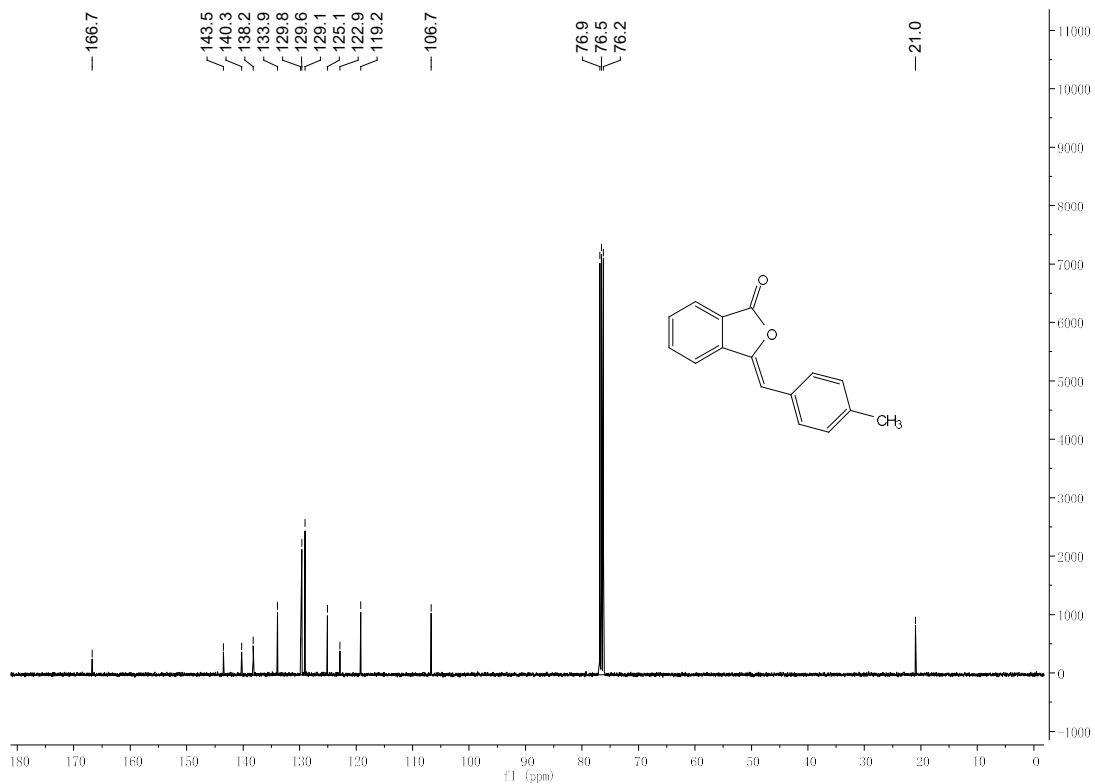
¹H NMR Spectrum of Compound 5a



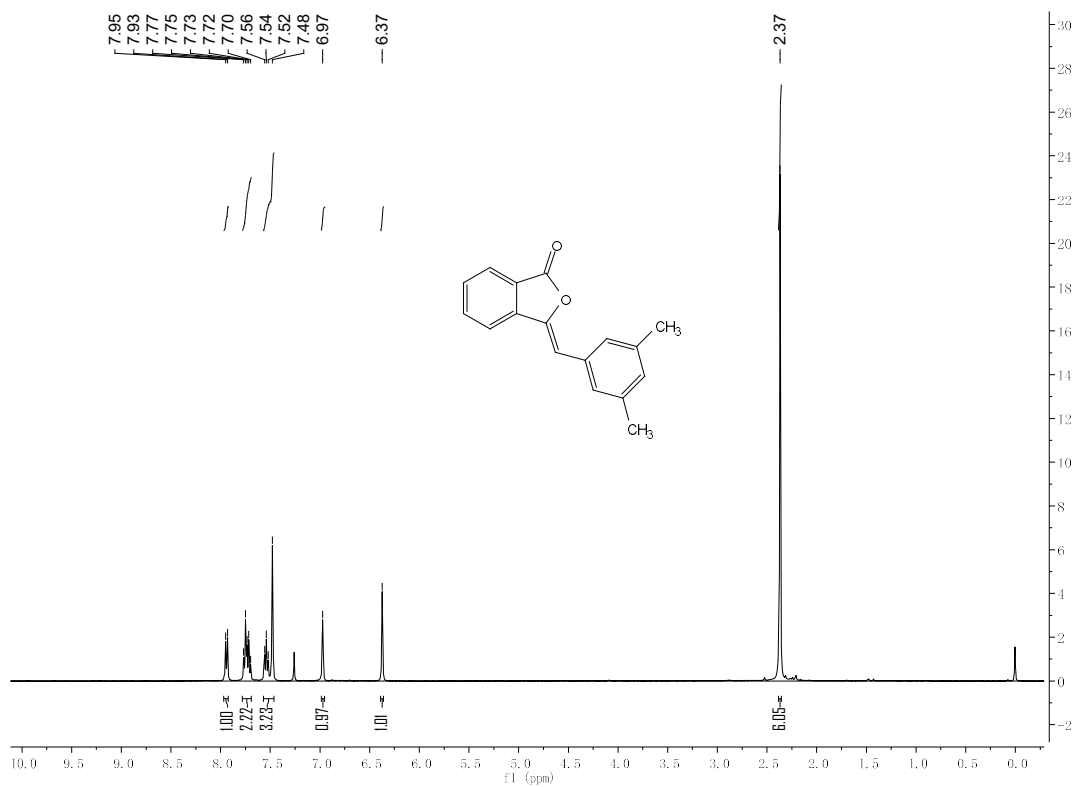
¹³C NMR Spectrum of Compound 5a



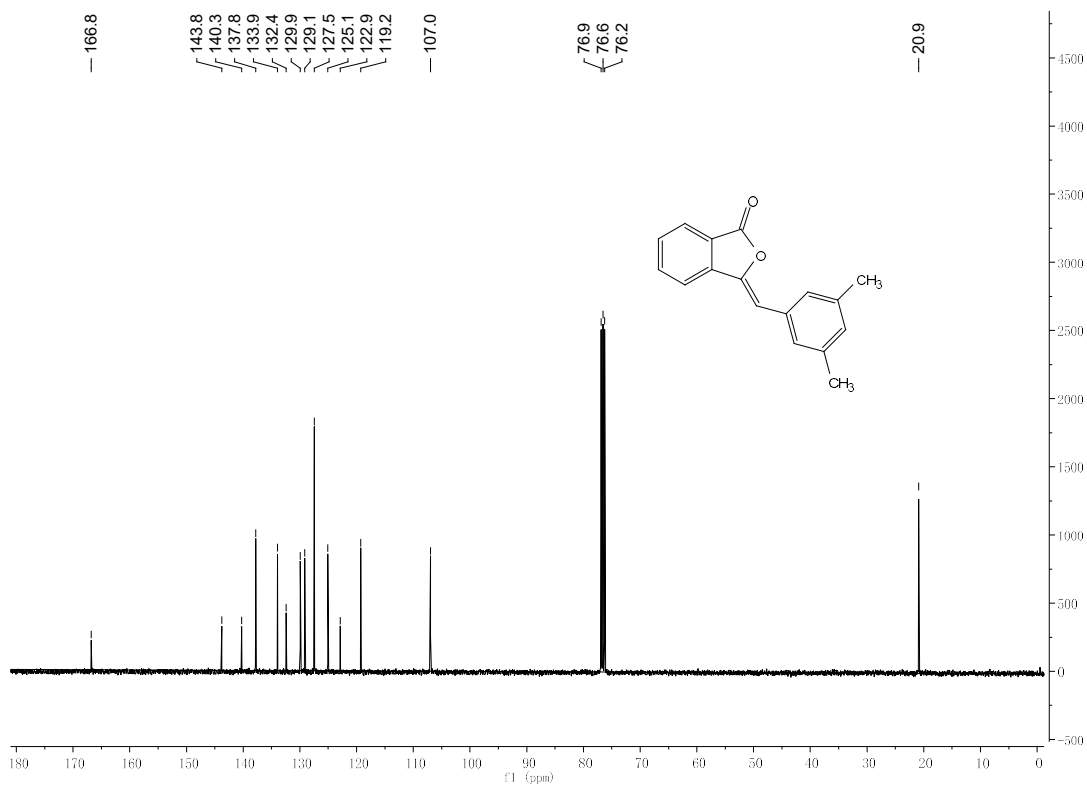
¹H NMR Spectrum of Compound 5b



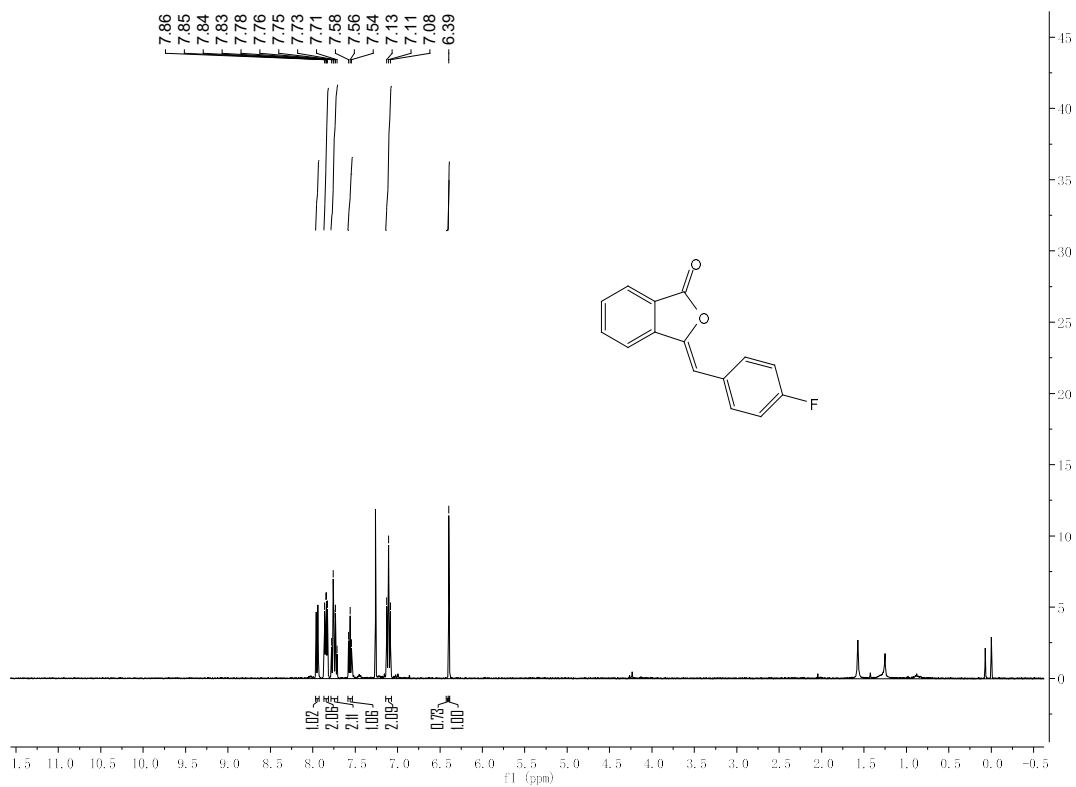
¹³C NMR Spectrum of Compound 5b



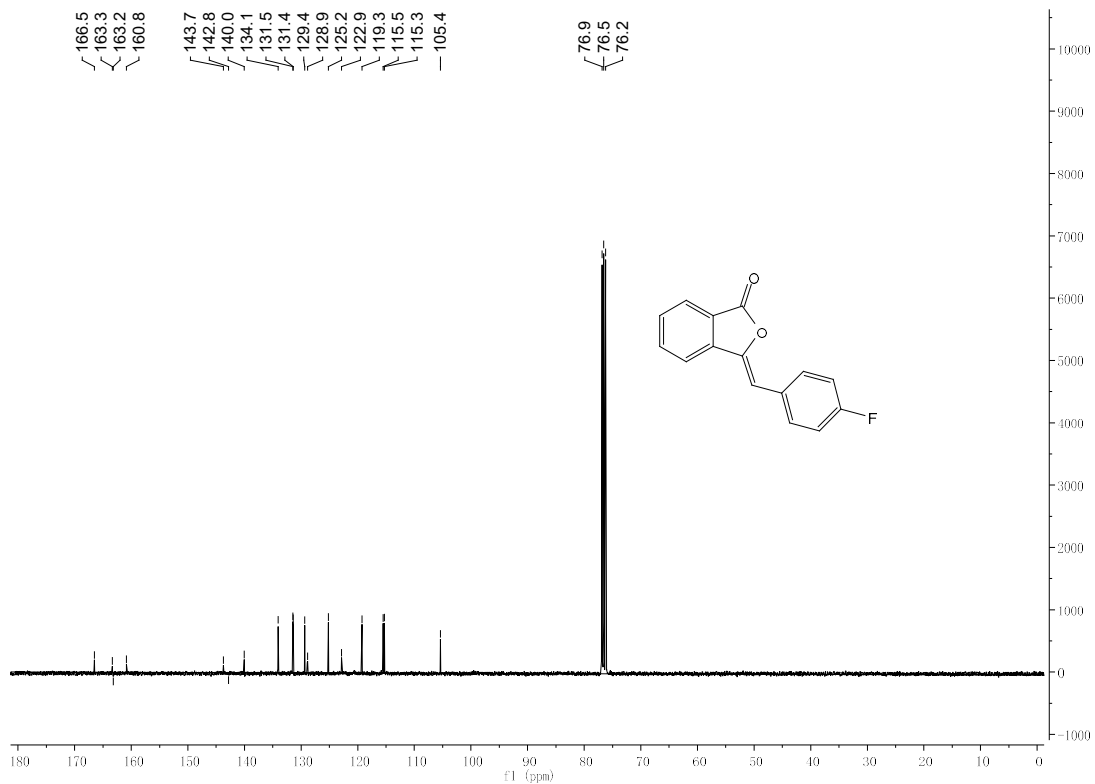
¹H NMR Spectrum of Compound 5c



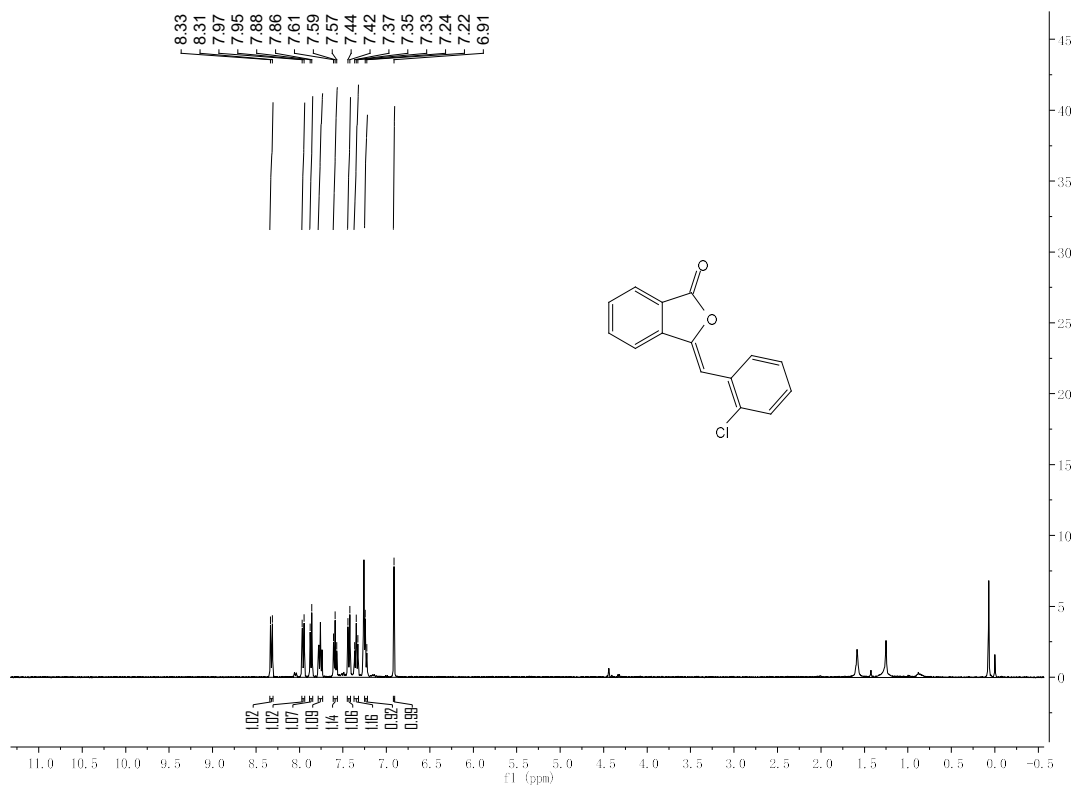
¹³C NMR Spectrum of Compound 5c



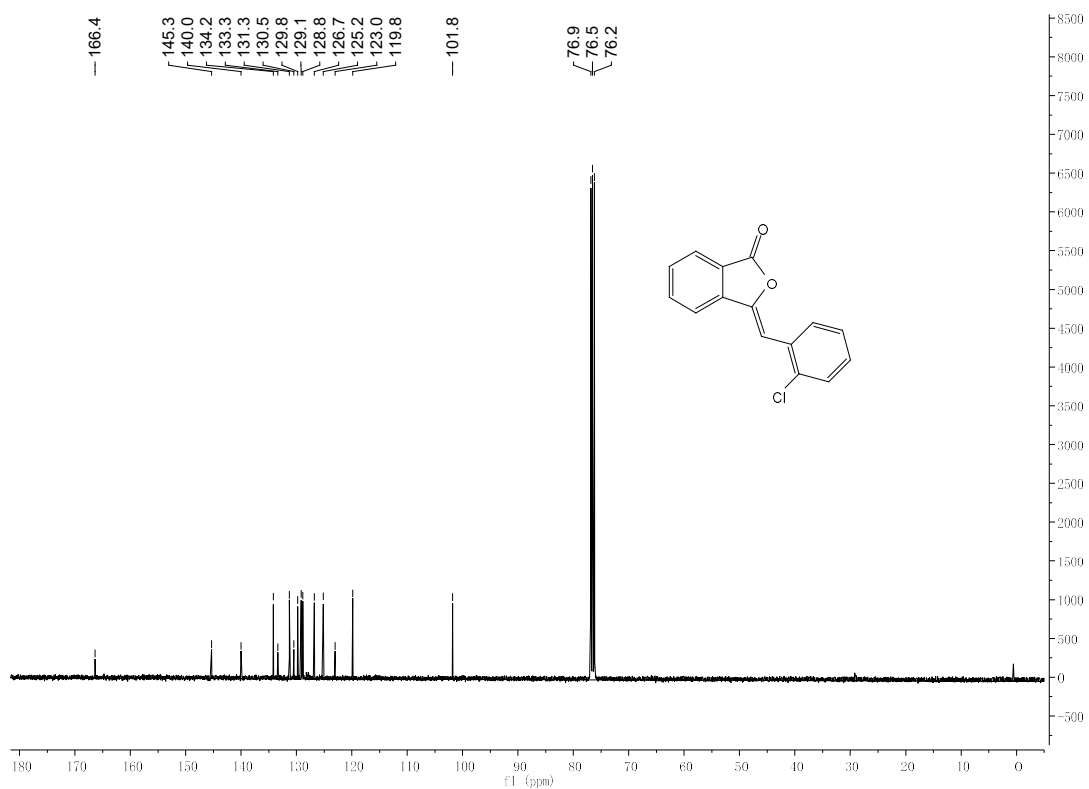
¹H NMR Spectrum of Compound 5d



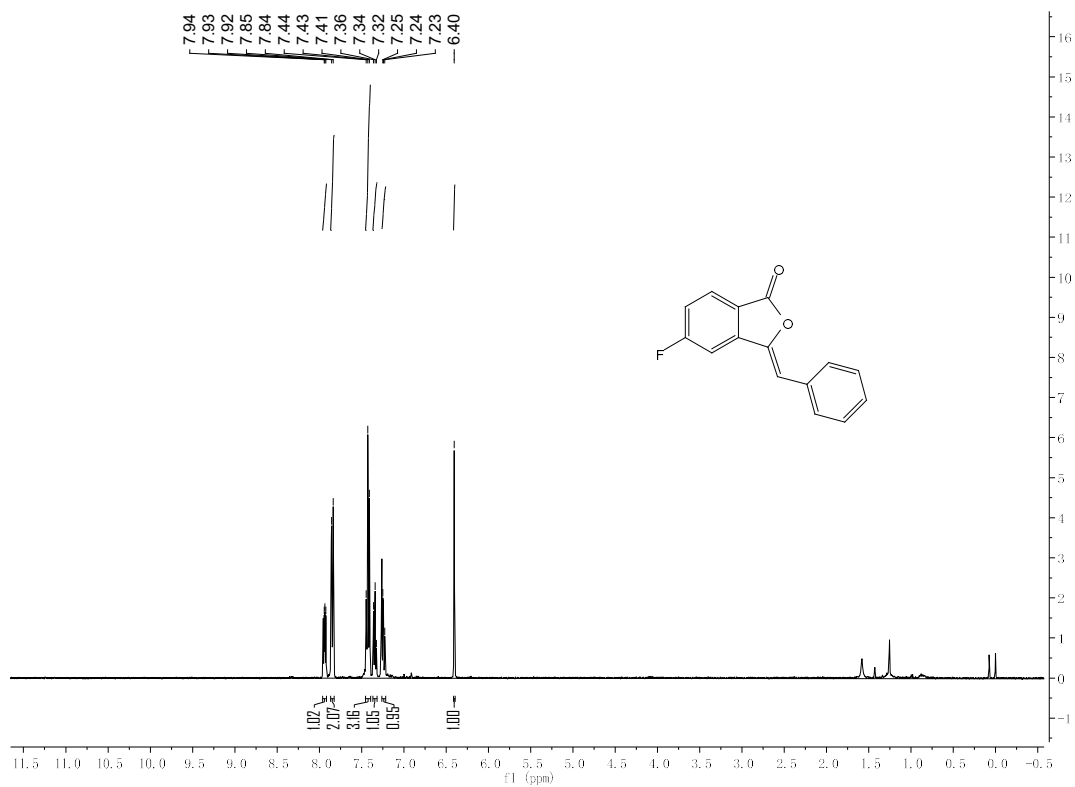
¹³C NMR Spectrum of Compound 5d



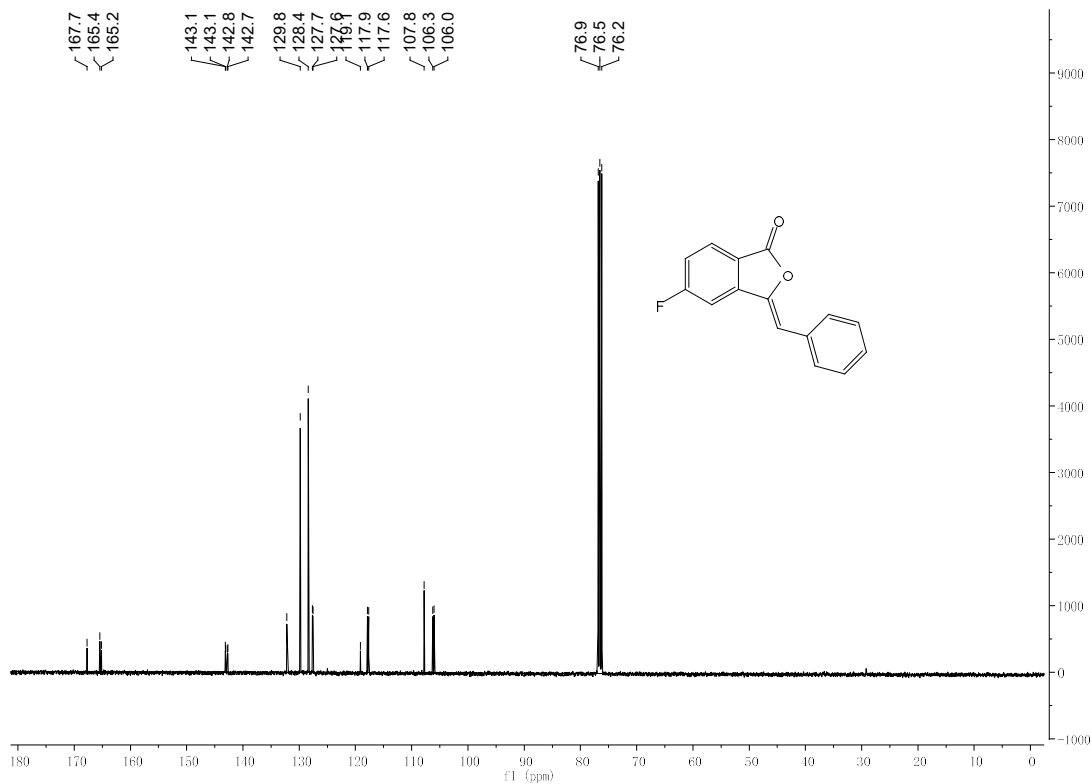
¹H NMR Spectrum of Compound 5e



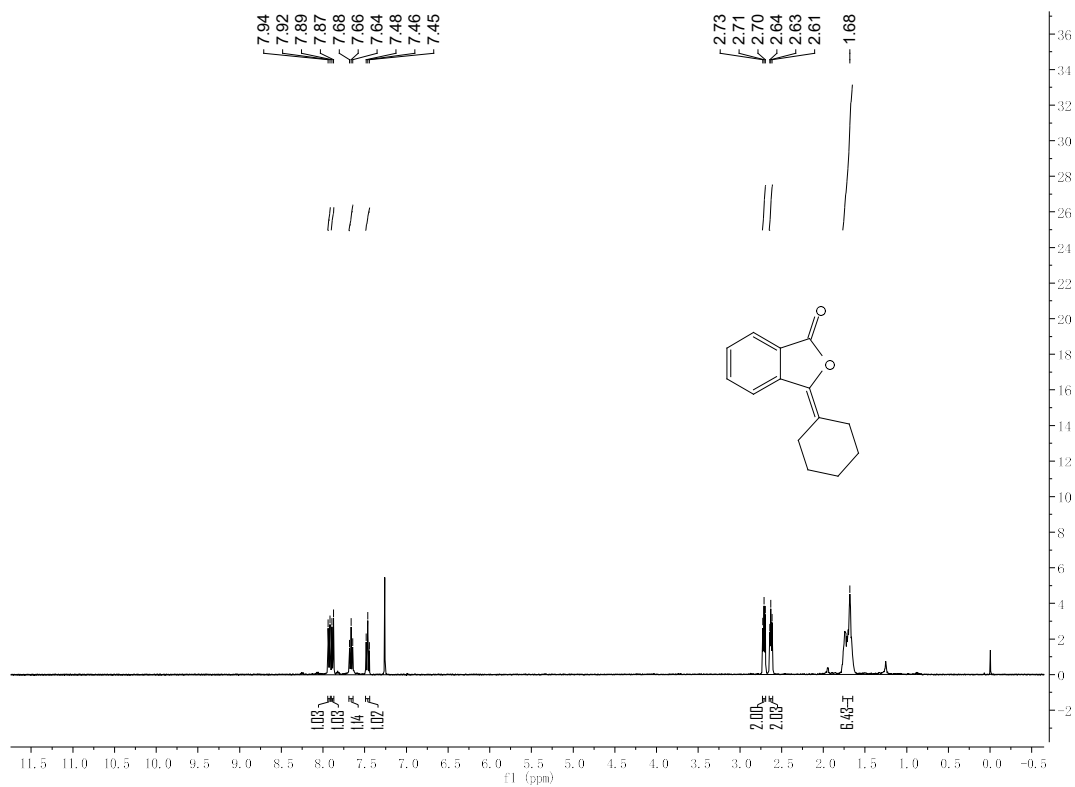
¹³C NMR Spectrum of Compound 5e



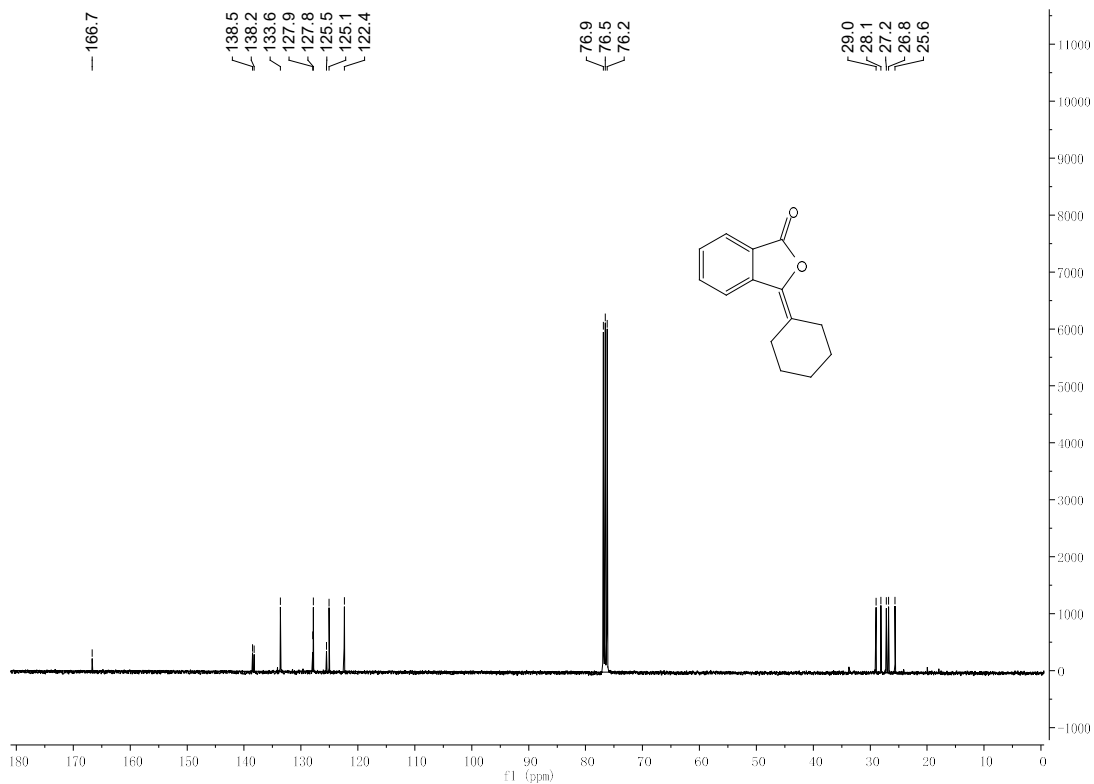
¹H NMR Spectrum of Compound 5f



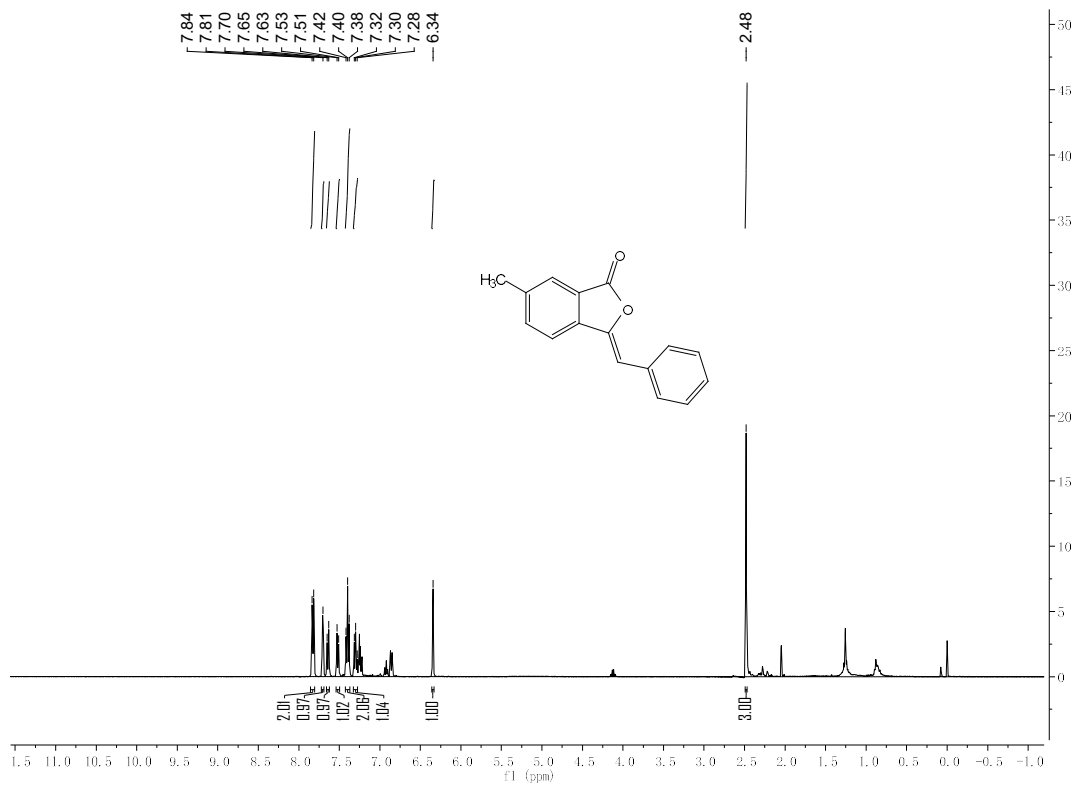
¹³C NMR Spectrum of Compound 5f



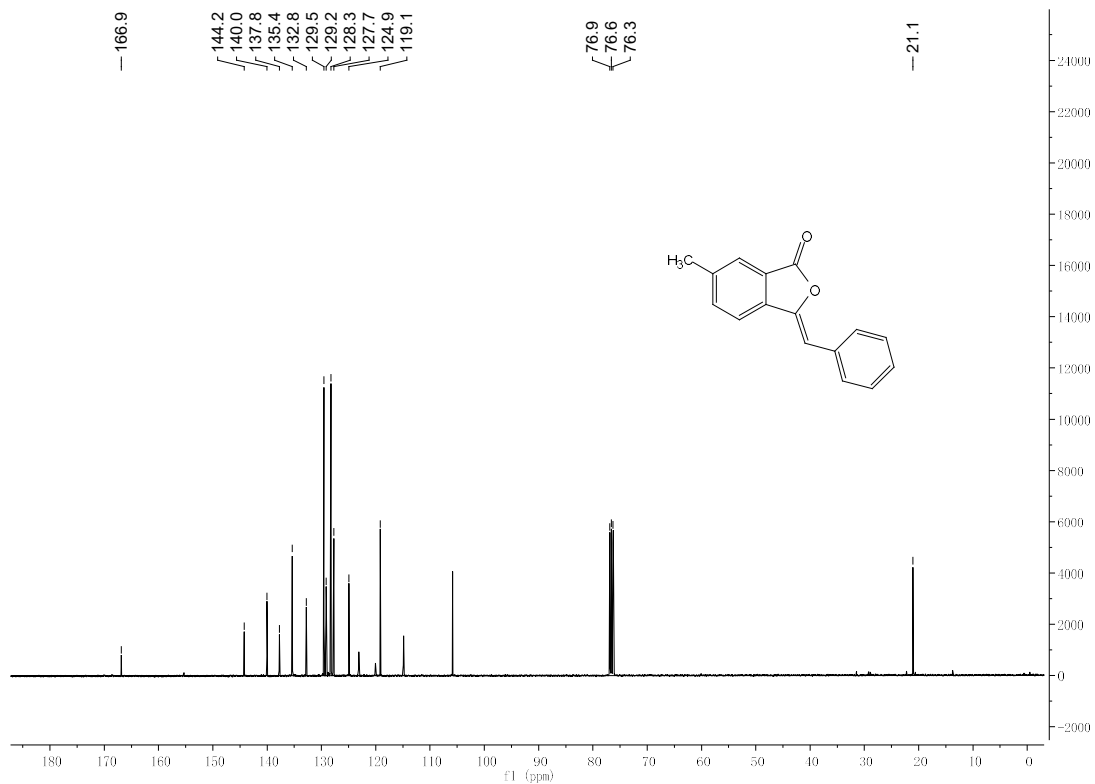
¹H NMR Spectrum of Compound 5g



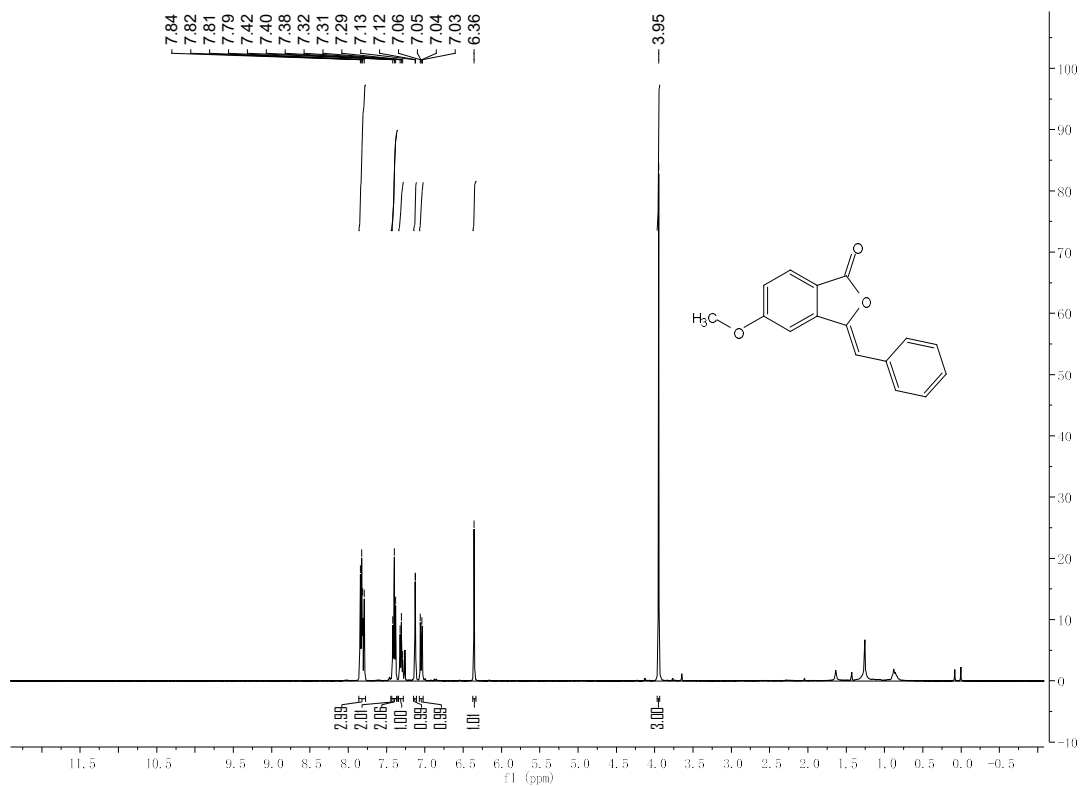
¹³C NMR Spectrum of Compound 5g



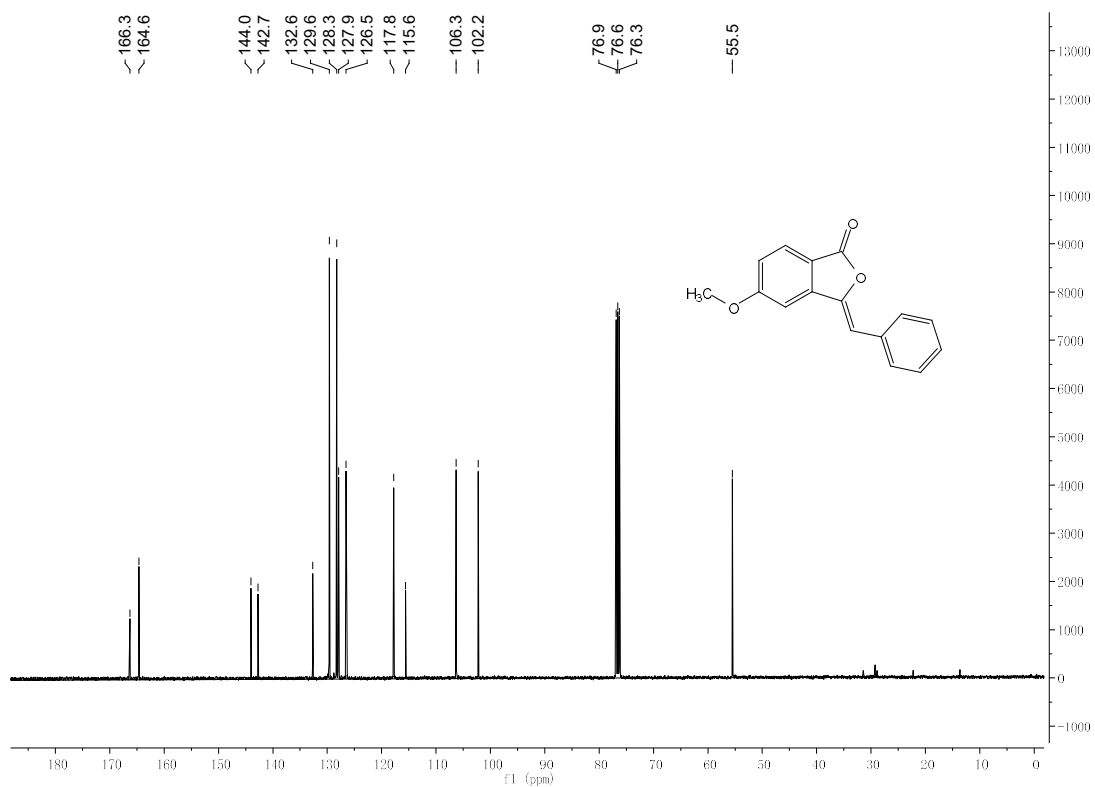
¹H NMR Spectrum of Compound 5h



¹³C NMR Spectrum of Compound 5h



¹H NMR Spectrum of Compound 5i



¹³C NMR Spectrum of Compound 5i