

Supporting Information

Palladium-Catalyzed *anti*-Markovnikov Oxidative Acetalization of Activated Olefins with Iron(III) Sulphate as Reoxidant

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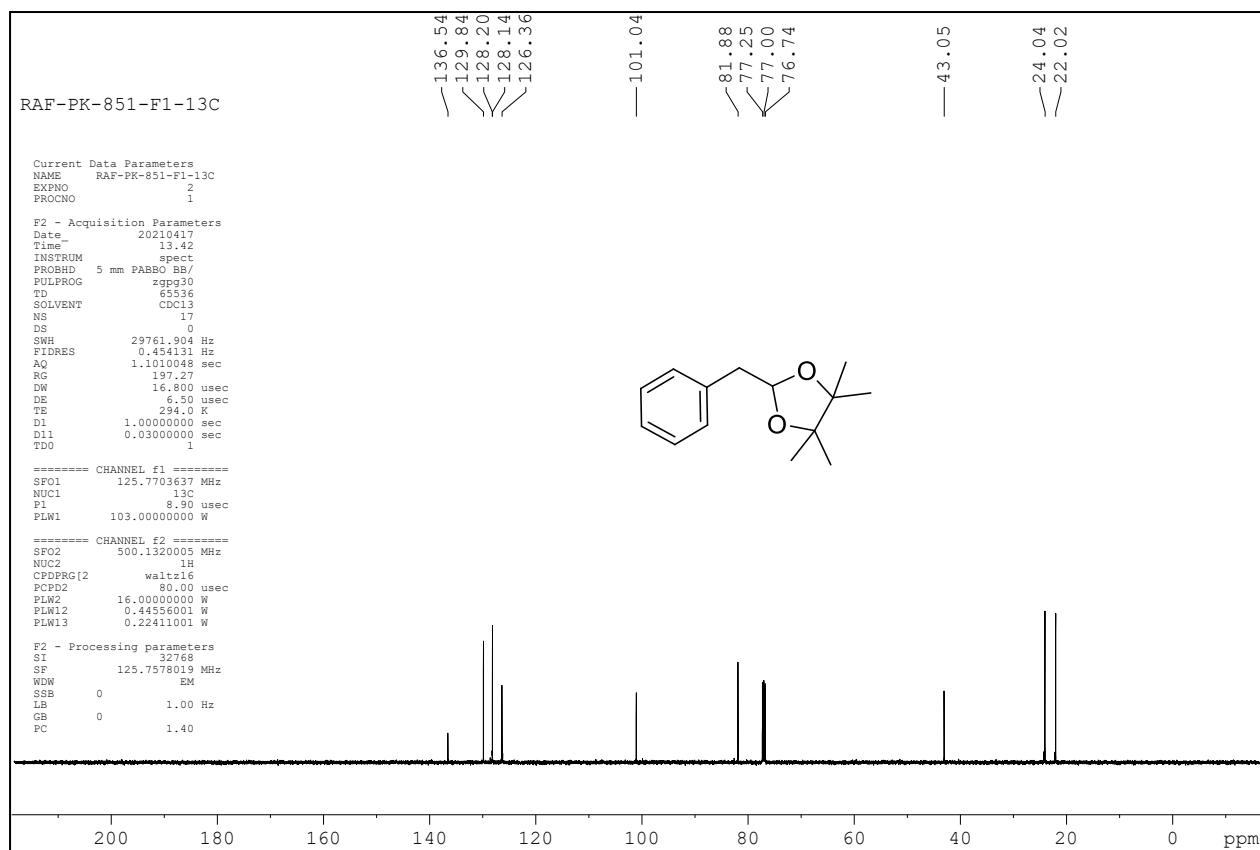
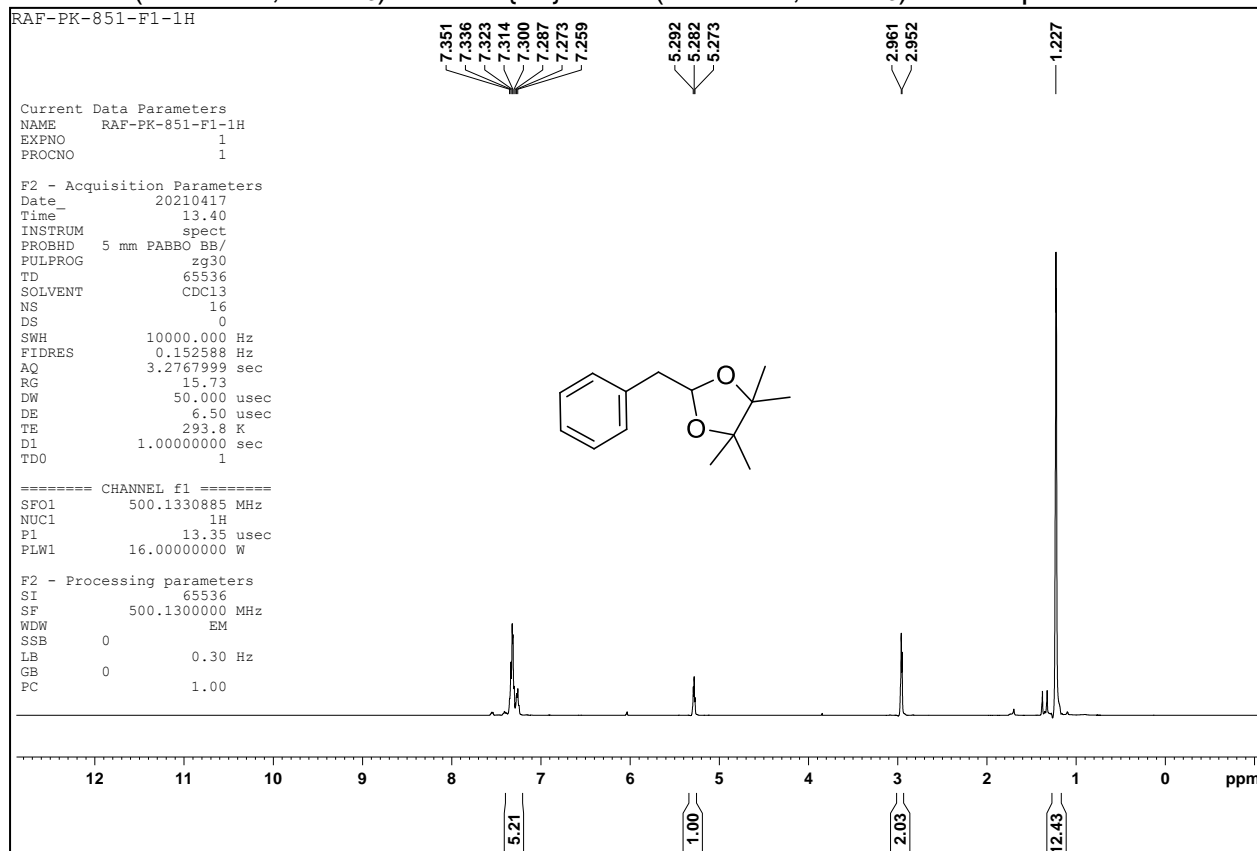
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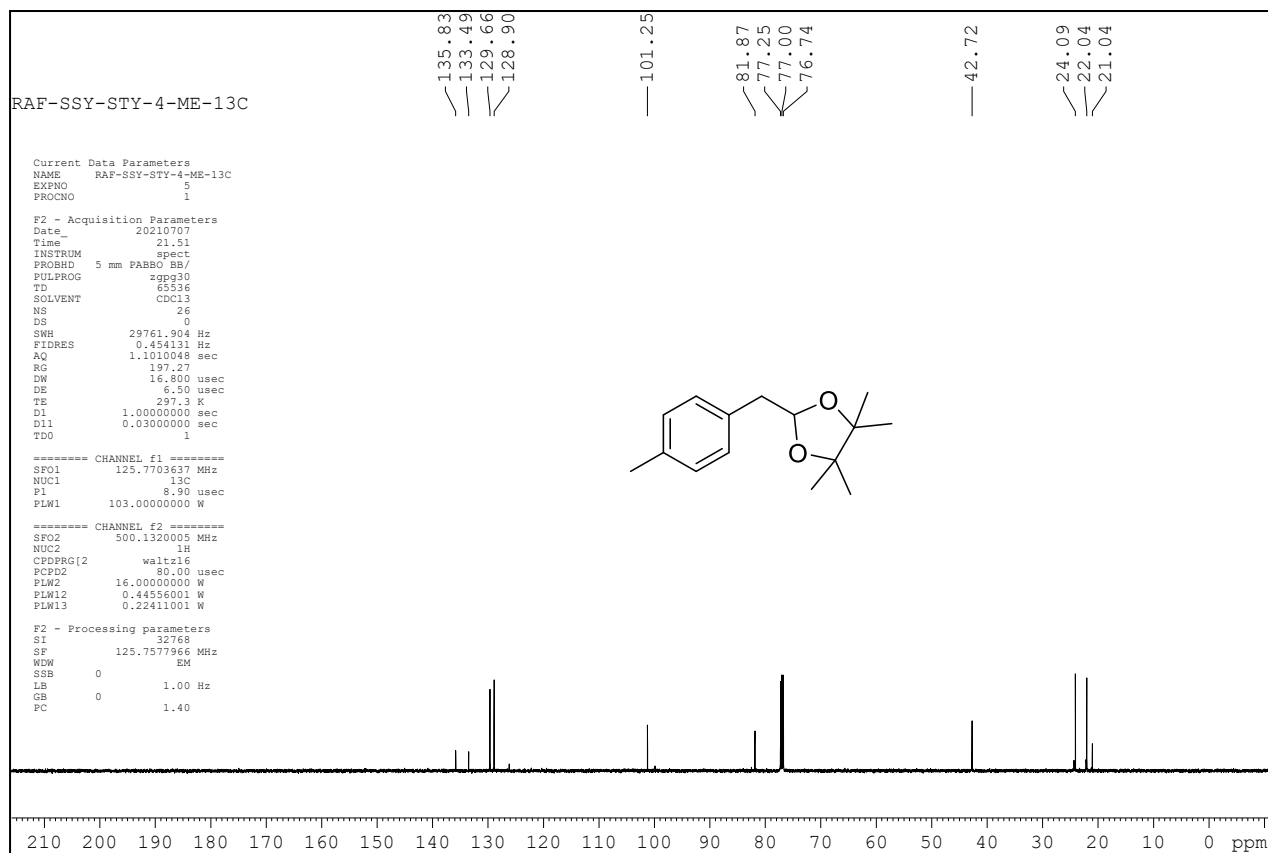
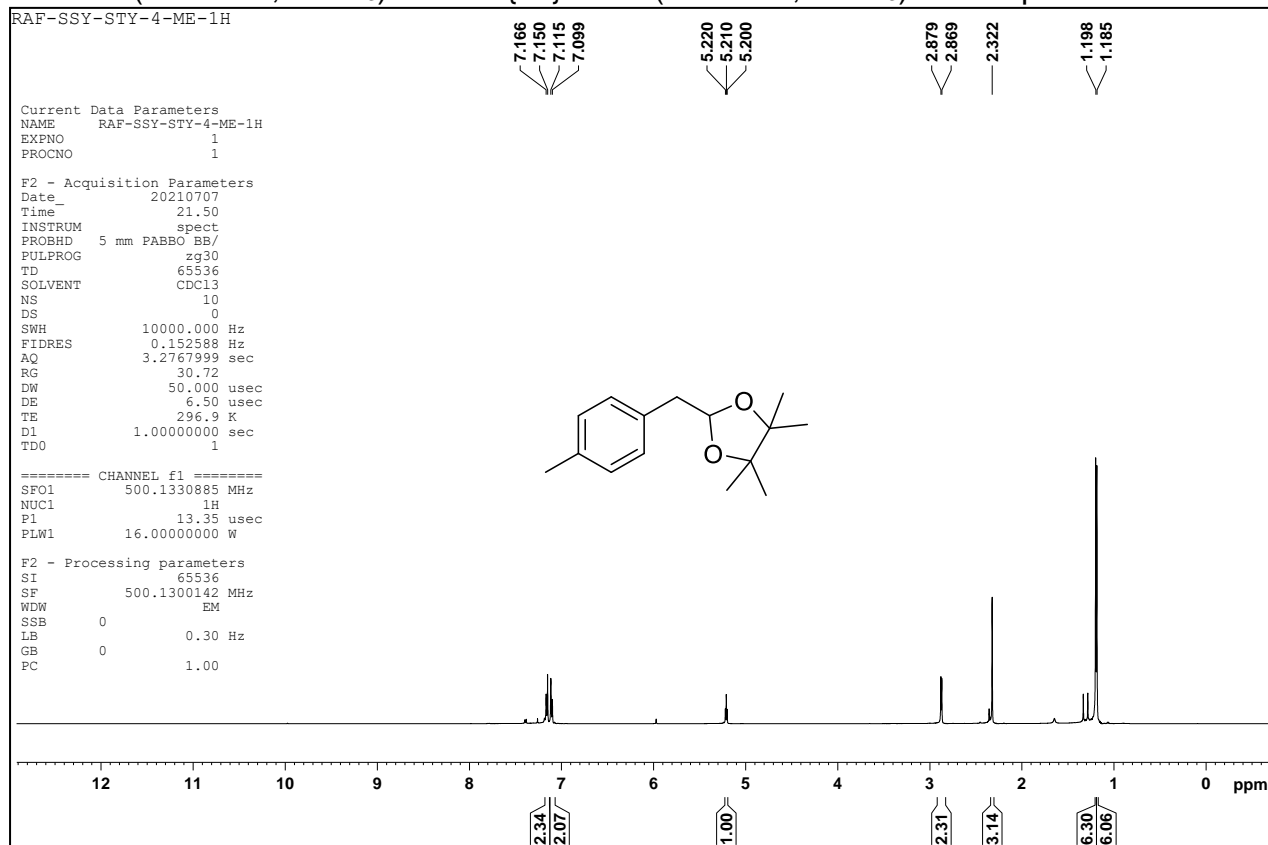
¹H and ¹³C NMR Spectra of all Compounds

S2–S113

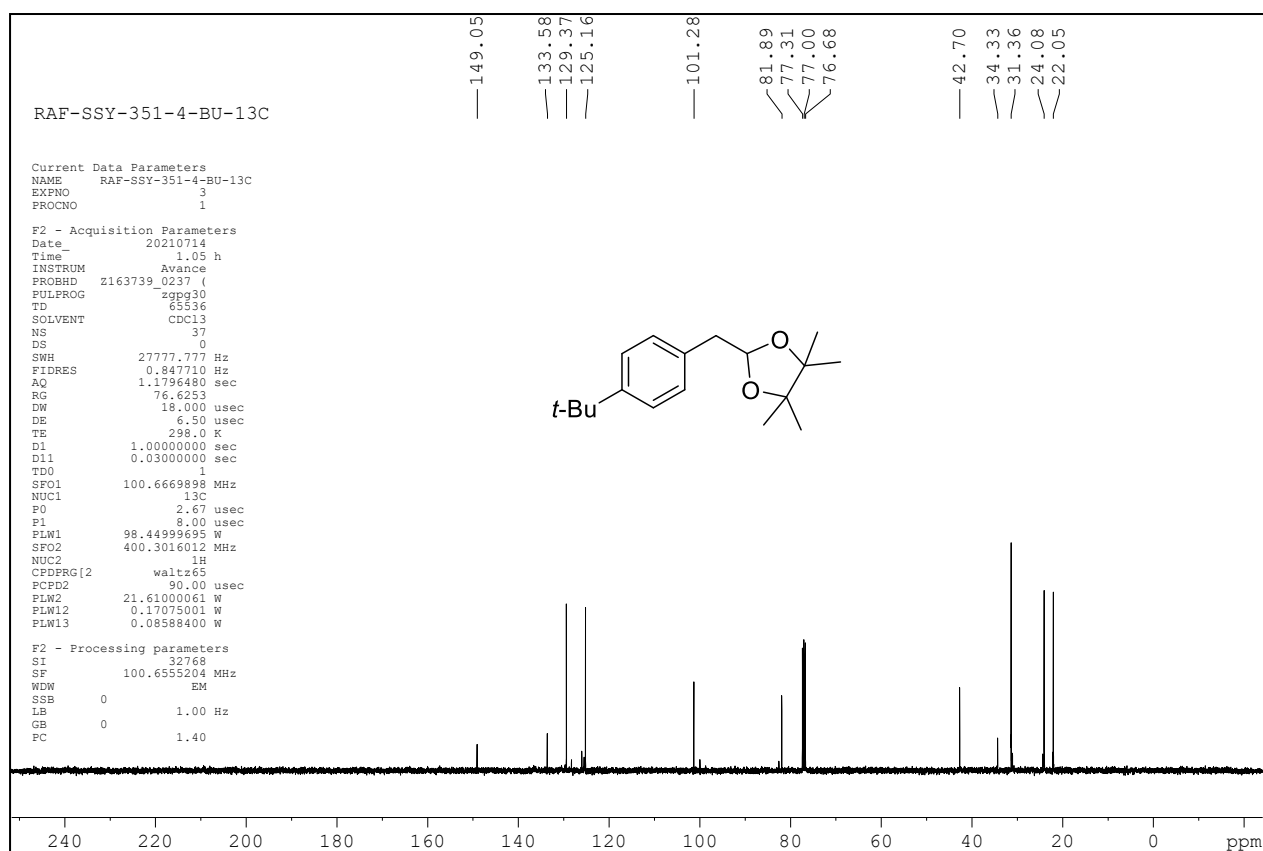
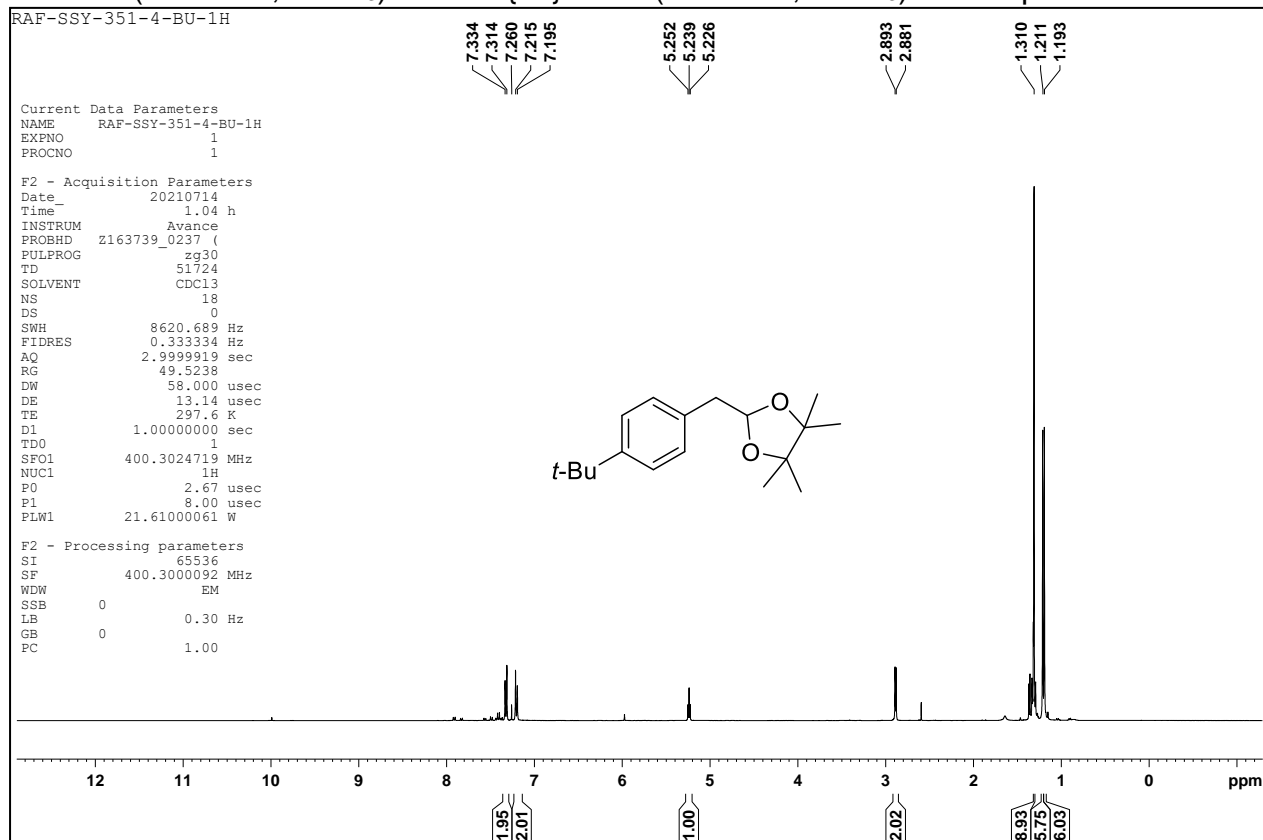
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 2a



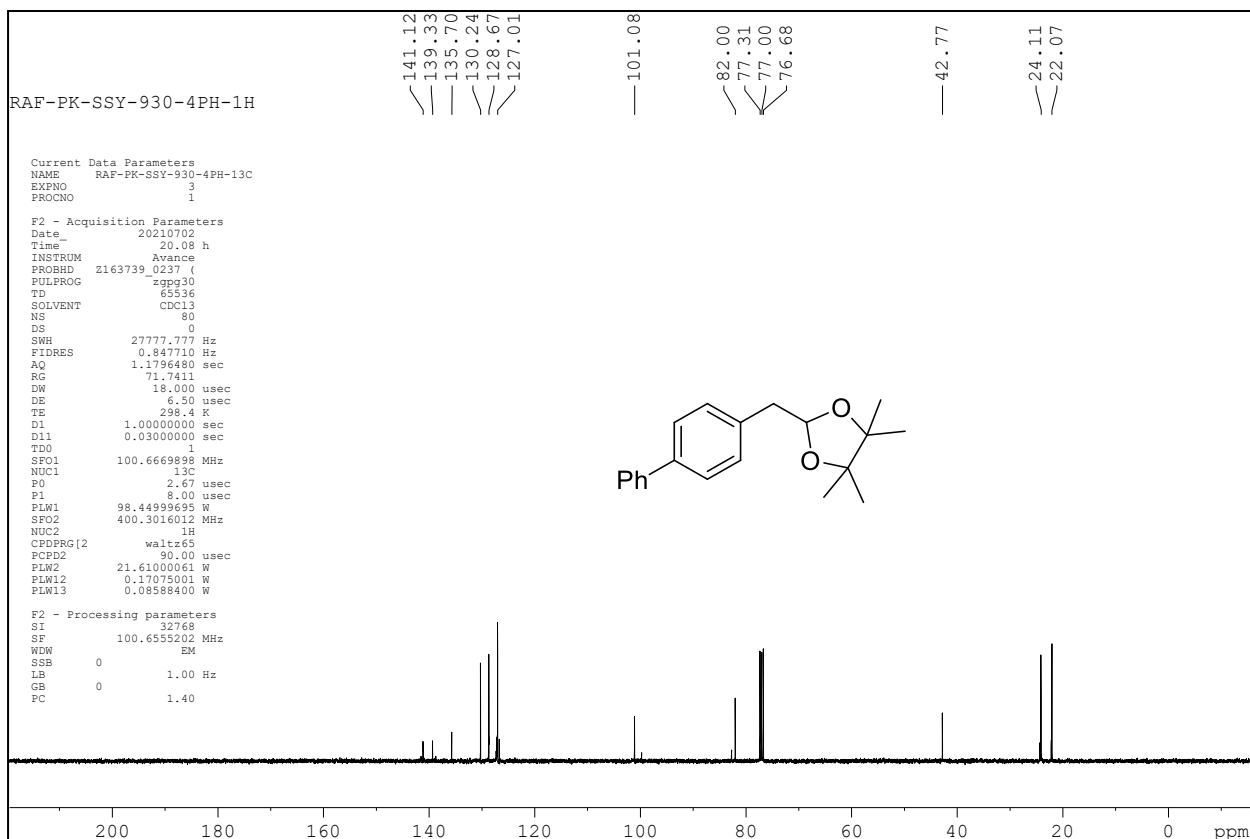
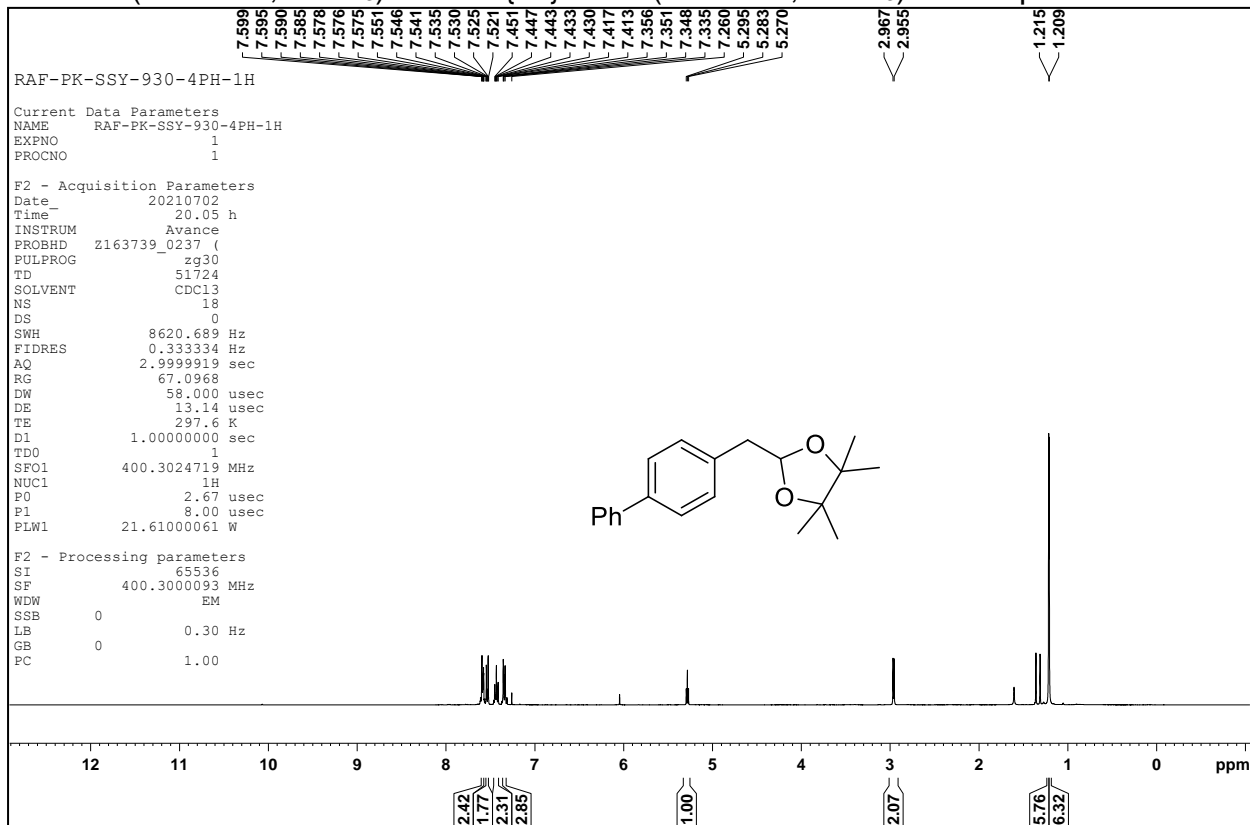
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **2b**



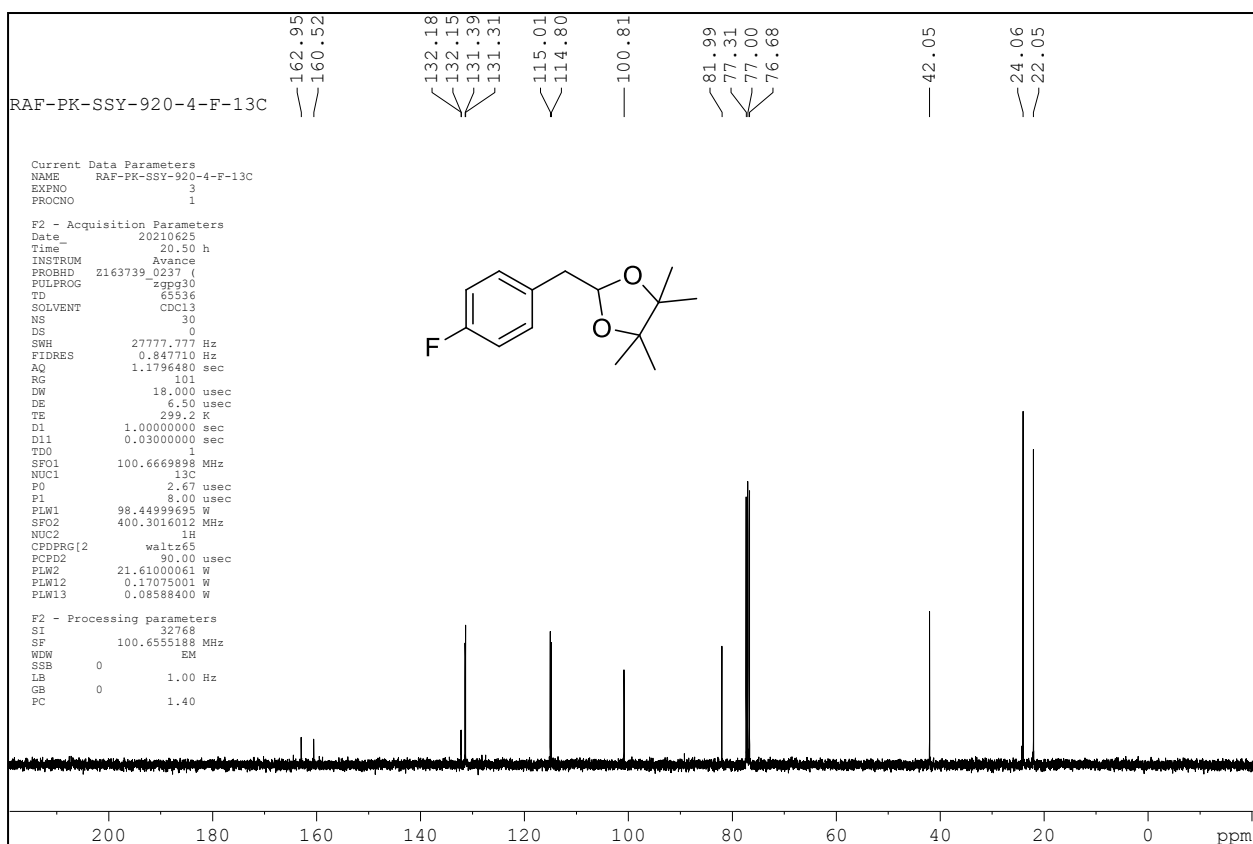
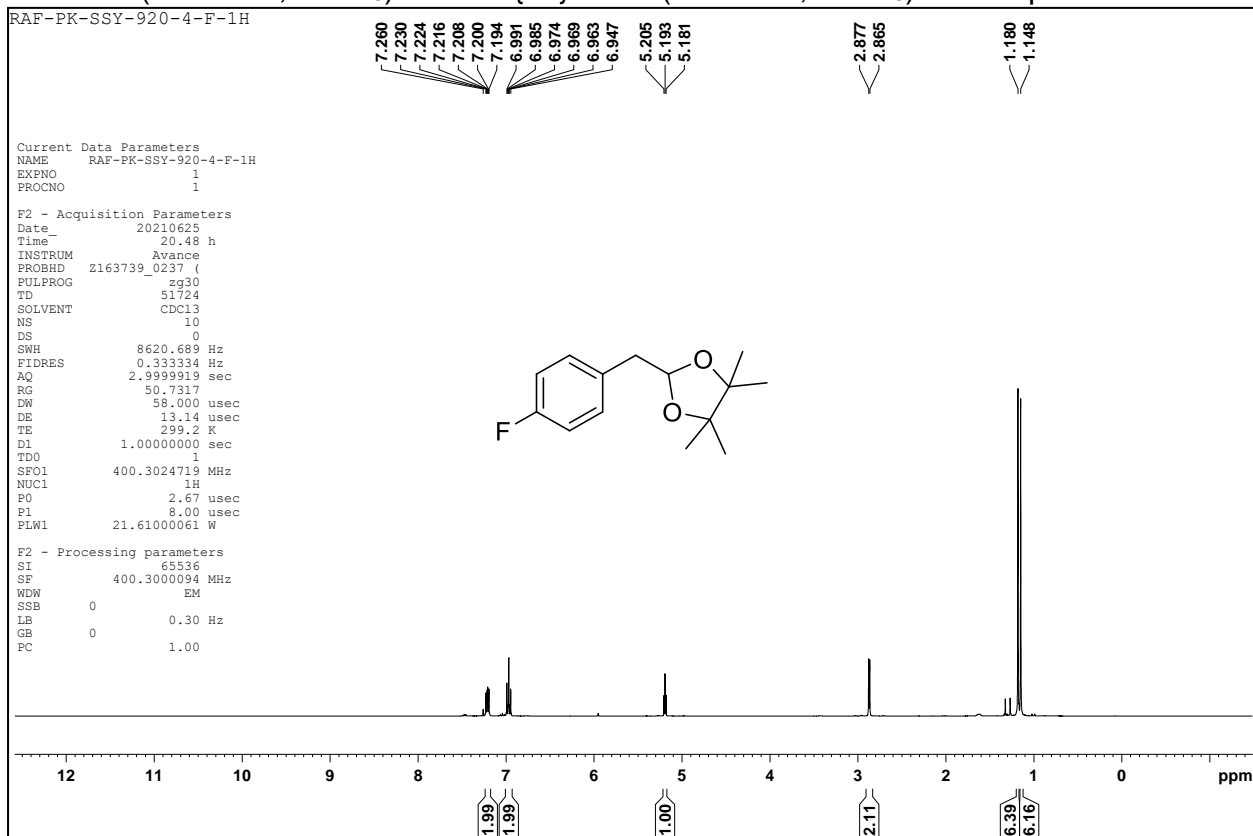
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **2c**



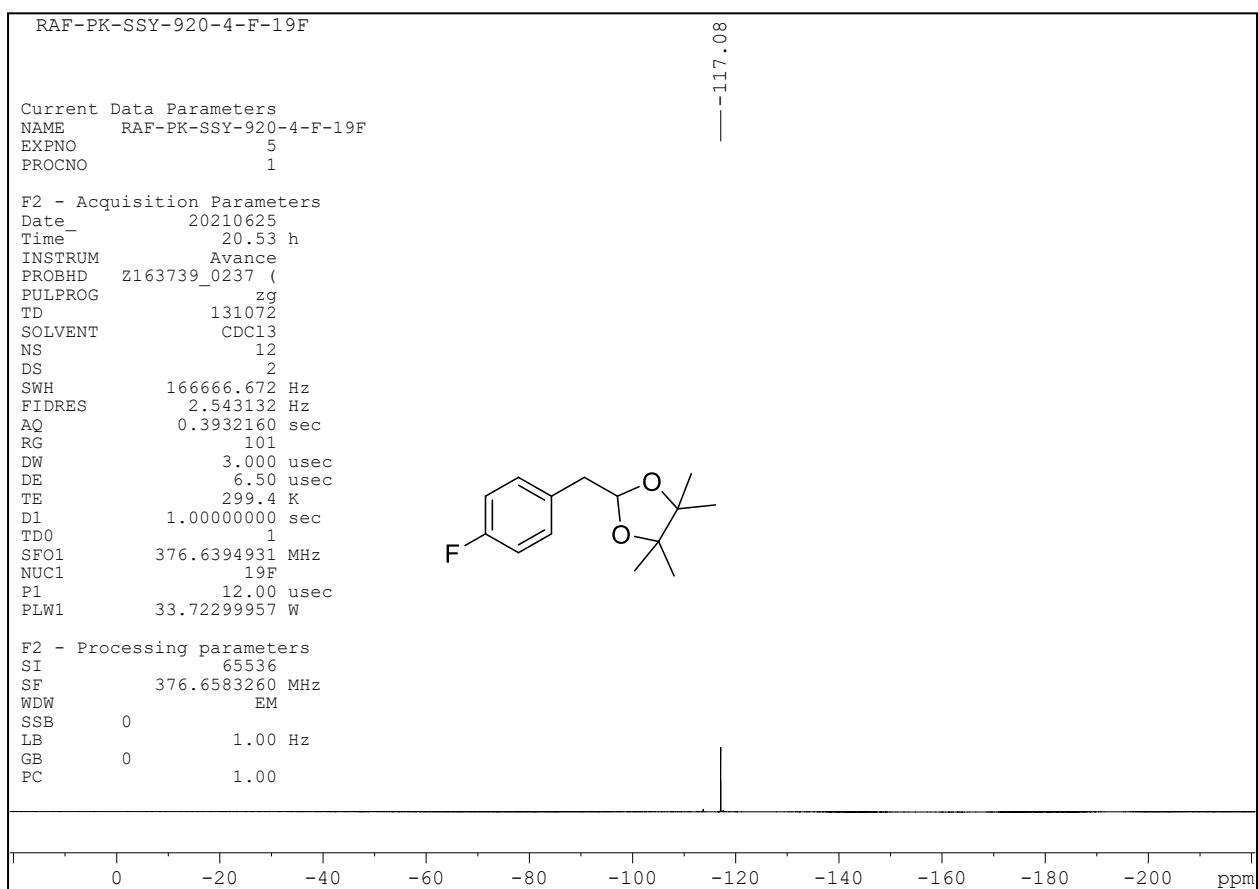
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 2d



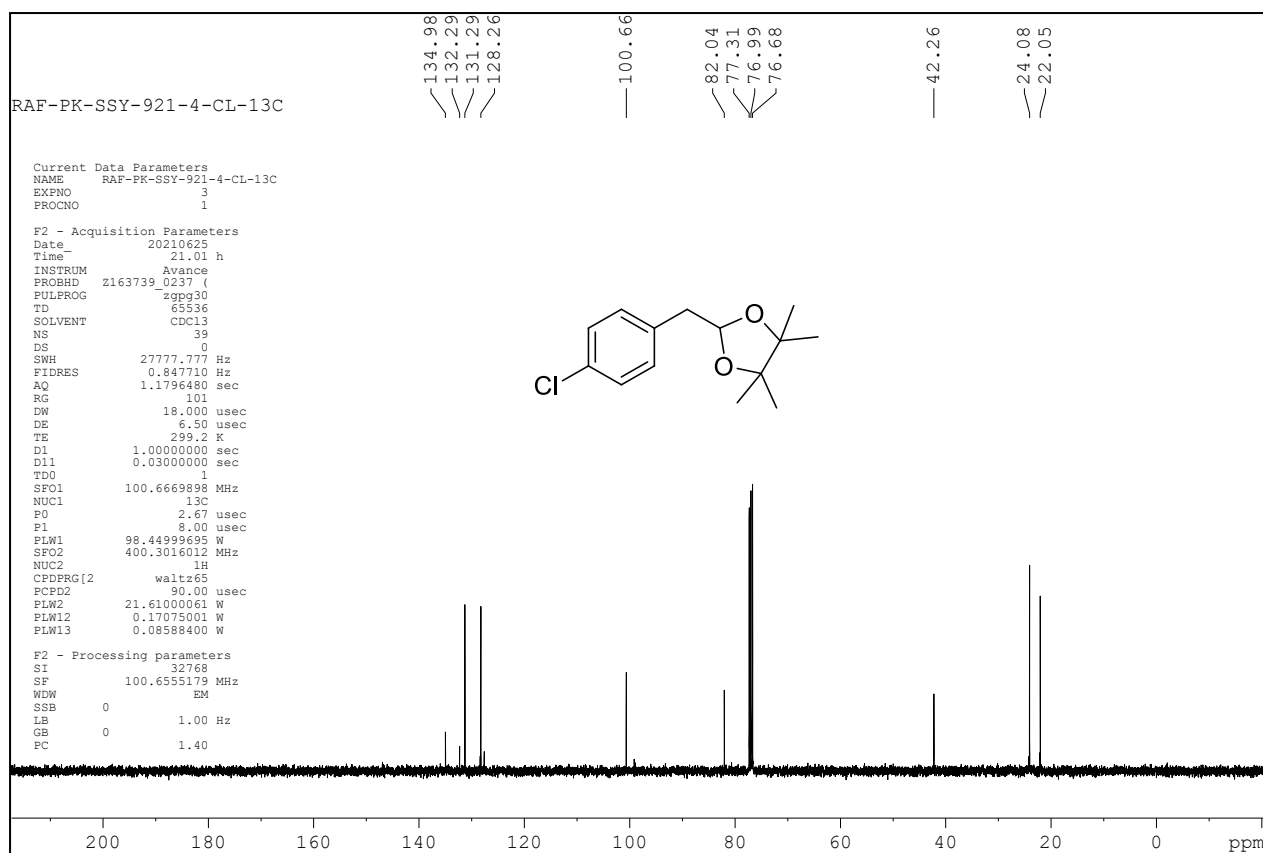
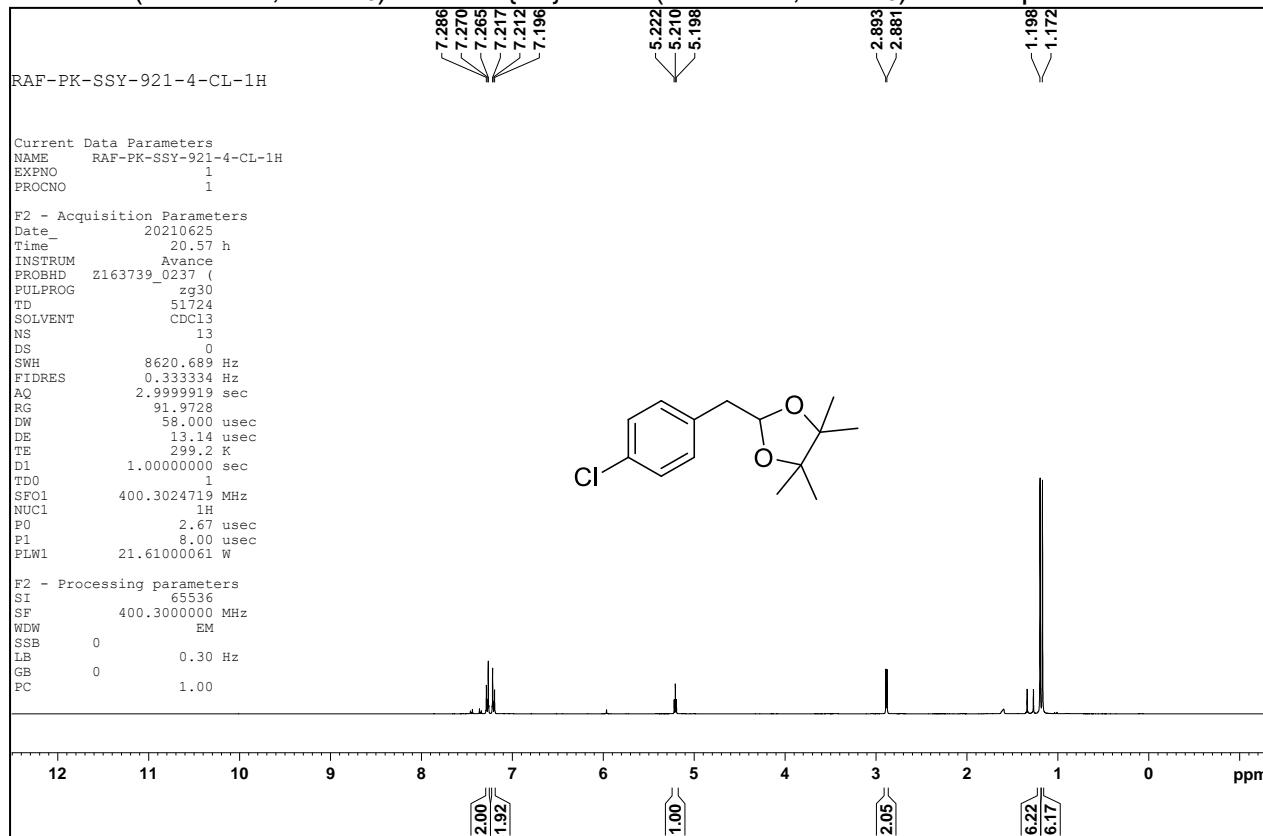
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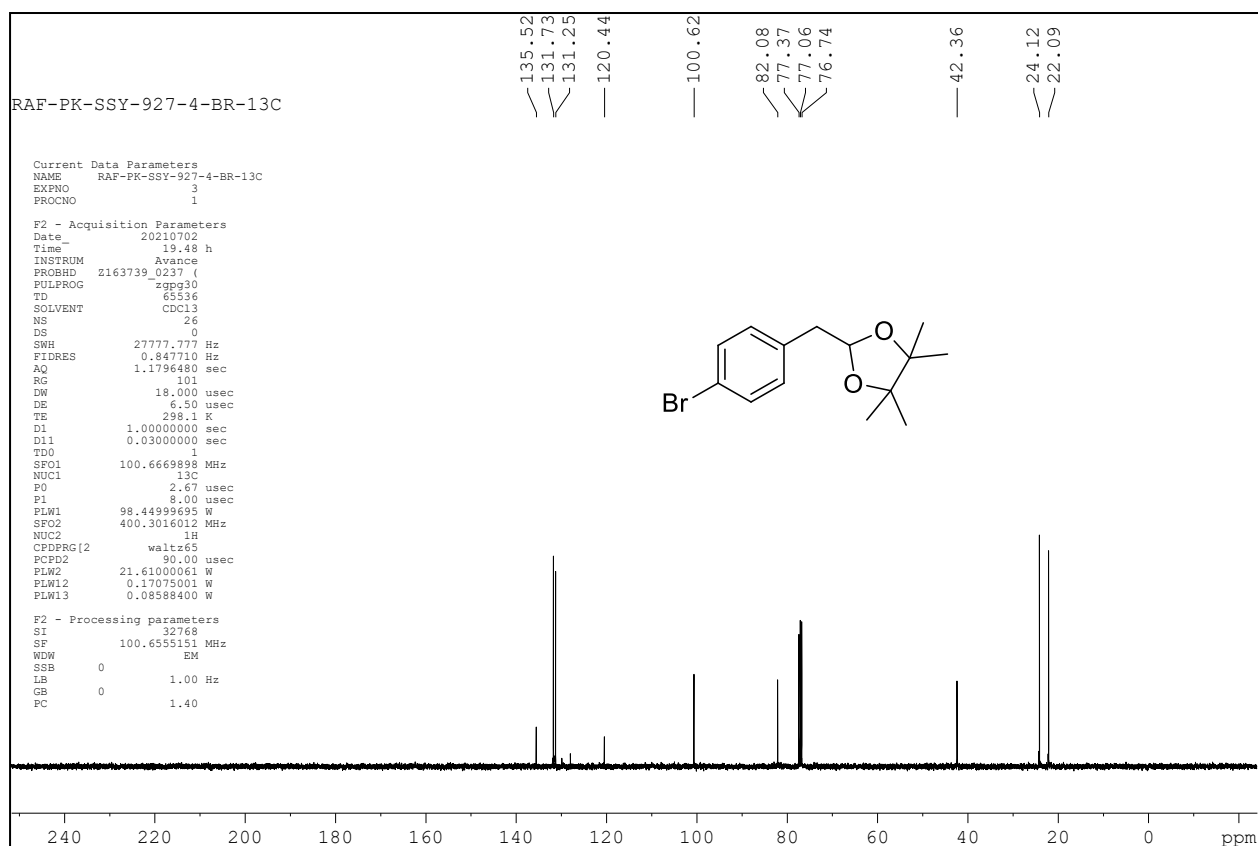
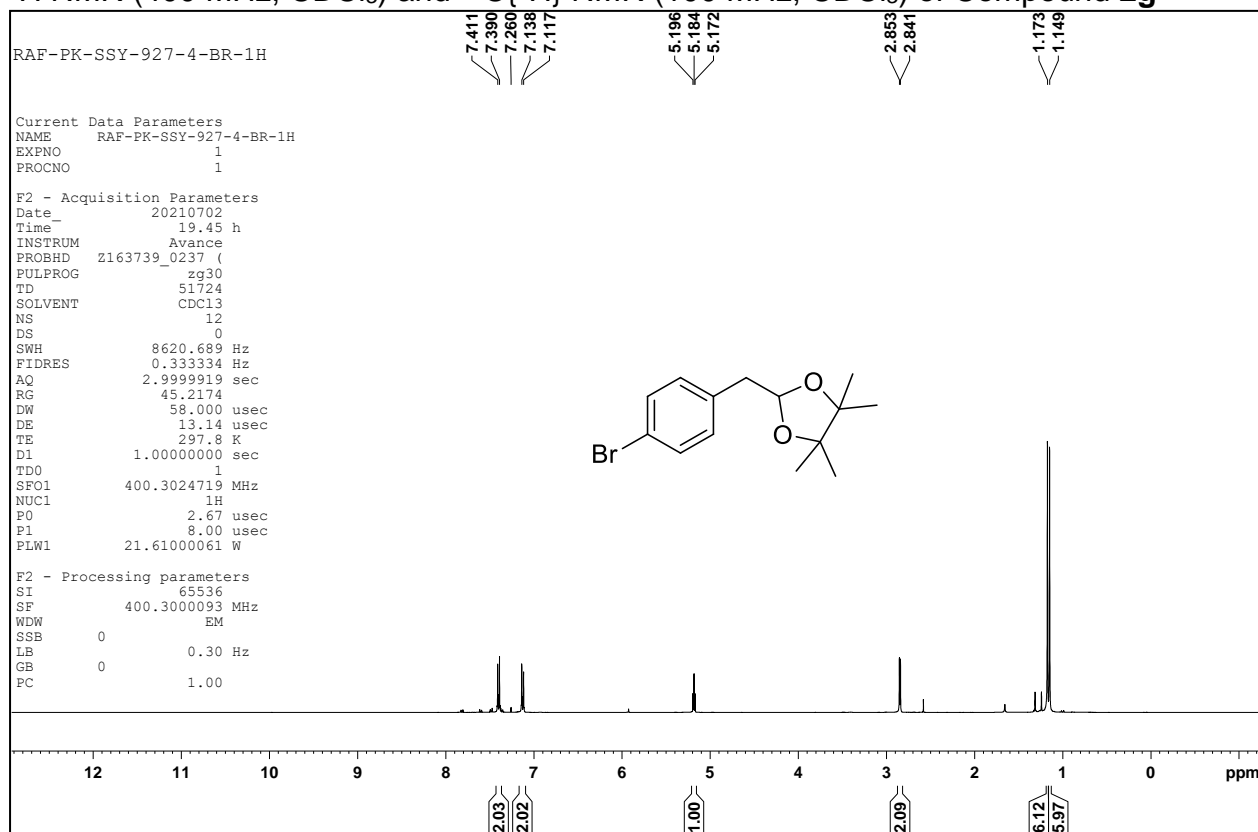
¹⁹F NMR (376 MHz, CDCl₃) of Compound 2e



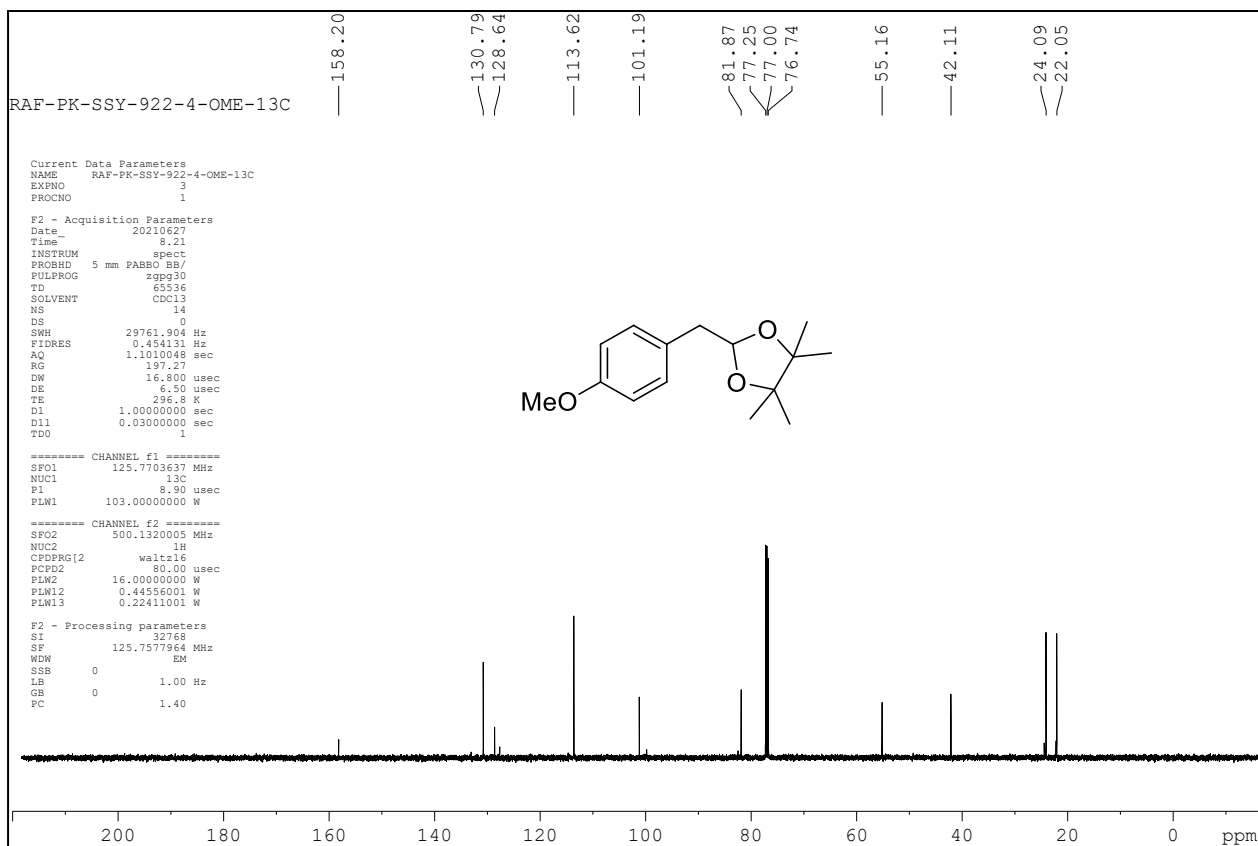
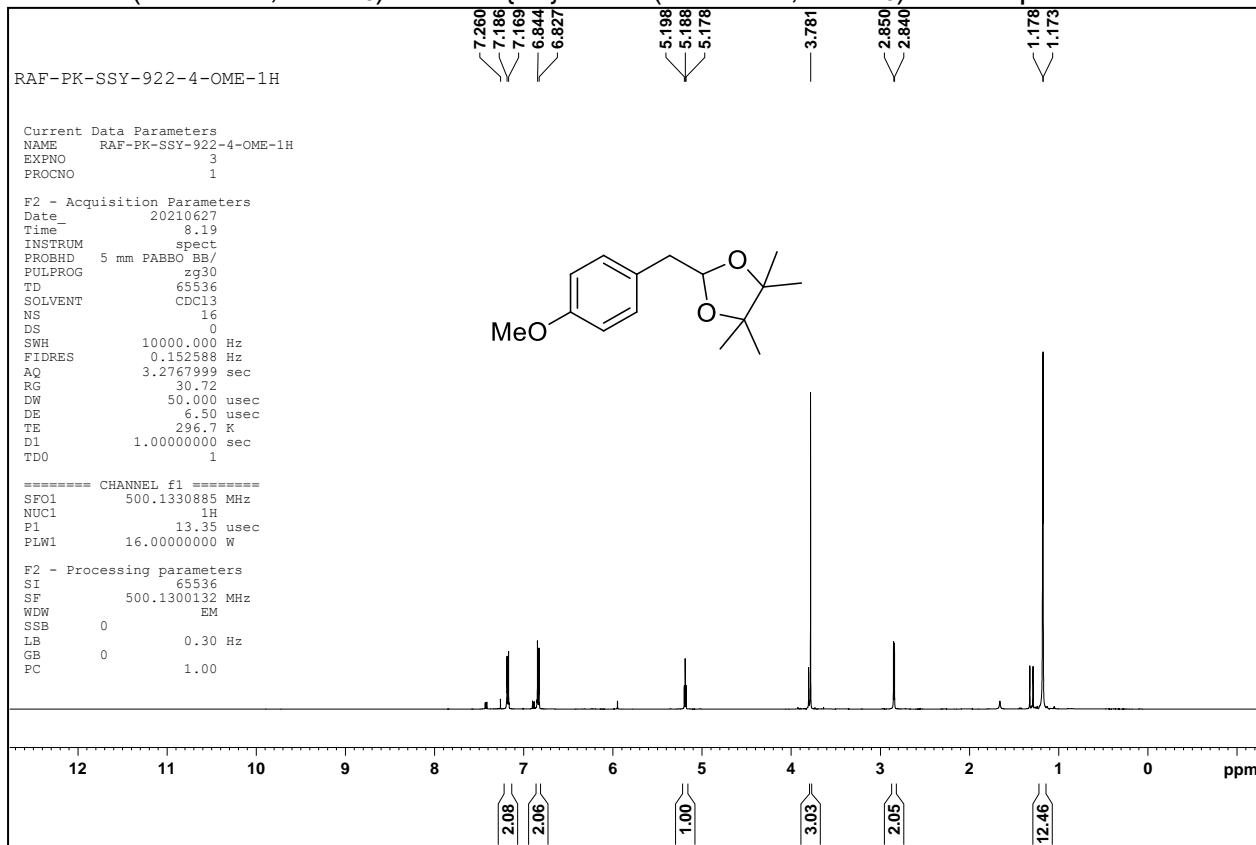
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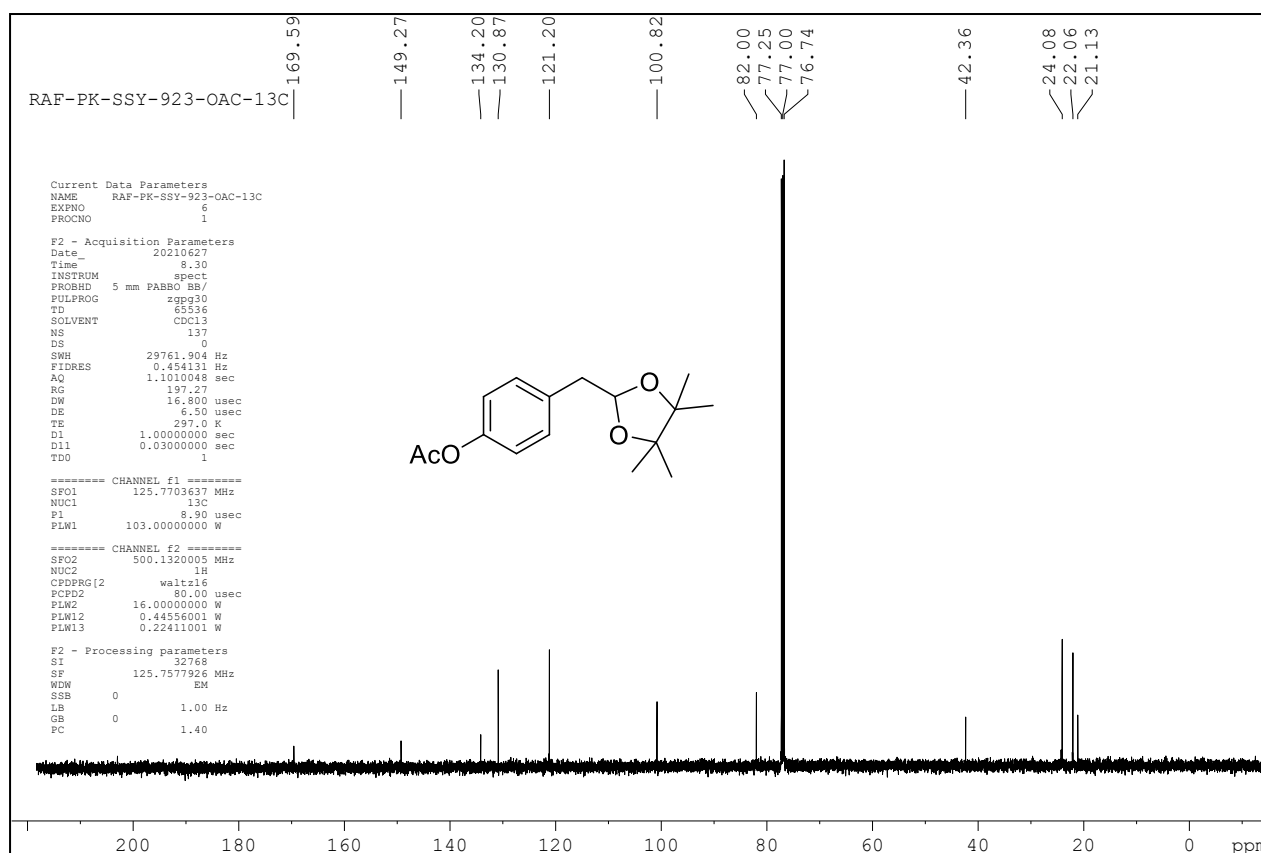
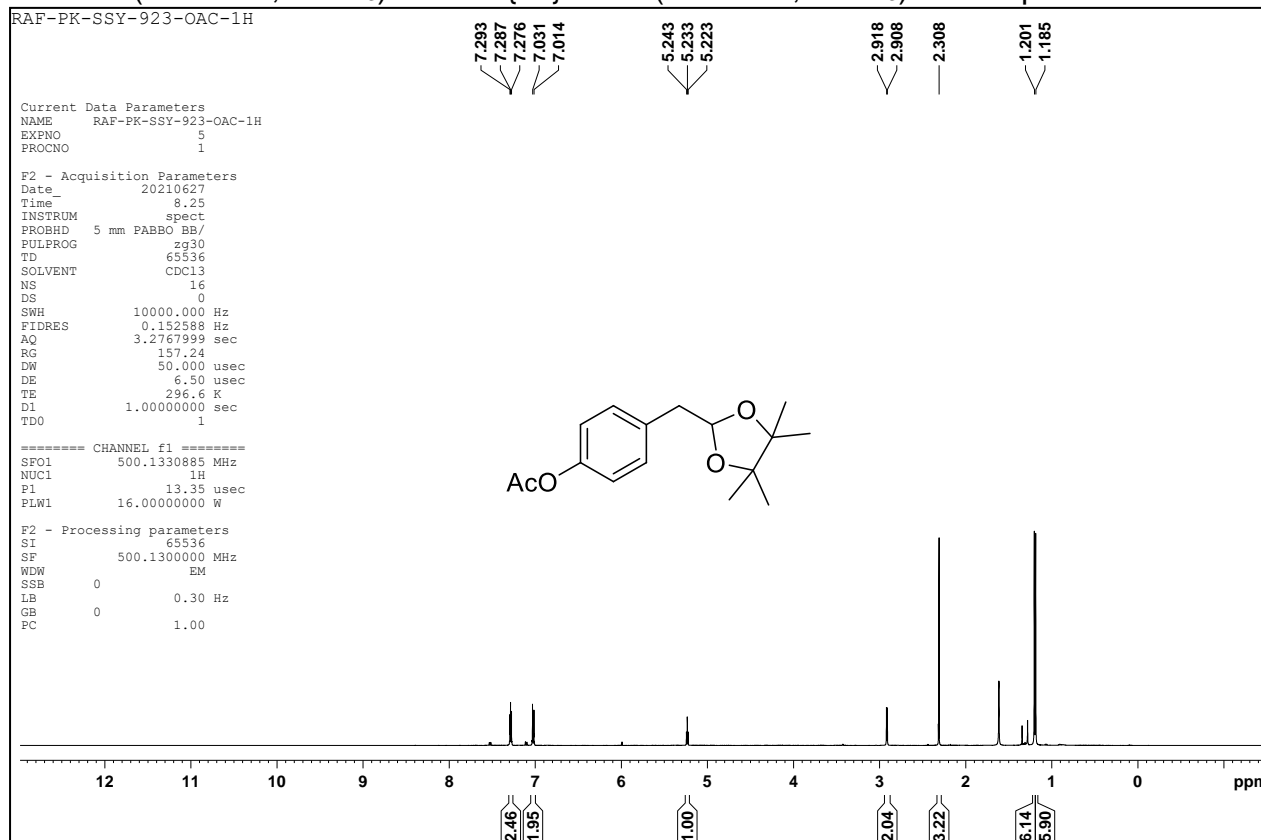
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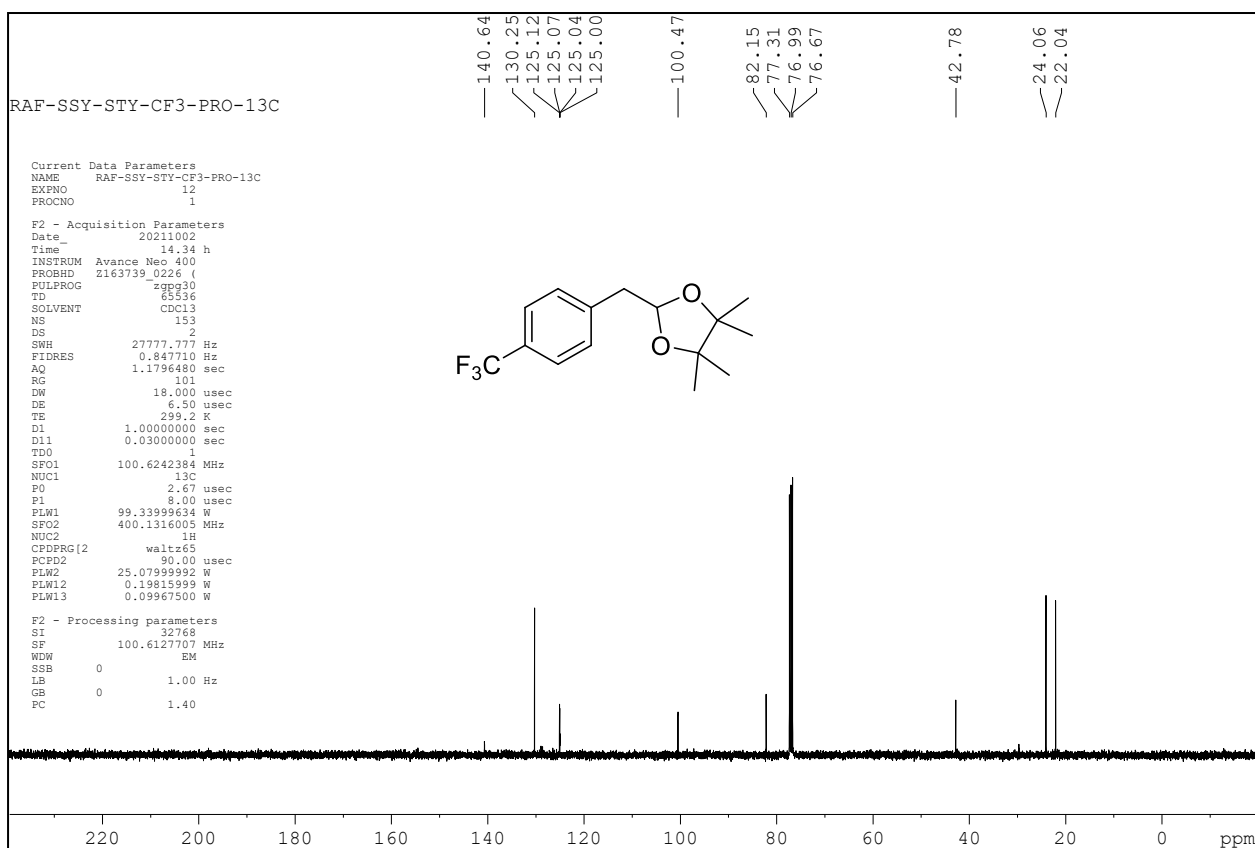
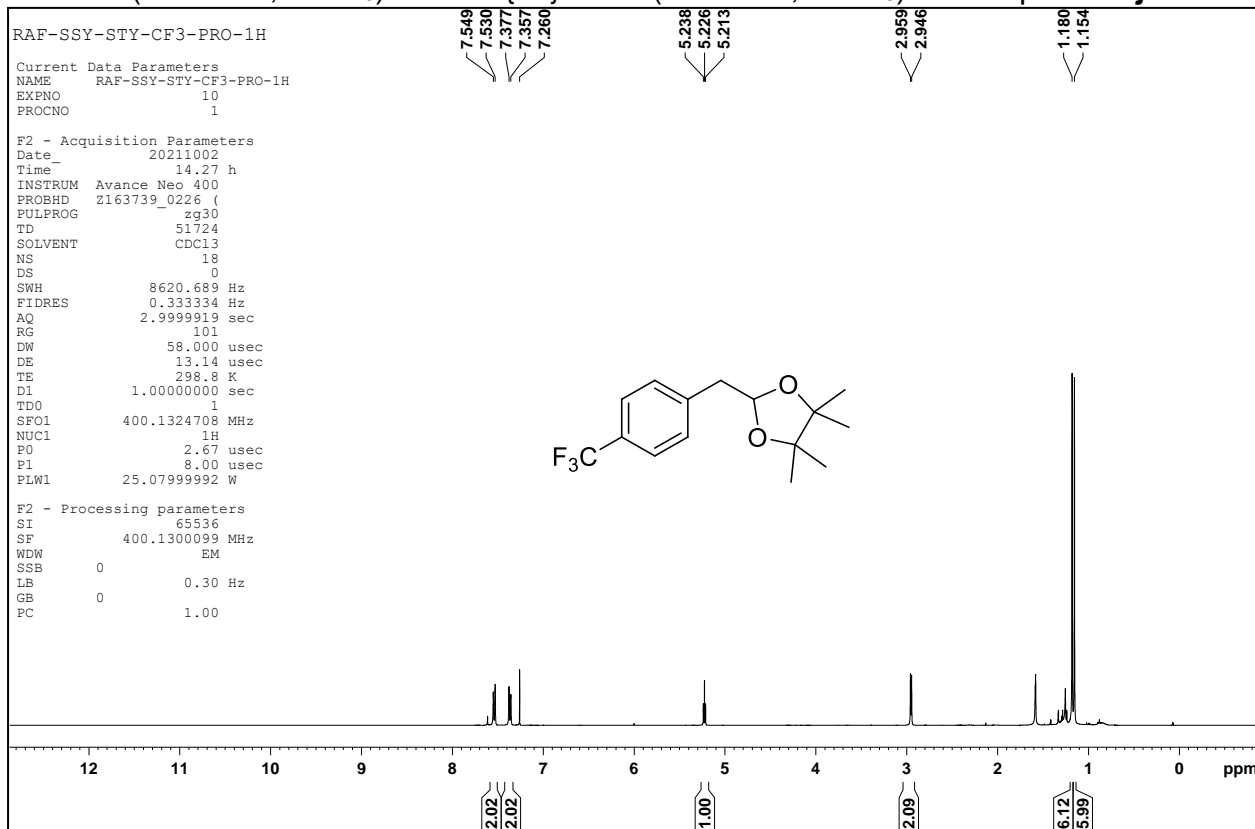
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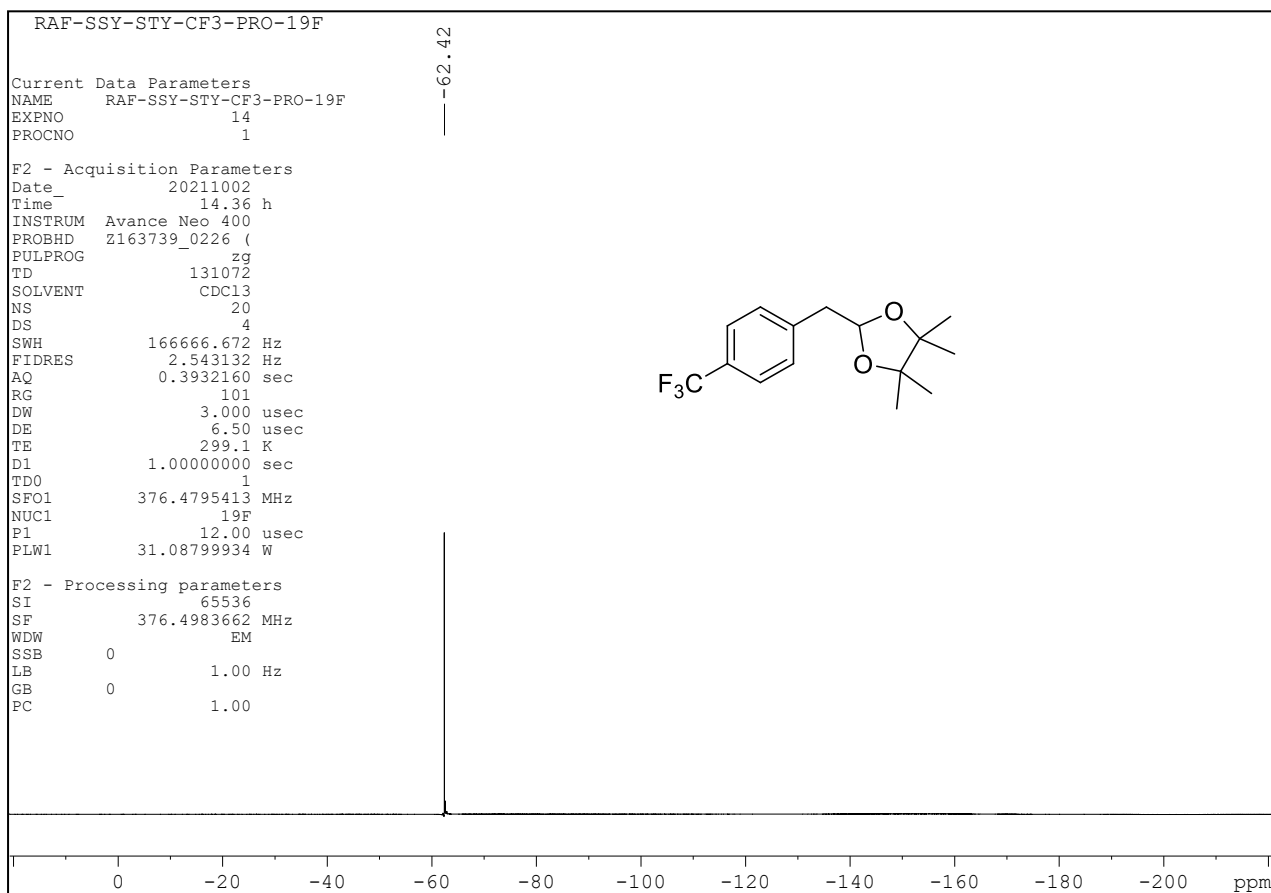
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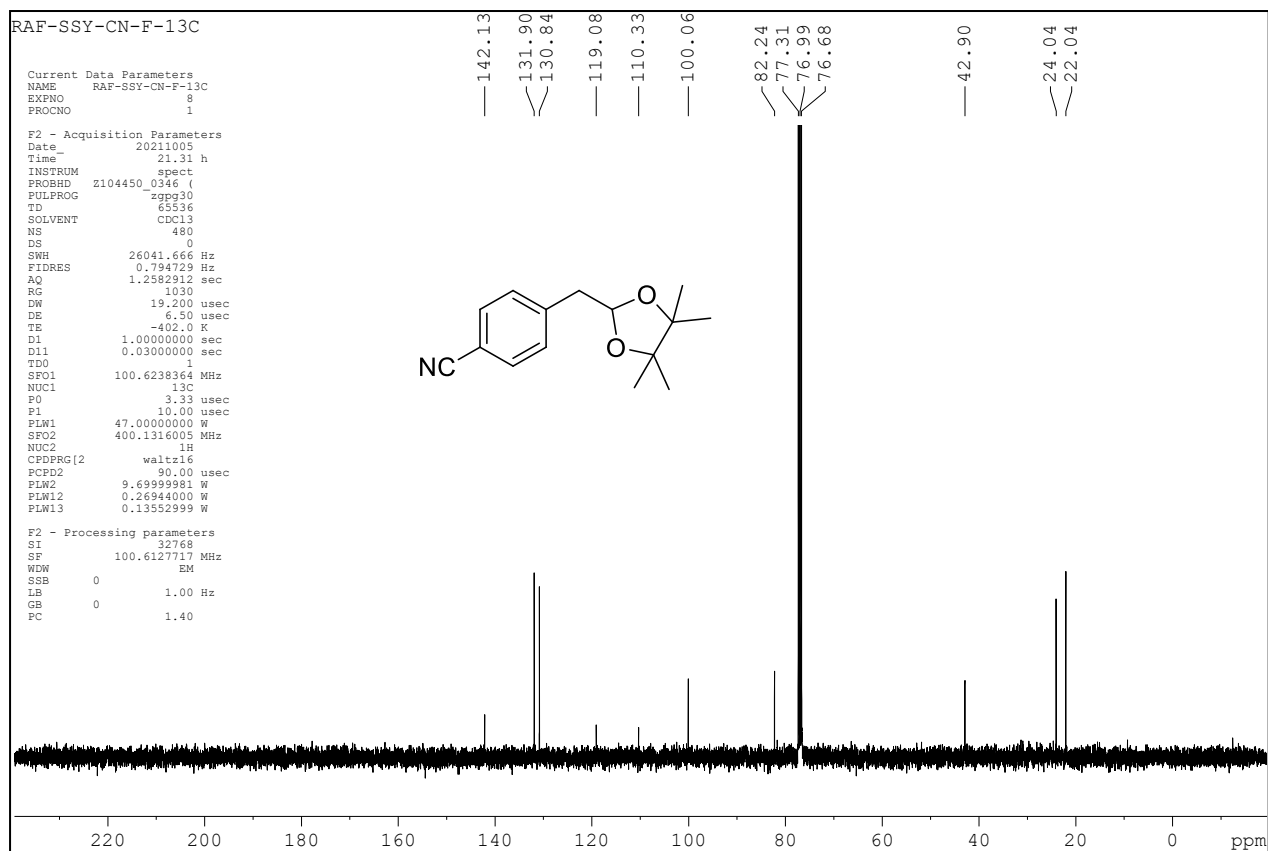
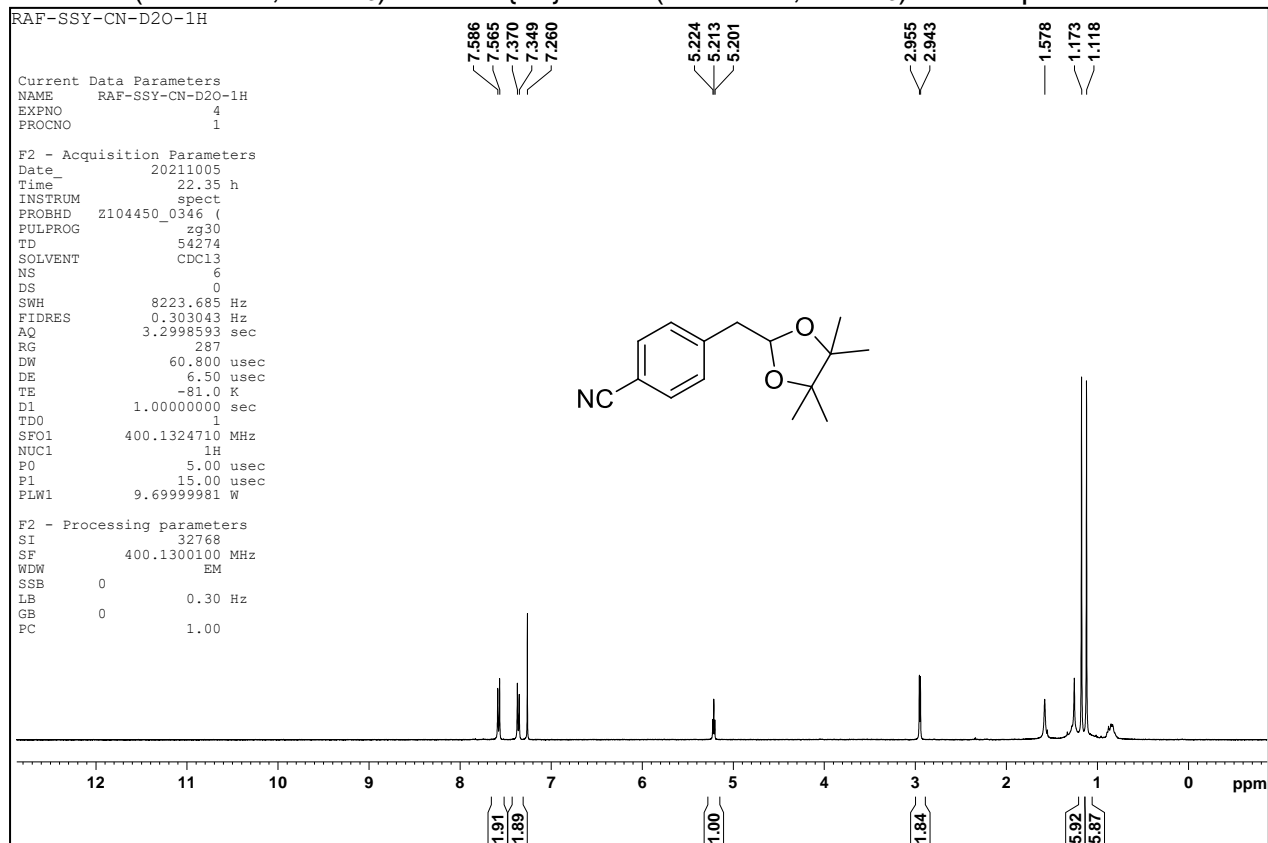
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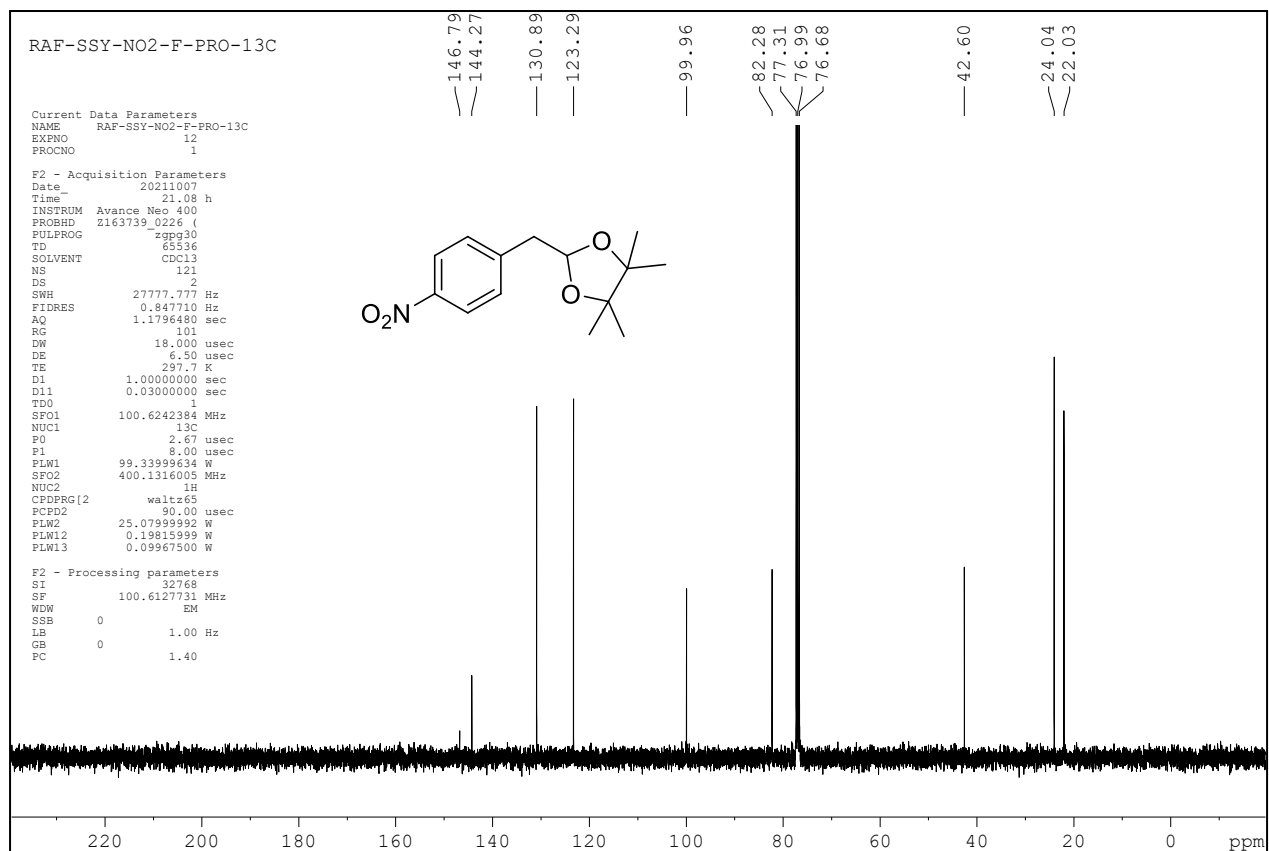
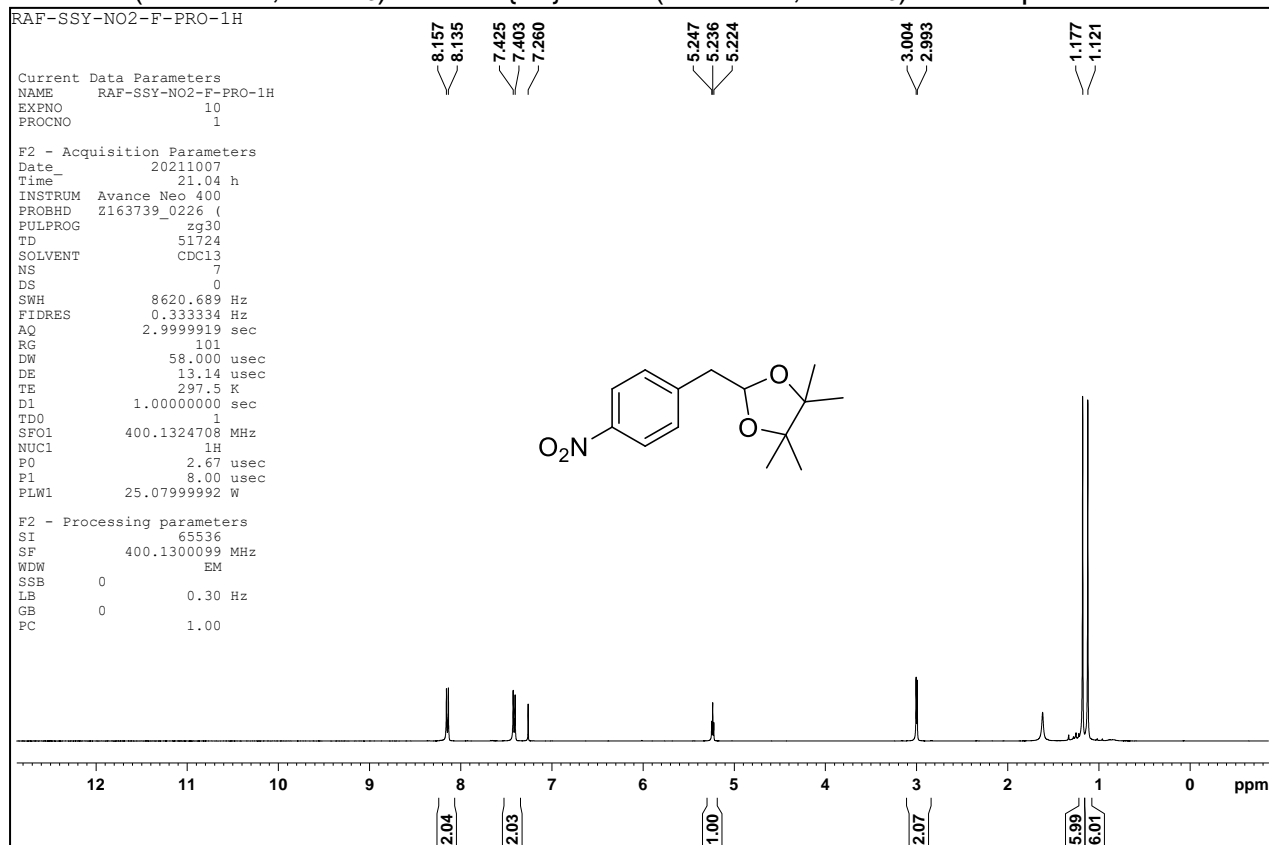
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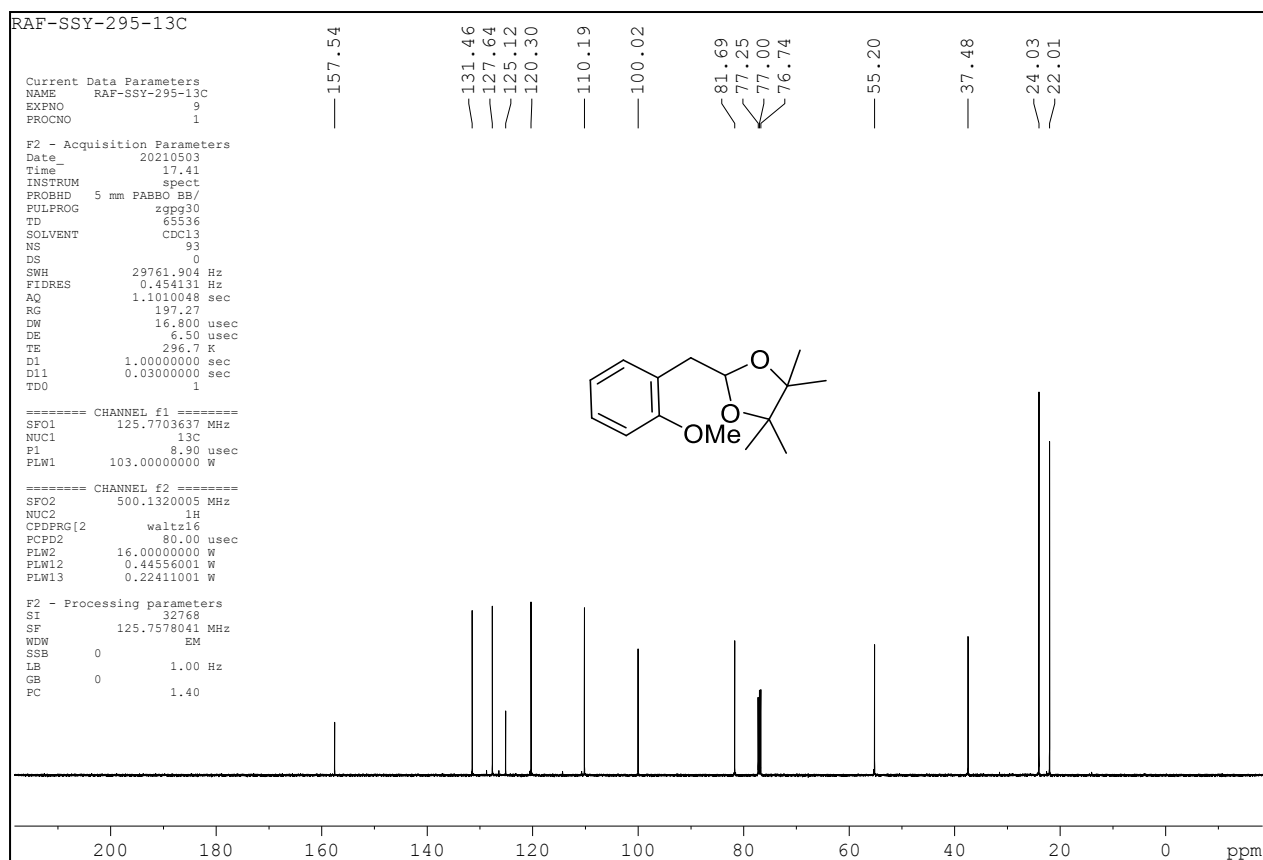
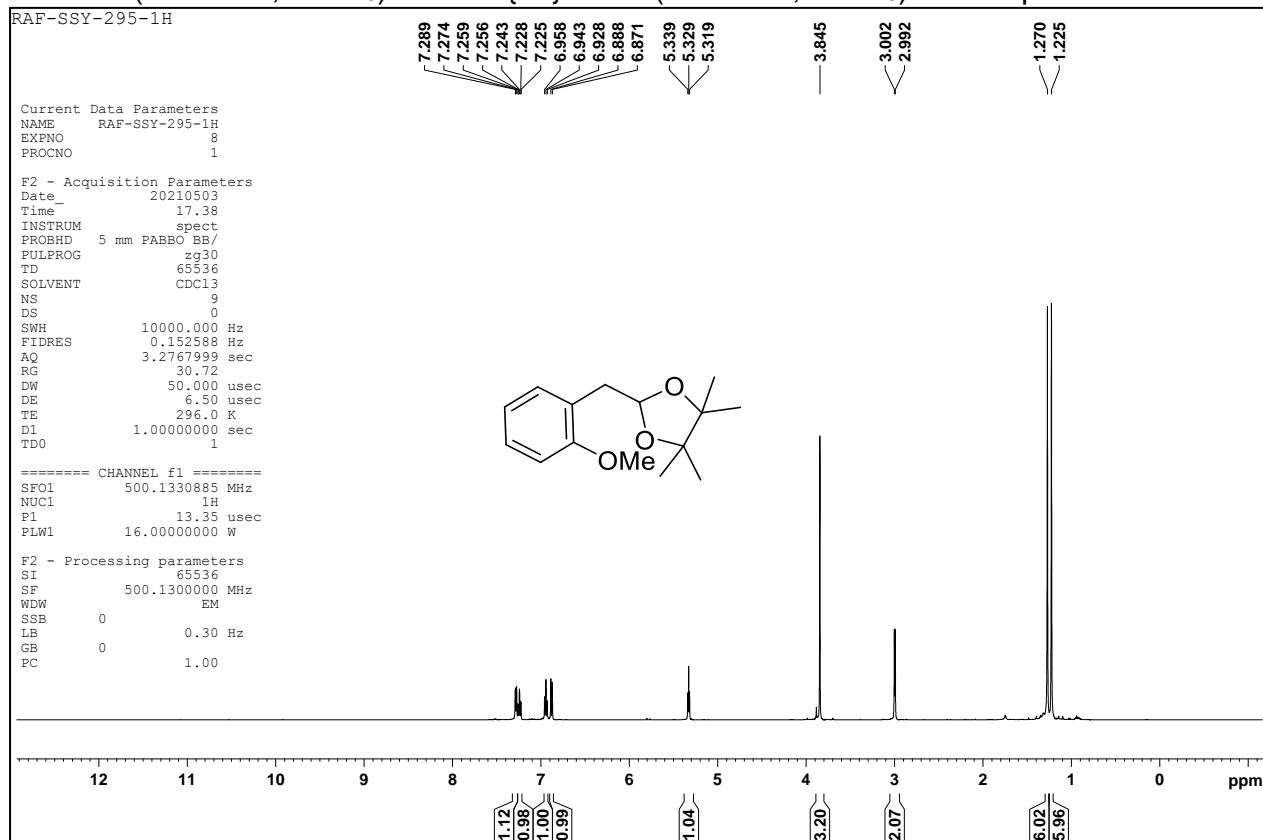
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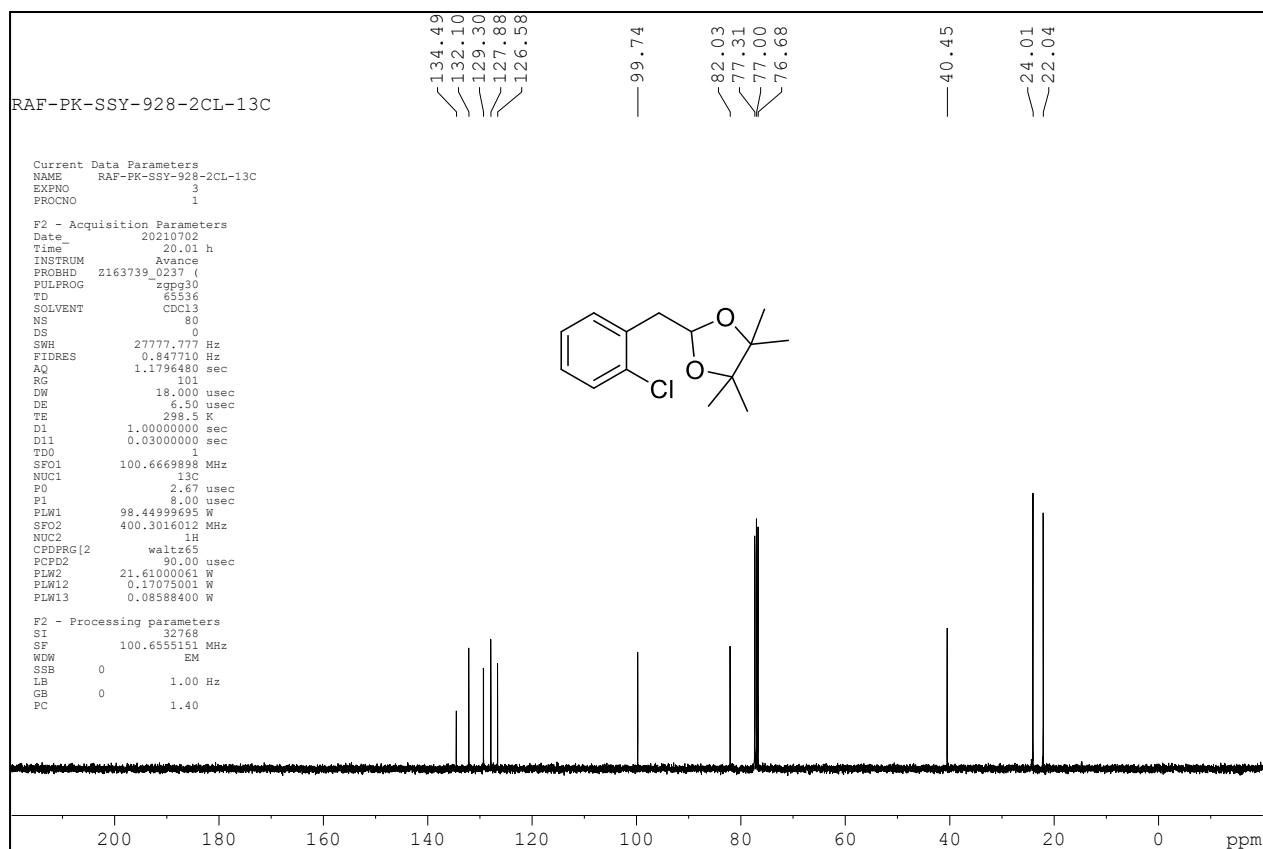
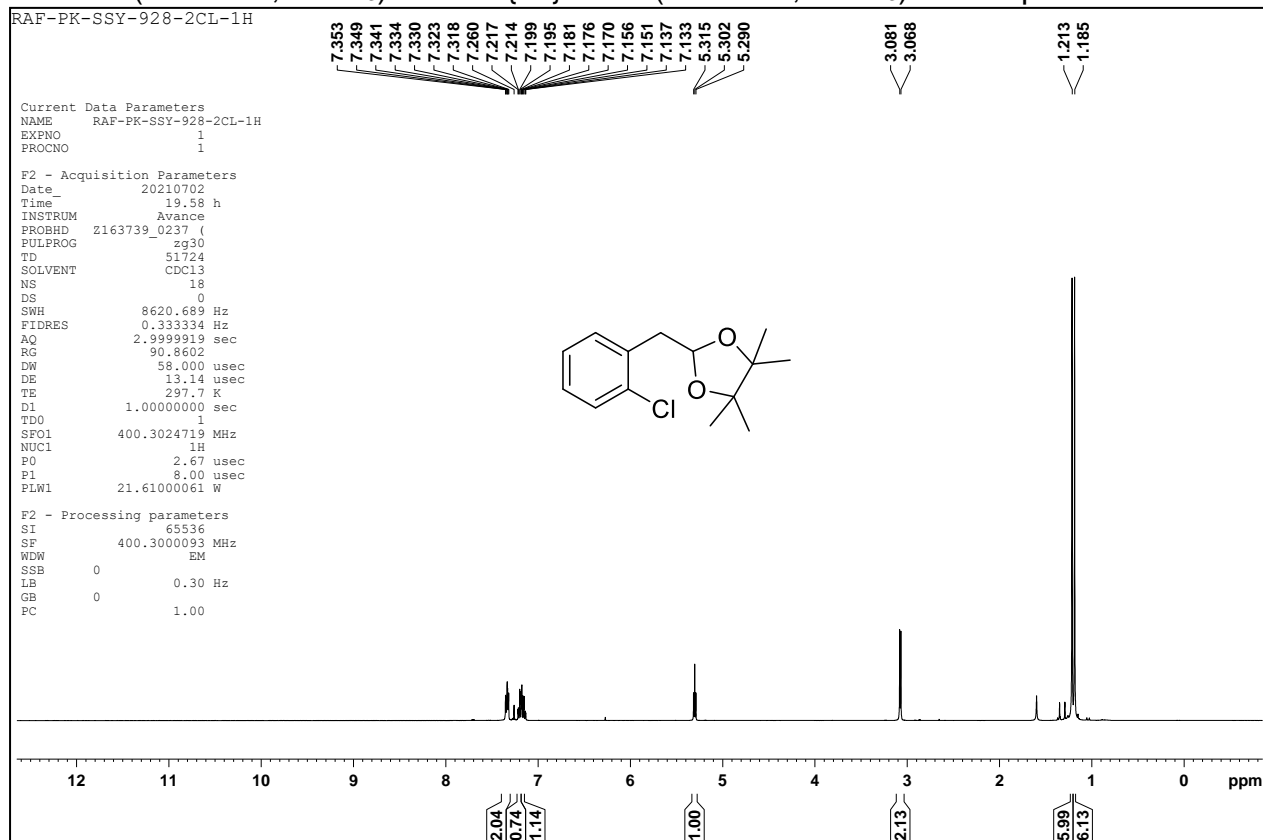
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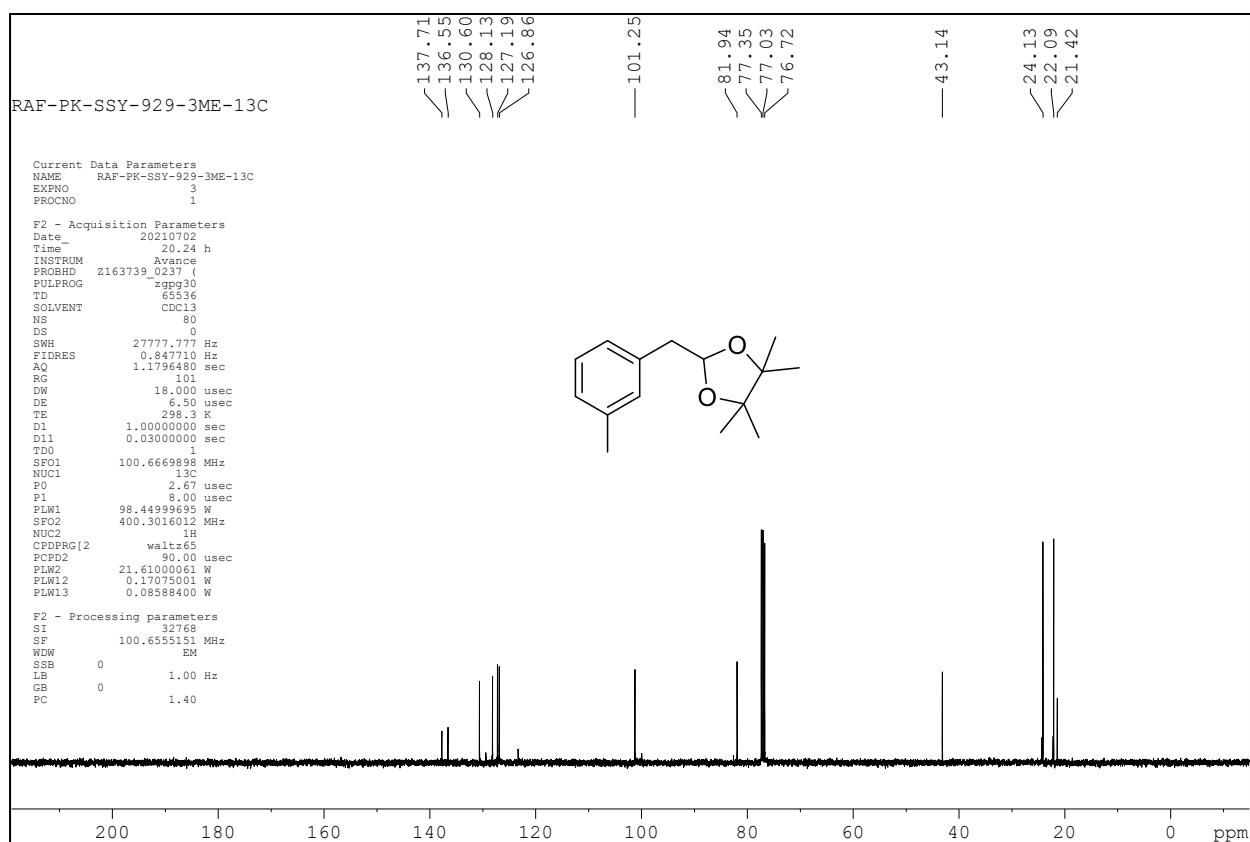
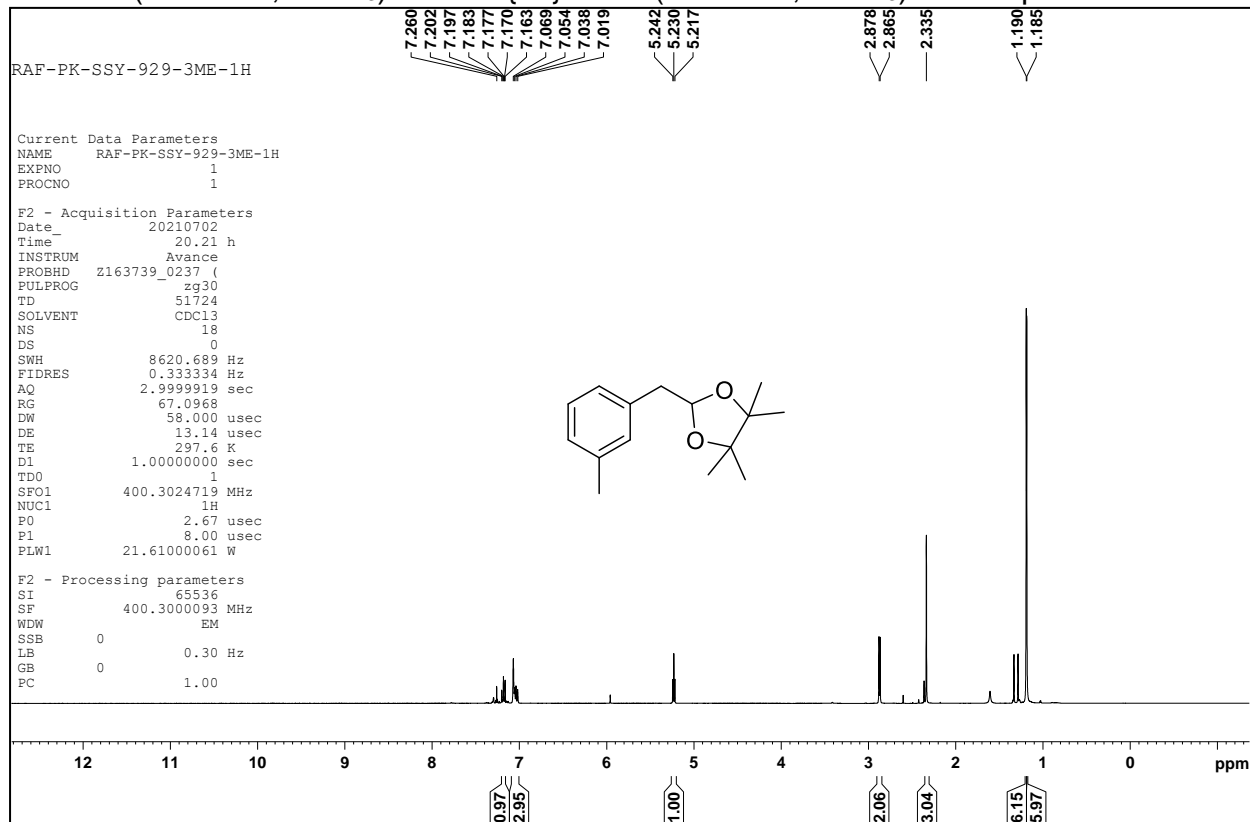
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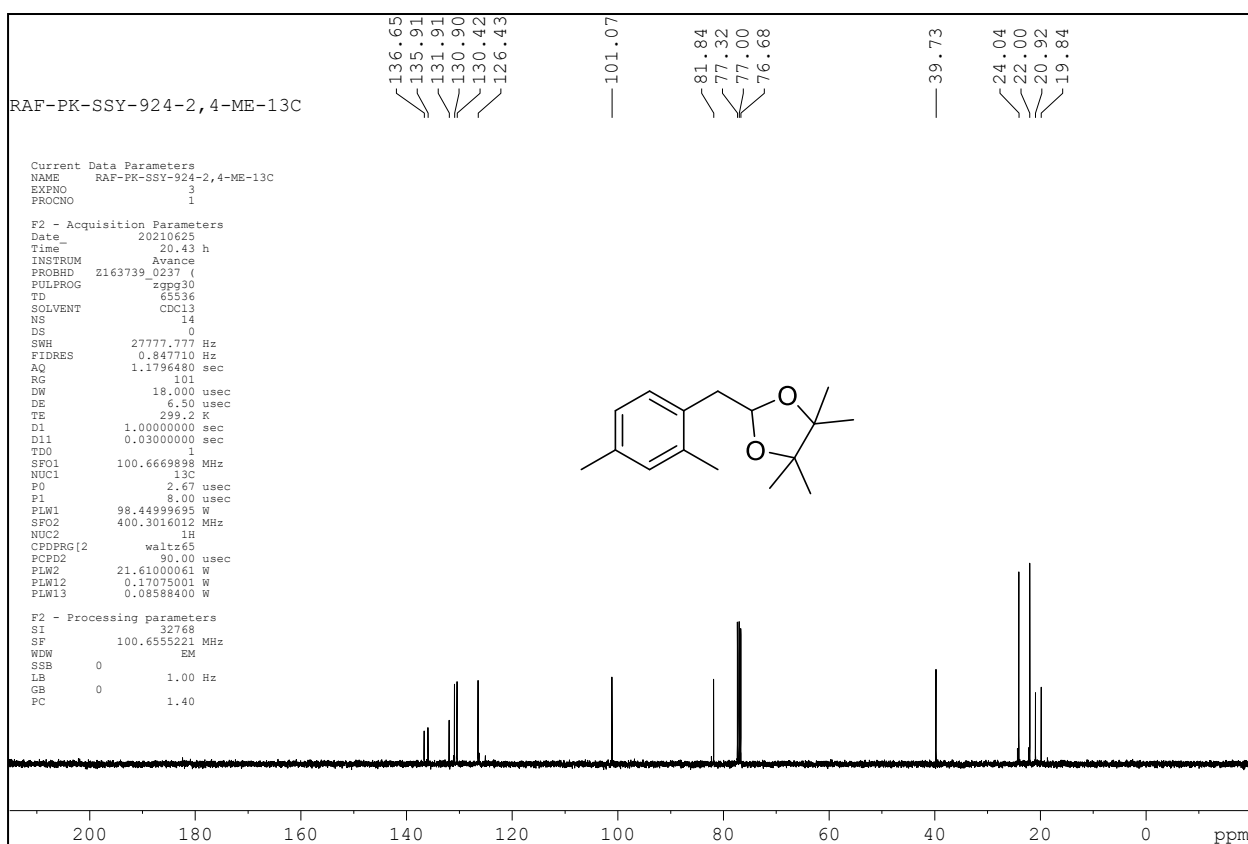
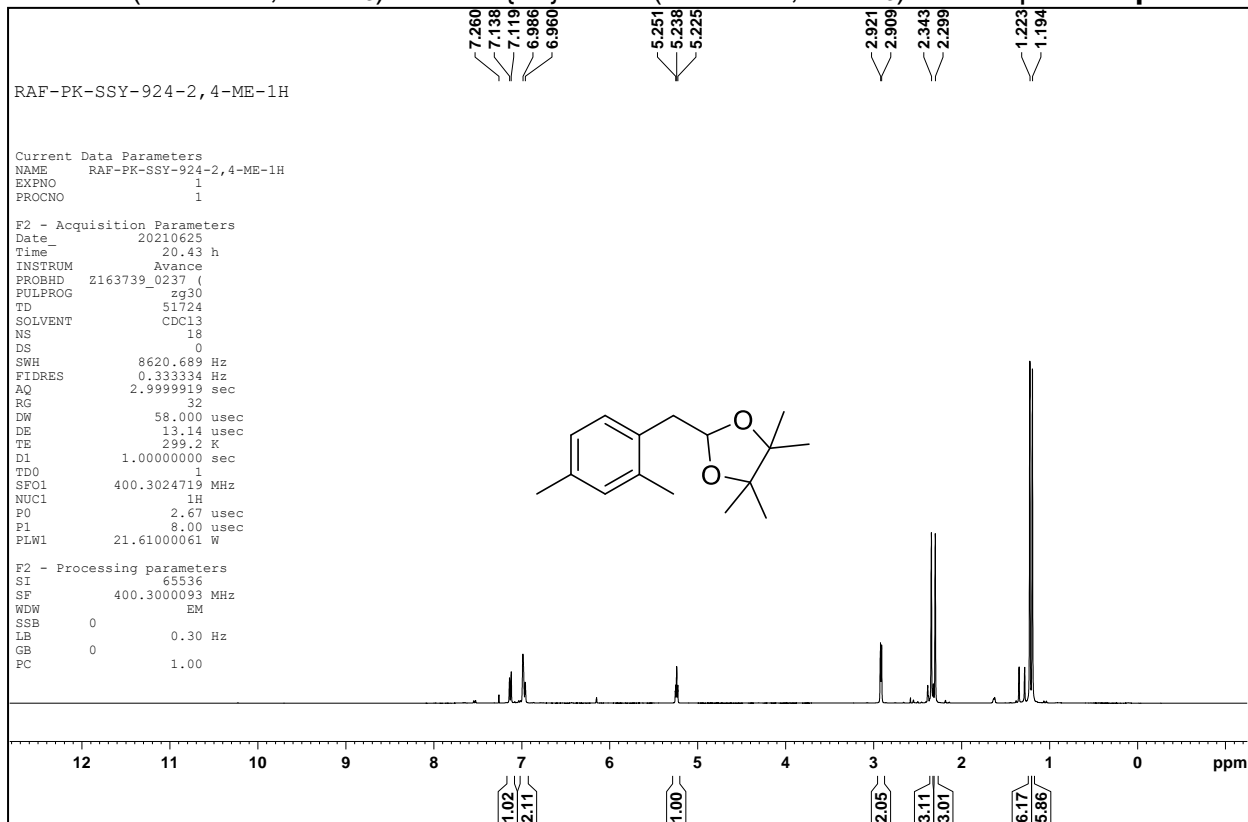
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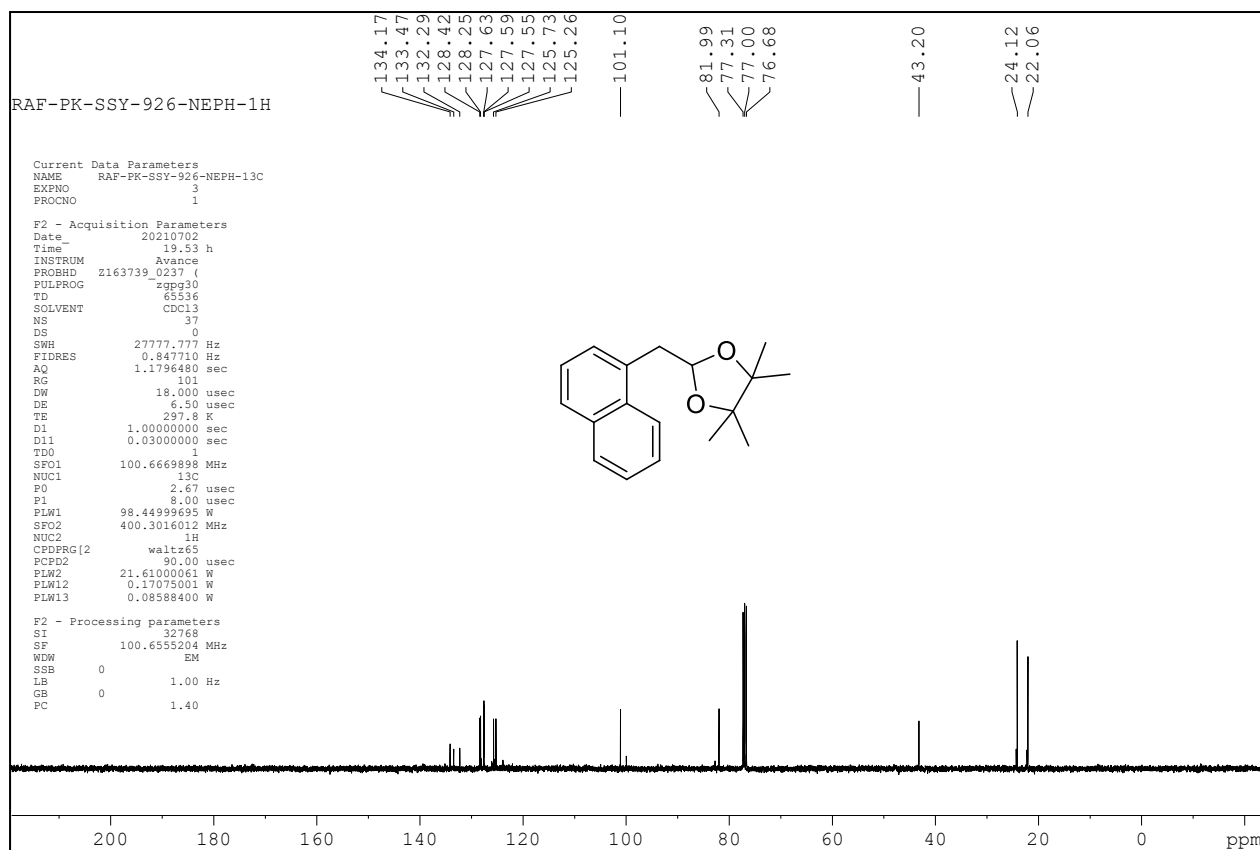
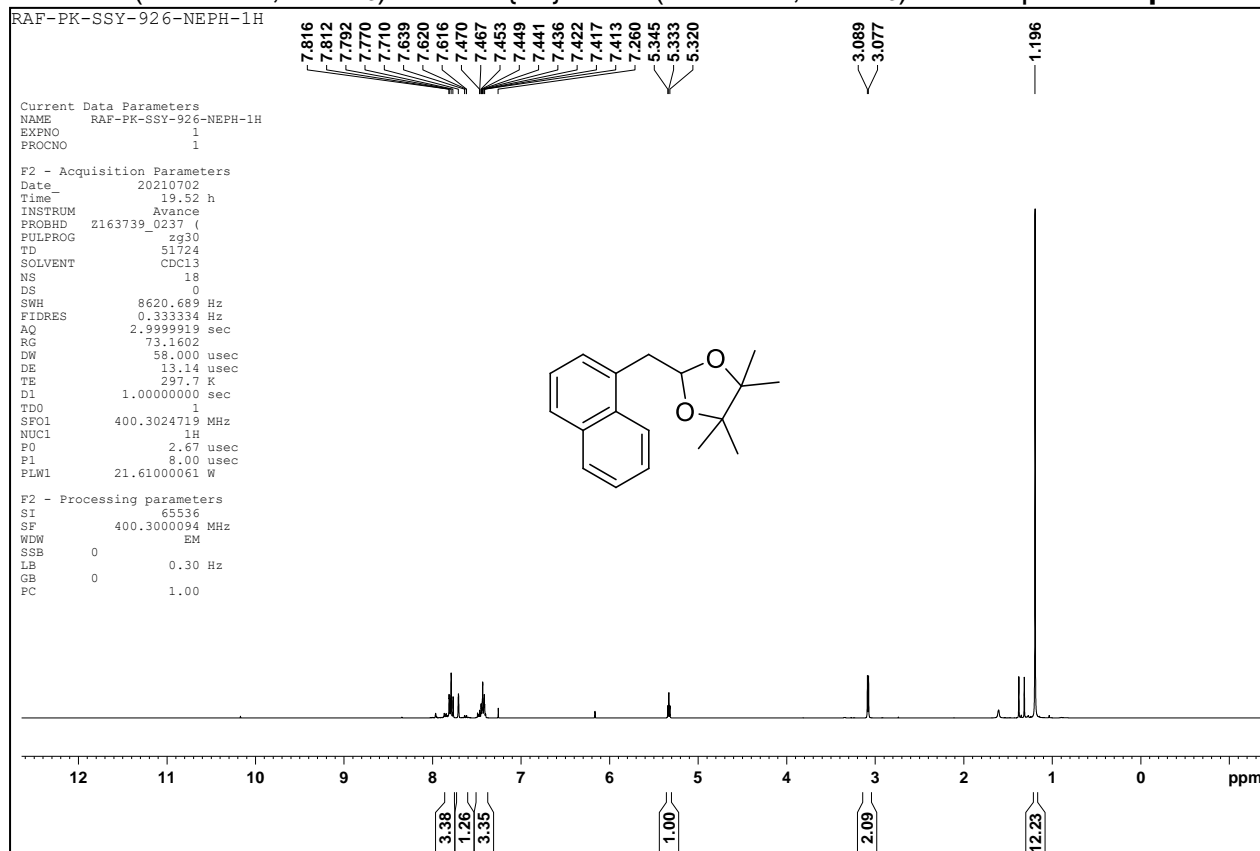
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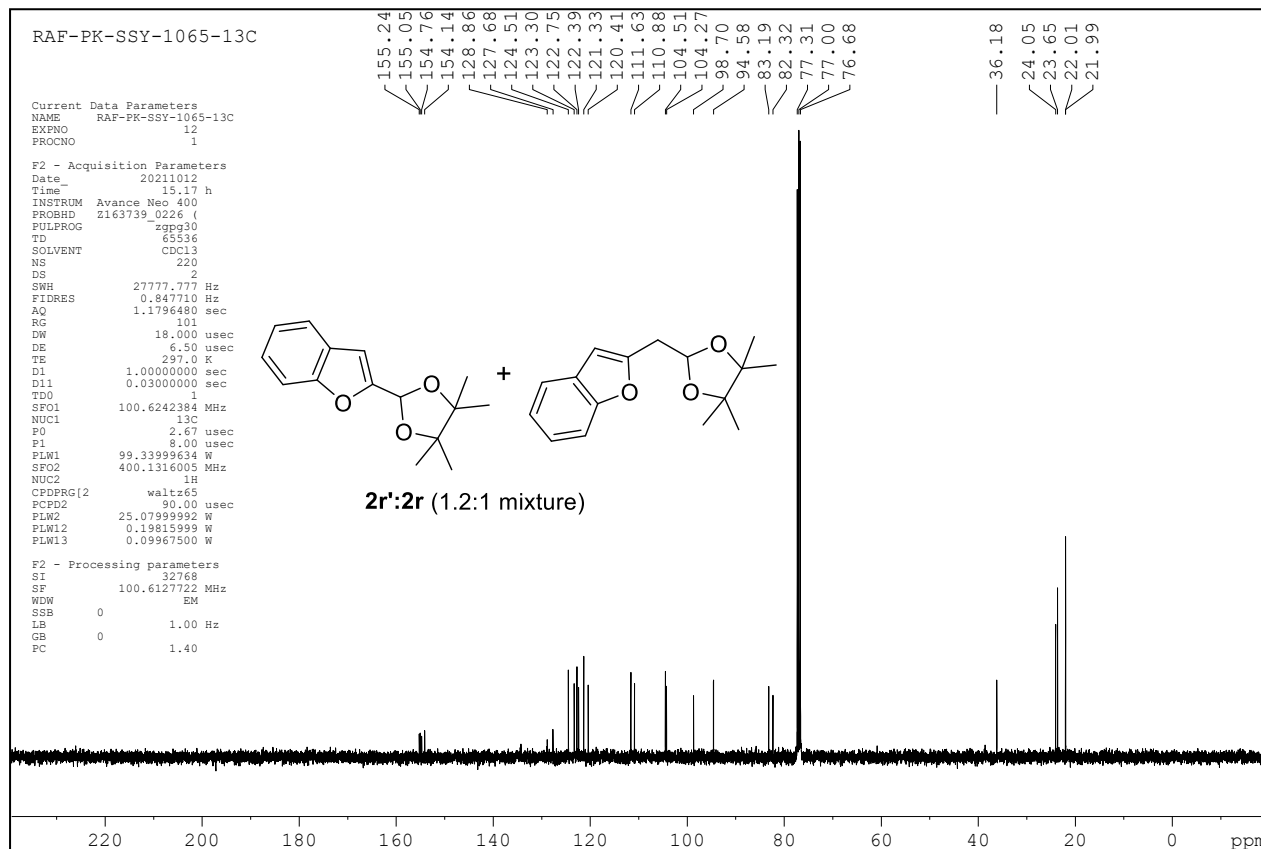
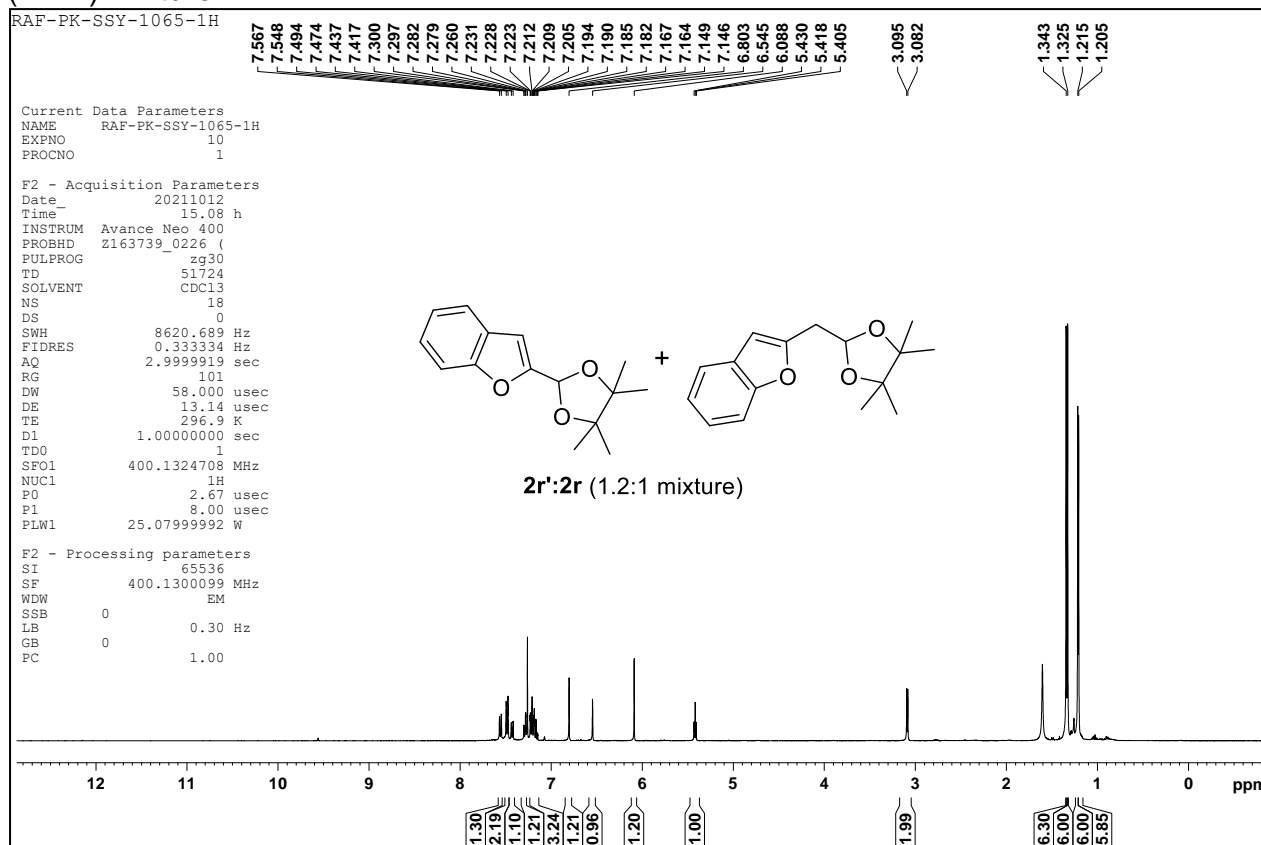
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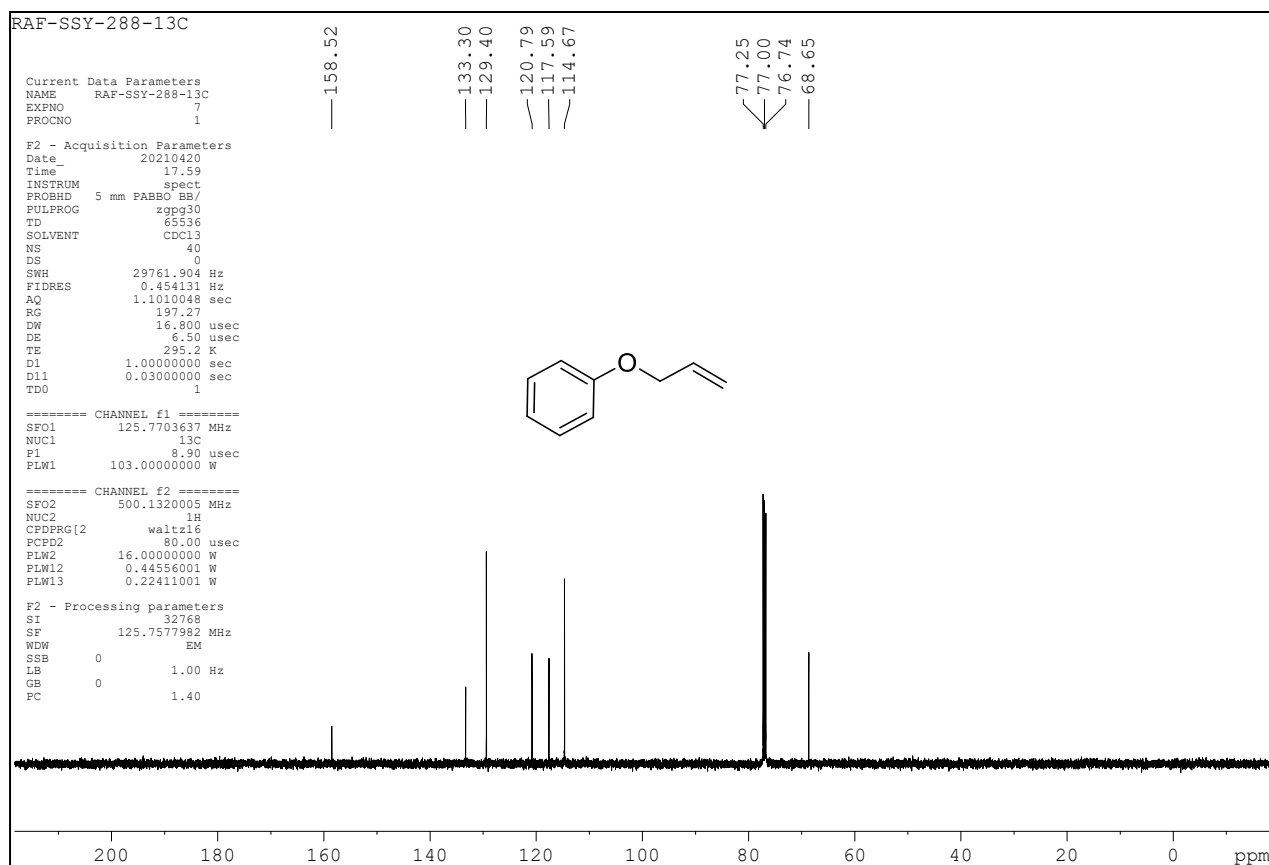
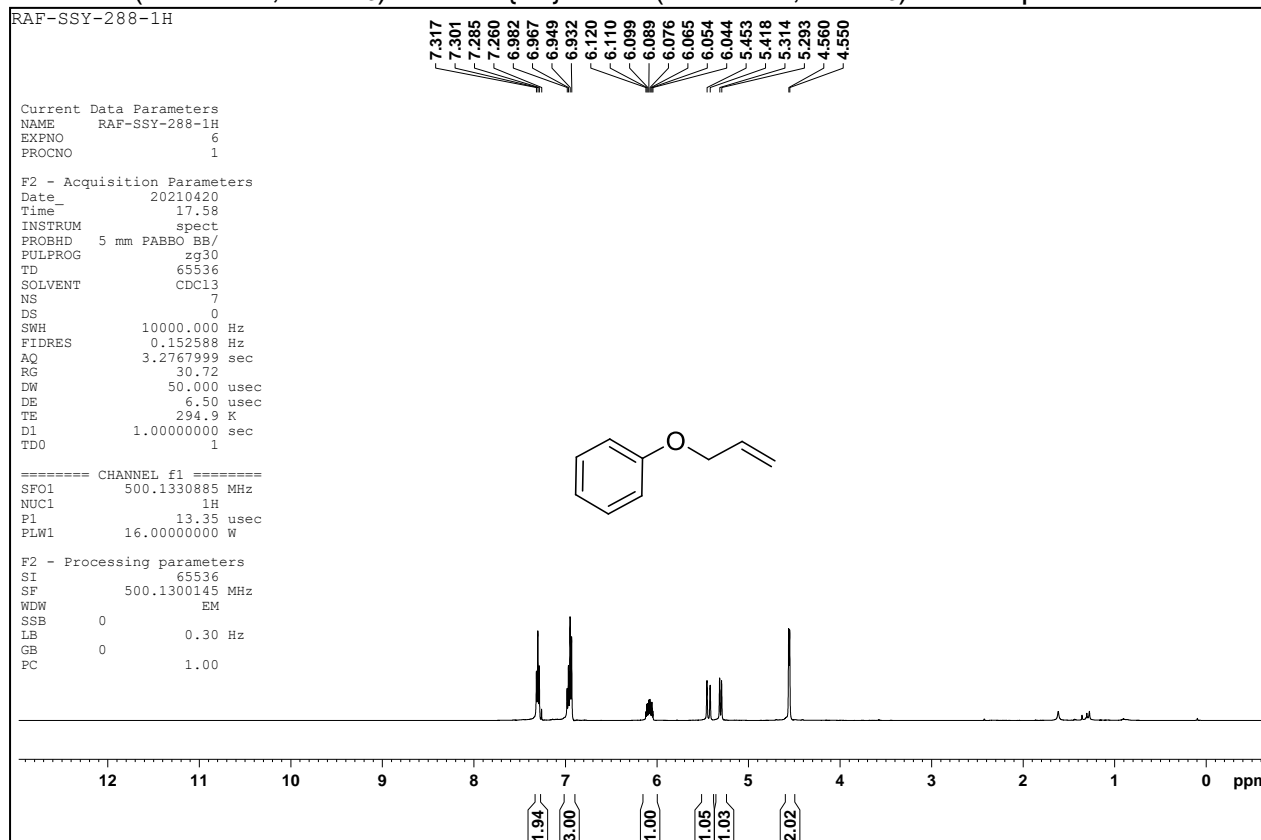
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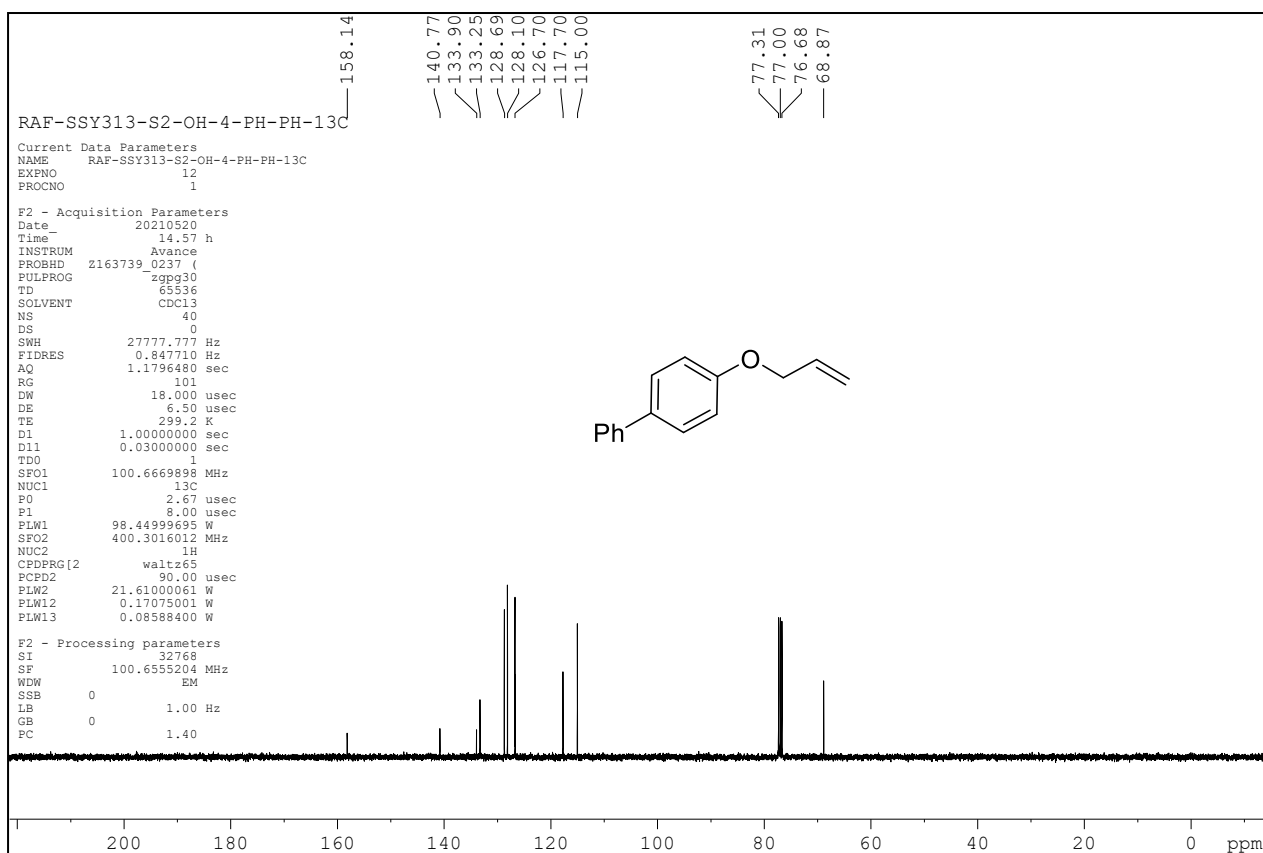
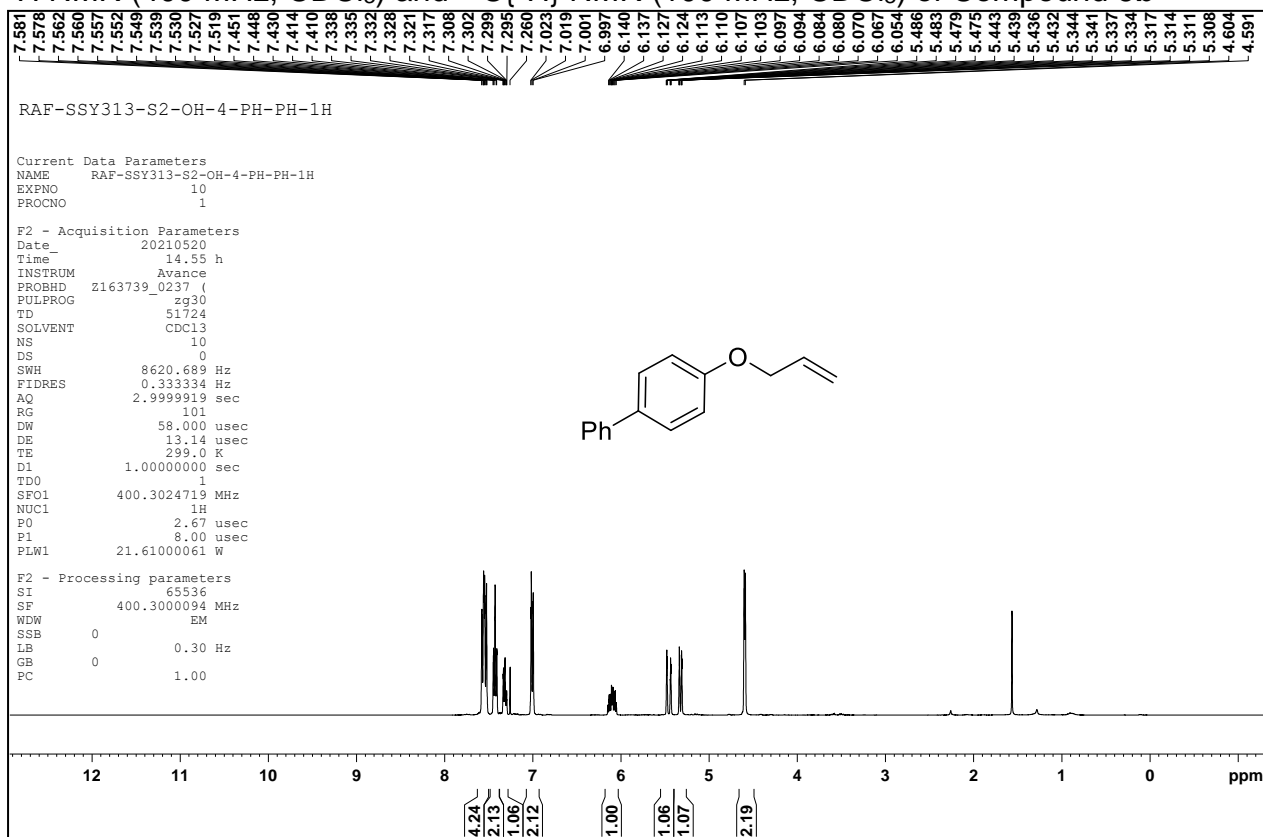
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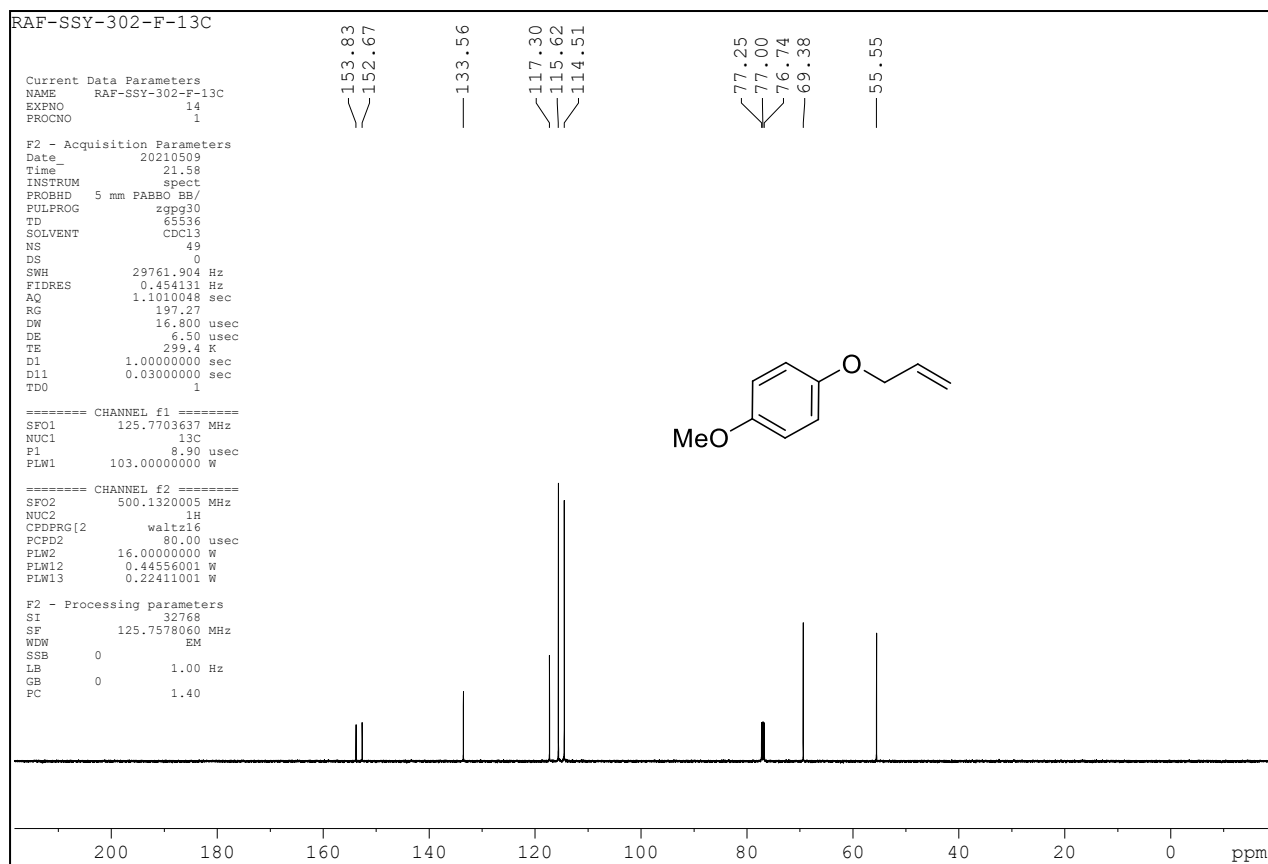
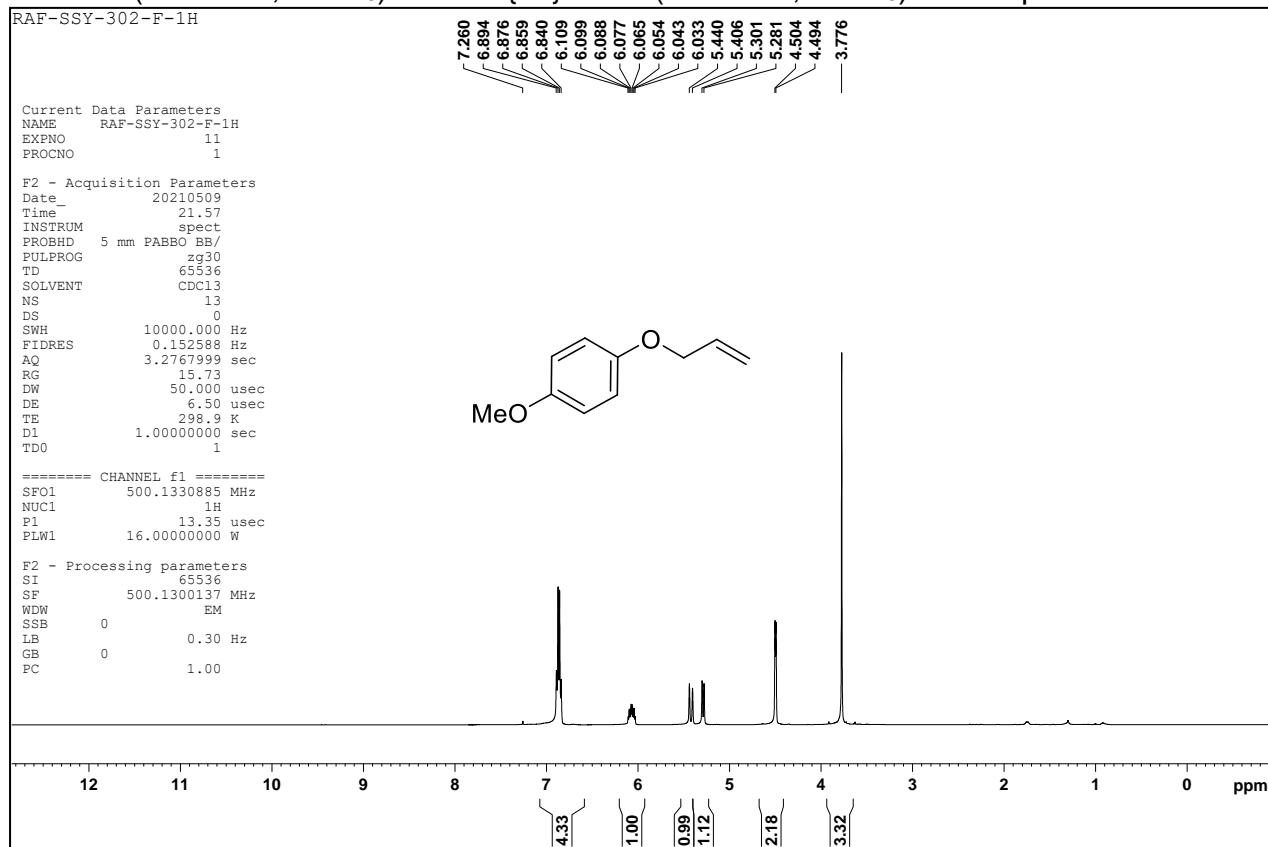
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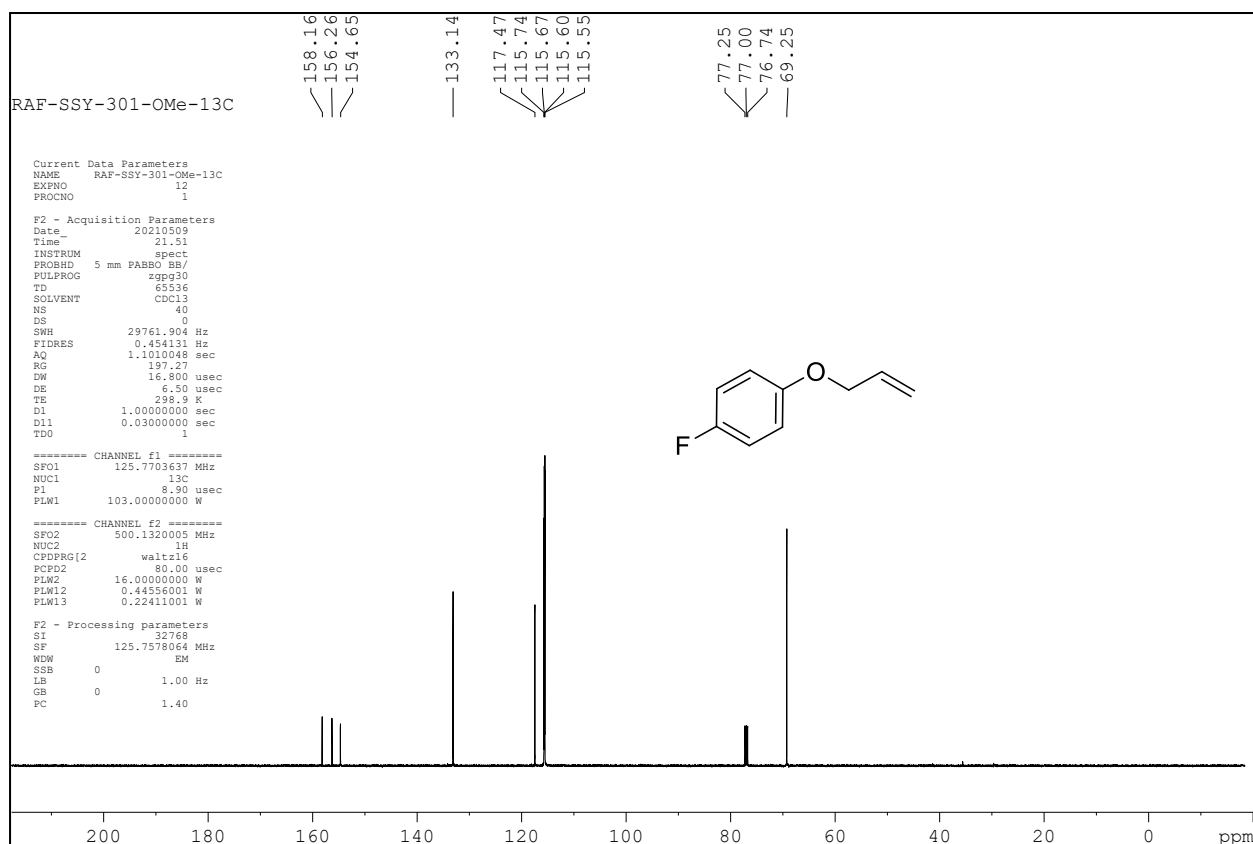
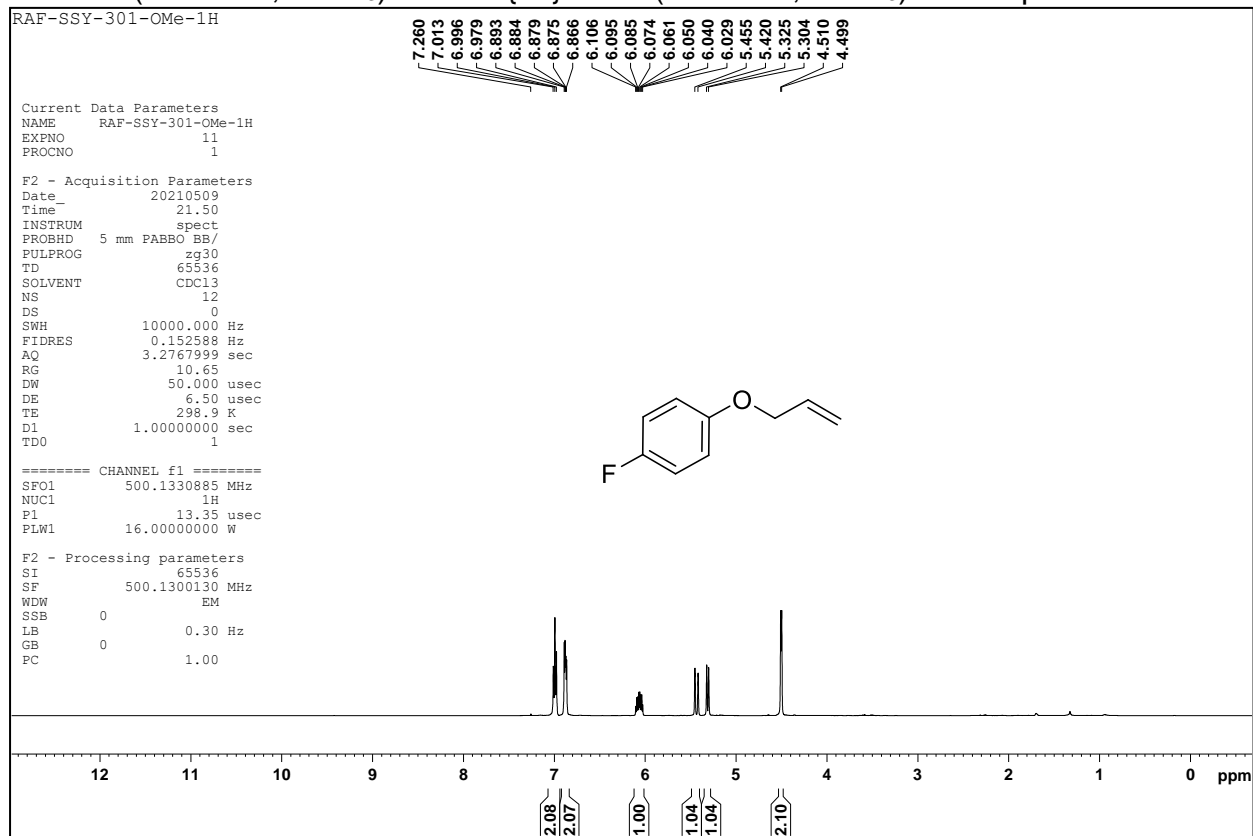
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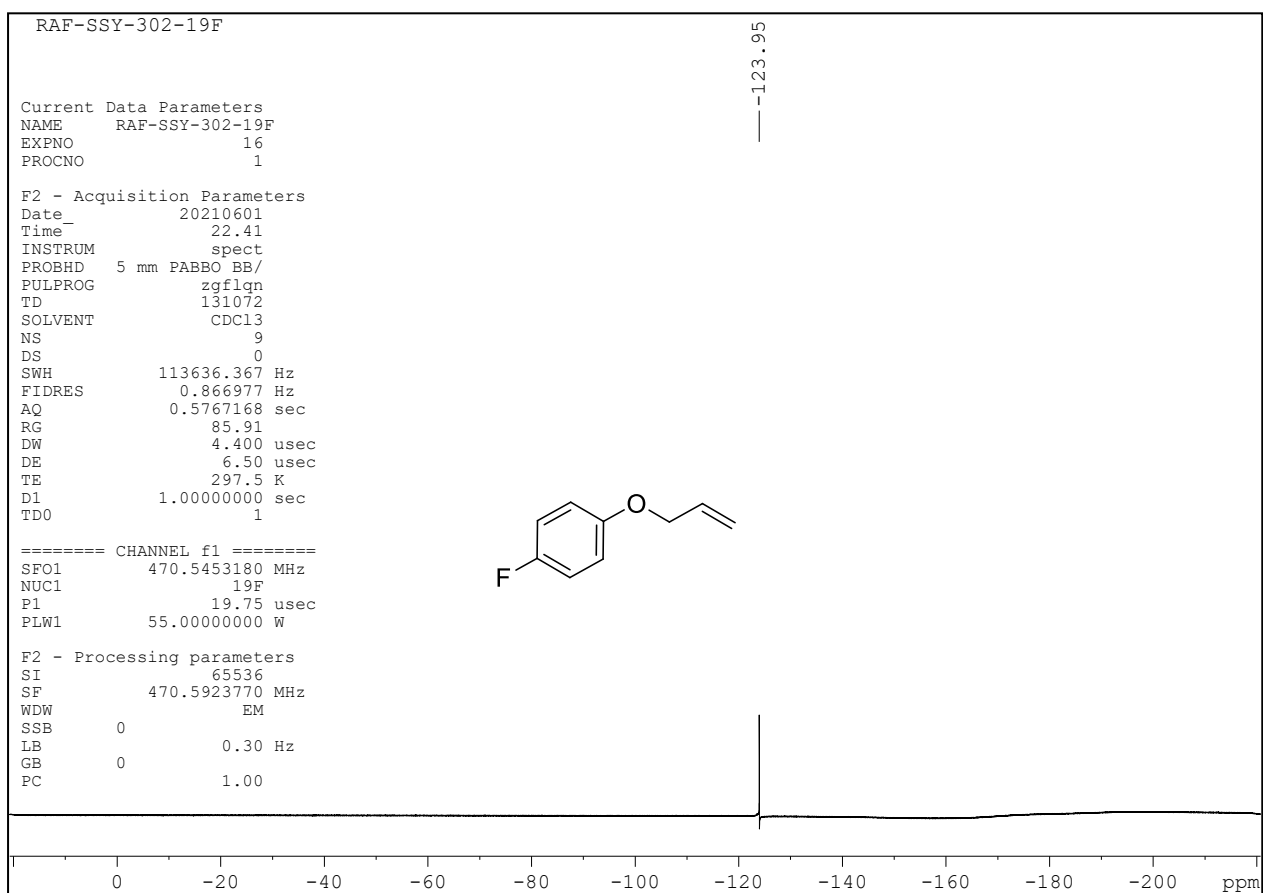
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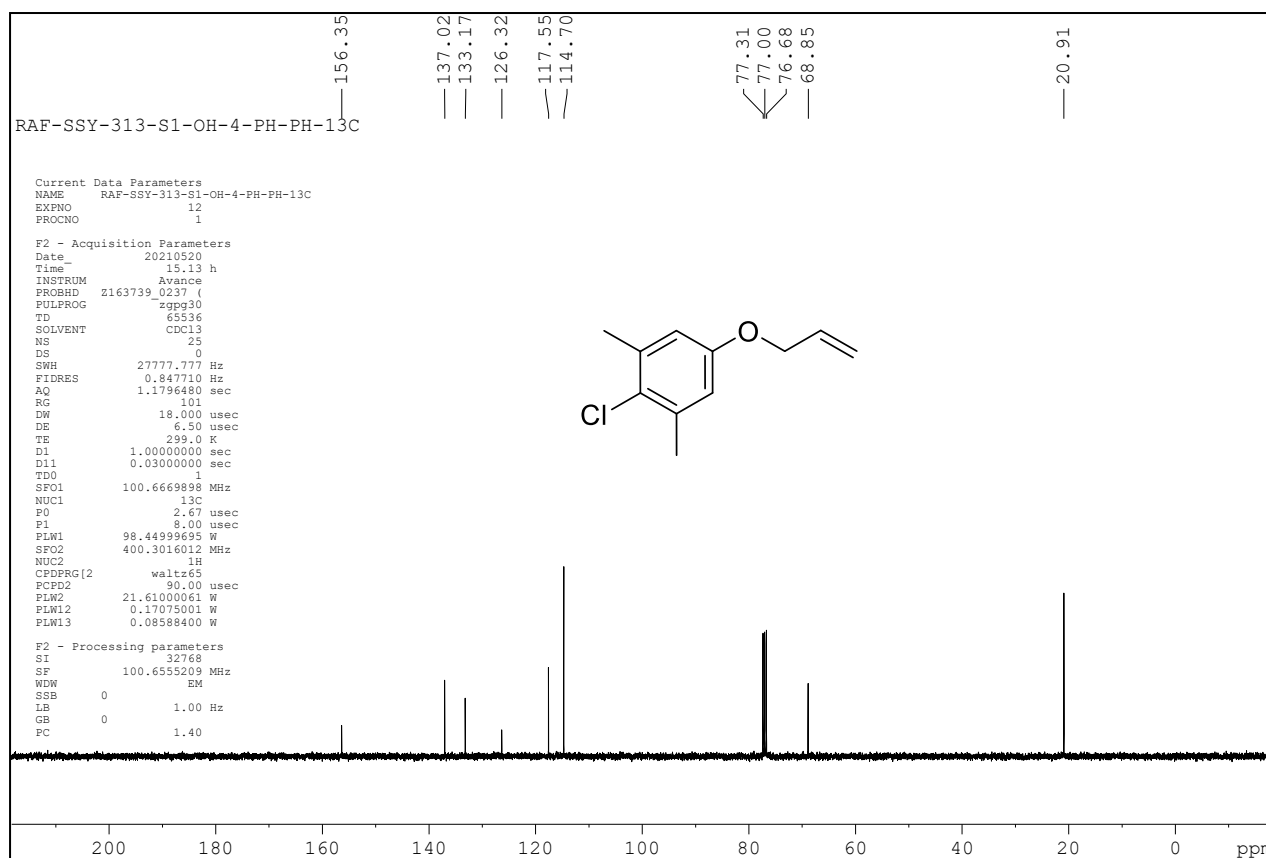
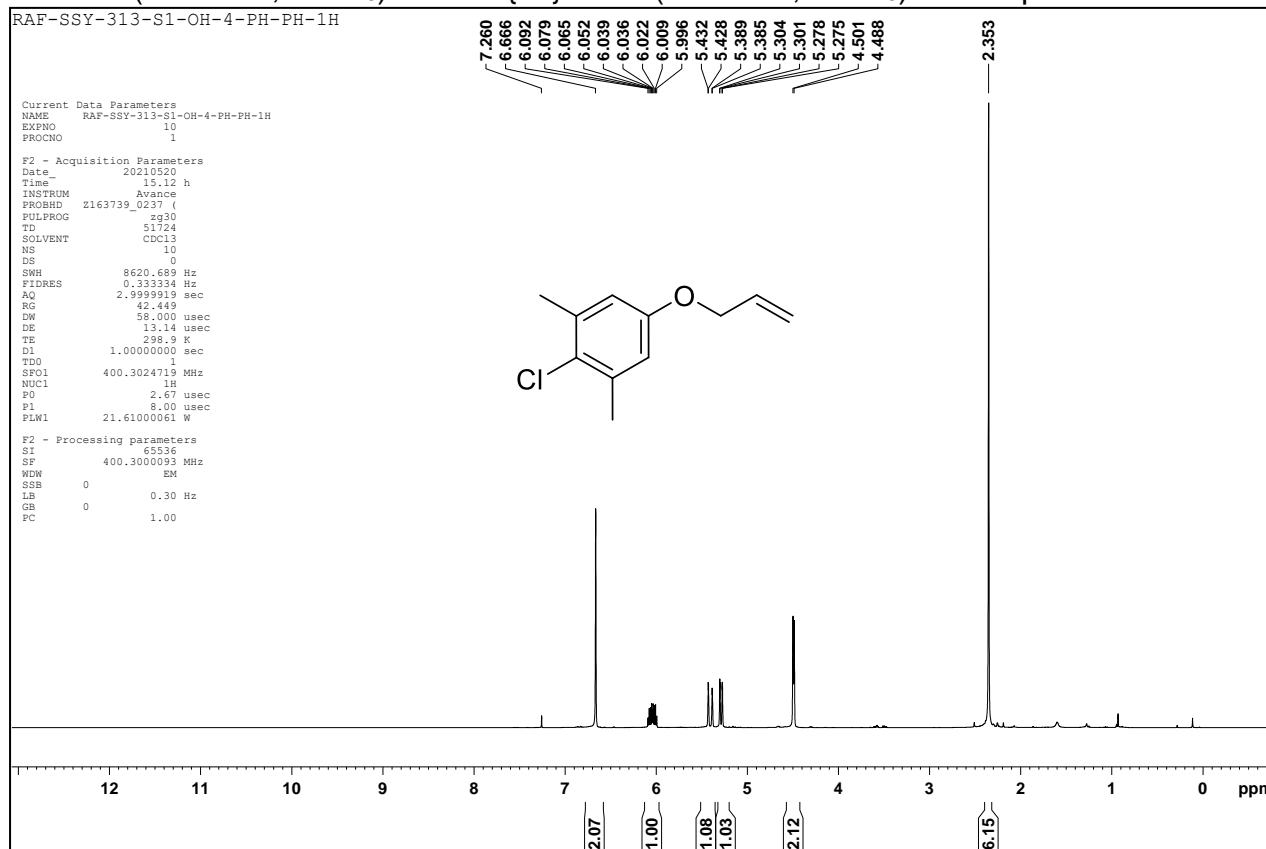
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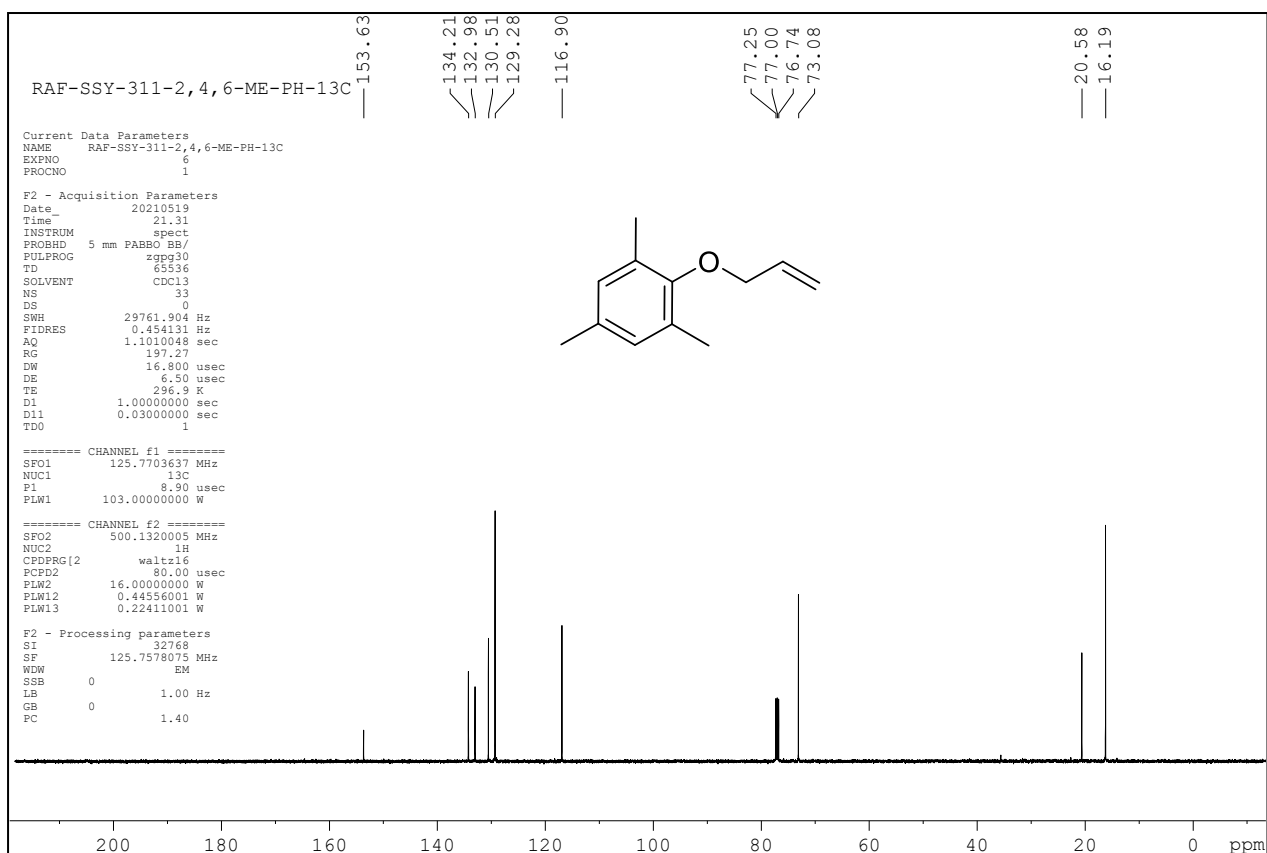
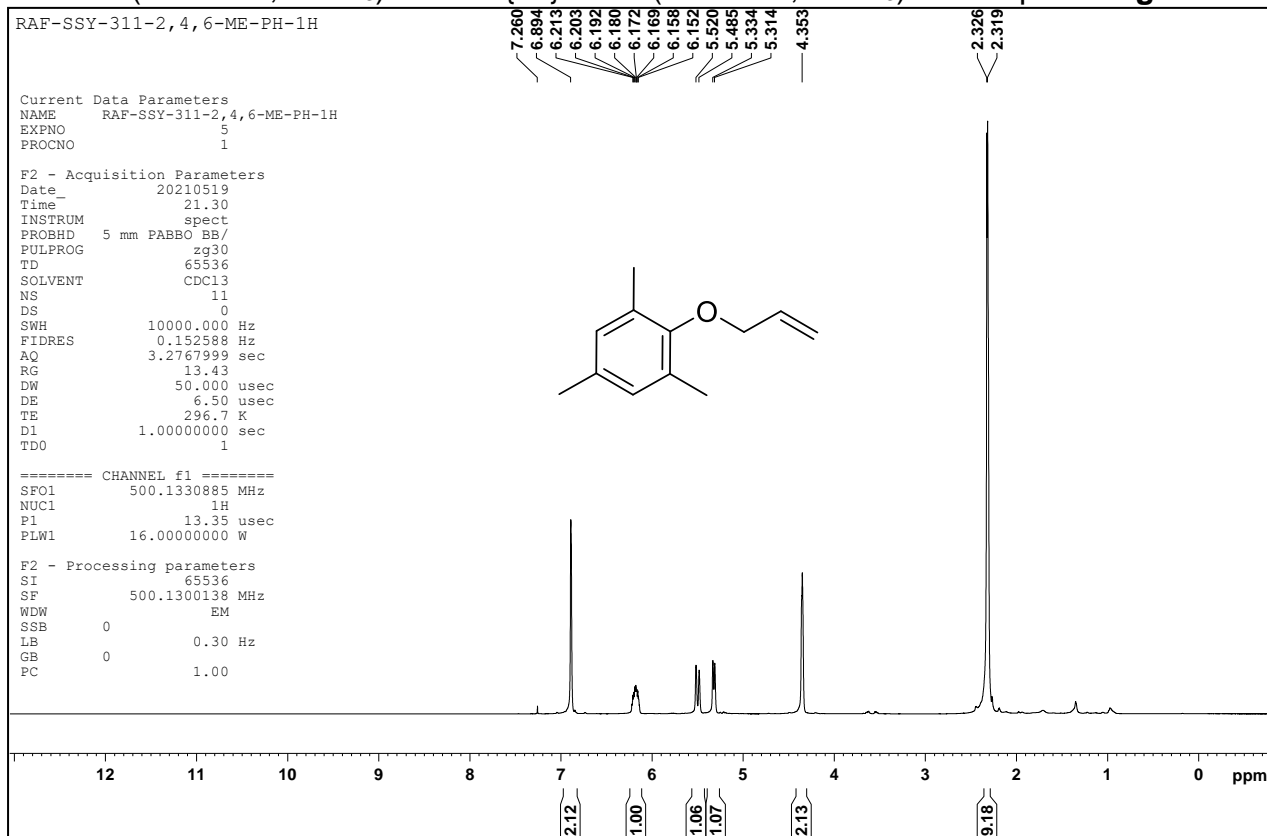
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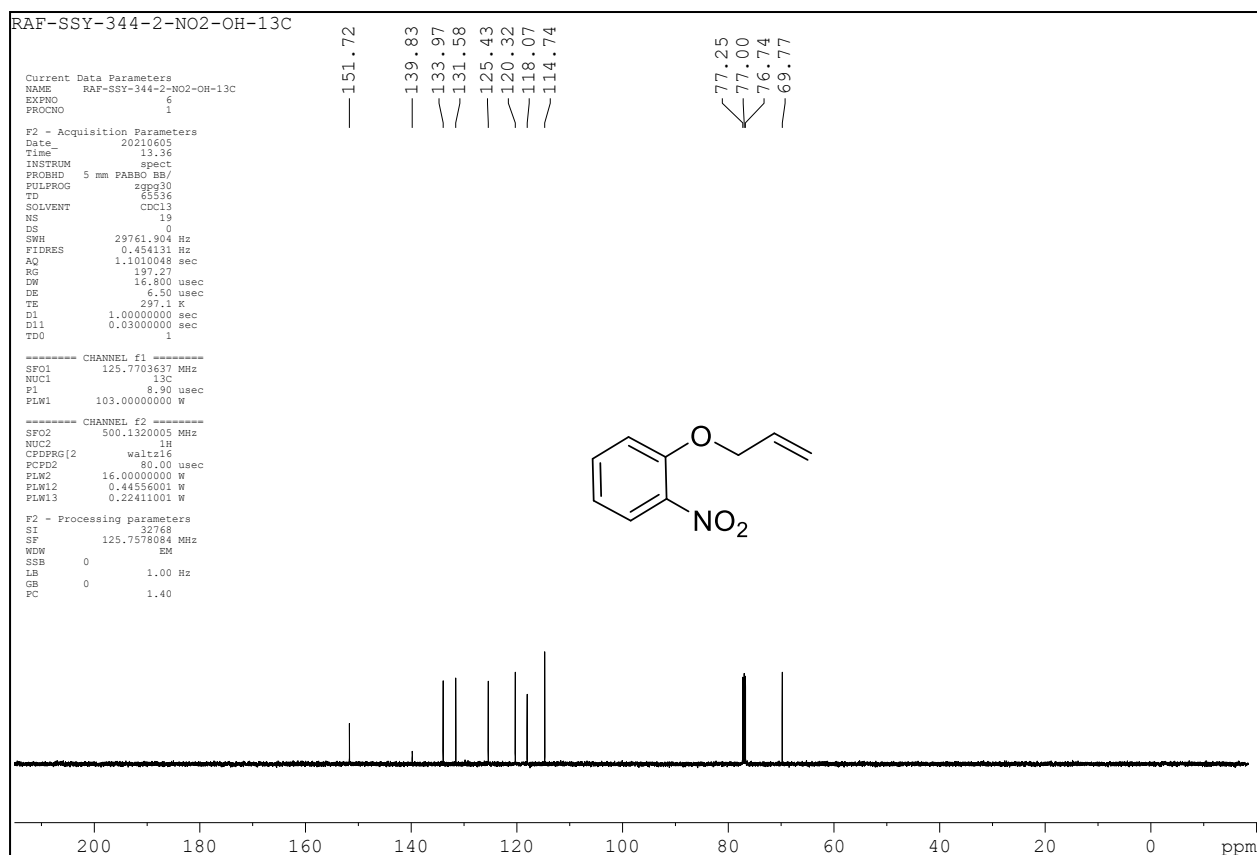
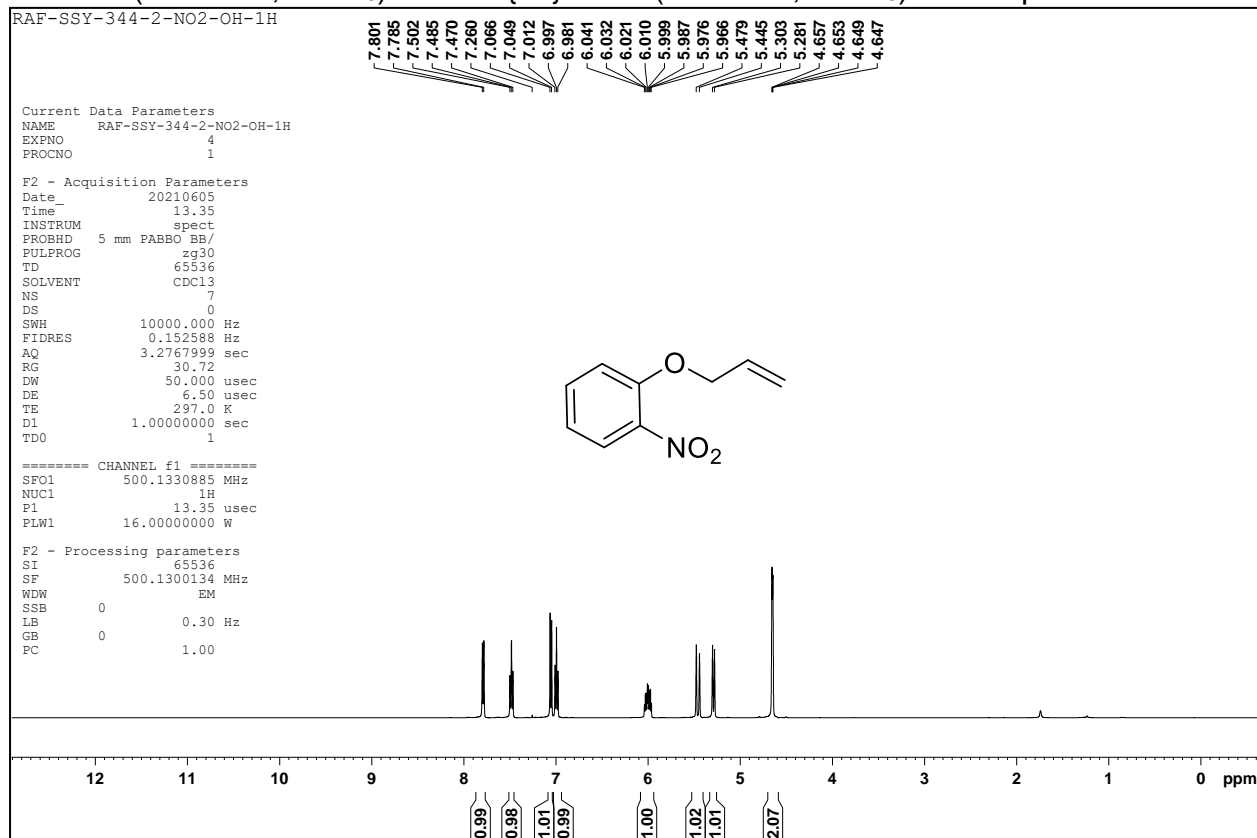
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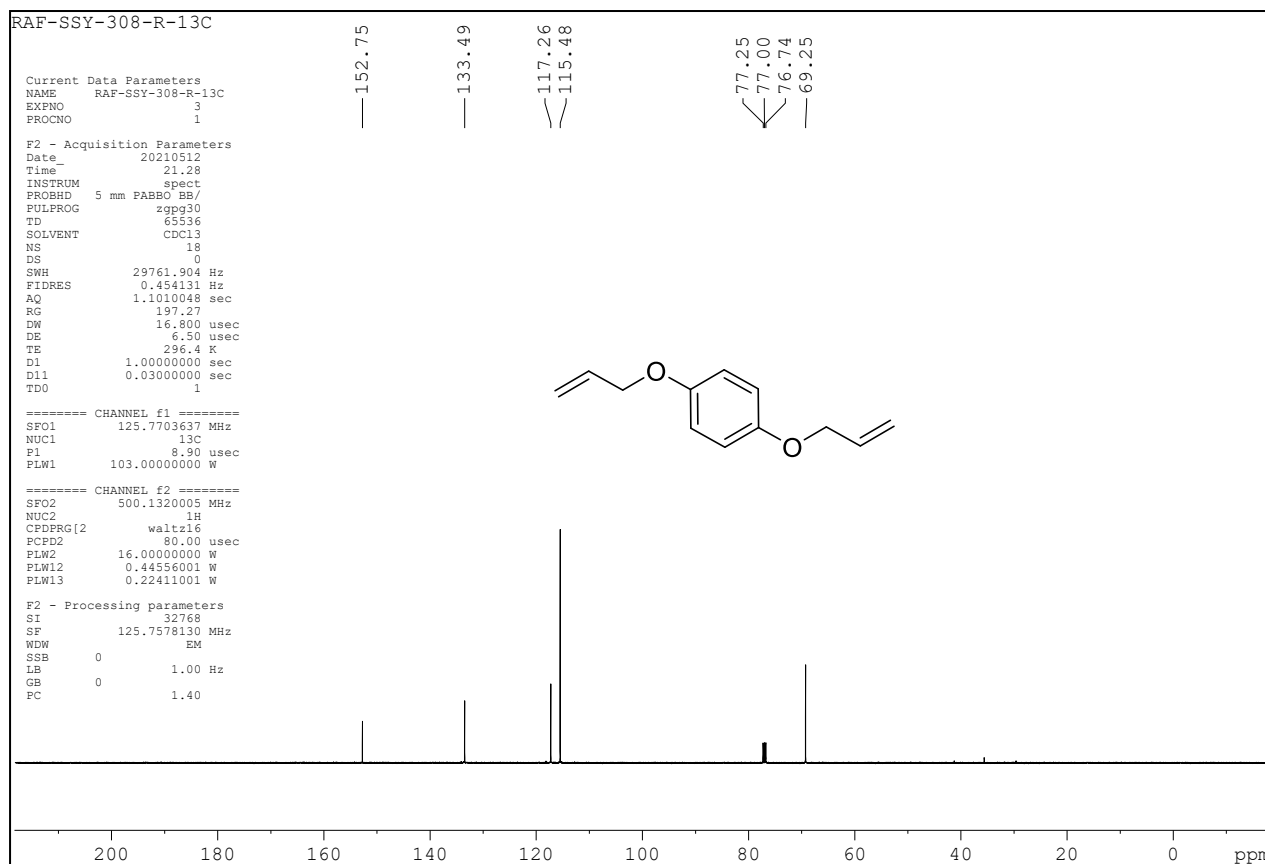
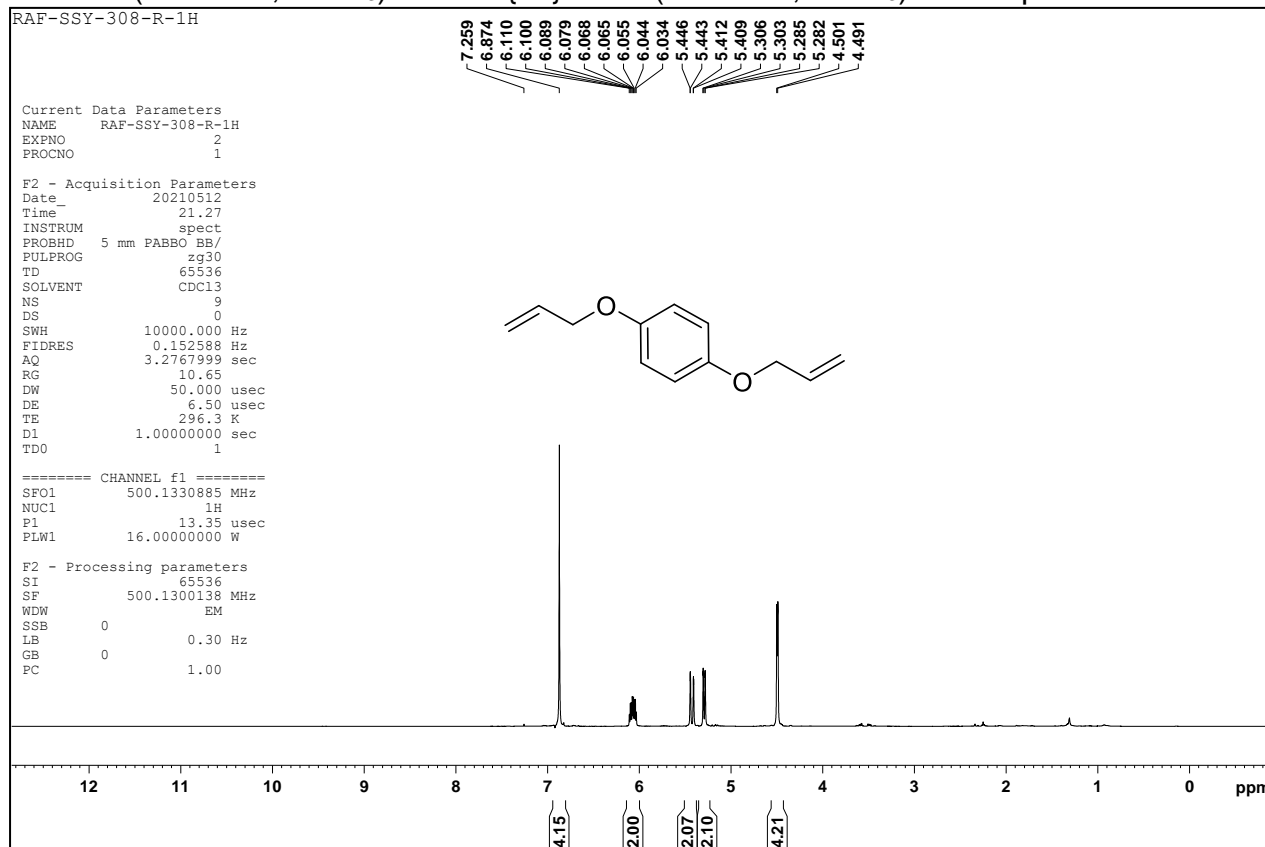
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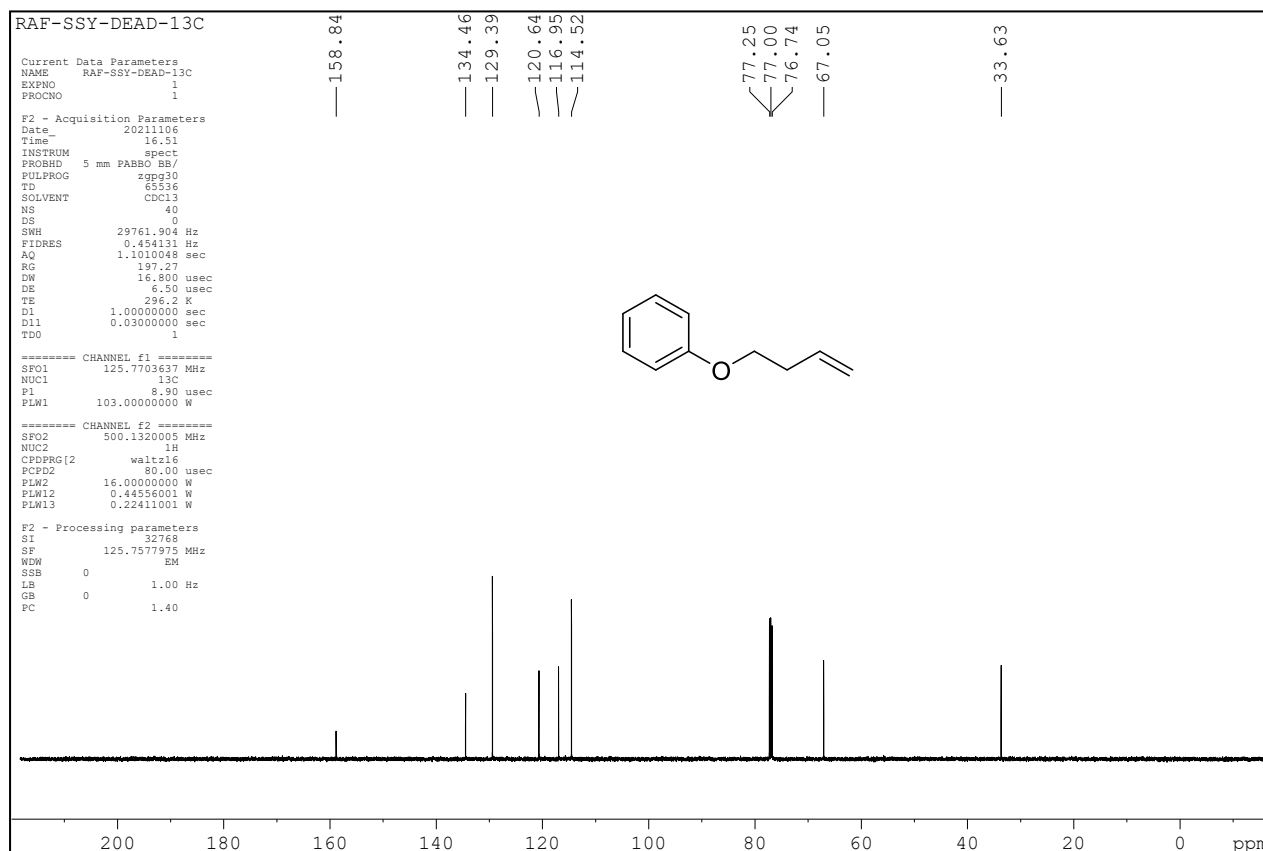
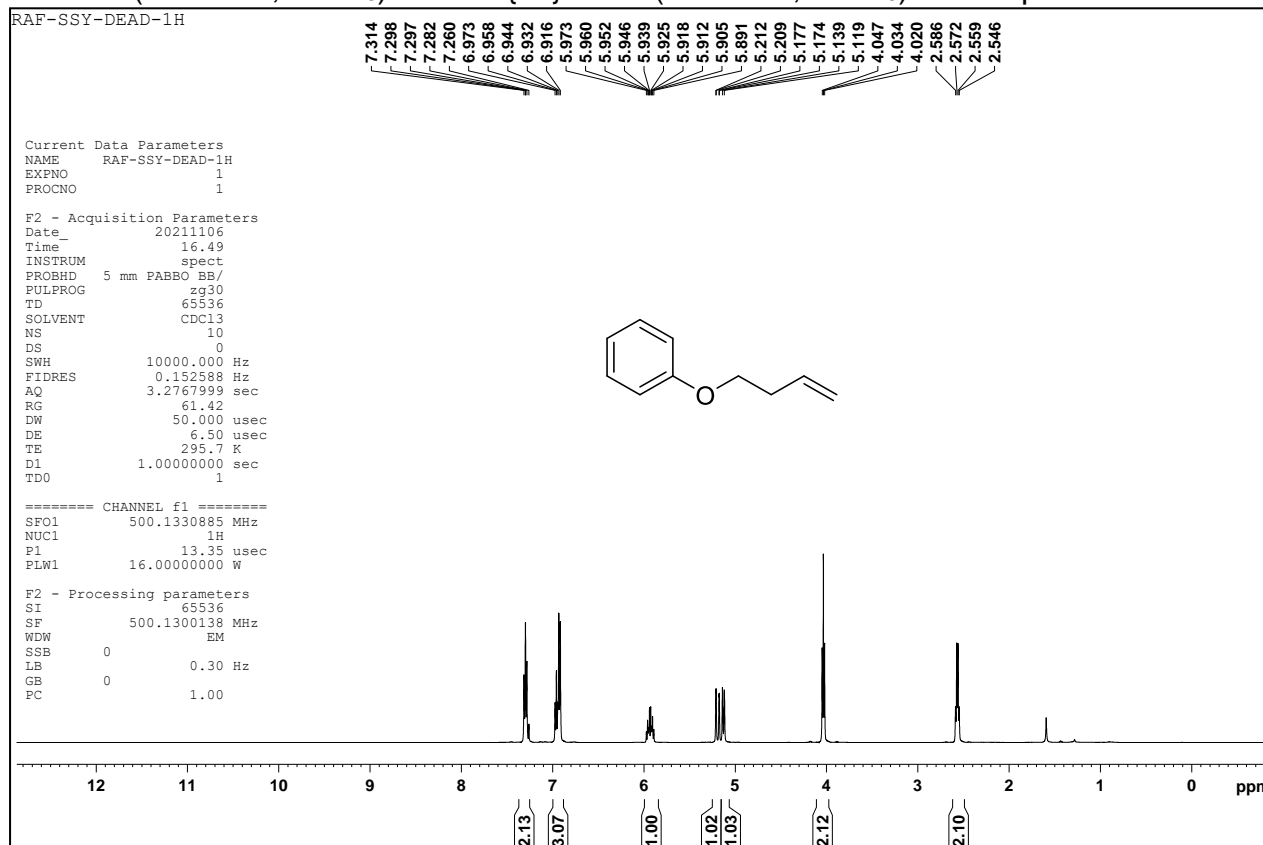
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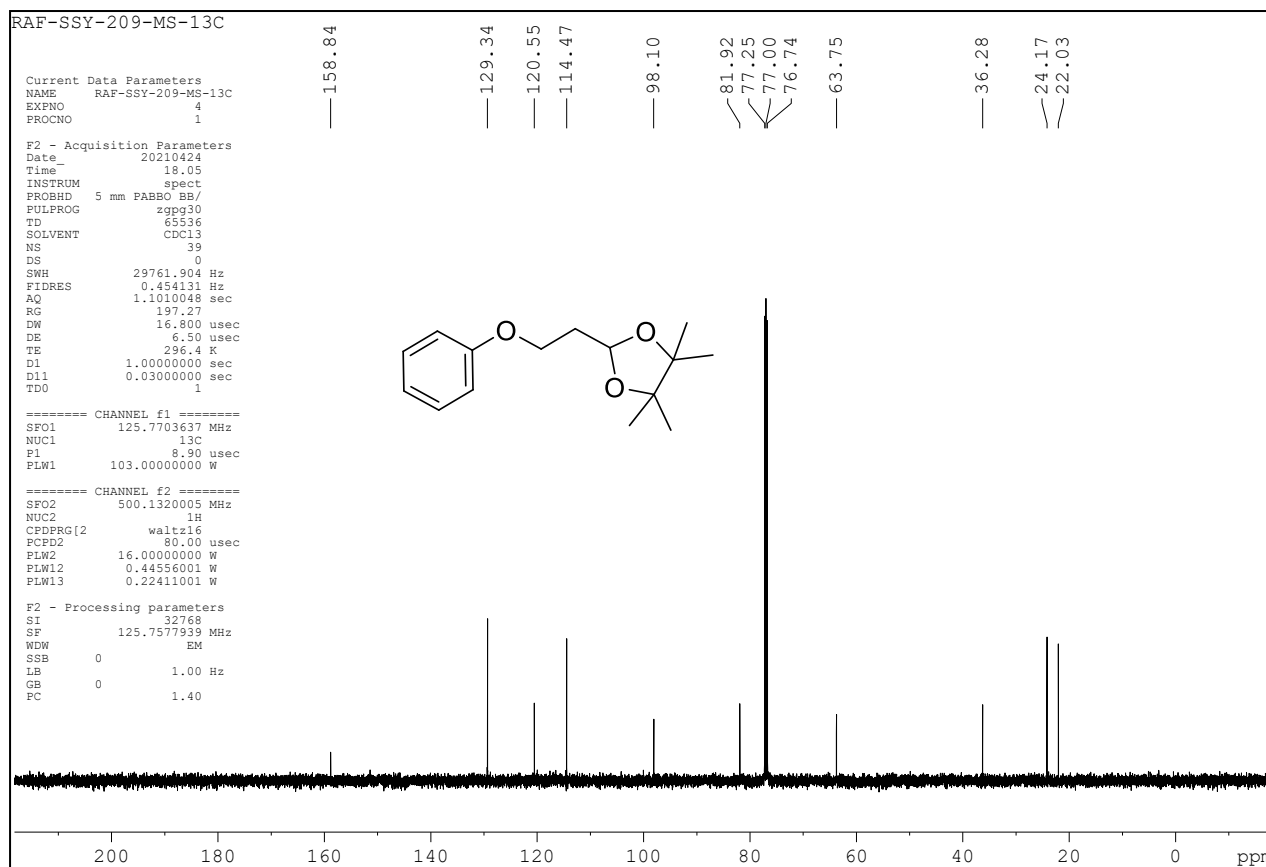
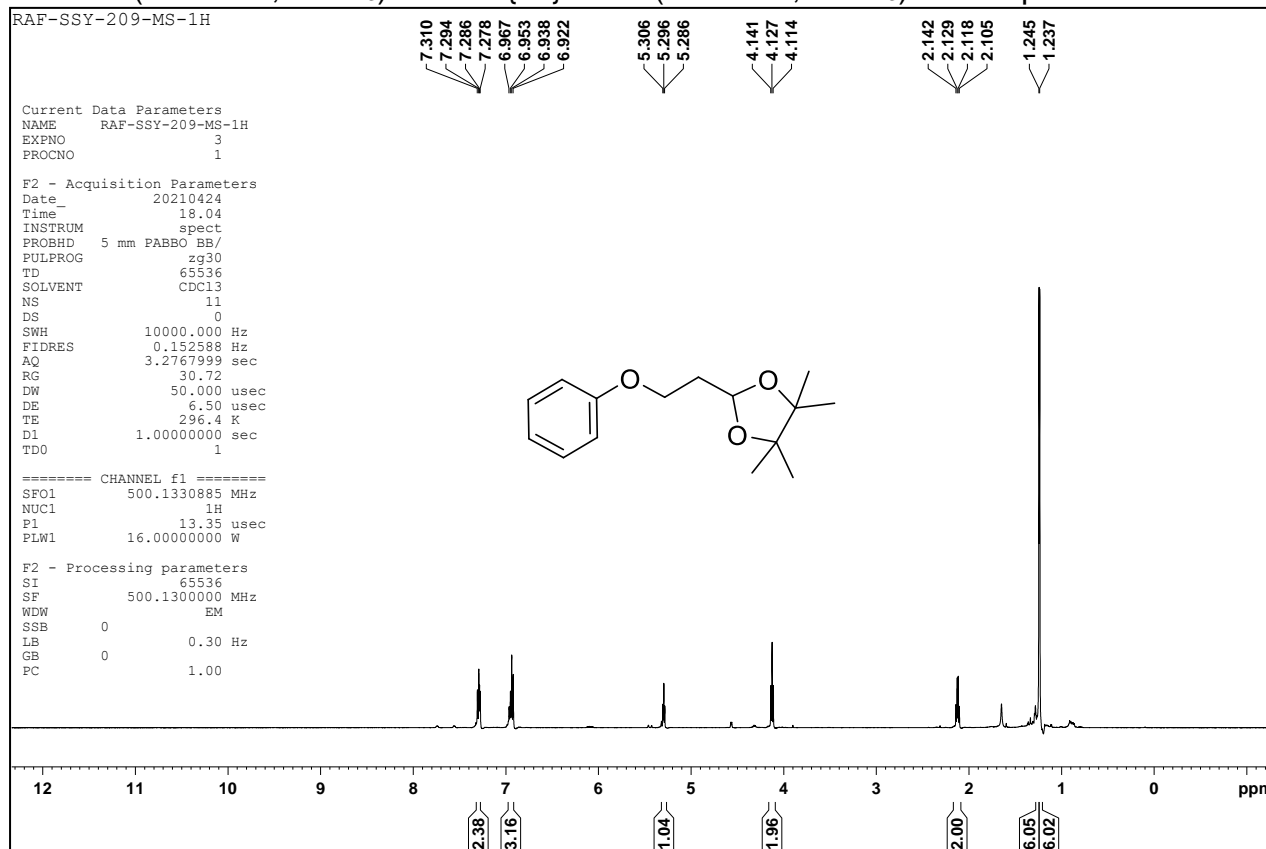
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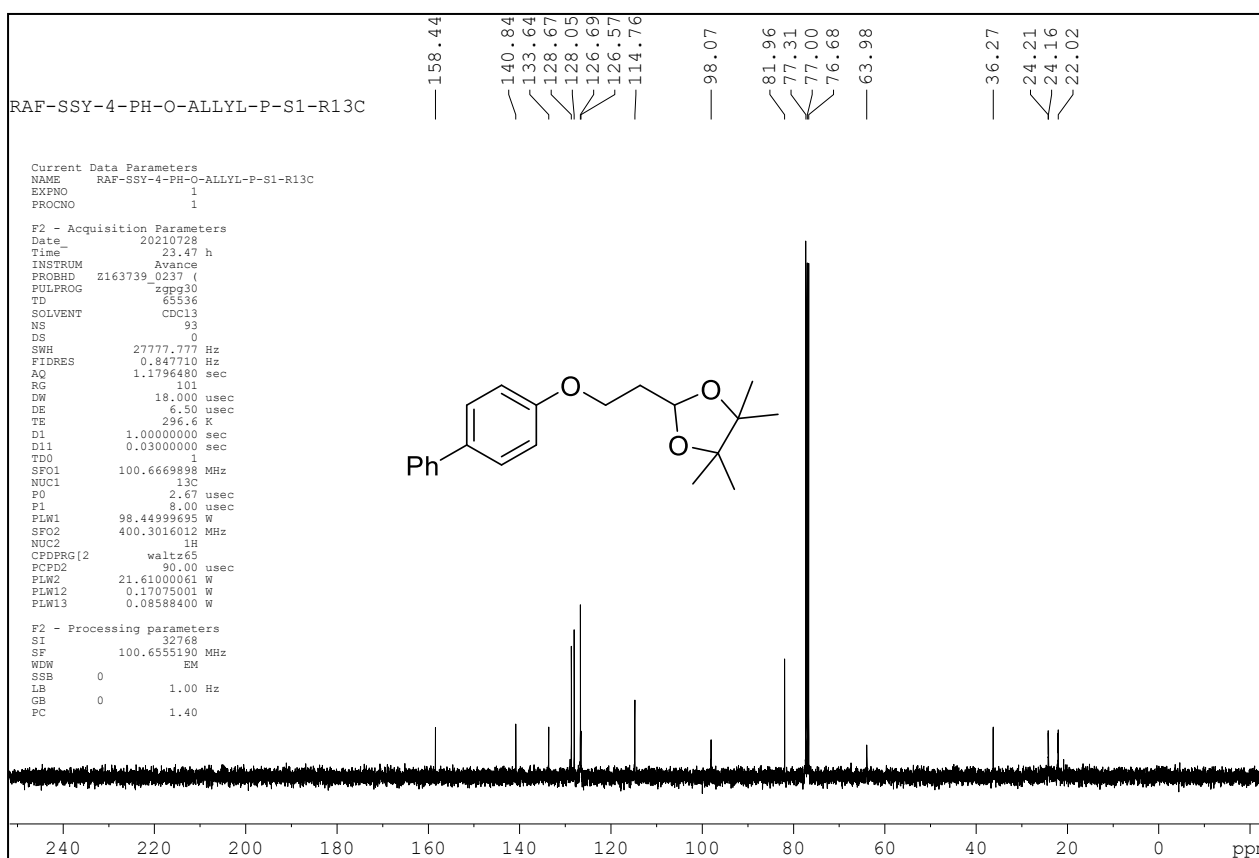
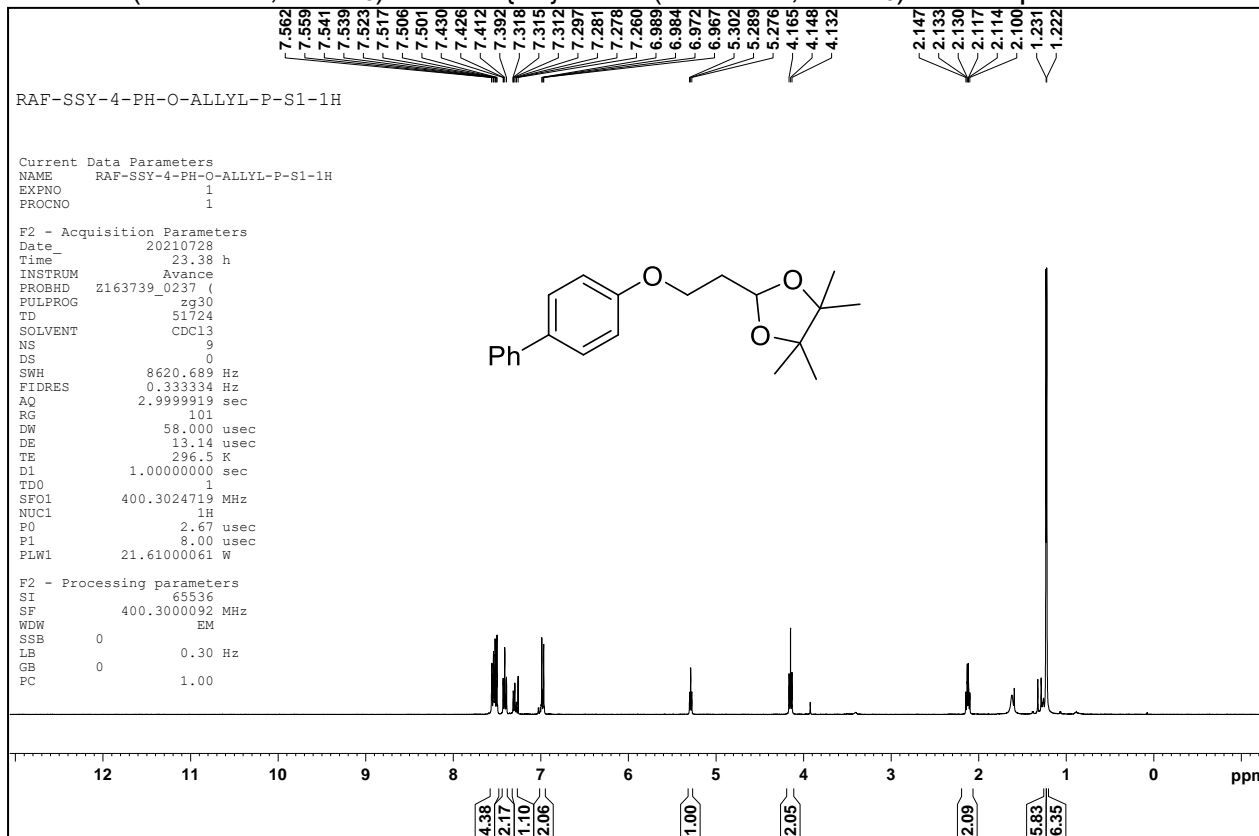
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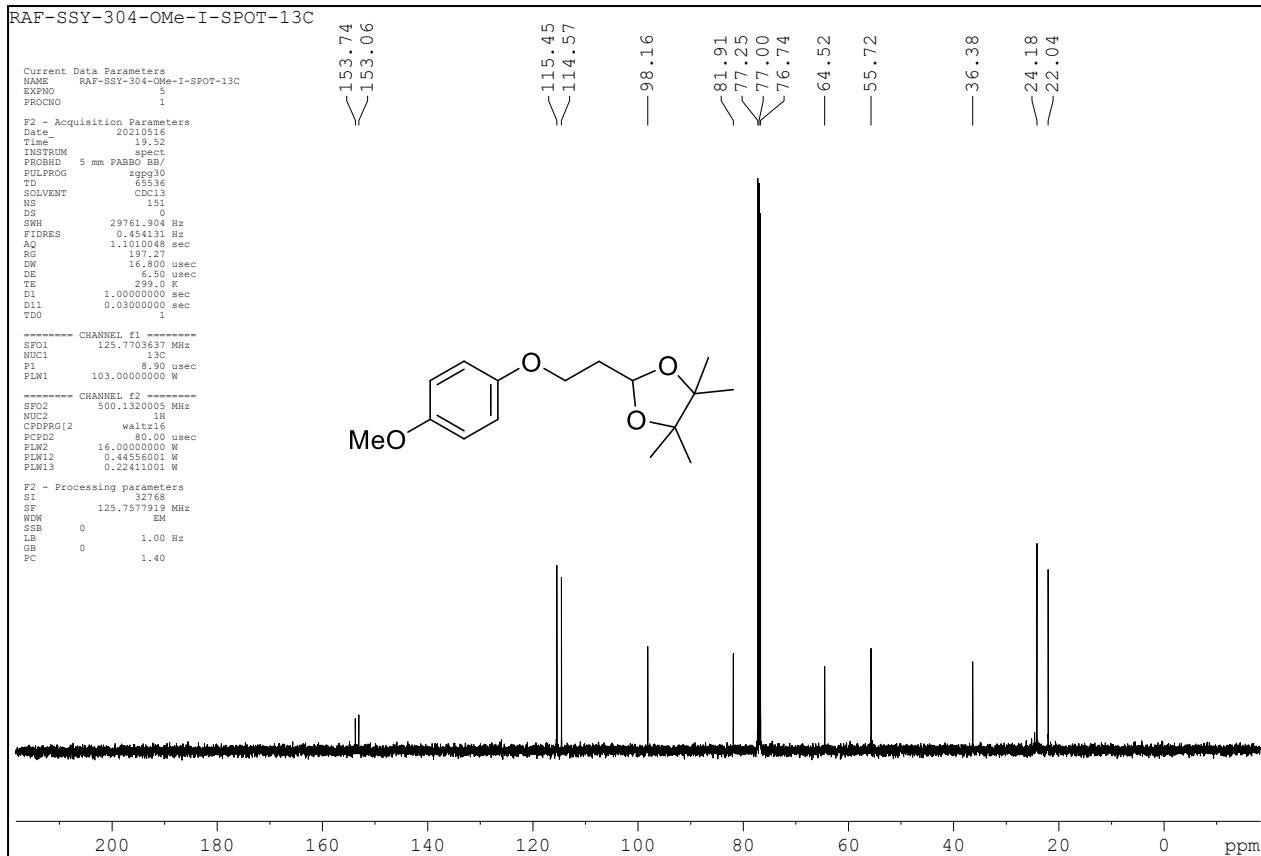
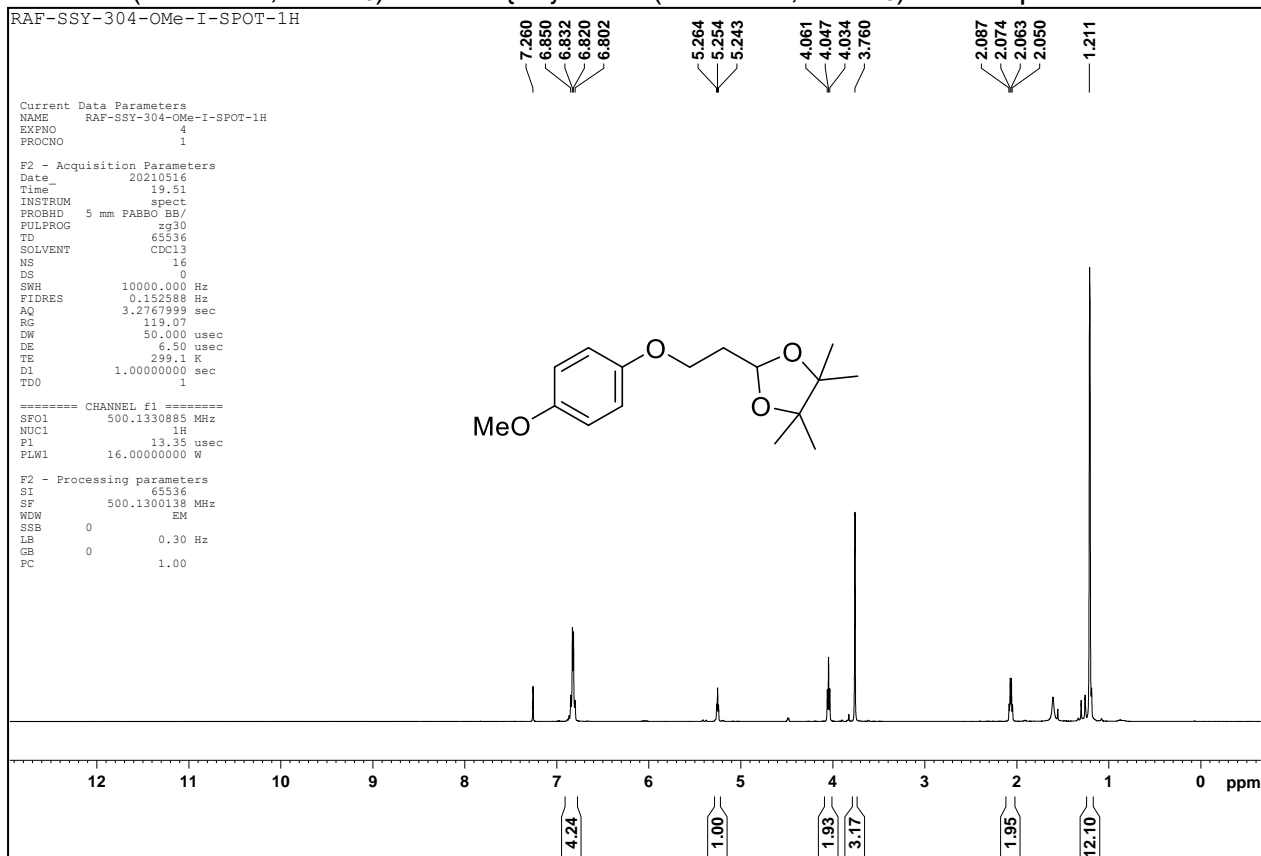
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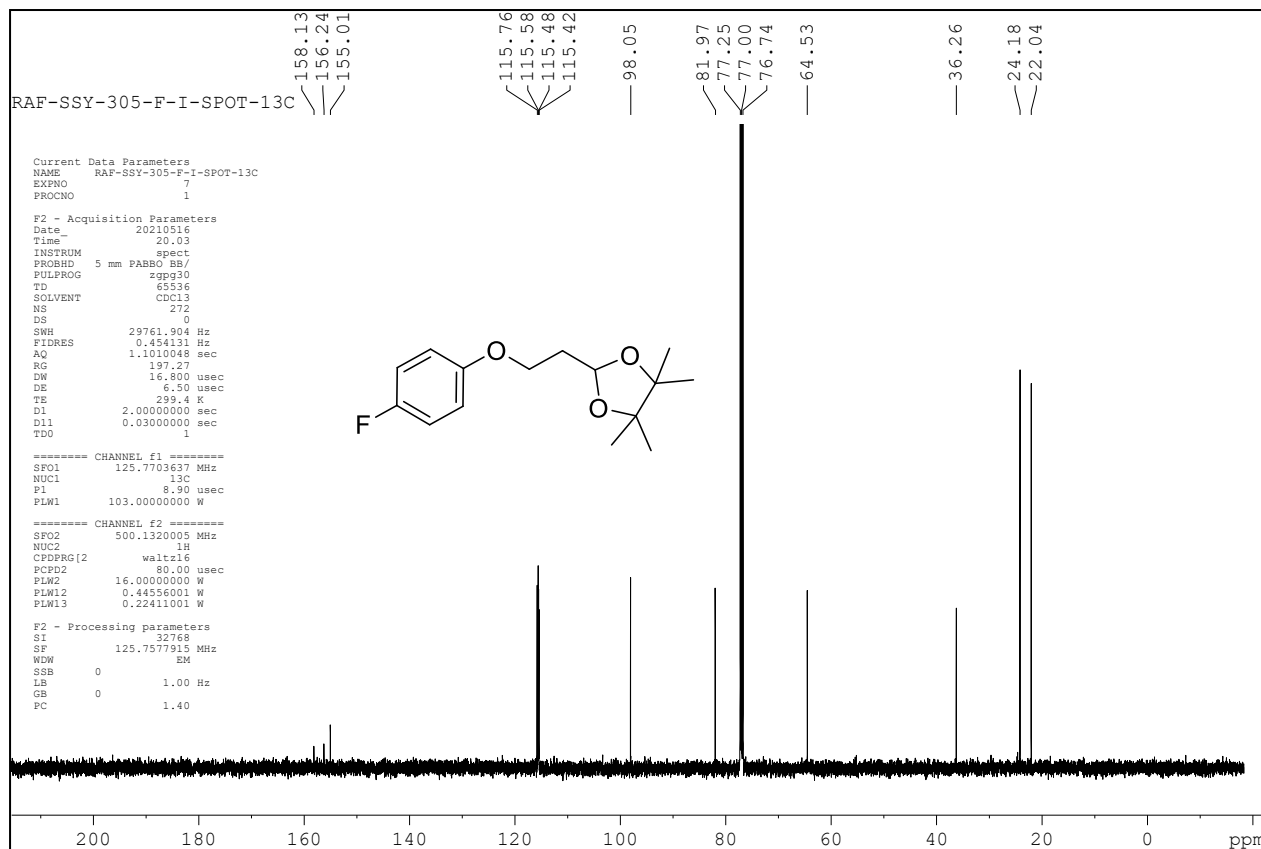
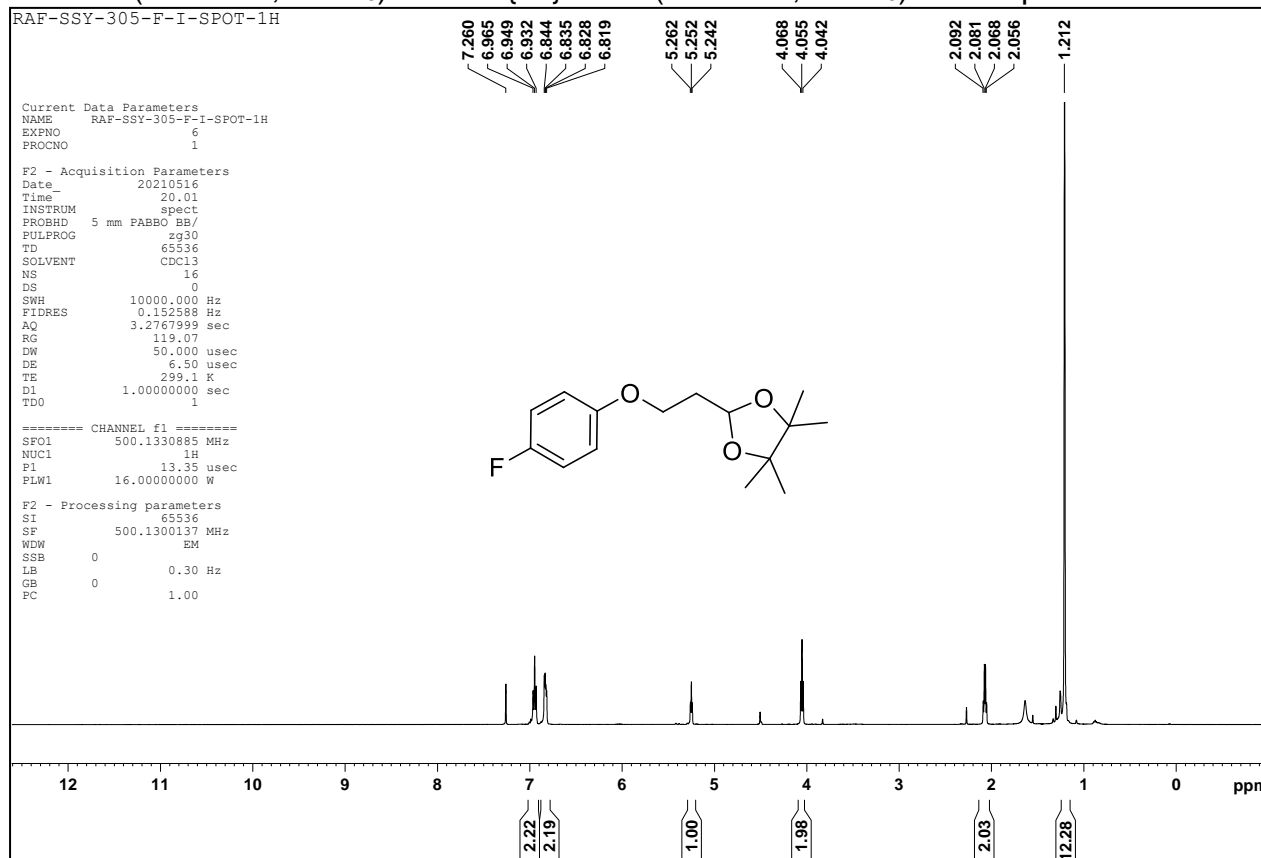
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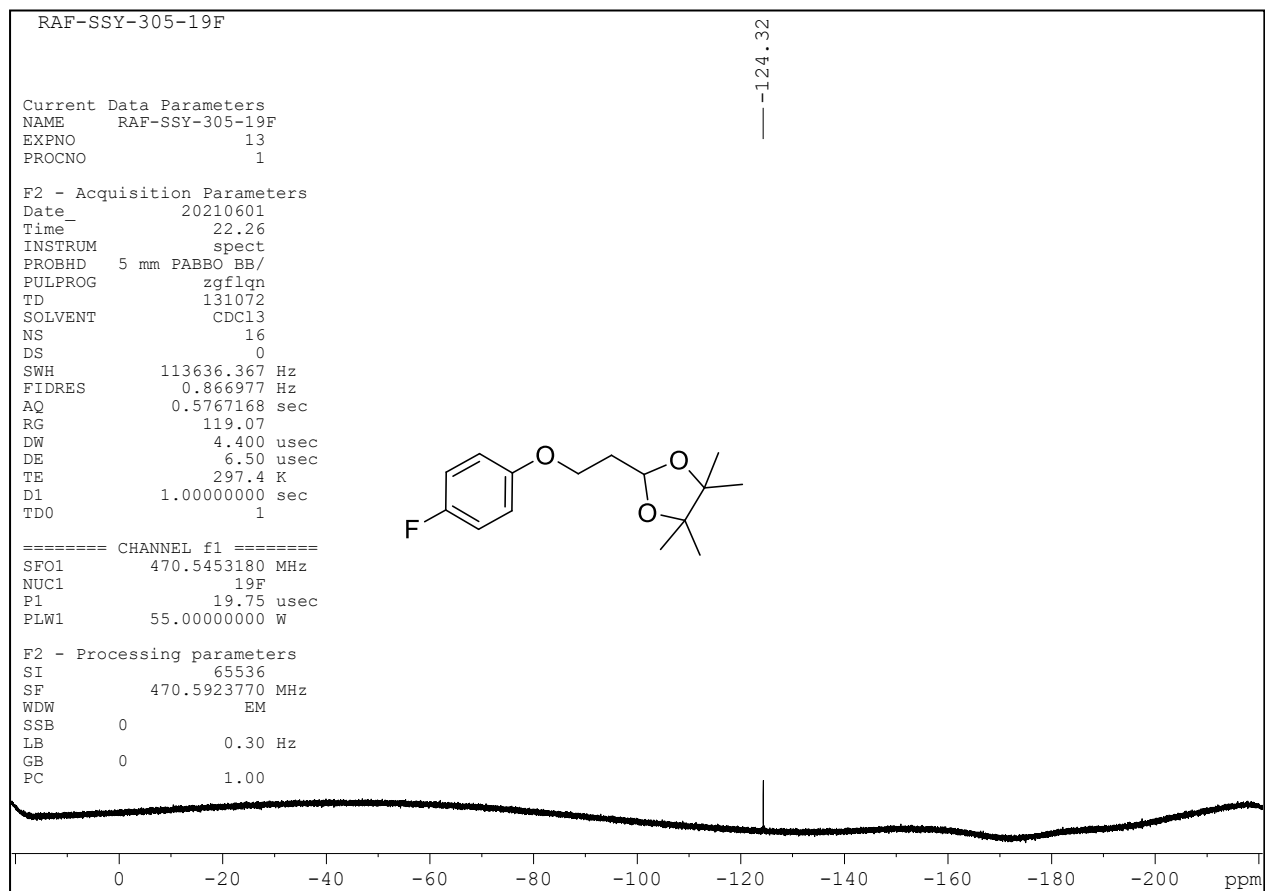
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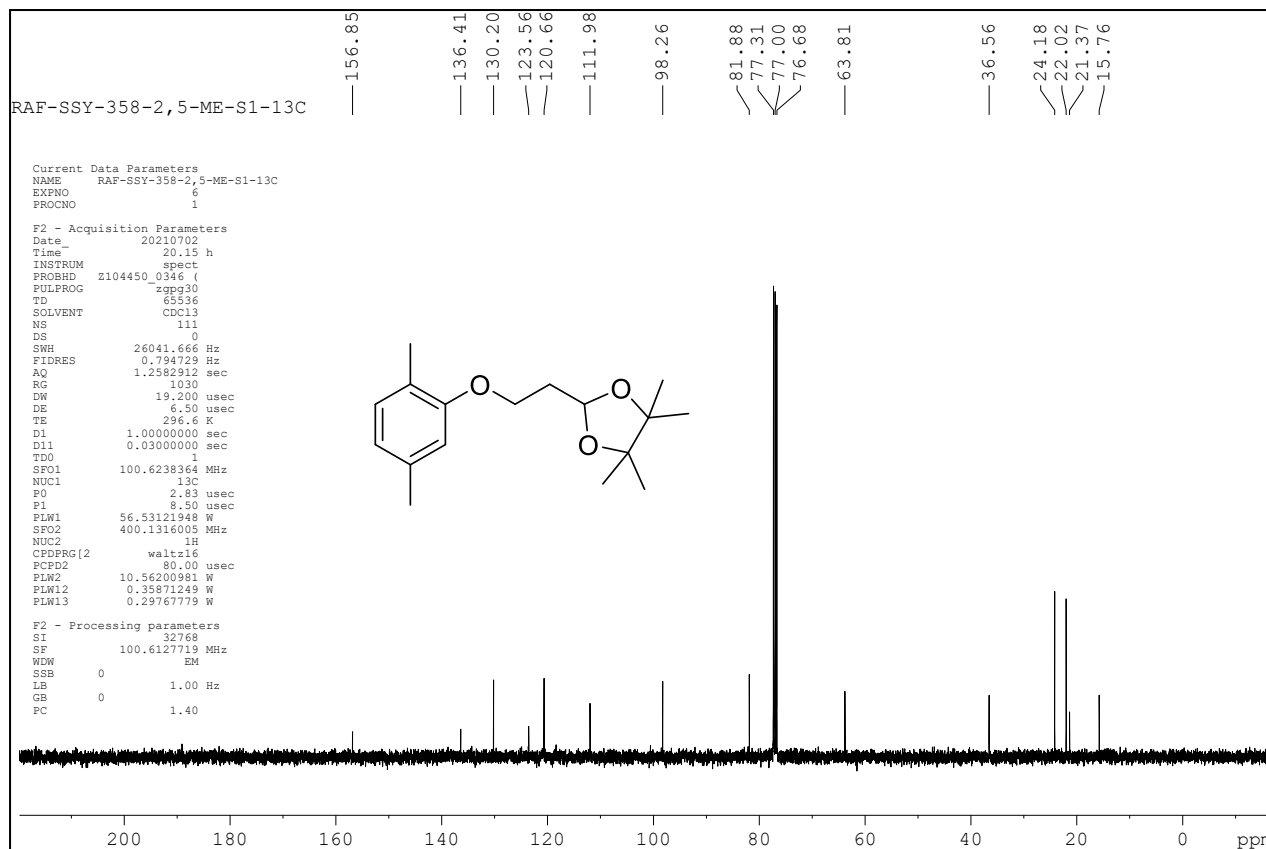
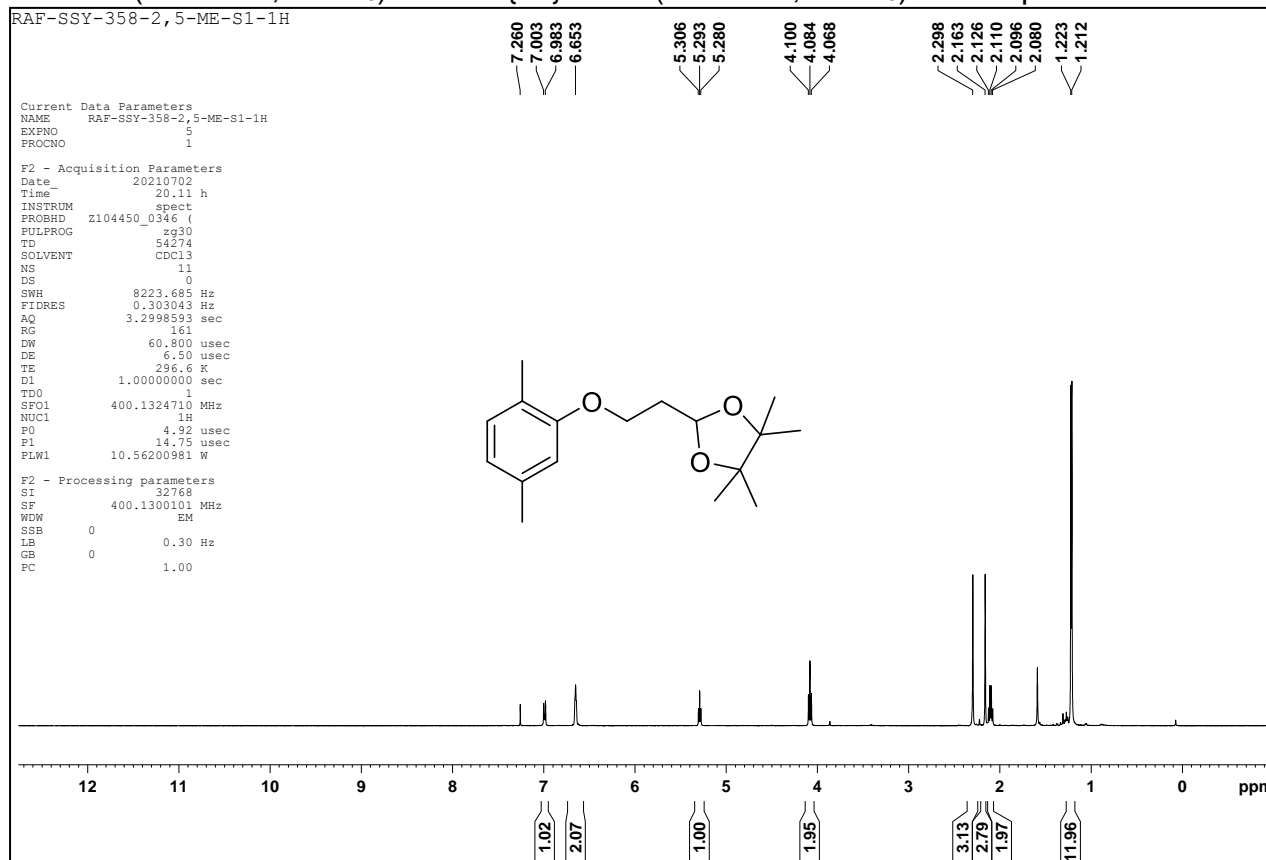
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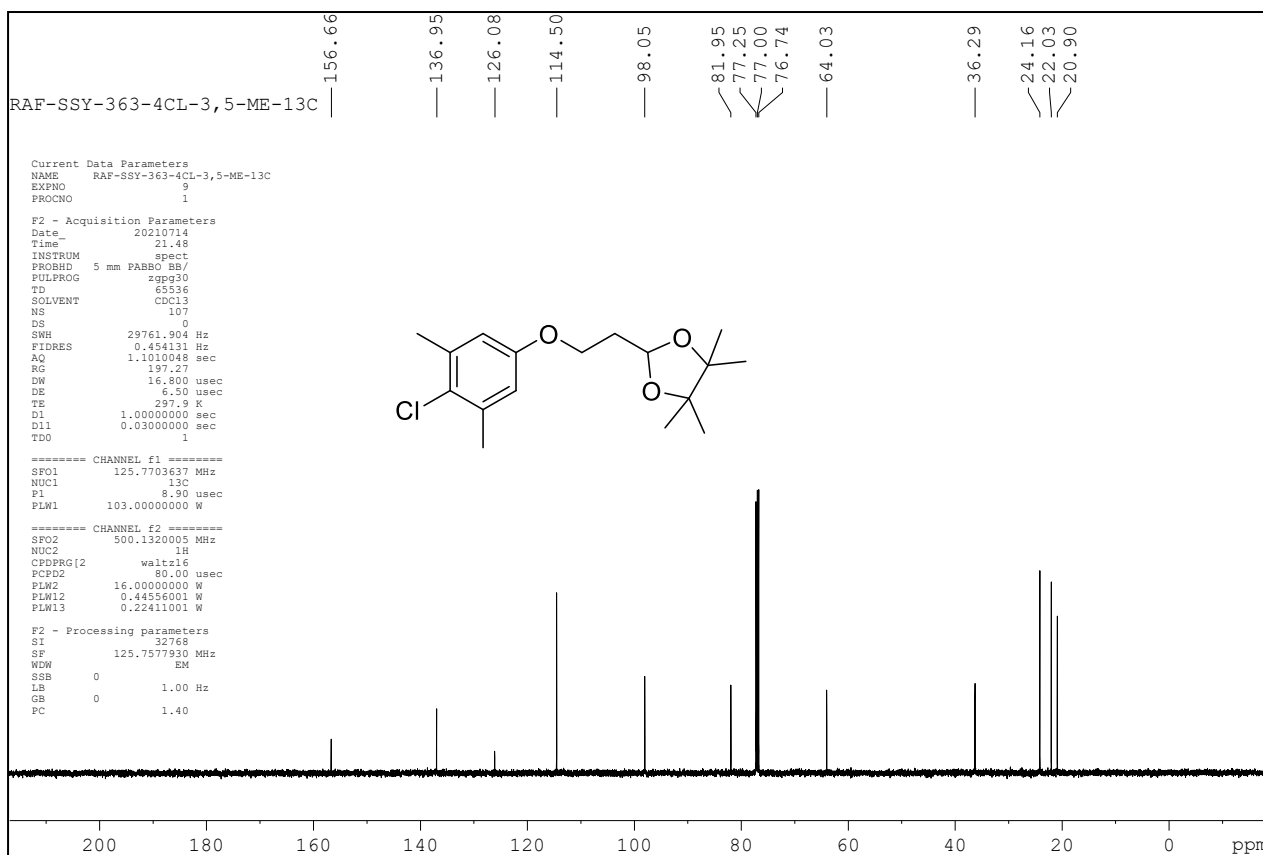
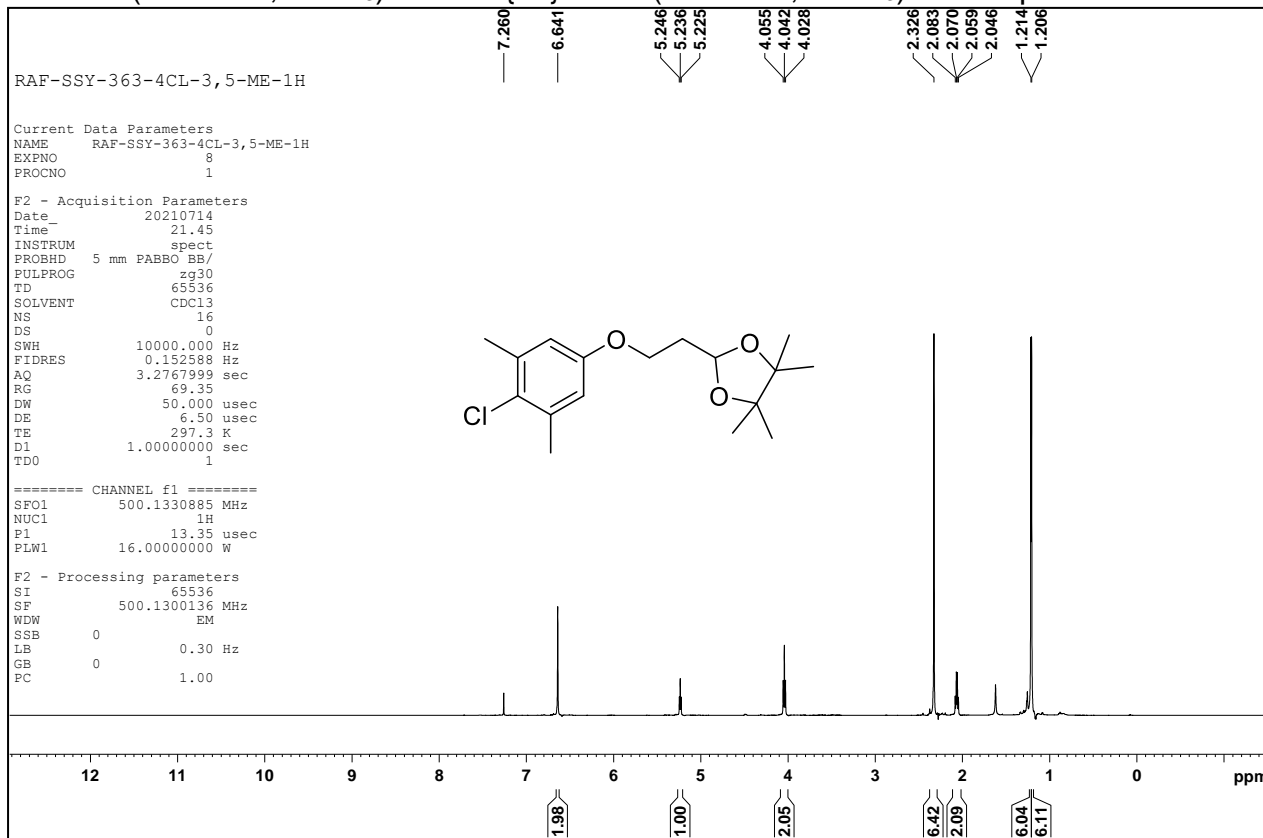
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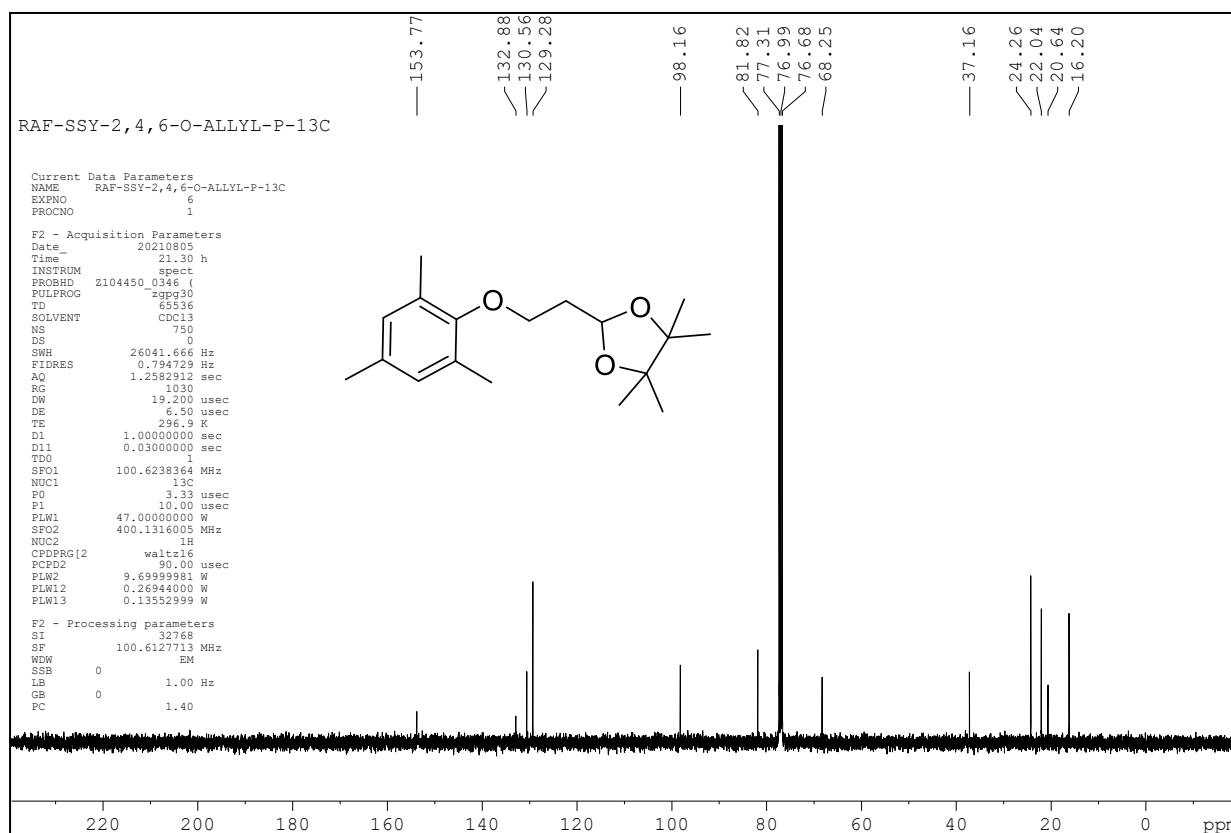
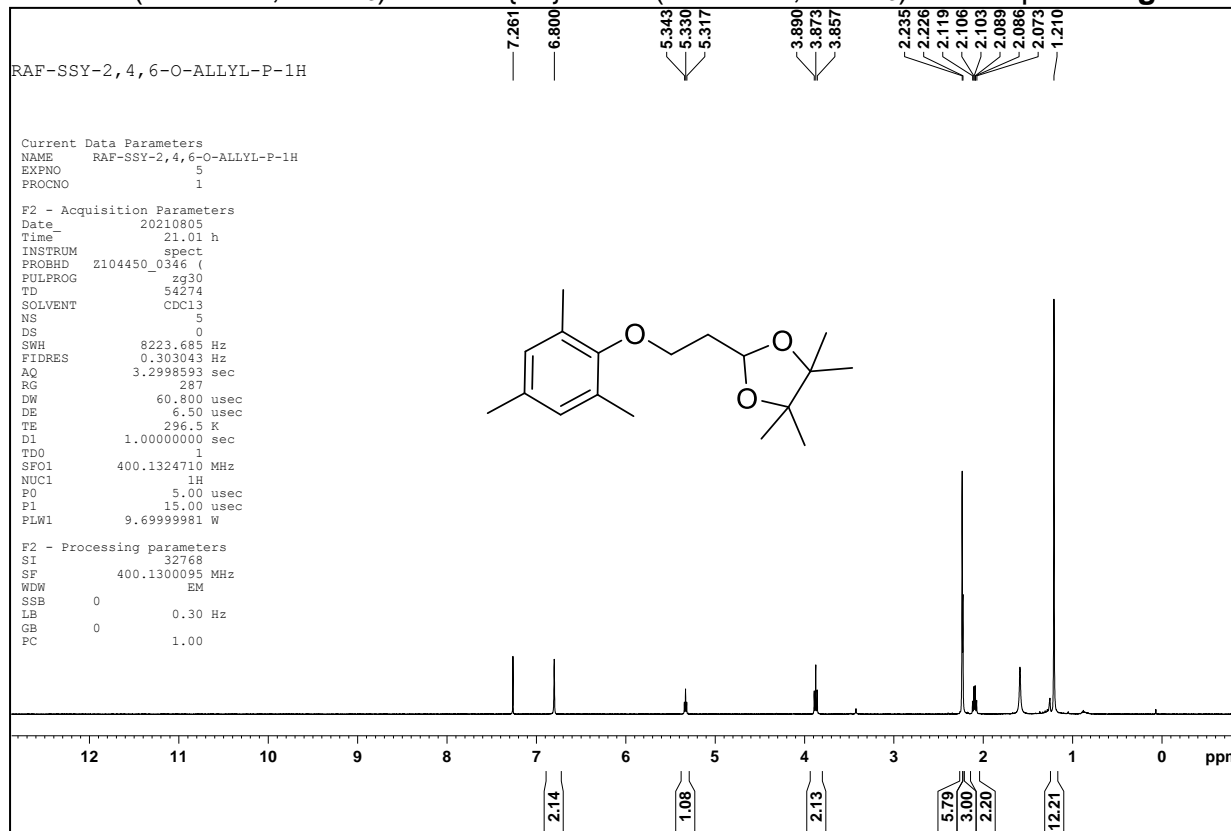
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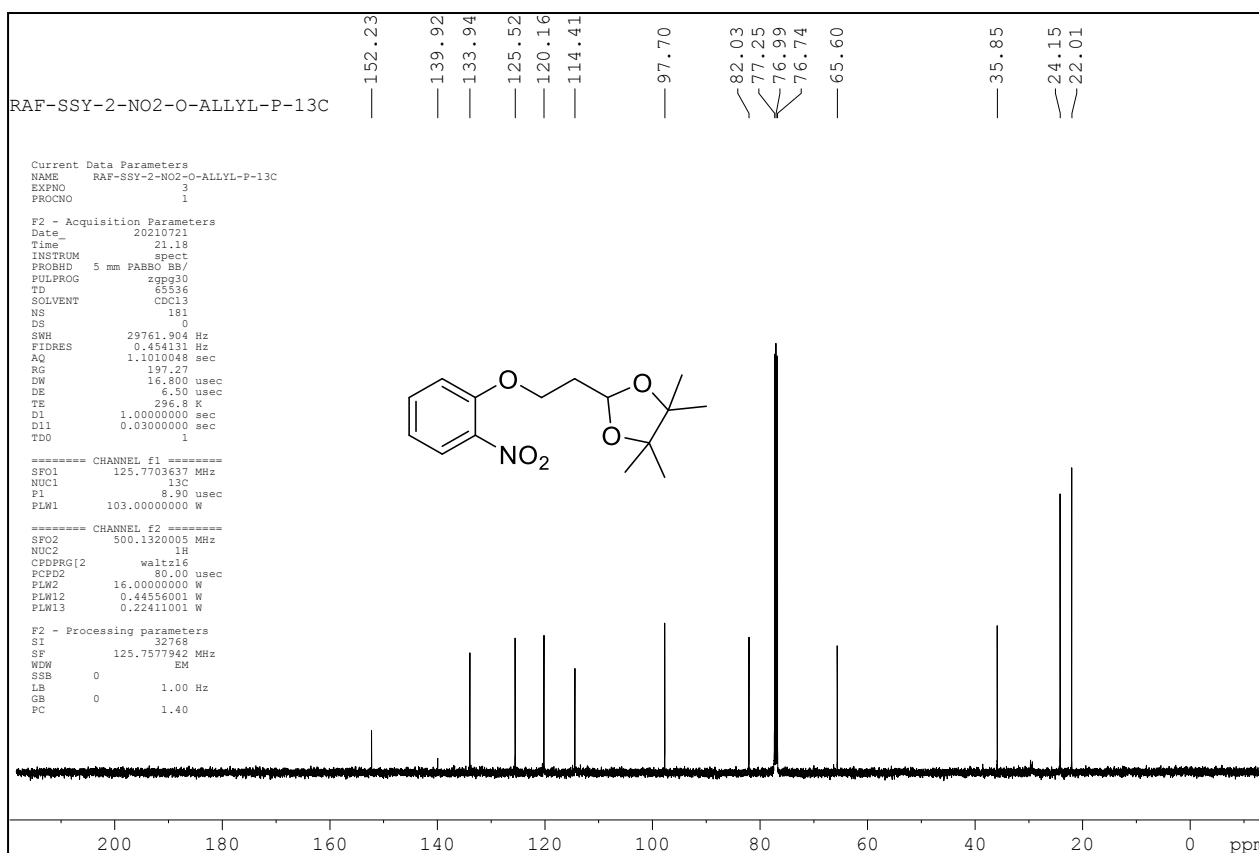
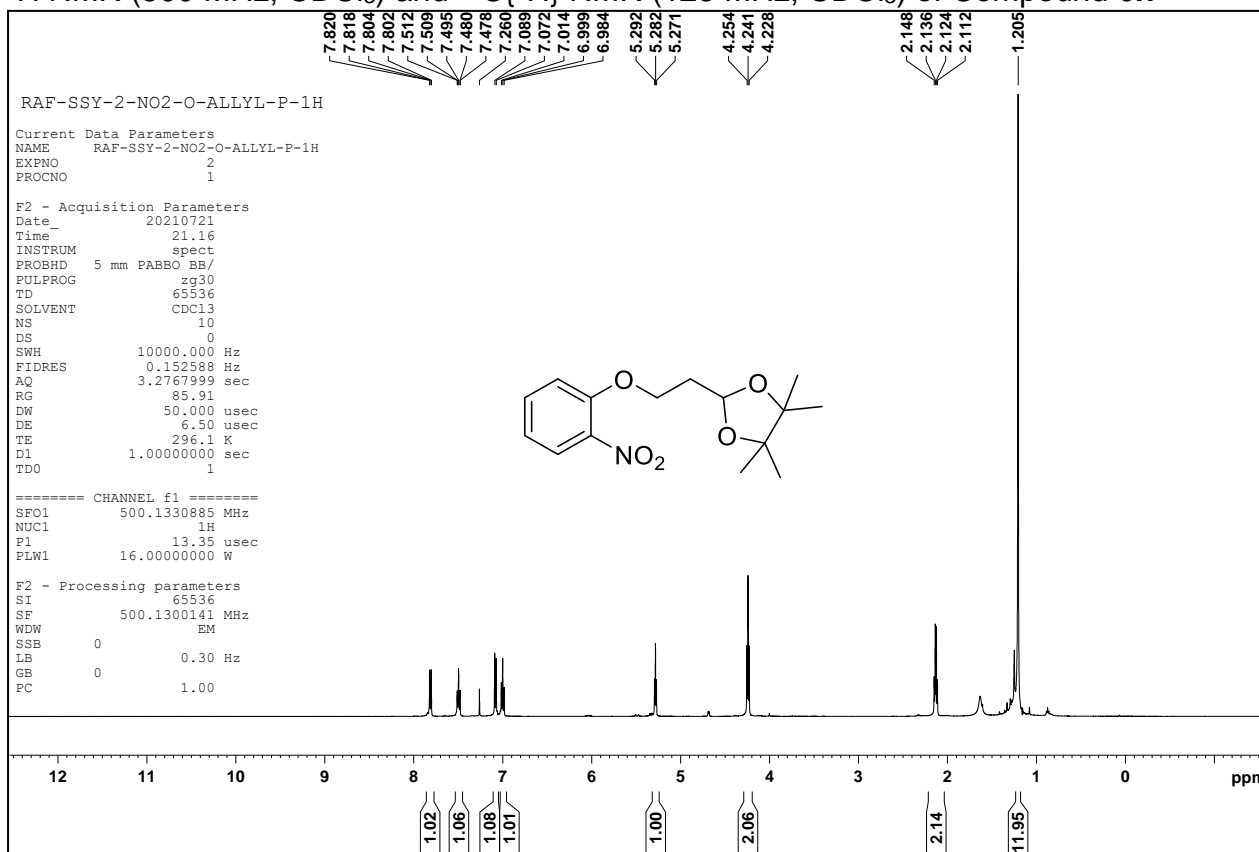
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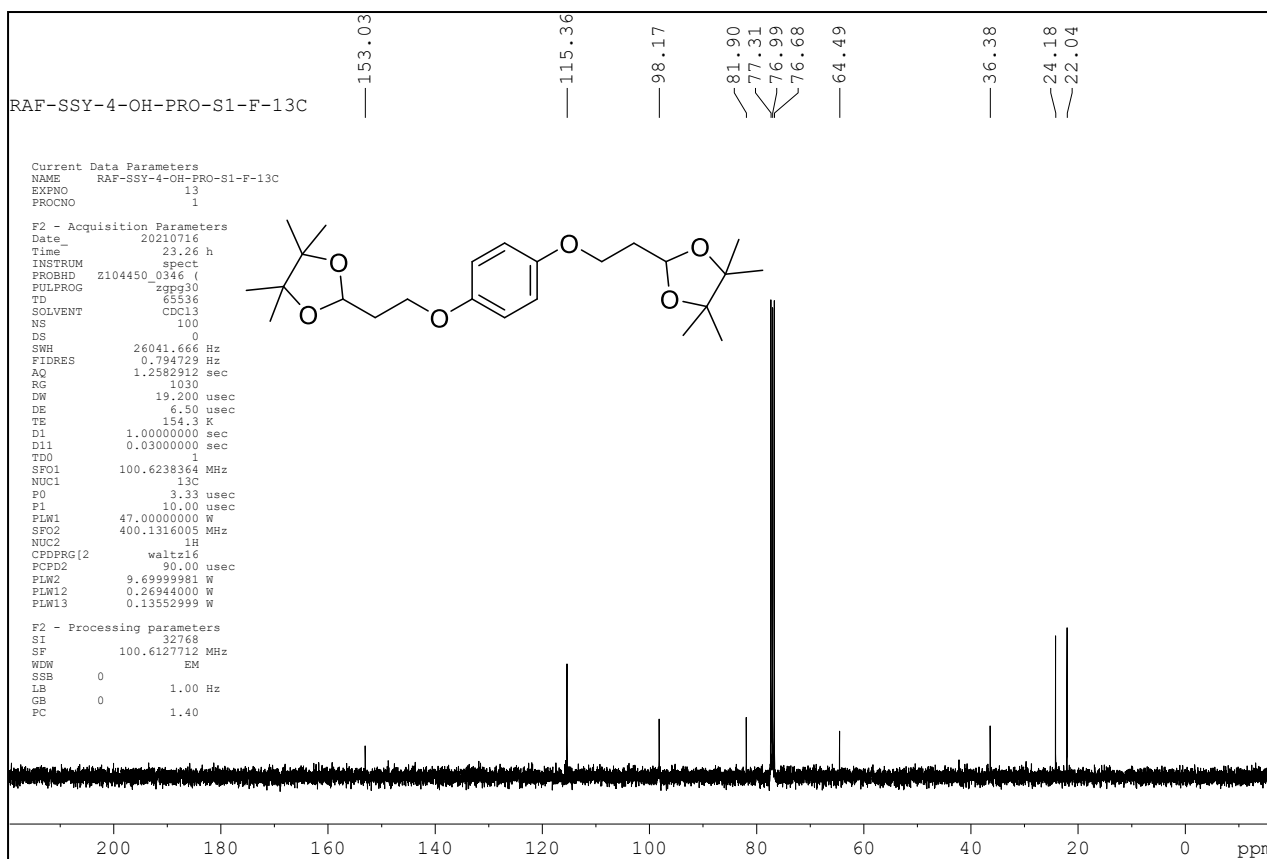
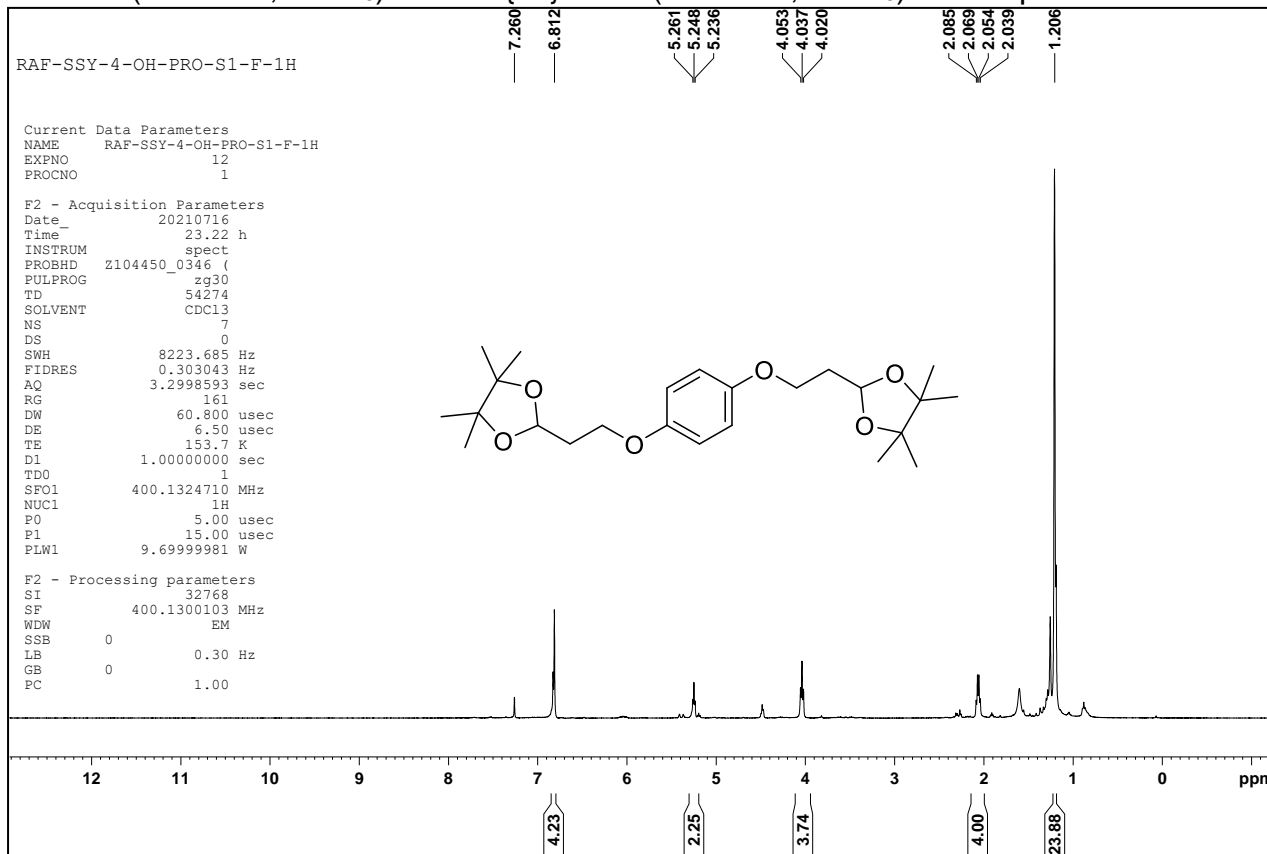
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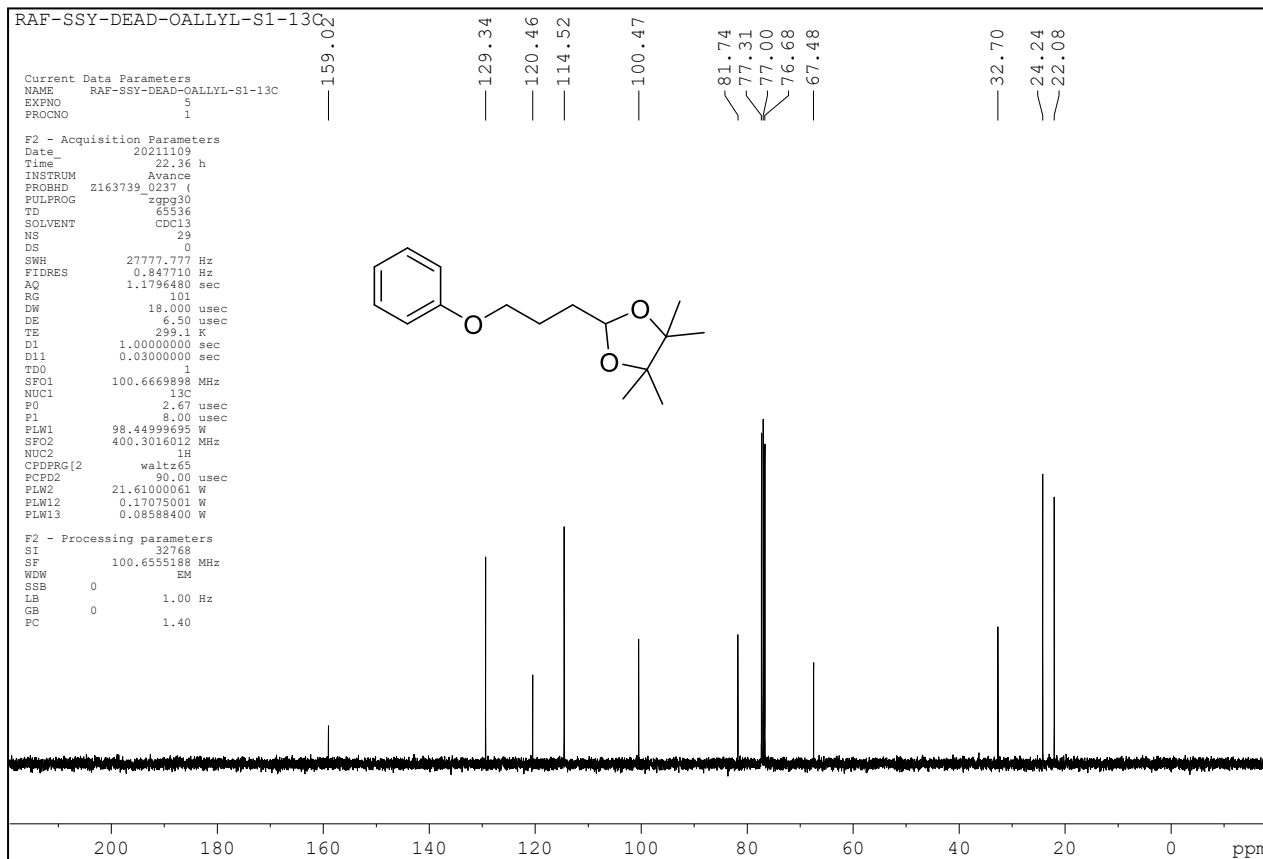
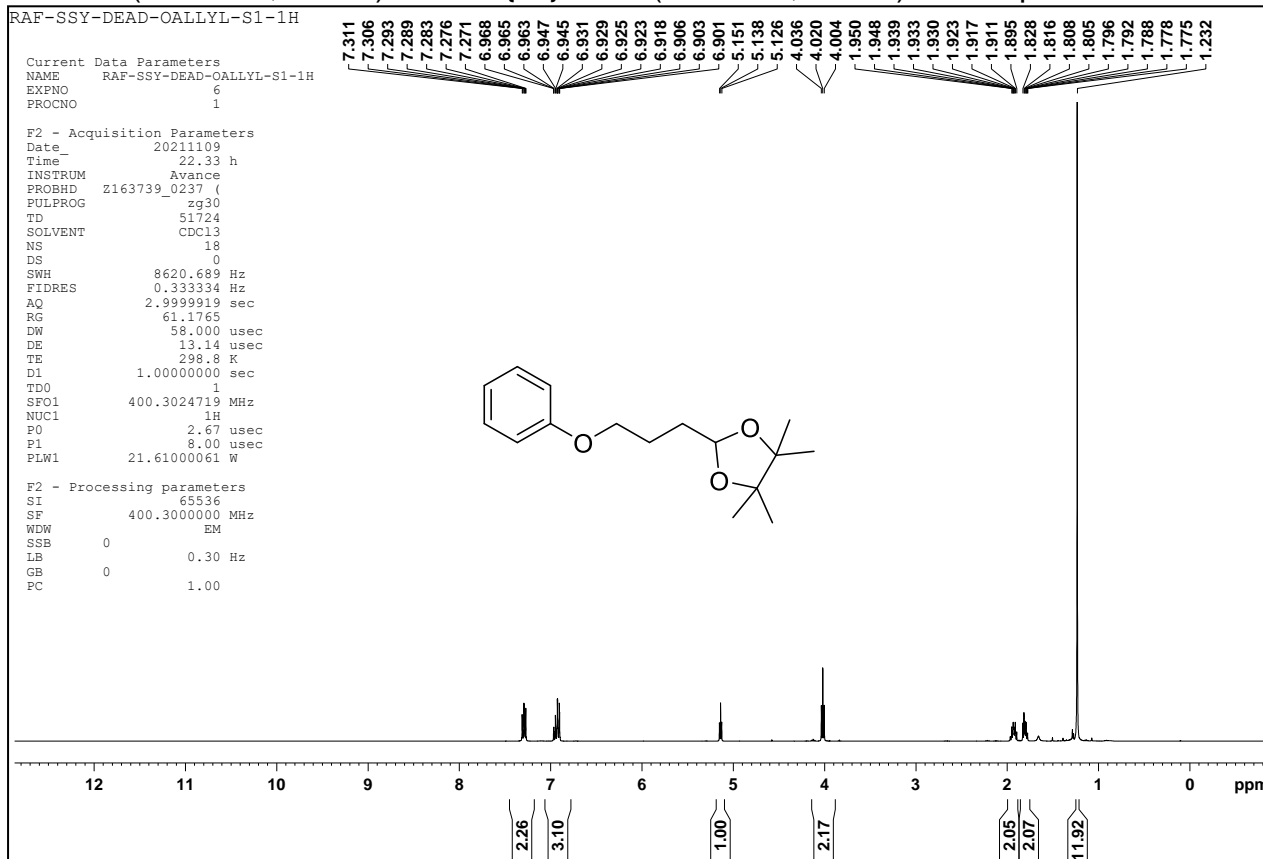
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 6h



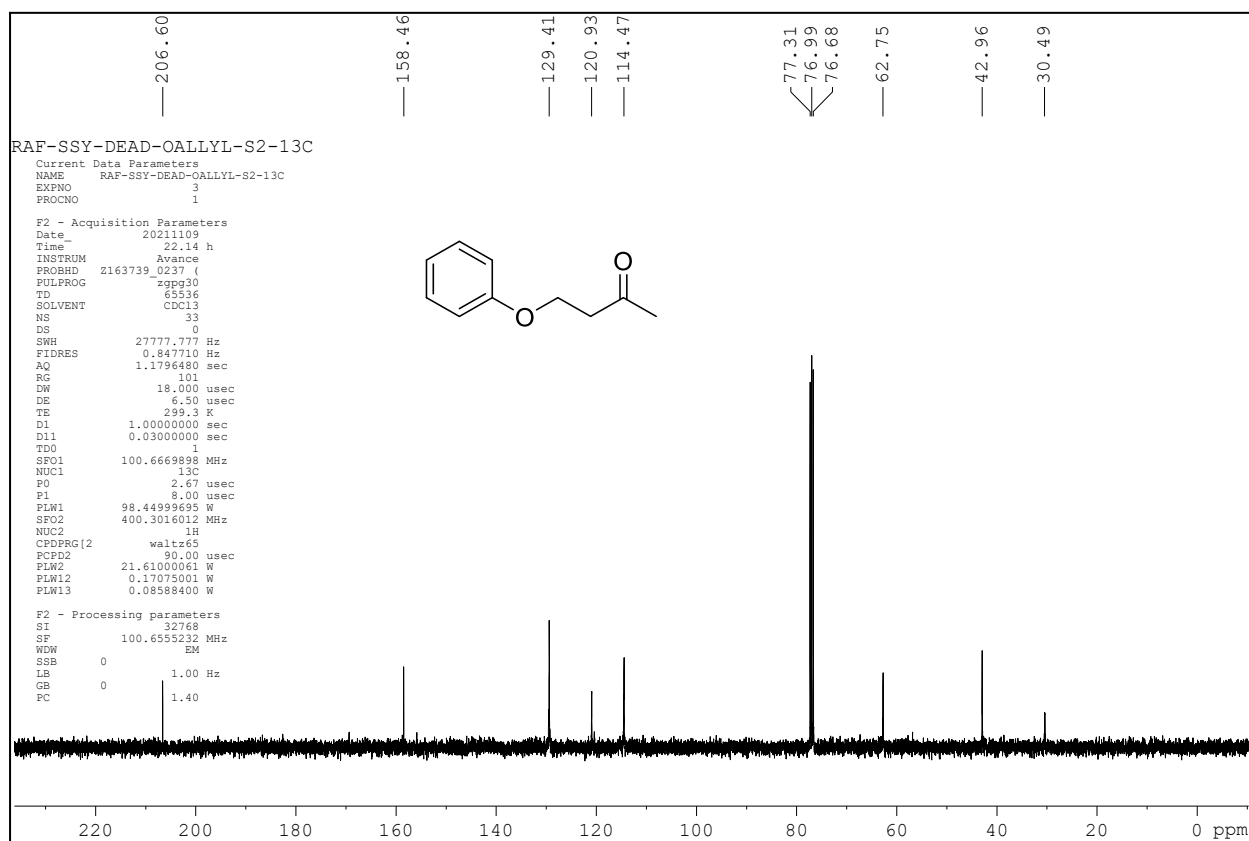
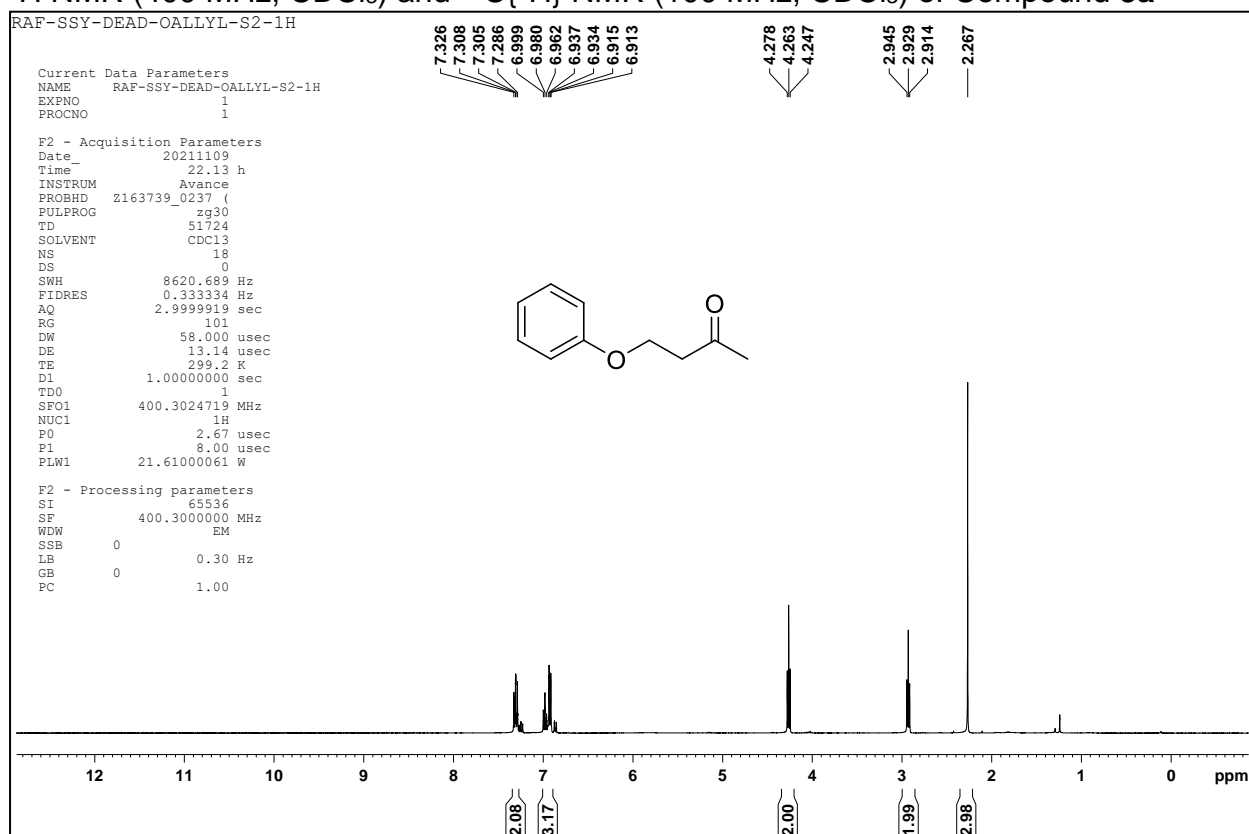
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 6i



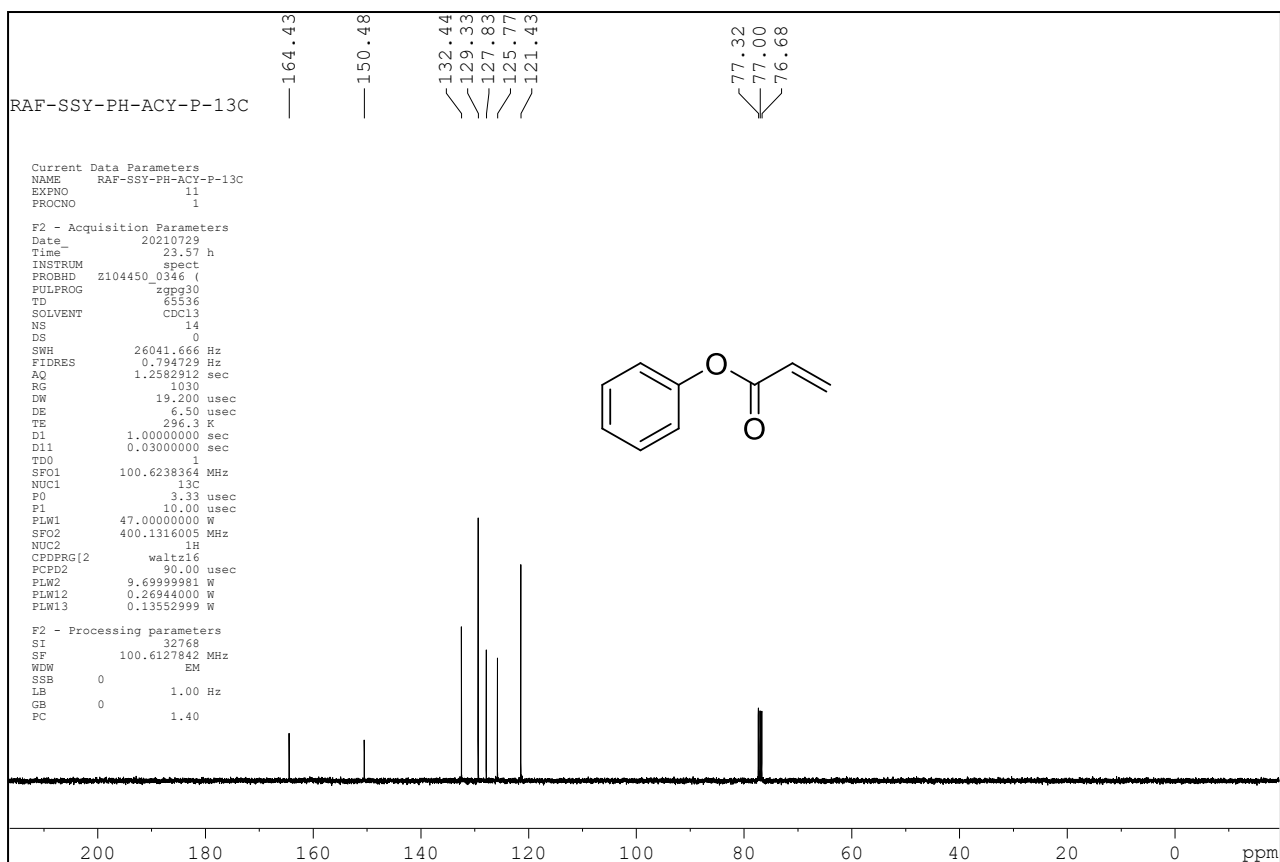
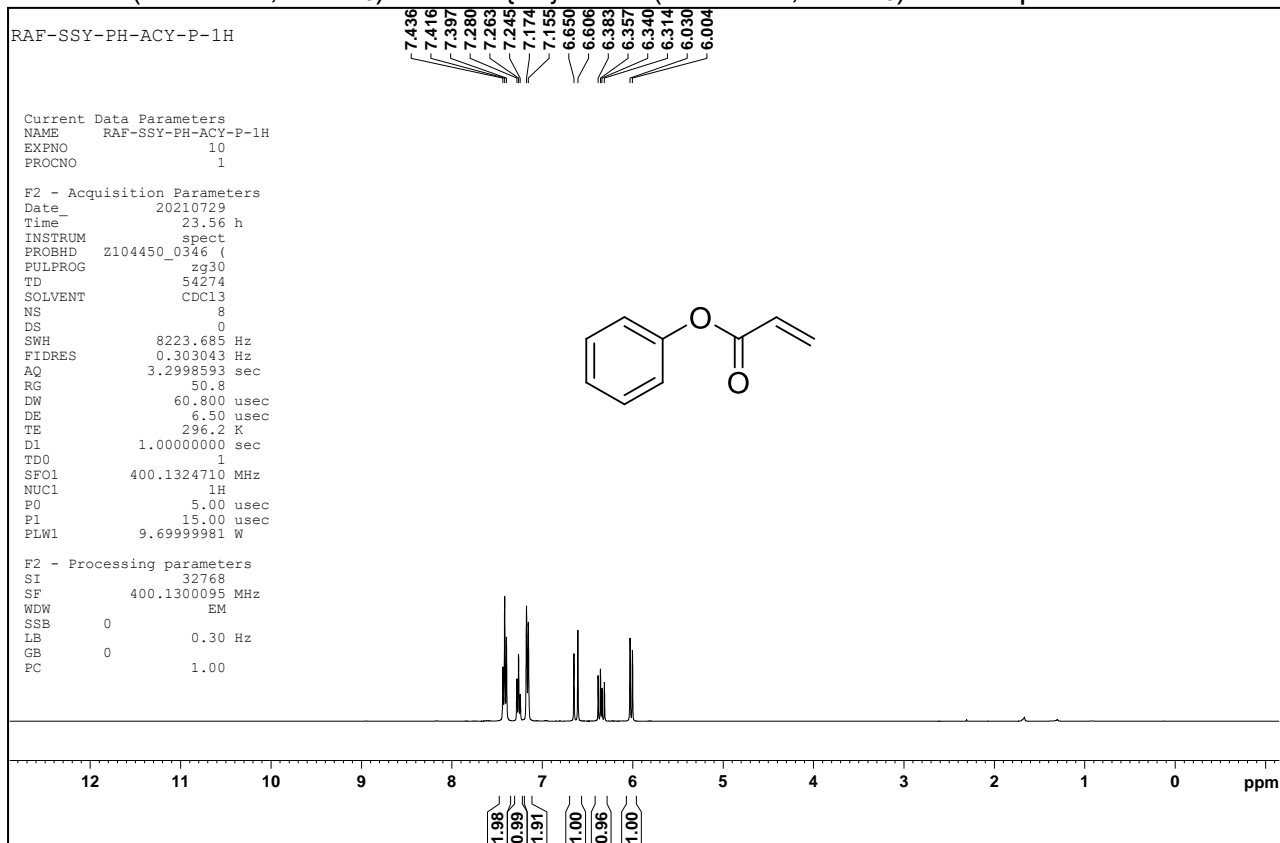
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 6'a



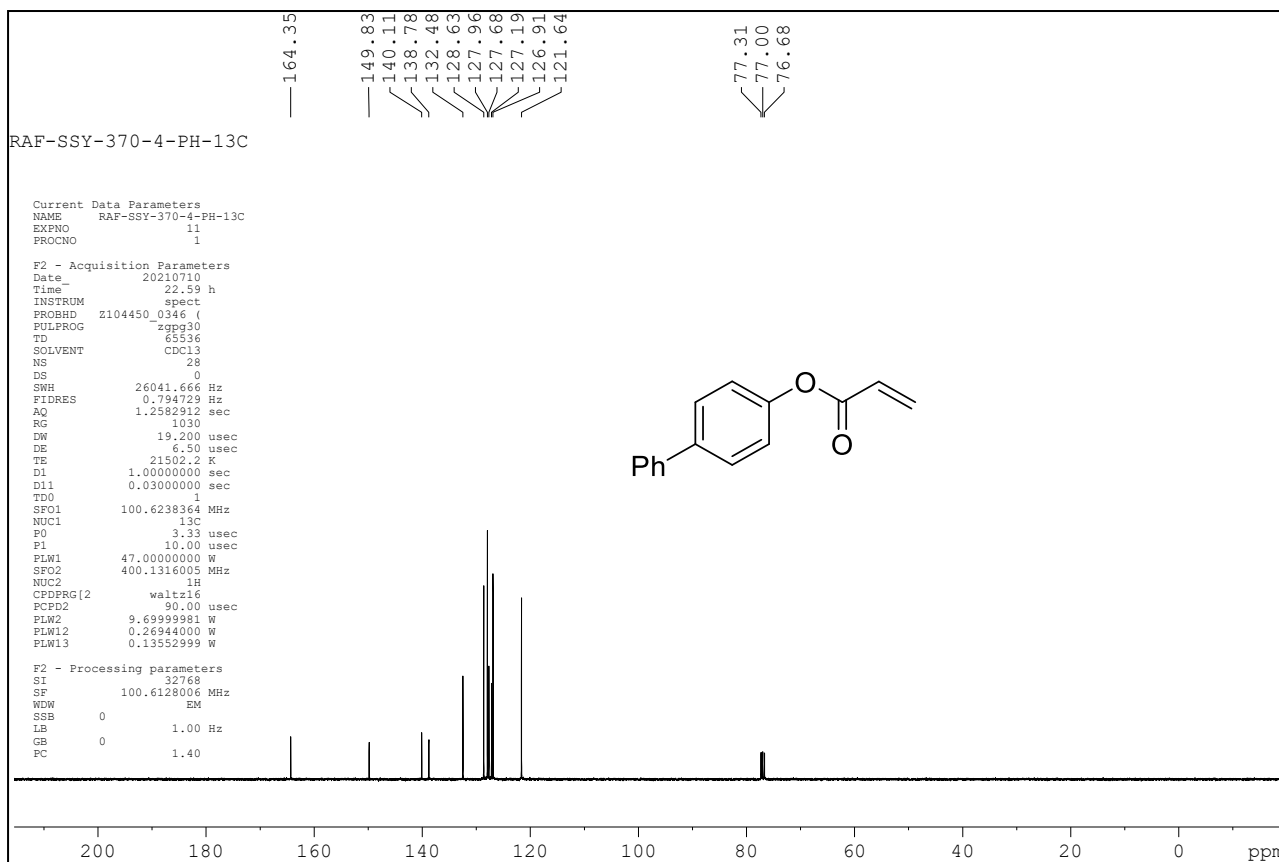
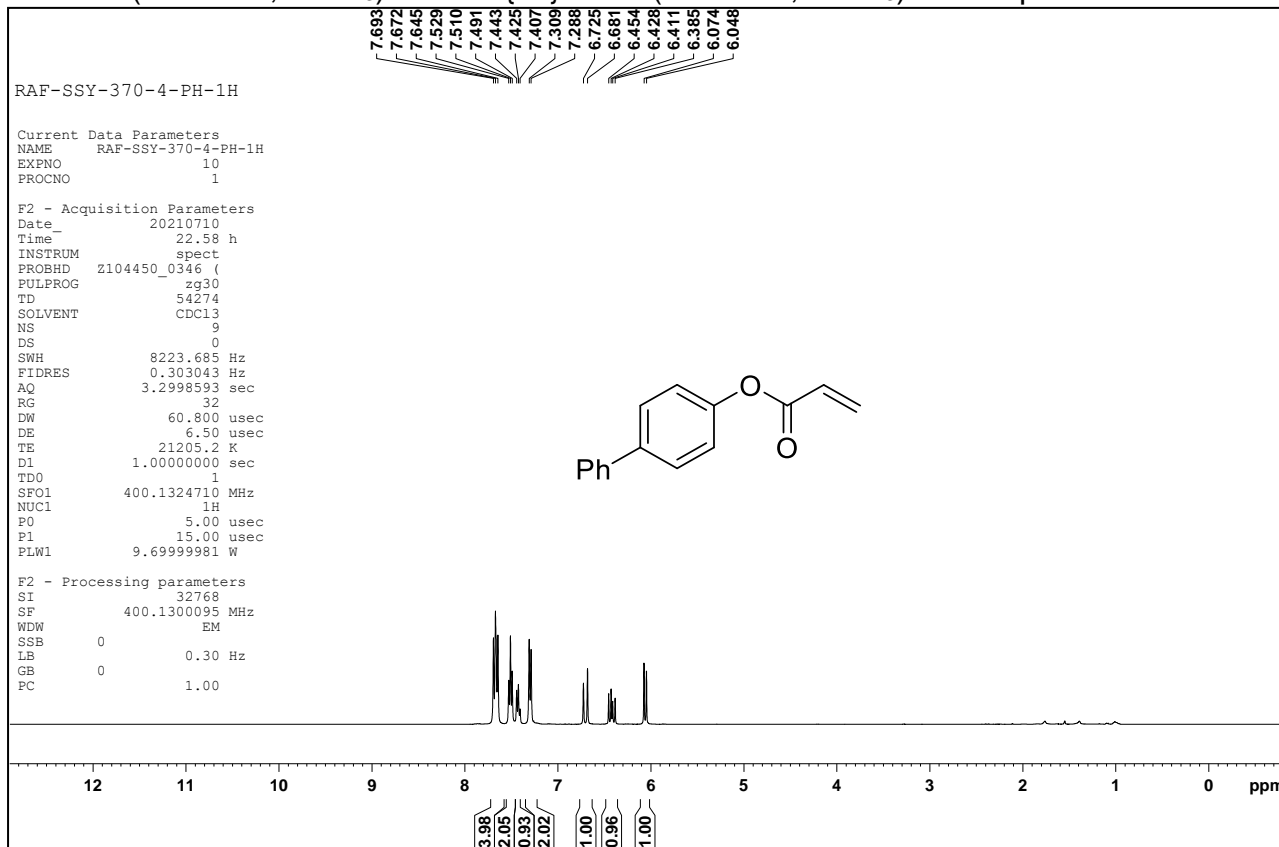
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 3a



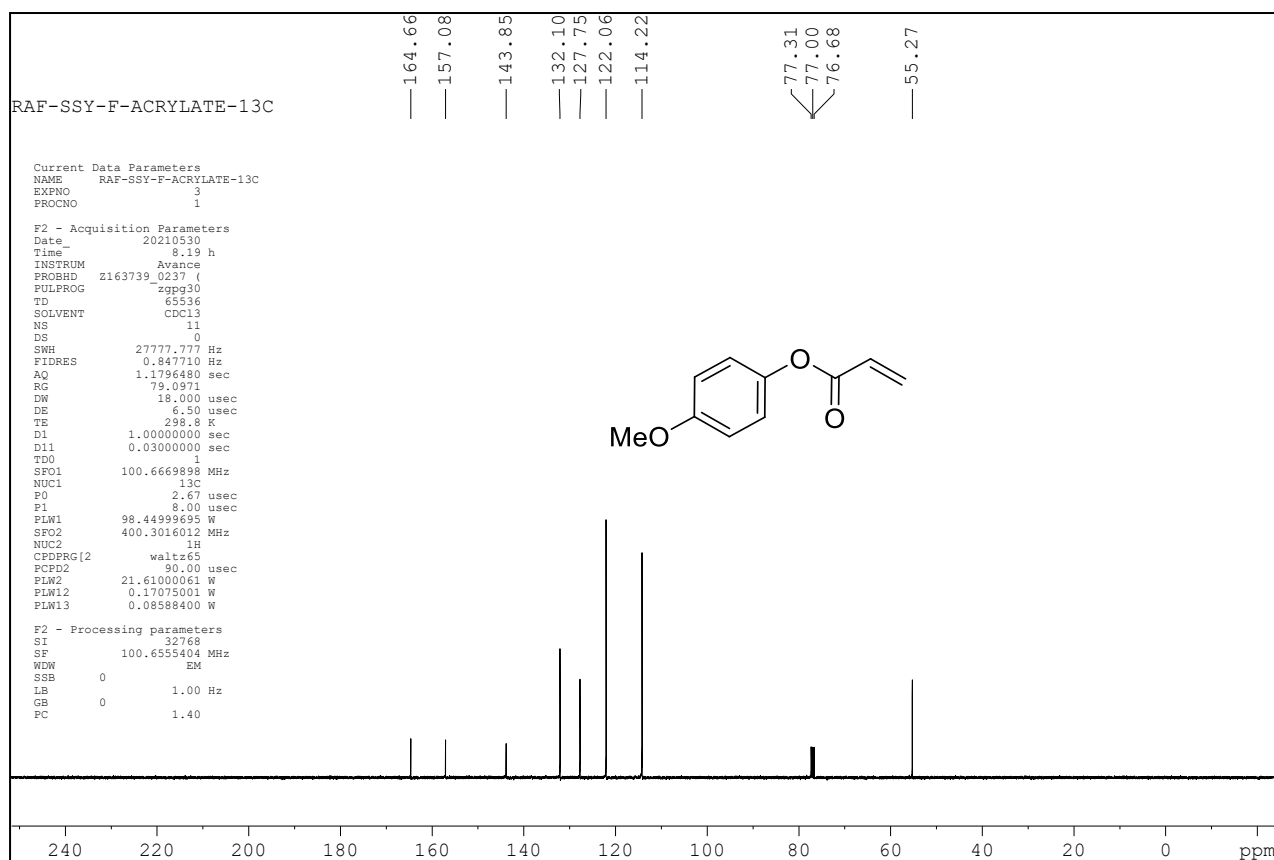
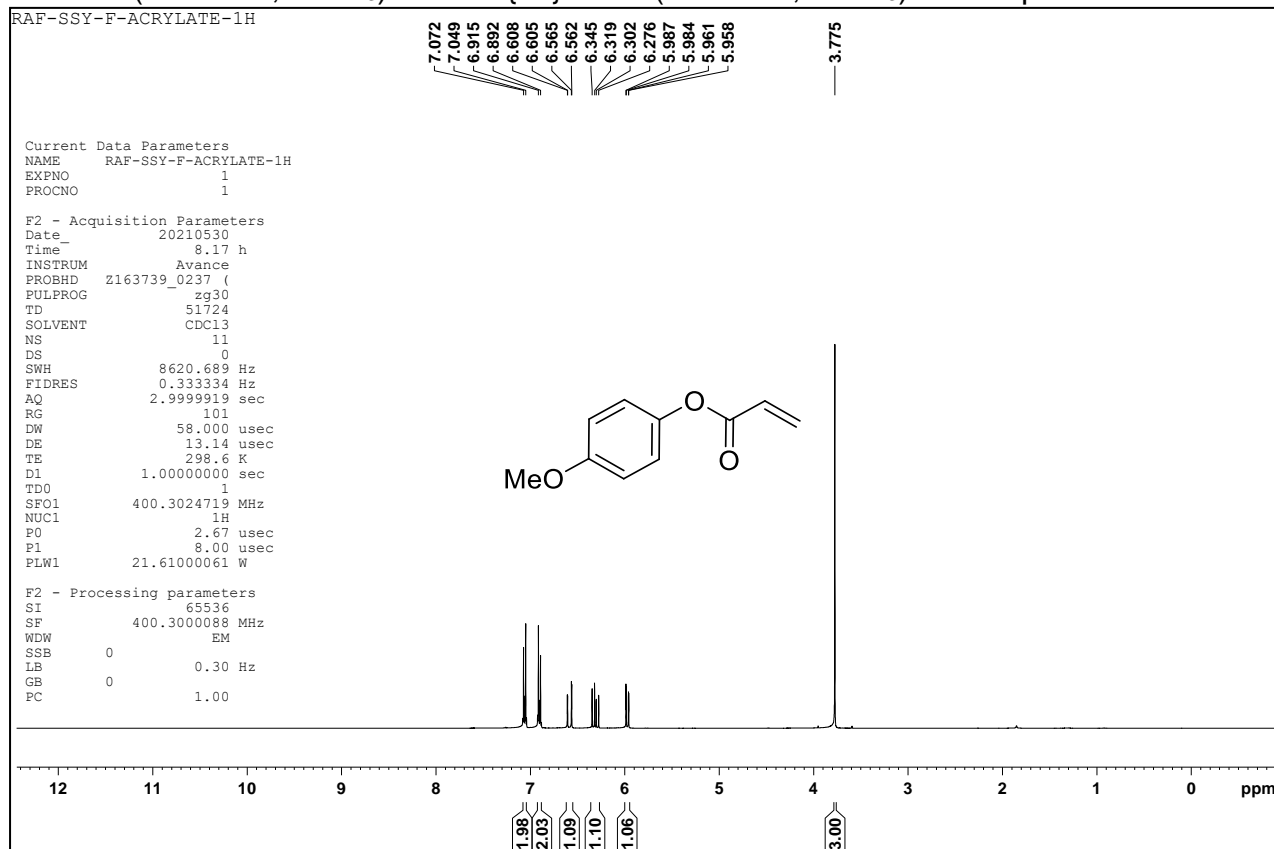
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7a



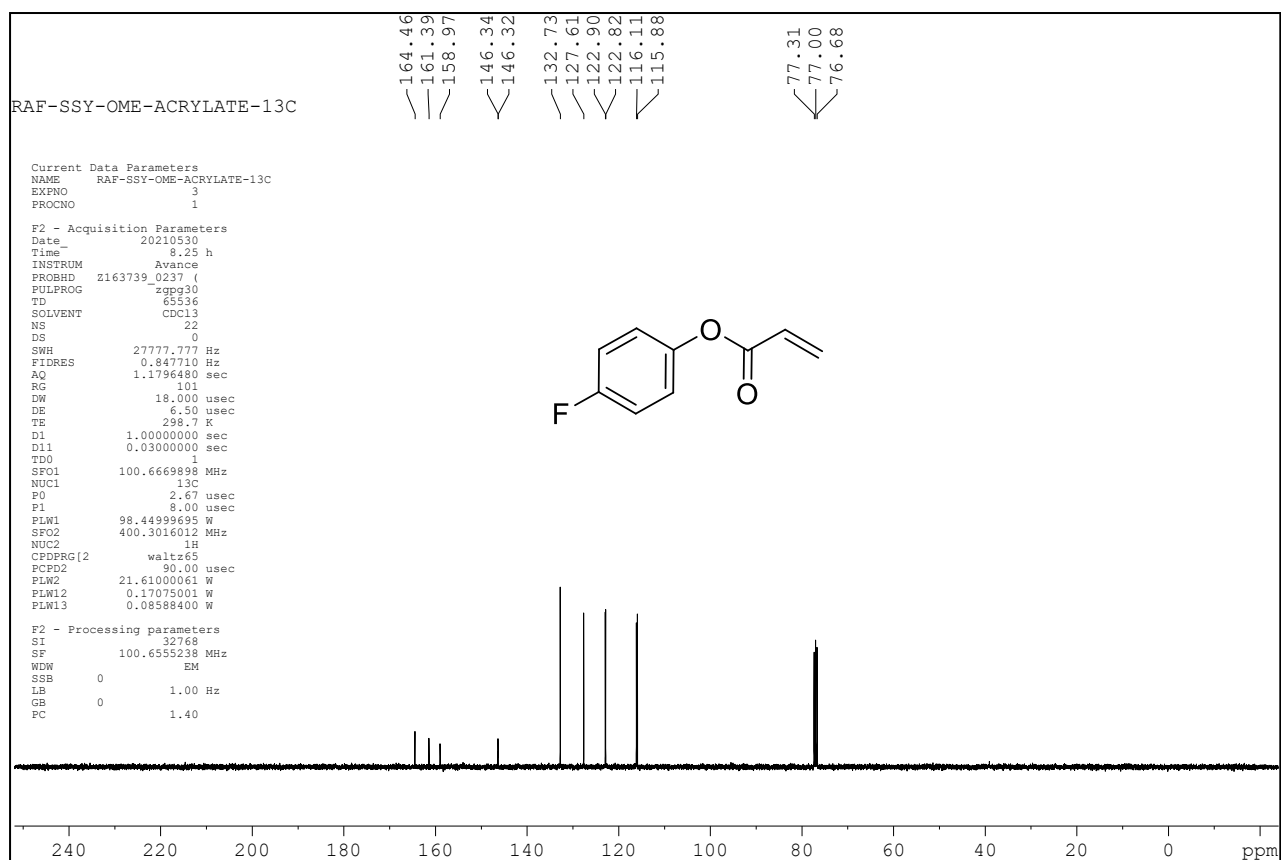
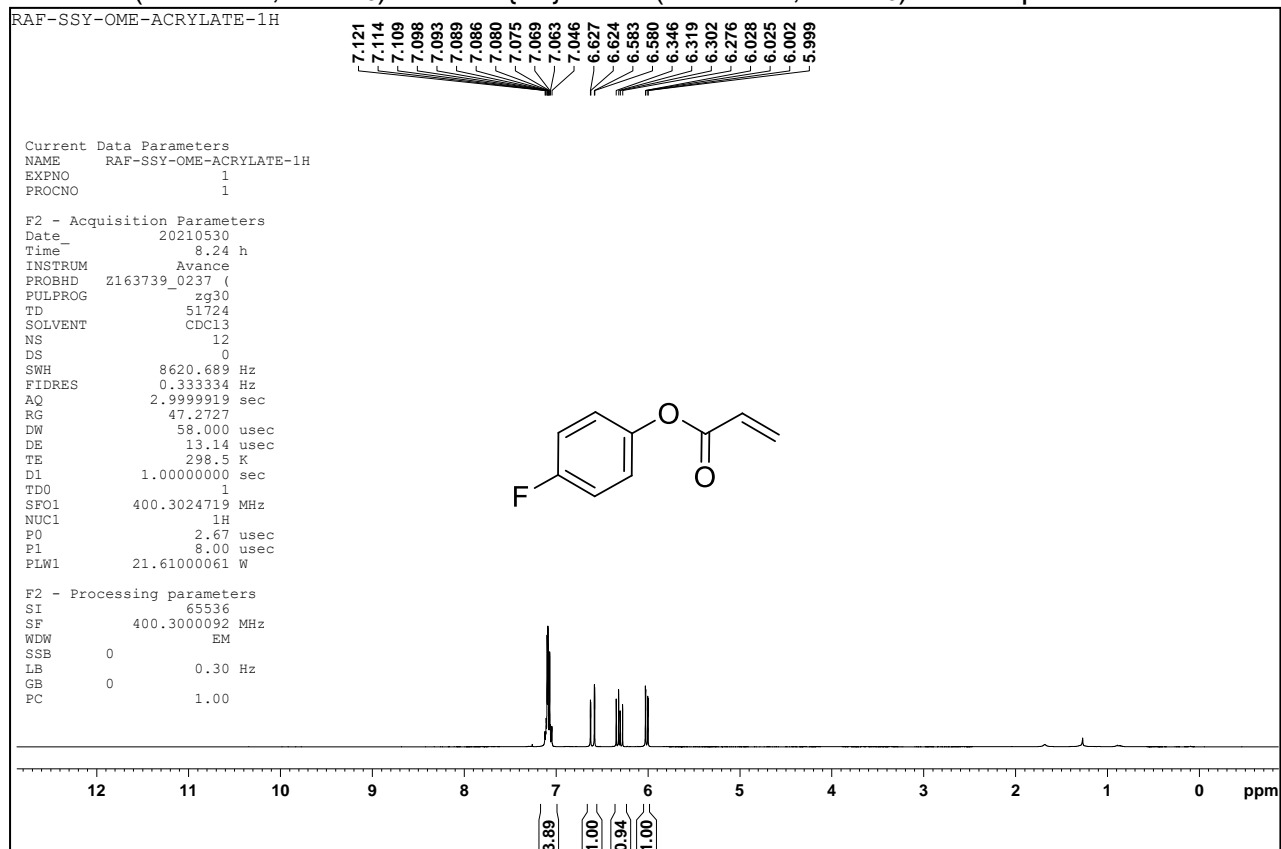
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7b



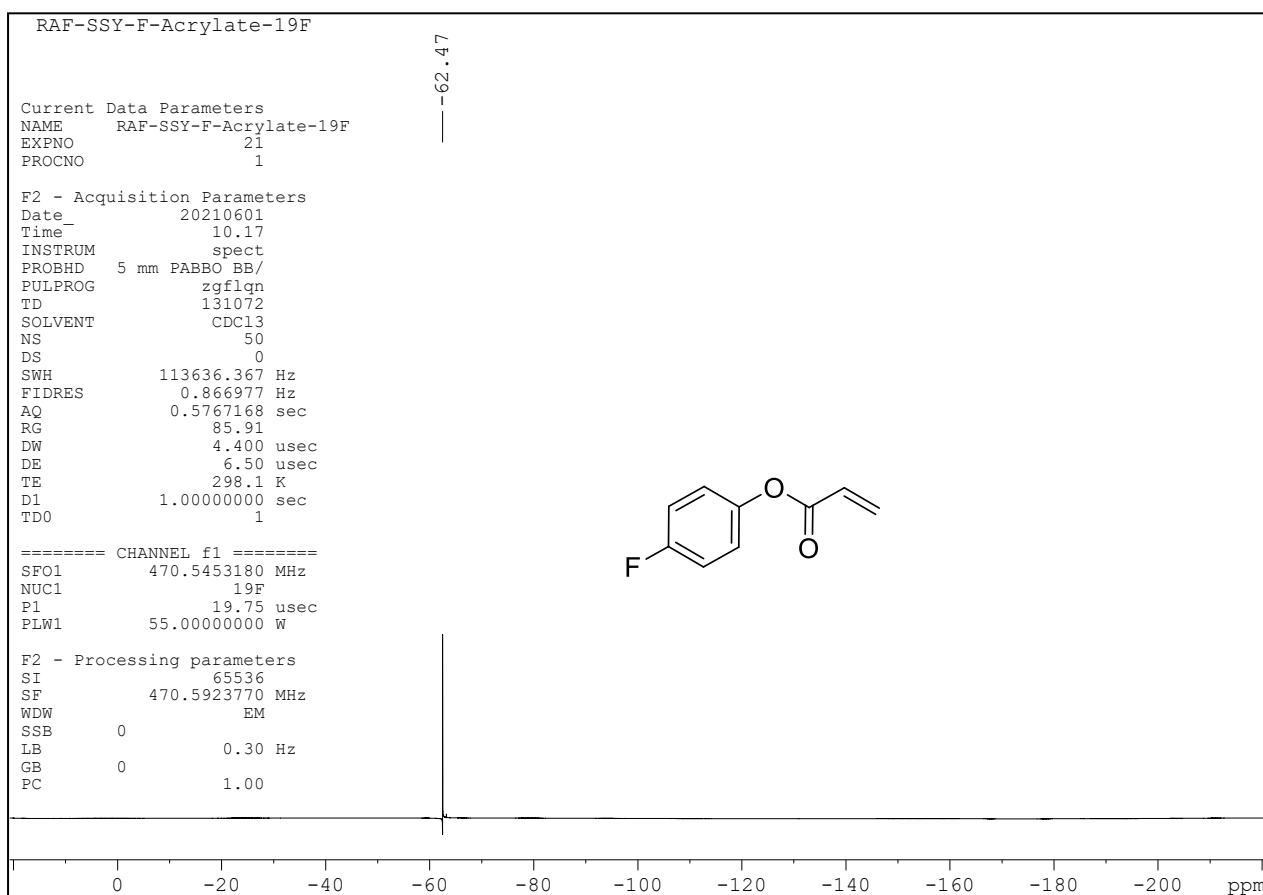
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7c



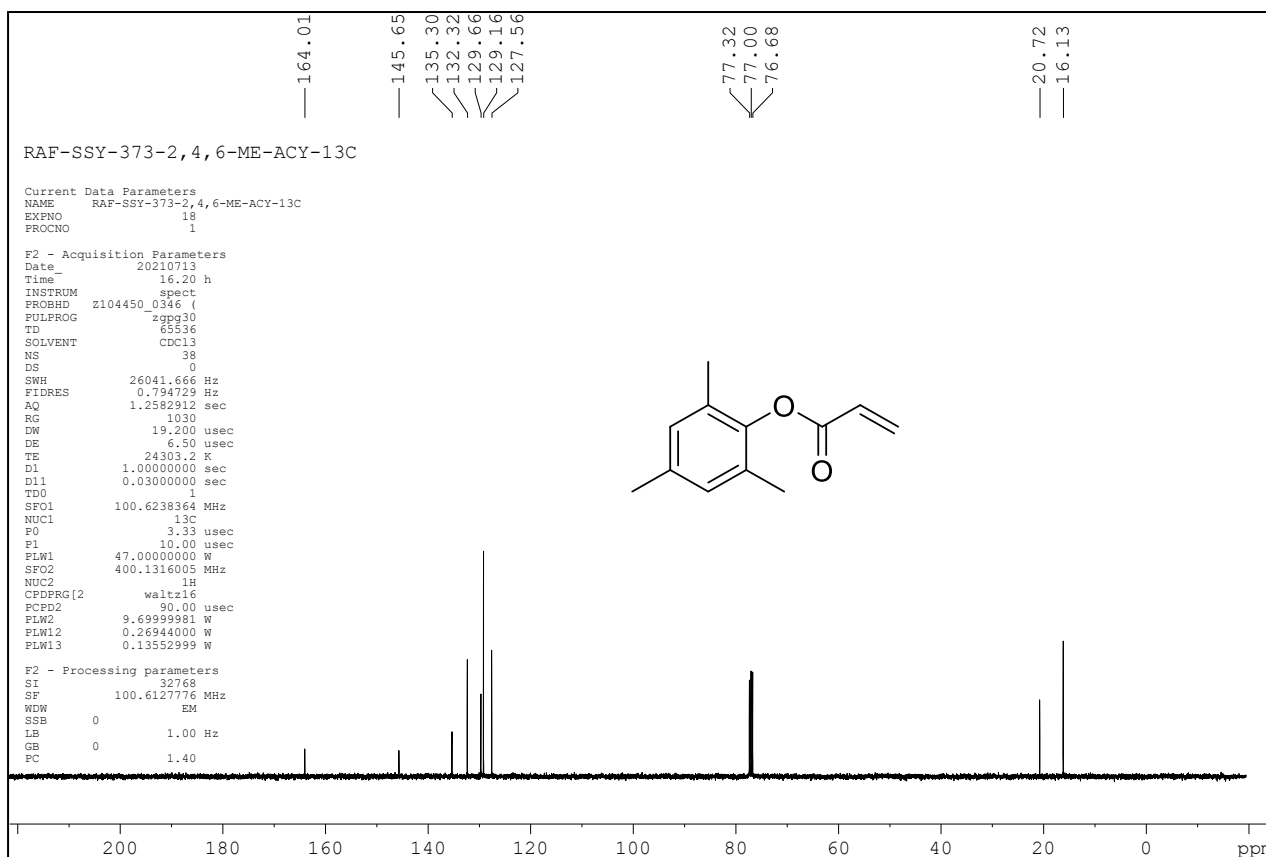
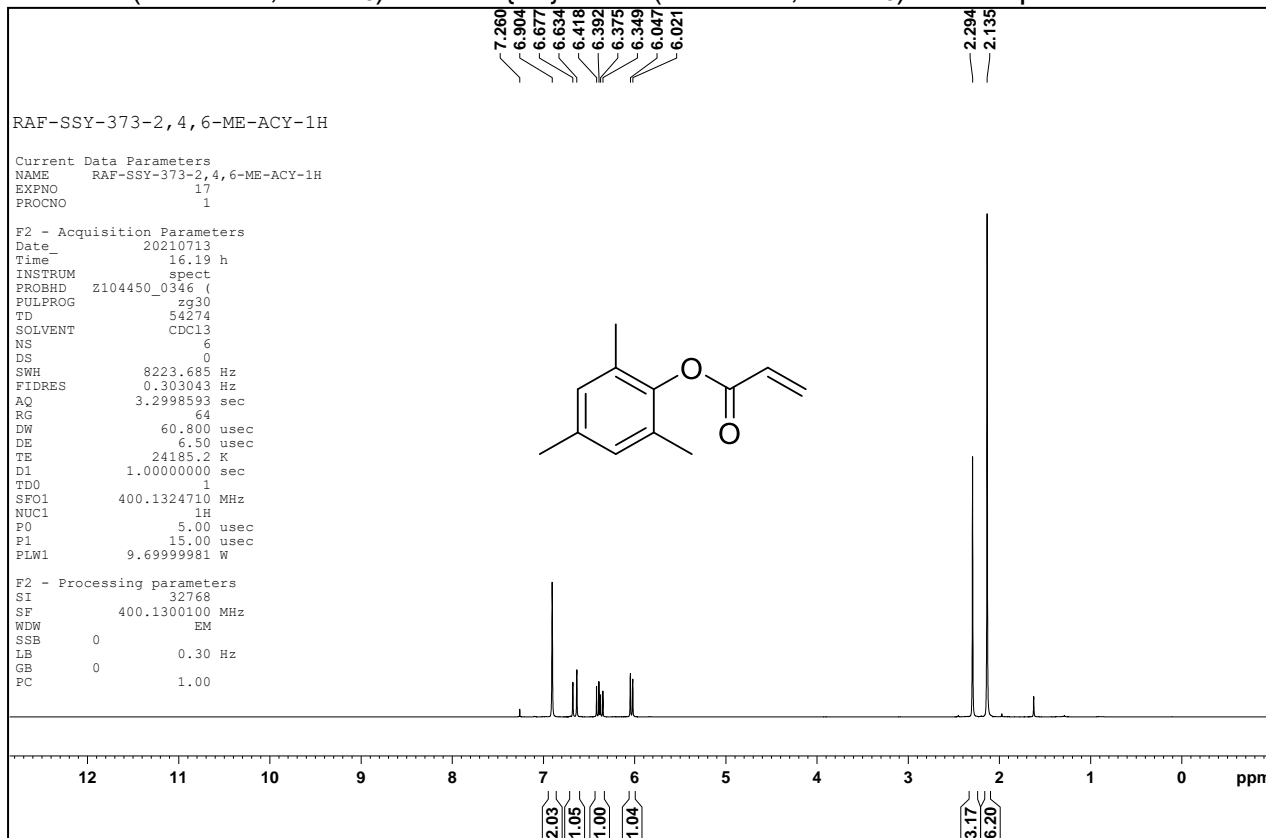
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7d



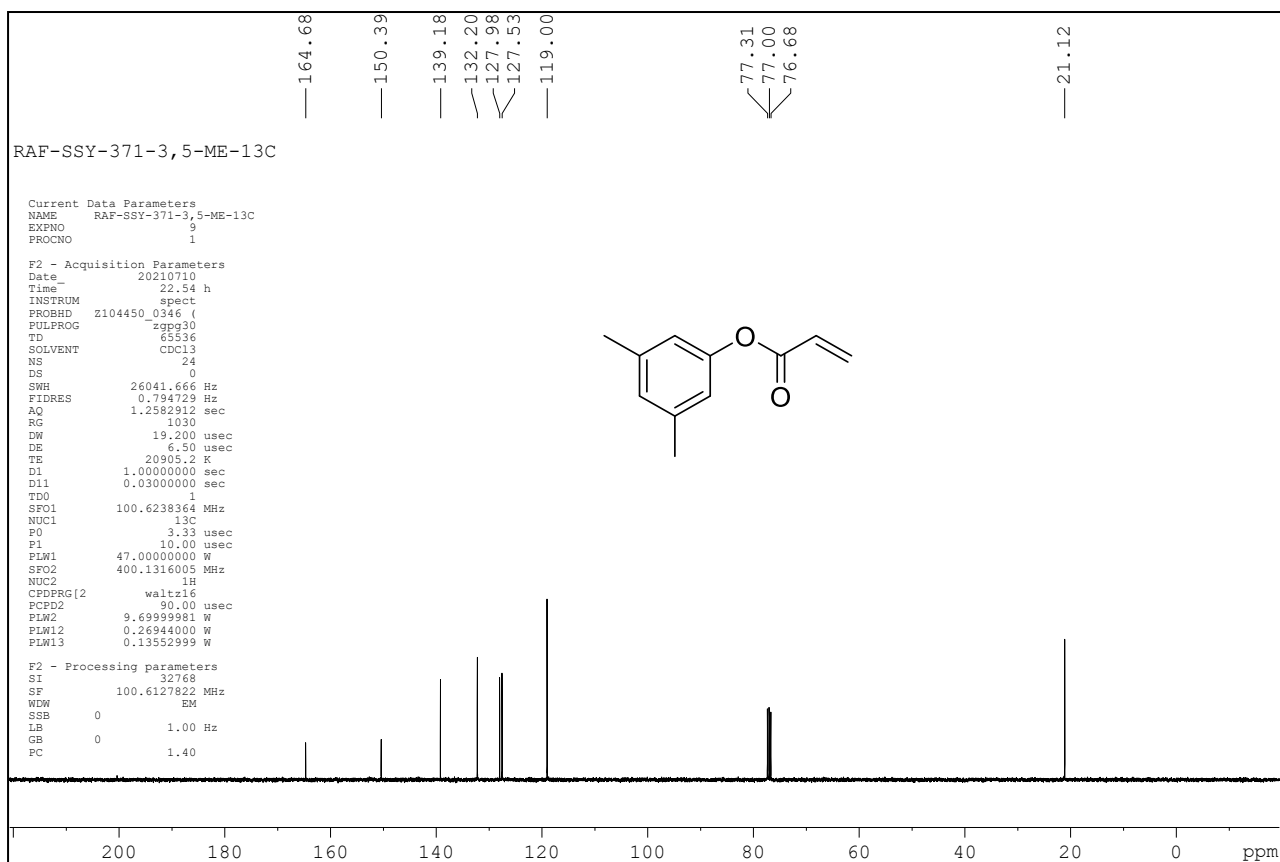
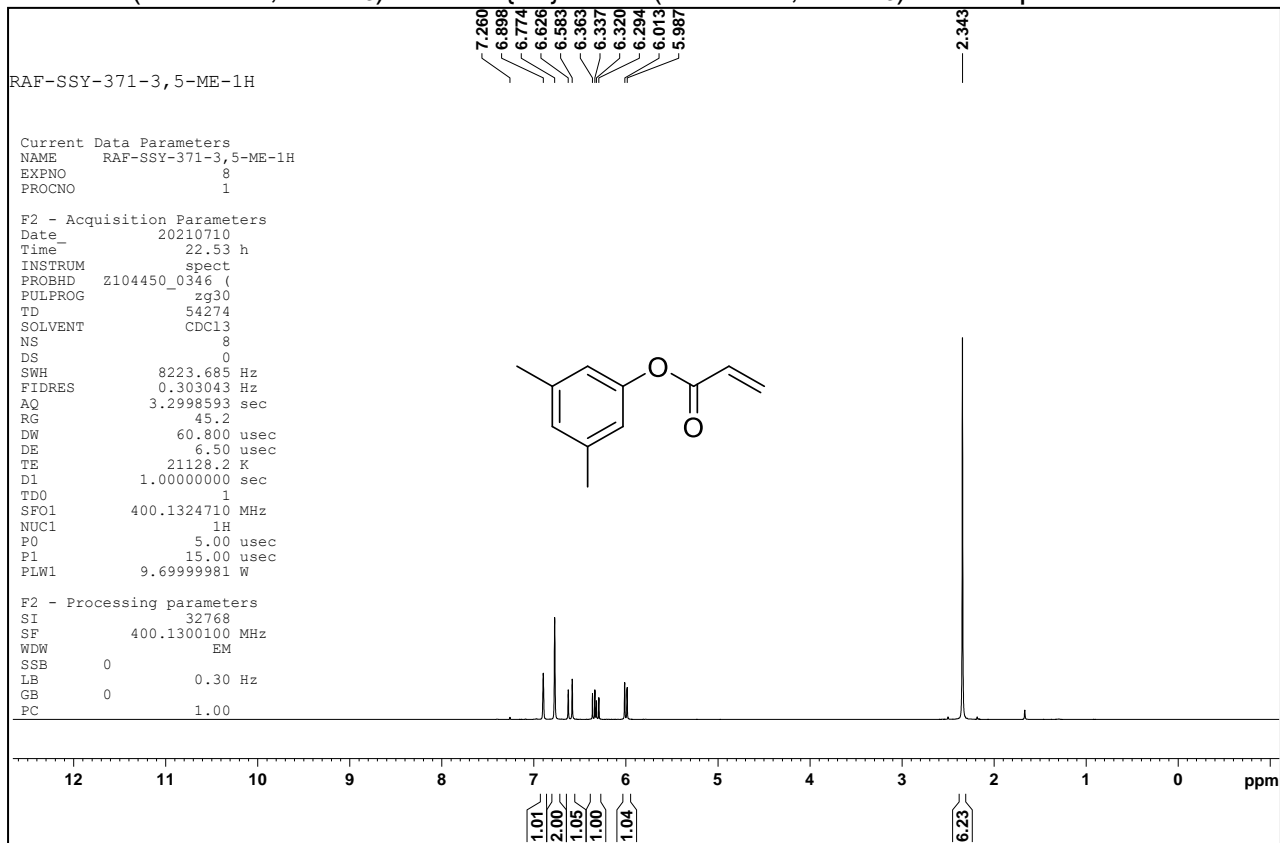
¹⁹F NMR (470 MHz, CDCl₃) of Compound 7d



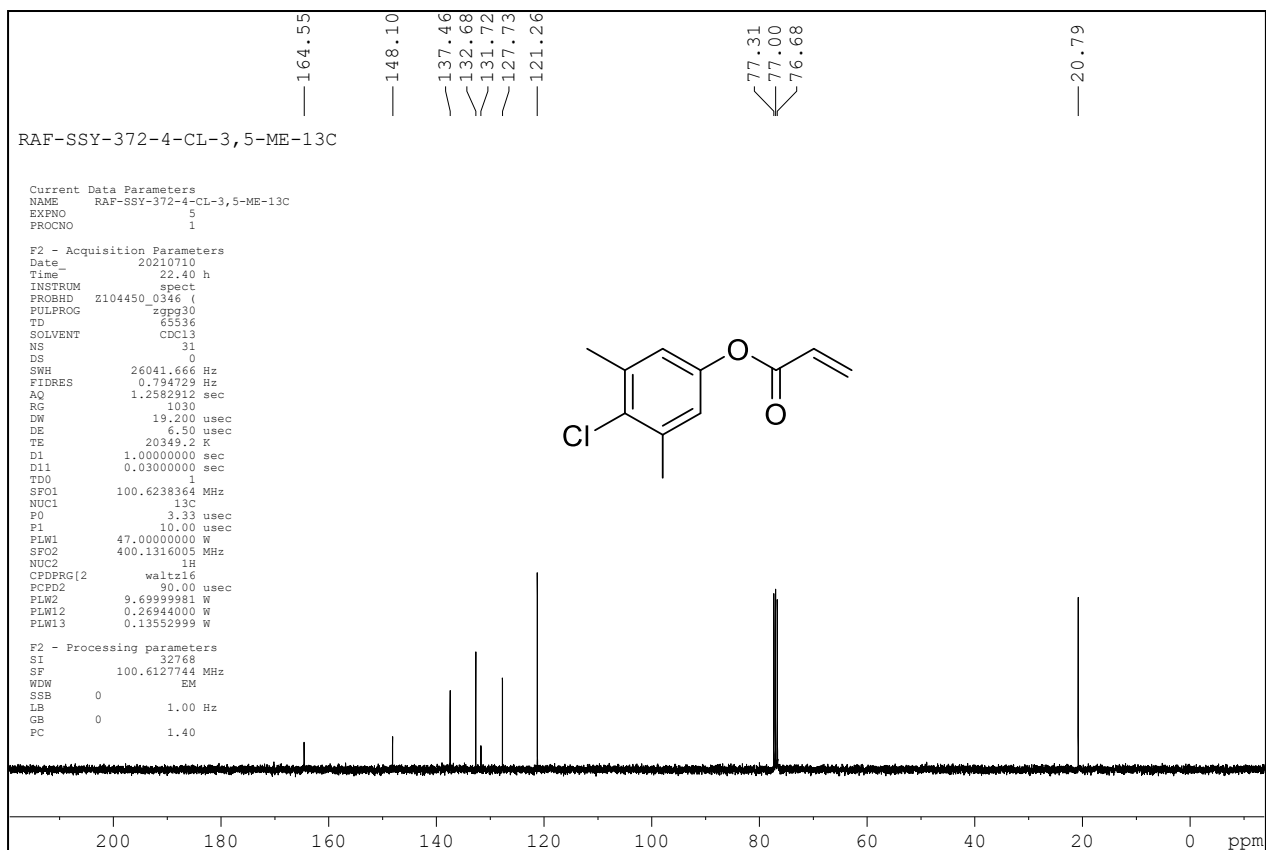
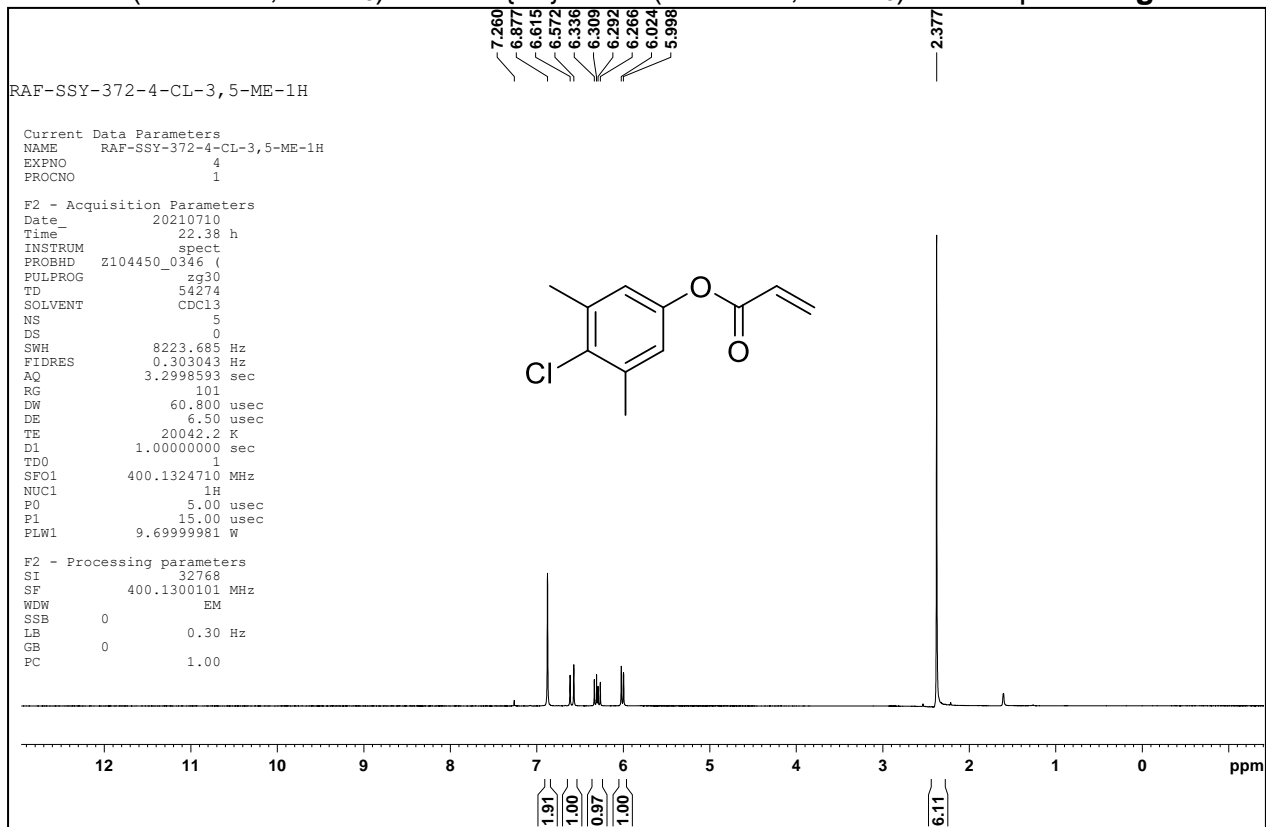
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7e



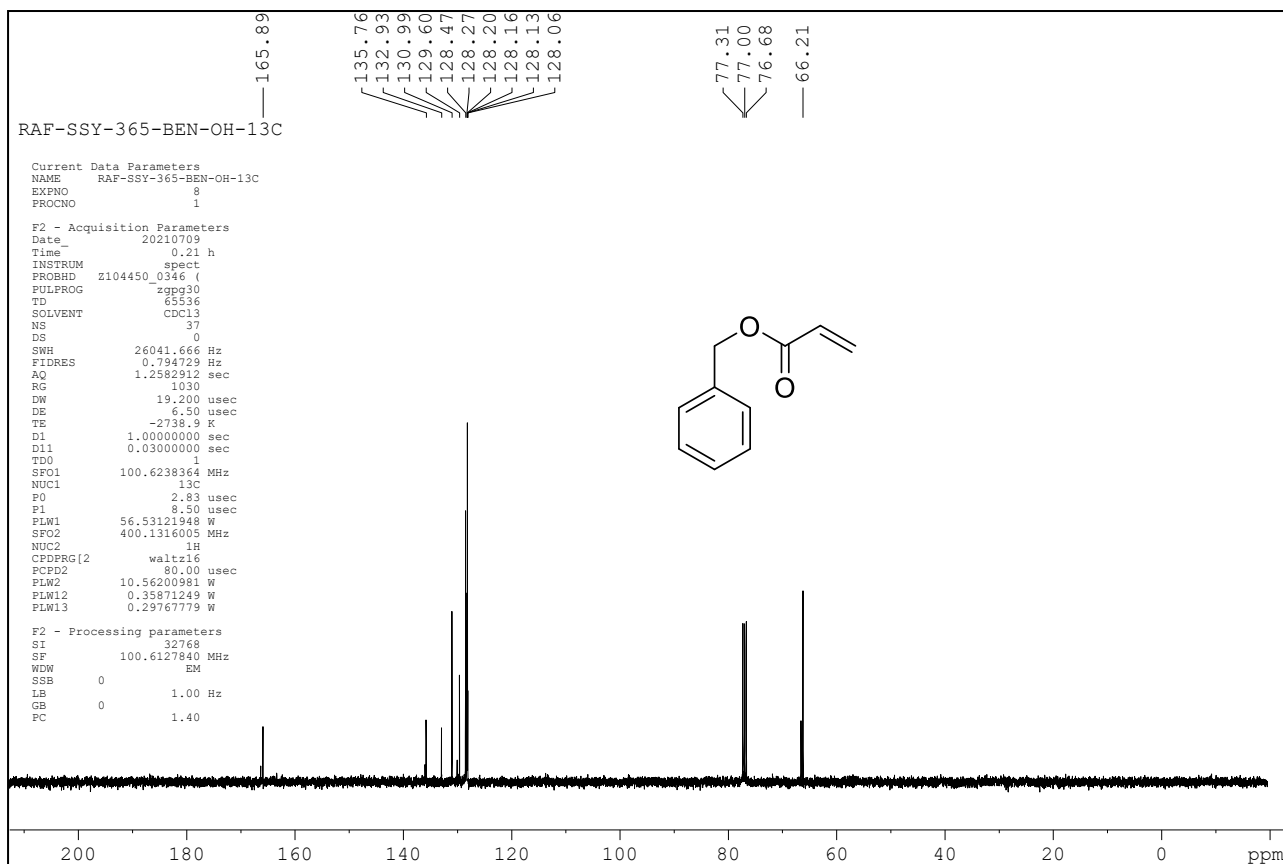
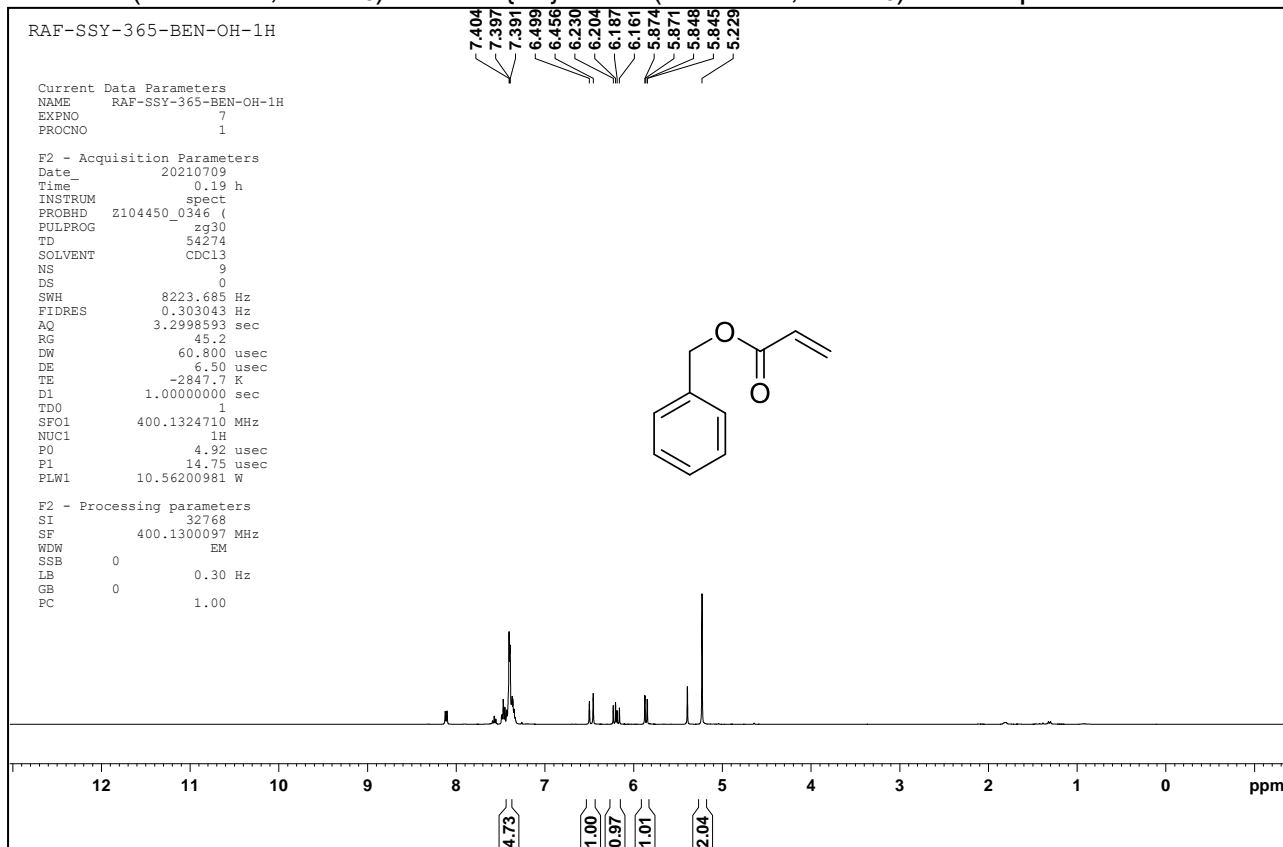
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 7f



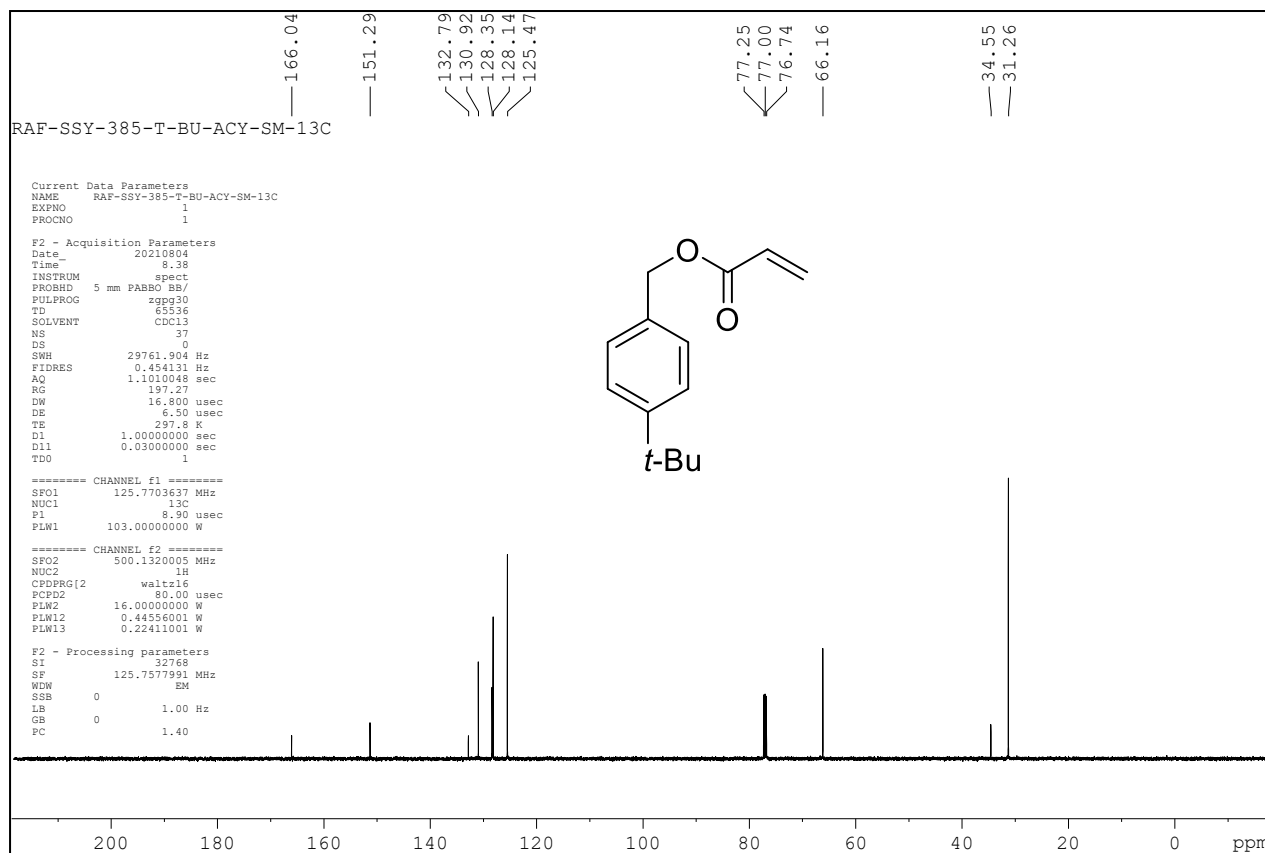
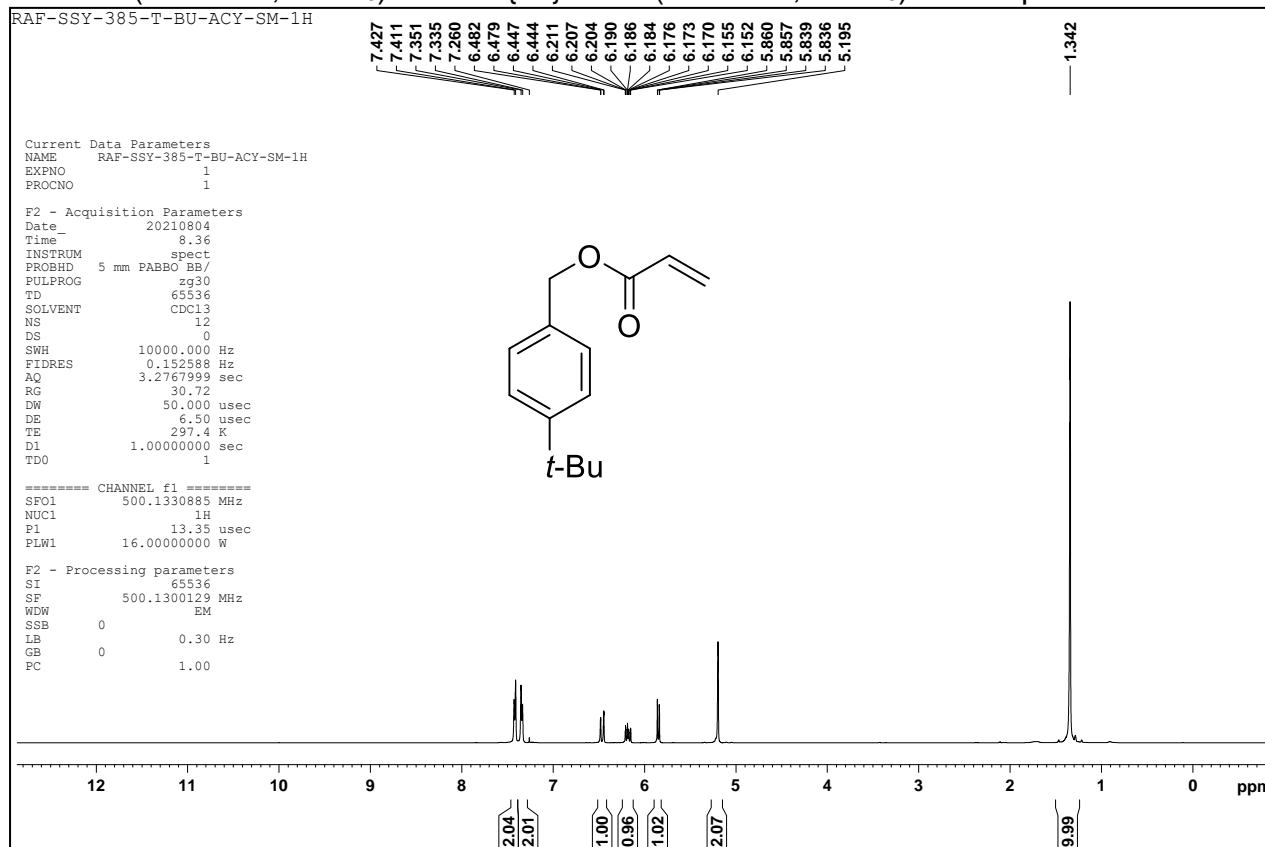
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **7g**



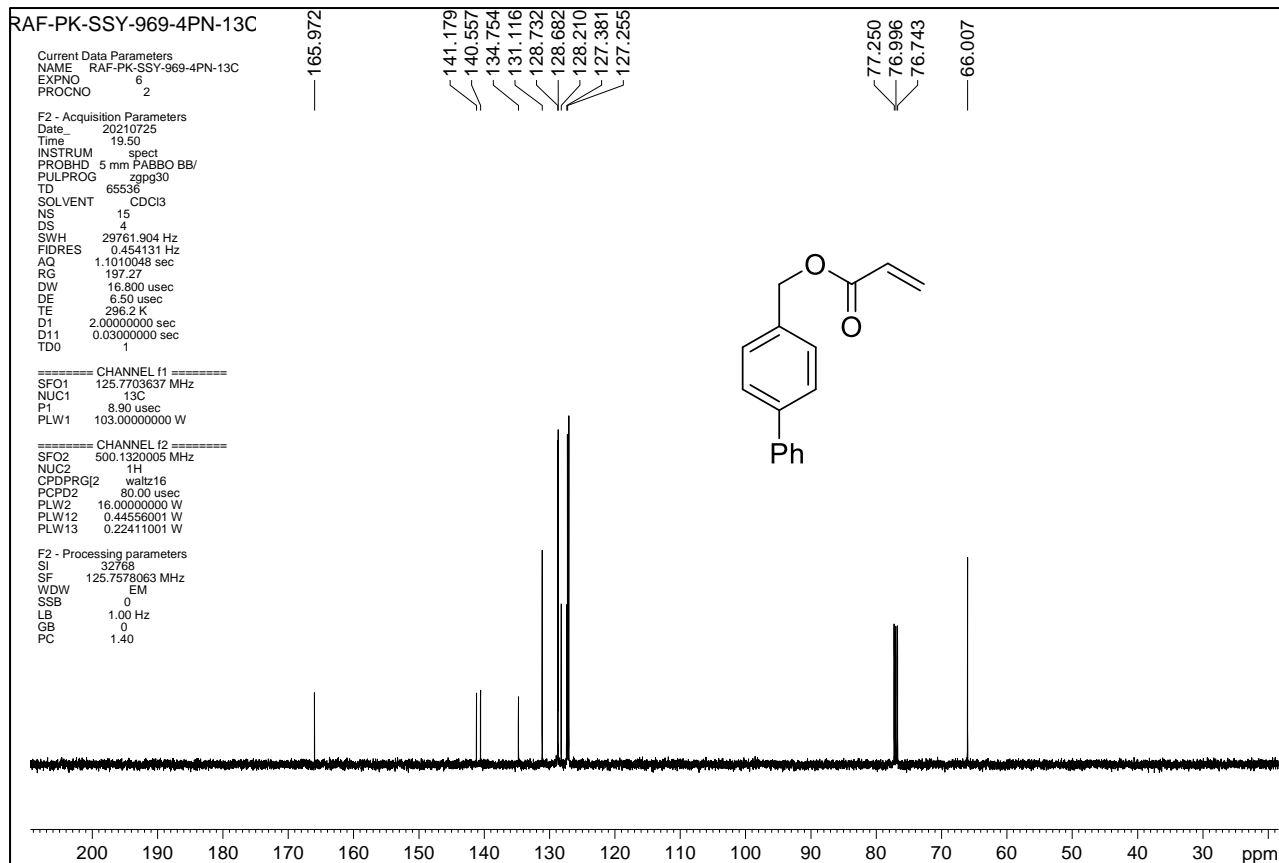
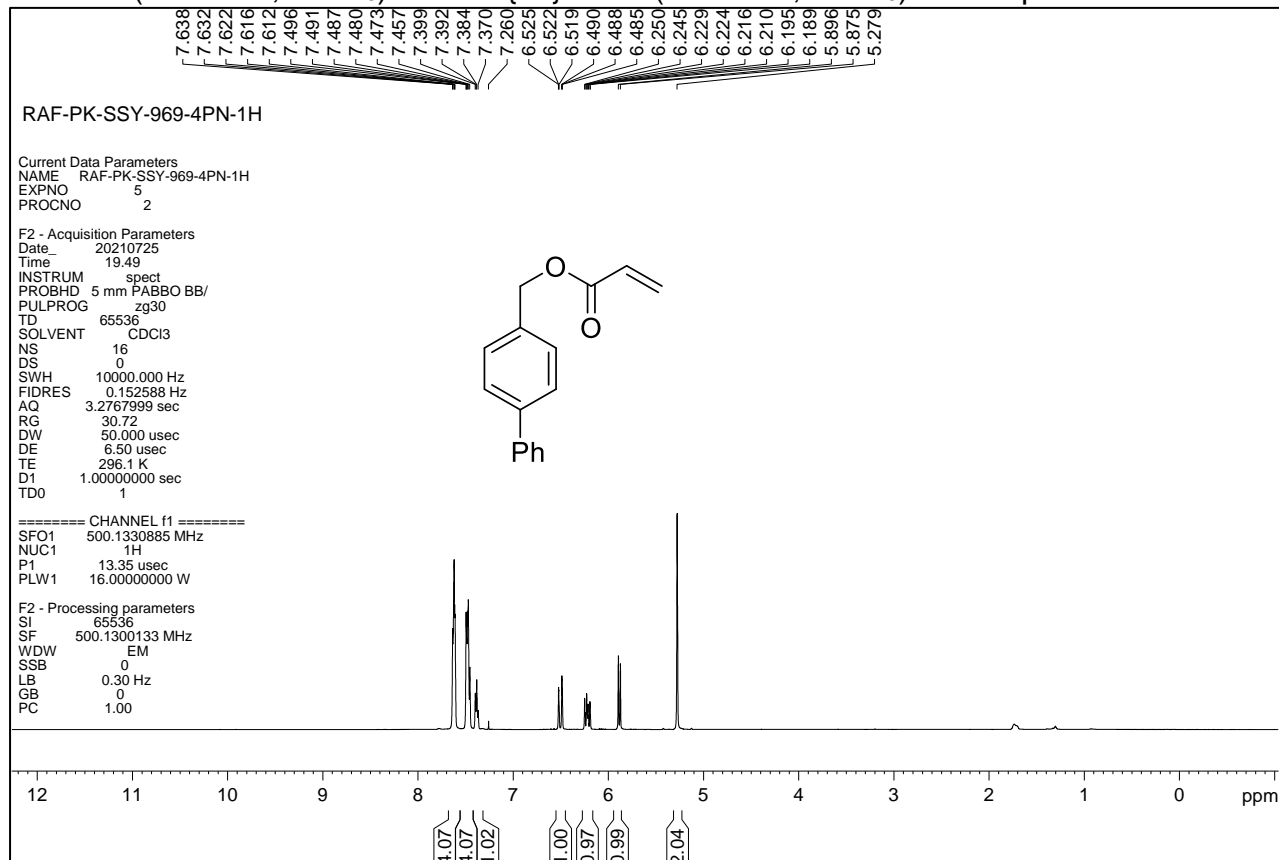
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **8a**



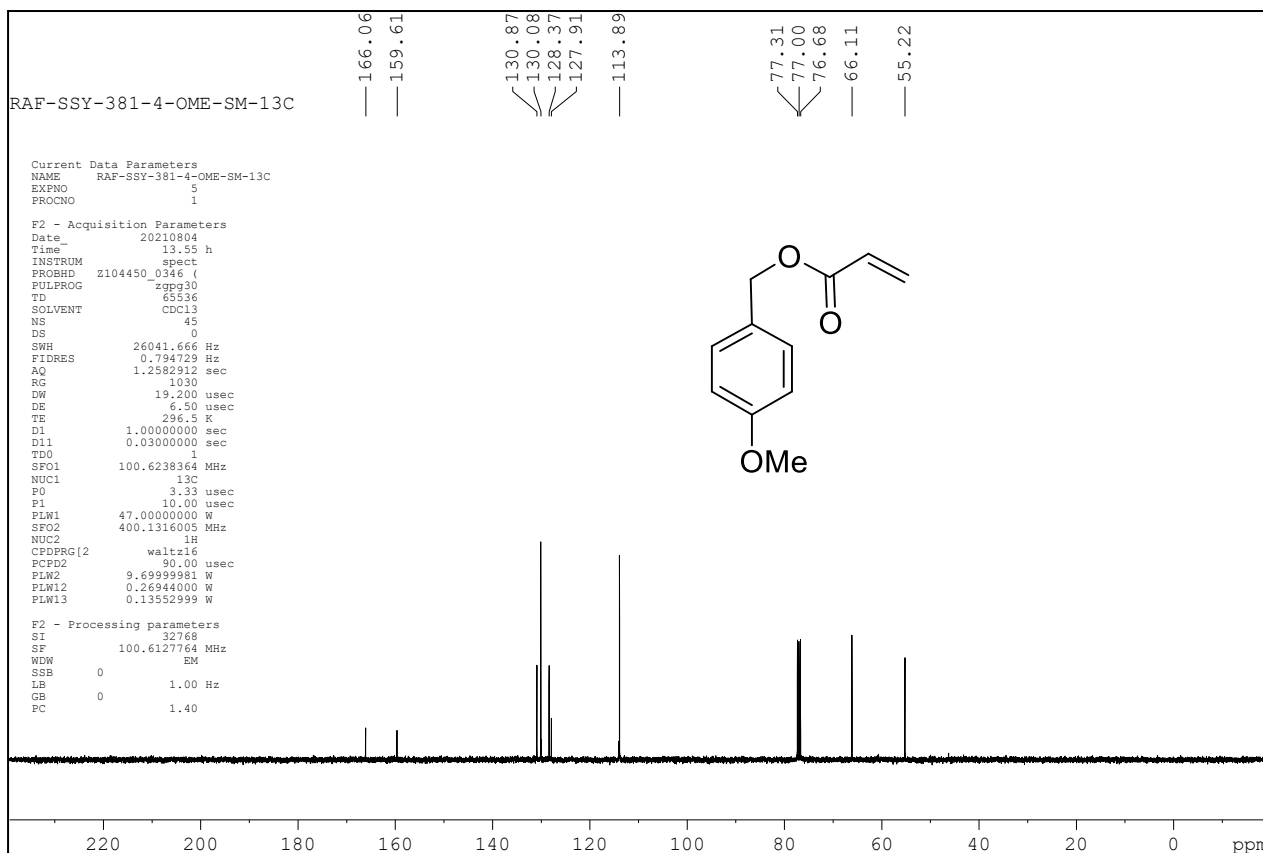
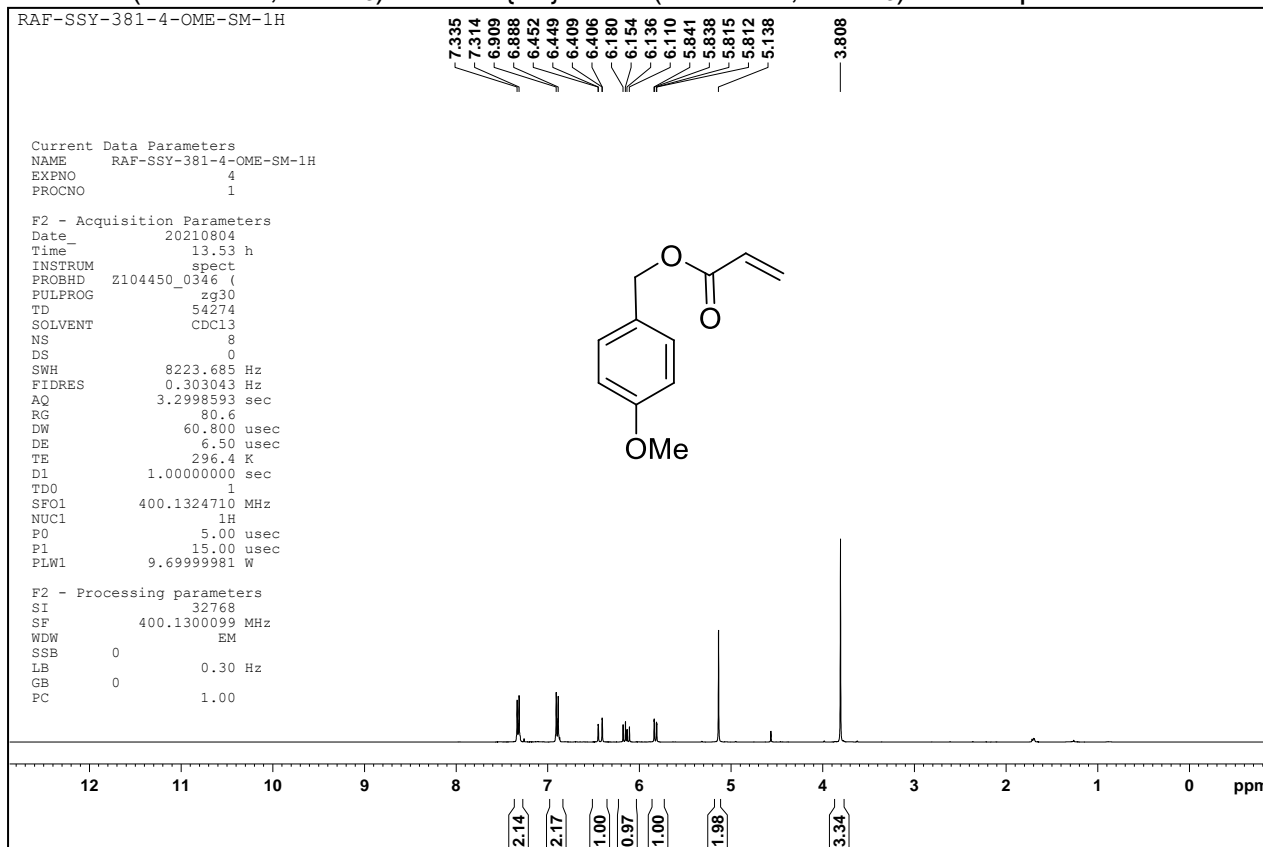
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **8b**



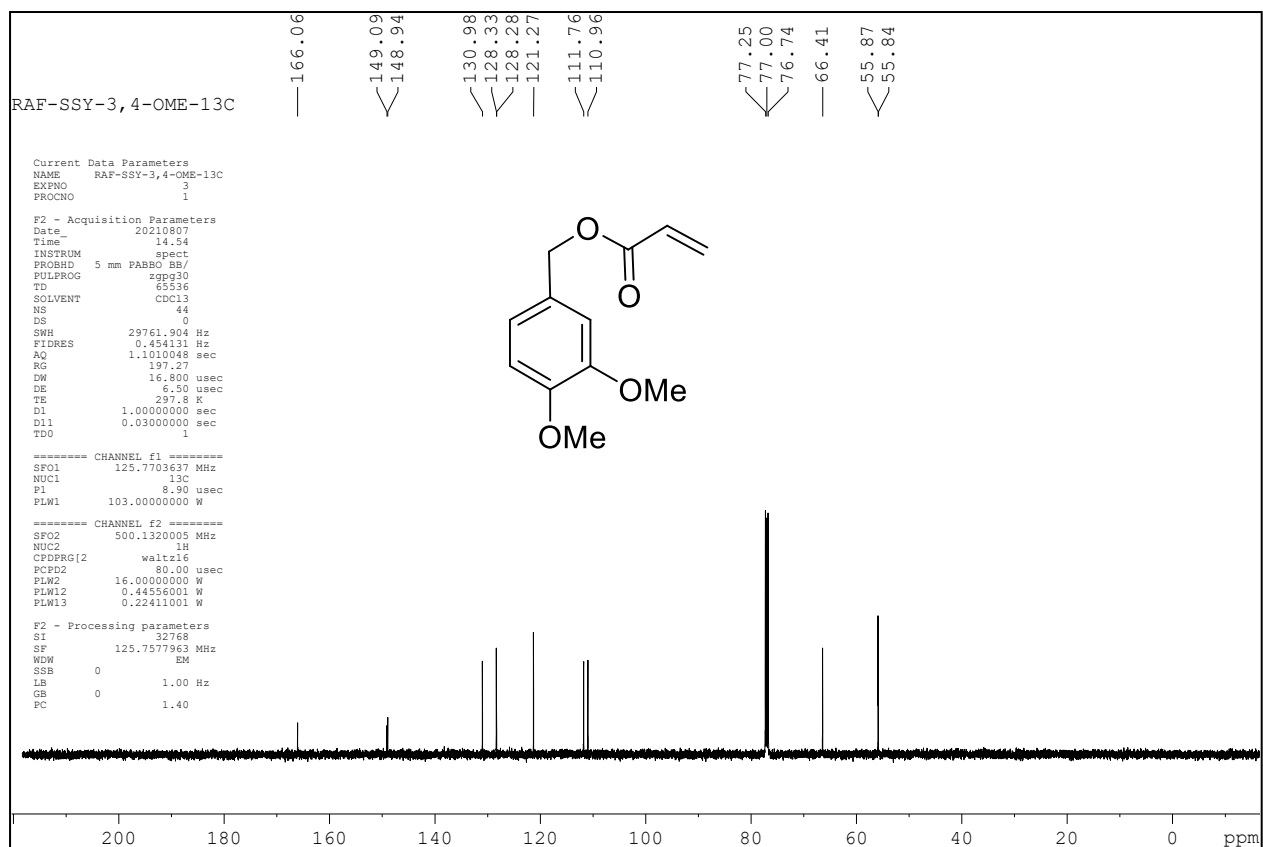
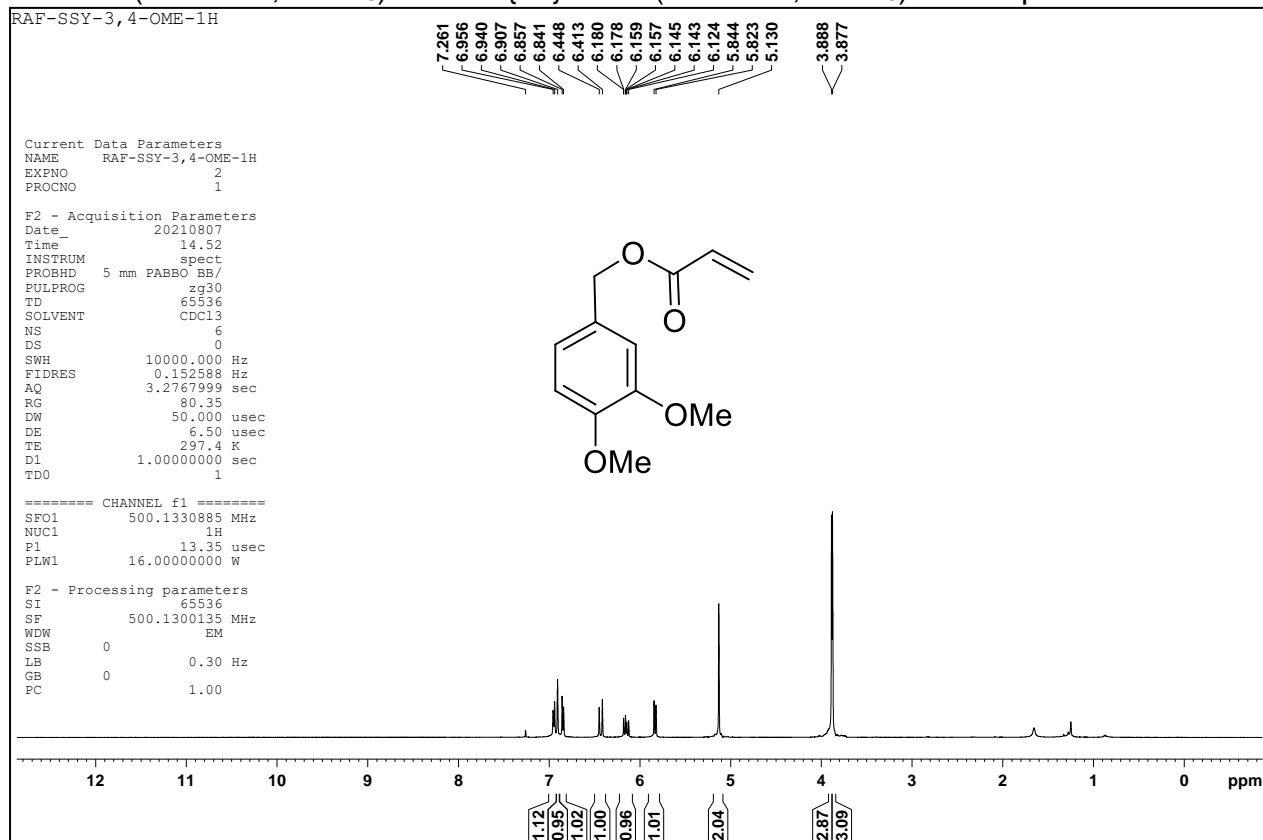
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **8c**



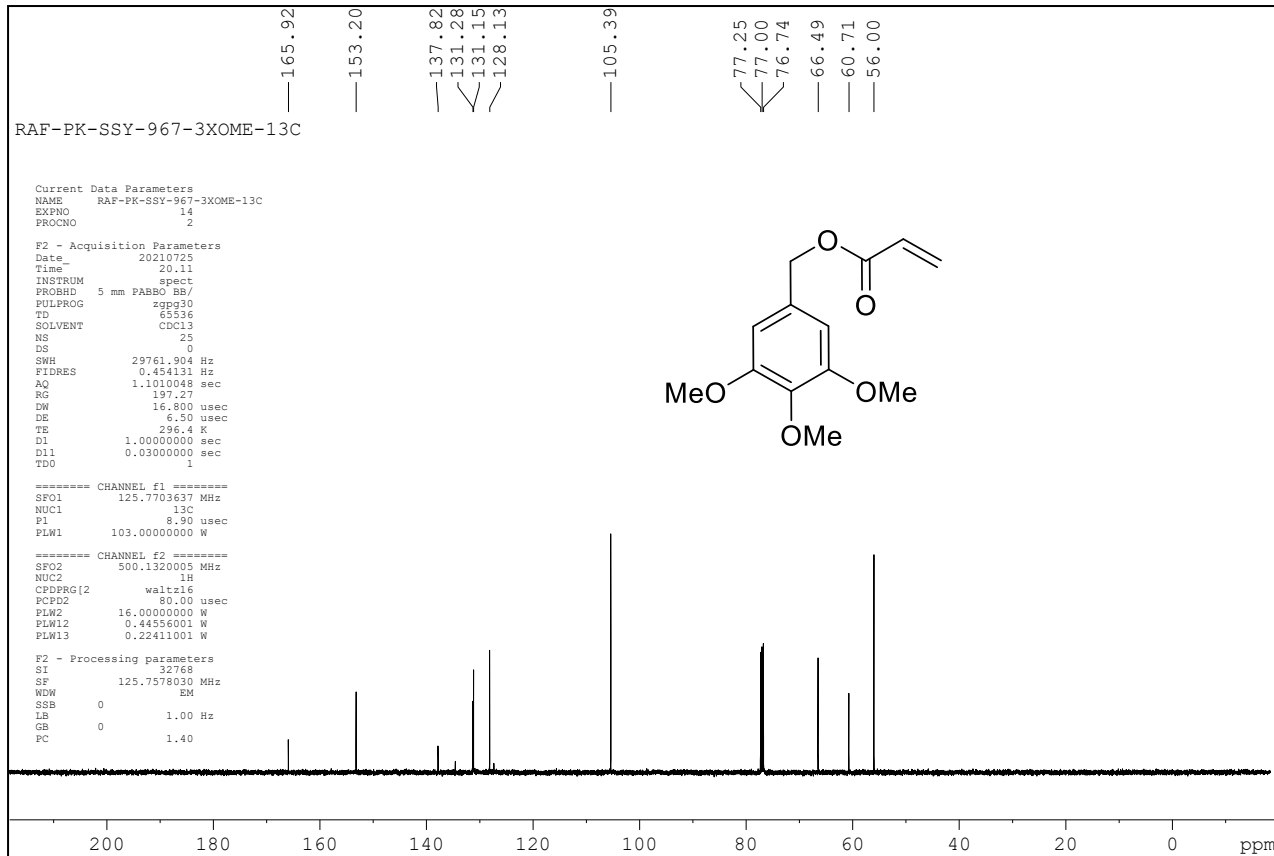
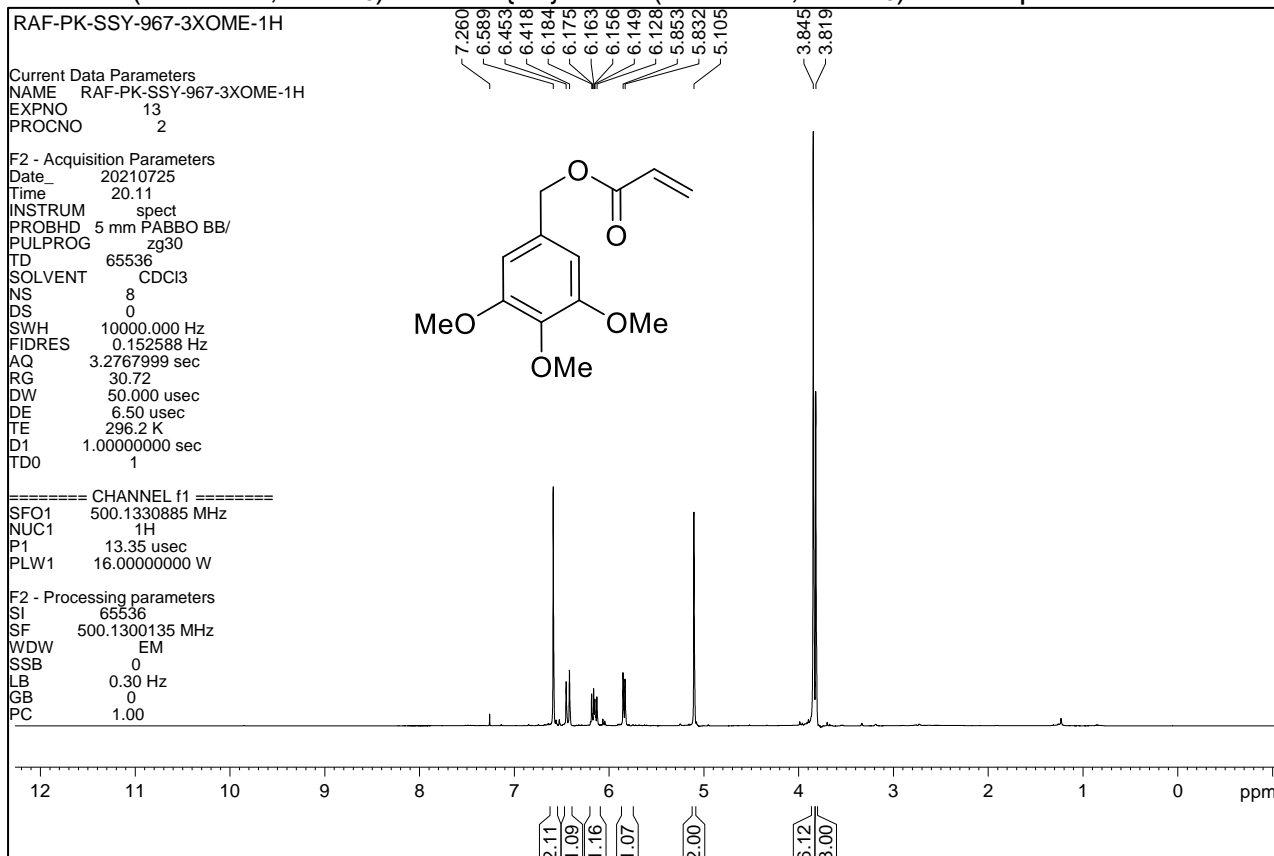
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **8d**



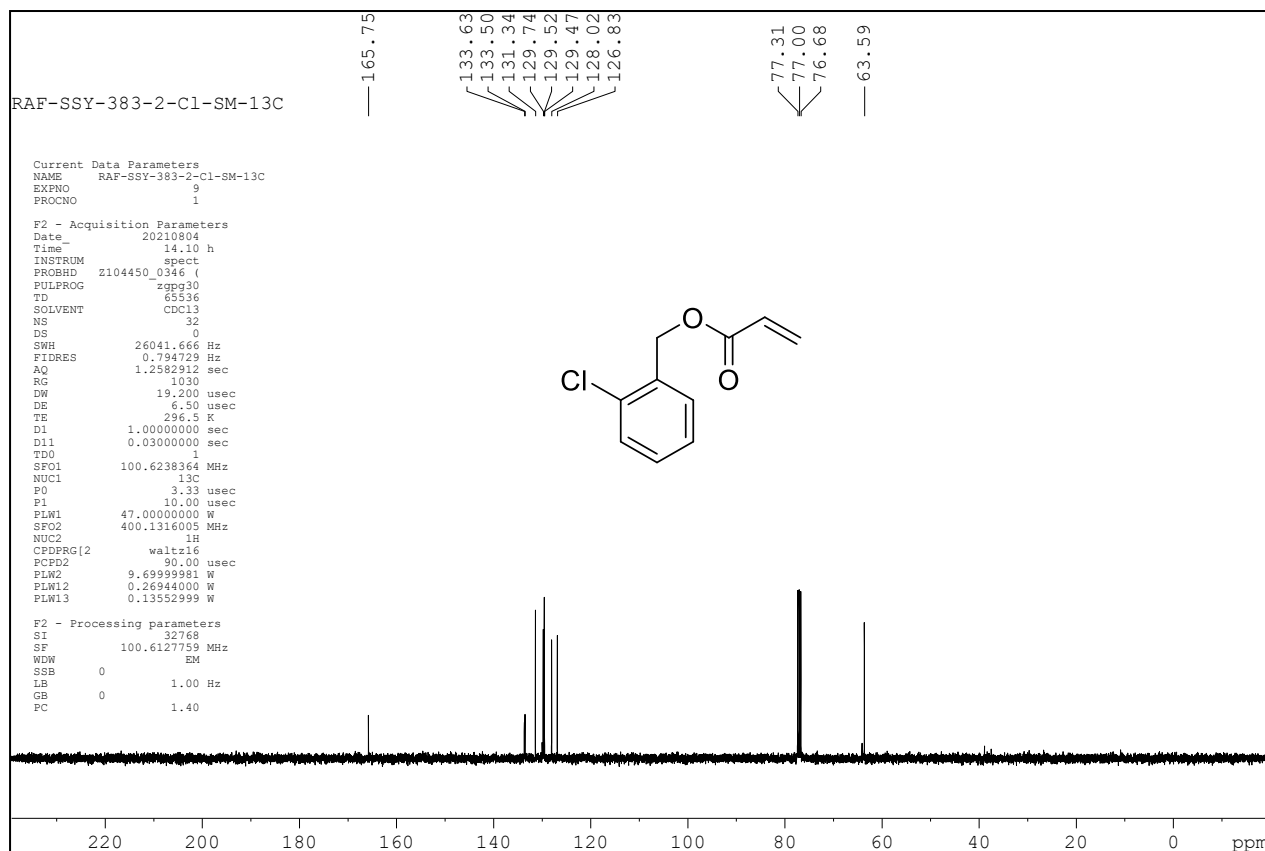
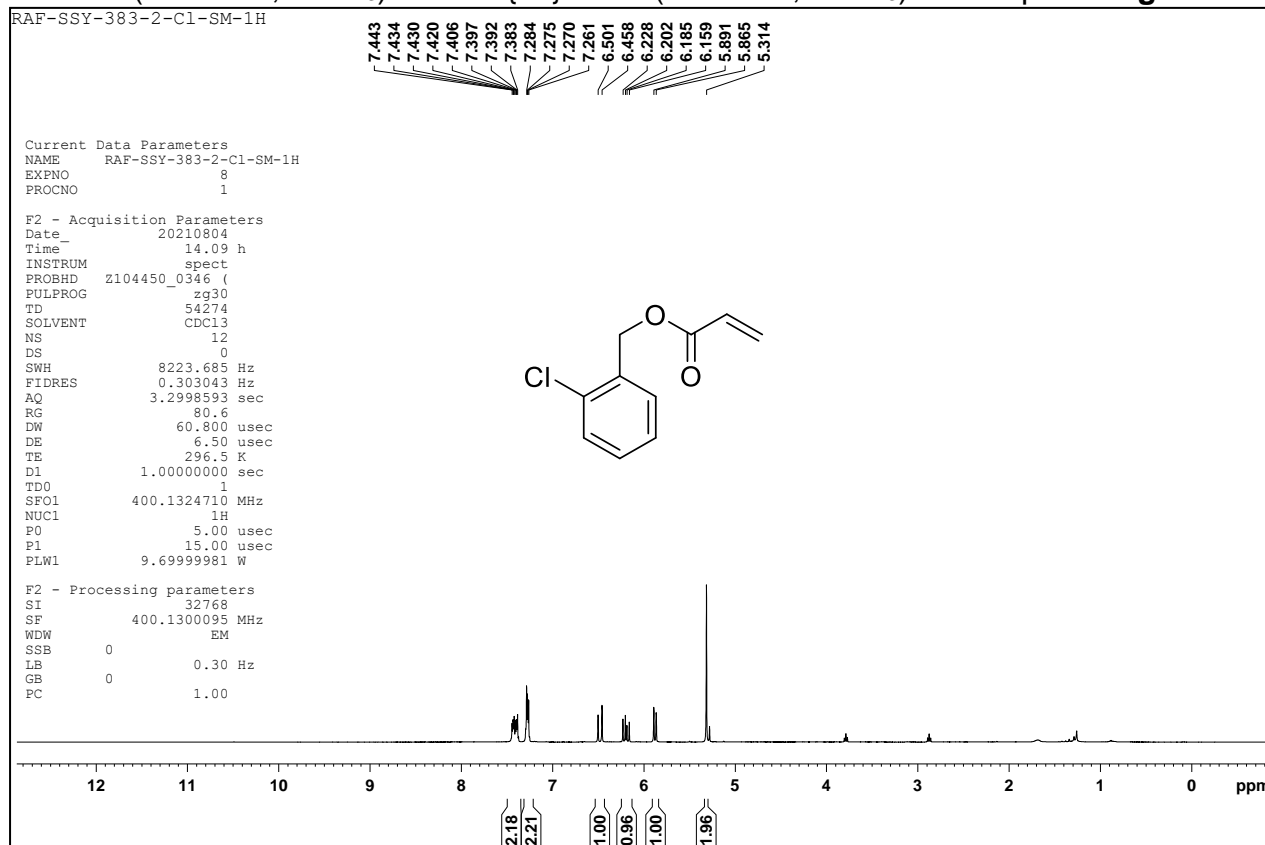
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **8e**



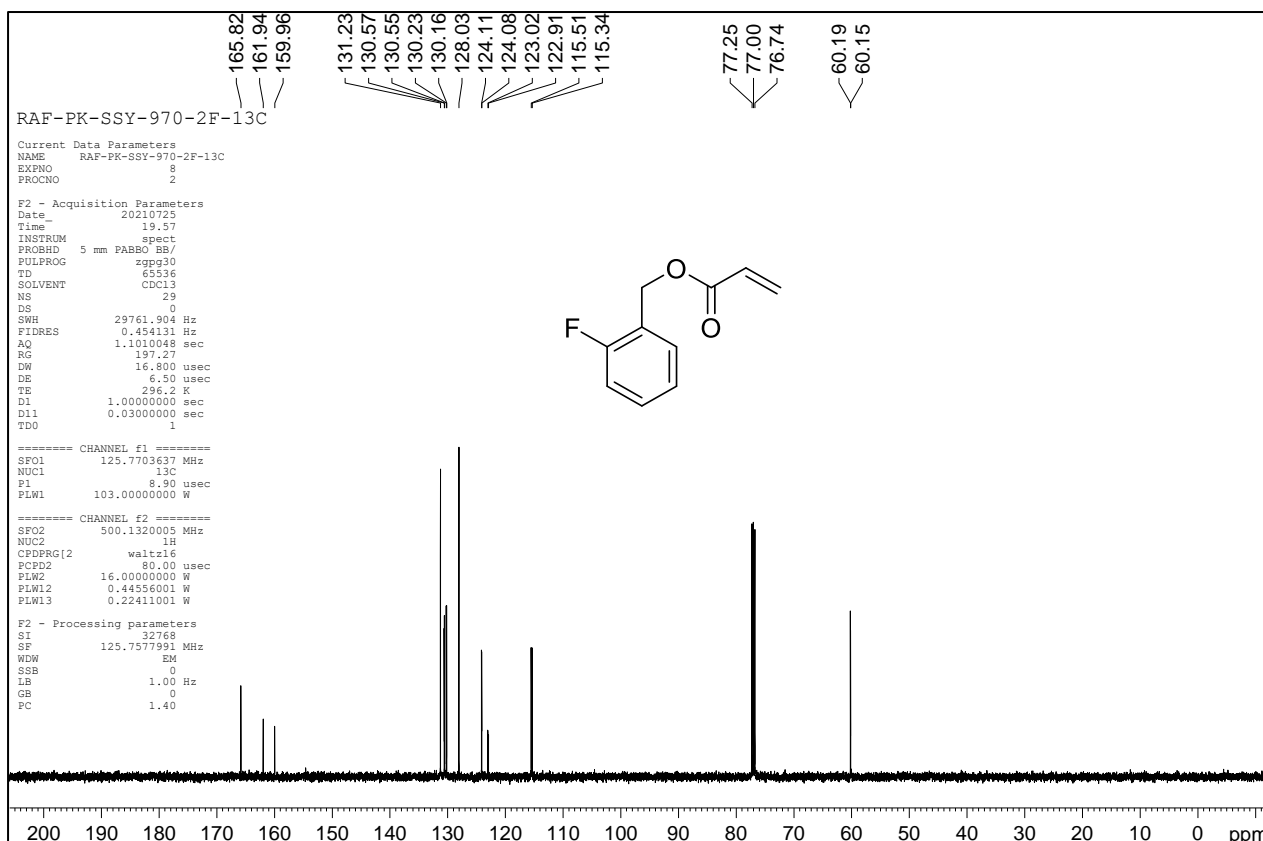
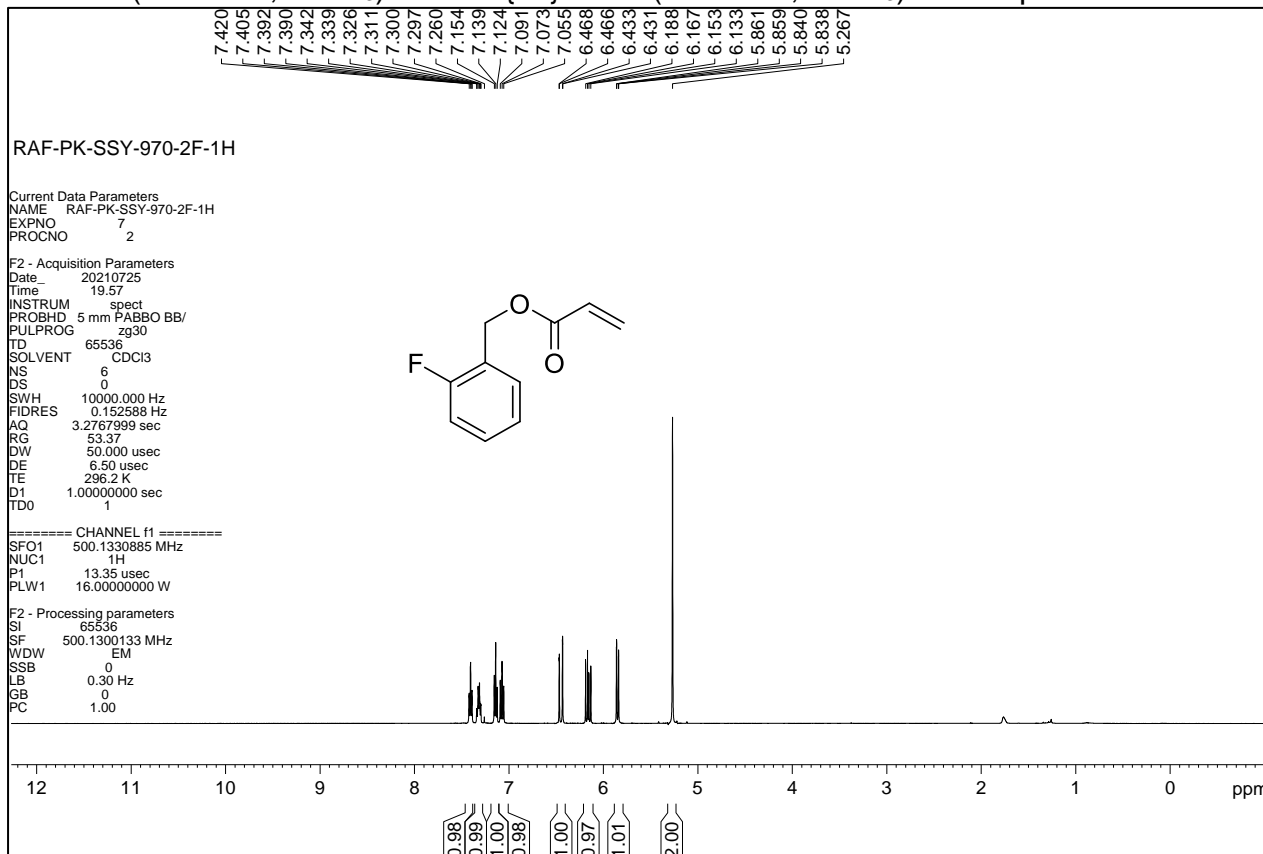
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **8f**



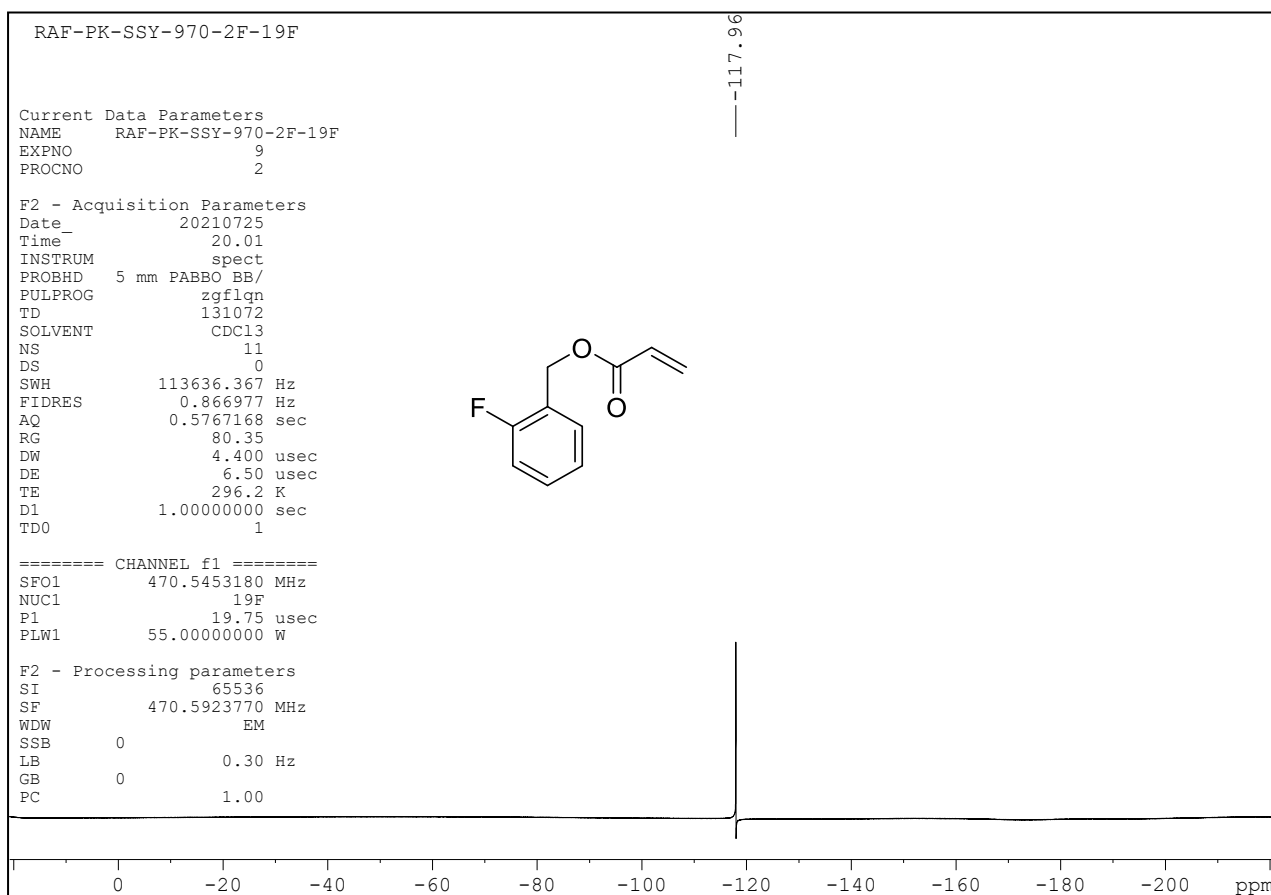
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **8g**



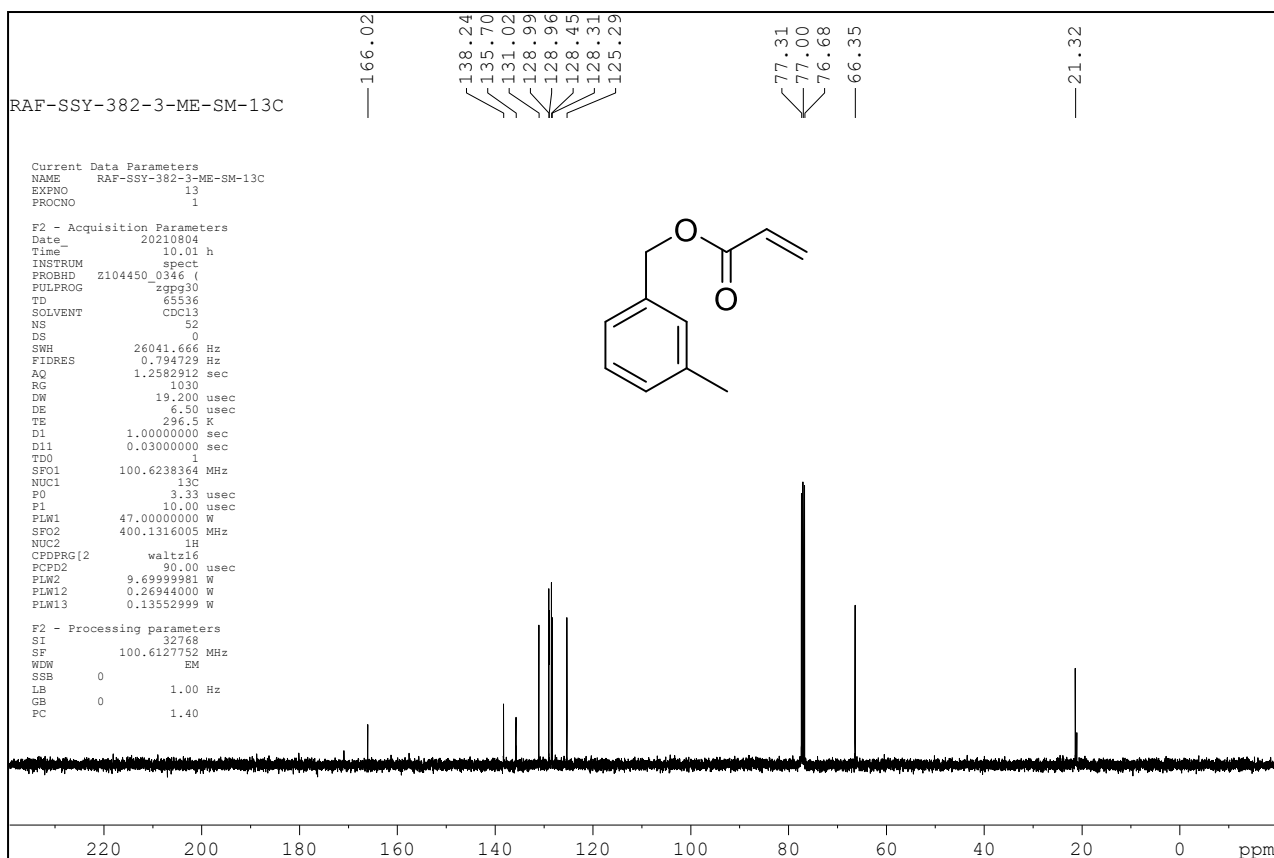
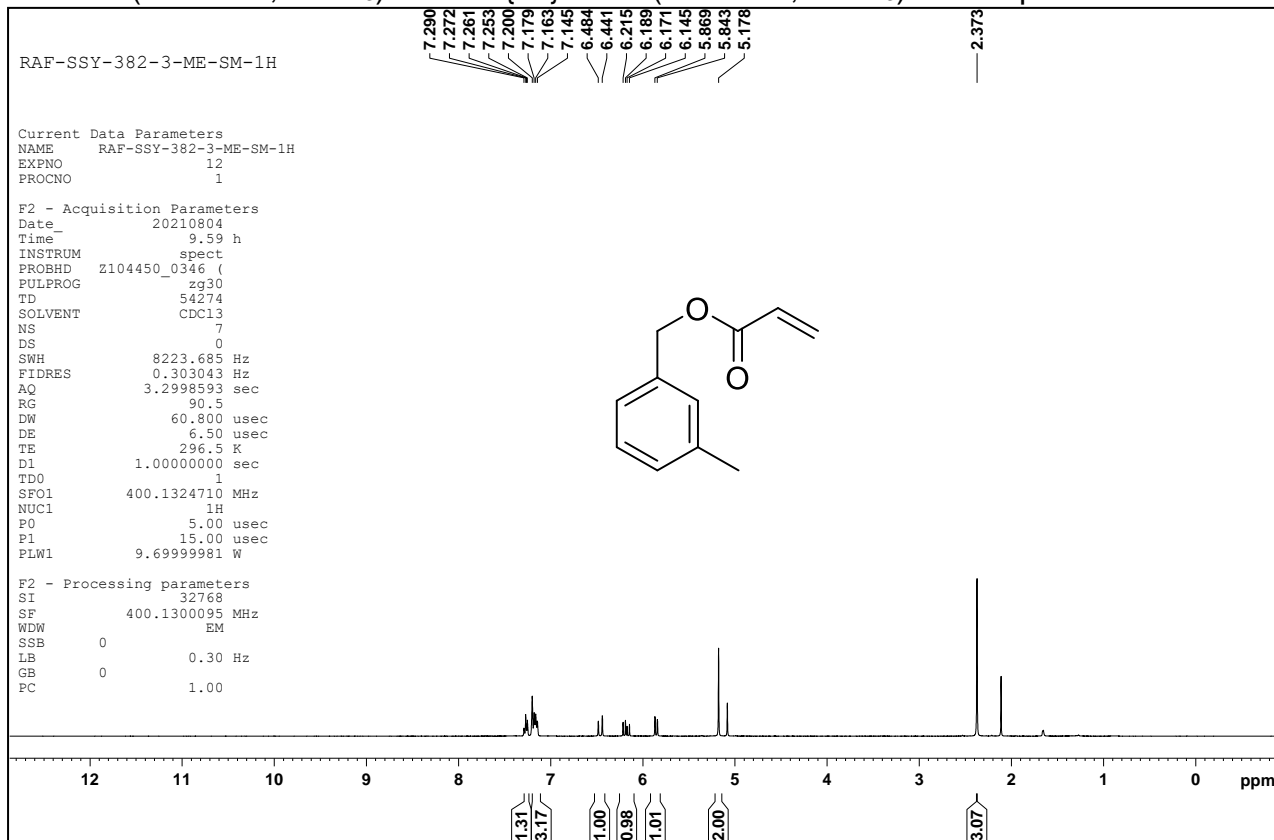
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 8h



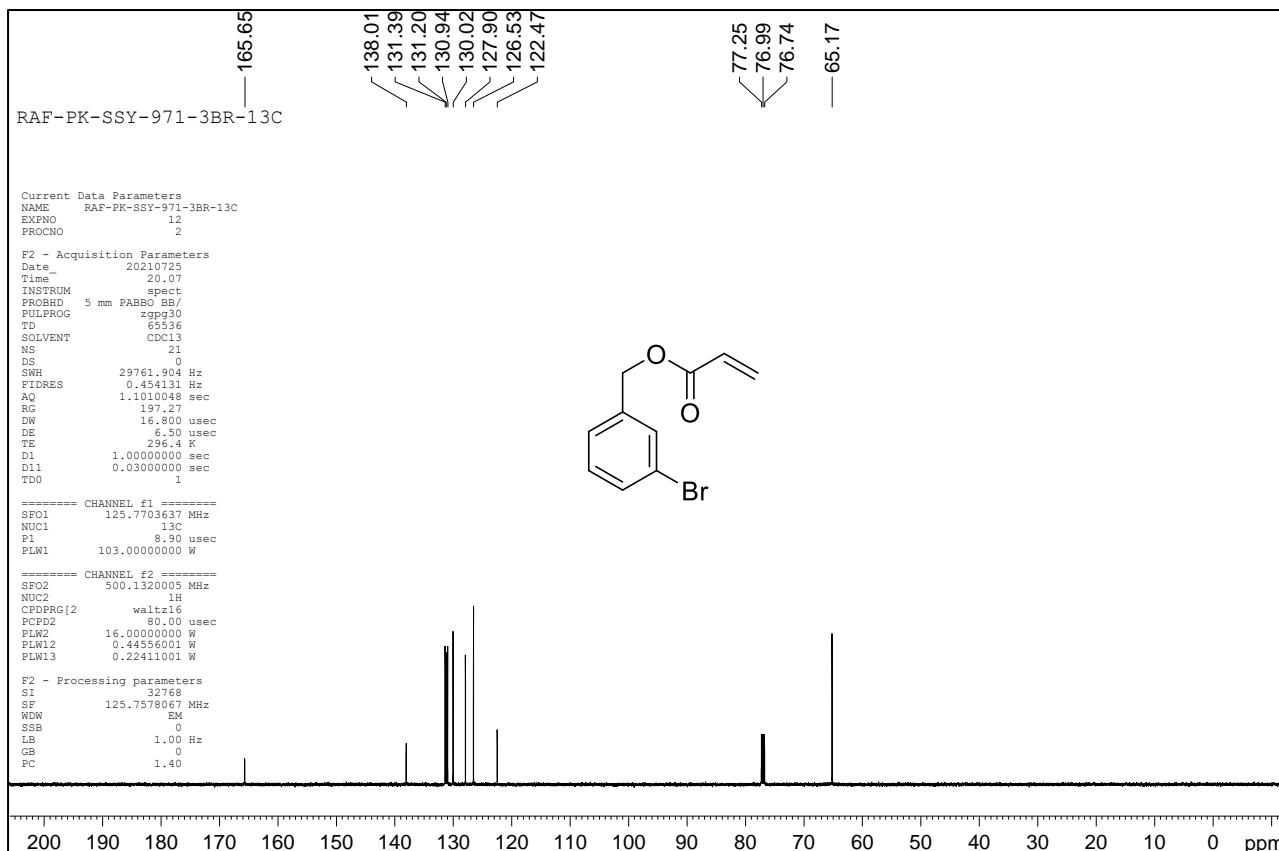
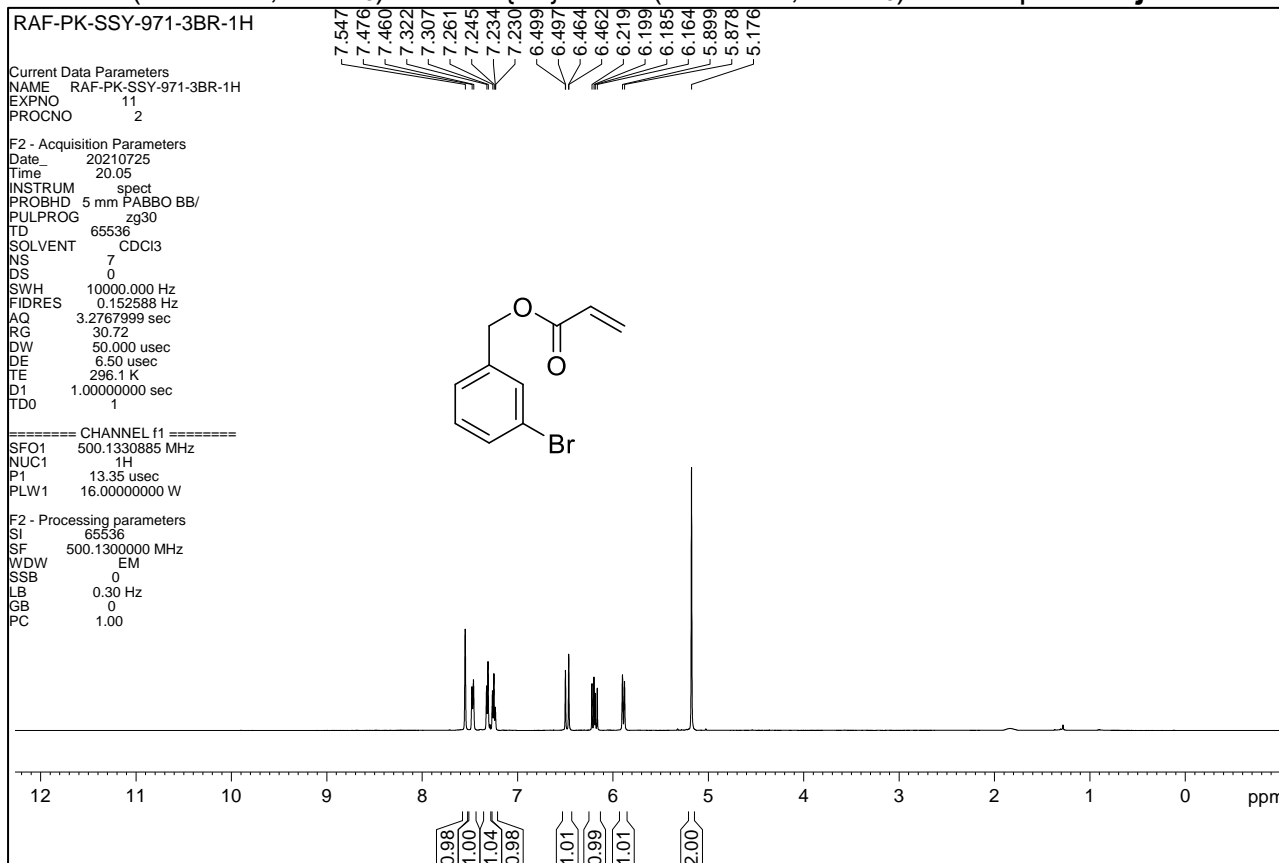
¹⁹F NMR (470 MHz, CDCl₃) of Compound 8h



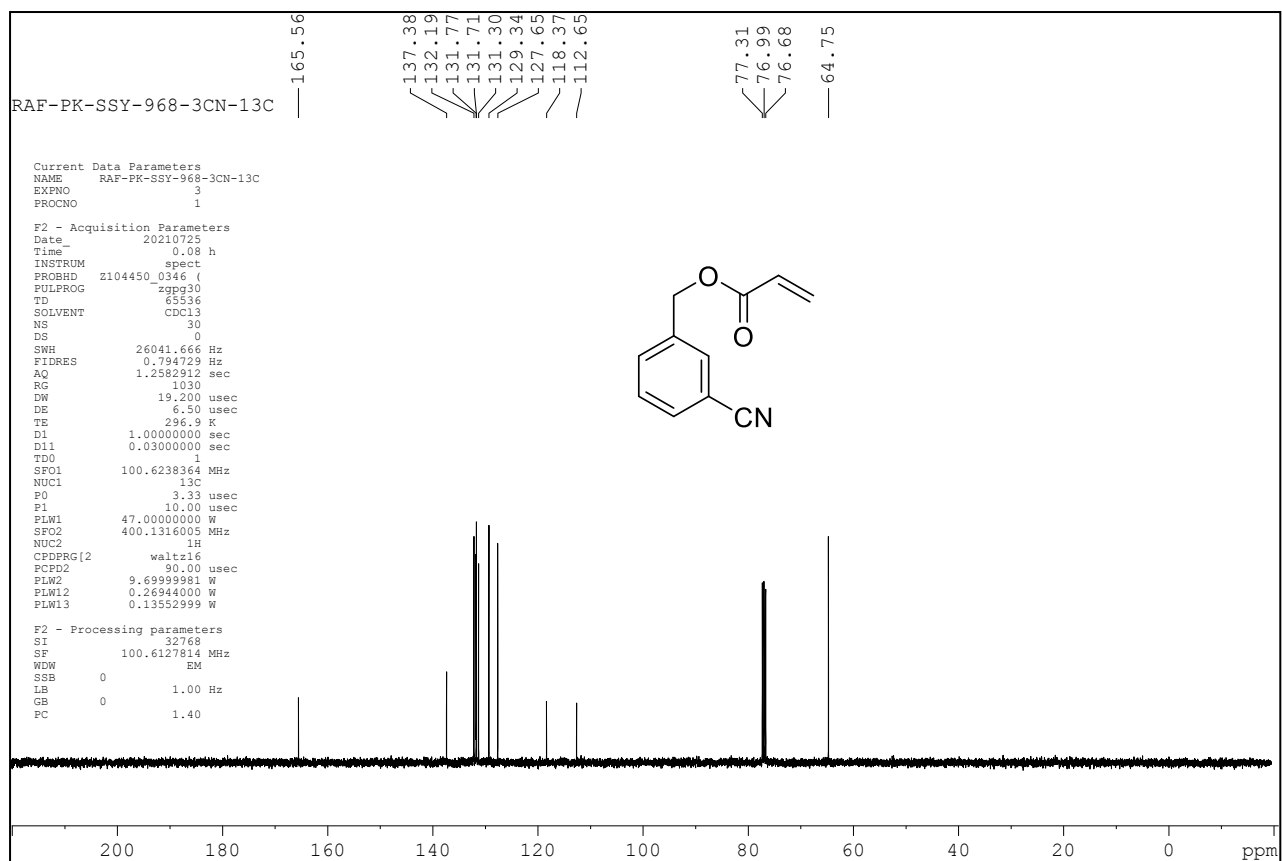
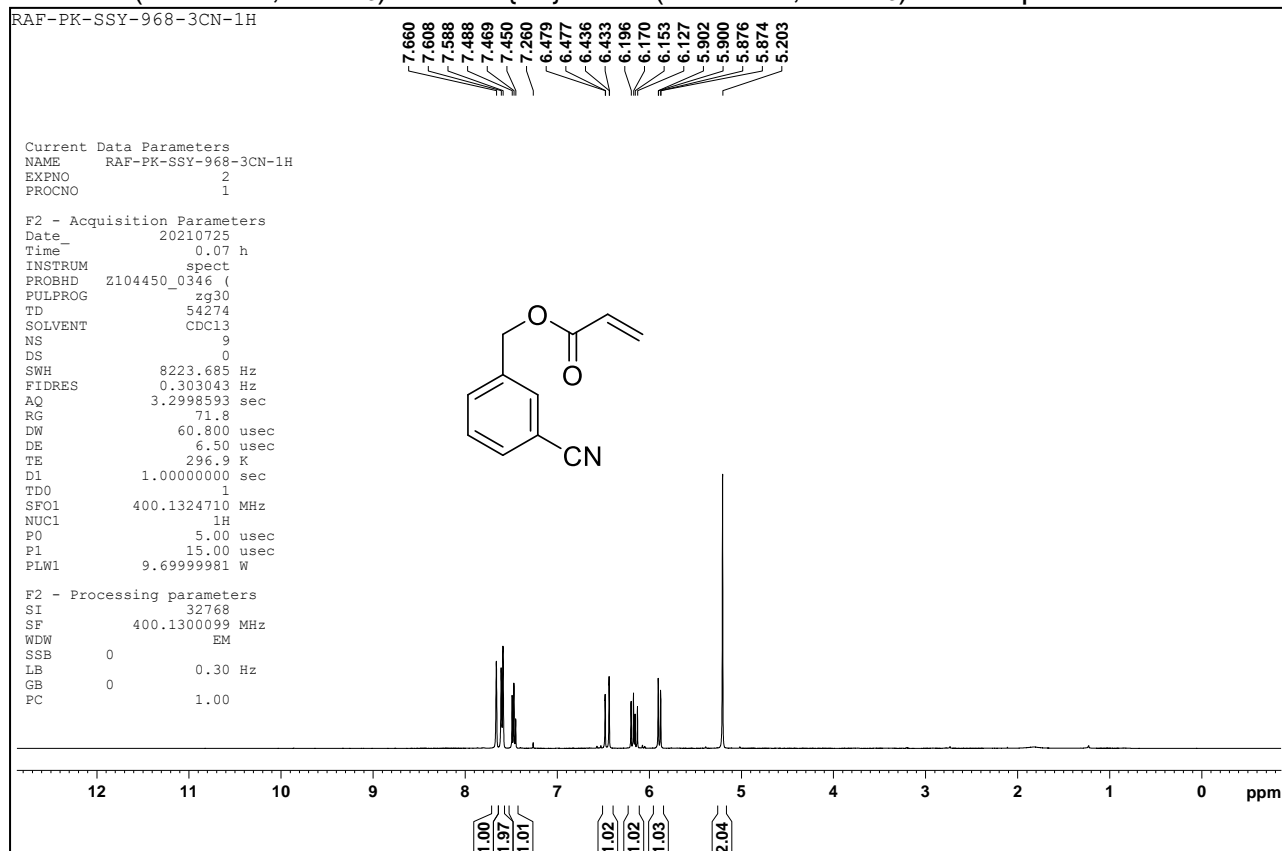
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **8i**



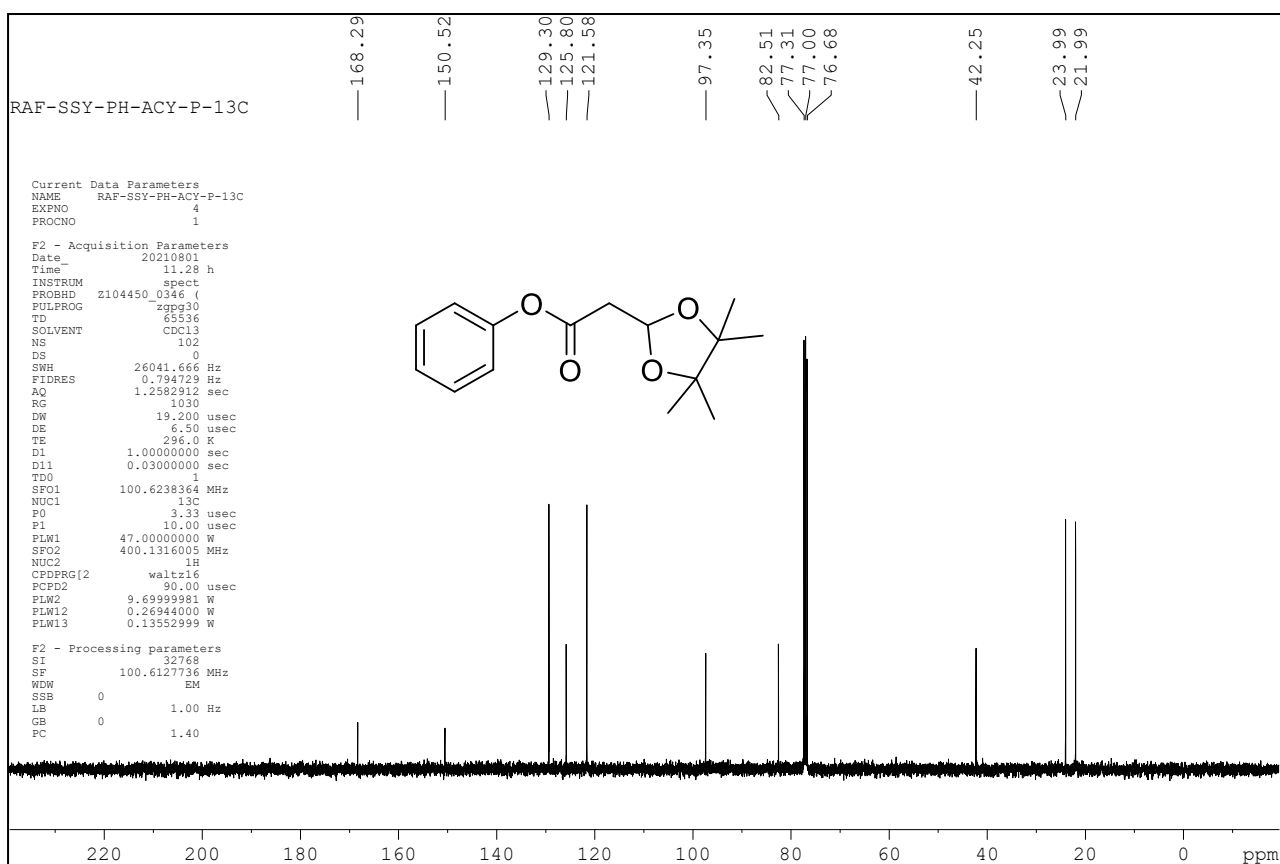
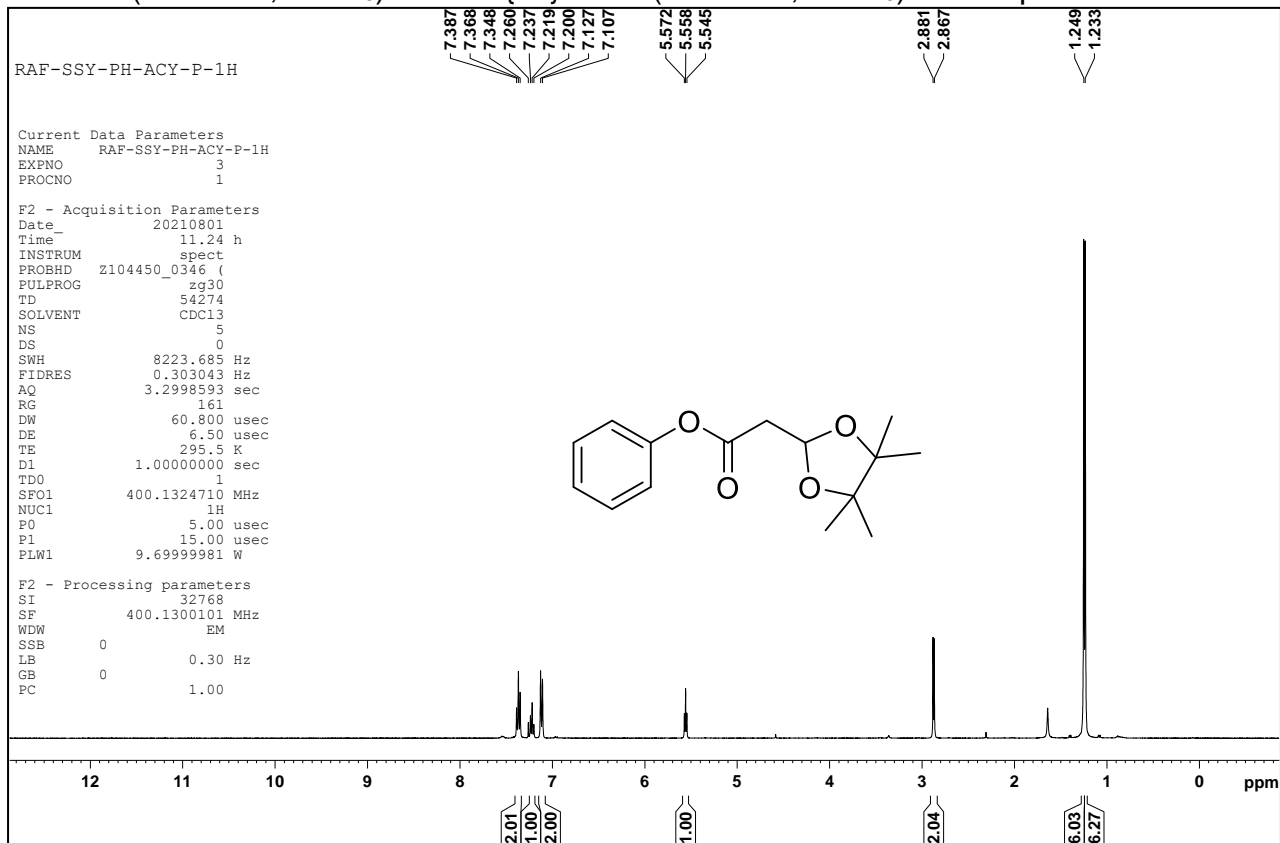
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **8j**



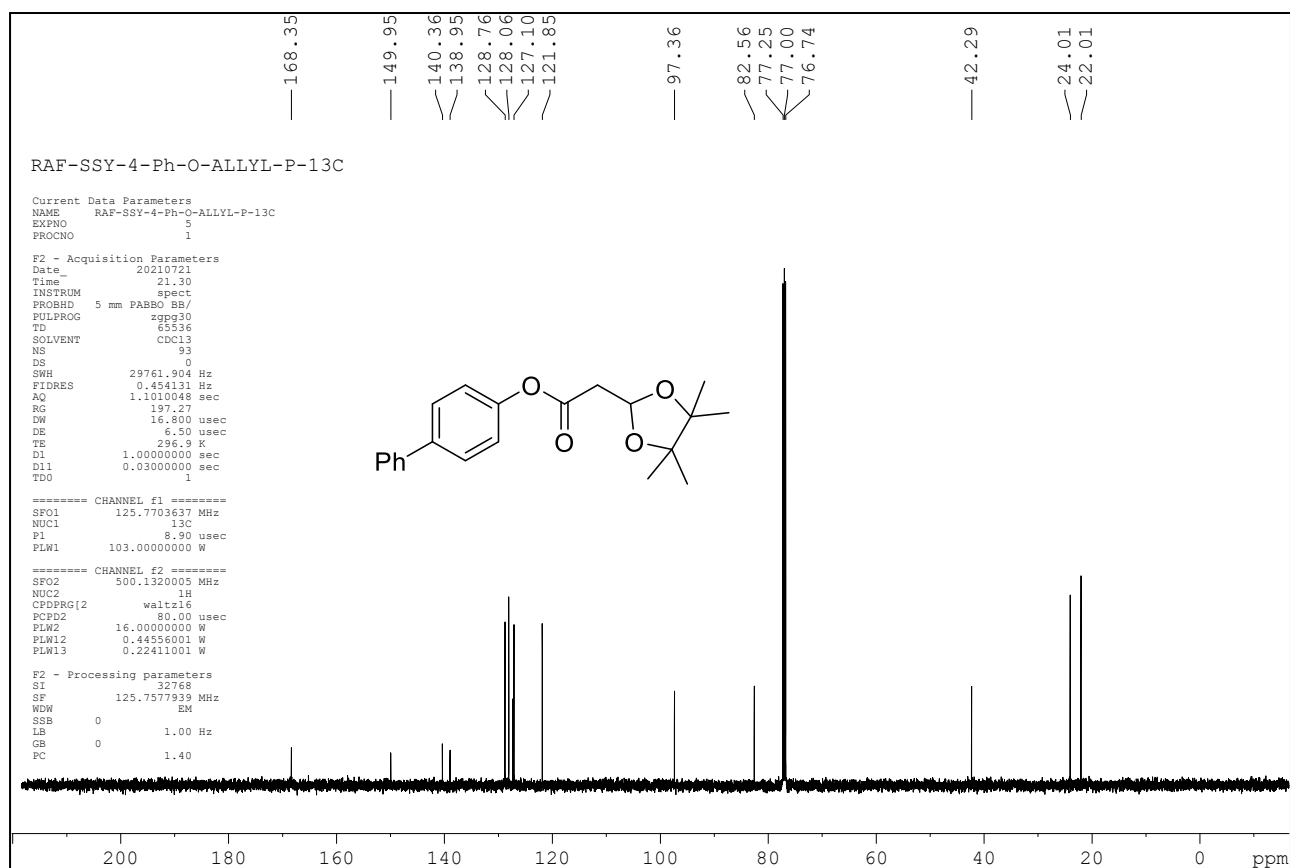
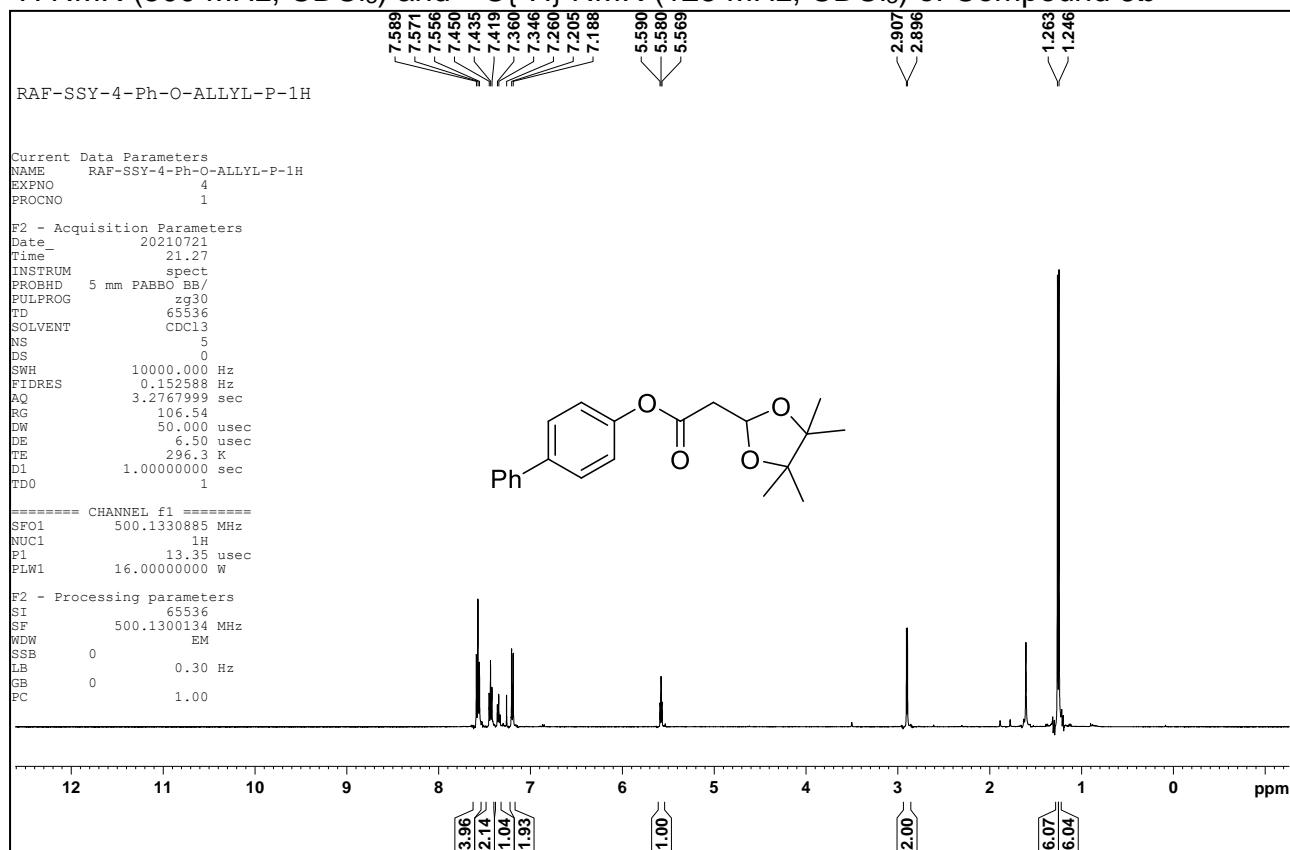
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **8k**



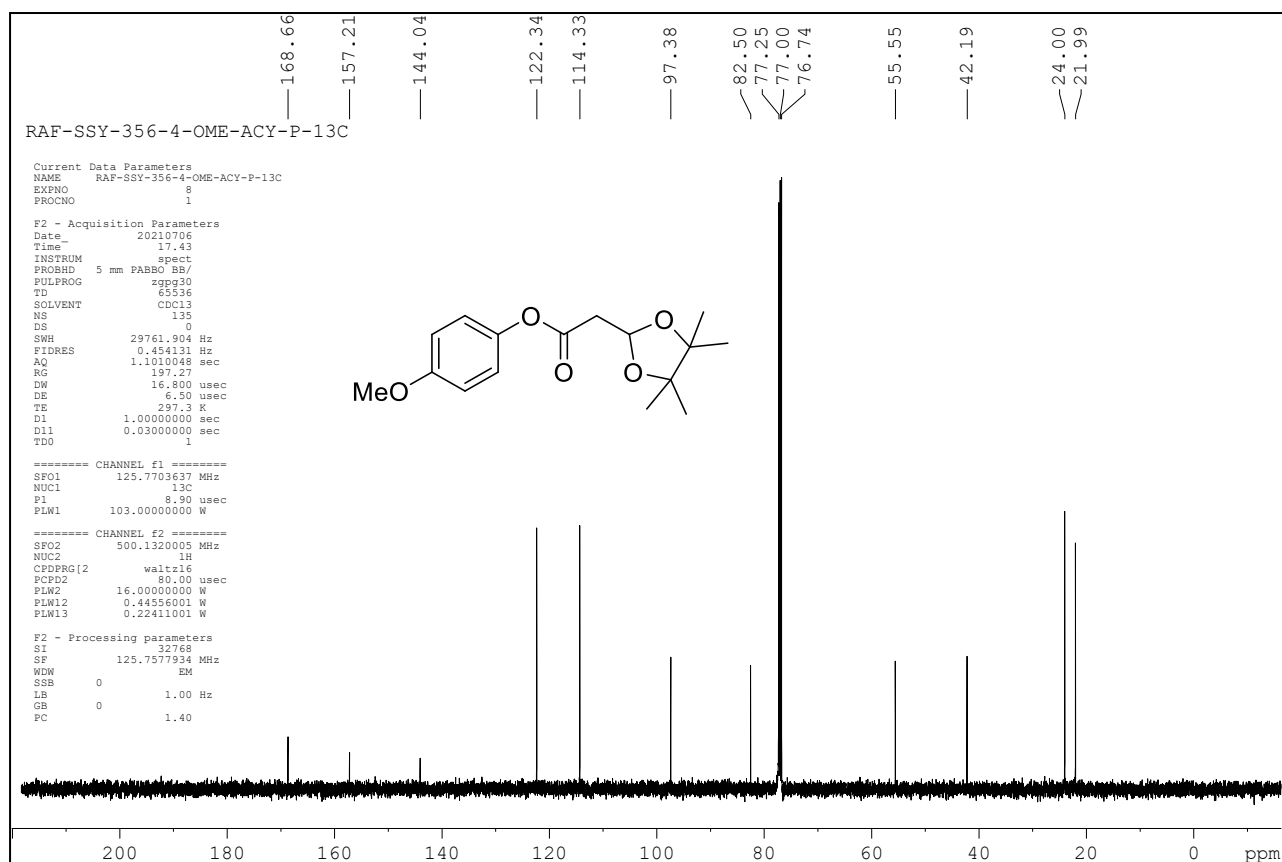
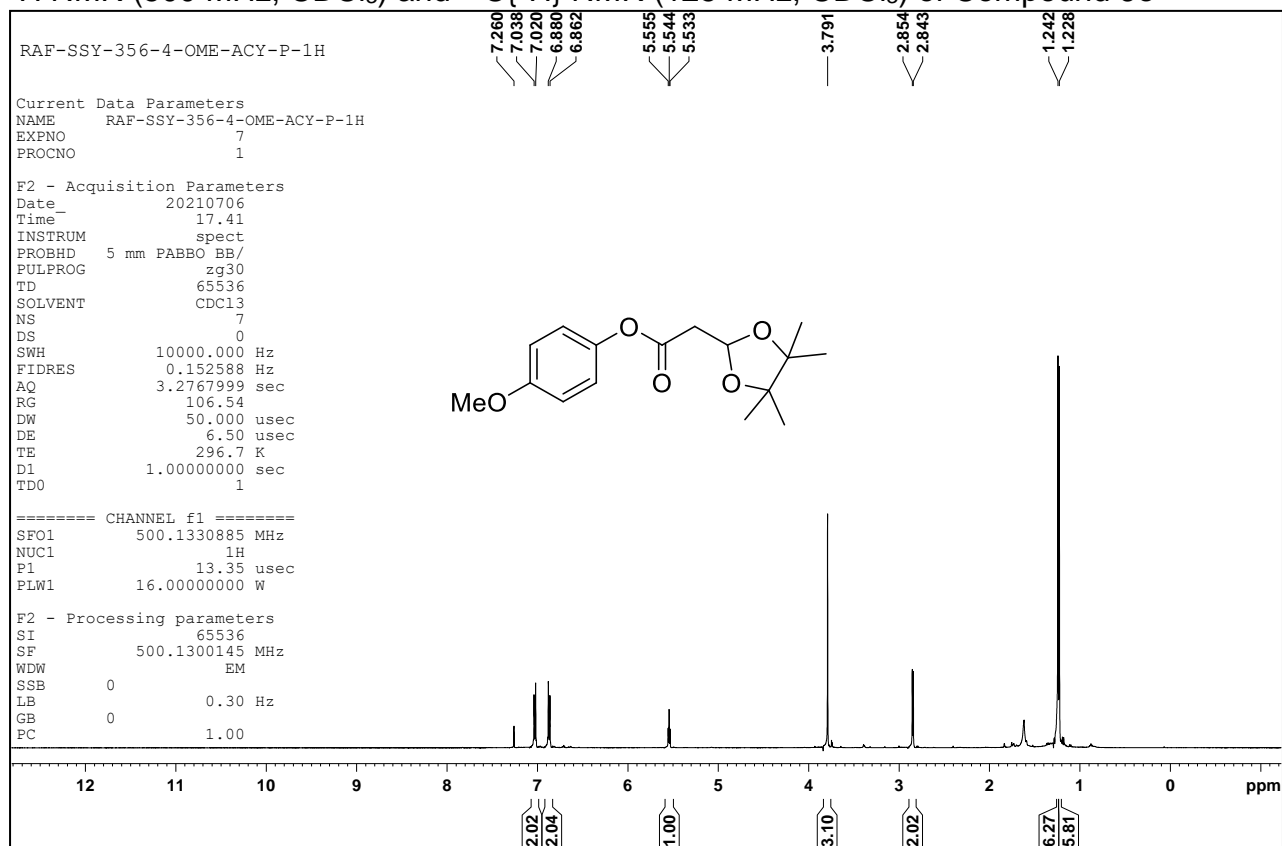
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **9a**



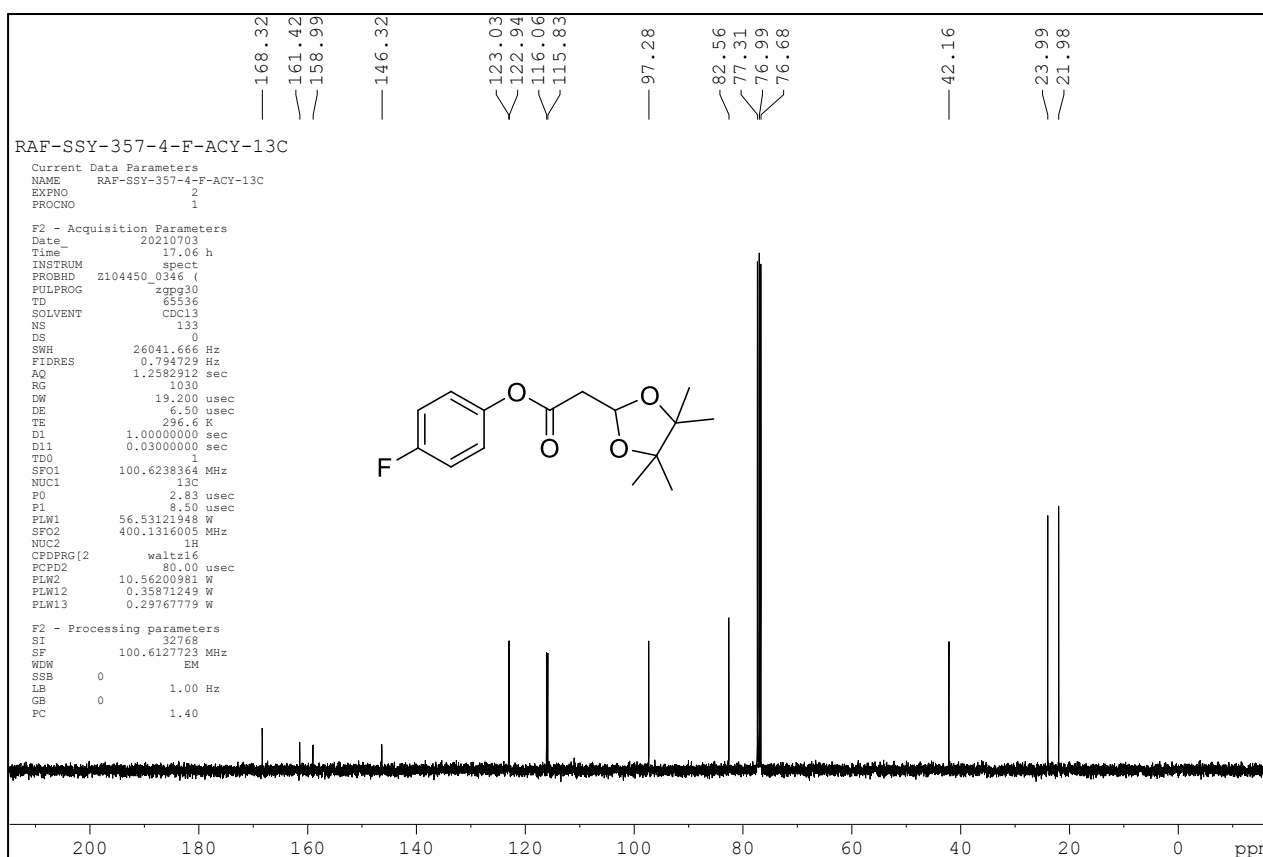
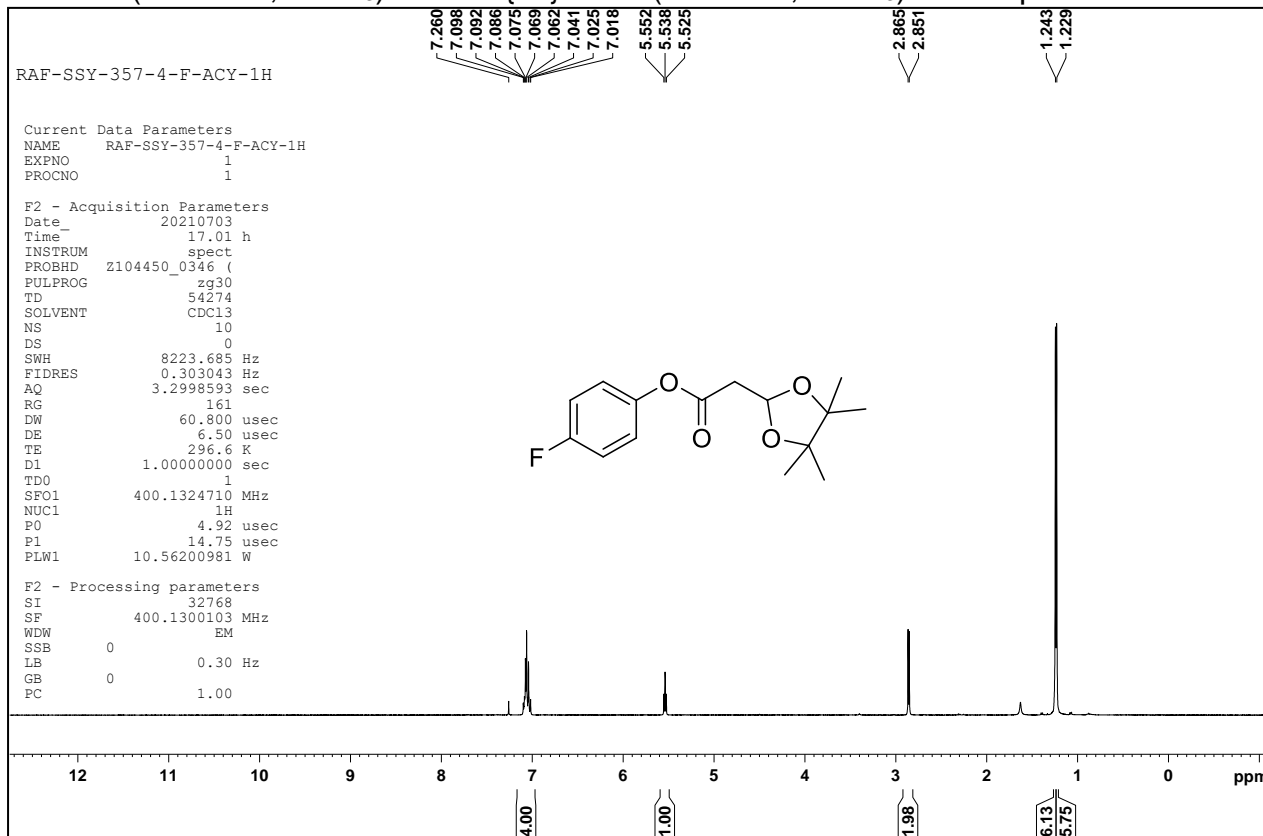
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **9b**



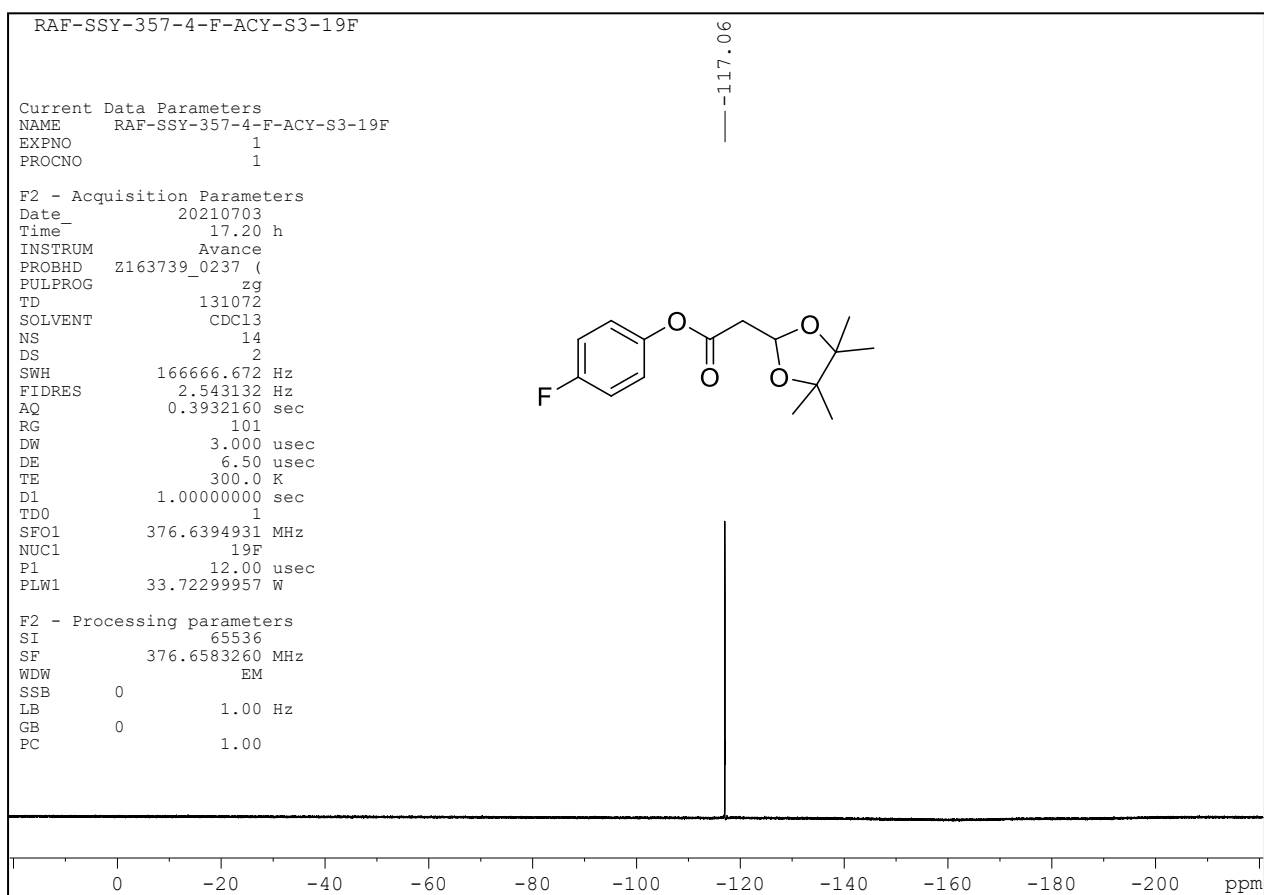
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **9c**



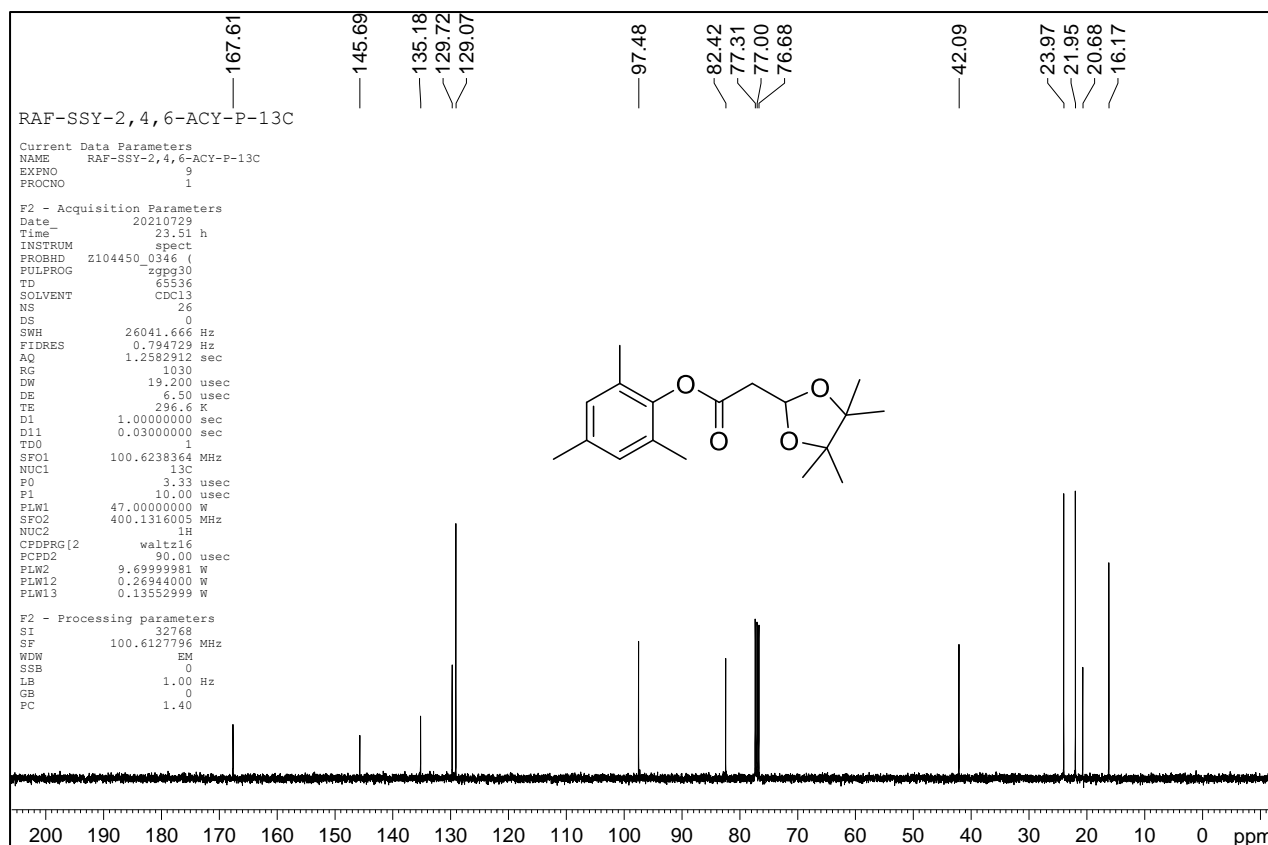
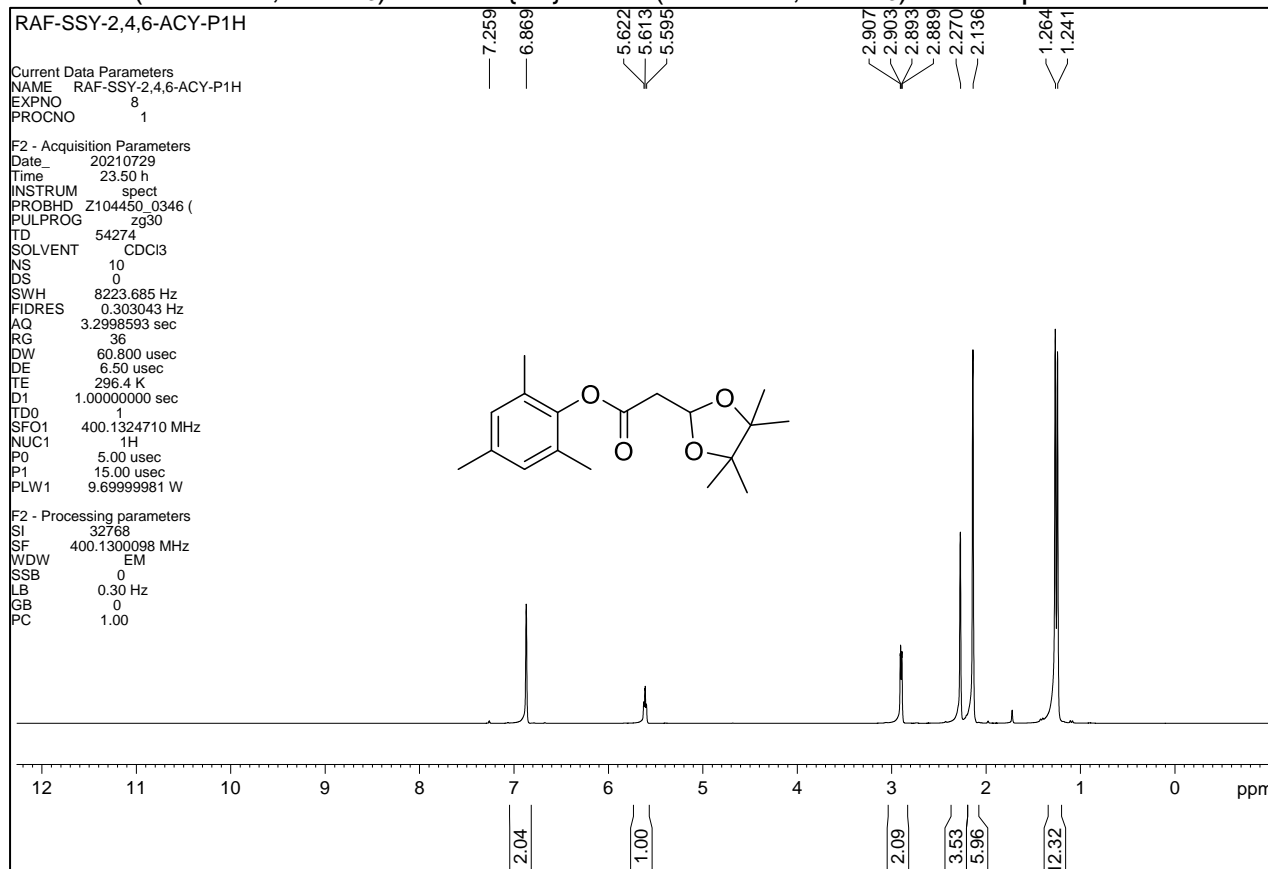
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **9d**



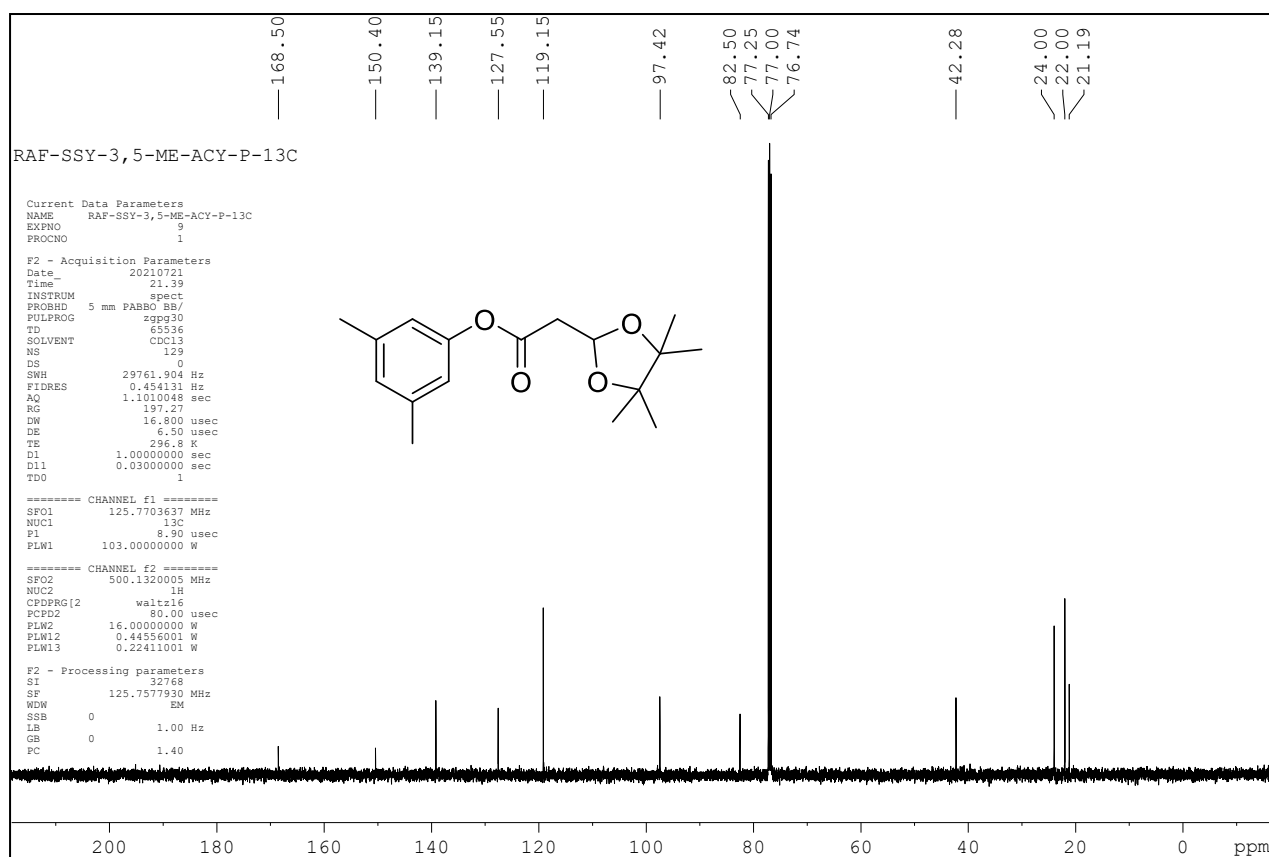
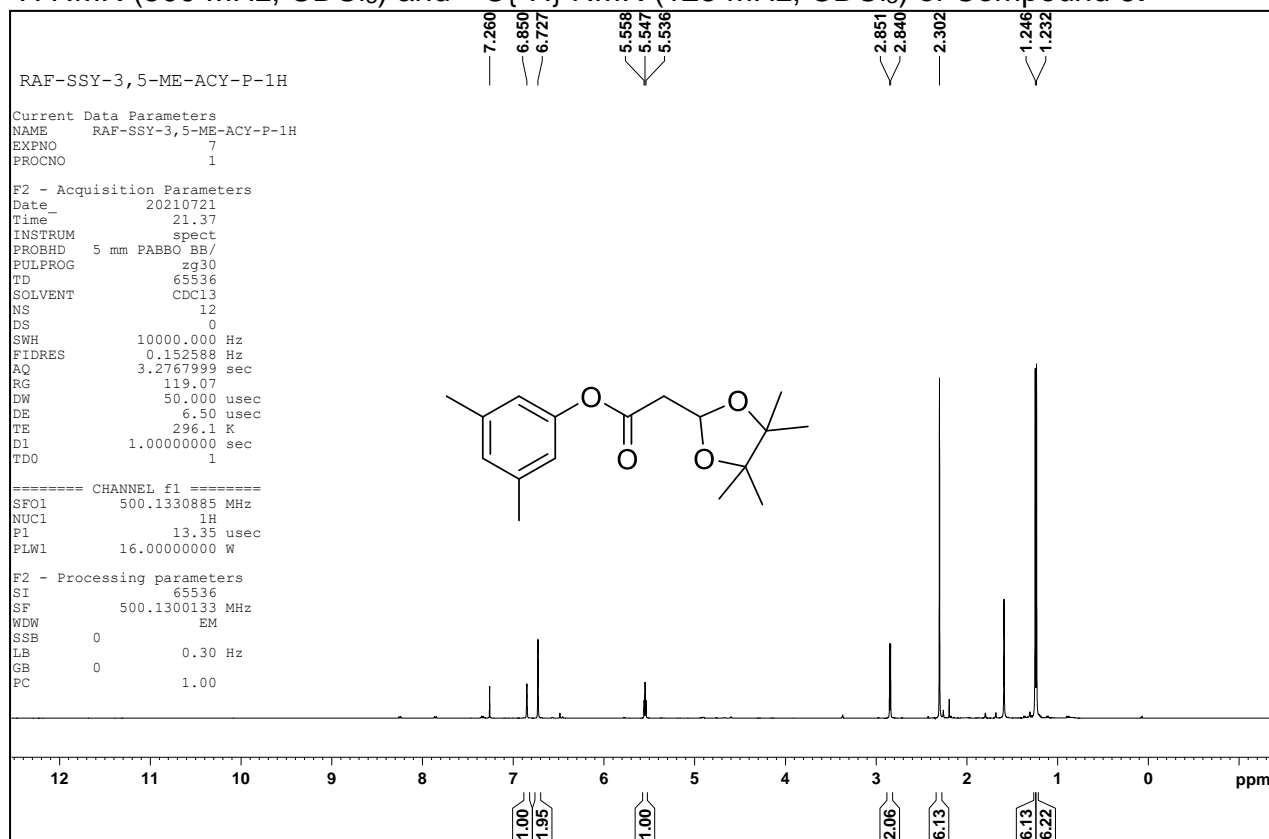
¹⁹F NMR (376 MHz, CDCl₃) of Compound 9d



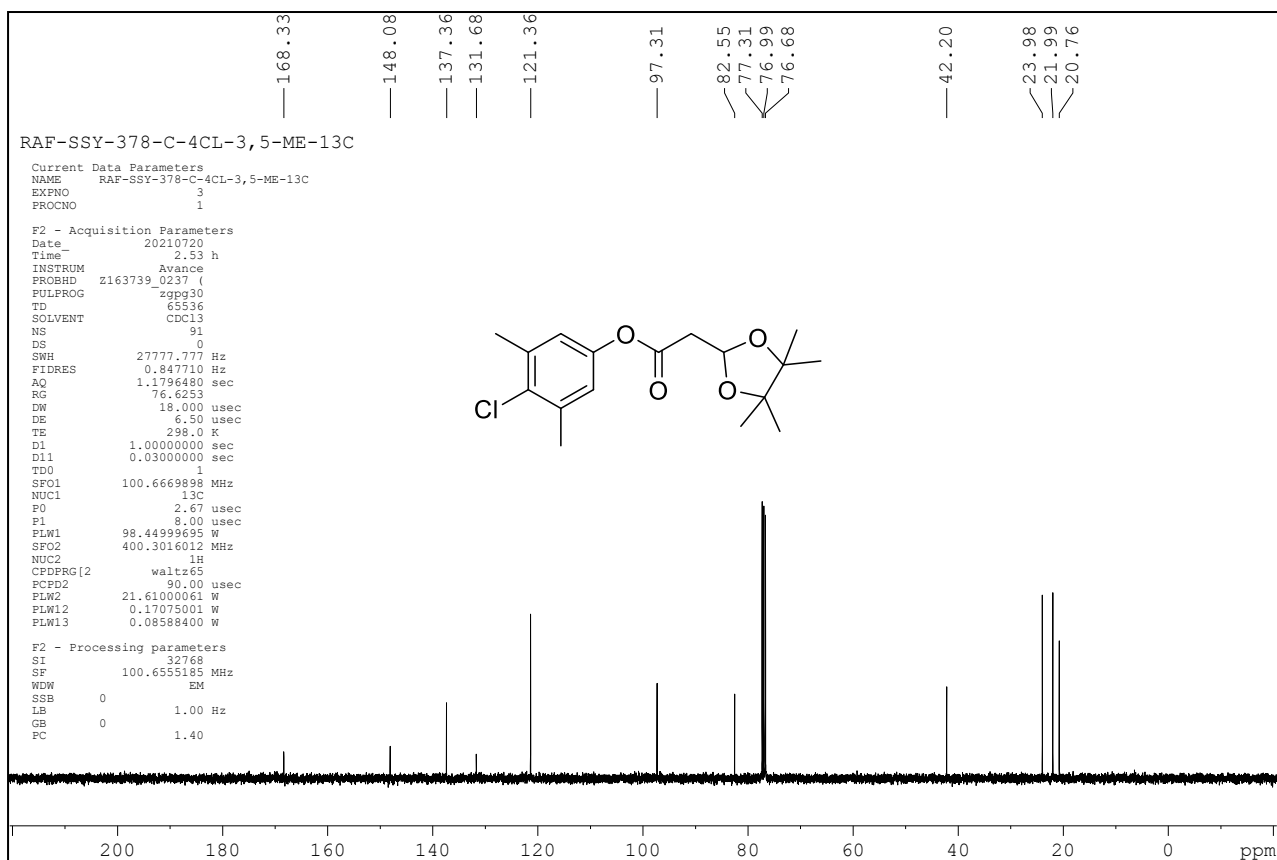
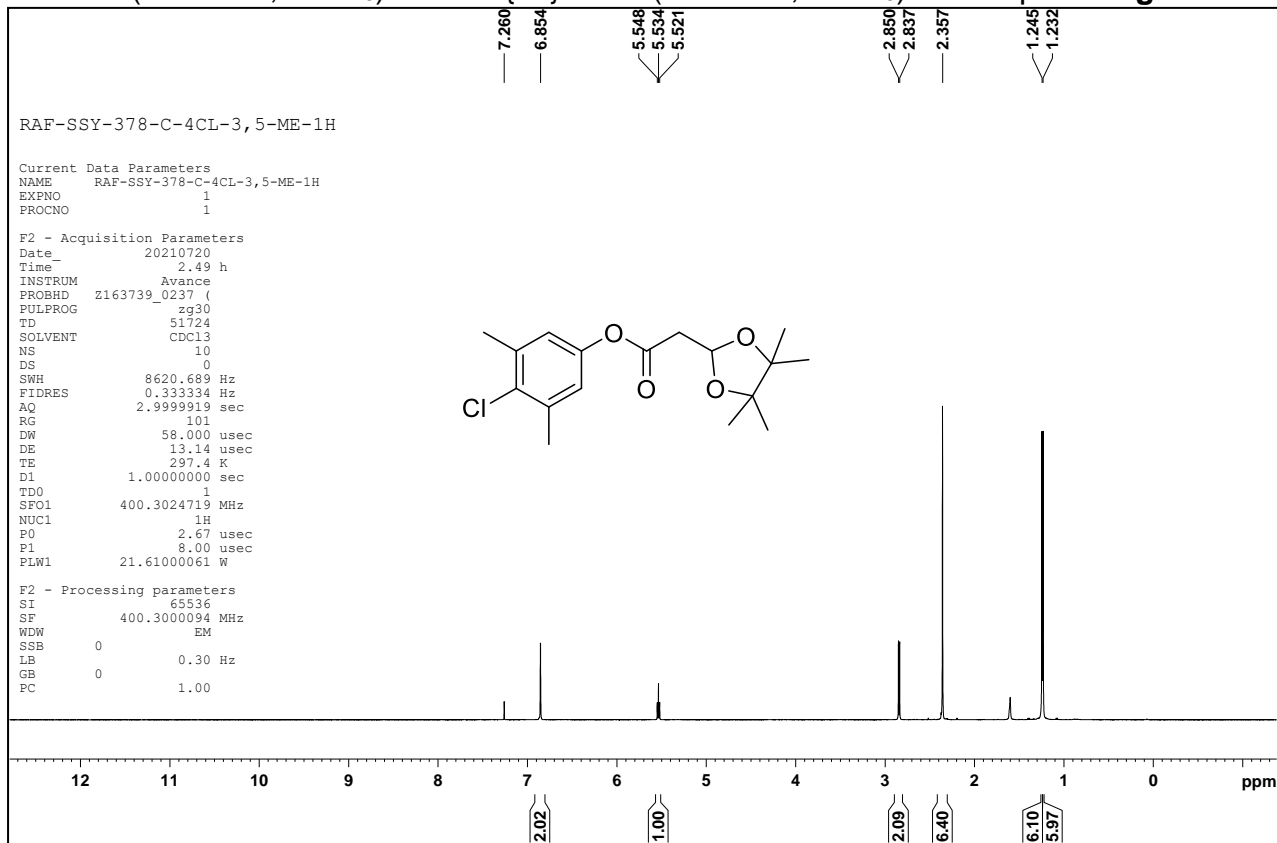
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **9e**



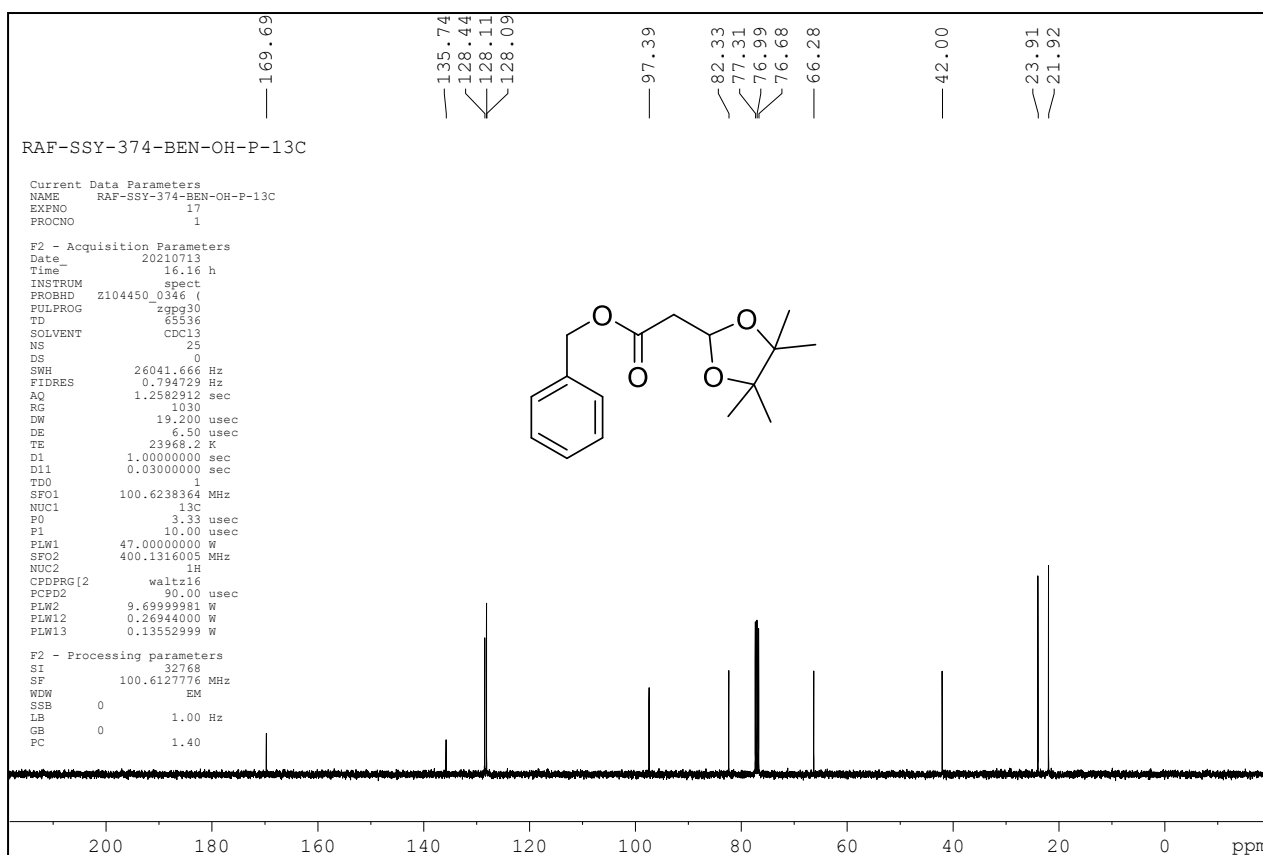
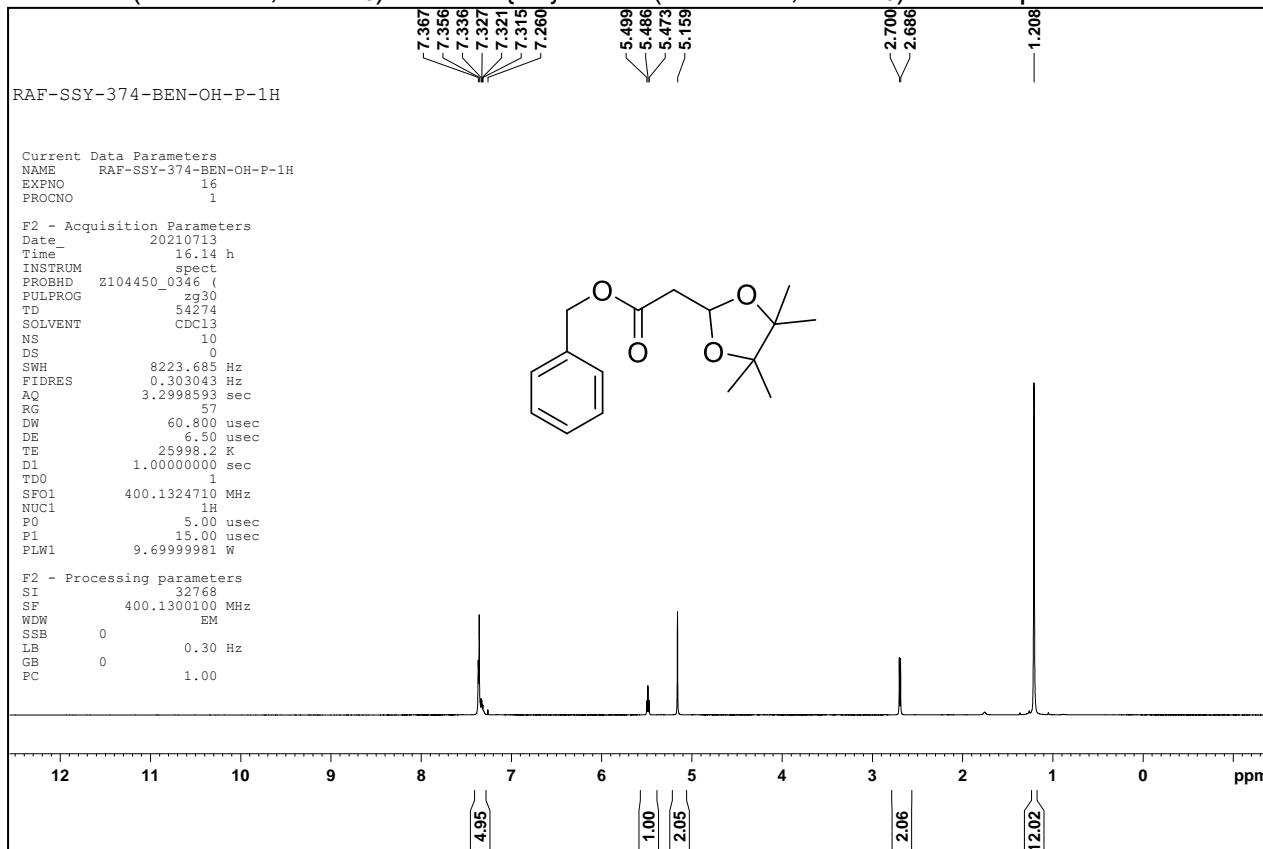
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **9f**



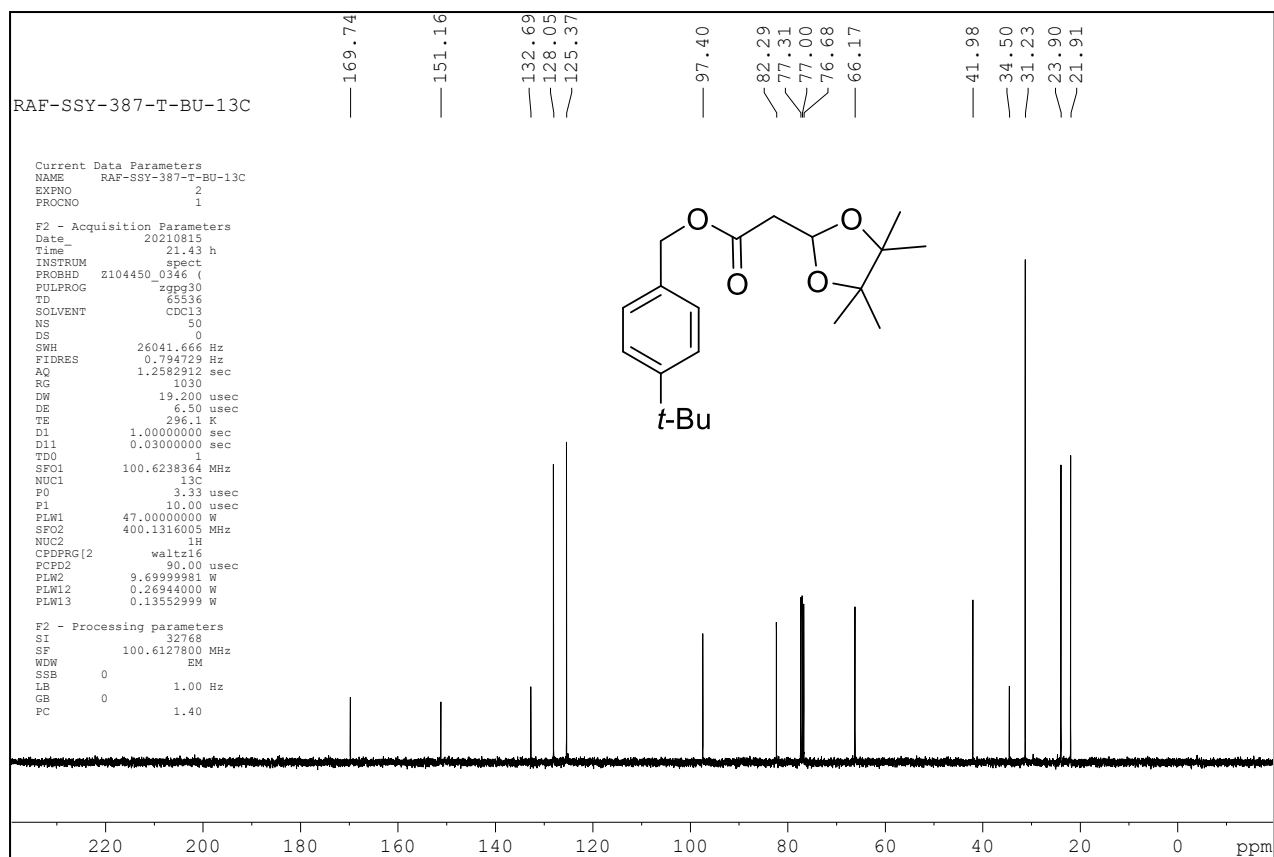
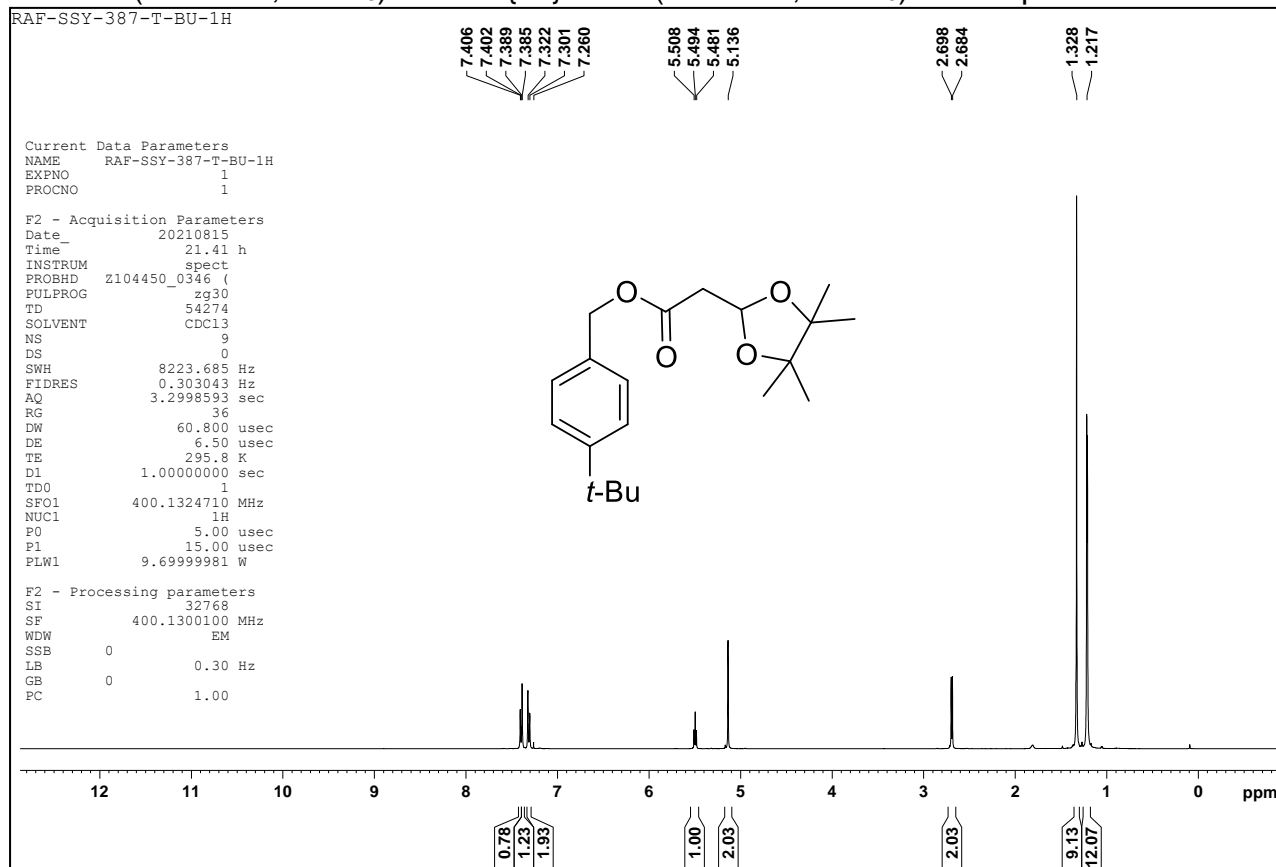
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **9g**



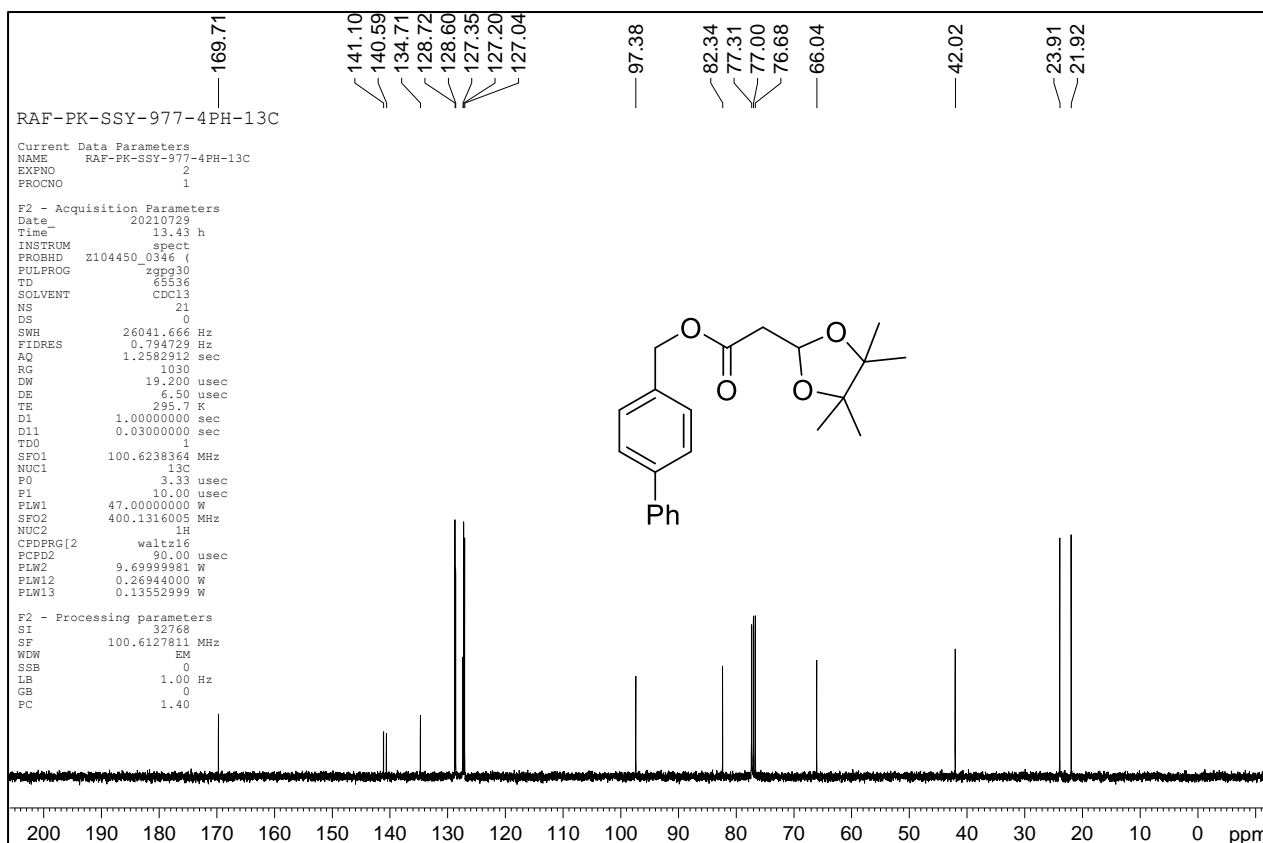
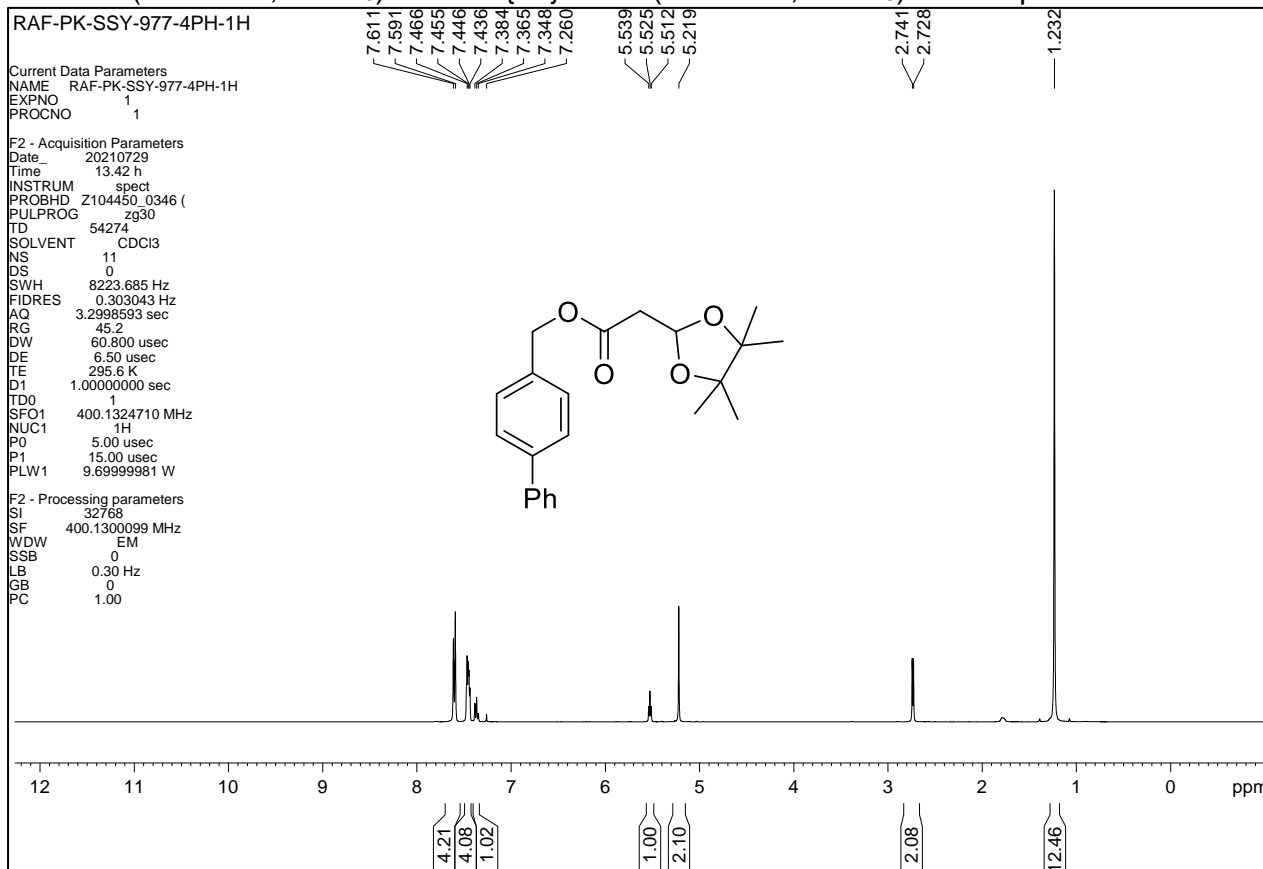
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10a



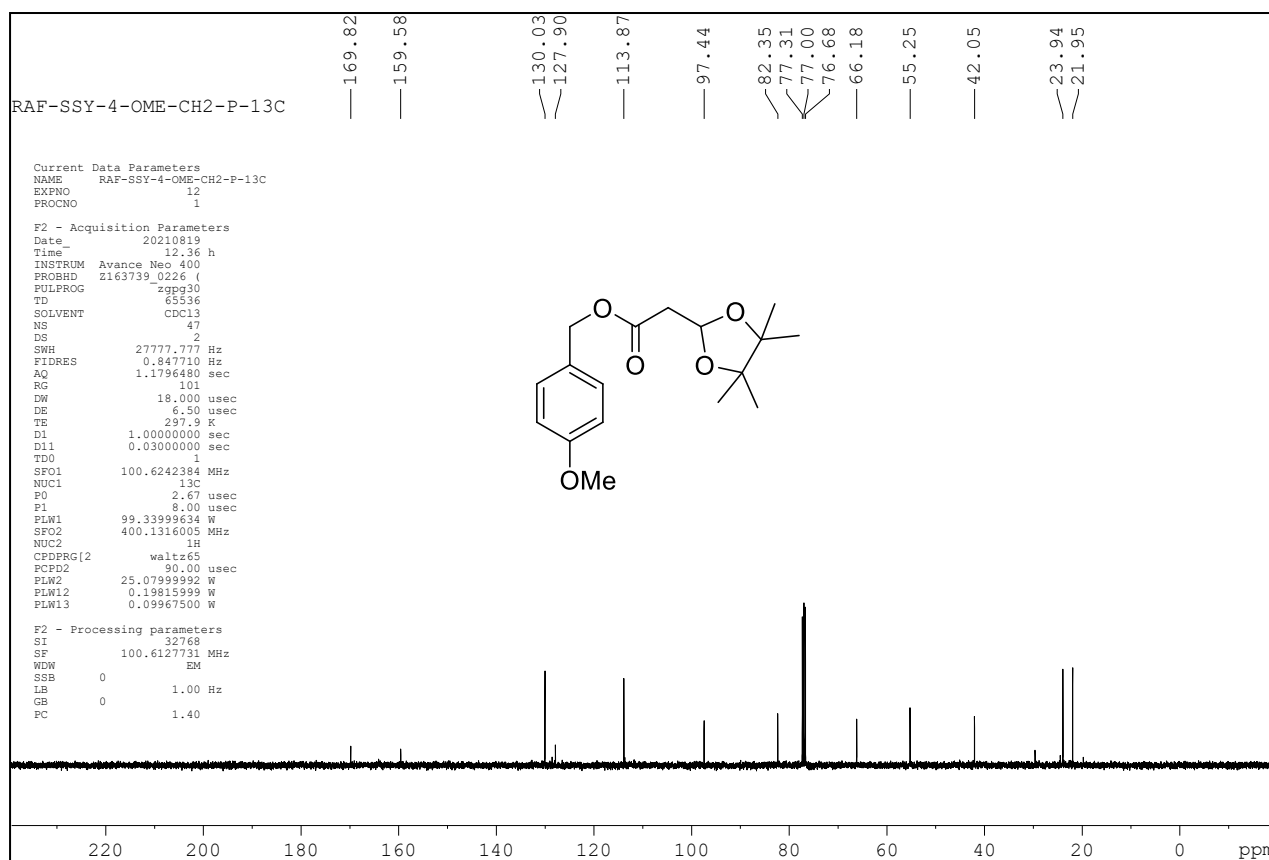
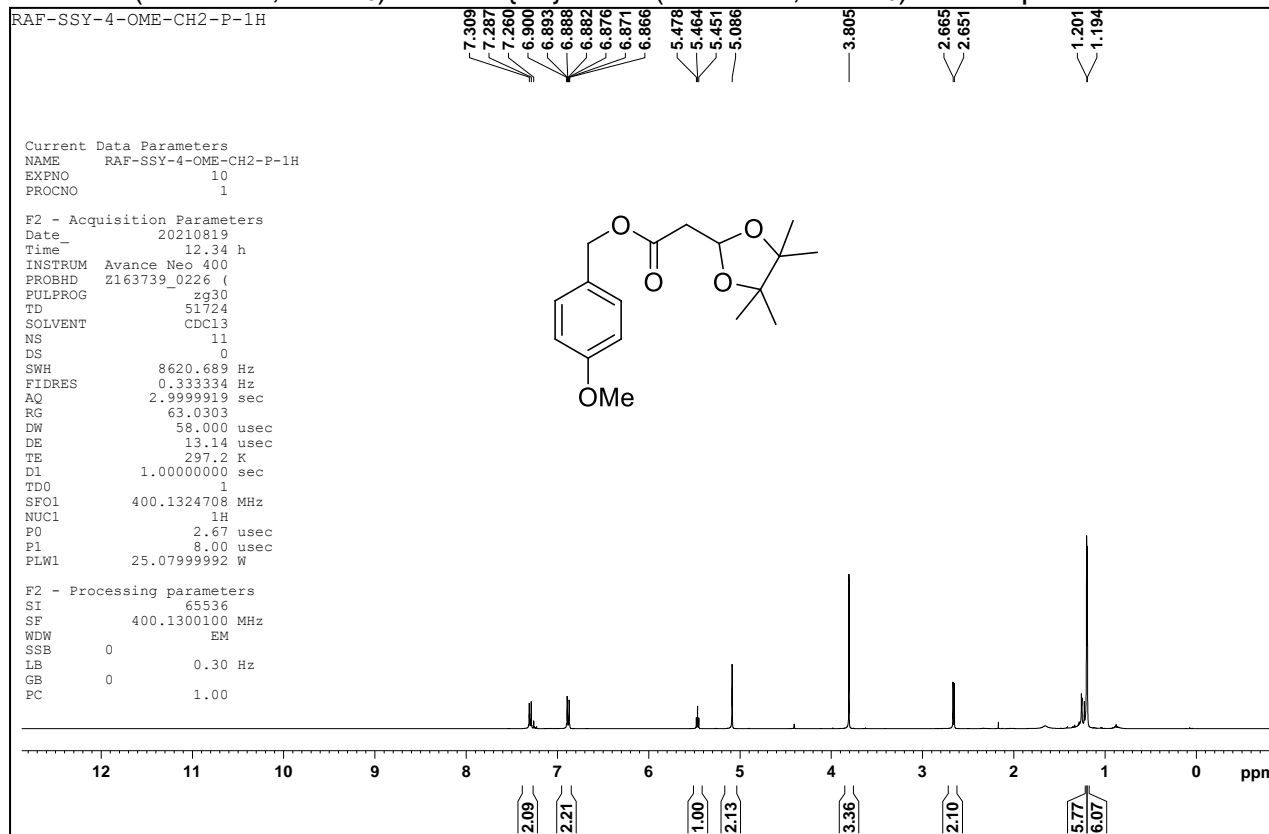
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **10b**



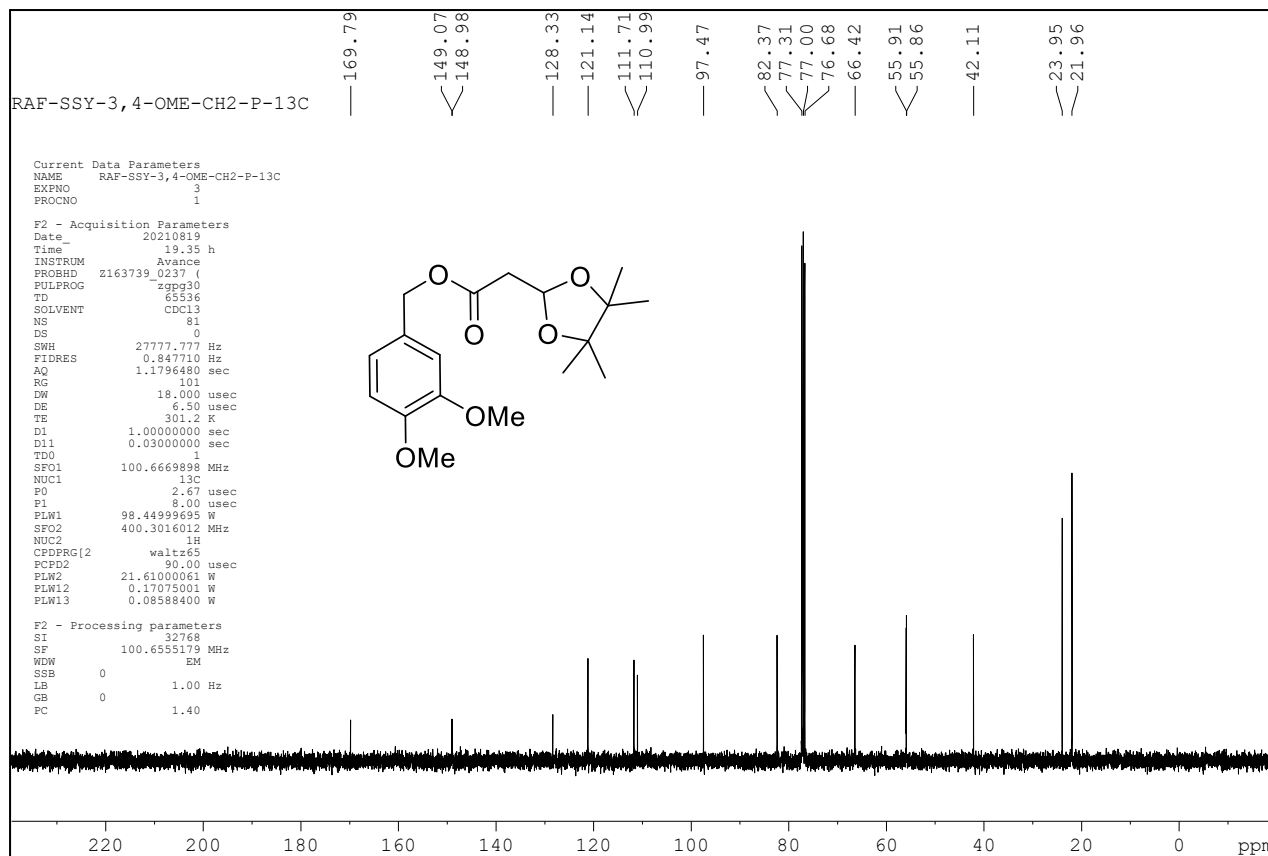
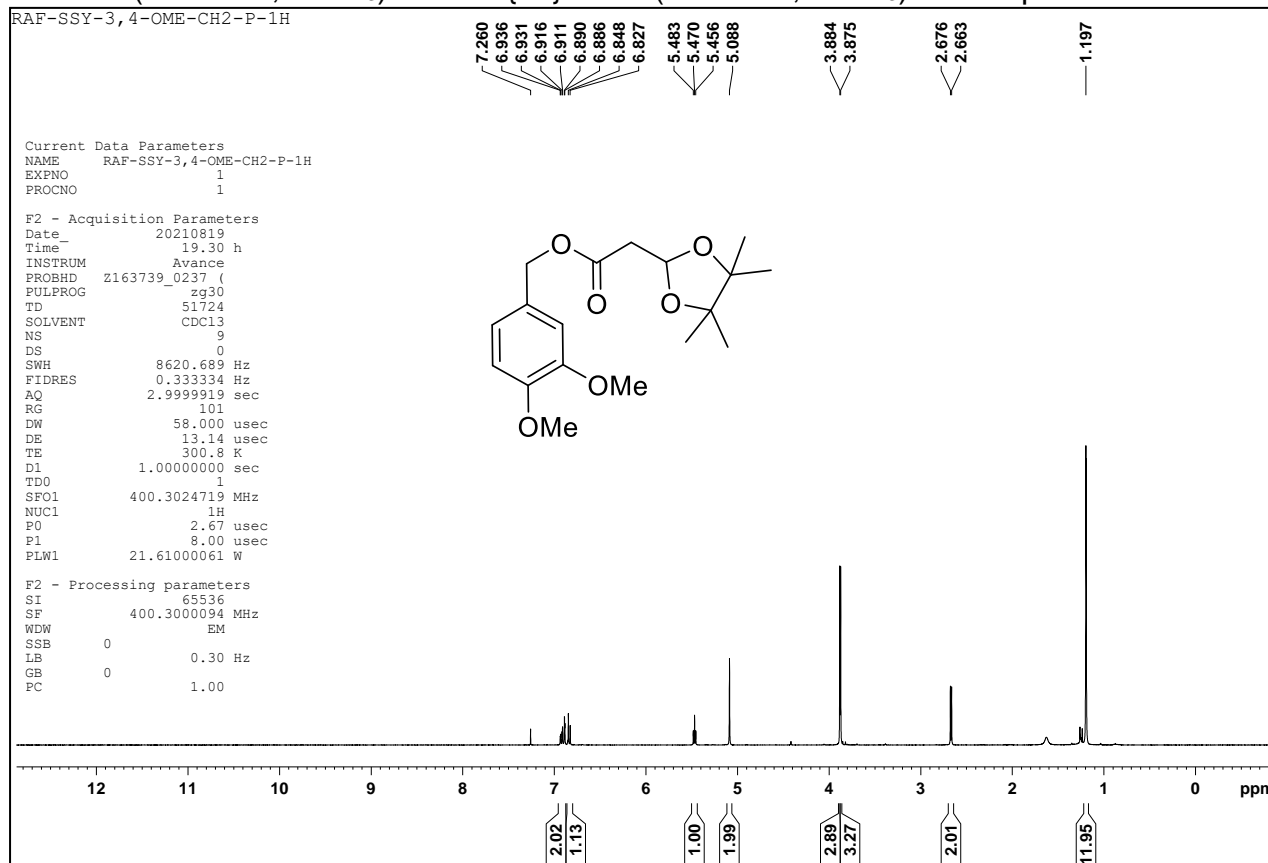
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10c



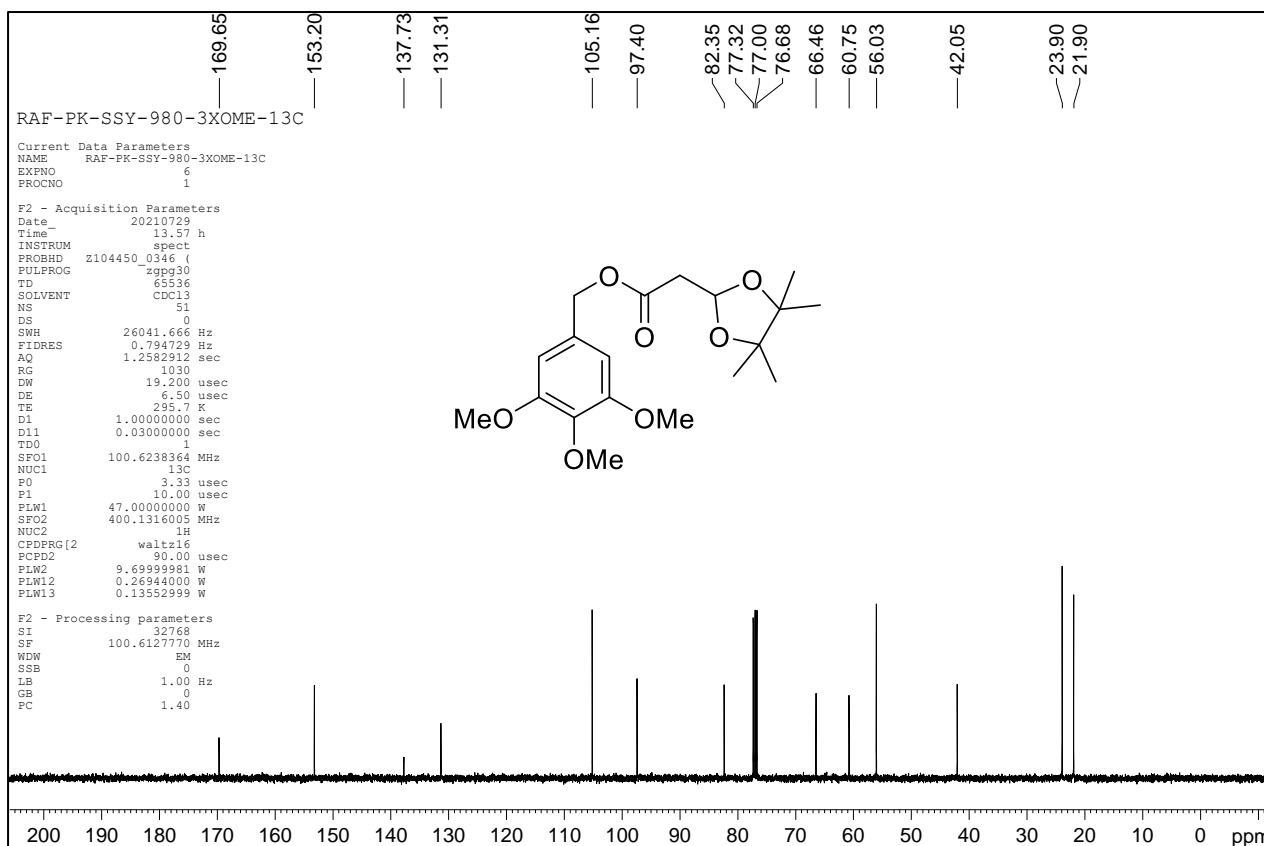
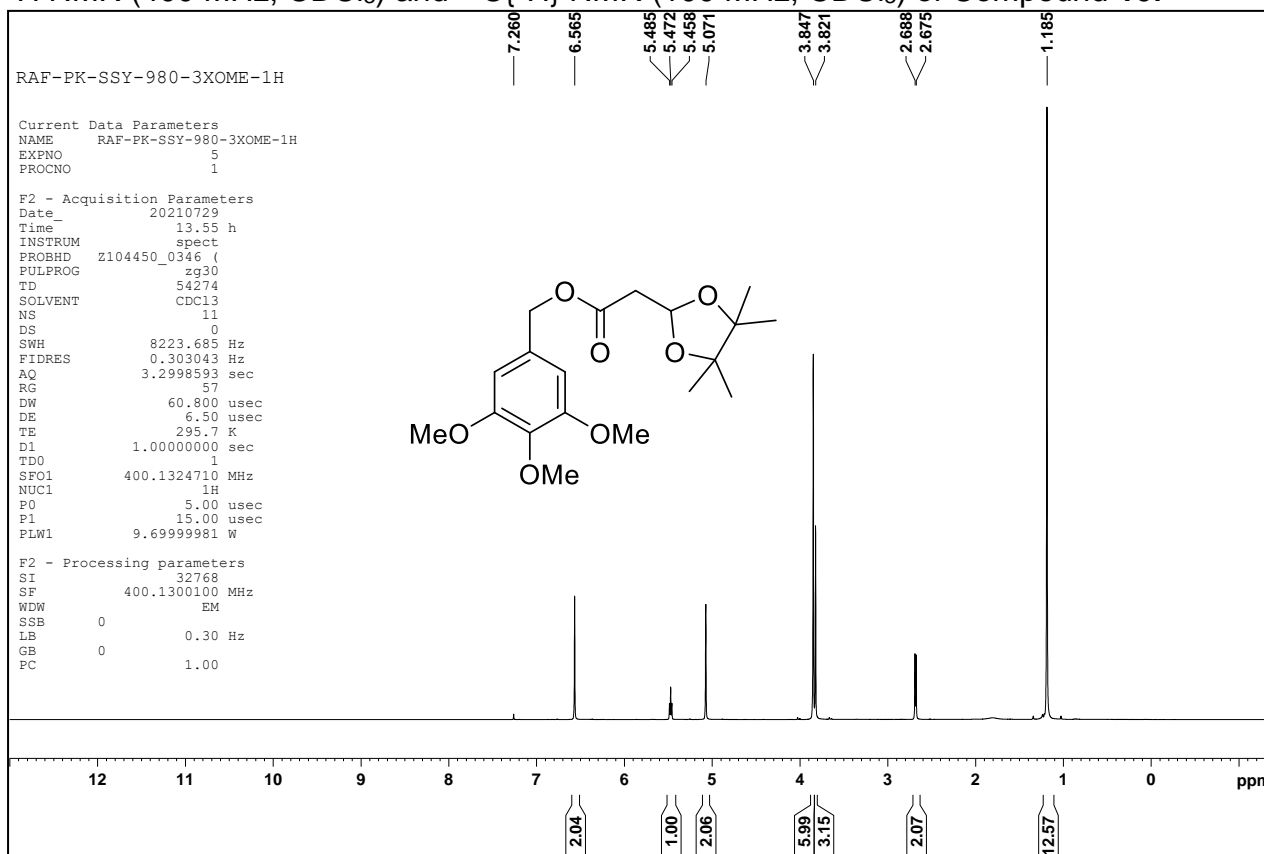
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10d



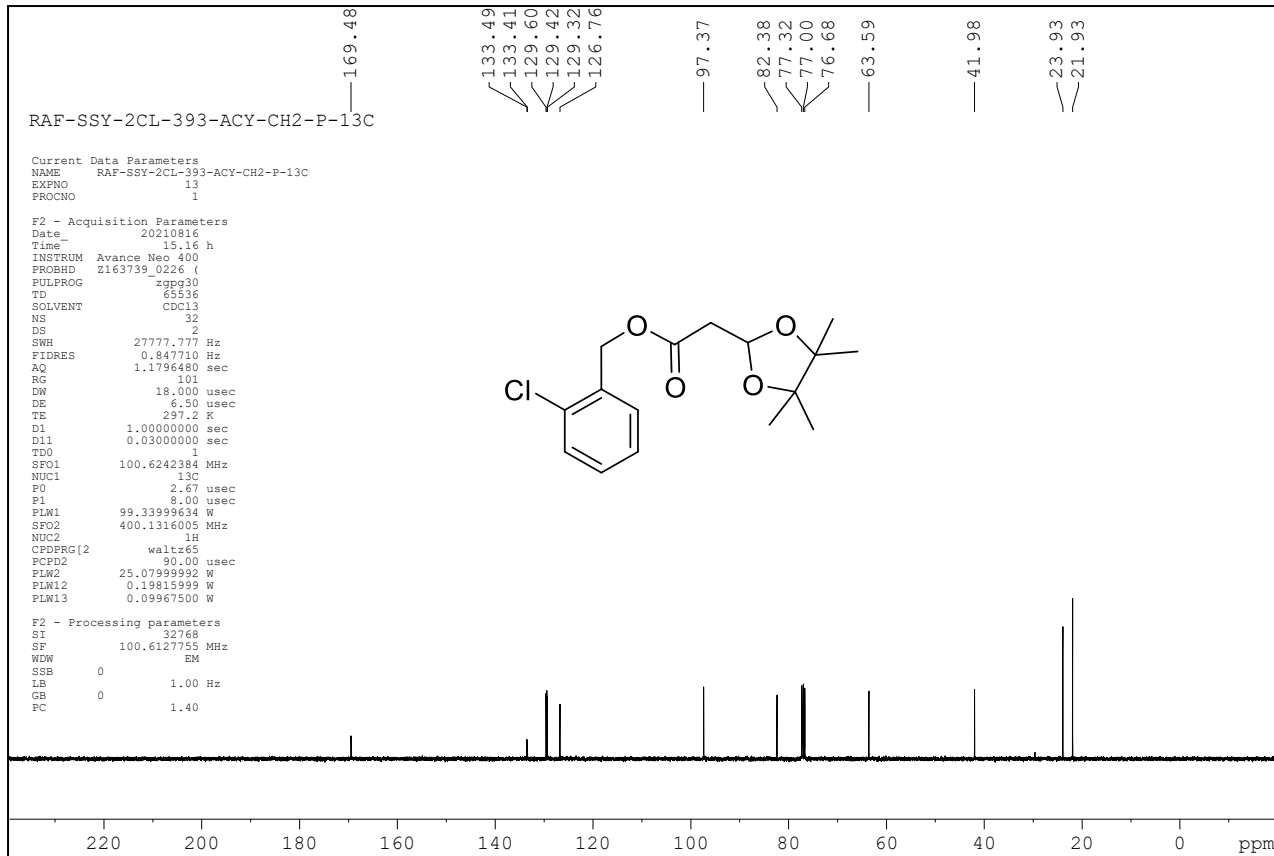
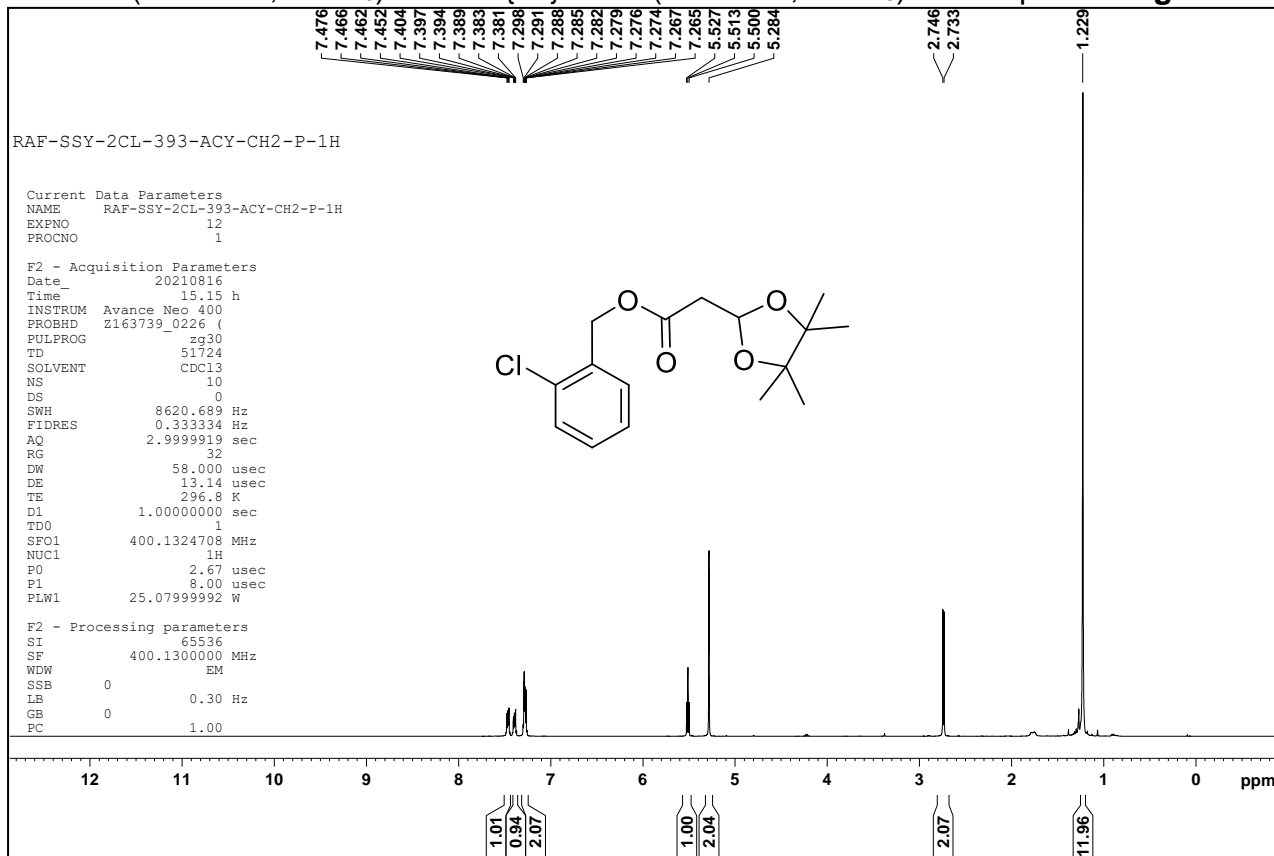
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **10e**



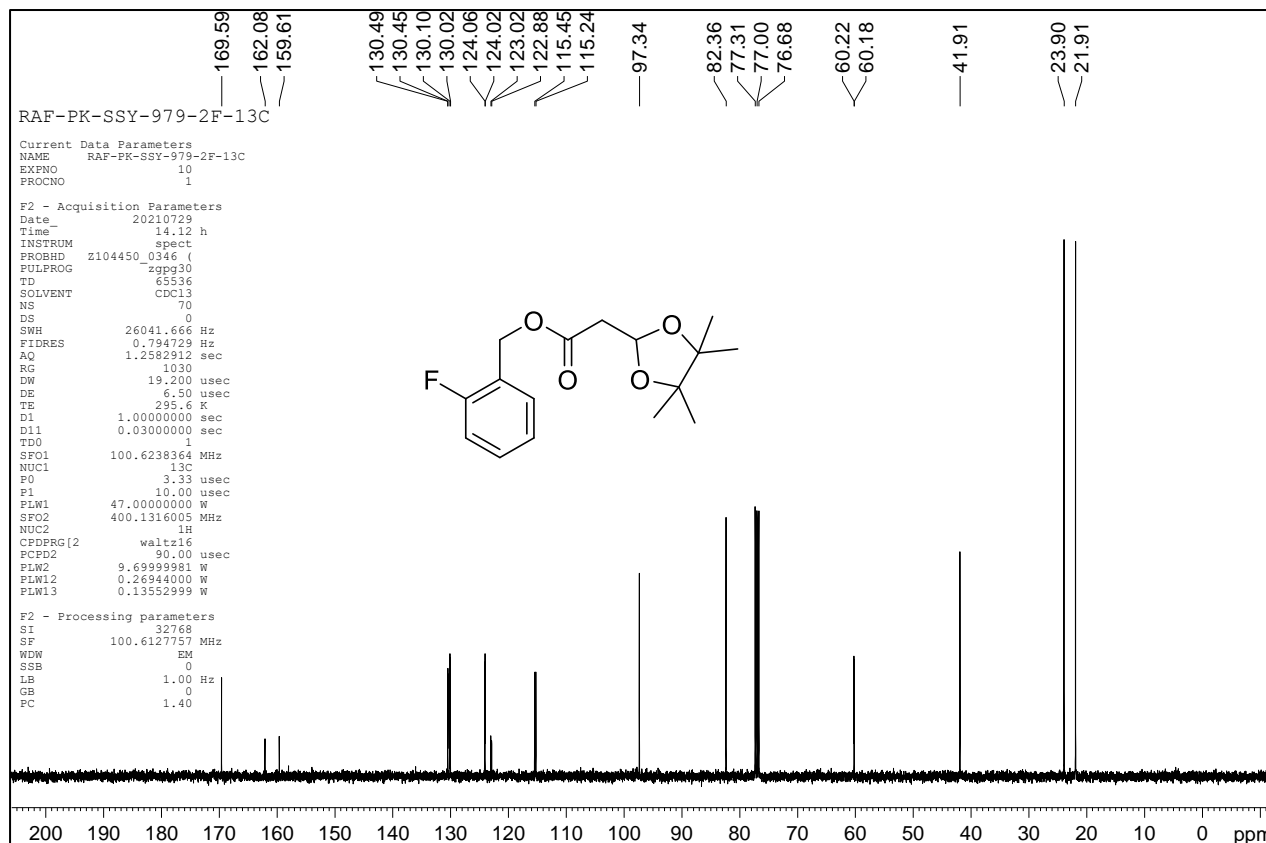
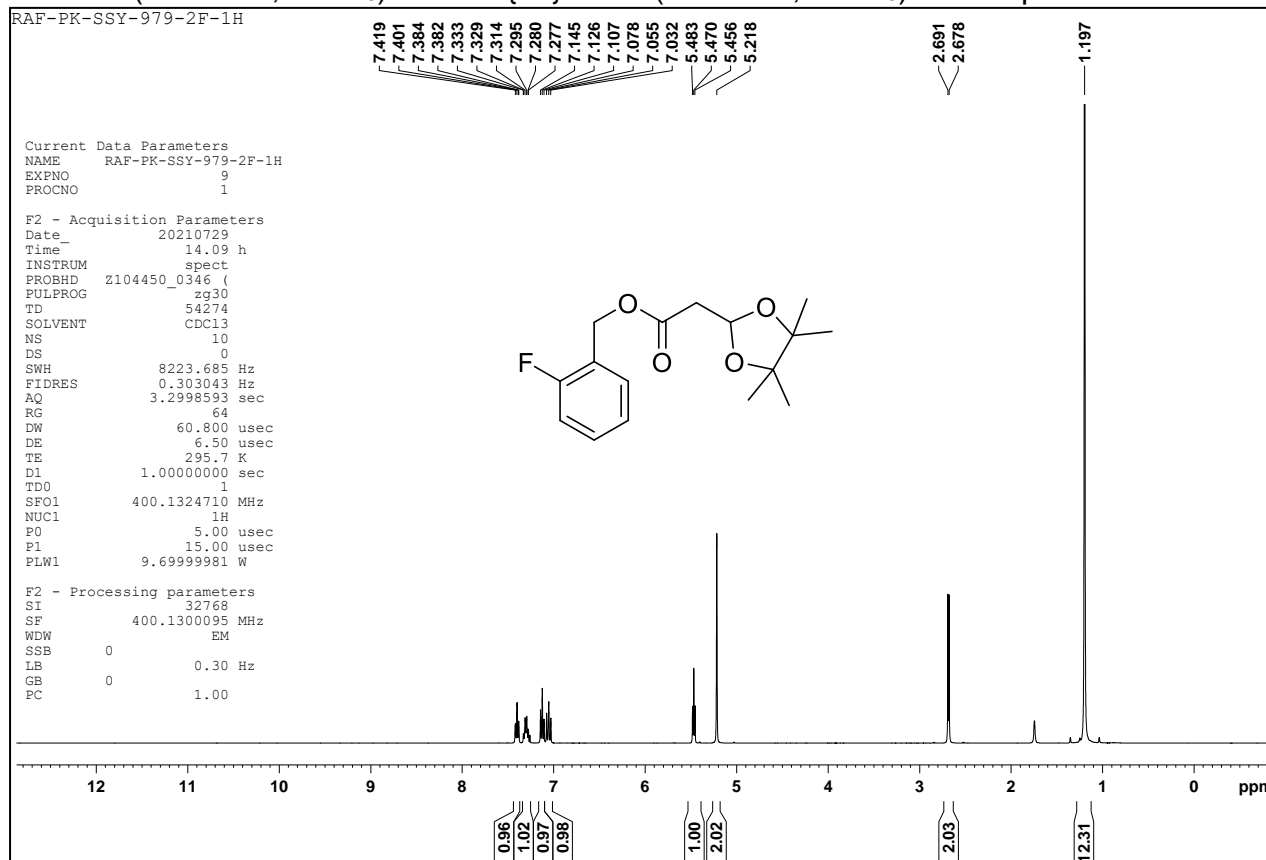
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10f



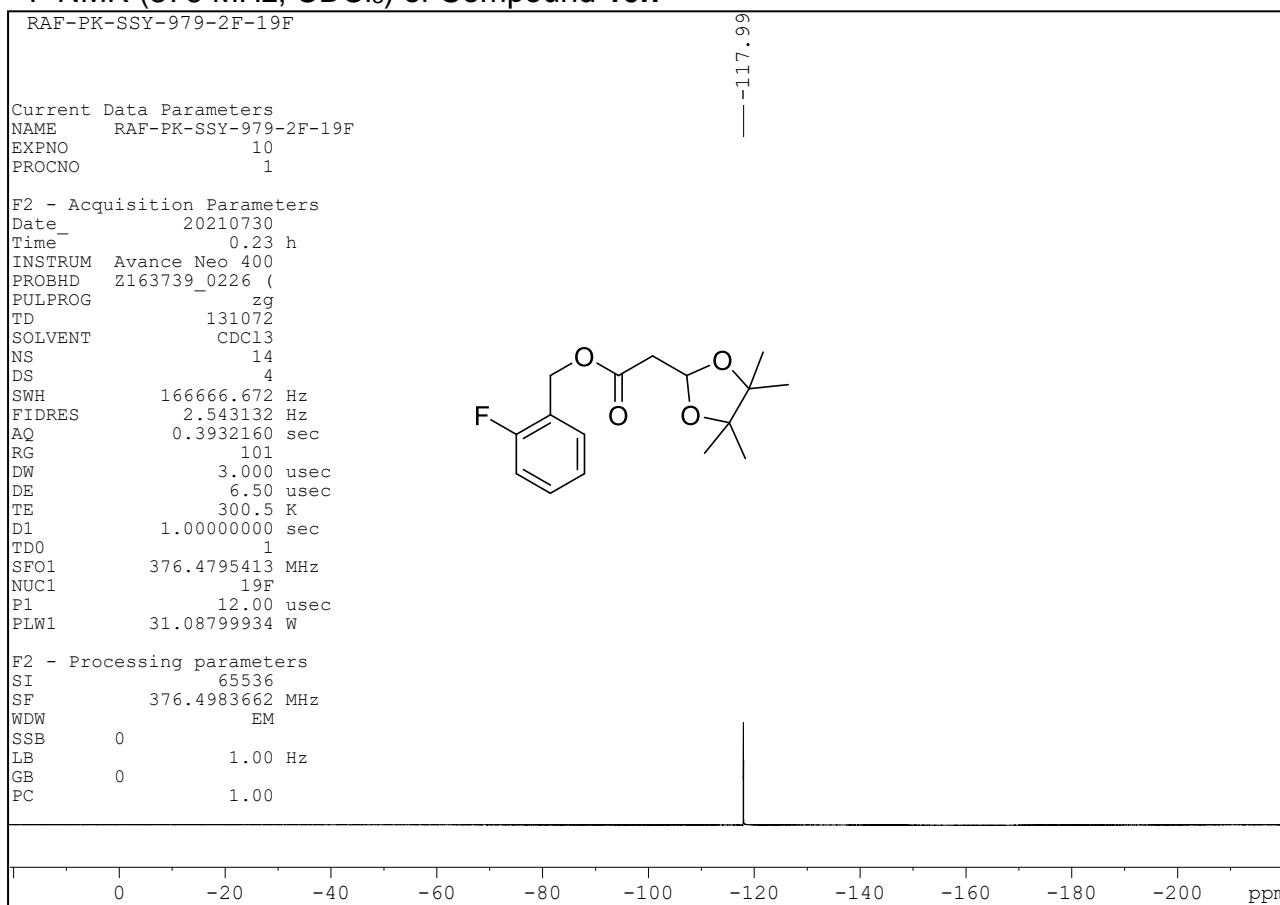
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10g



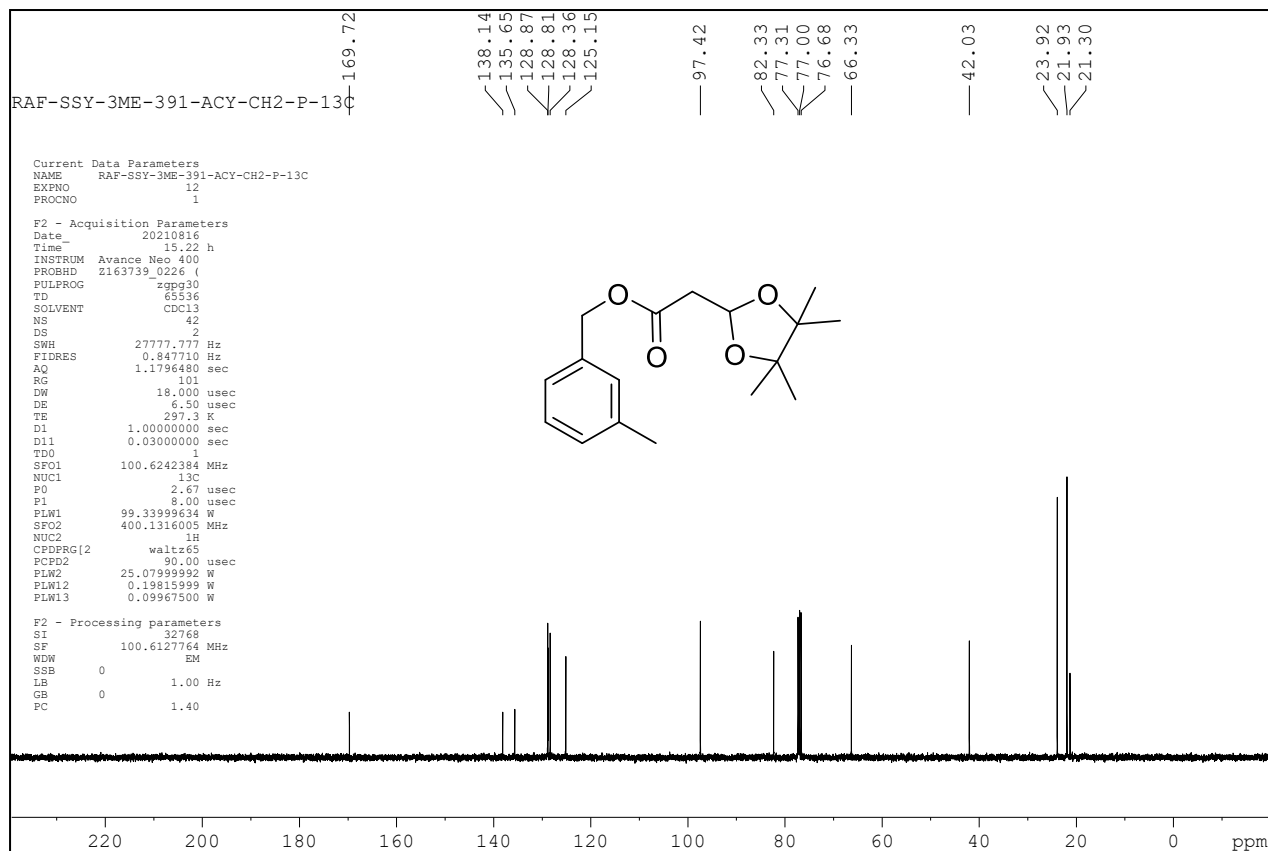
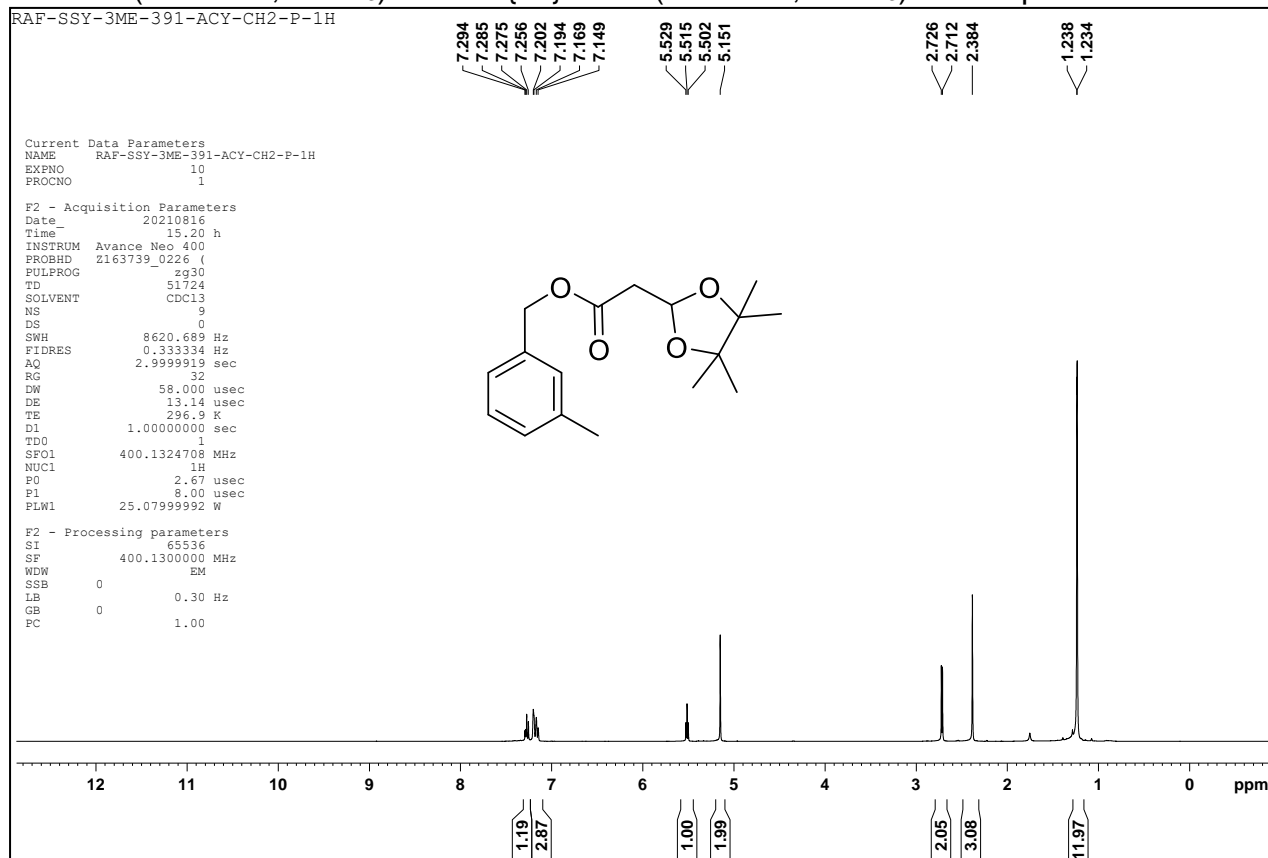
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10h



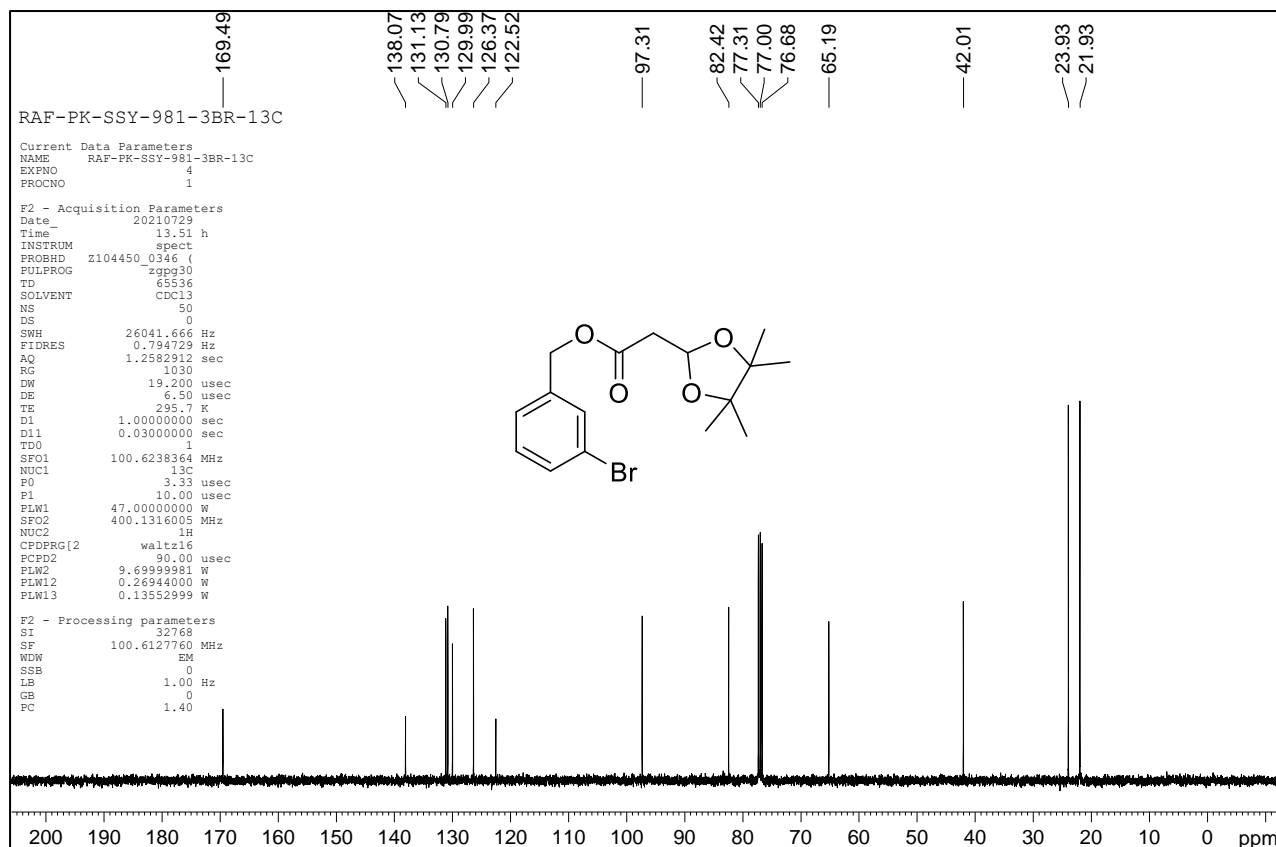
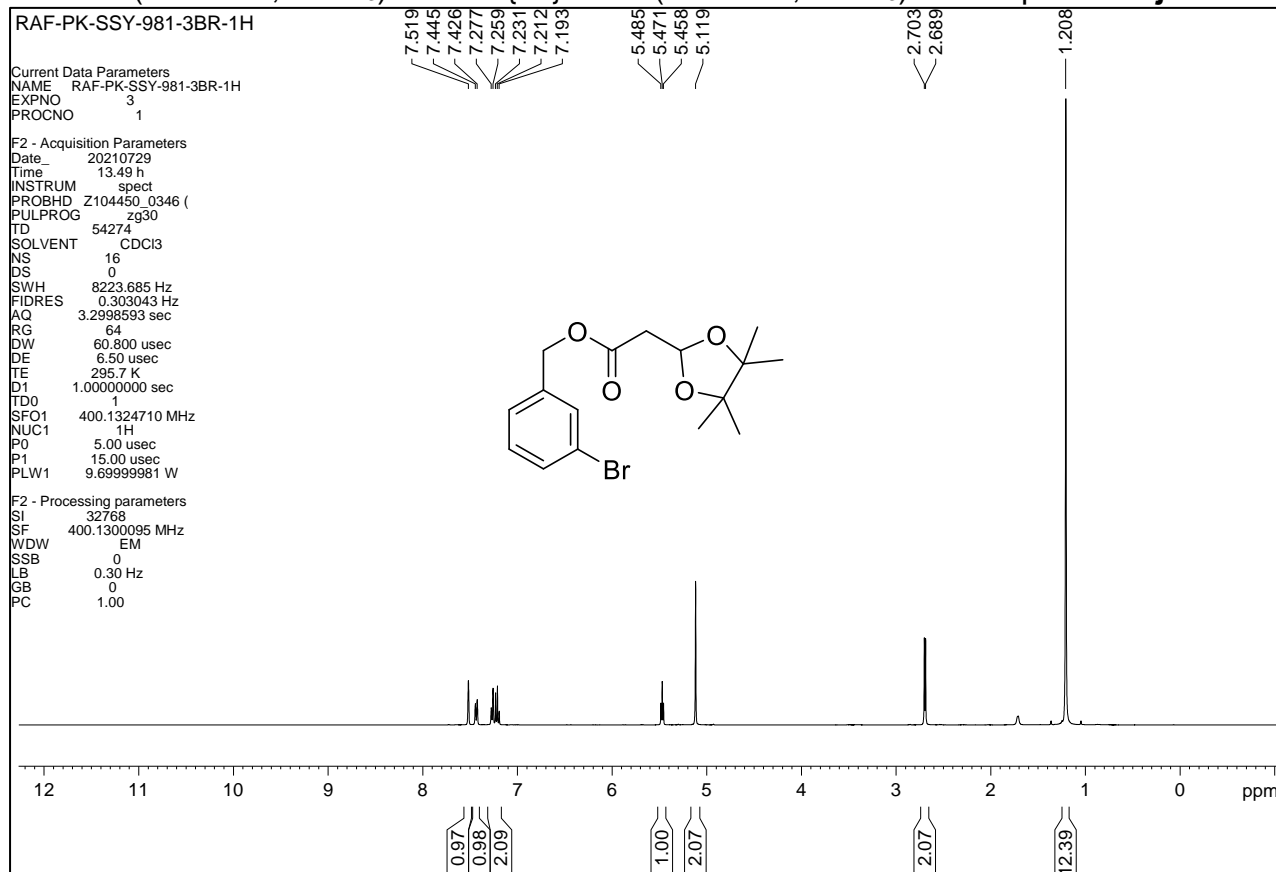
¹⁹F NMR (376 MHz, CDCl₃) of Compound 10h



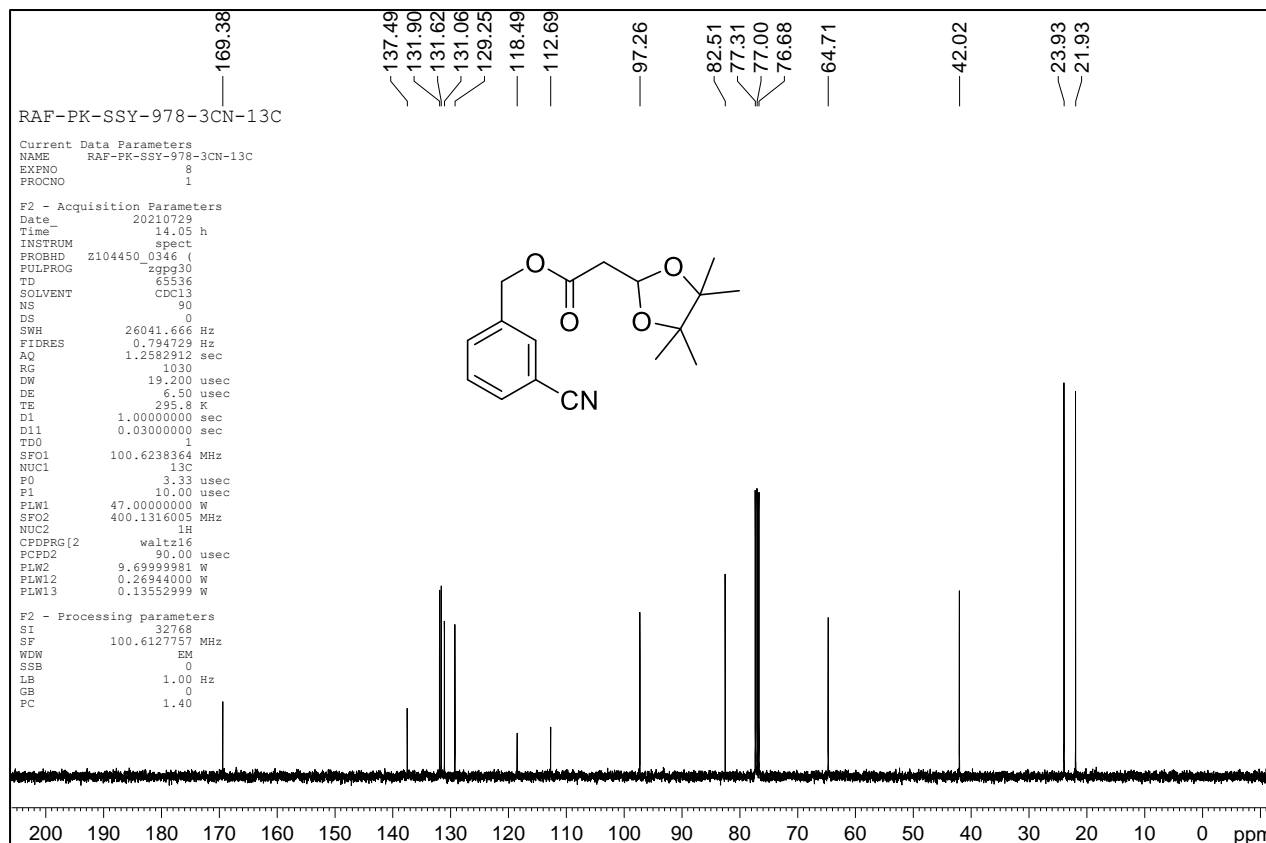
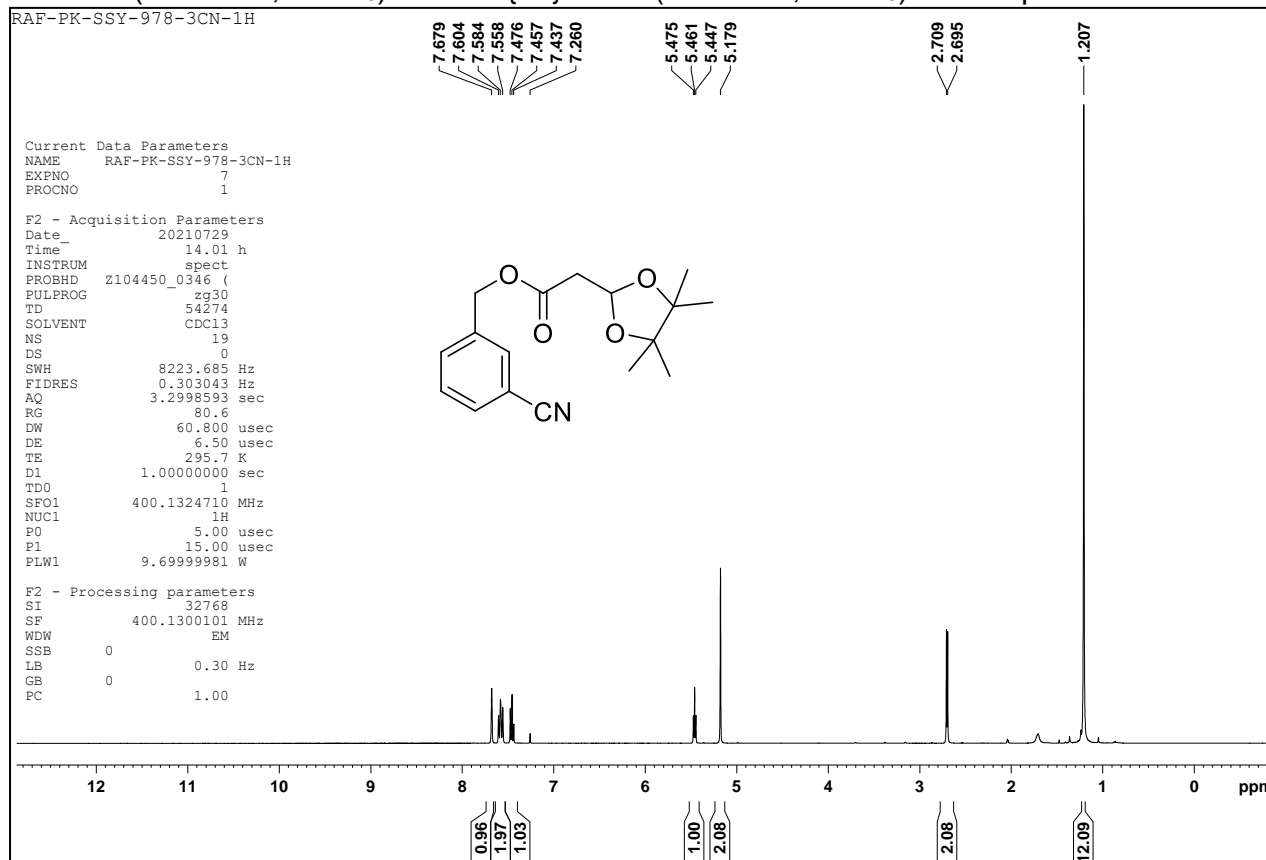
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **10i**



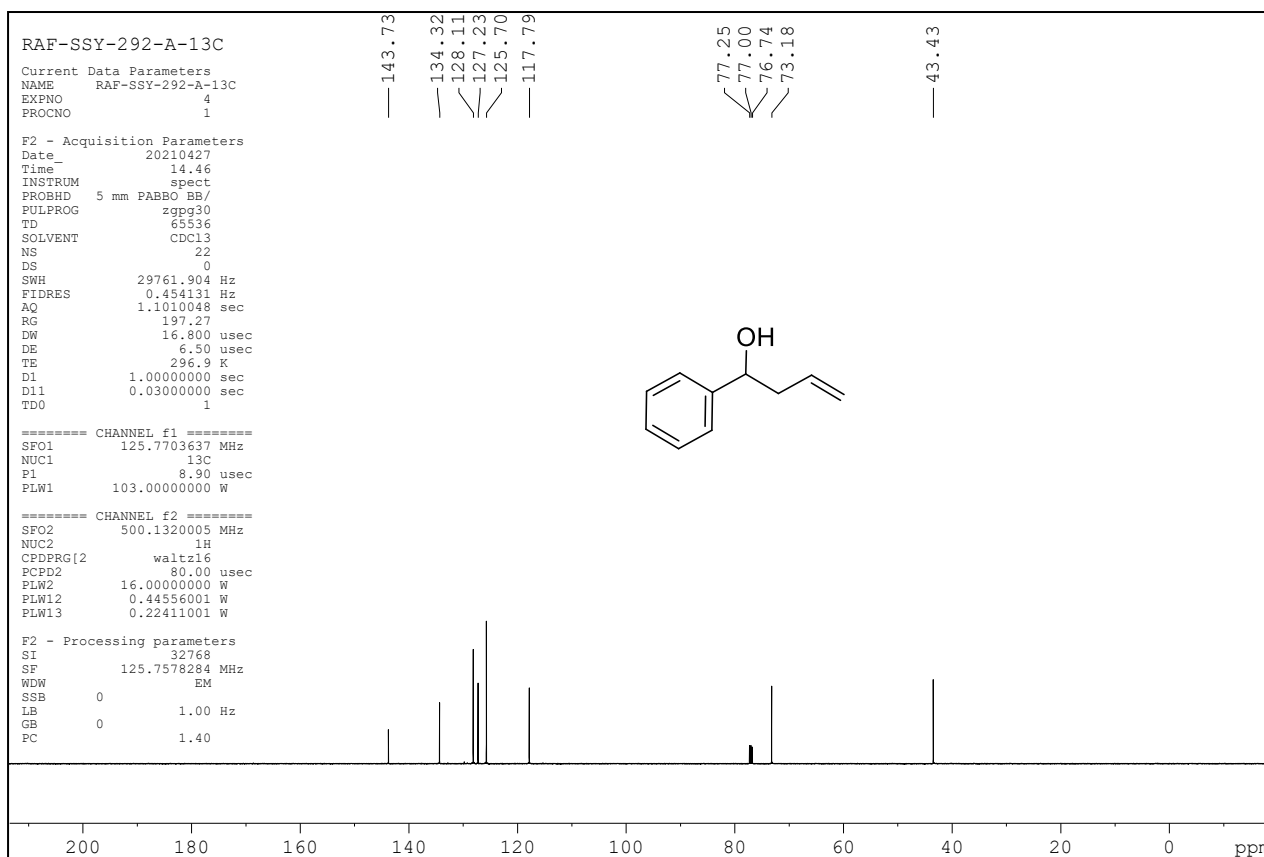
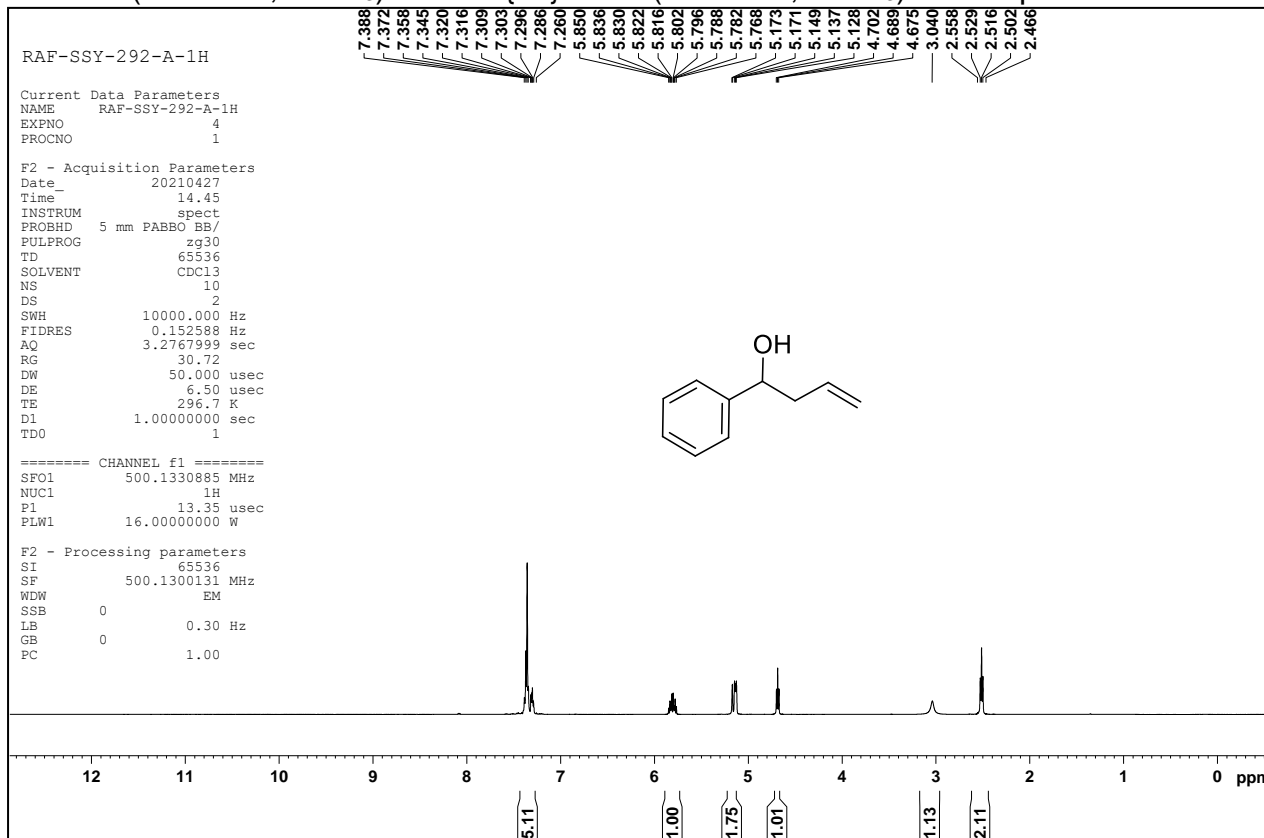
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 10j



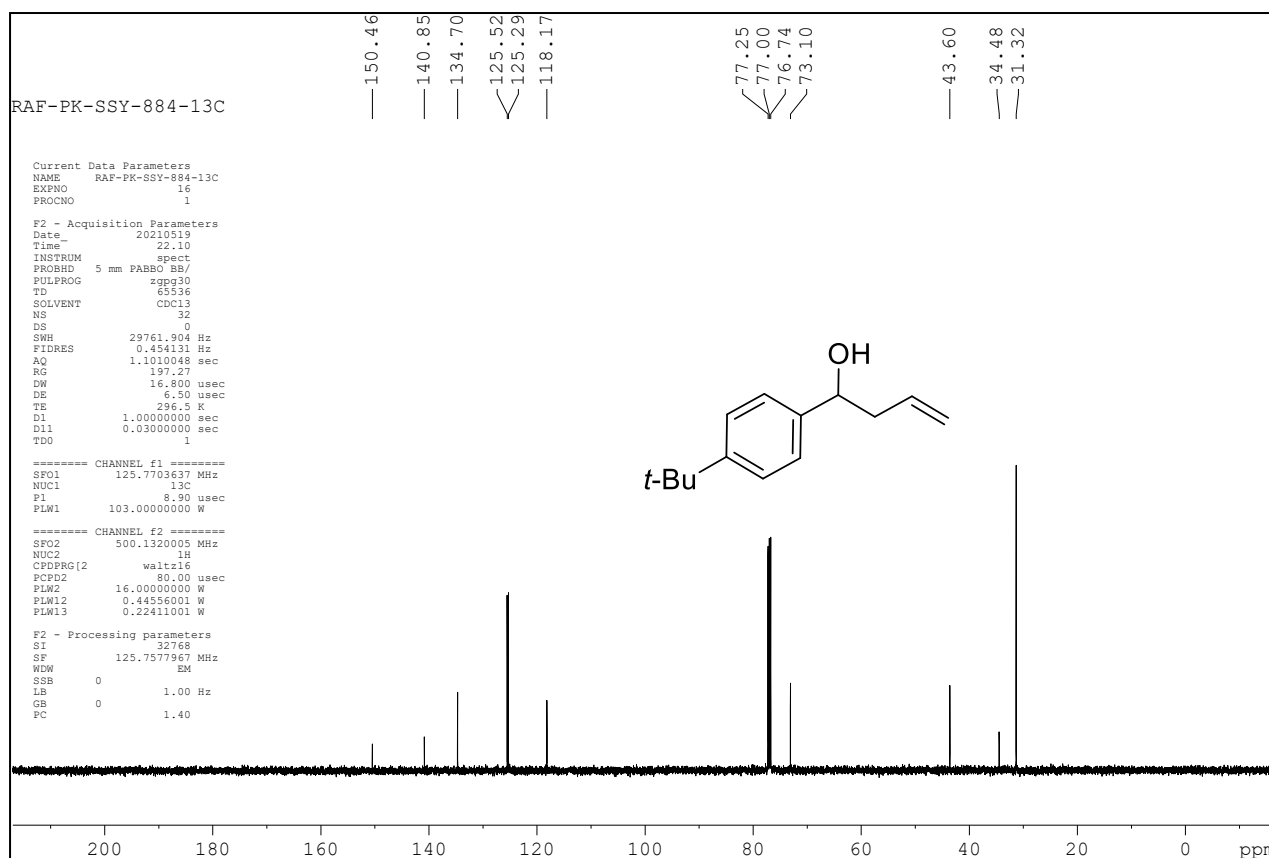
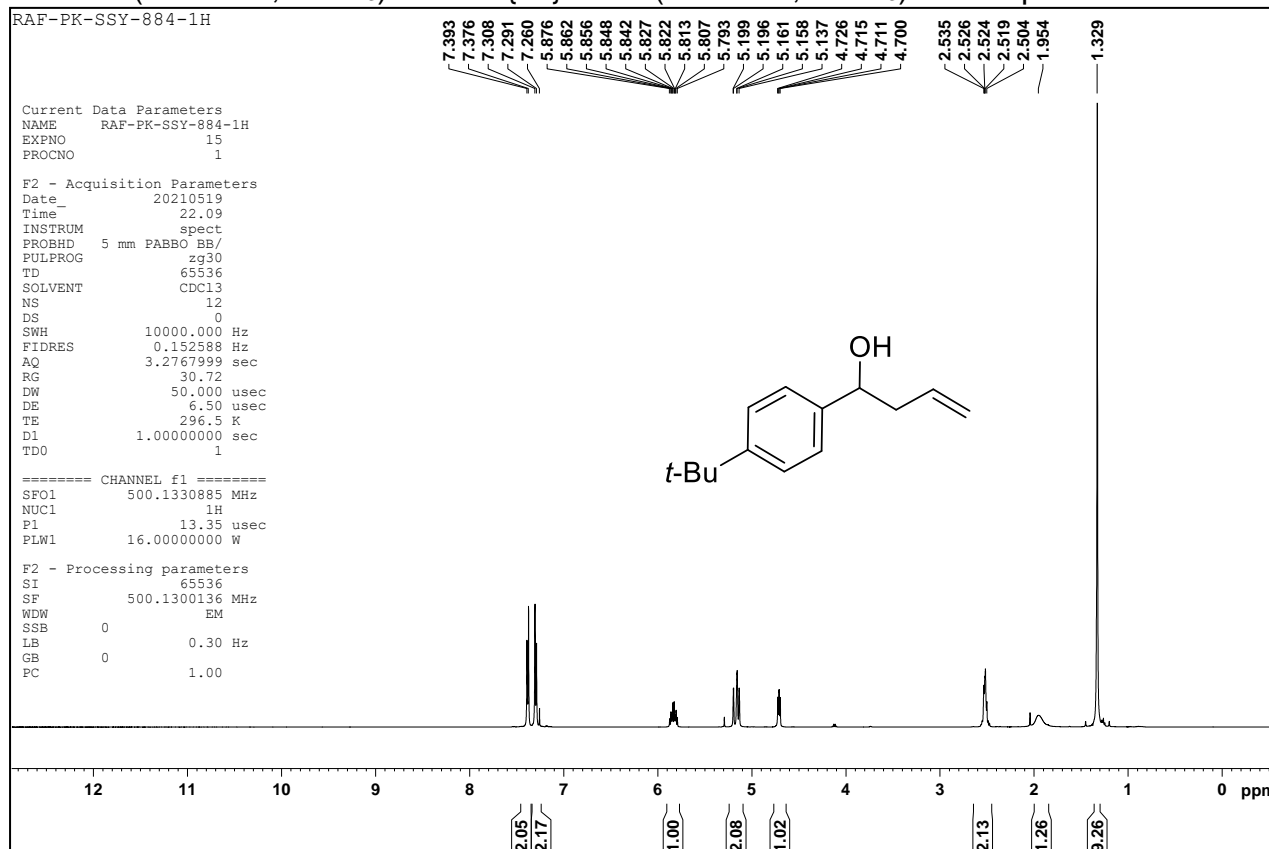
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **10k**



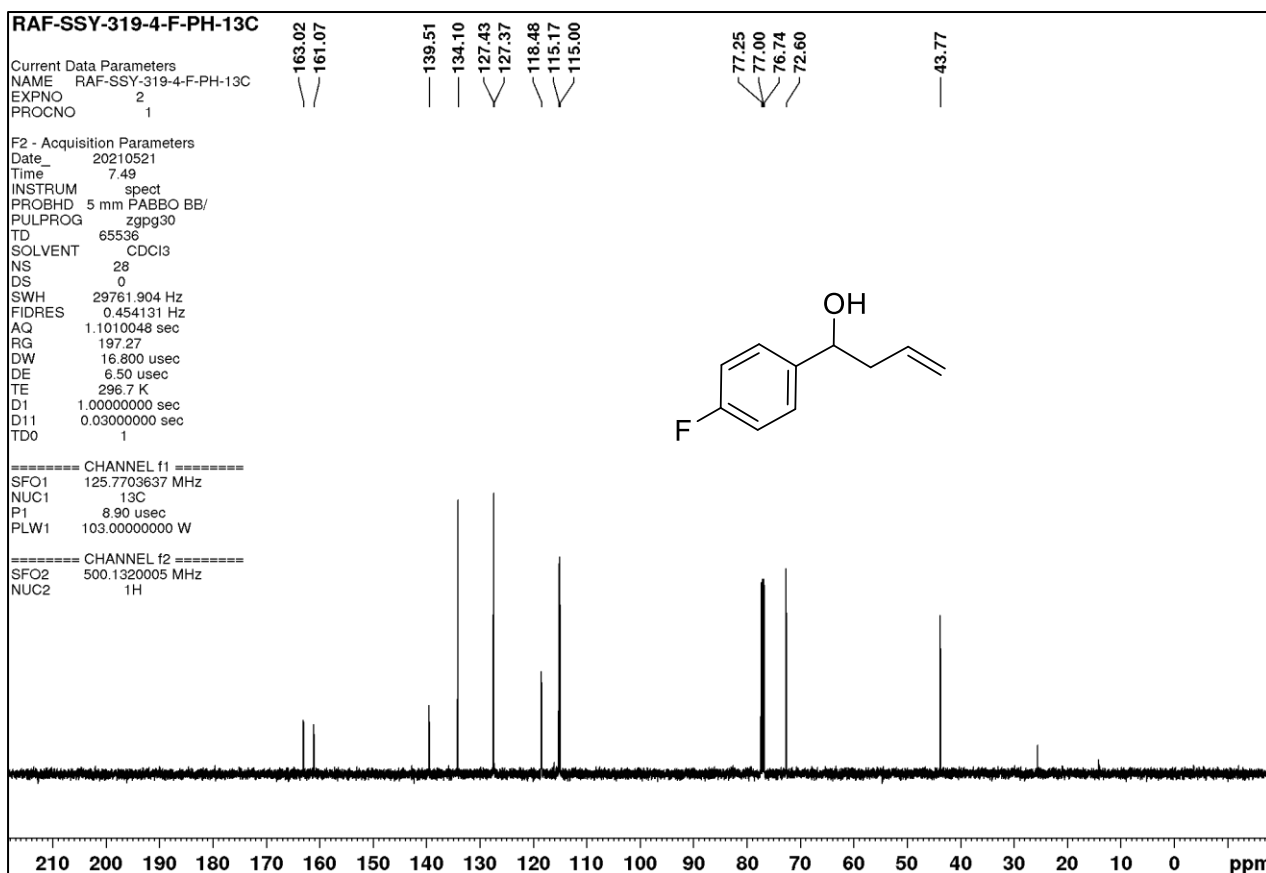
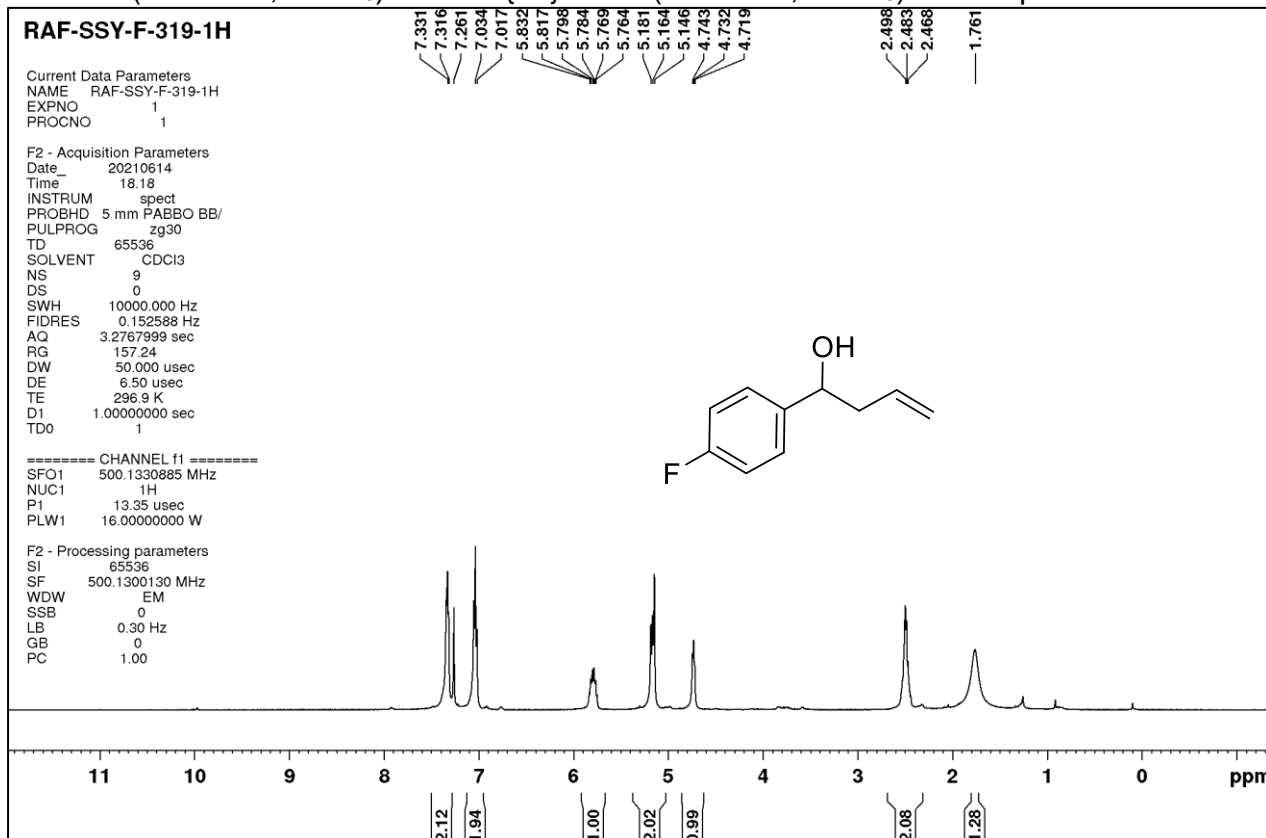
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 11a



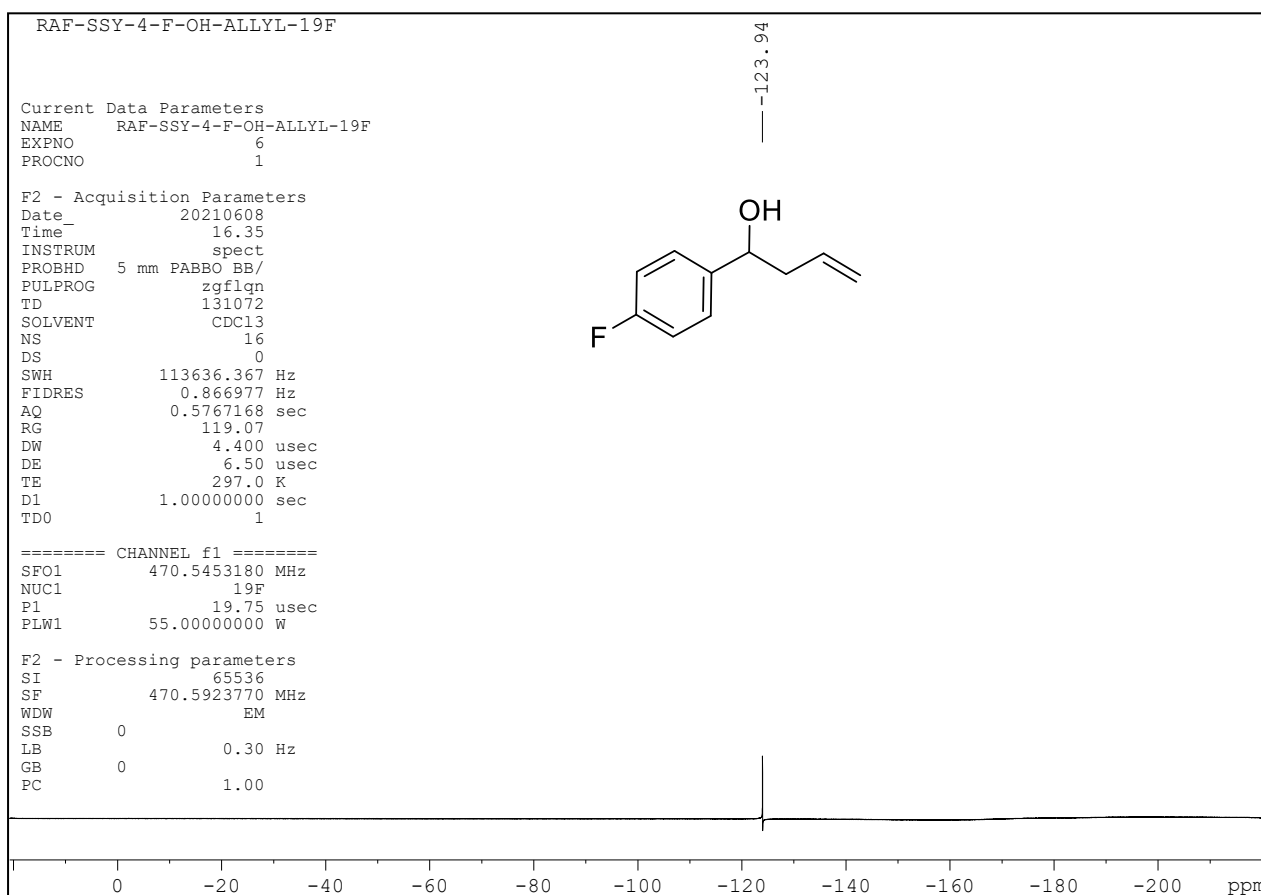
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 11b



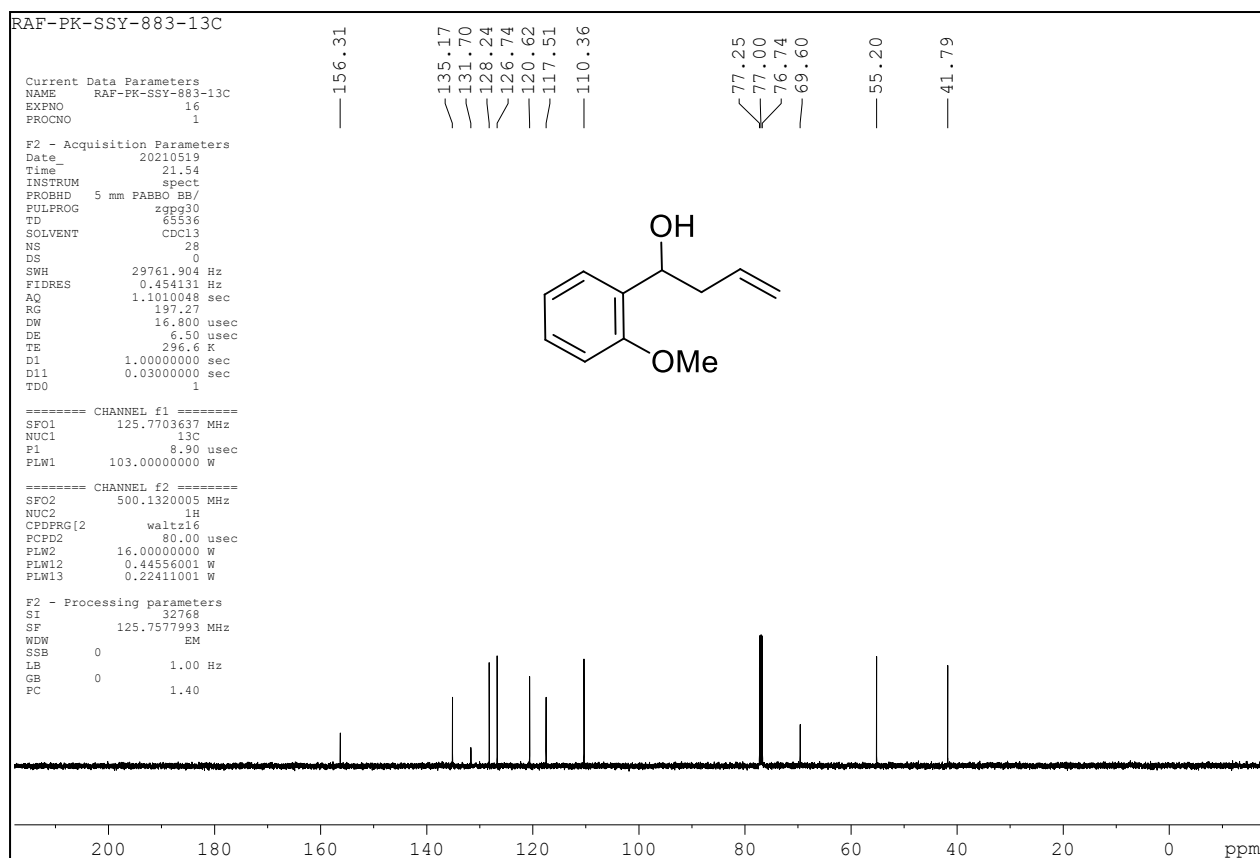
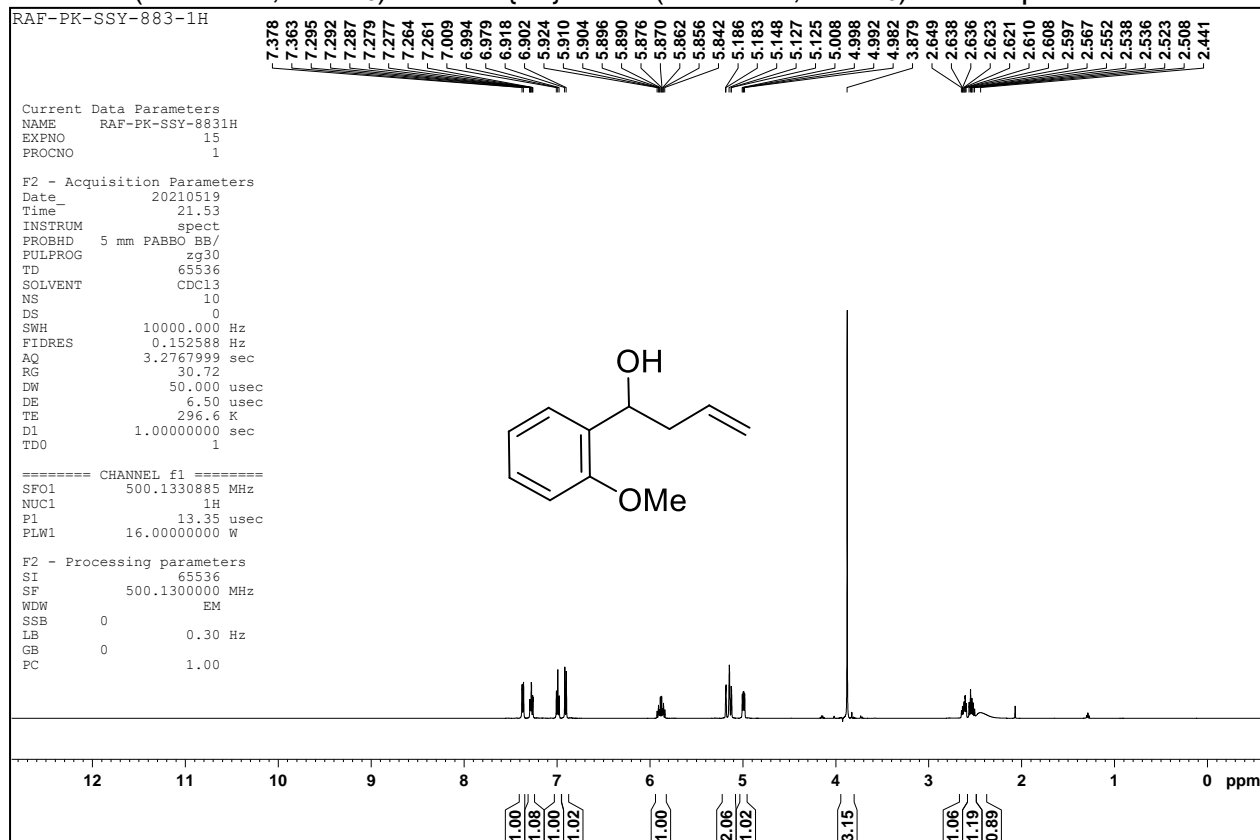
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 11c



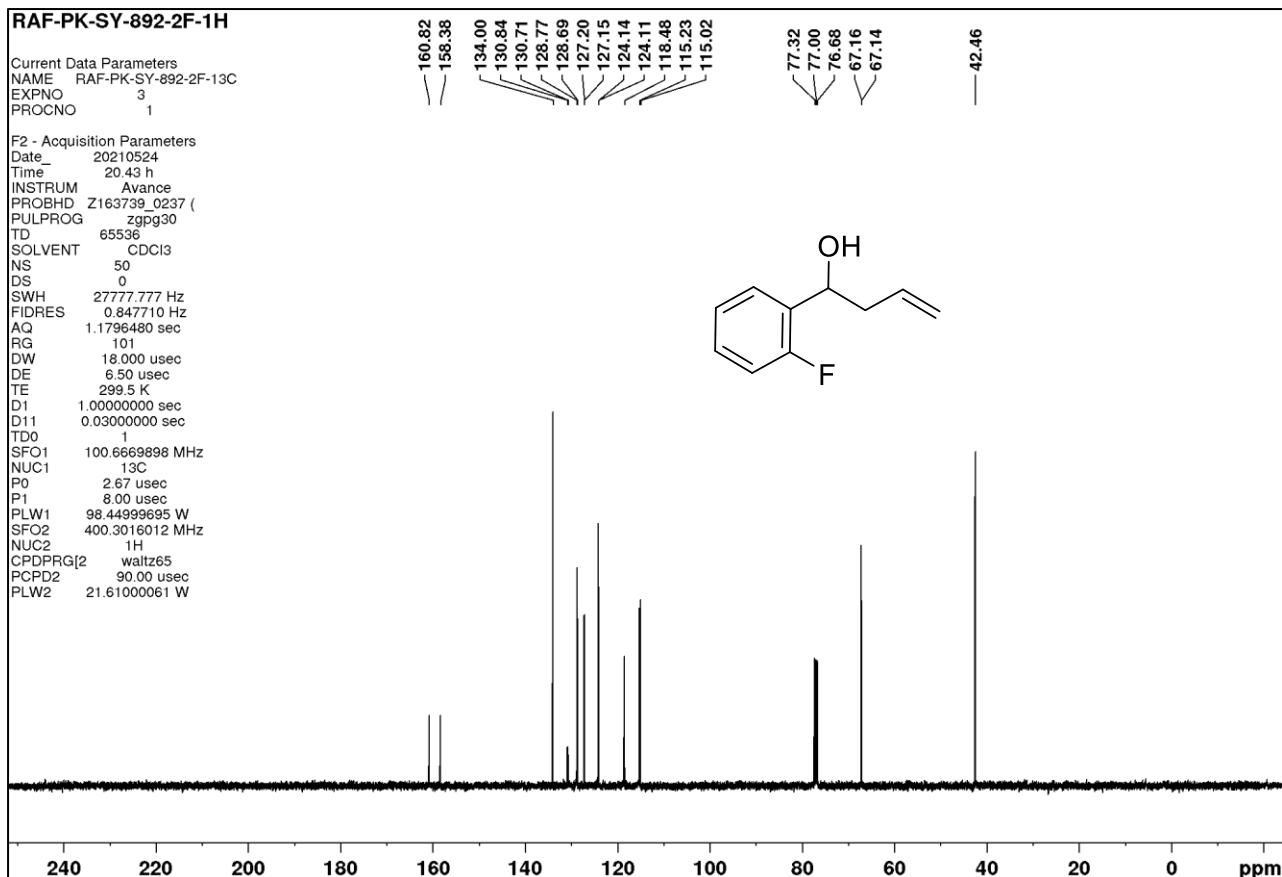
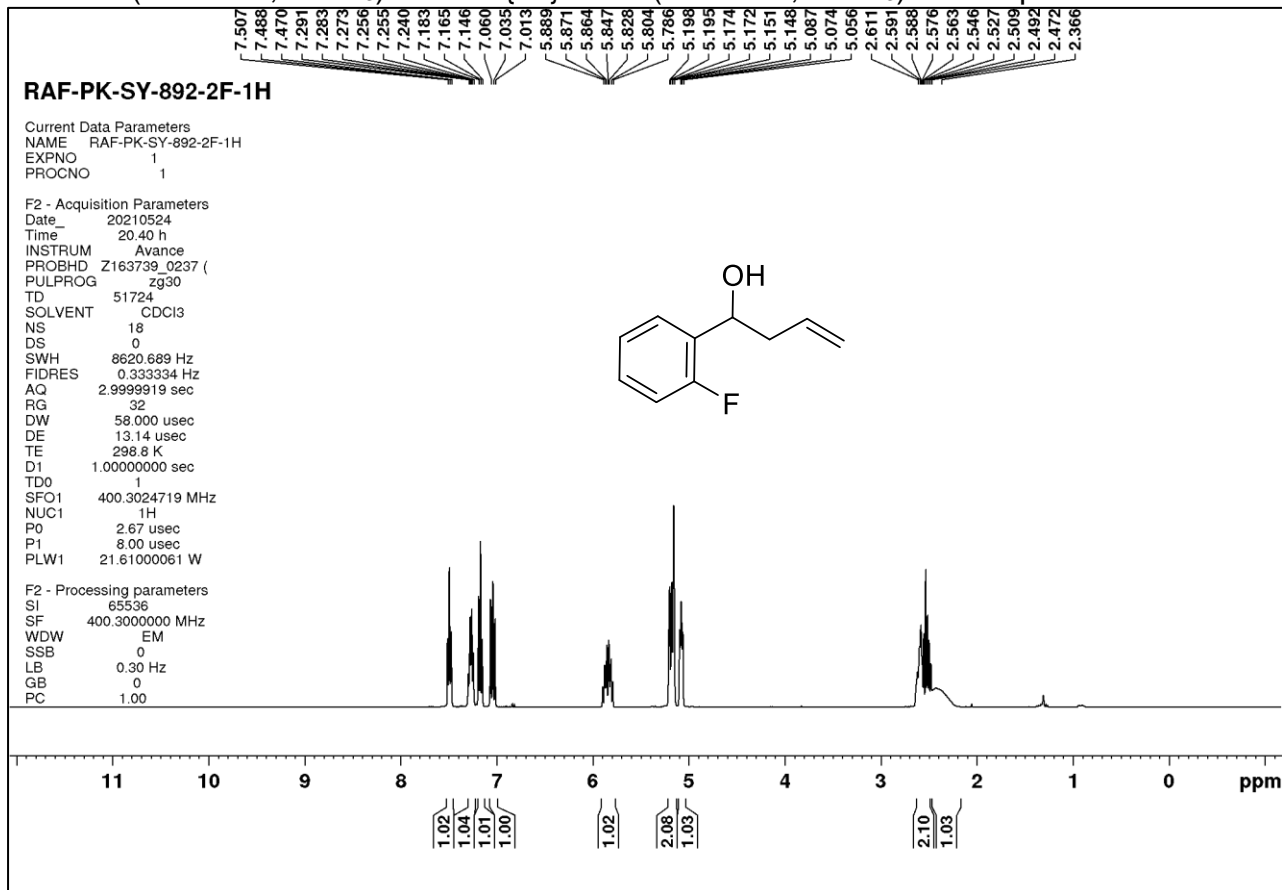
¹³F NMR (470 MHz, CDCl₃) of Compound **11c**



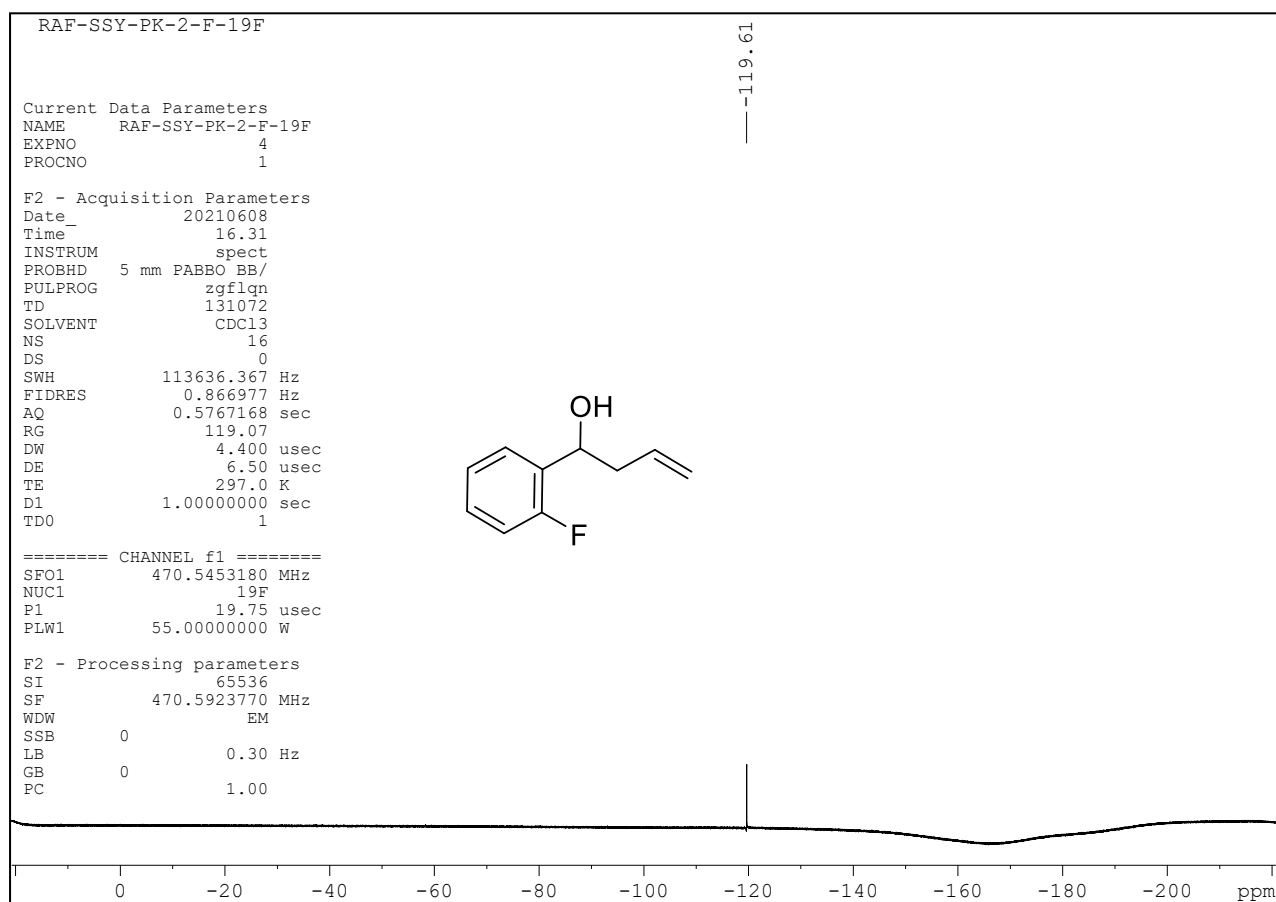
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 11d



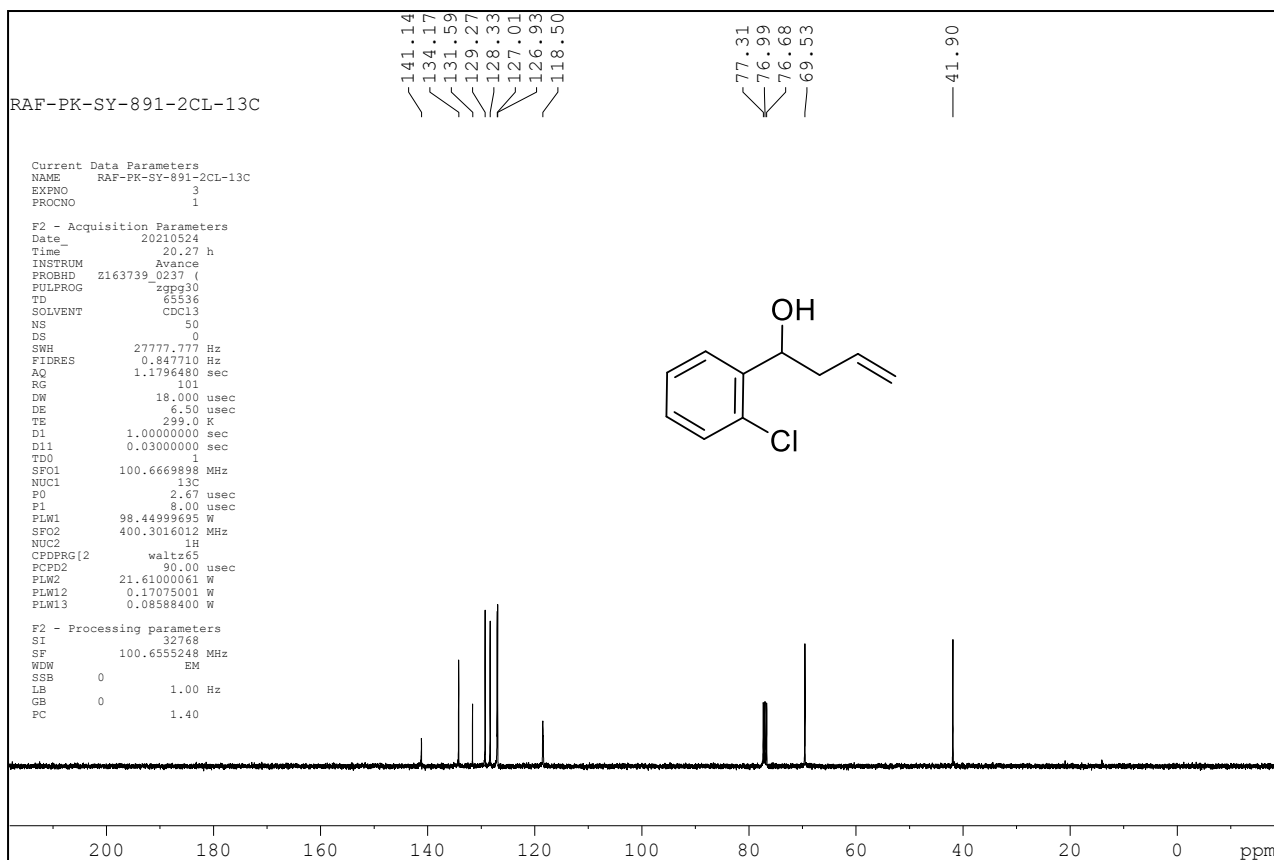
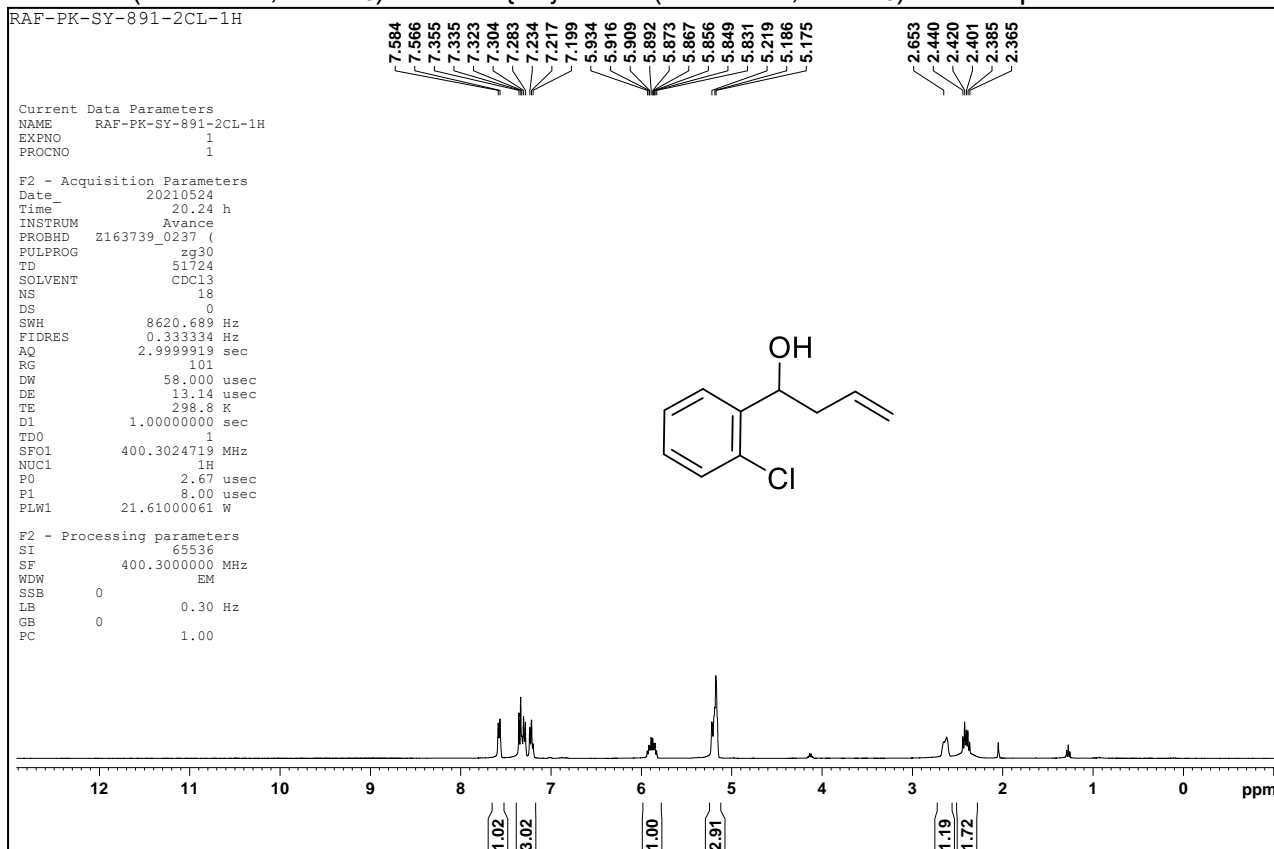
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 11e



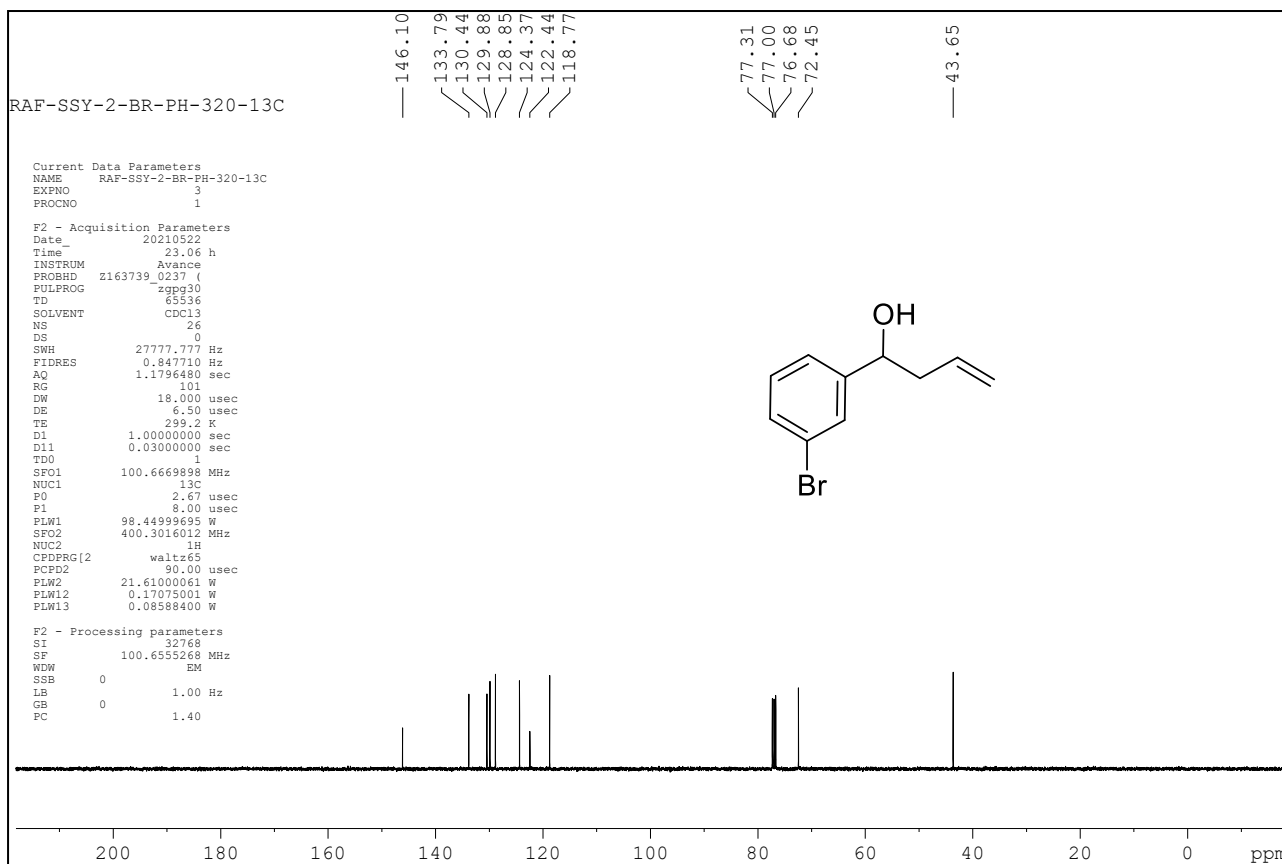
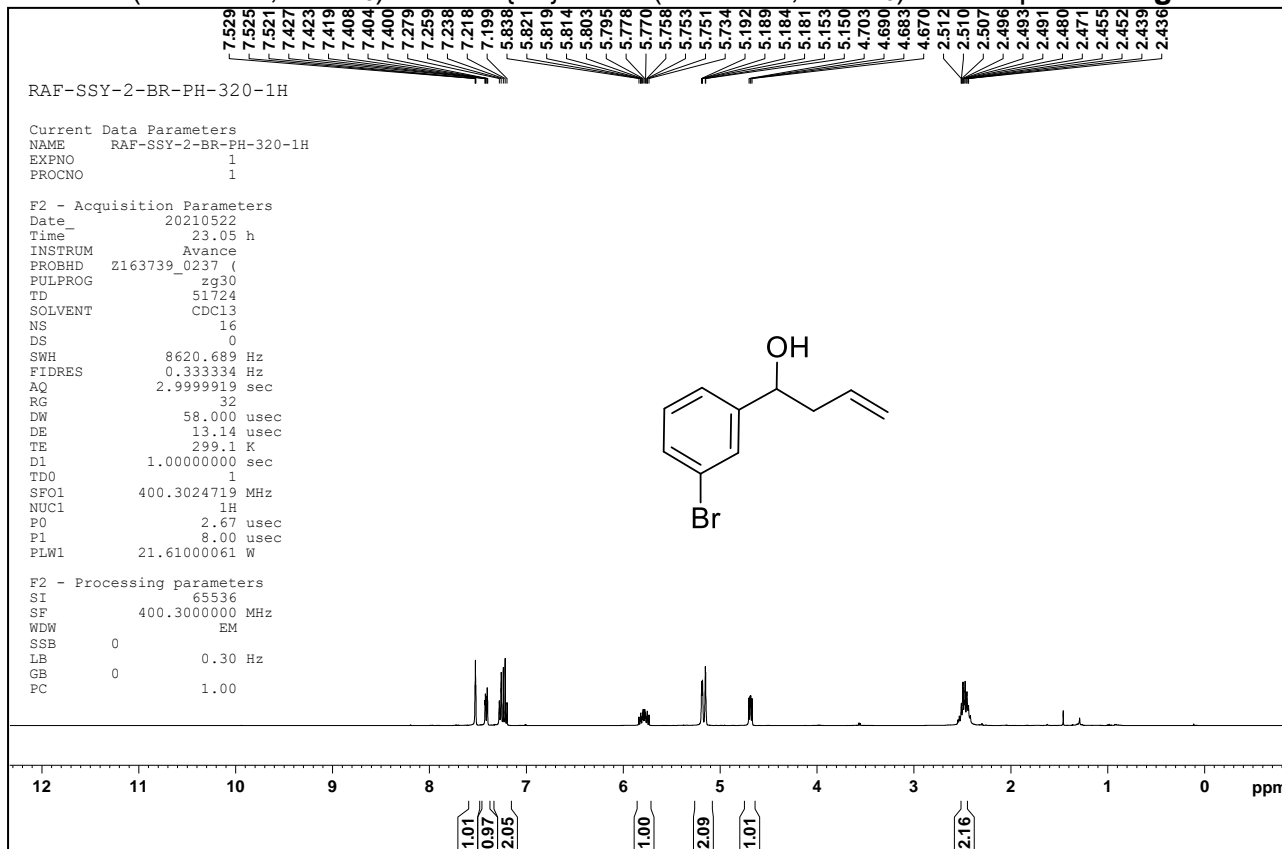
¹⁹F NMR (470 MHz, CDCl₃) of Compound 11e



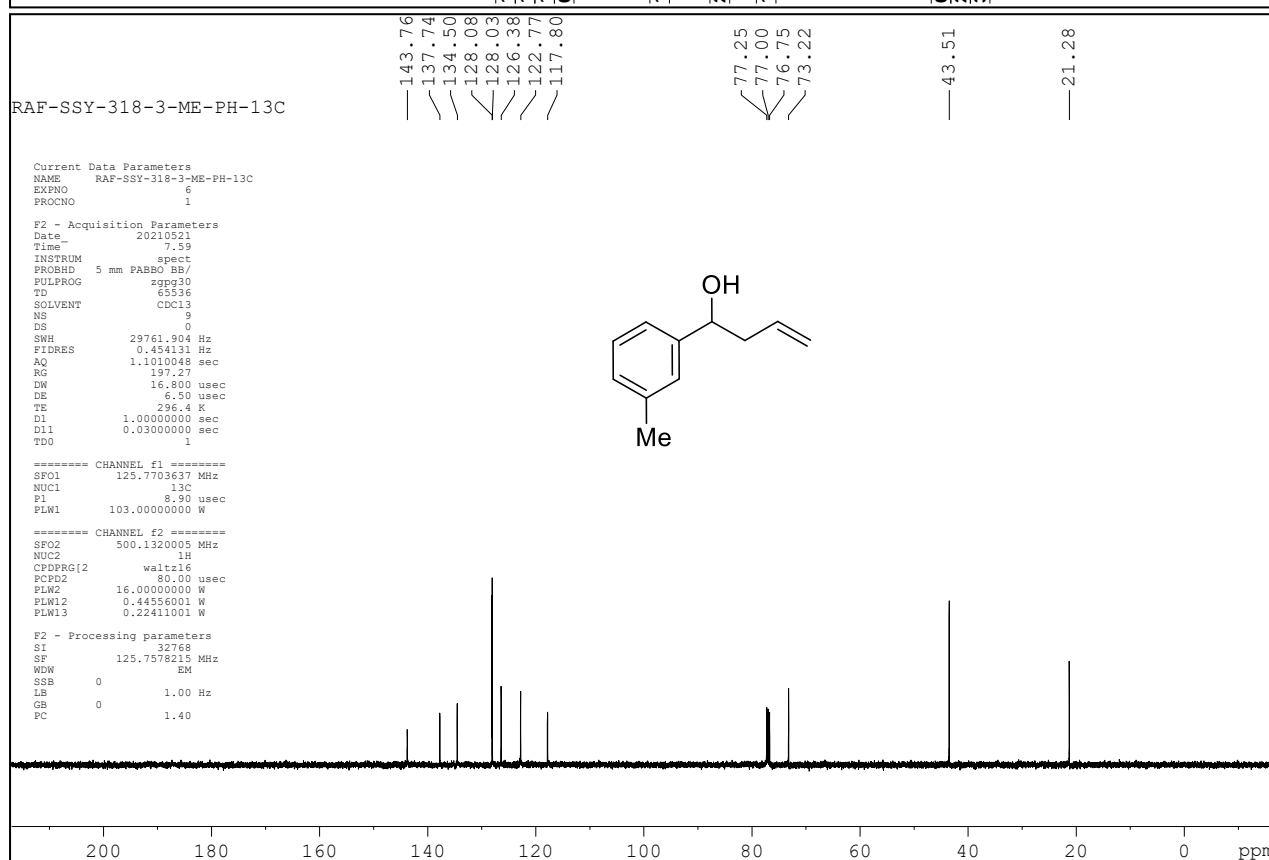
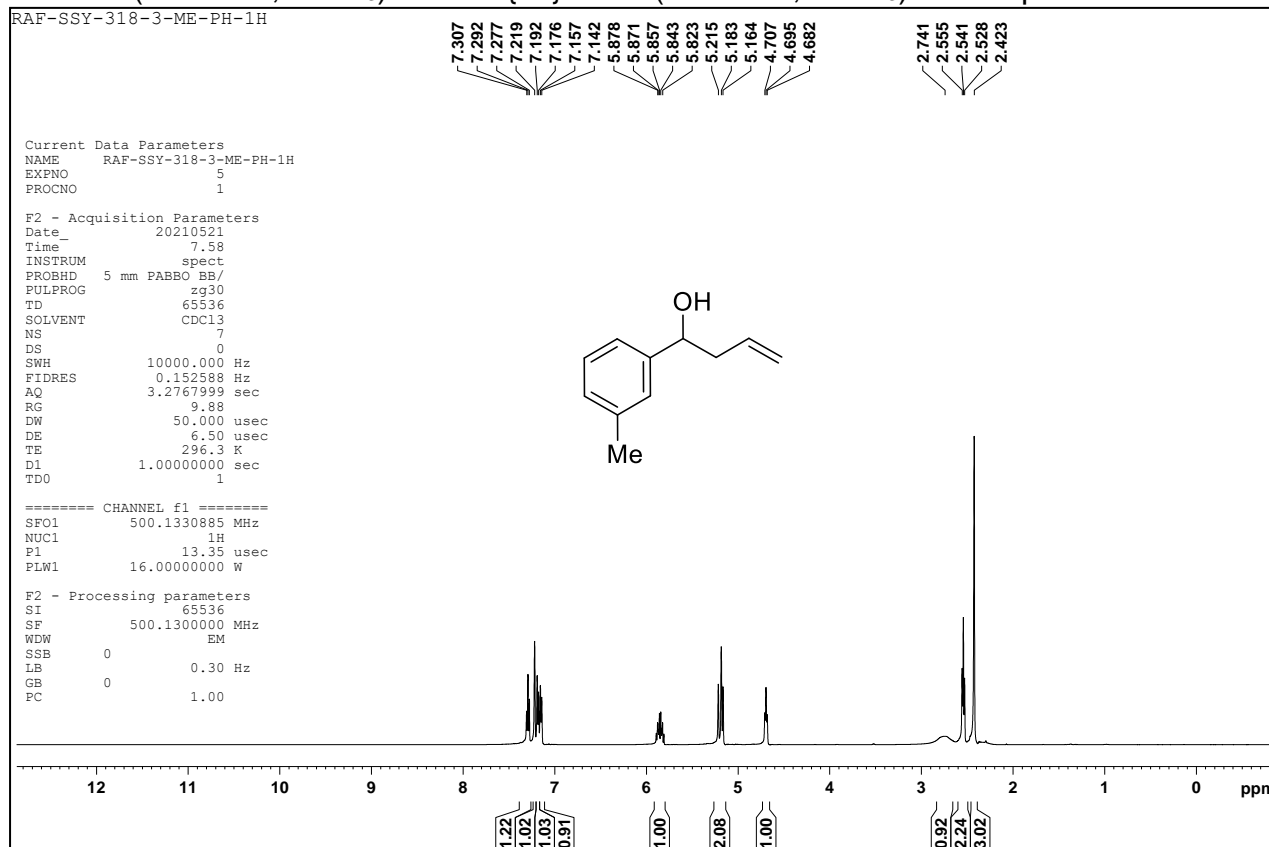
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 11f



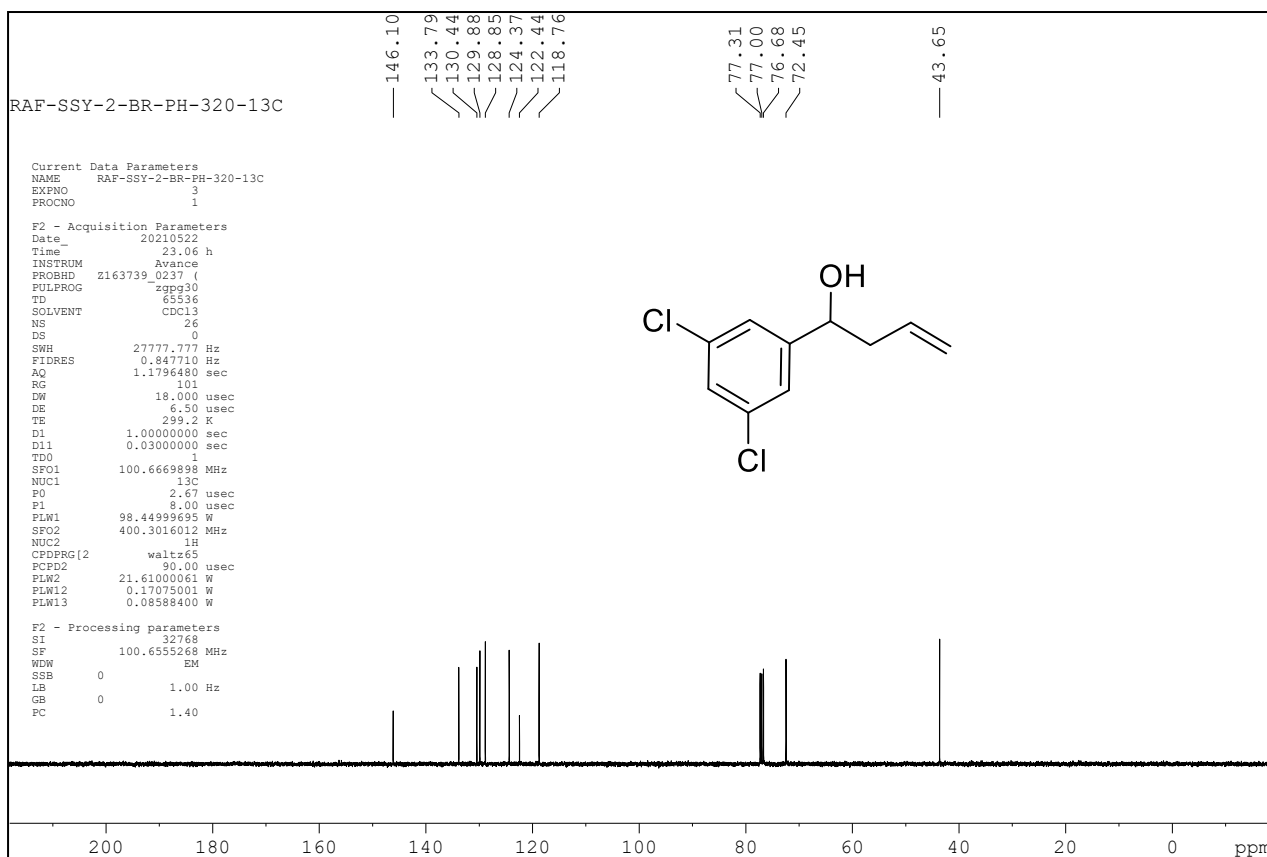
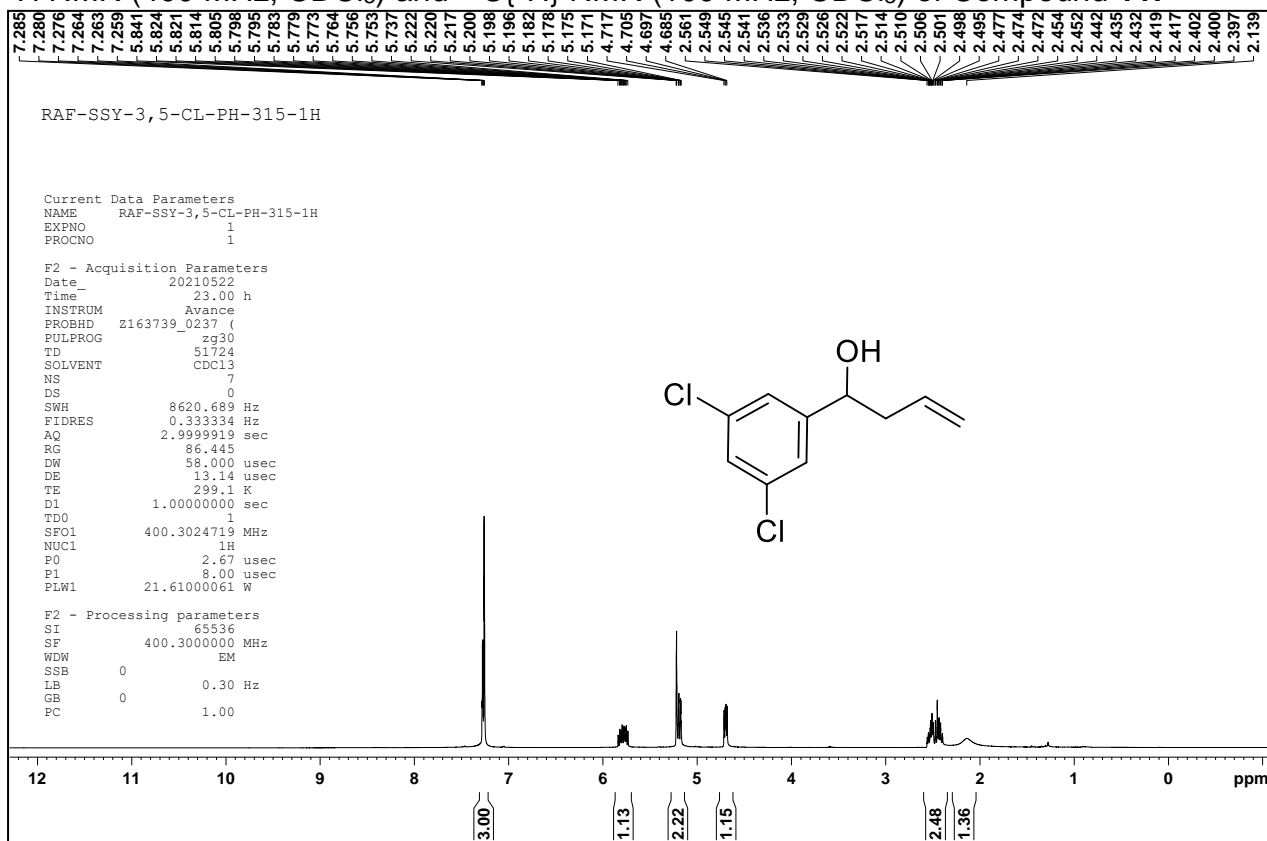
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **11g**



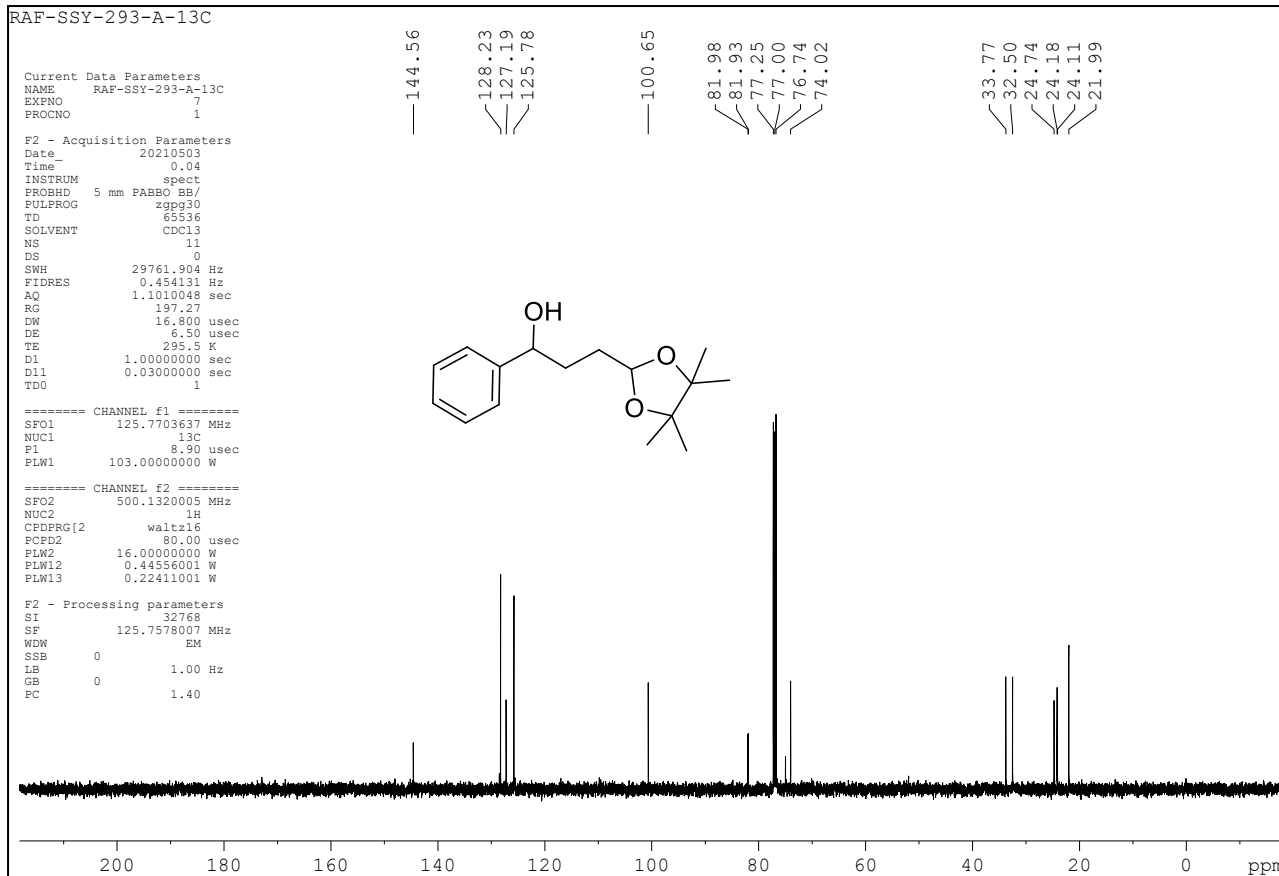
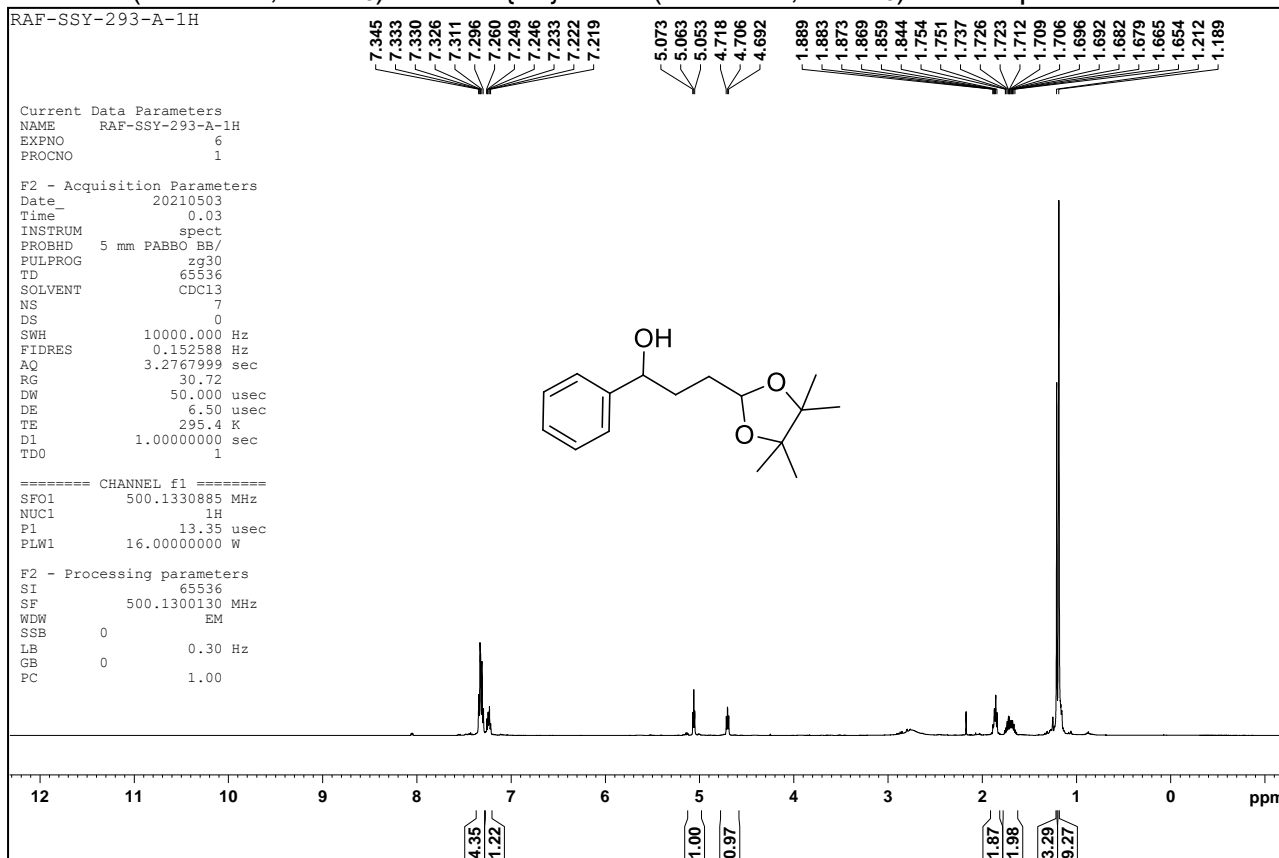
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 11h



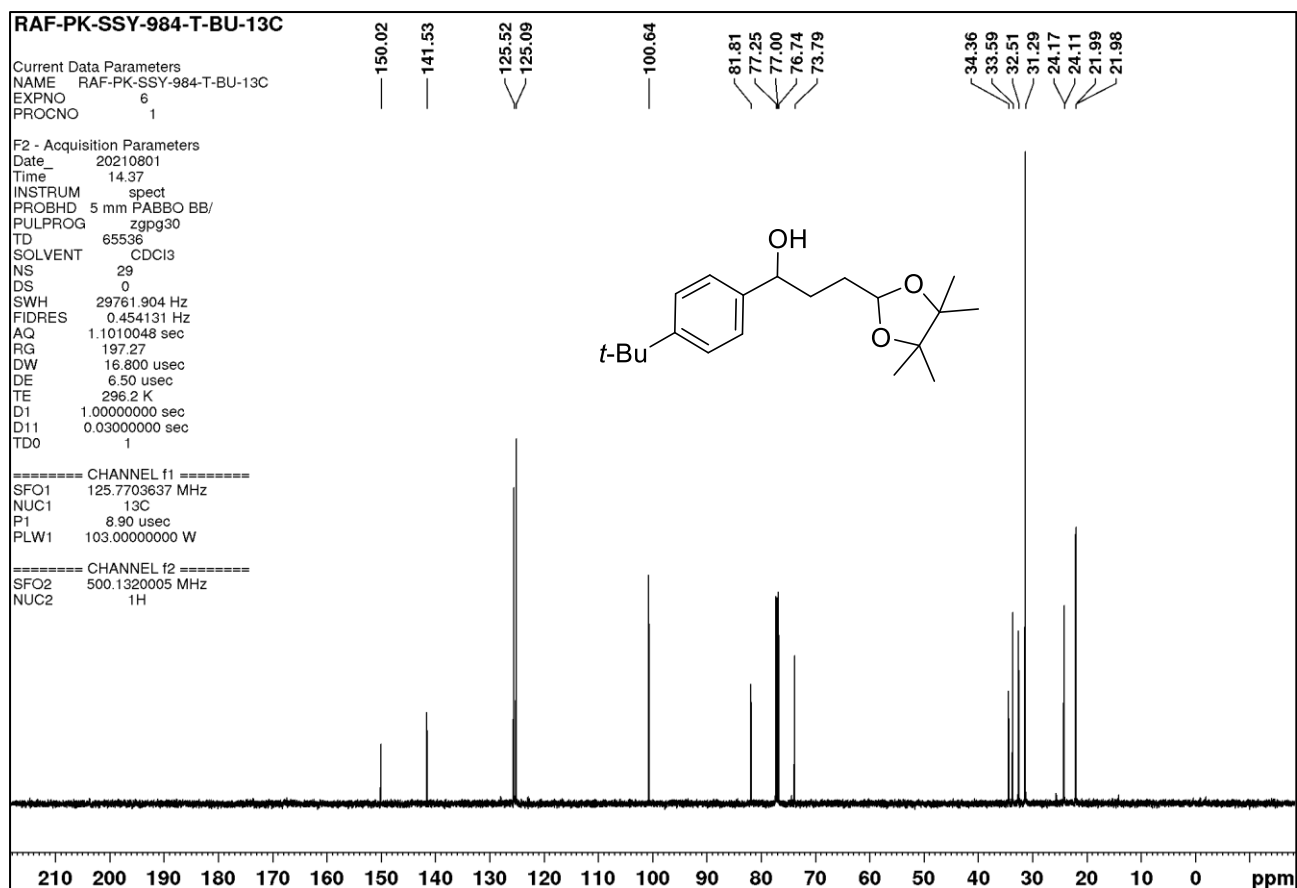
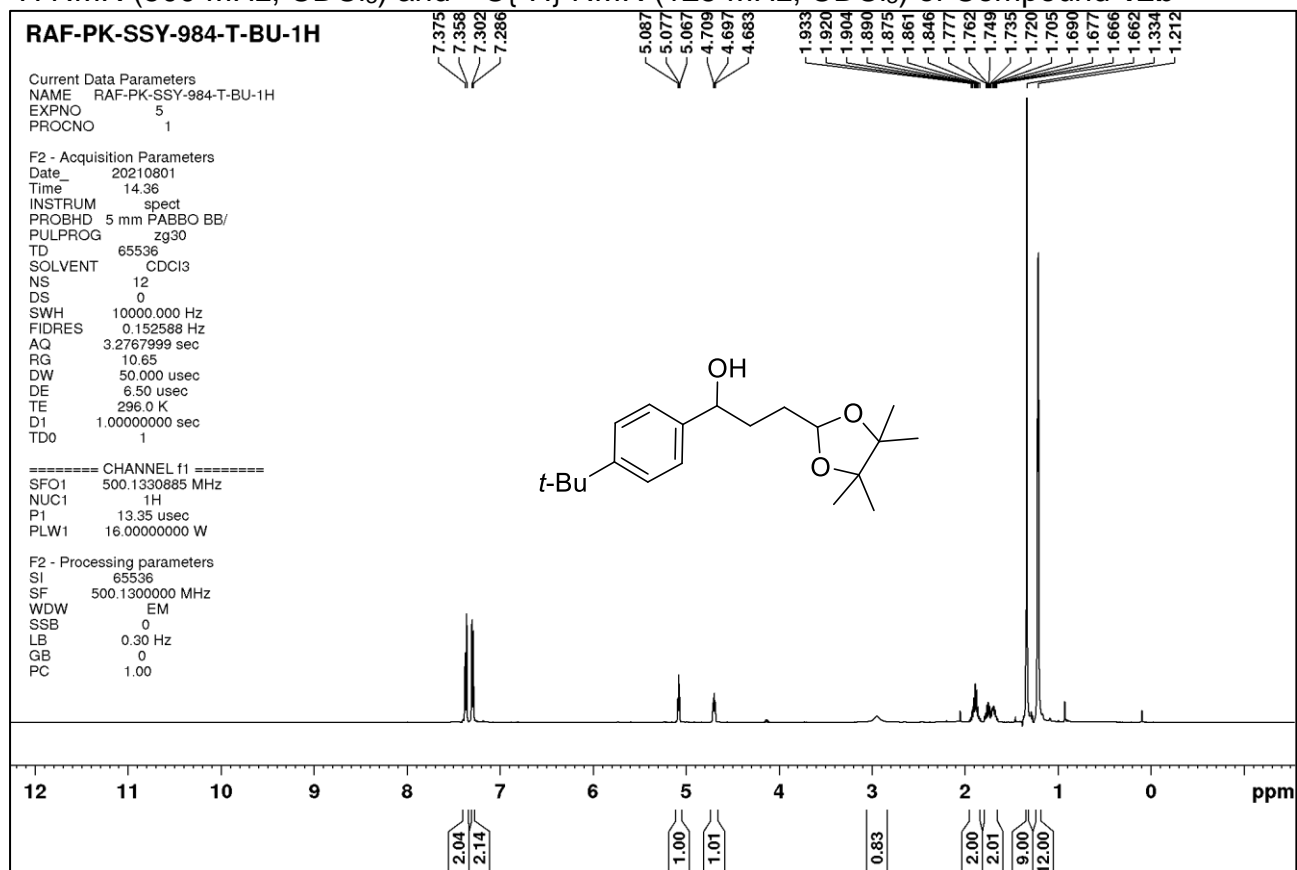
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 11i



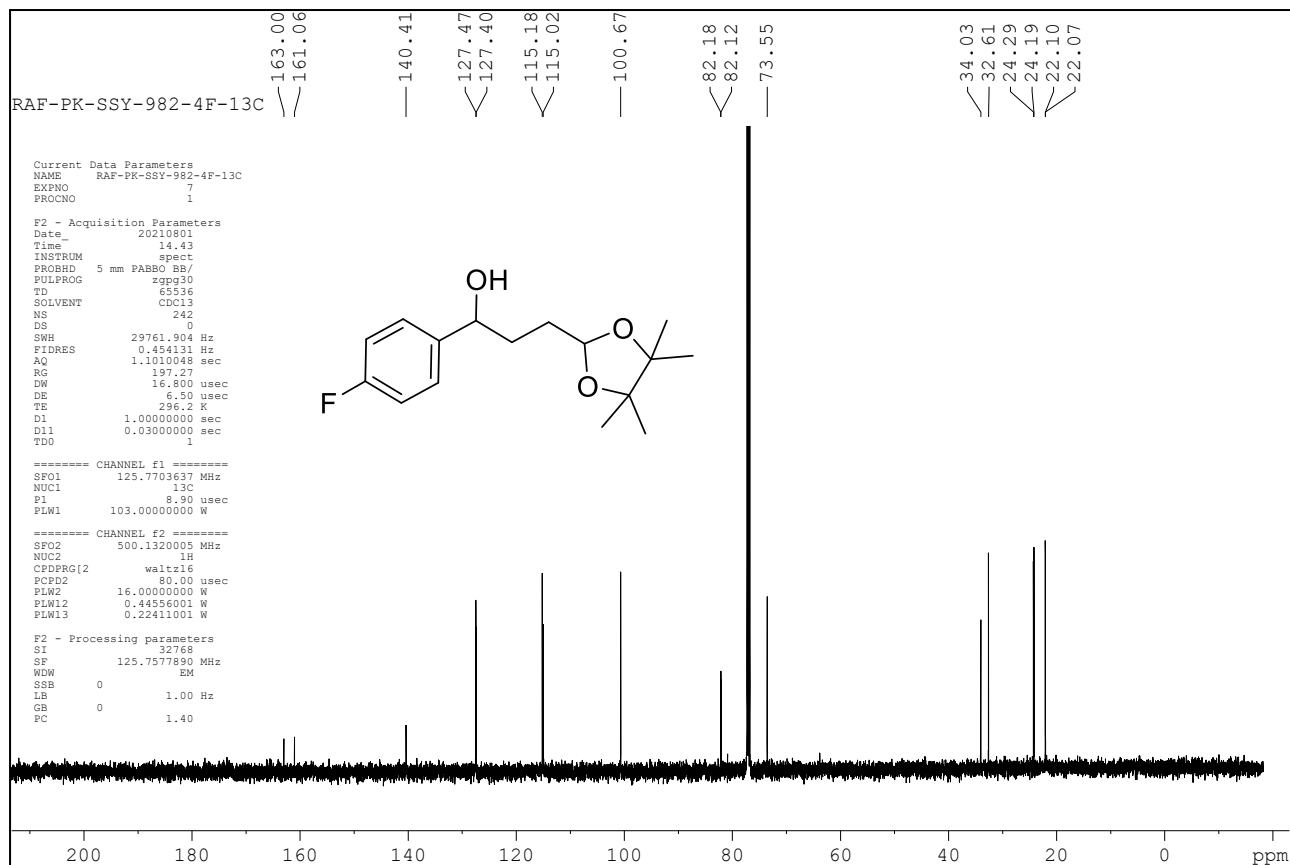
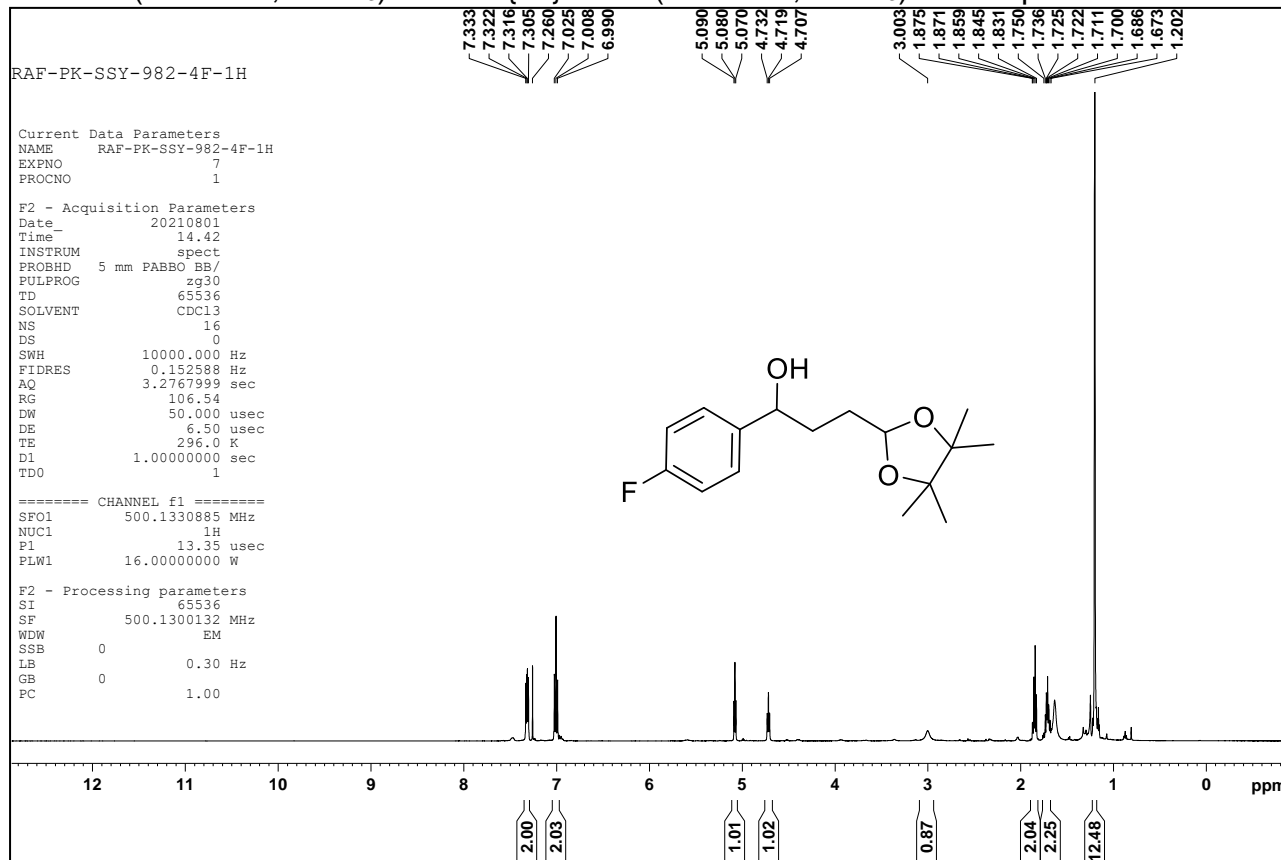
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 12a



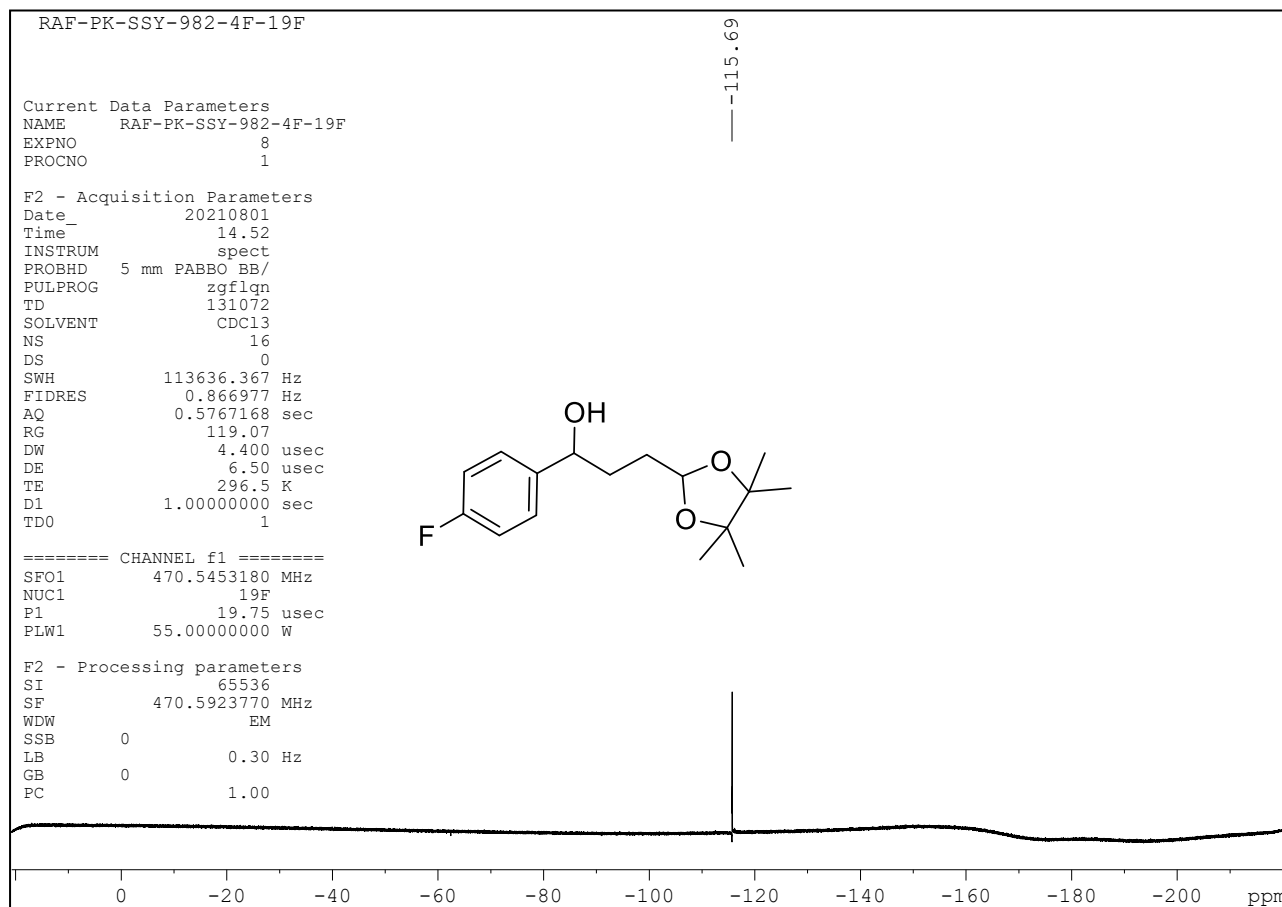
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **12b**



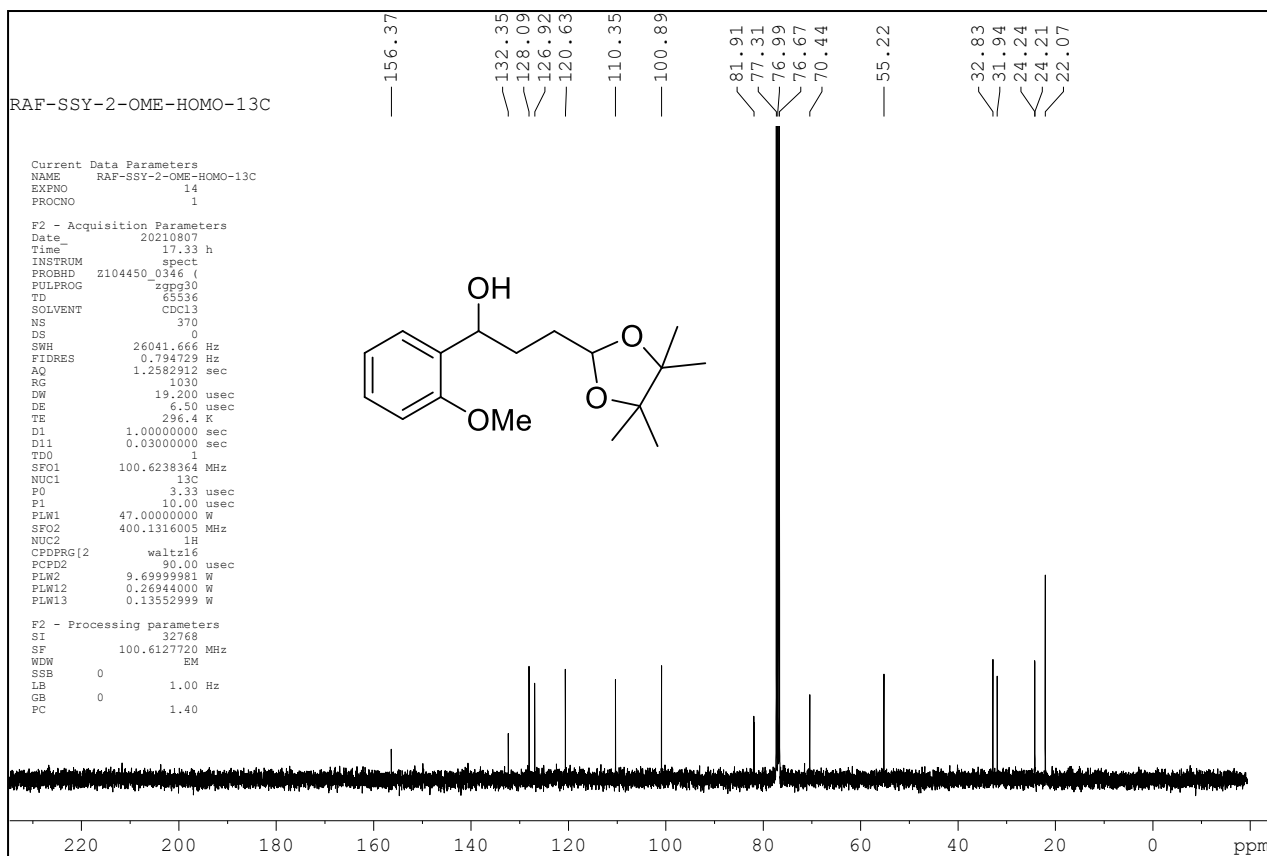
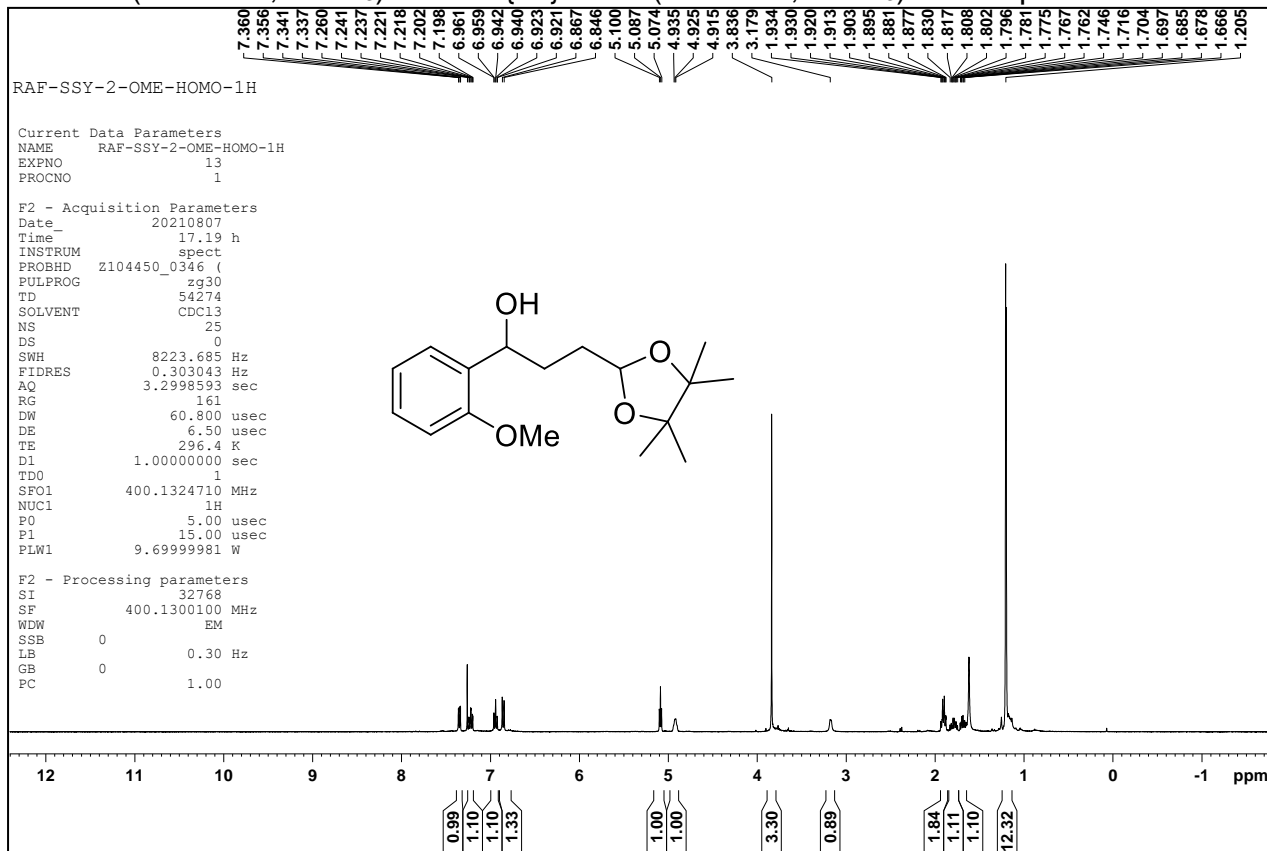
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 12c



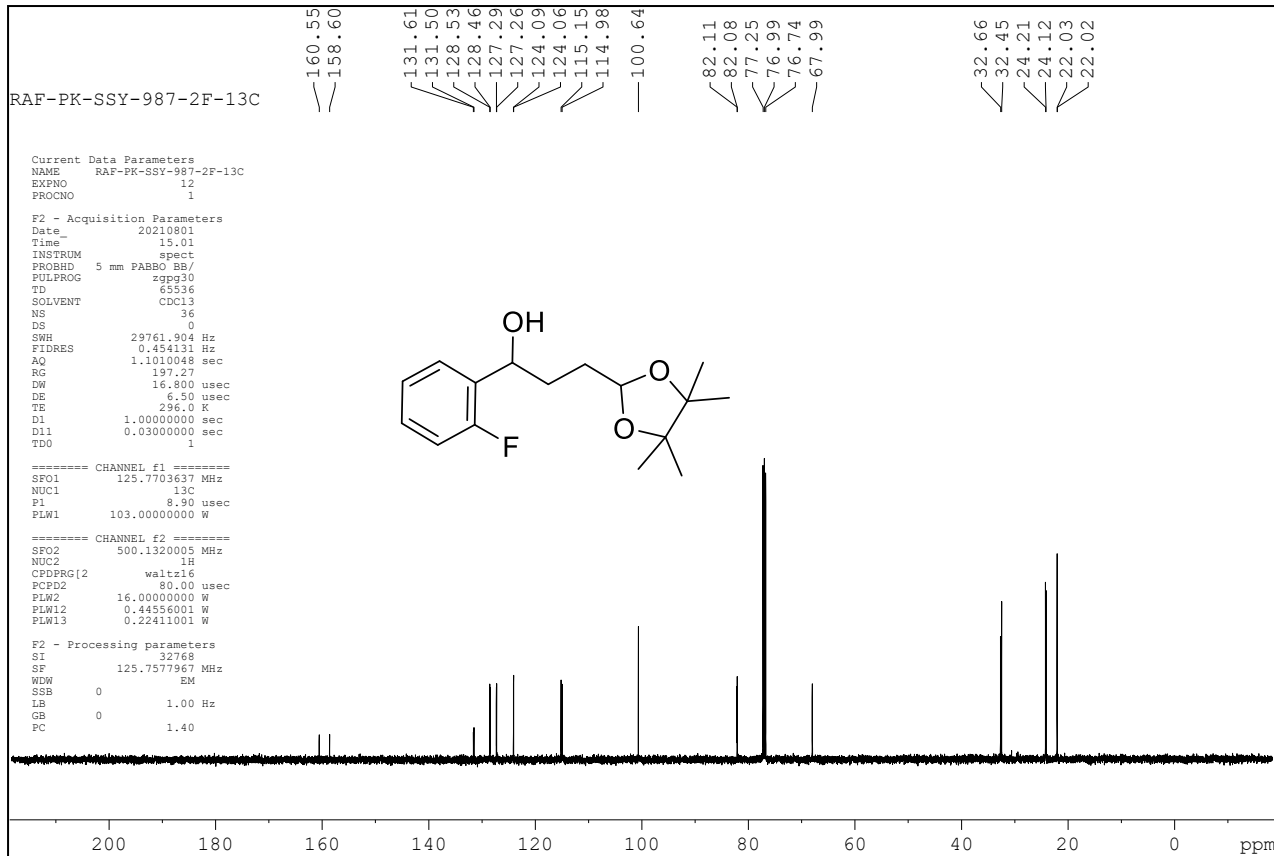
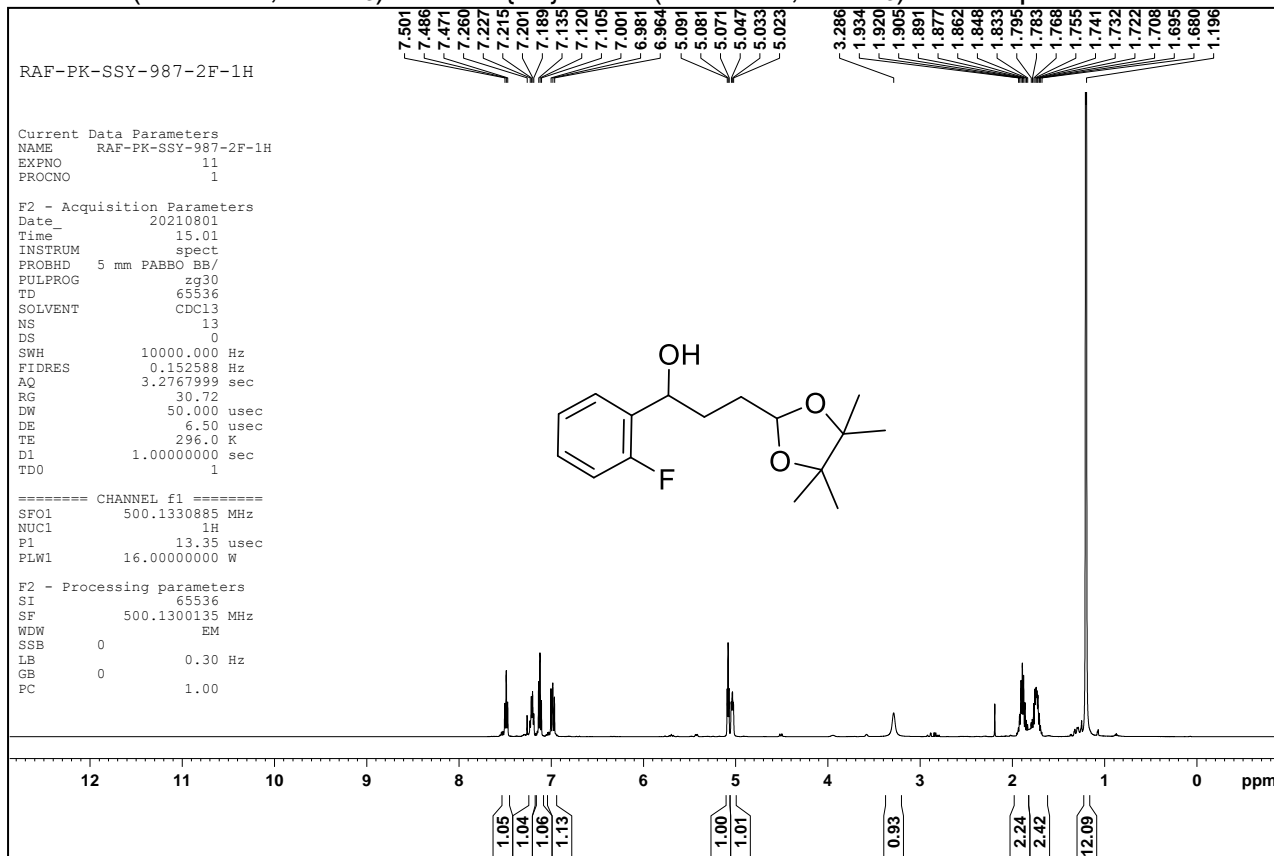
¹⁹F NMR (470 MHz, CDCl₃) of Compound **12c**



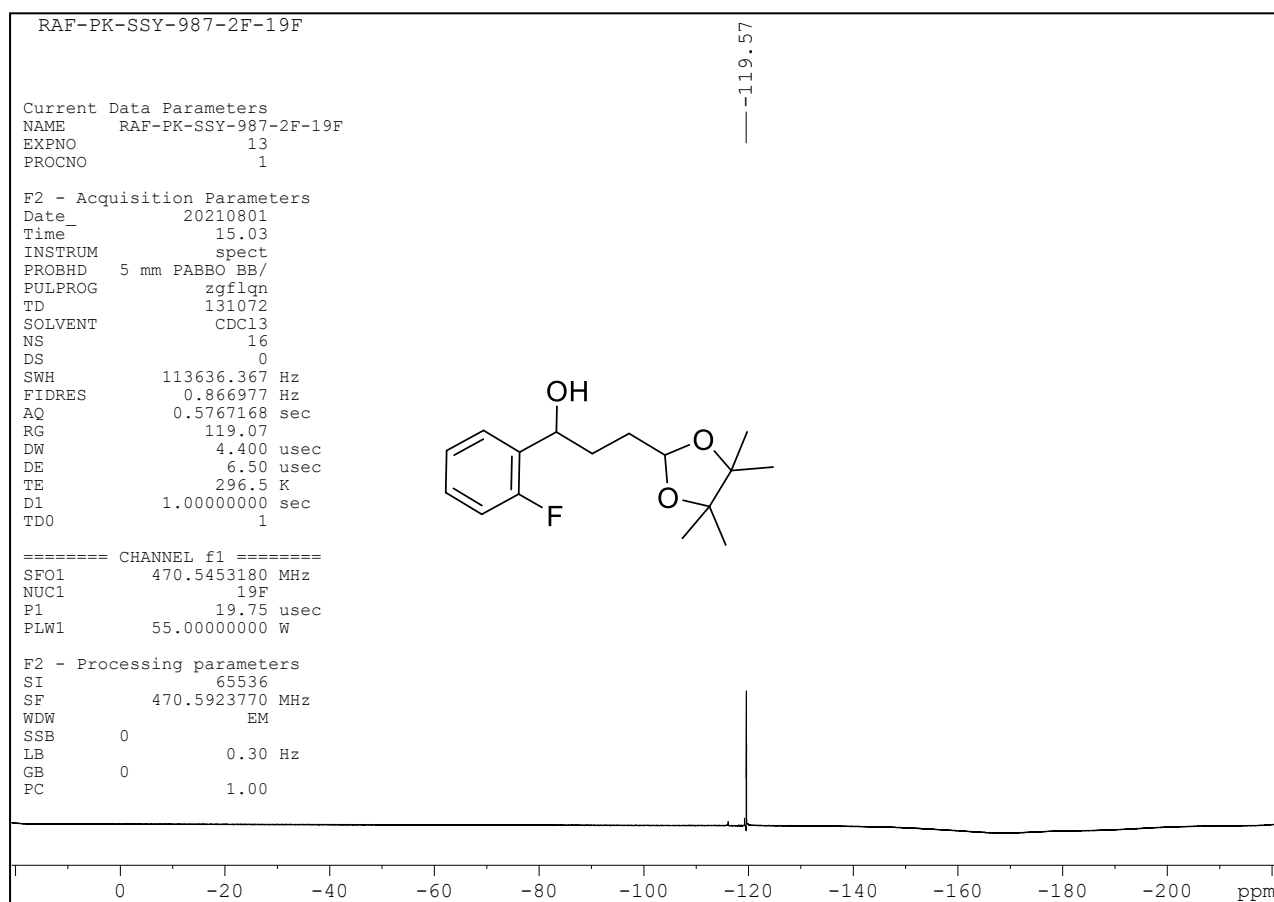
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 12d



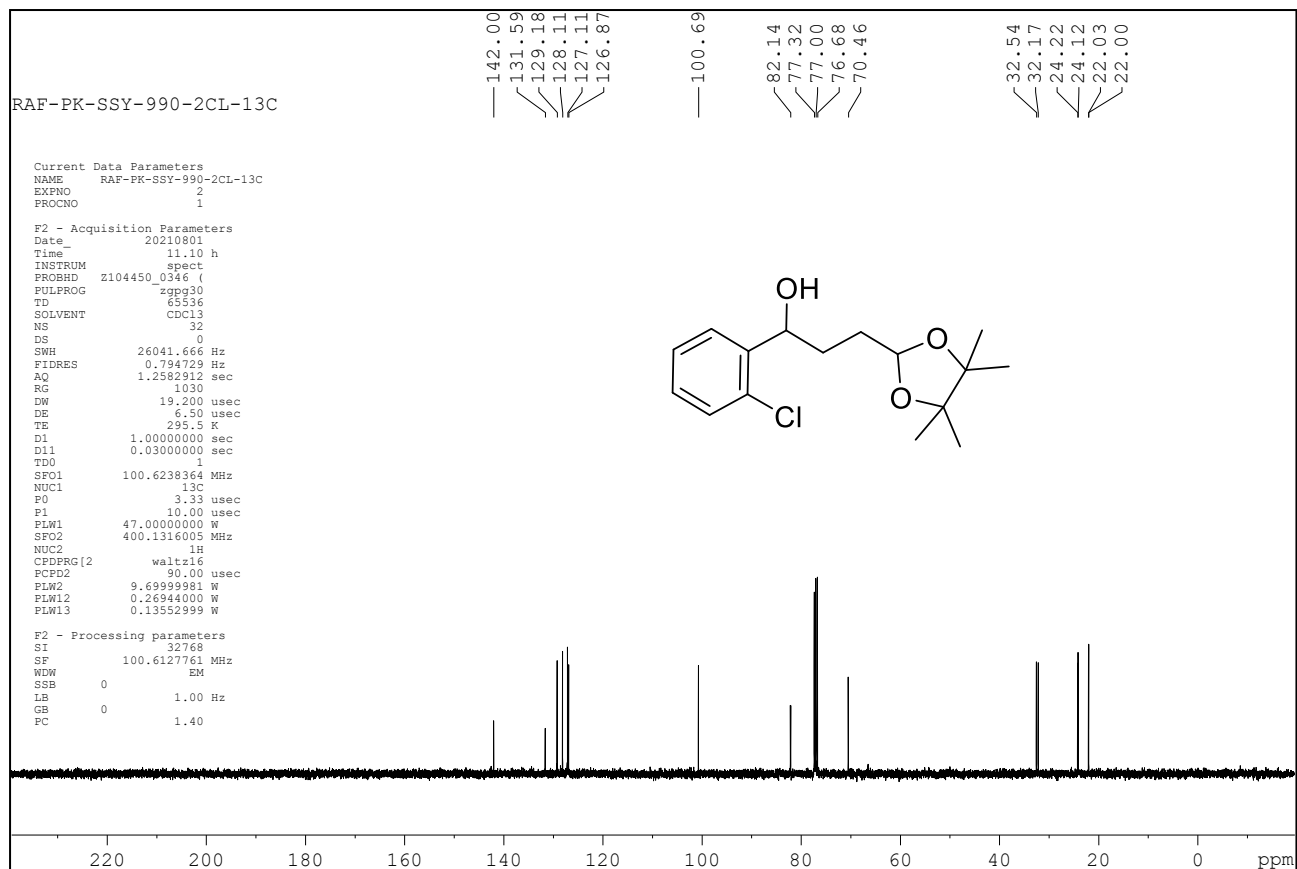
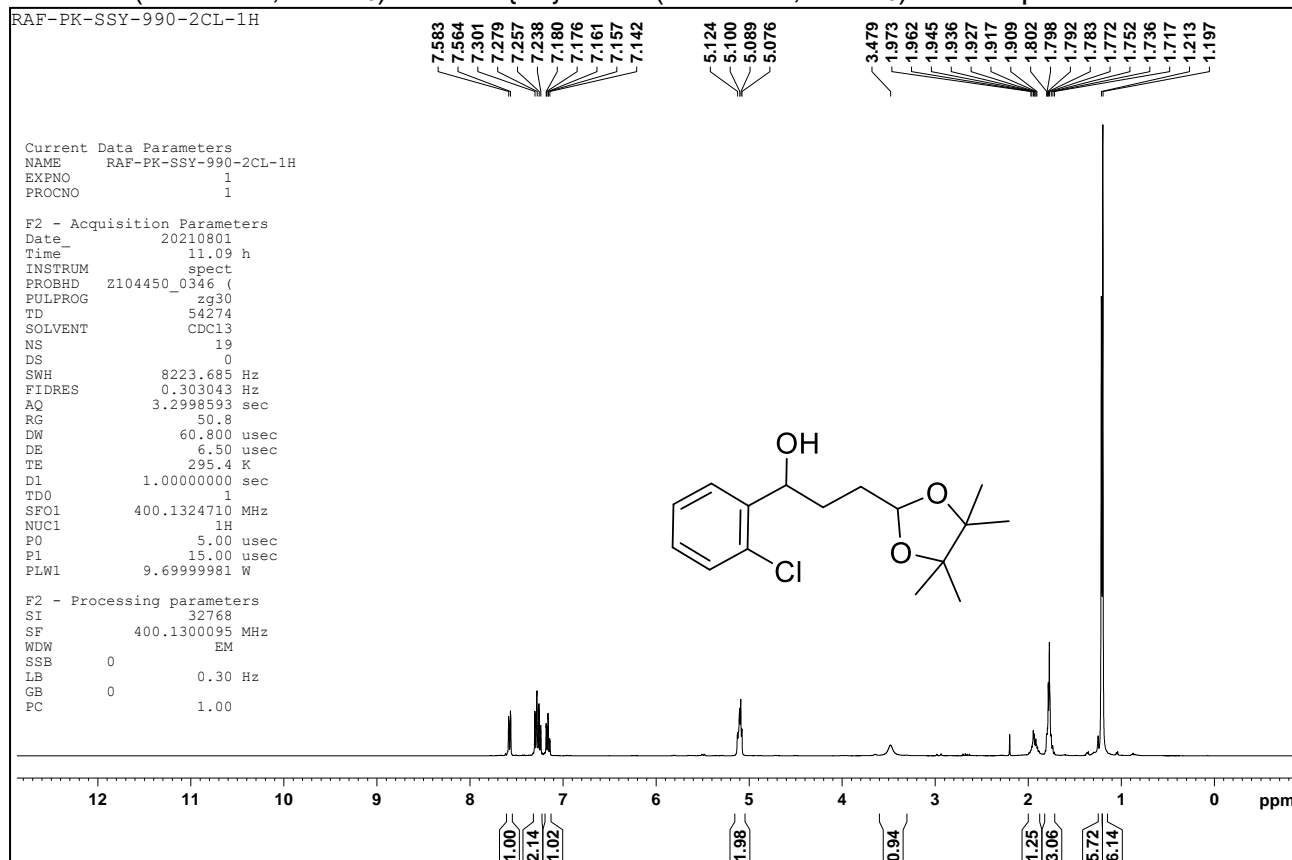
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound 12e



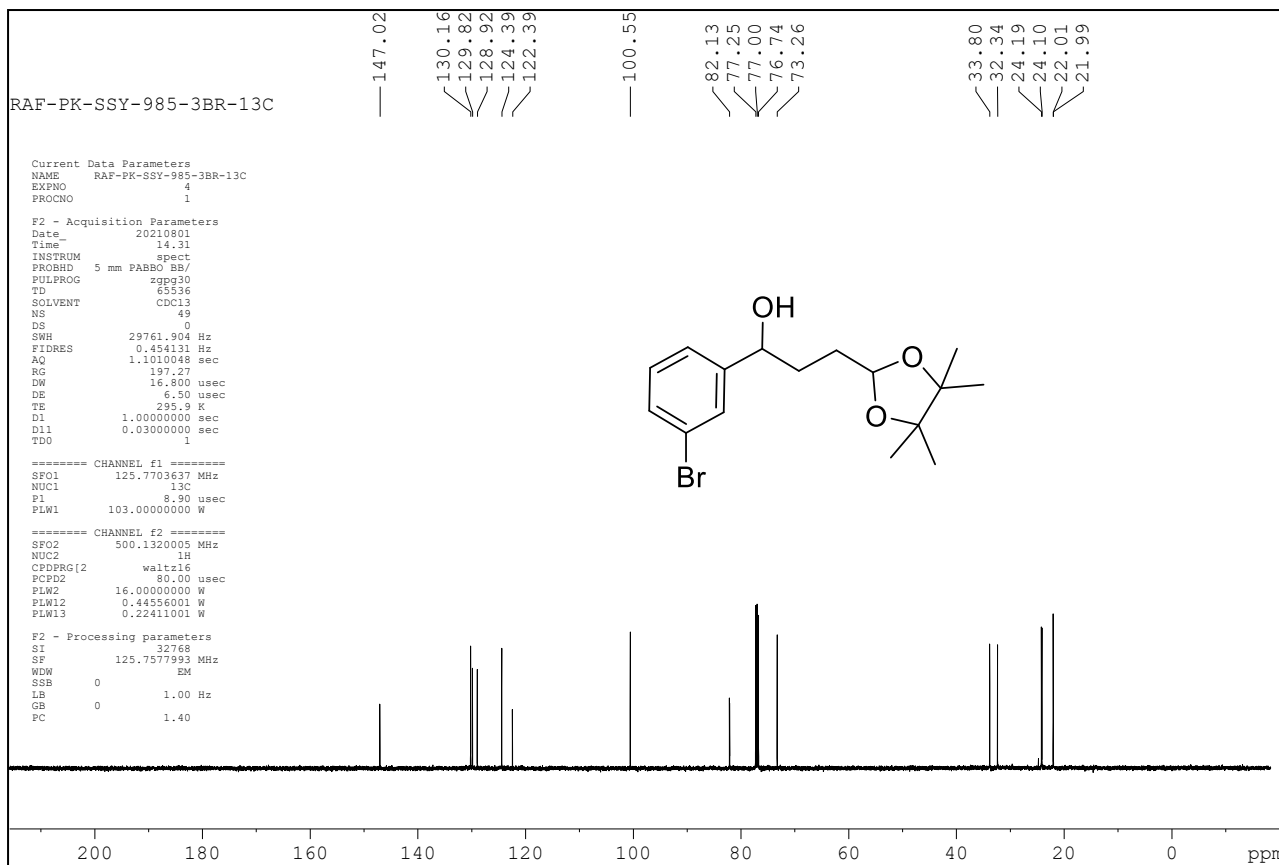
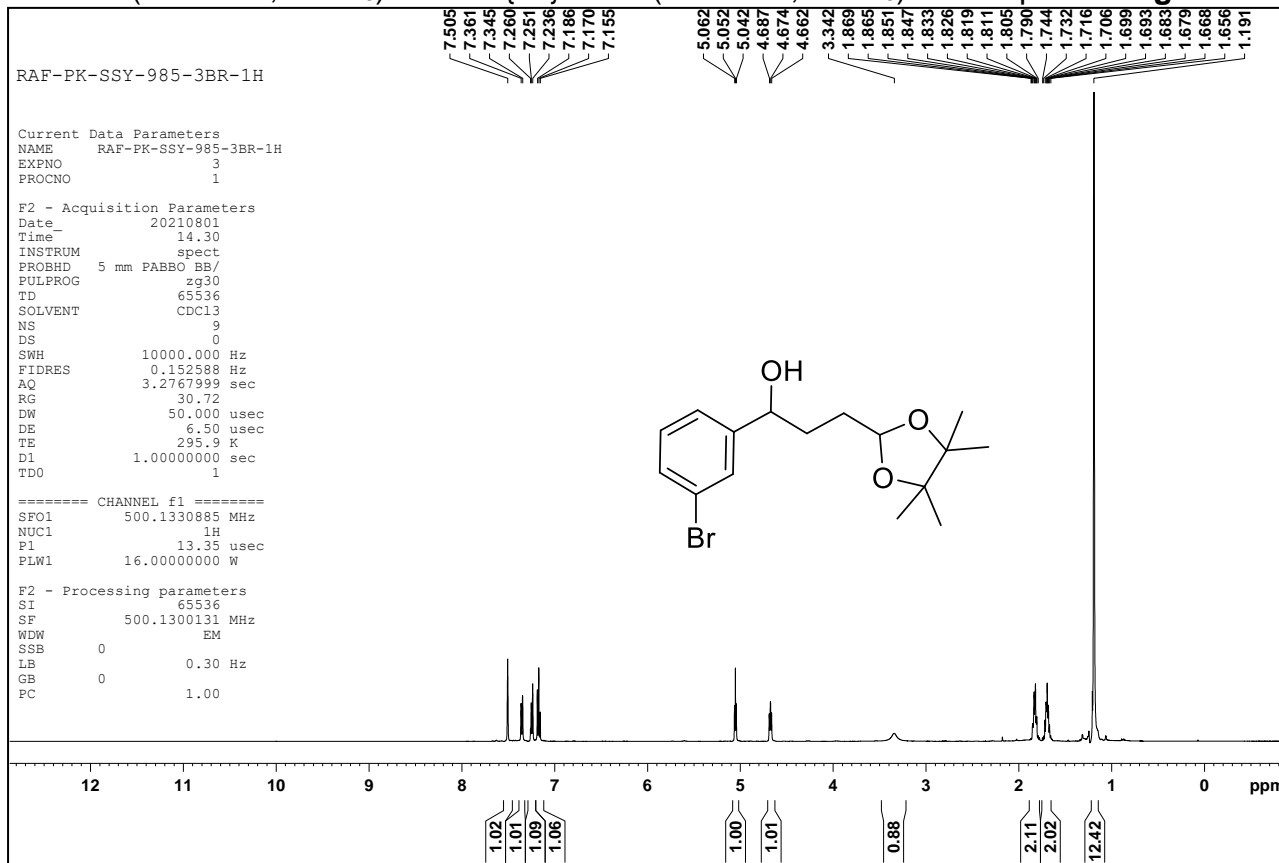
¹⁹F NMR (470 MHz, CDCl₃) of Compound 12e



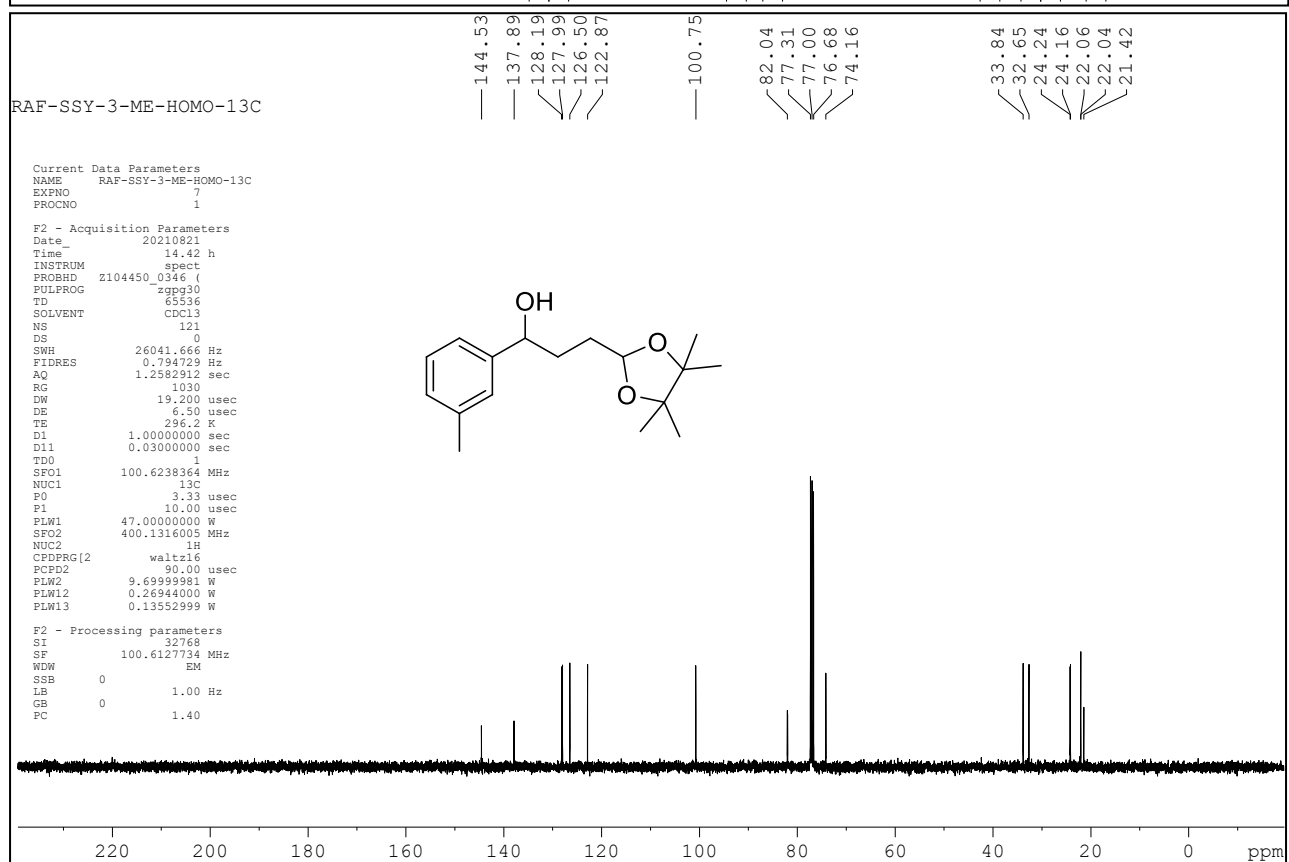
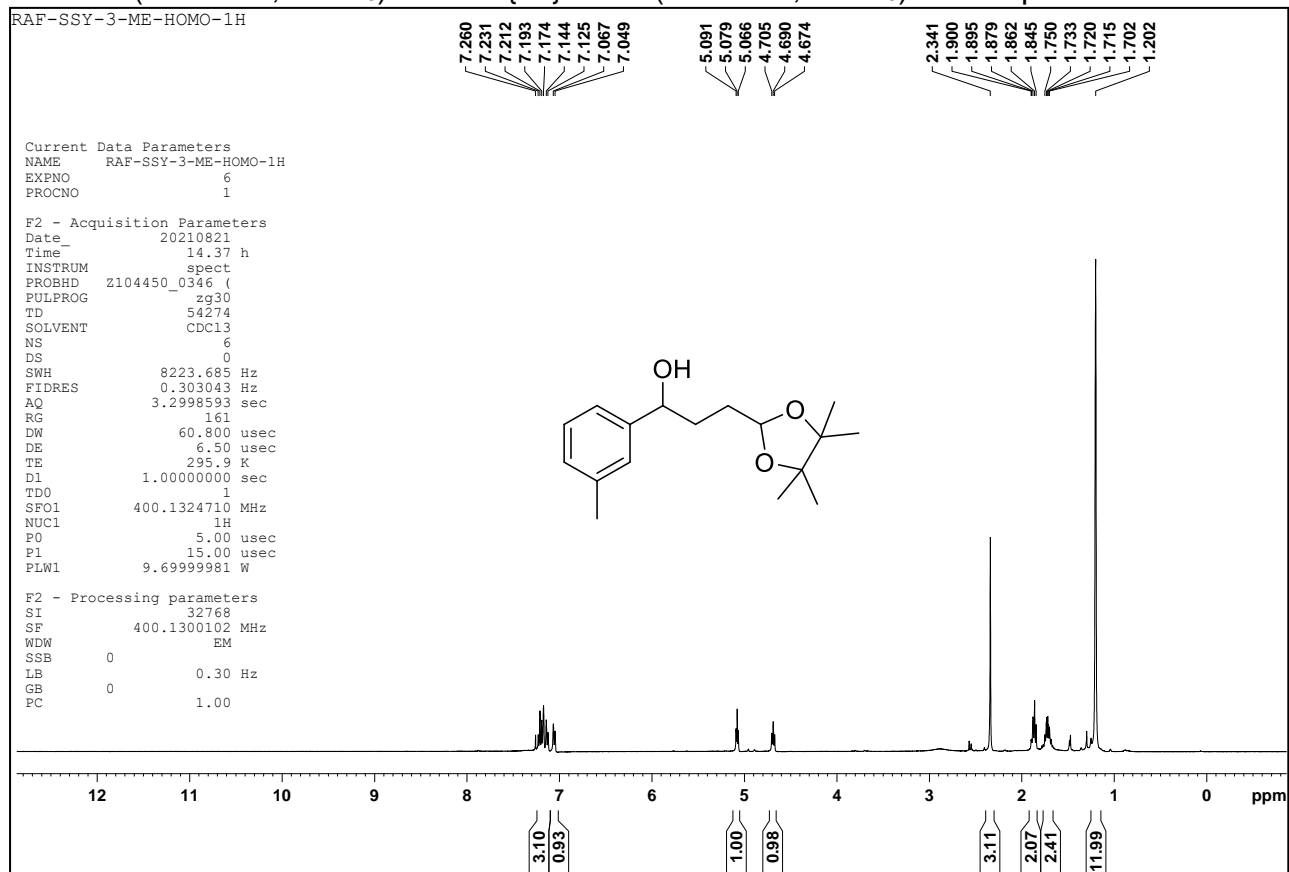
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 12f



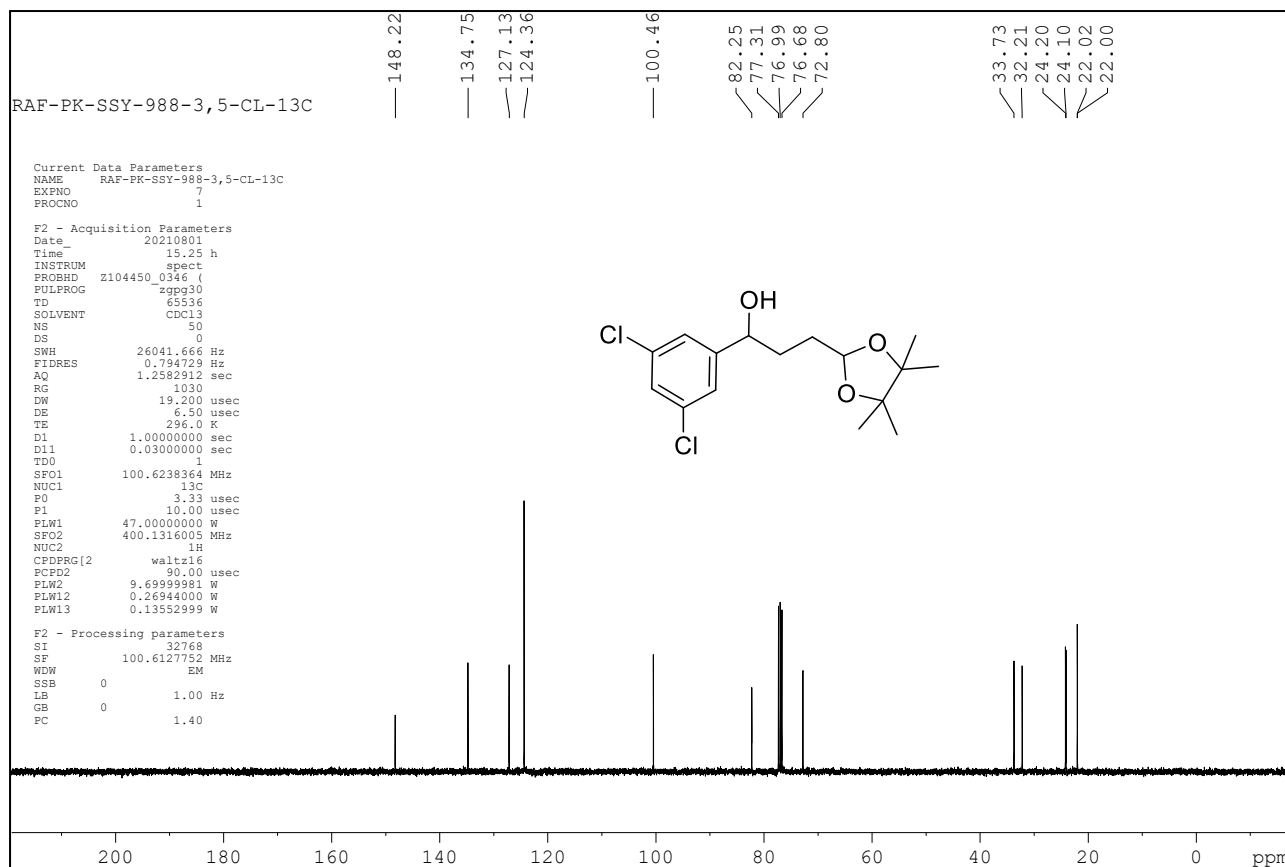
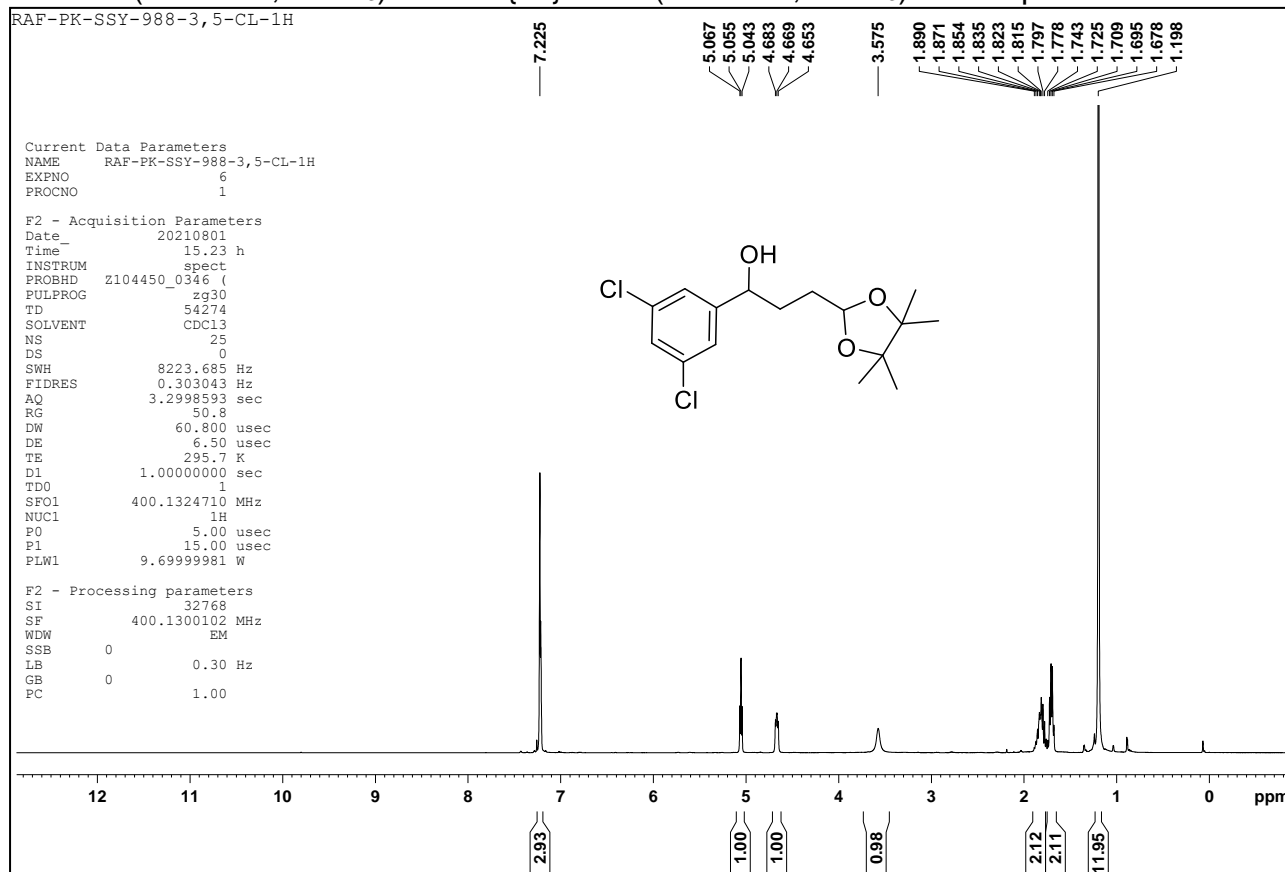
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **12g**



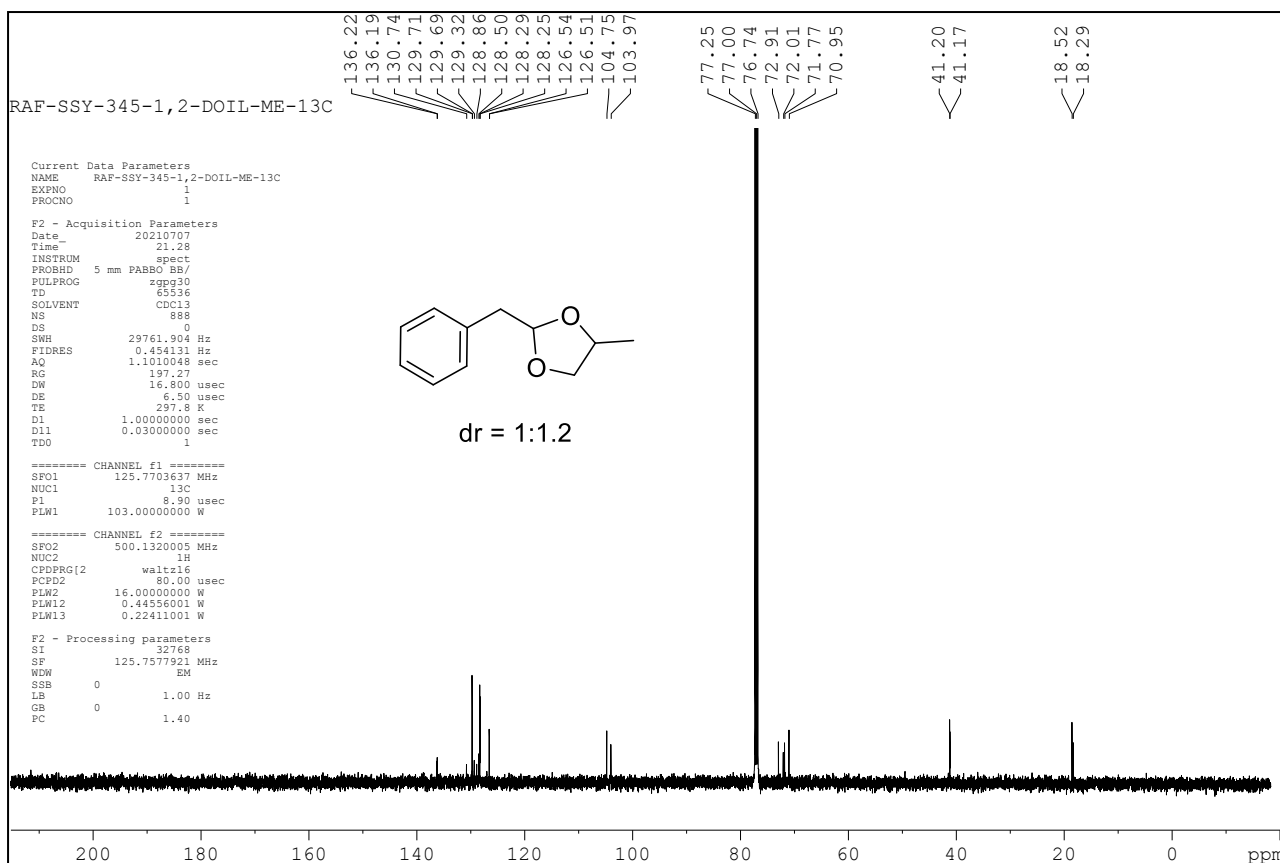
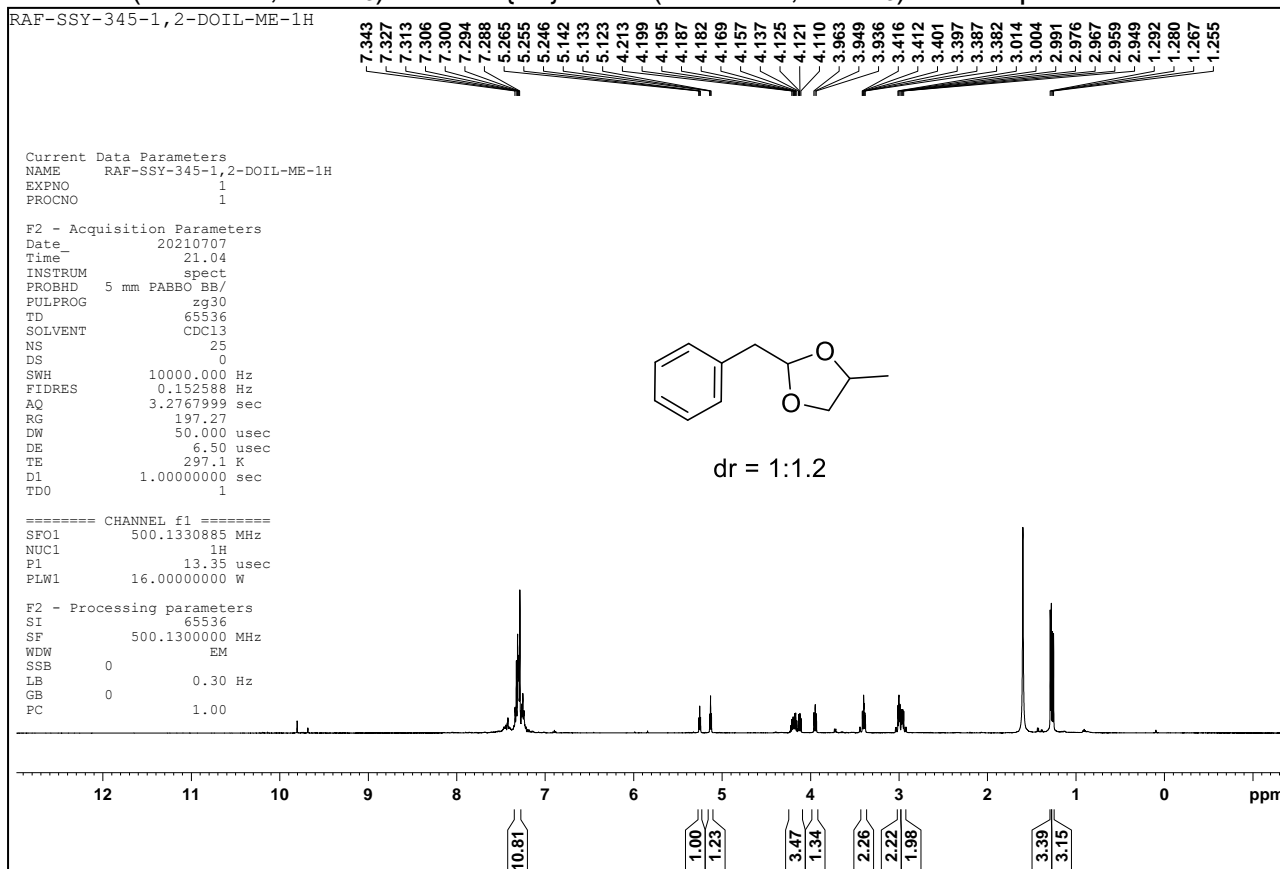
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 12h



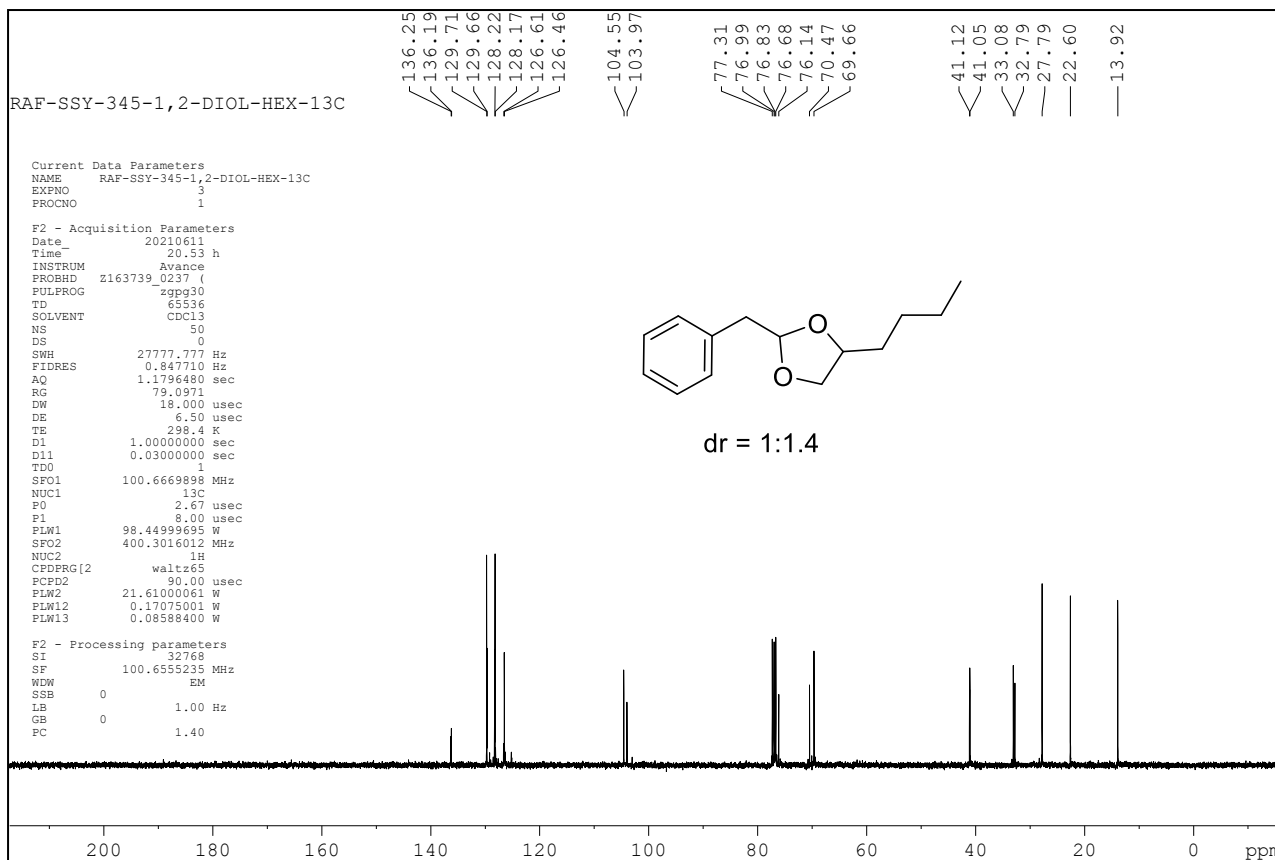
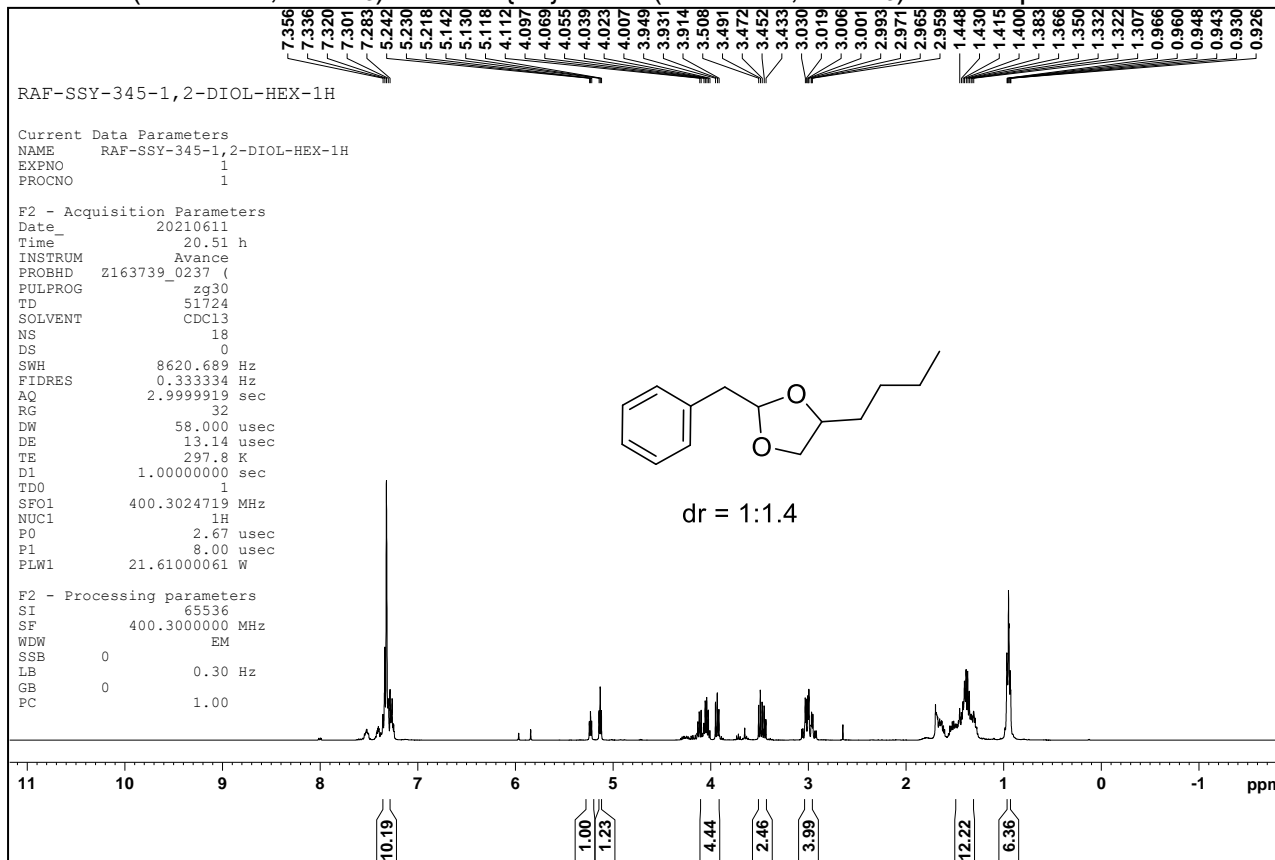
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 12i



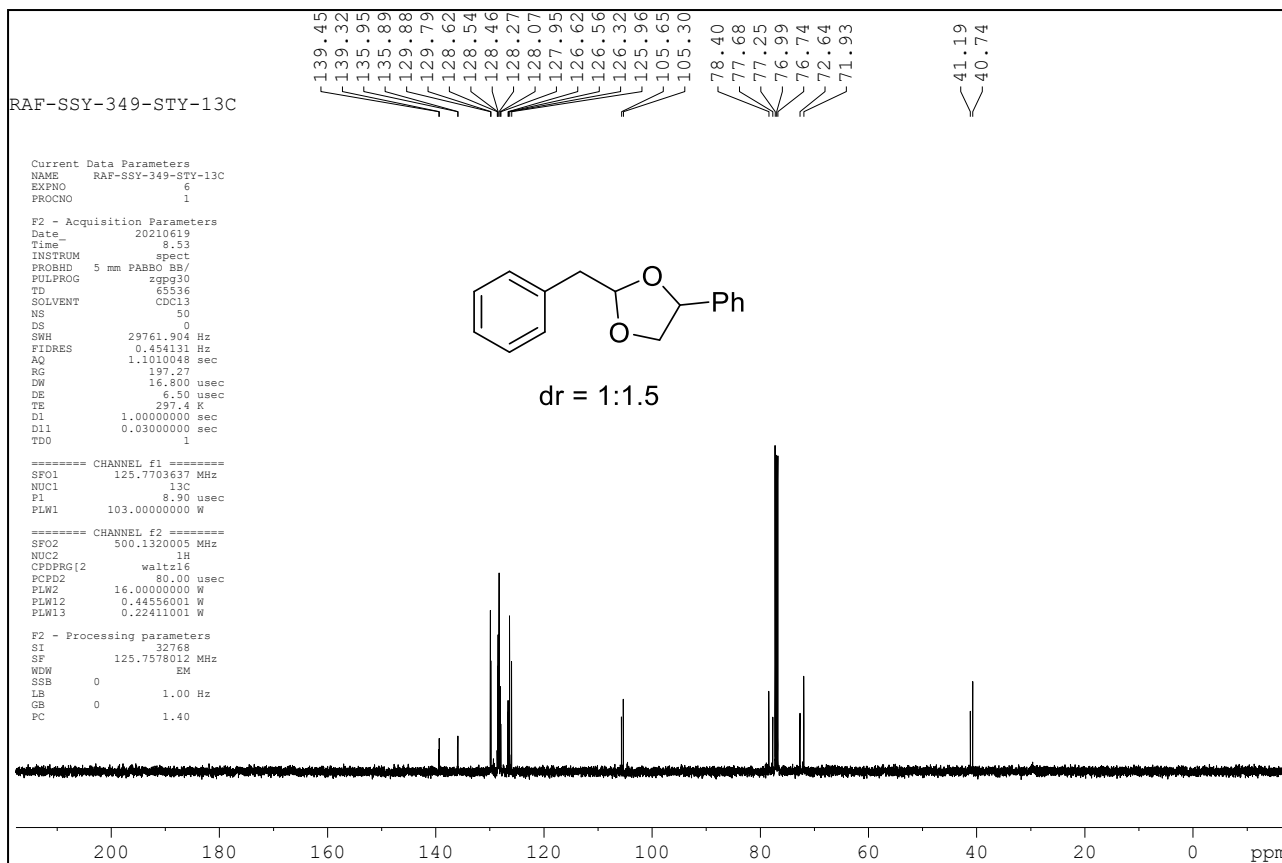
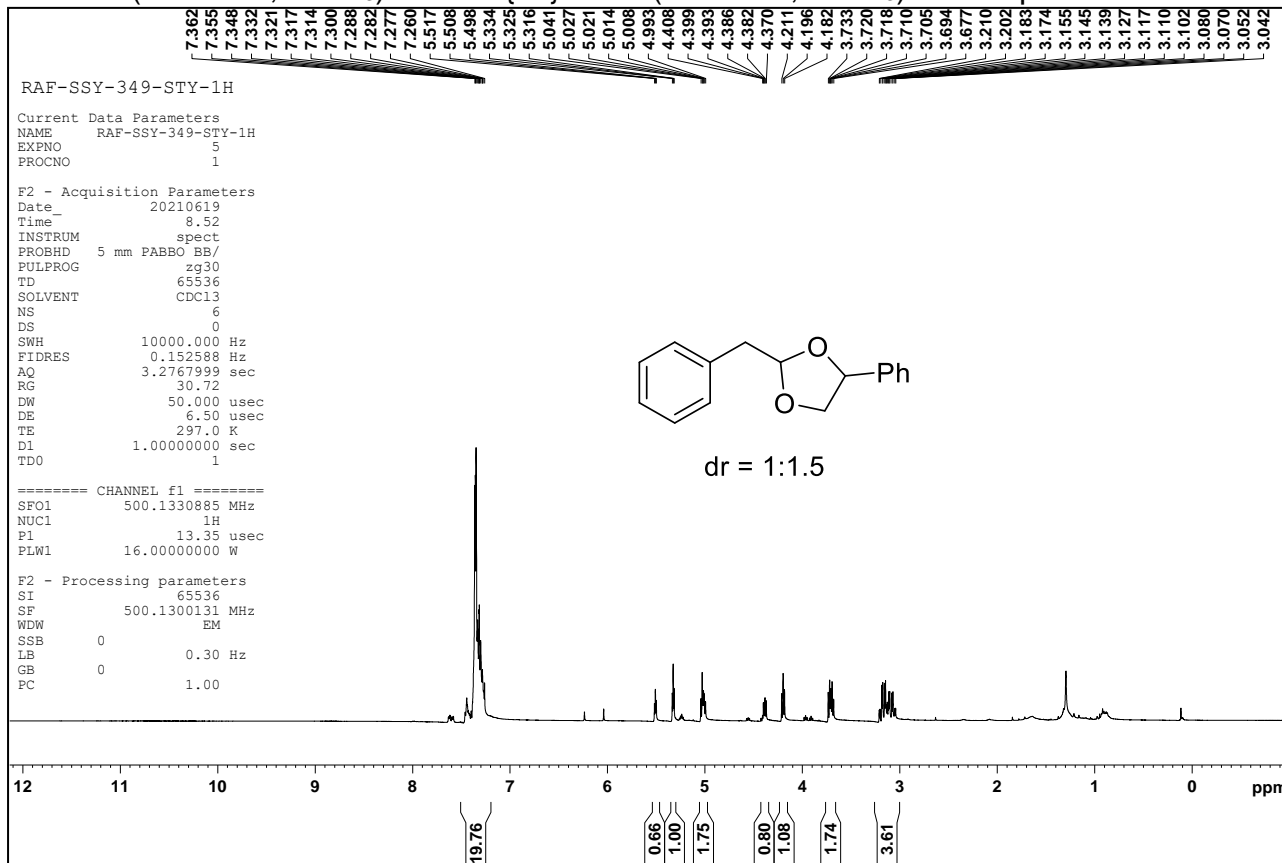
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **2aa**



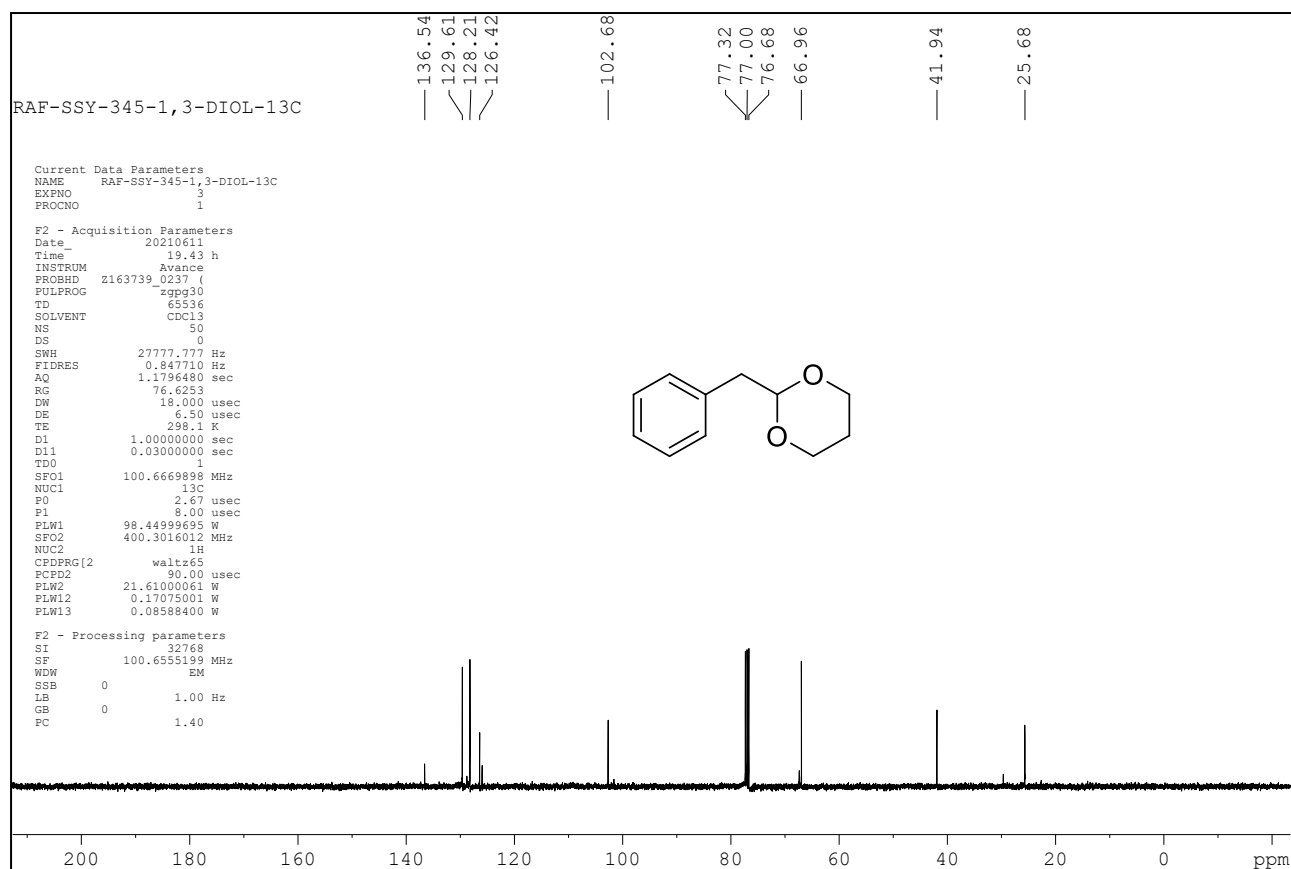
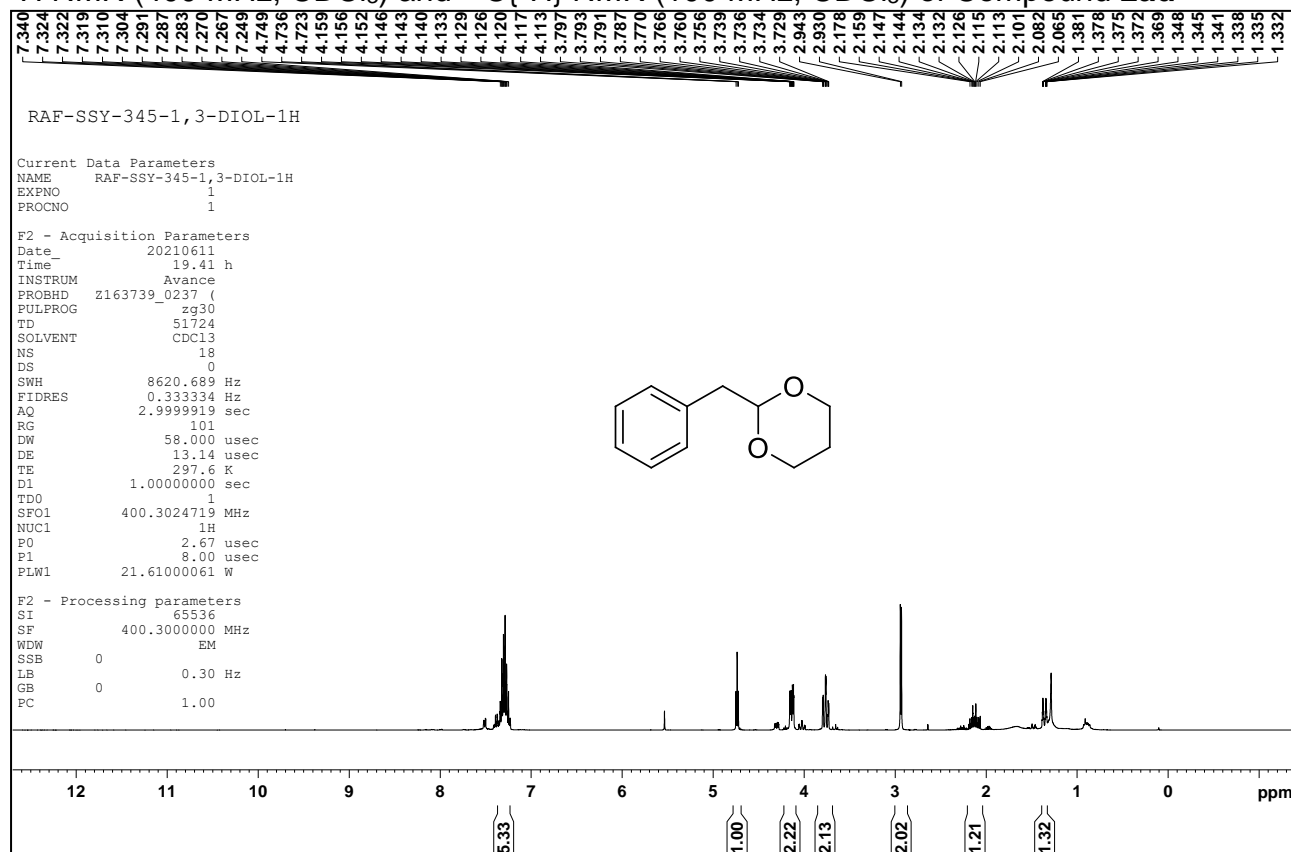
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **2ab**



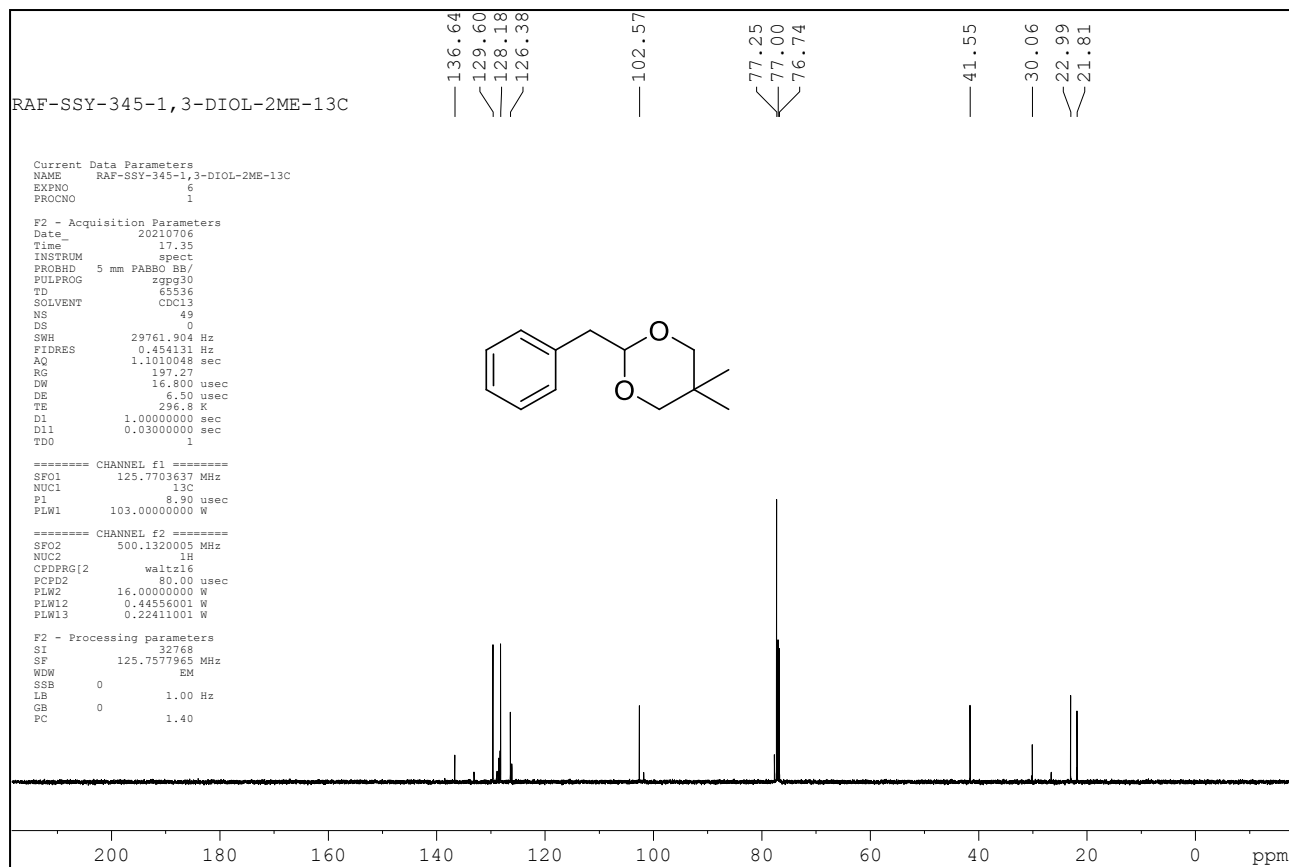
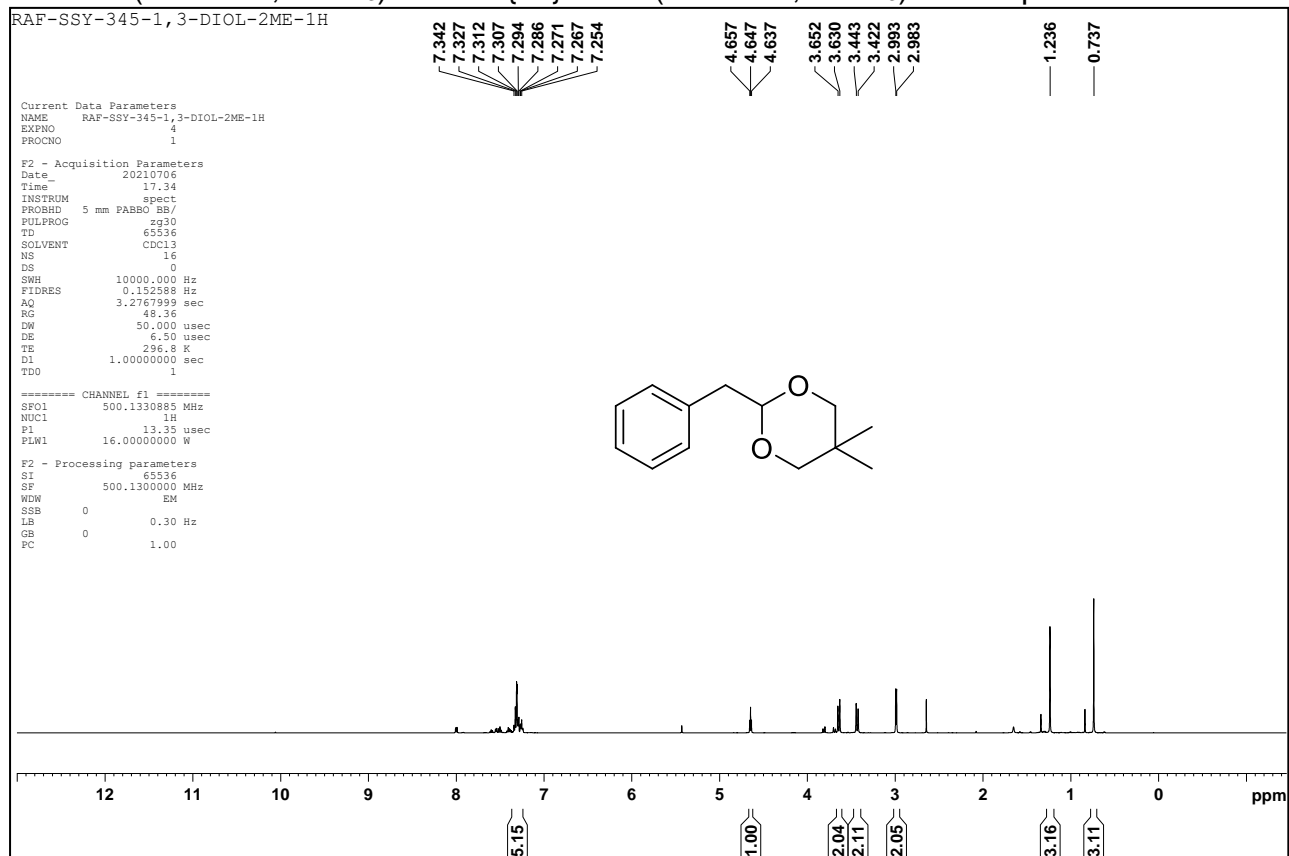
¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **2ac**



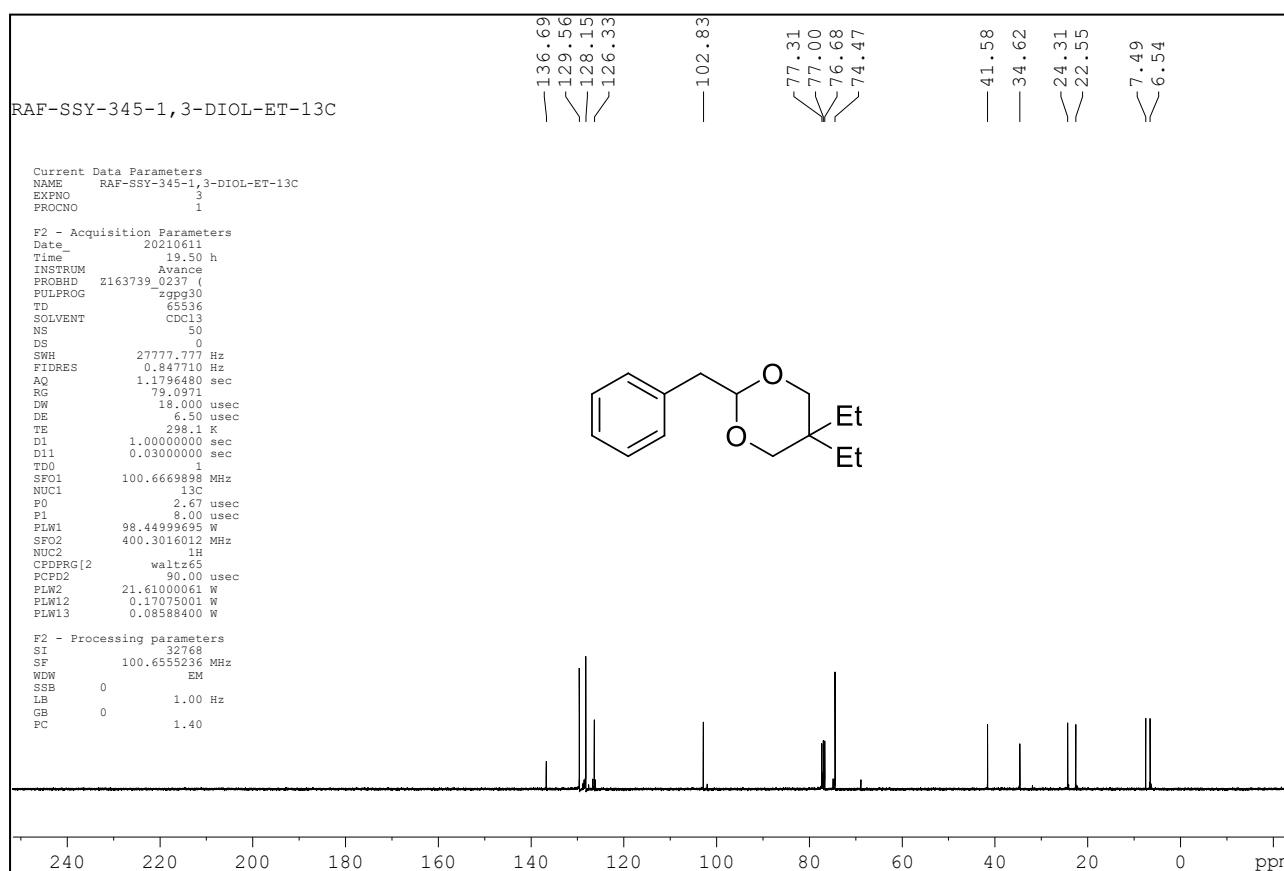
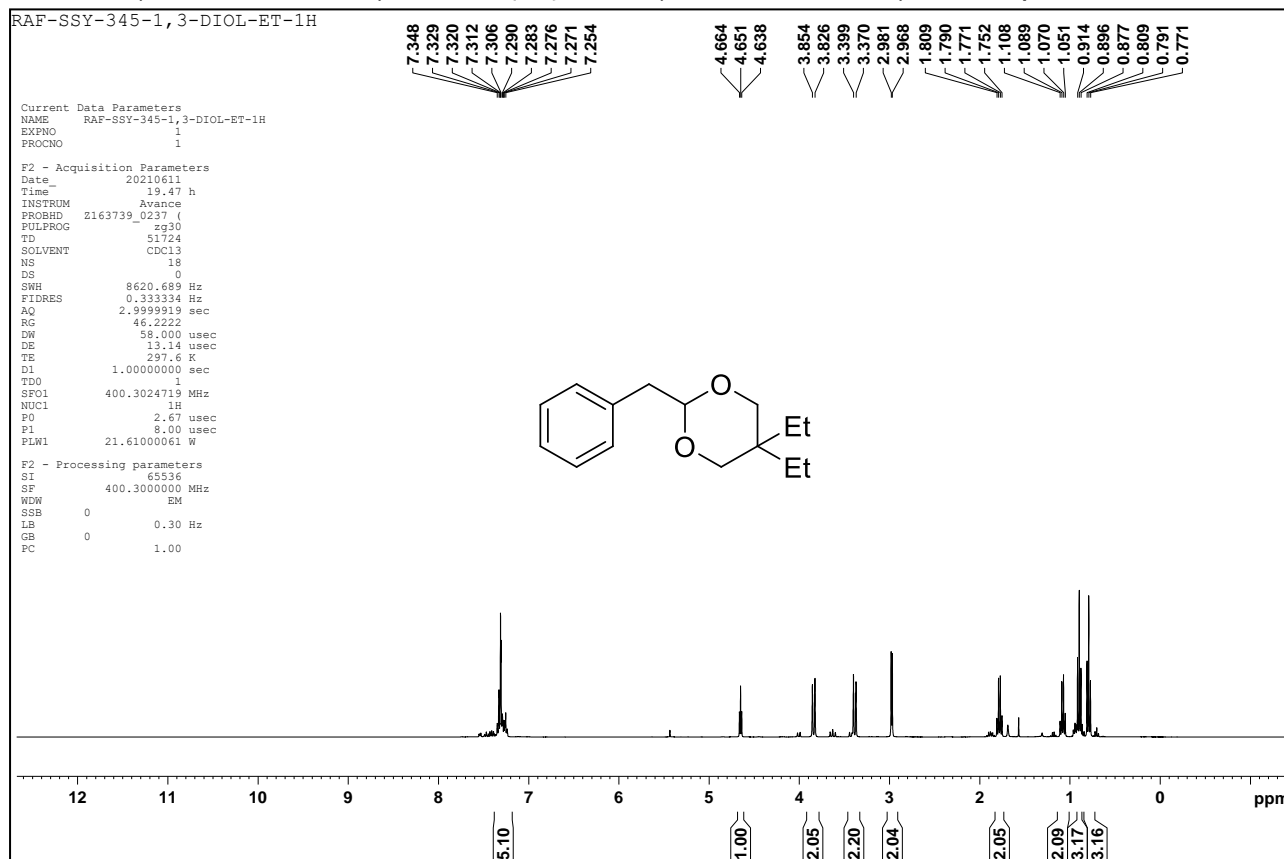
¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 2ad



¹H NMR (500 MHz, CDCl₃) and ¹³C{¹H} NMR (125 MHz, CDCl₃) of Compound **2ae**



¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound **2af**



¹H NMR (400 MHz, CDCl₃) and ¹³C{¹H} NMR (100 MHz, CDCl₃) of Compound 13

