SUPPORTING INFORMATION

Radical Cyclization of Alkynyl Aryl Ketones for the Synthesis of 3-Seleno-substituted Thiochromones and Chromones

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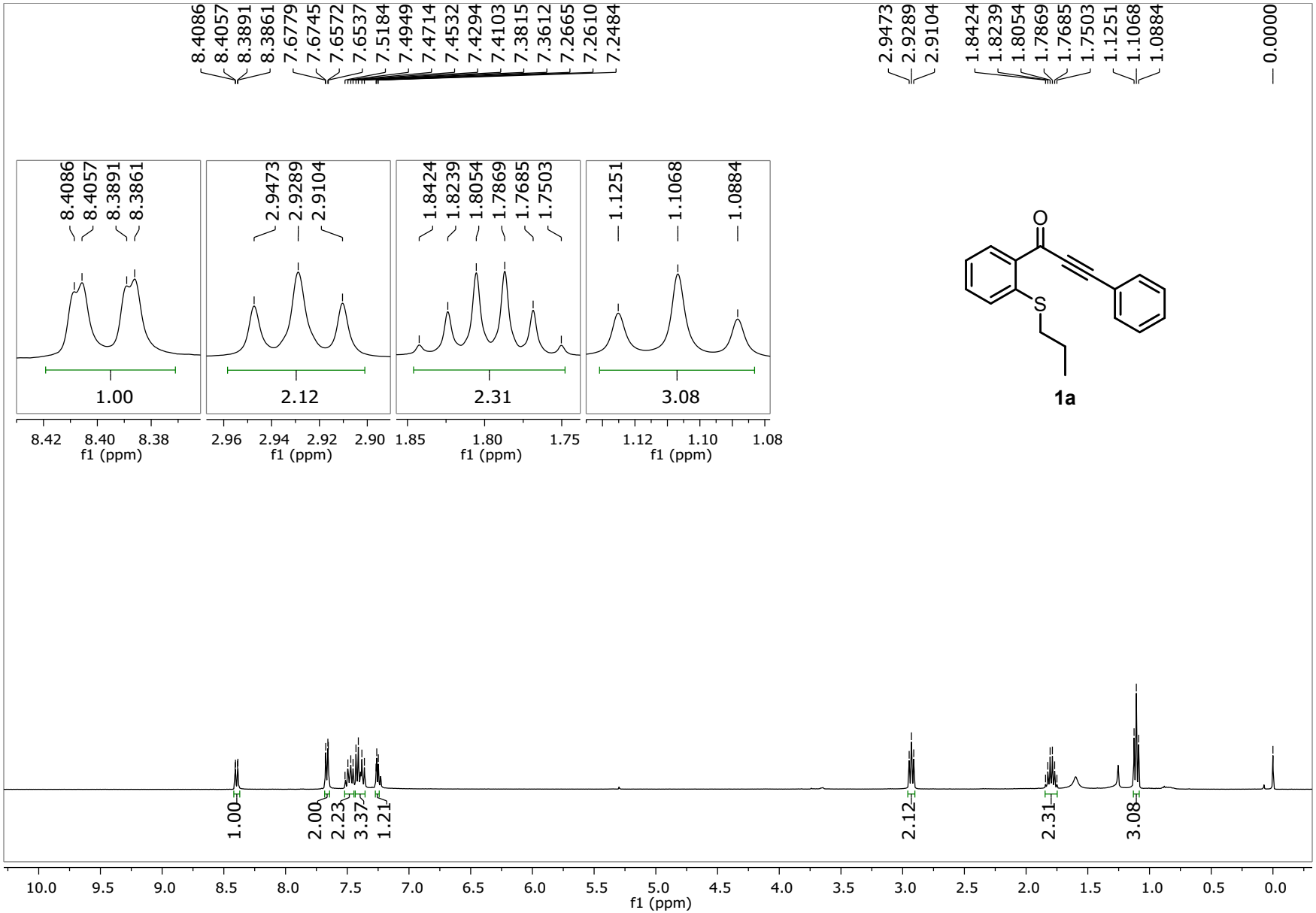

Figure S1: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **1a**.

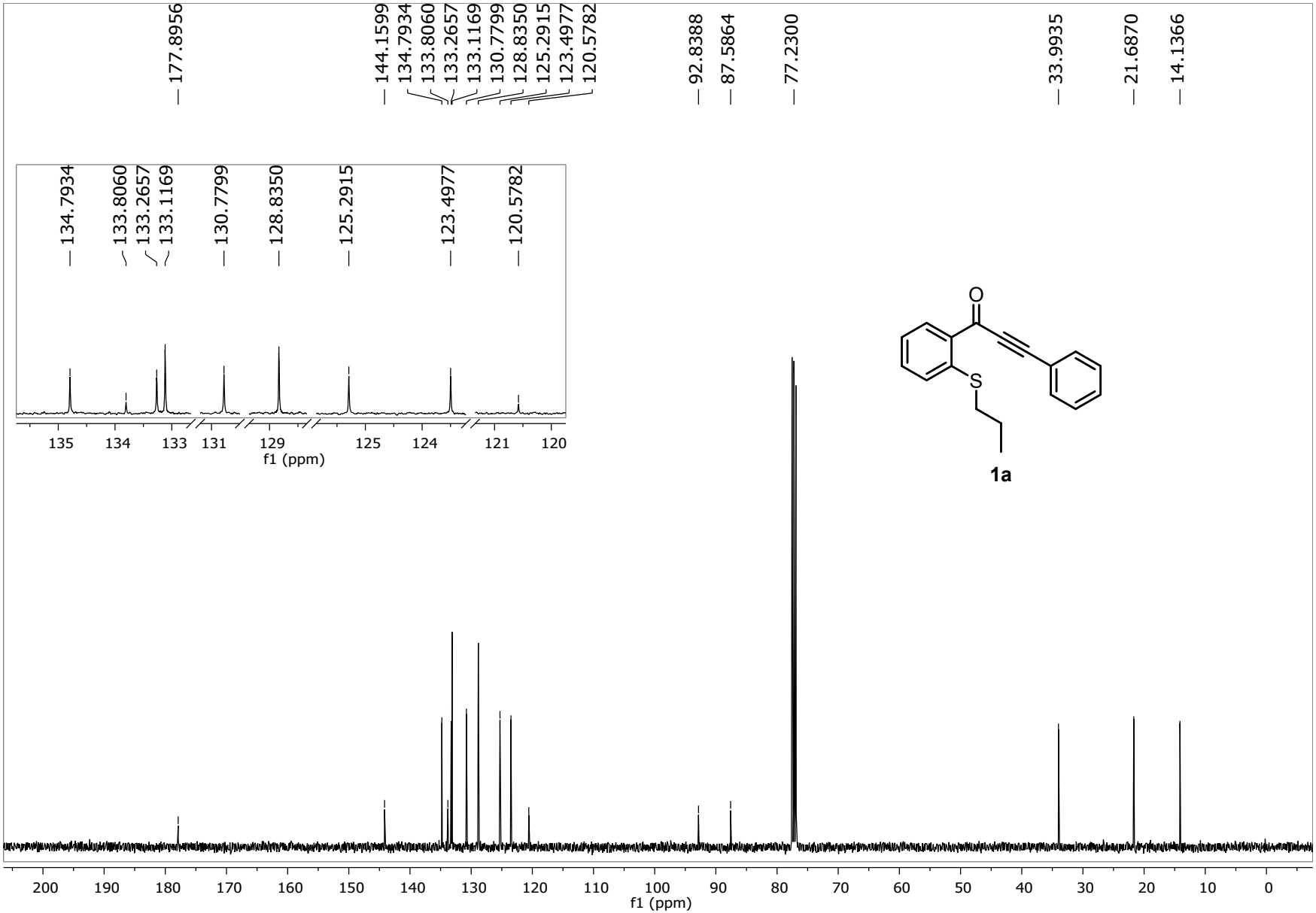

Figure S2: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **1a**.

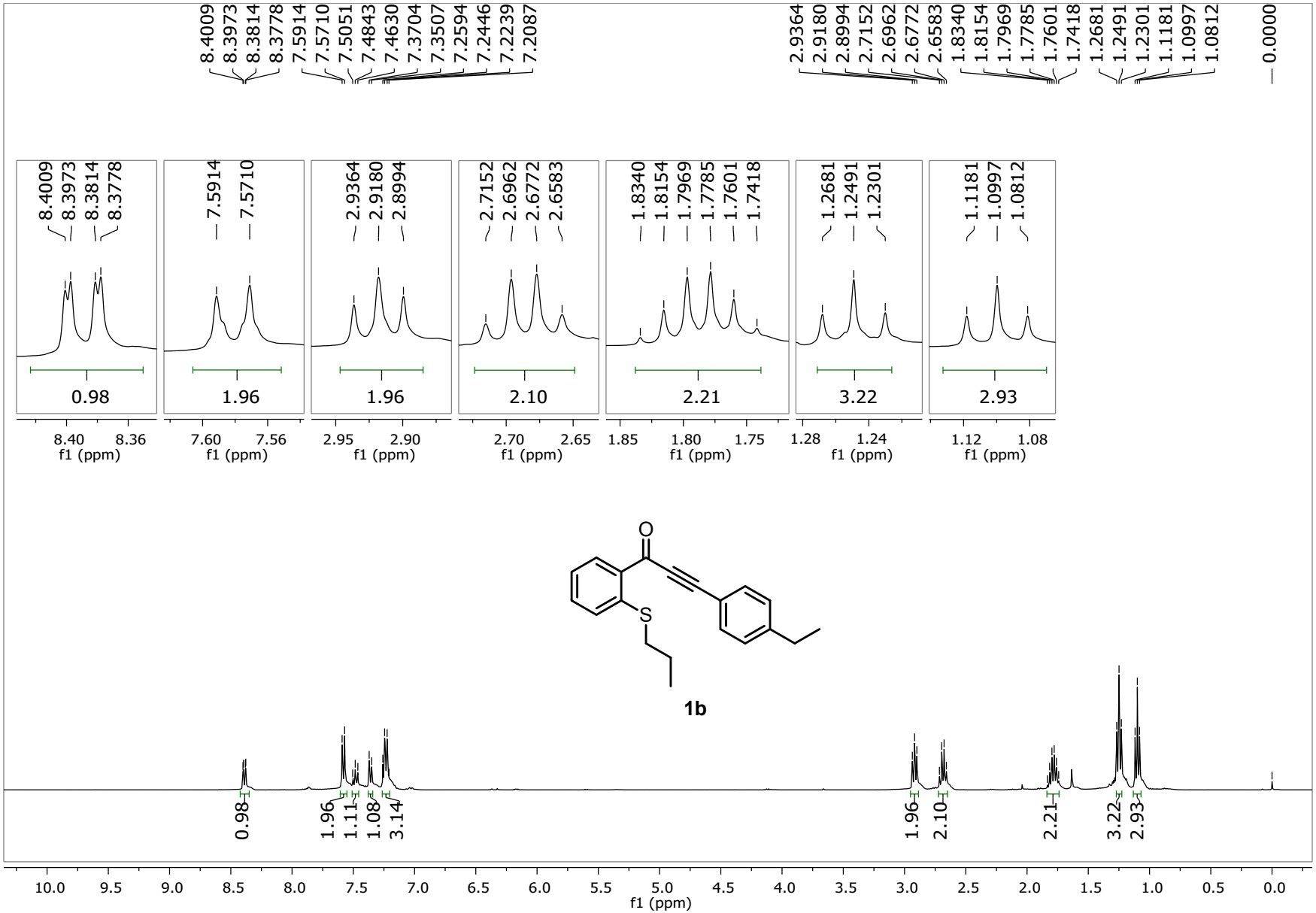

Figure S3: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **1b**.

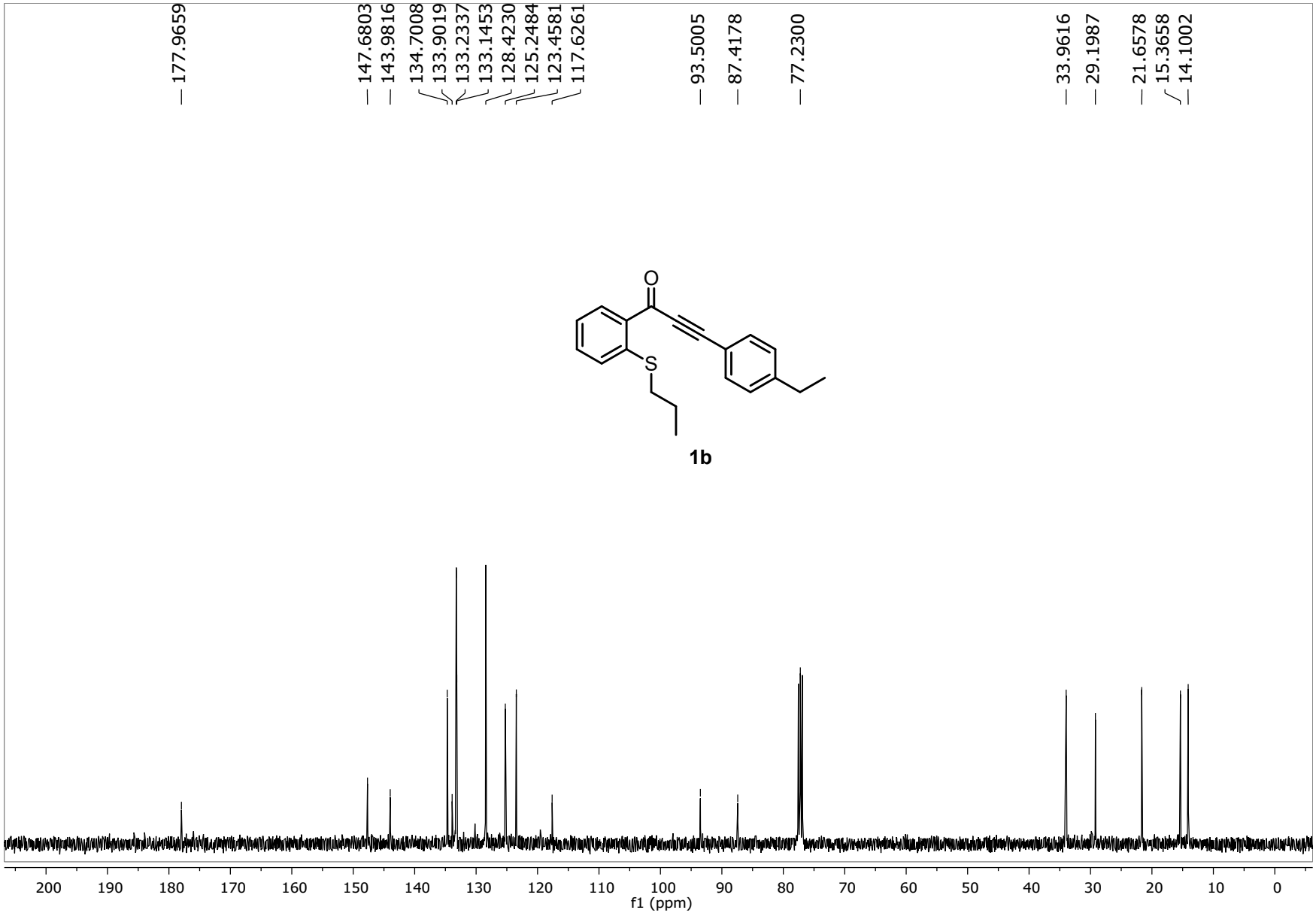

Figure S4: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **1b**.

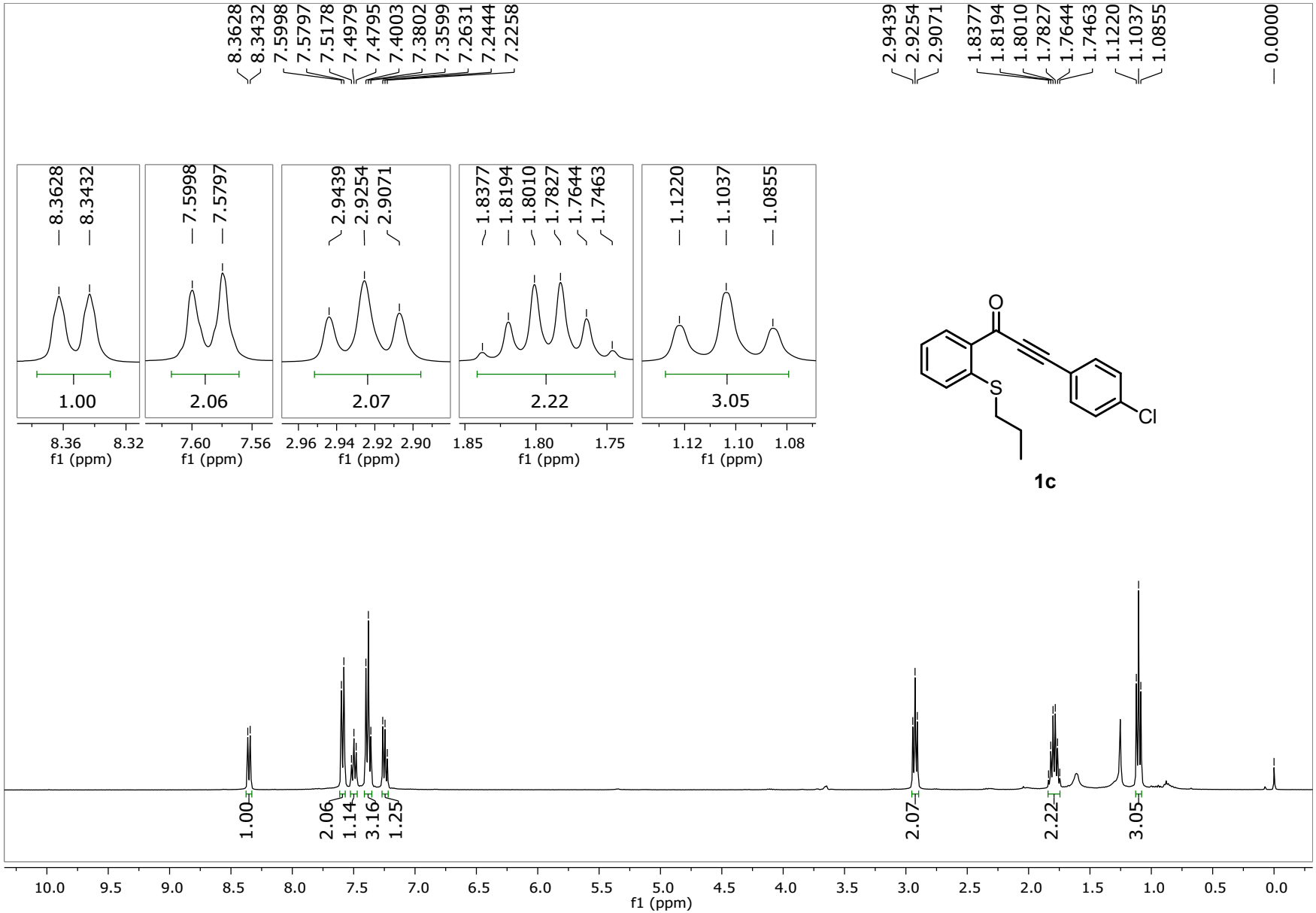

Figure S5: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **1c**.

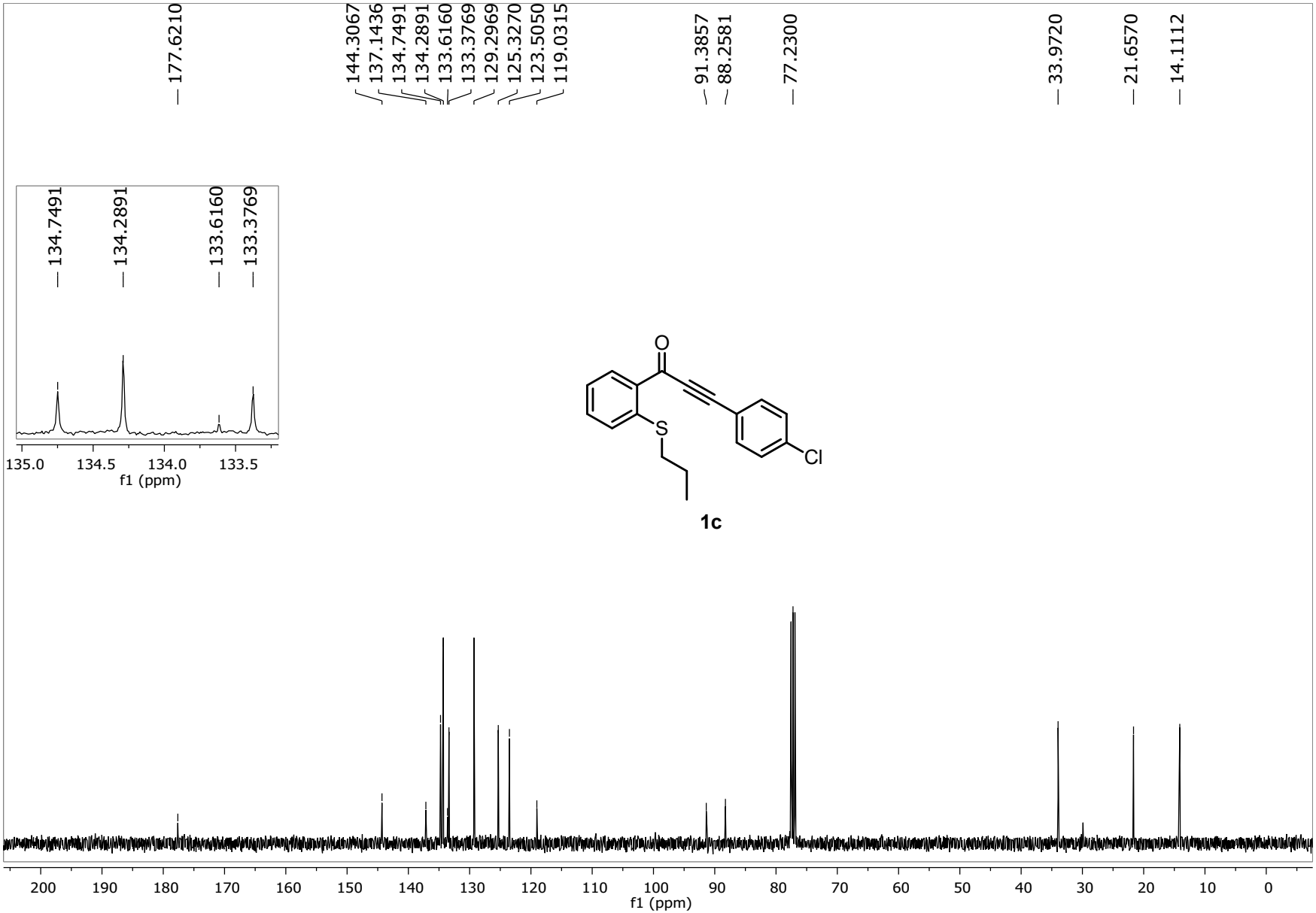

Figure S6: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **1c**.

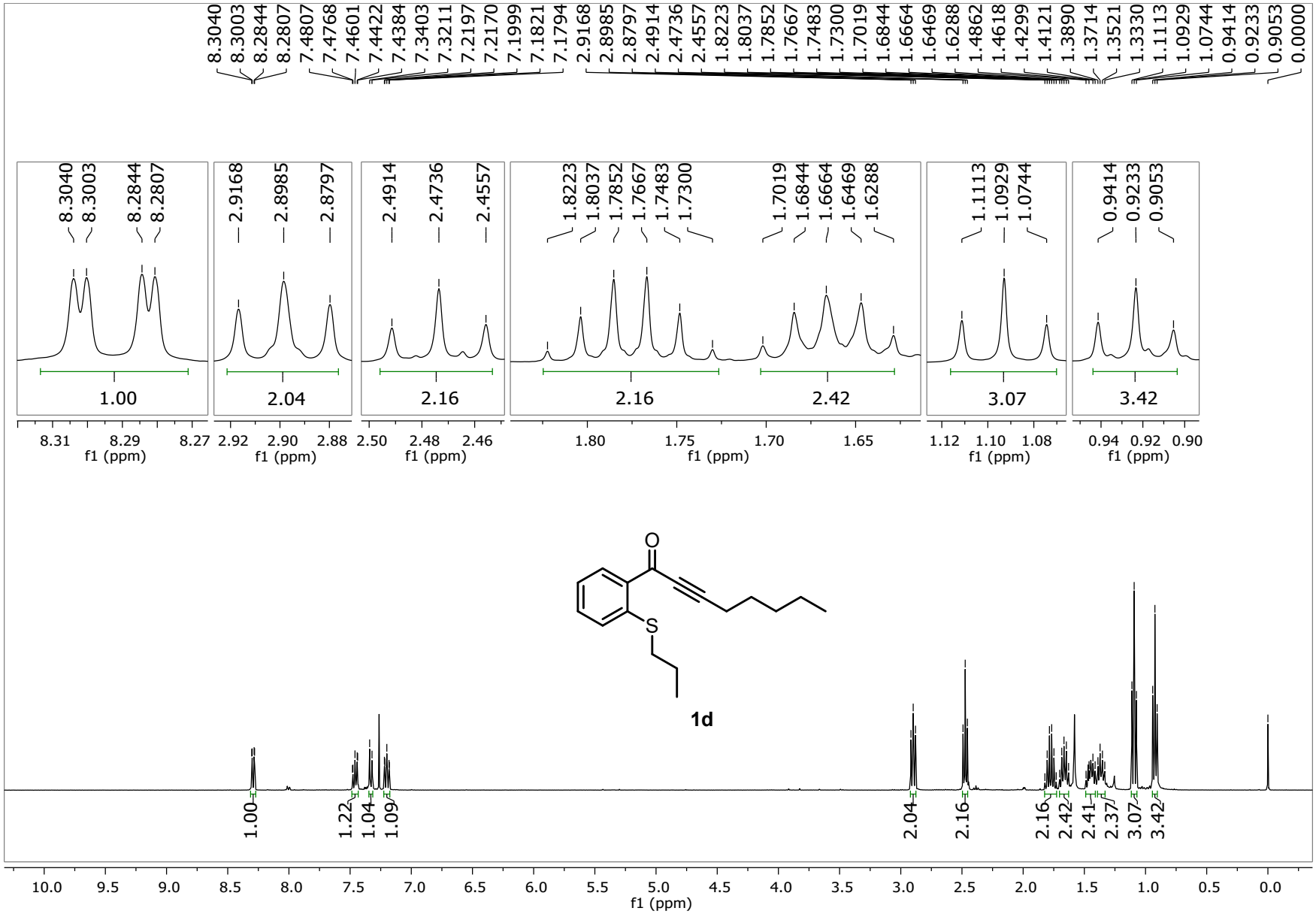

Figure S7: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **1d**.

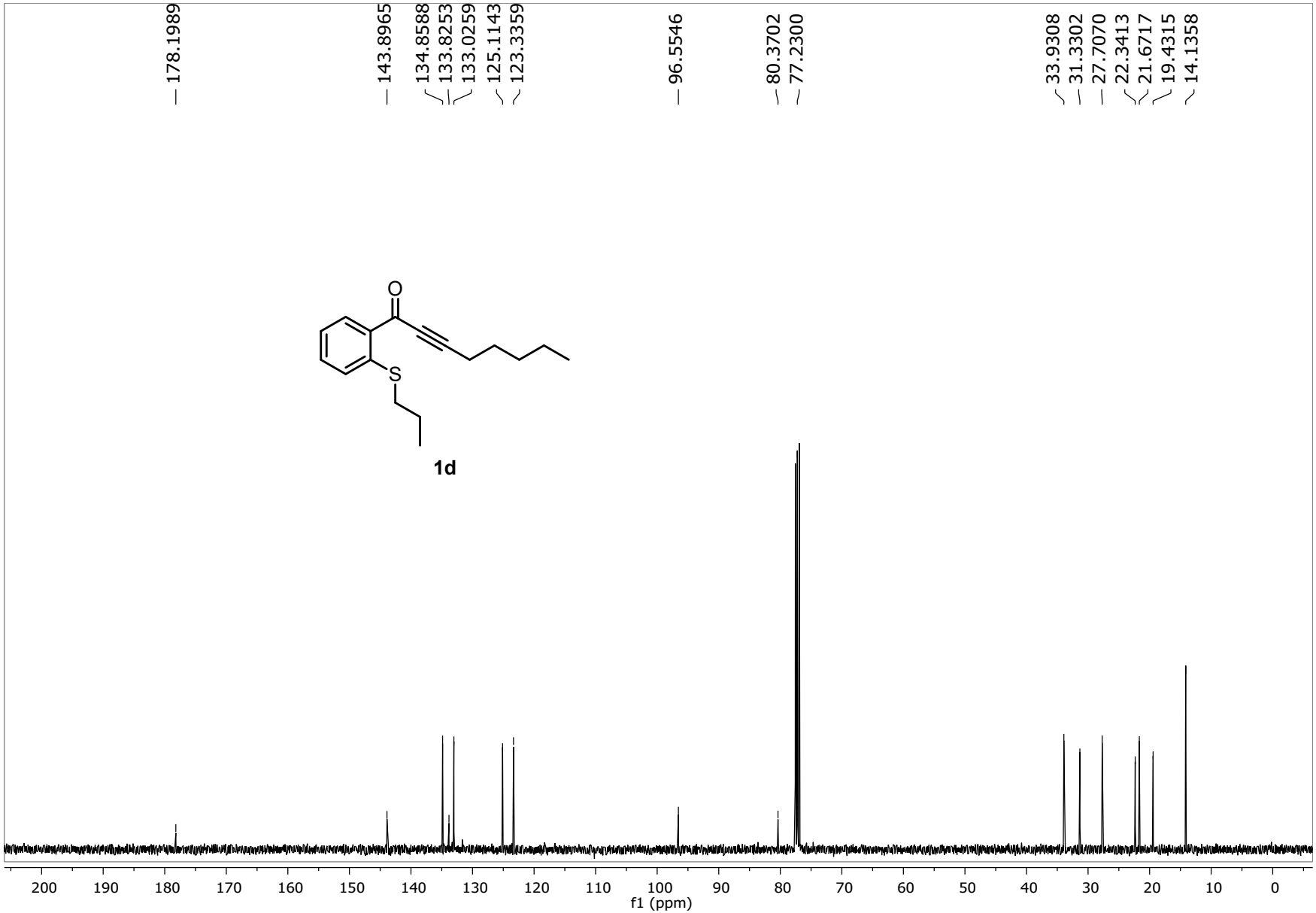

Figure S8: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **1d**.

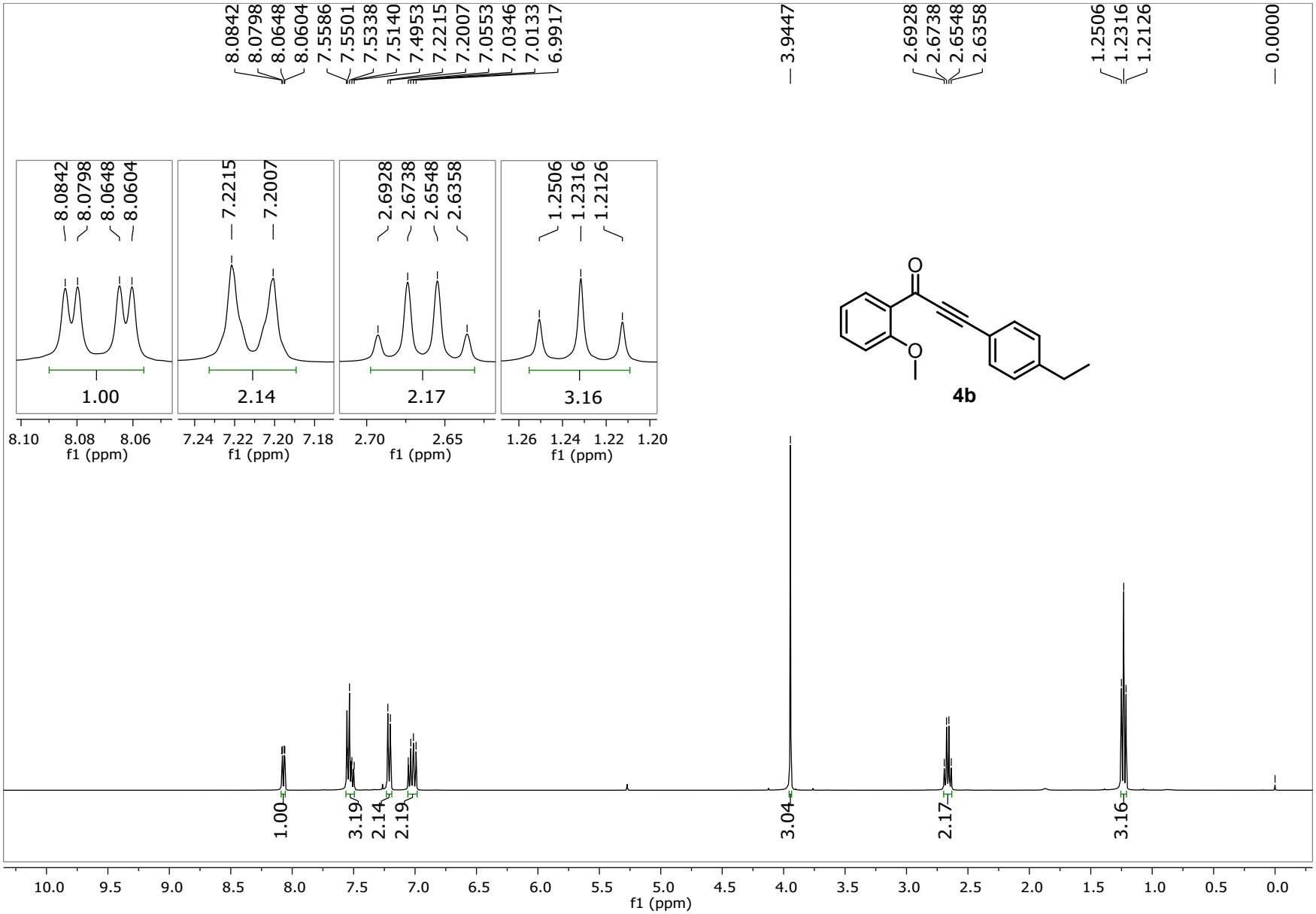

Figure S9: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **4b**.

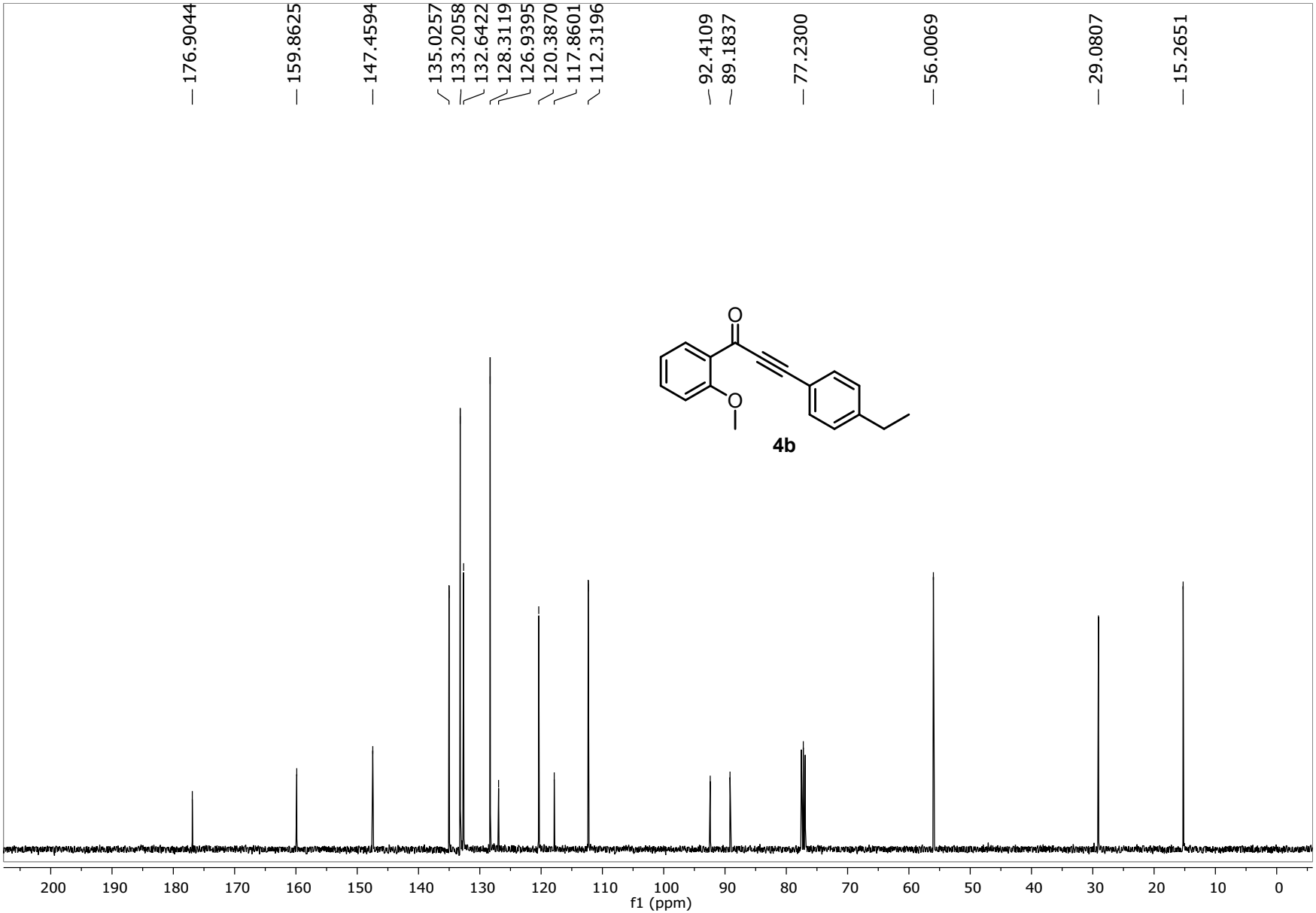

Figure S10: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **4b**.

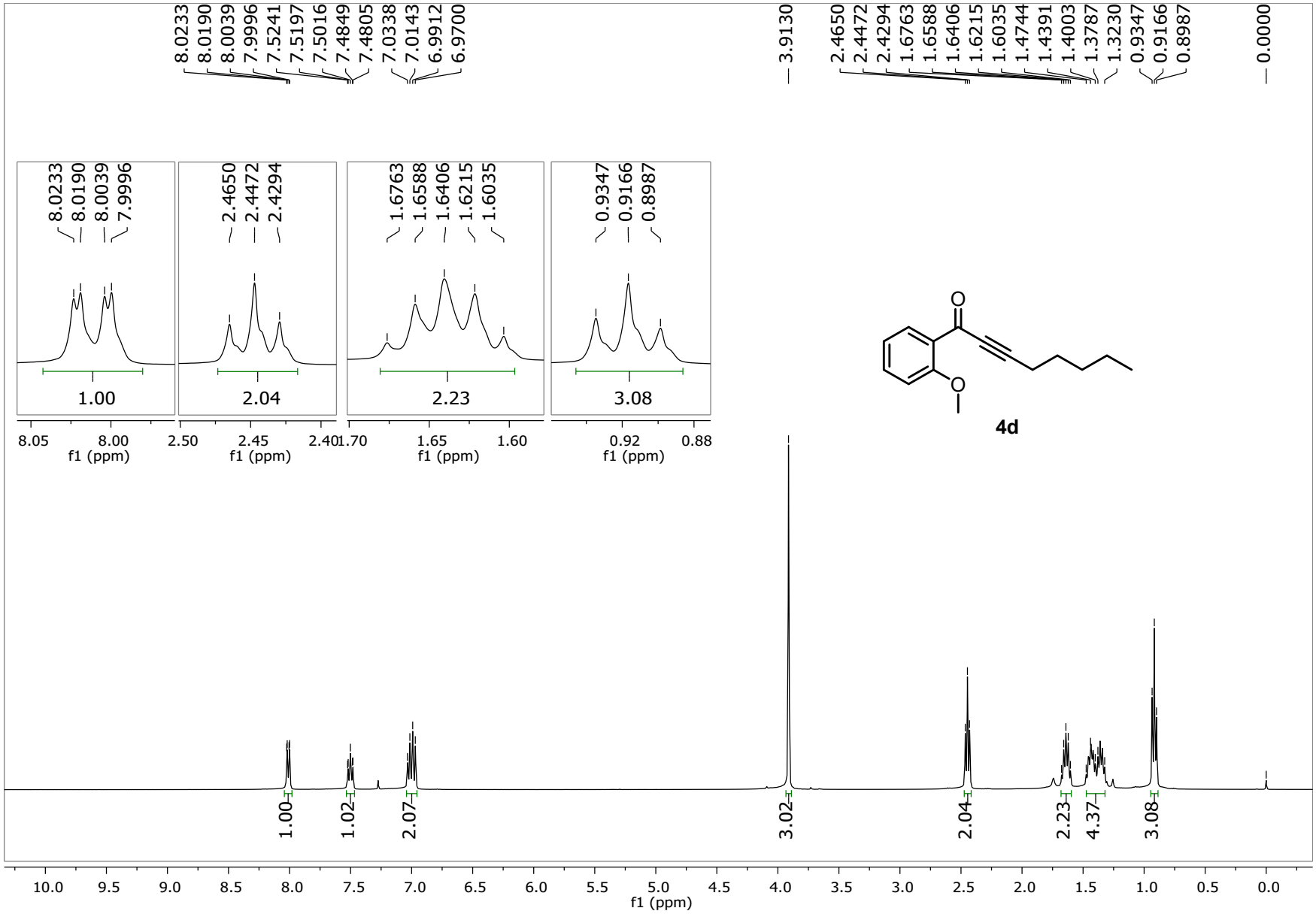

Figure S11: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **4d**.

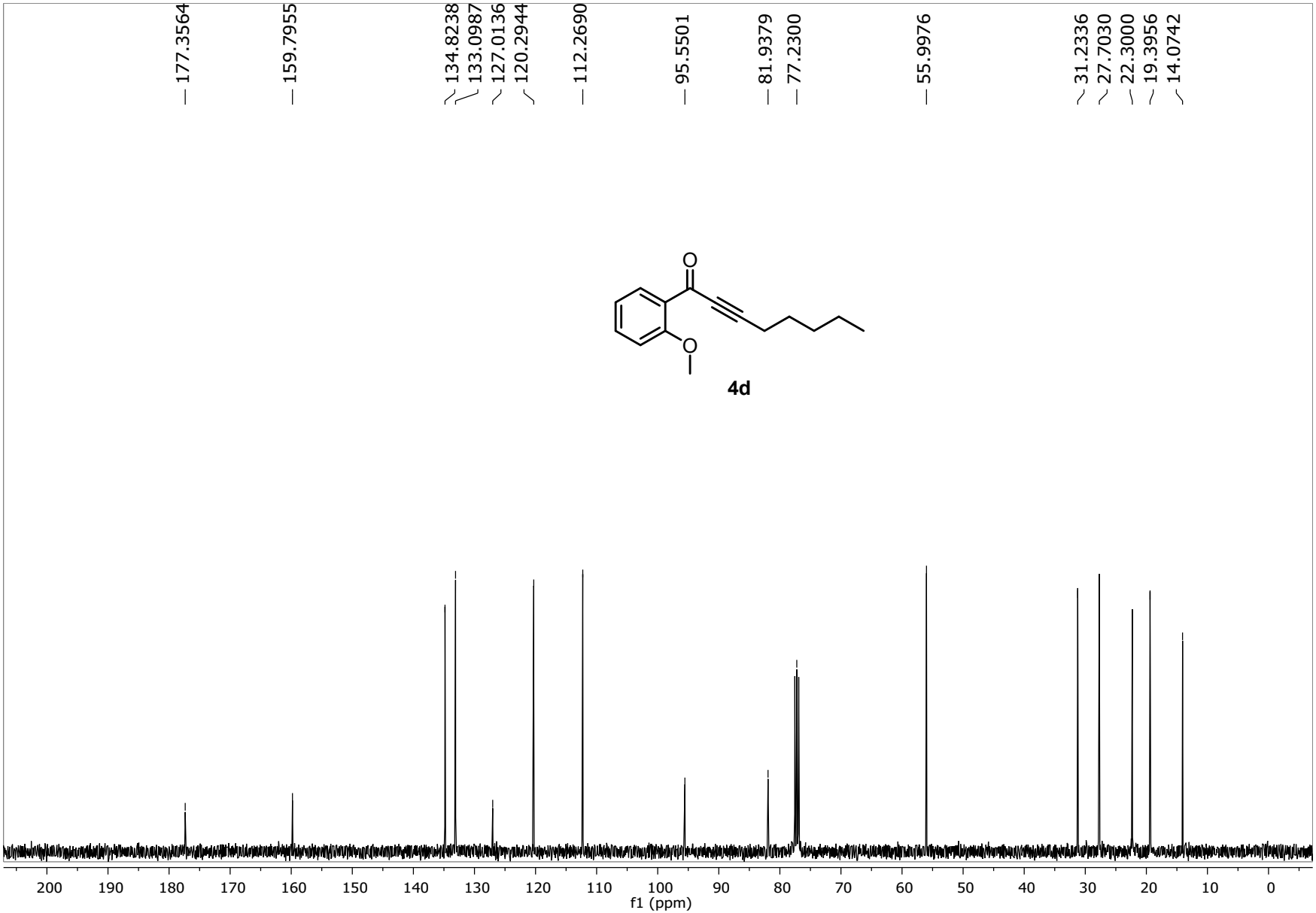

Figure S12: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **4d**.

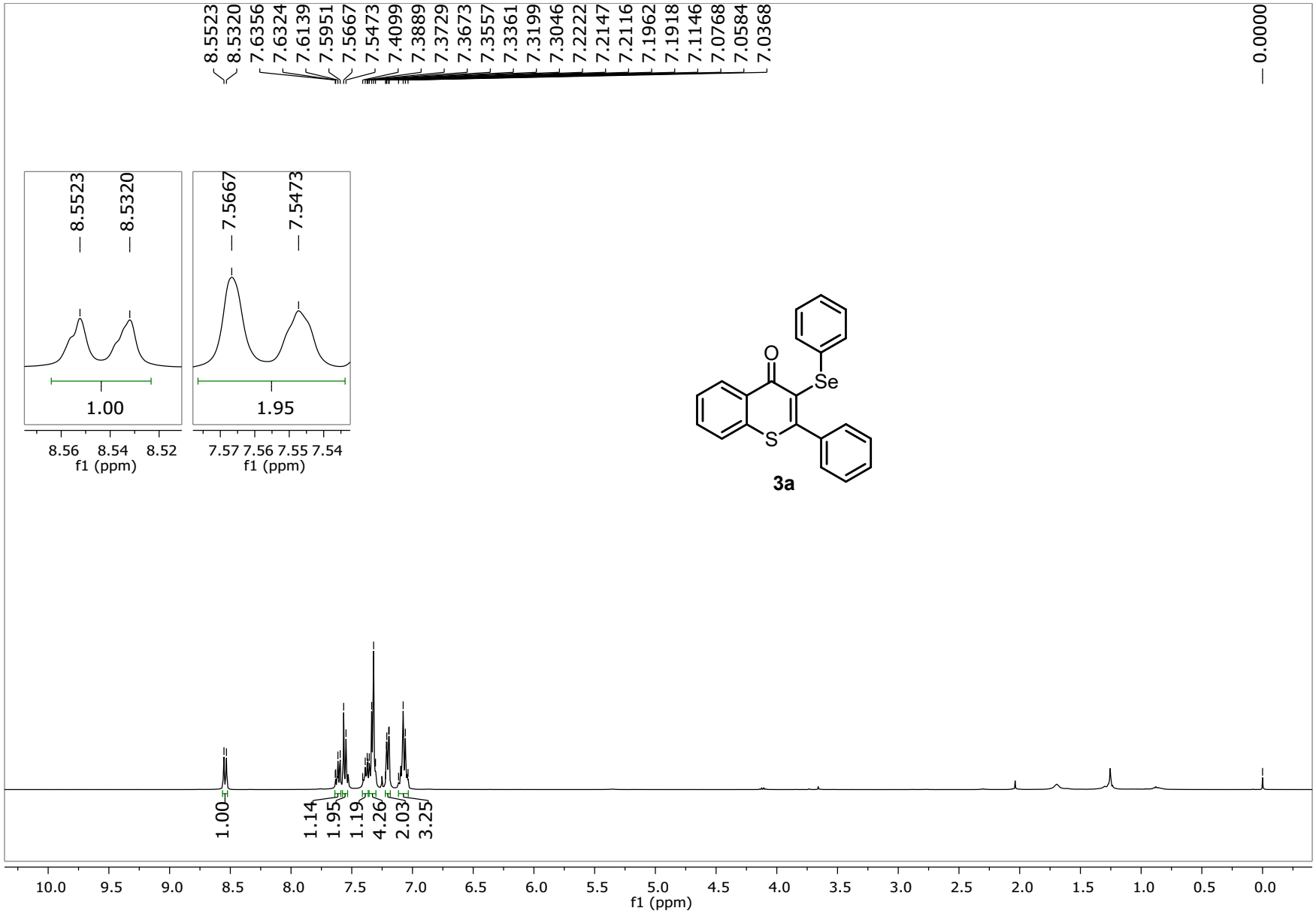

Figure S13: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3a**.

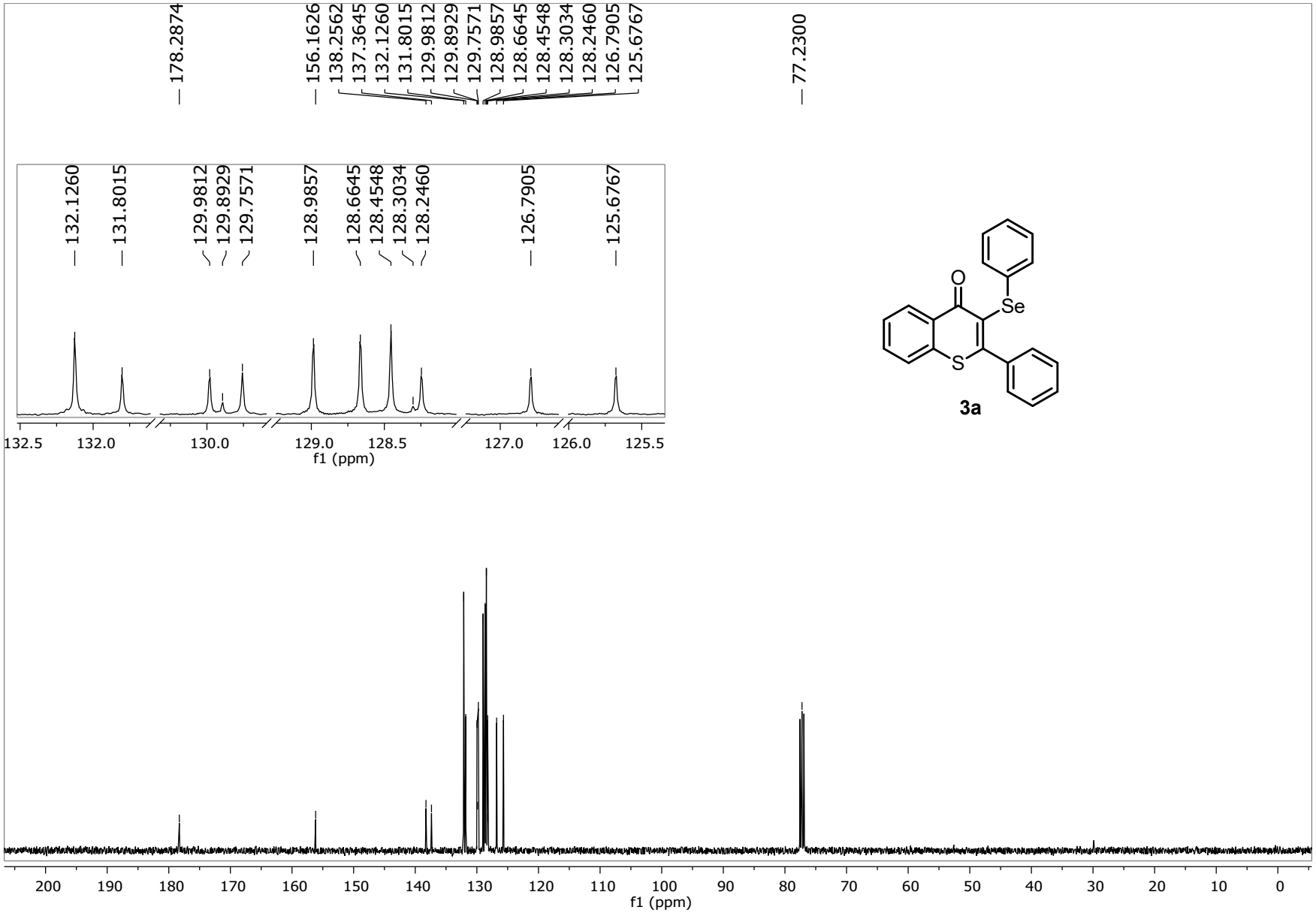

Figure S14: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3a**.

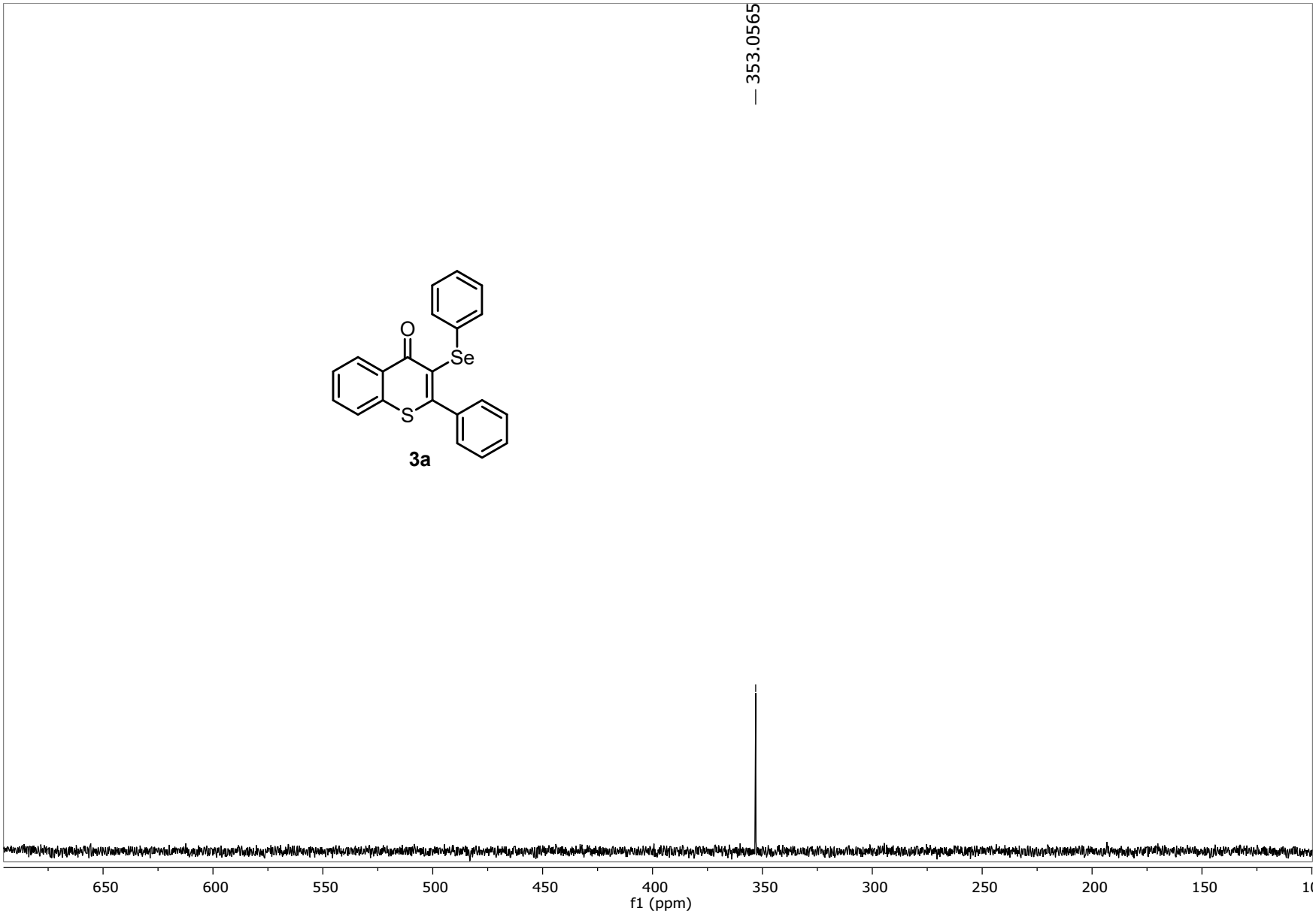

Figure S15: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3a**

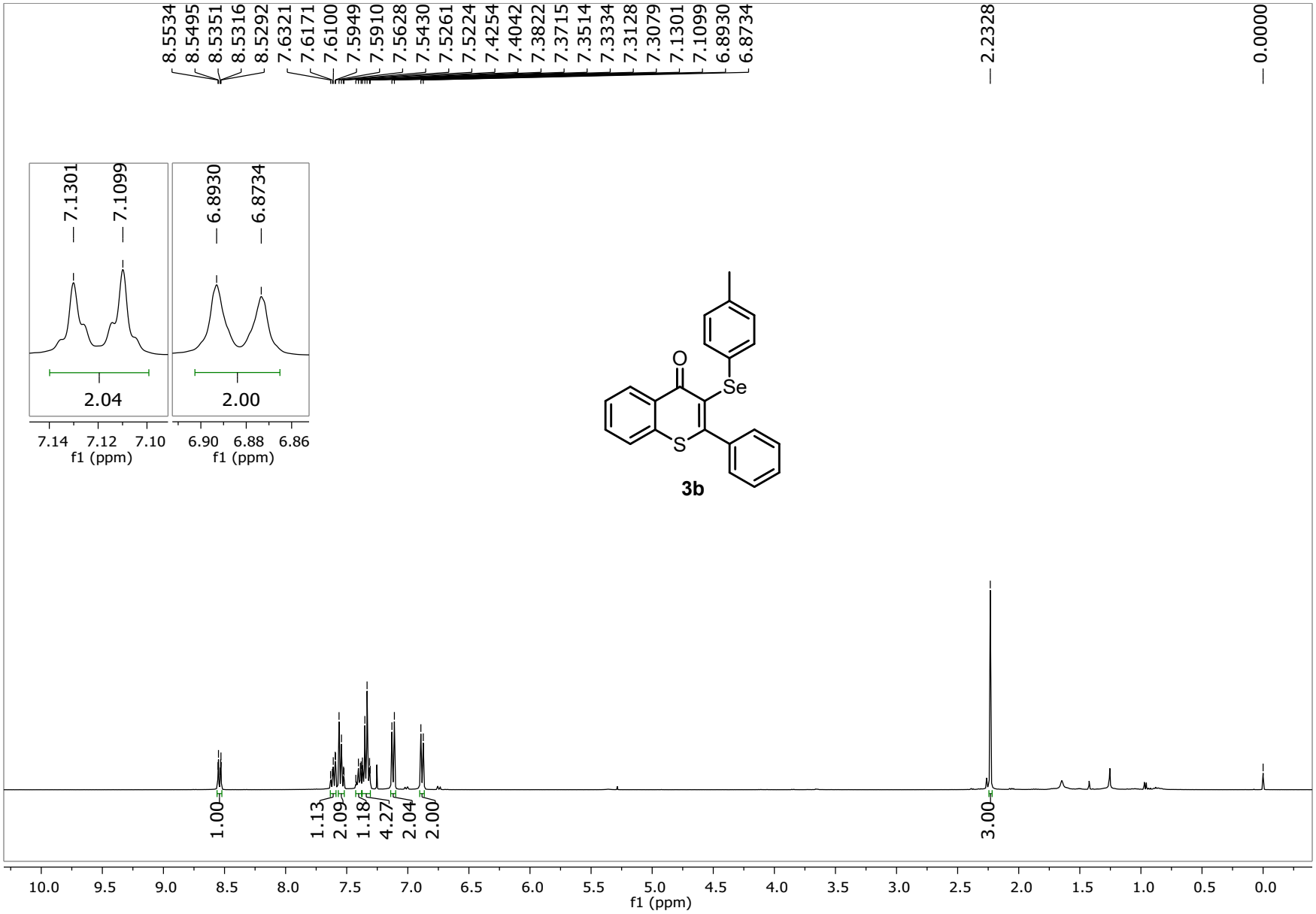

Figure S16: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3b**.

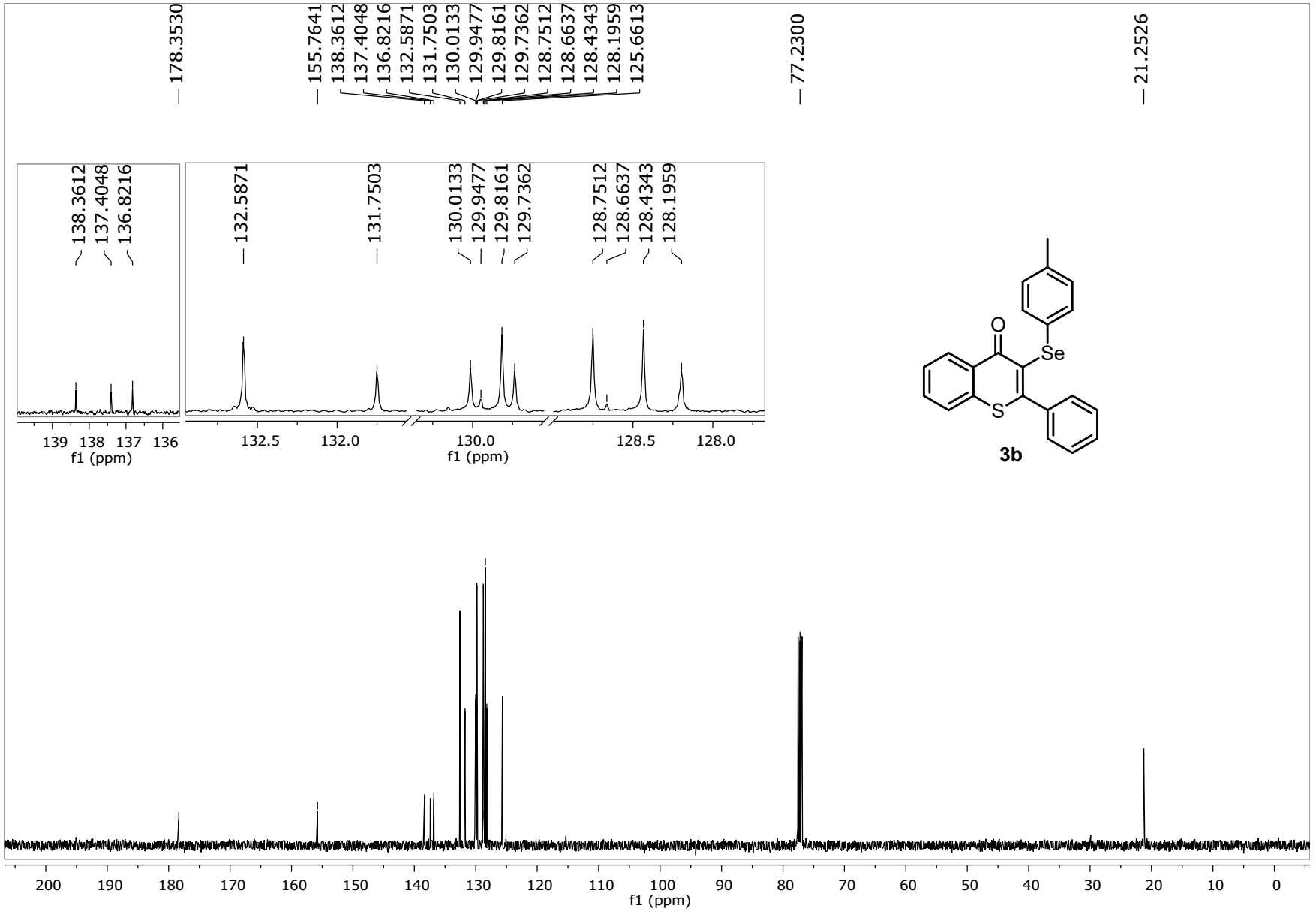

Figure S17: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3b**.

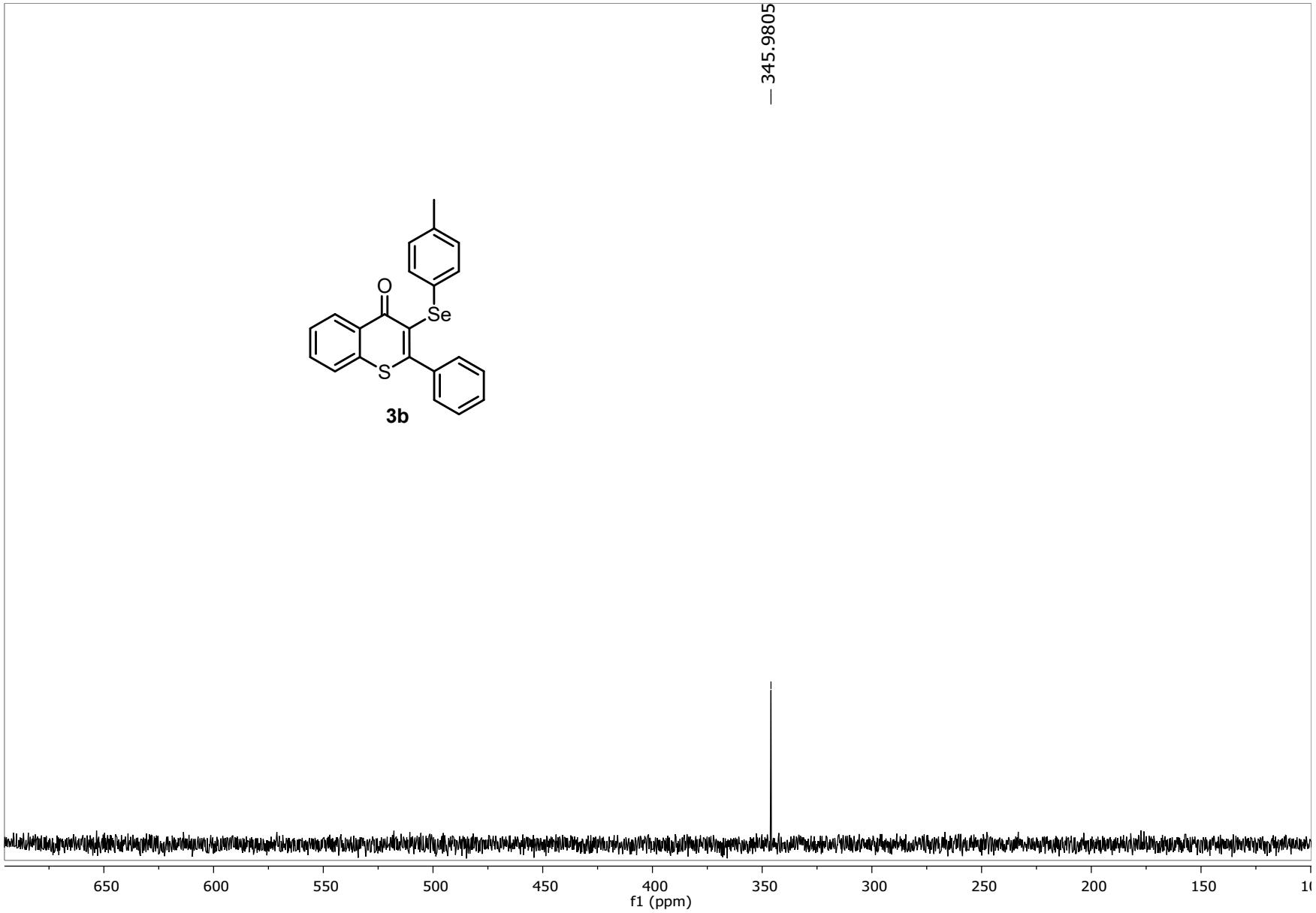

Figure S18: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3b**.

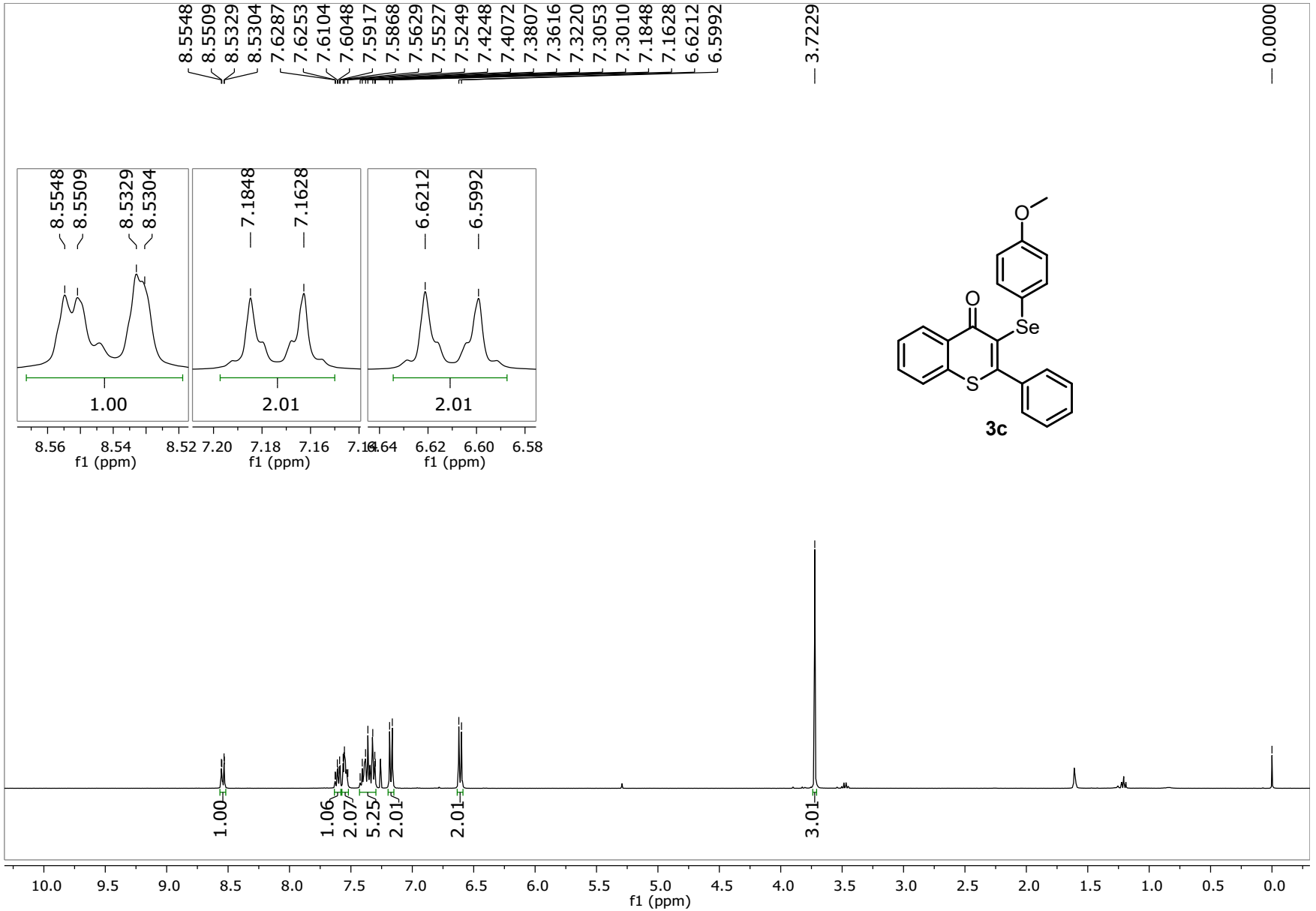

Figure S19: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3c**.

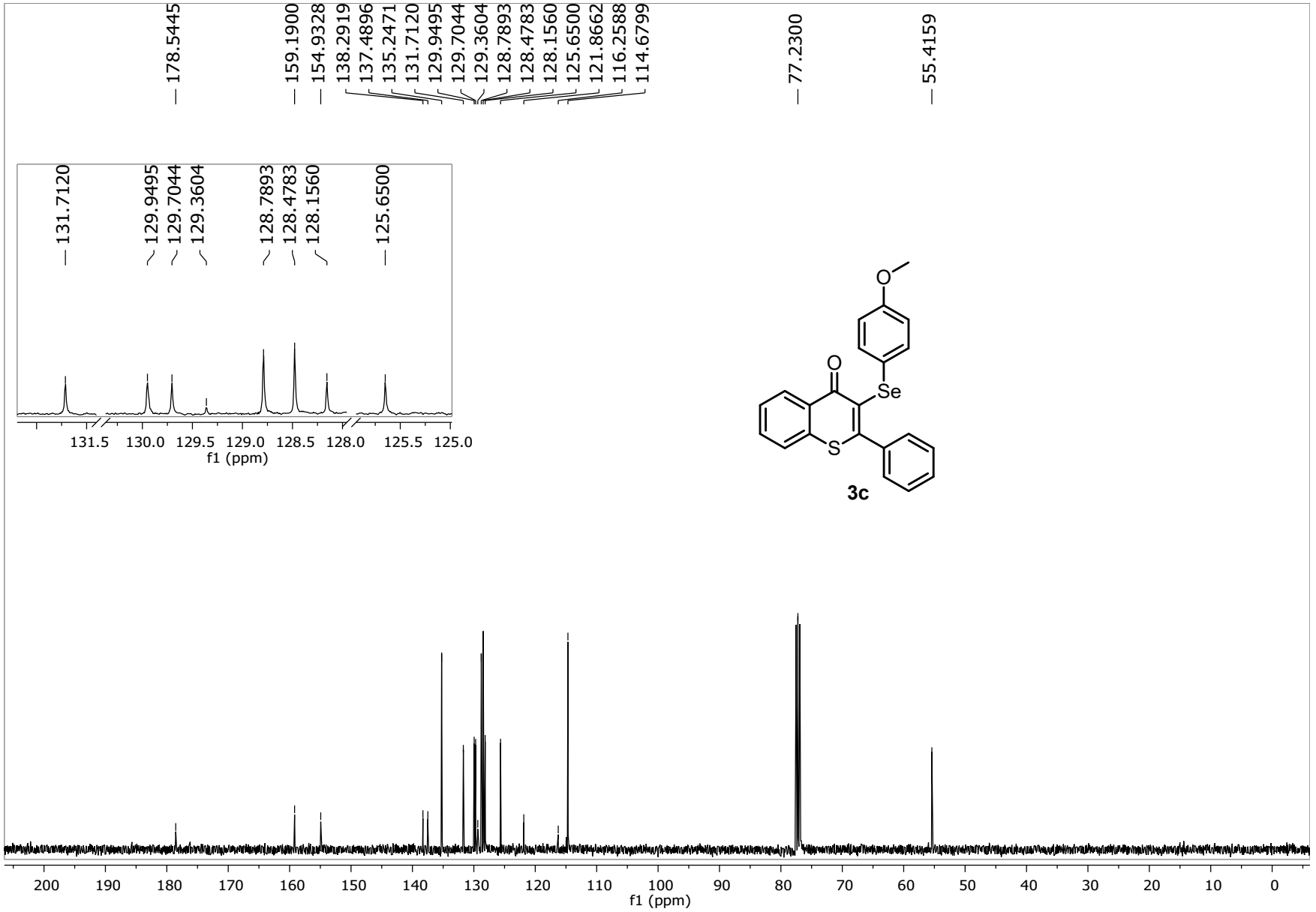

Figure S20: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3c**.

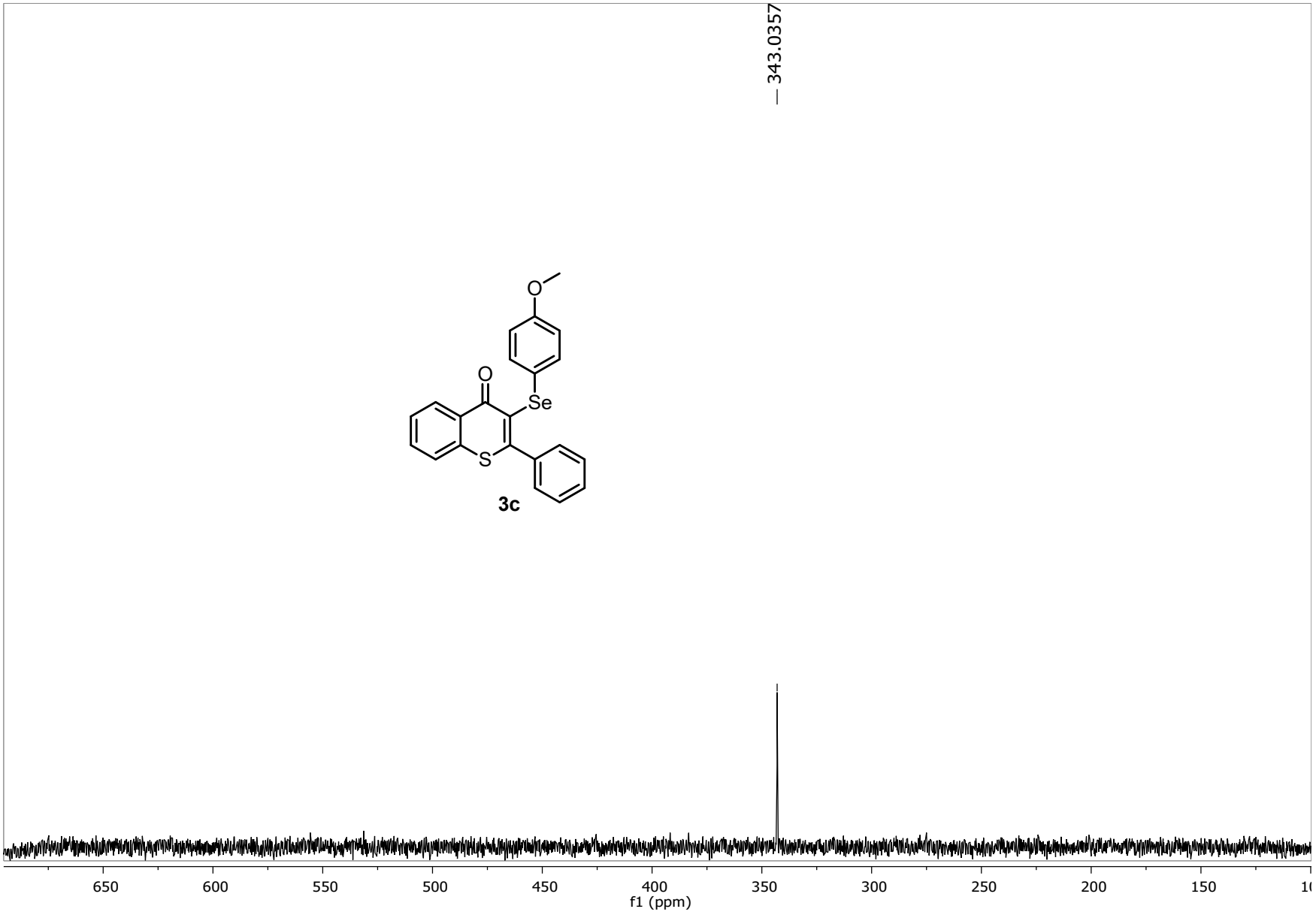

Figure S21: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3c**.

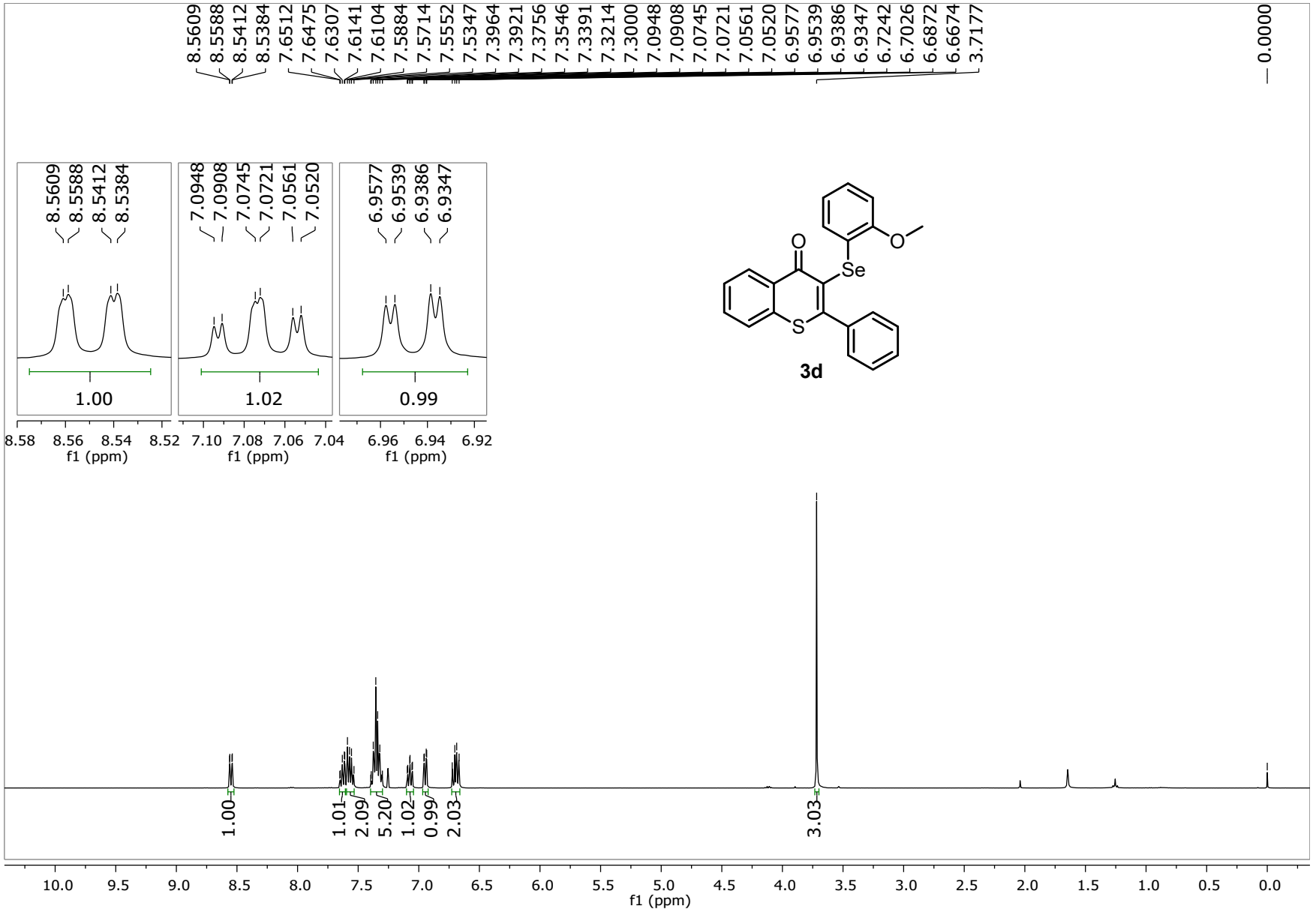

Figure S22: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3d**.

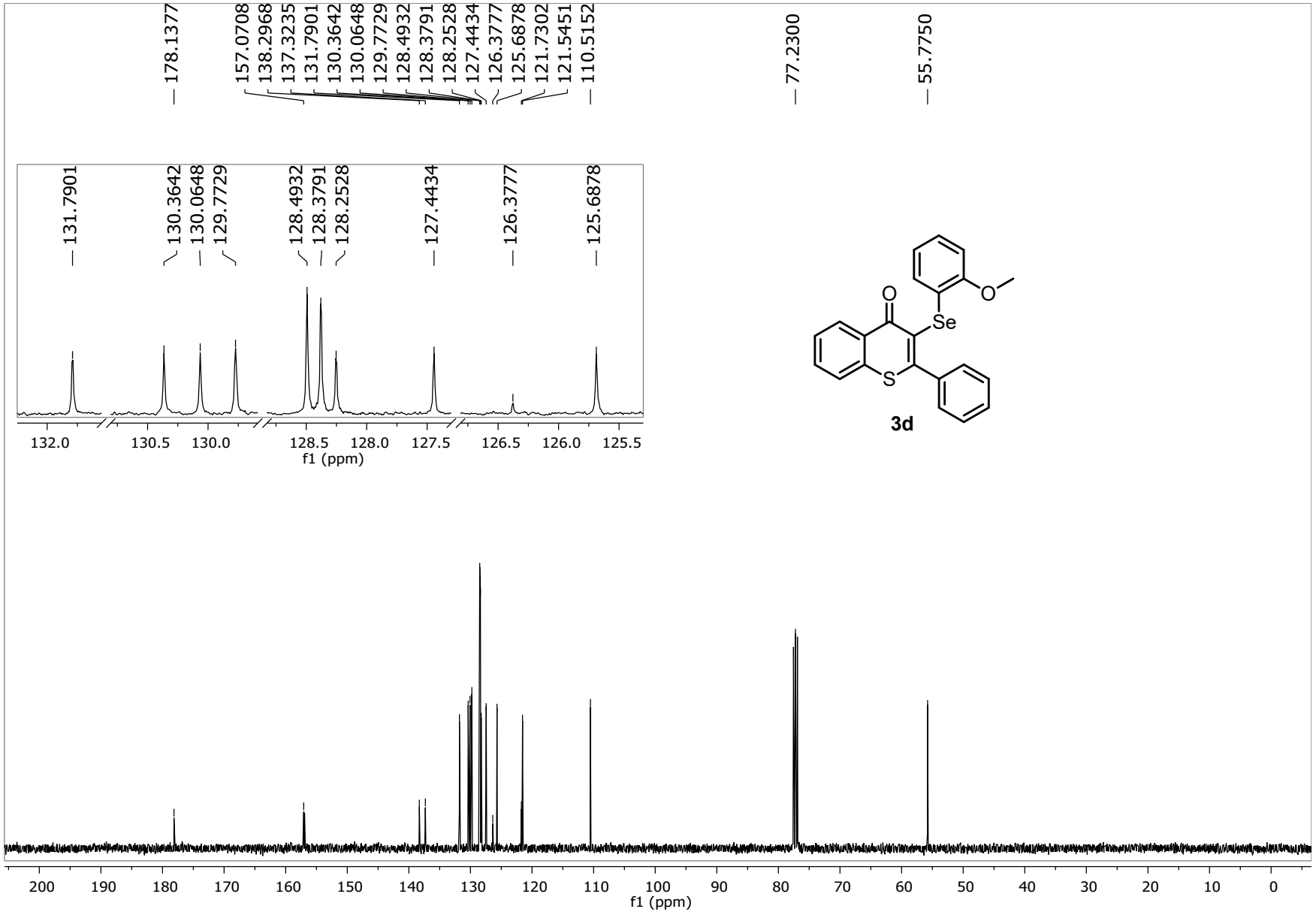

Figure S23: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3d**.

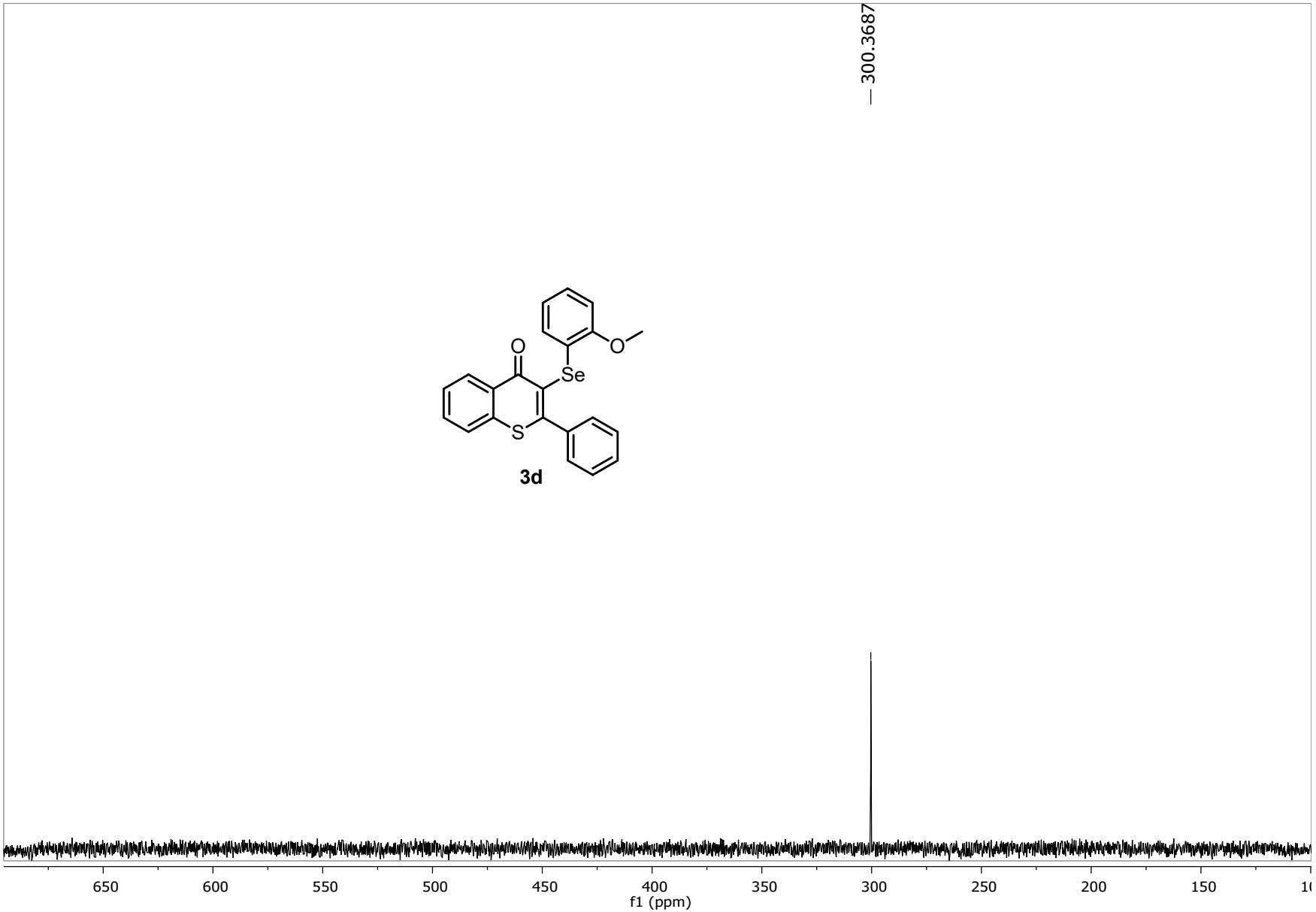

Figure S24: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3d**.

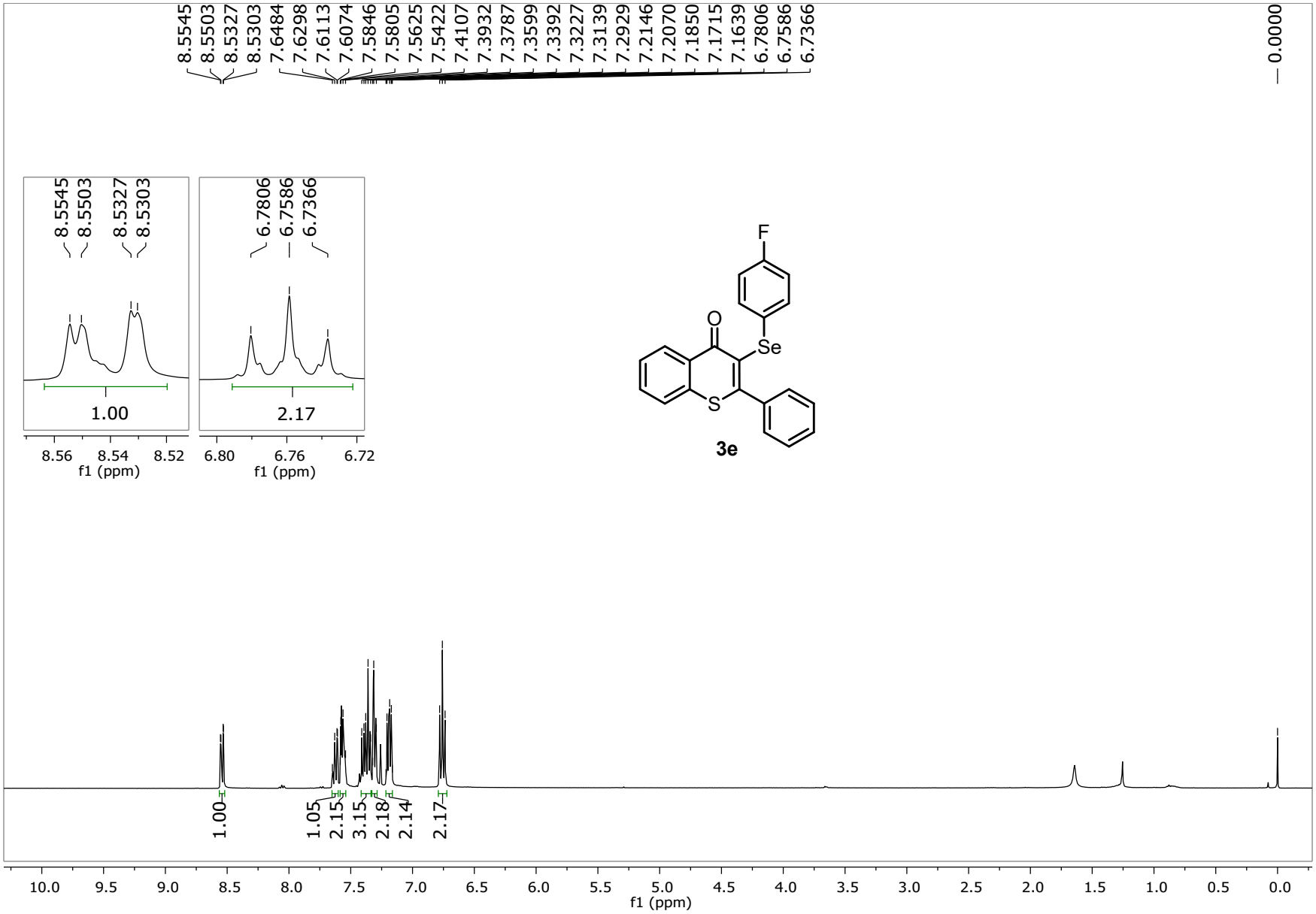

Figure S25: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3e**.

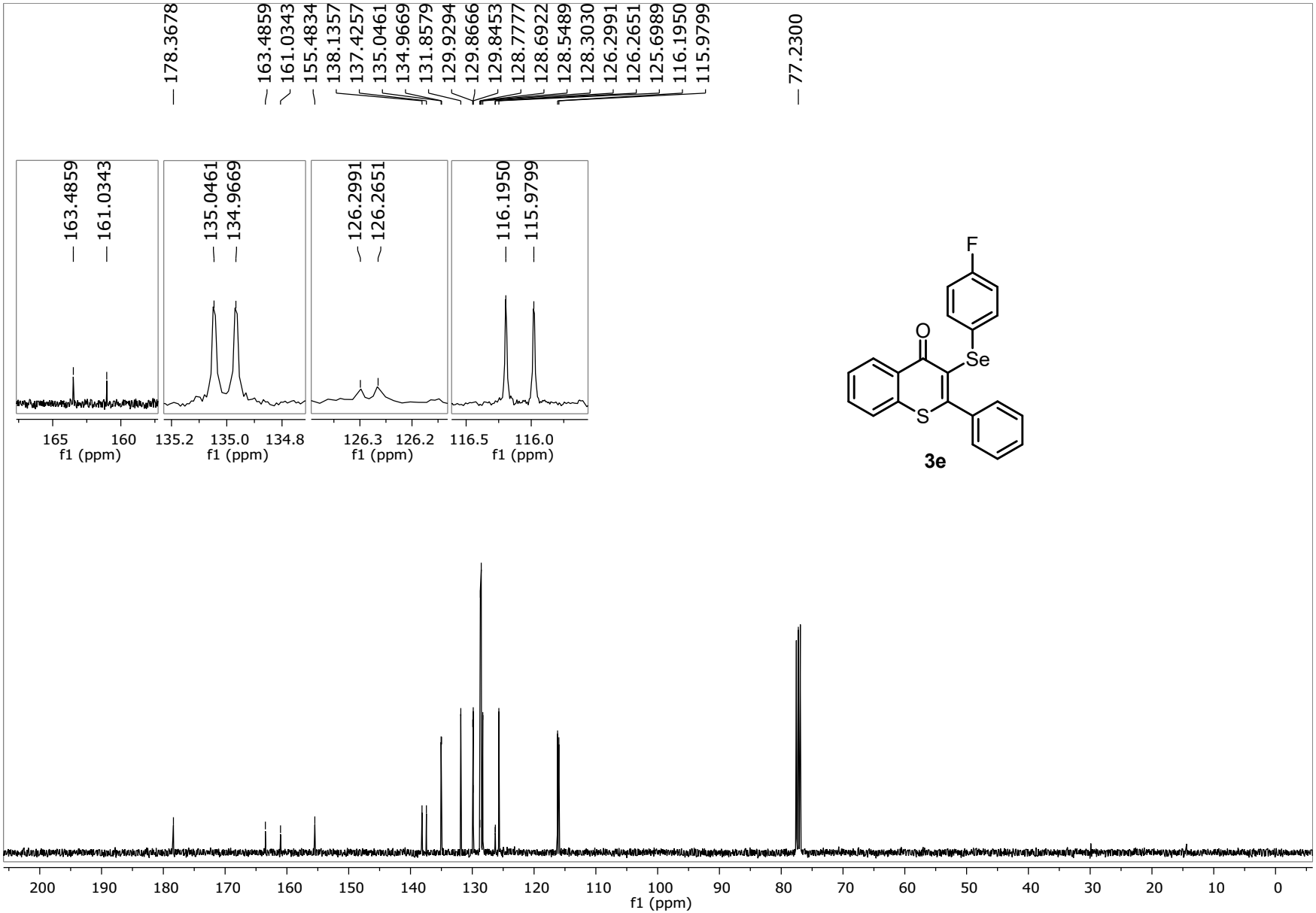

Figure S26: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3e**.

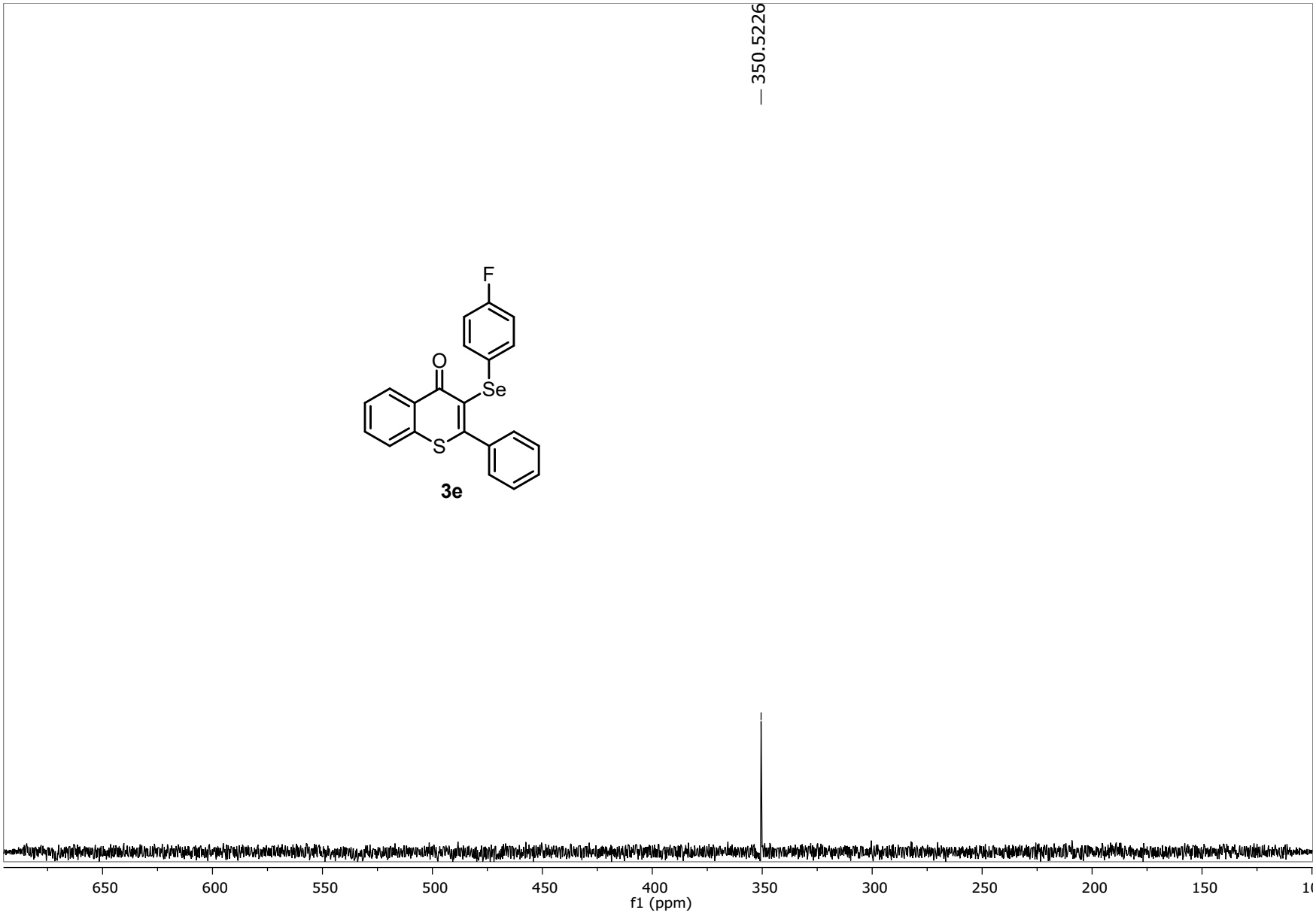

Figure S27: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3e**.

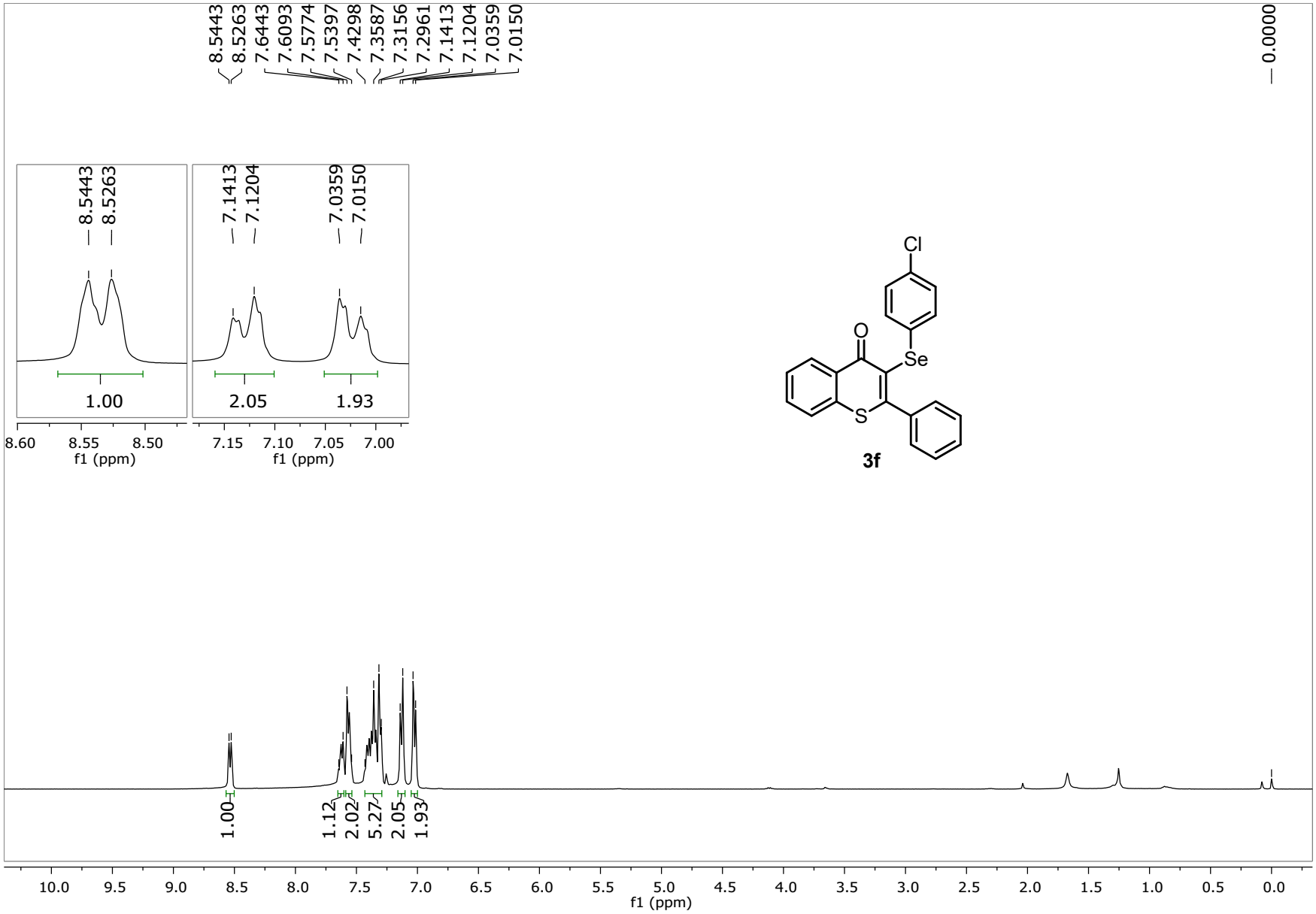

Figure S28: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3f**.

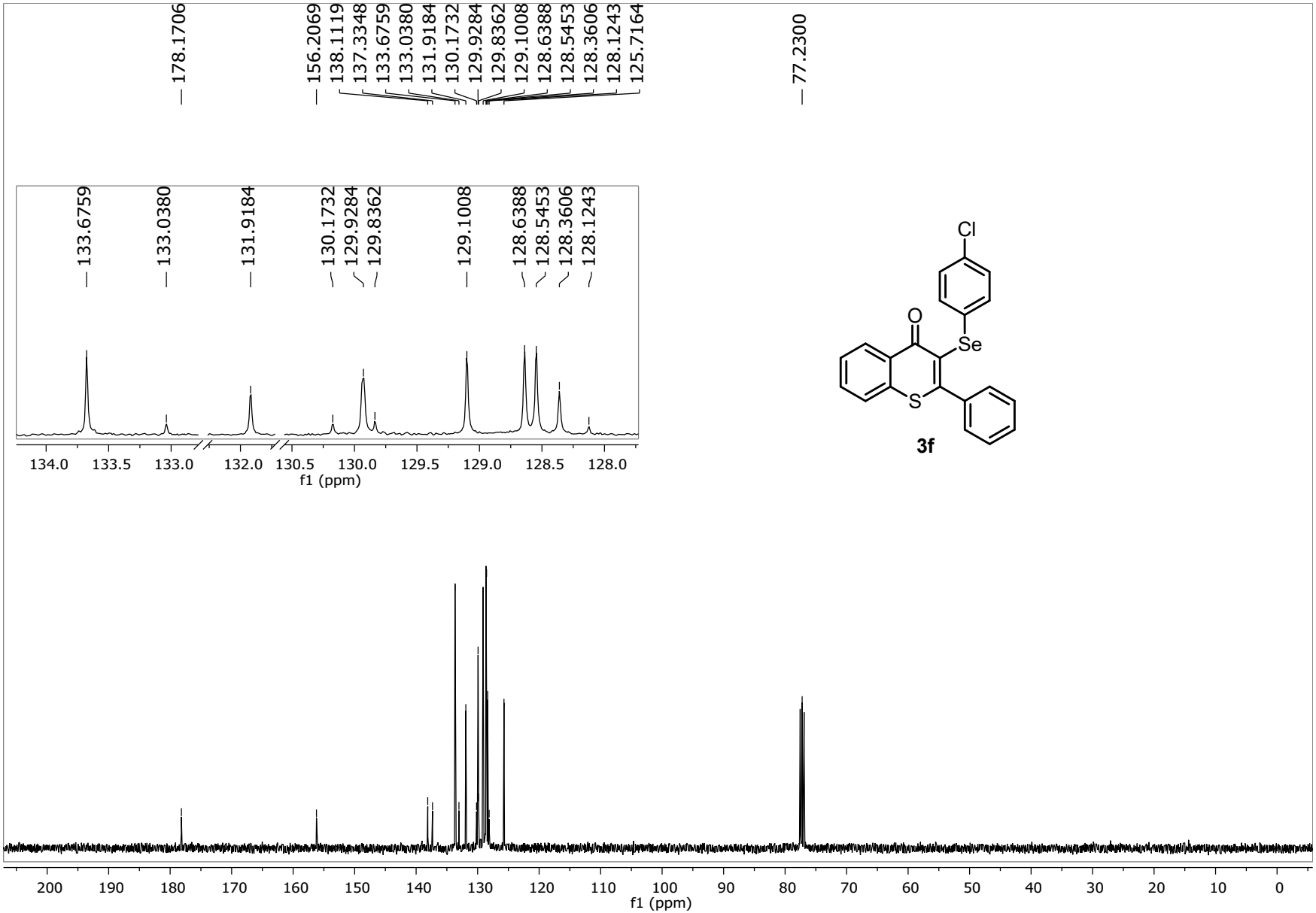

Figure S29: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3f**.

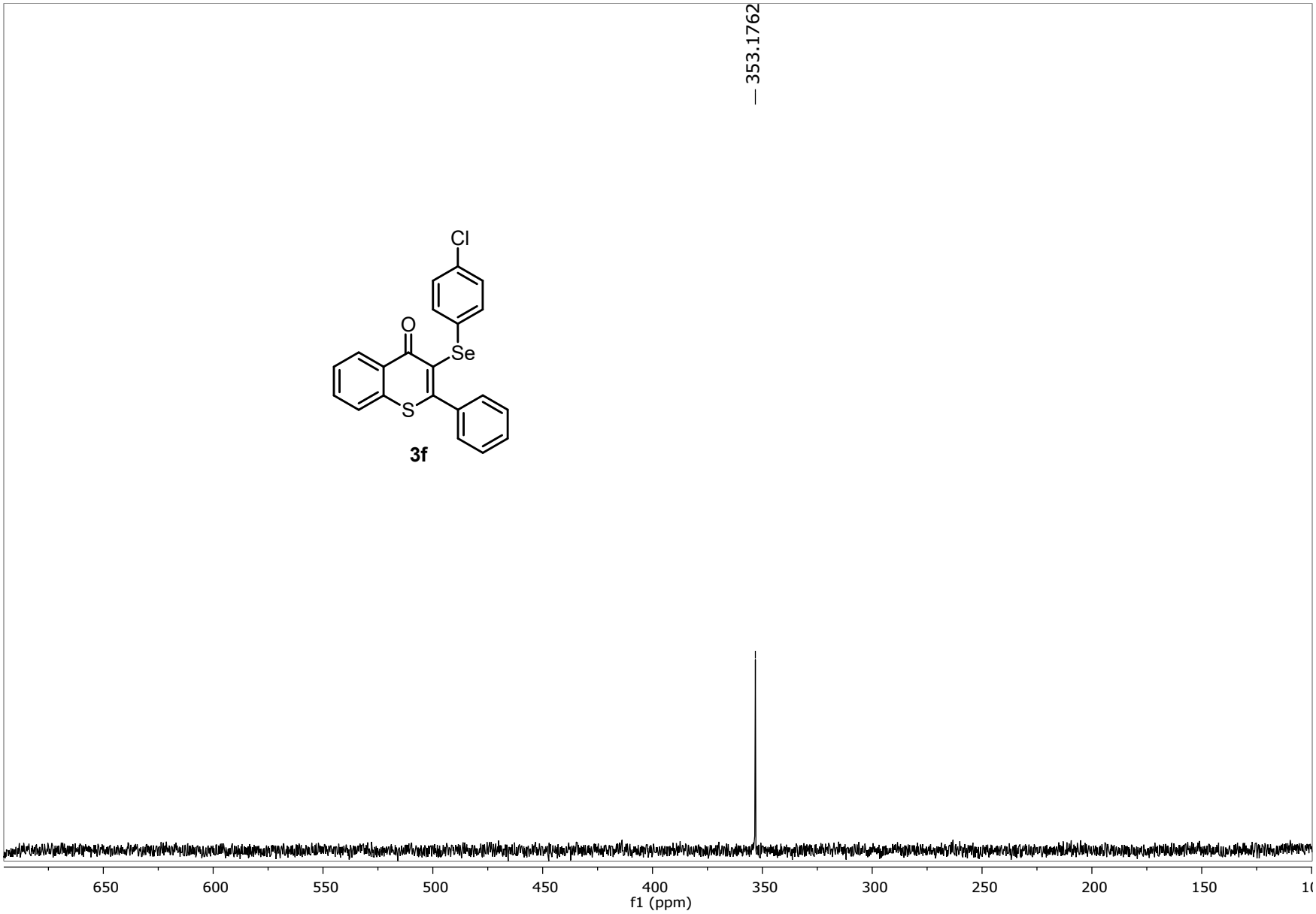

Figure S30: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3f**.

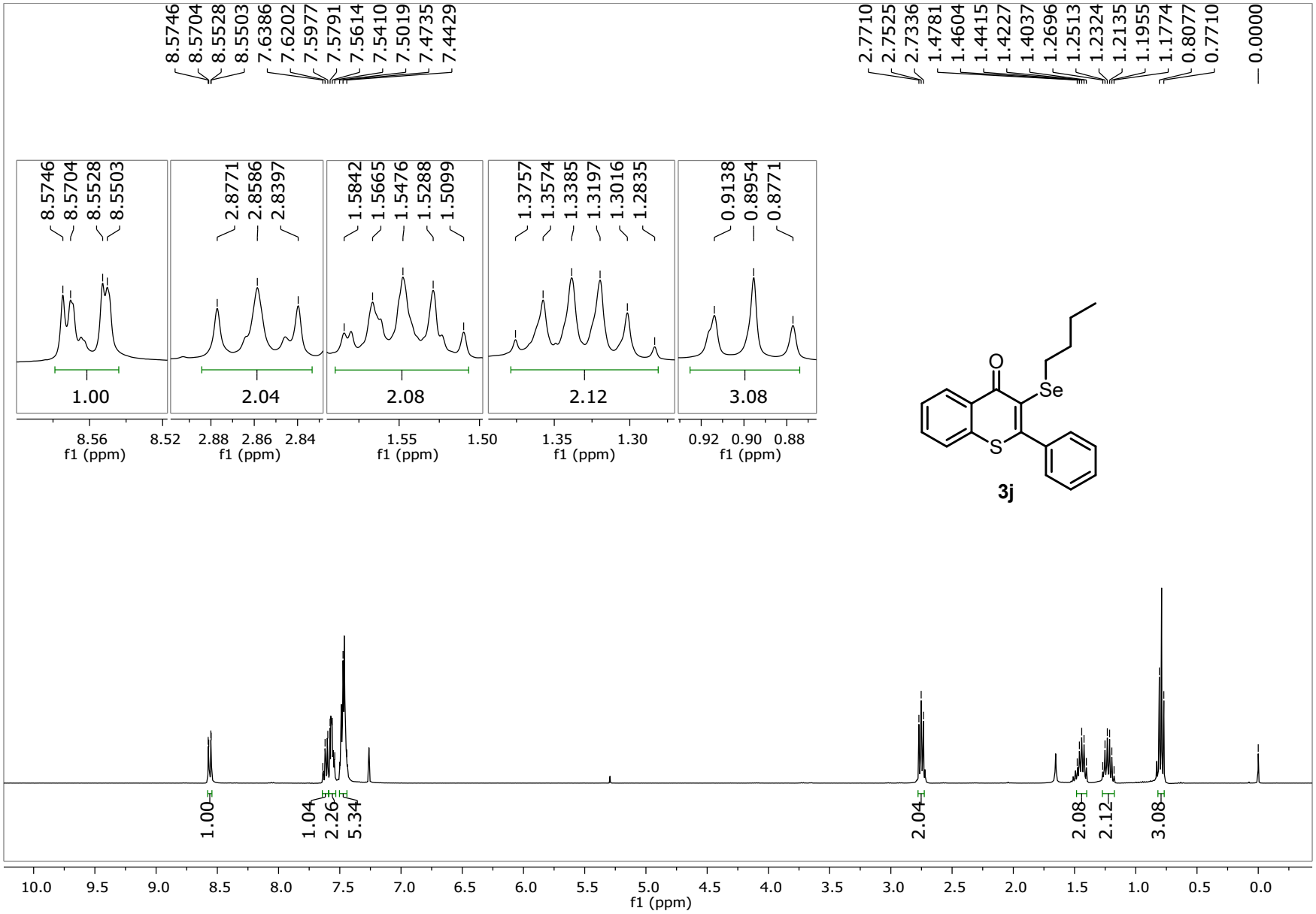

Figure S31: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3j**.

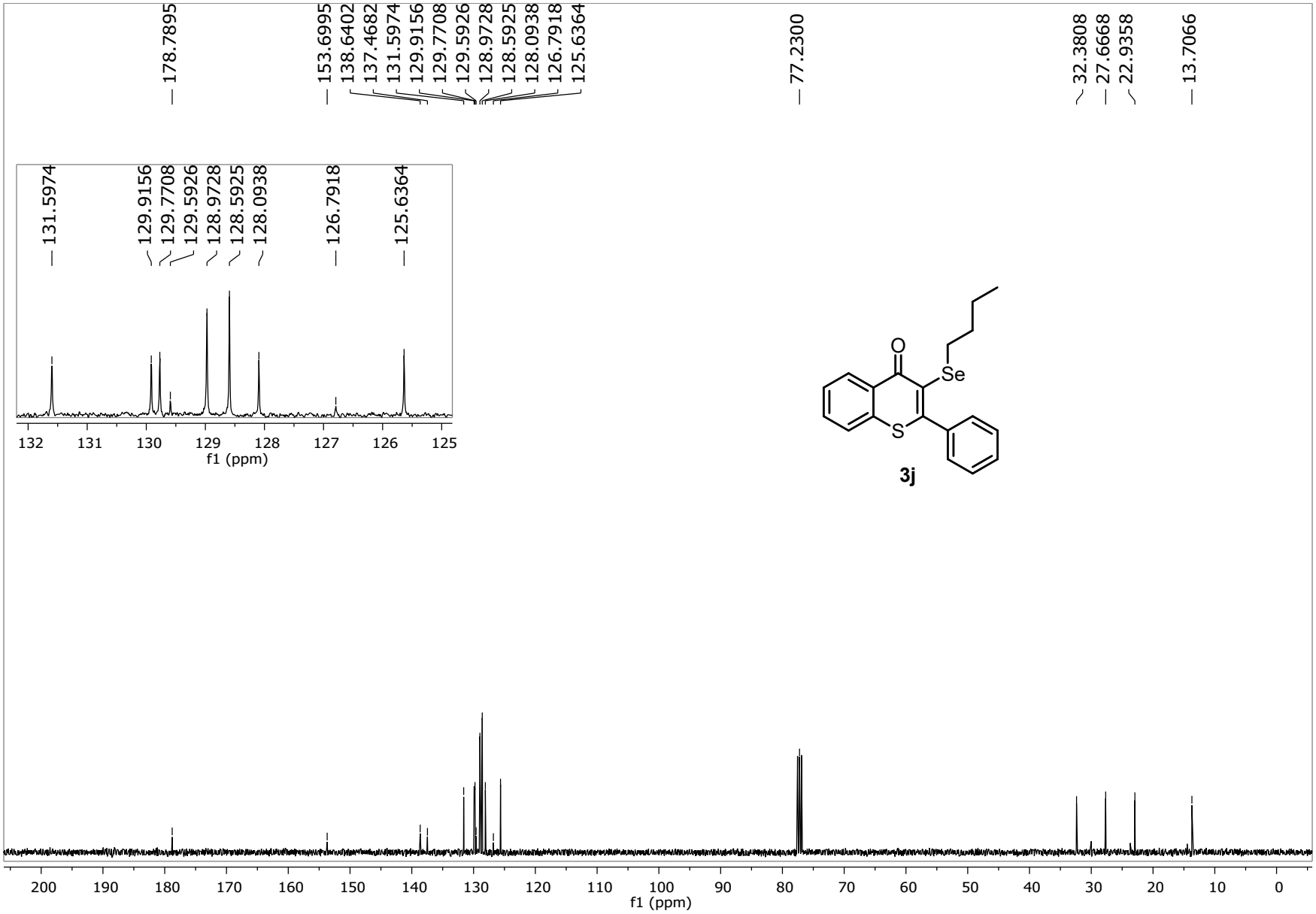

Figure S32: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3j**.

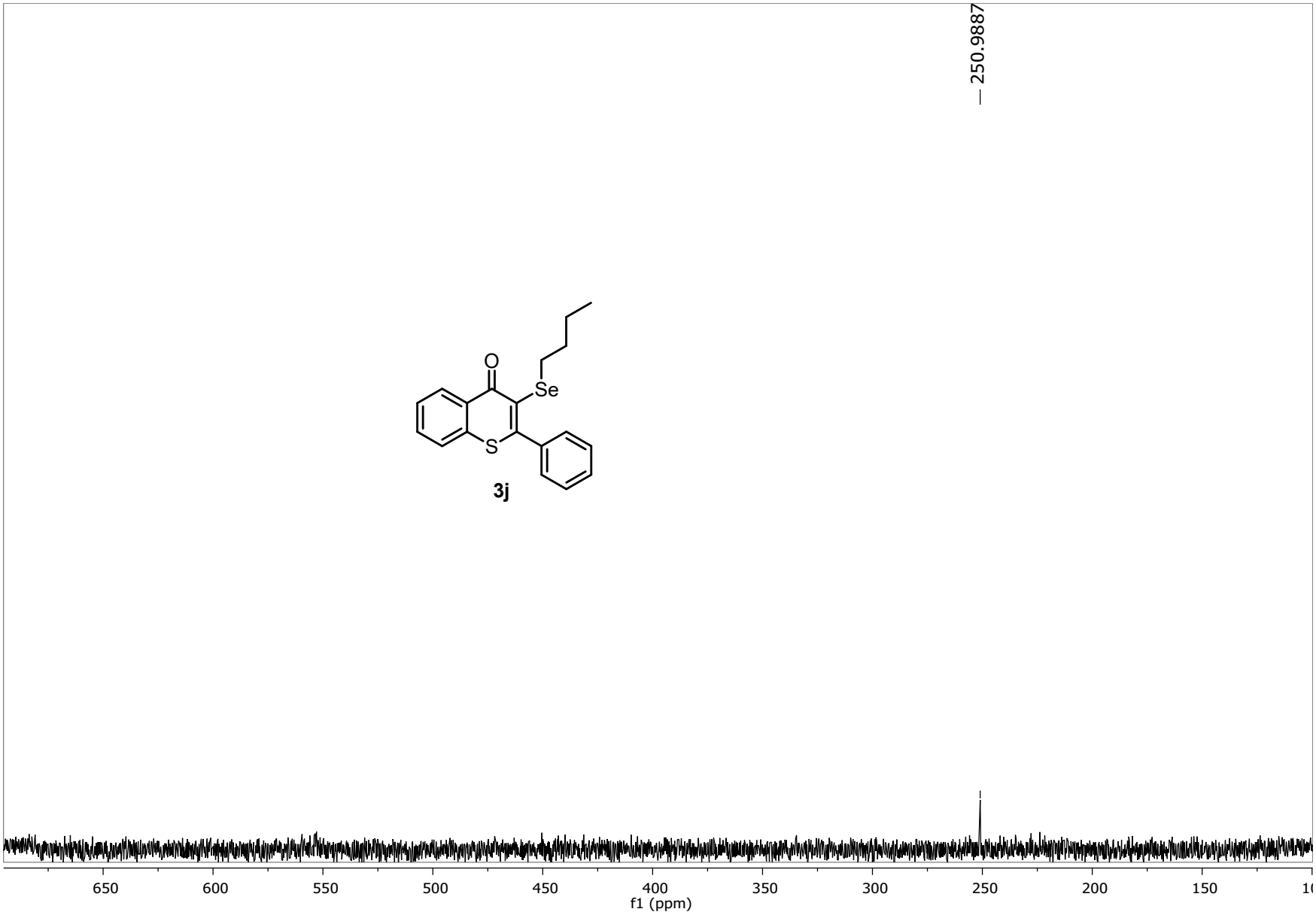

Figure S33: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3j**.

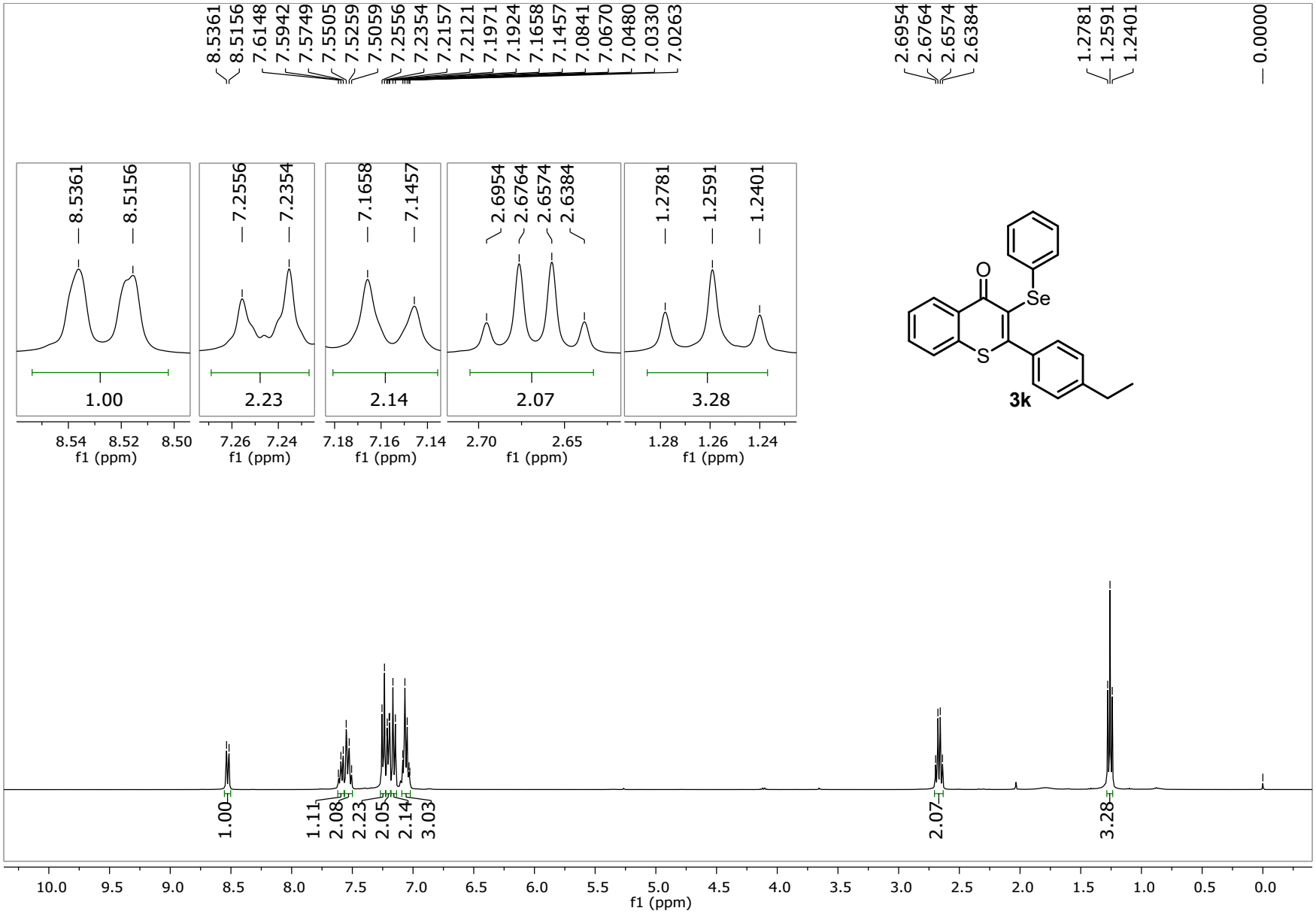

Figure S34: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3k**.

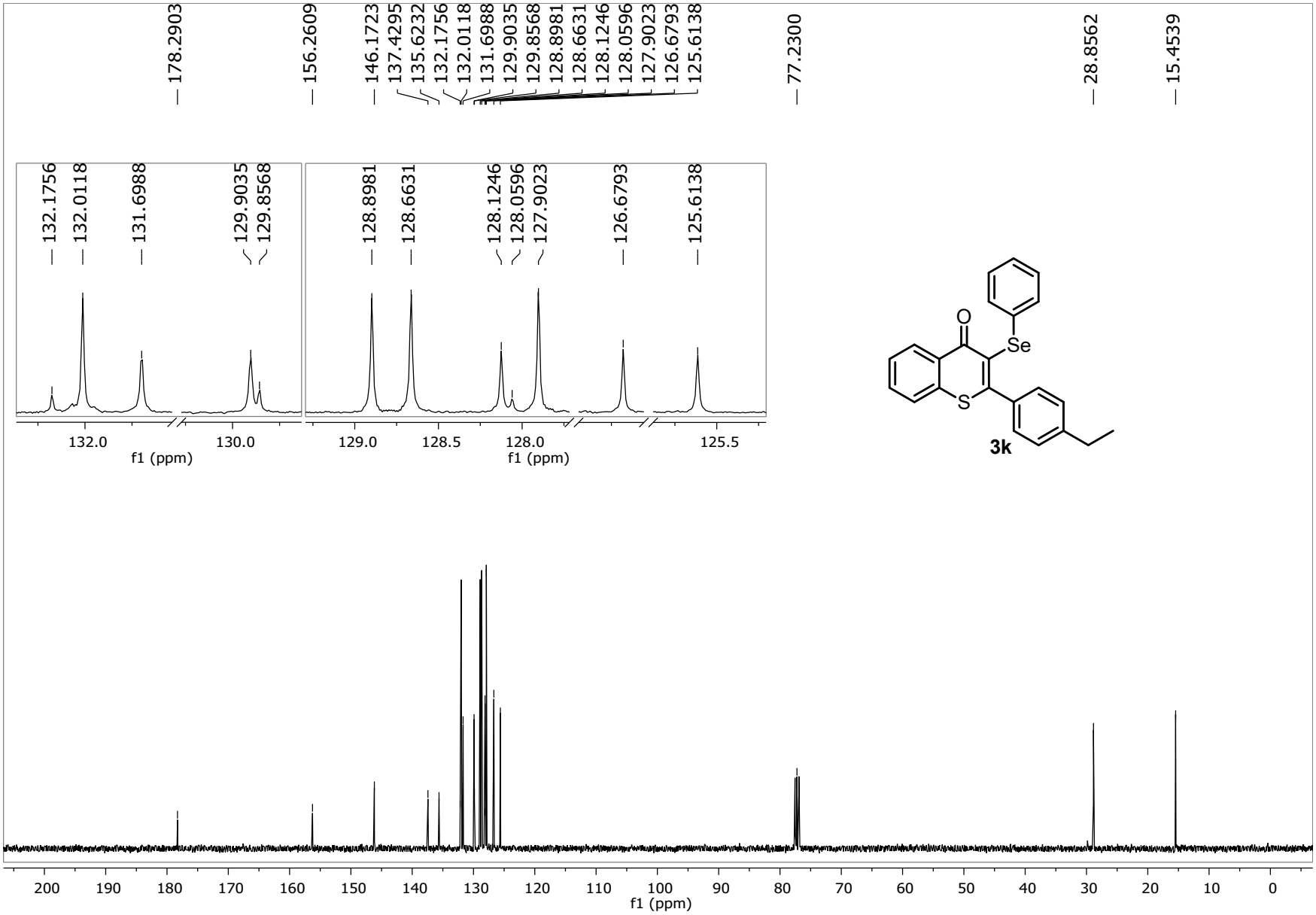

Figure S35: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3k**.

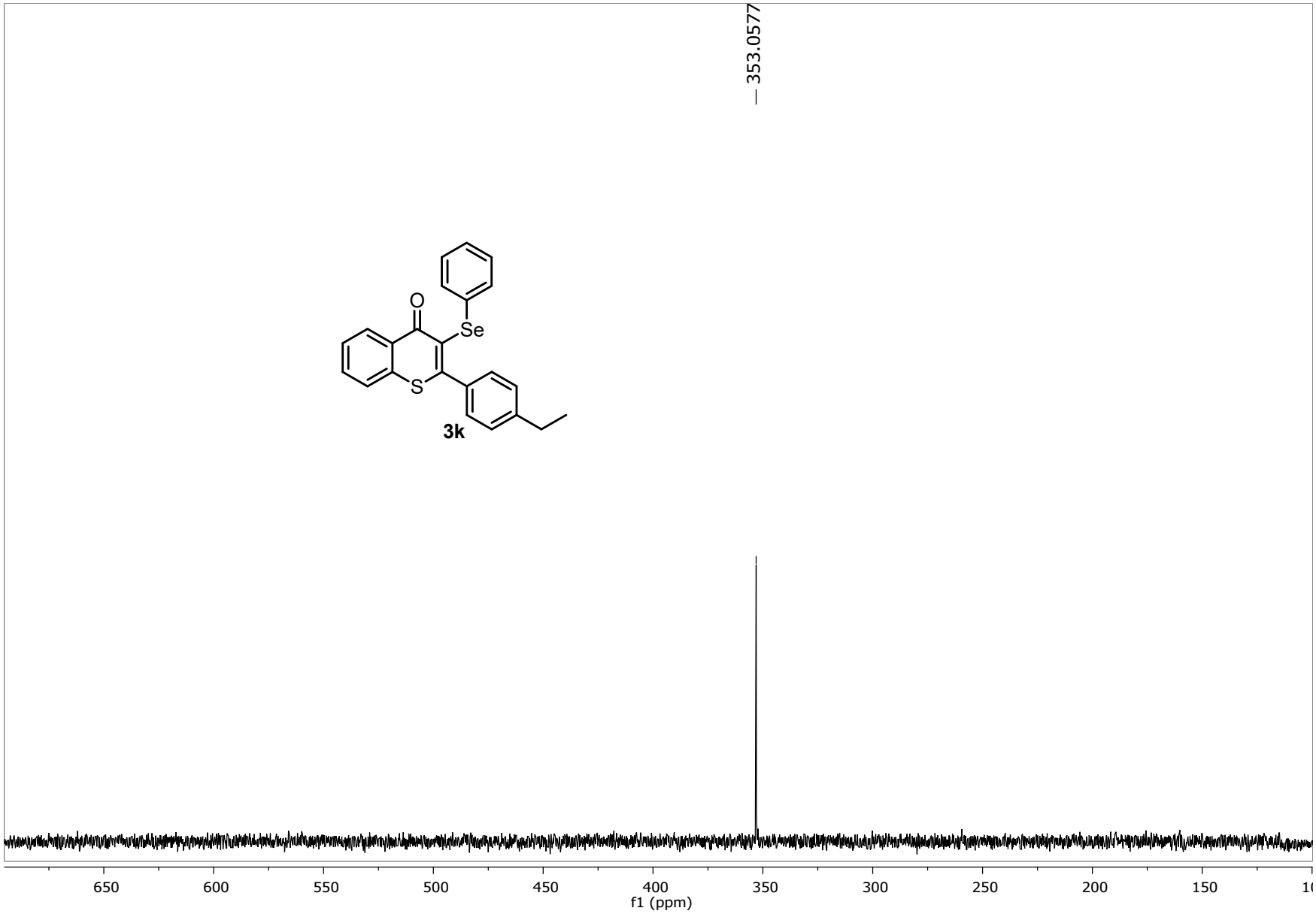

Figure S36: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3k**.

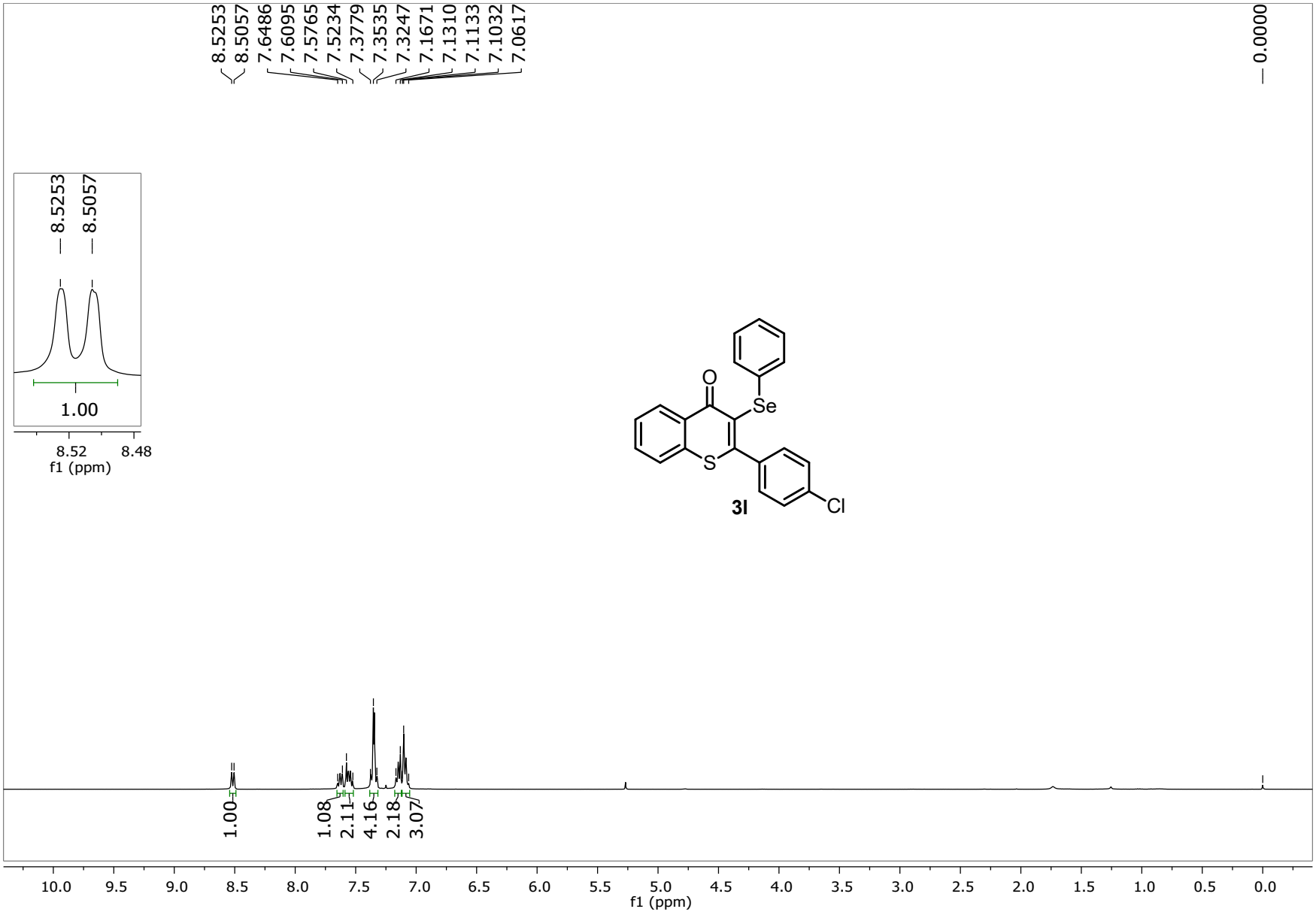

Figure S37: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3l**.

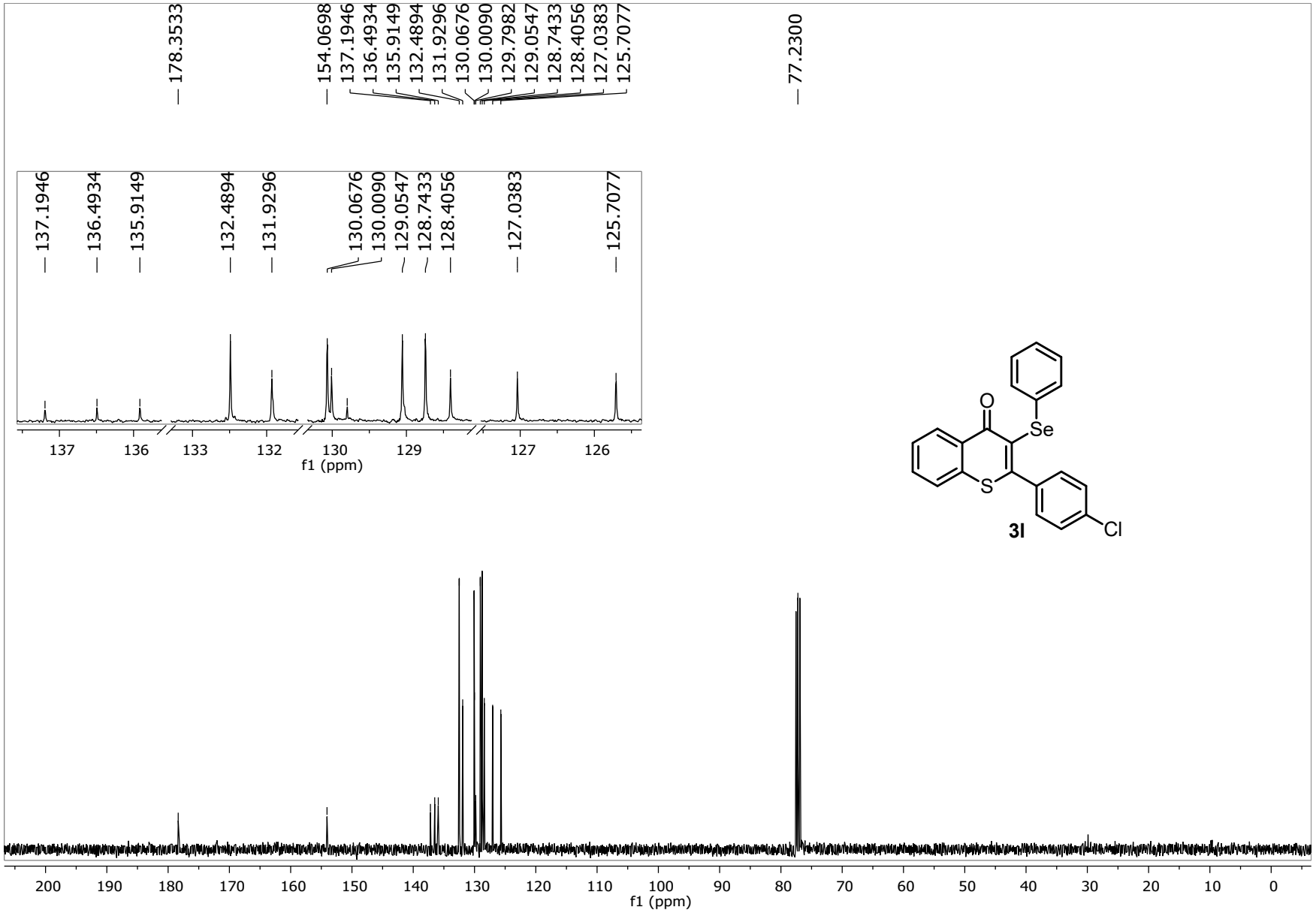

Figure S38: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3l**.

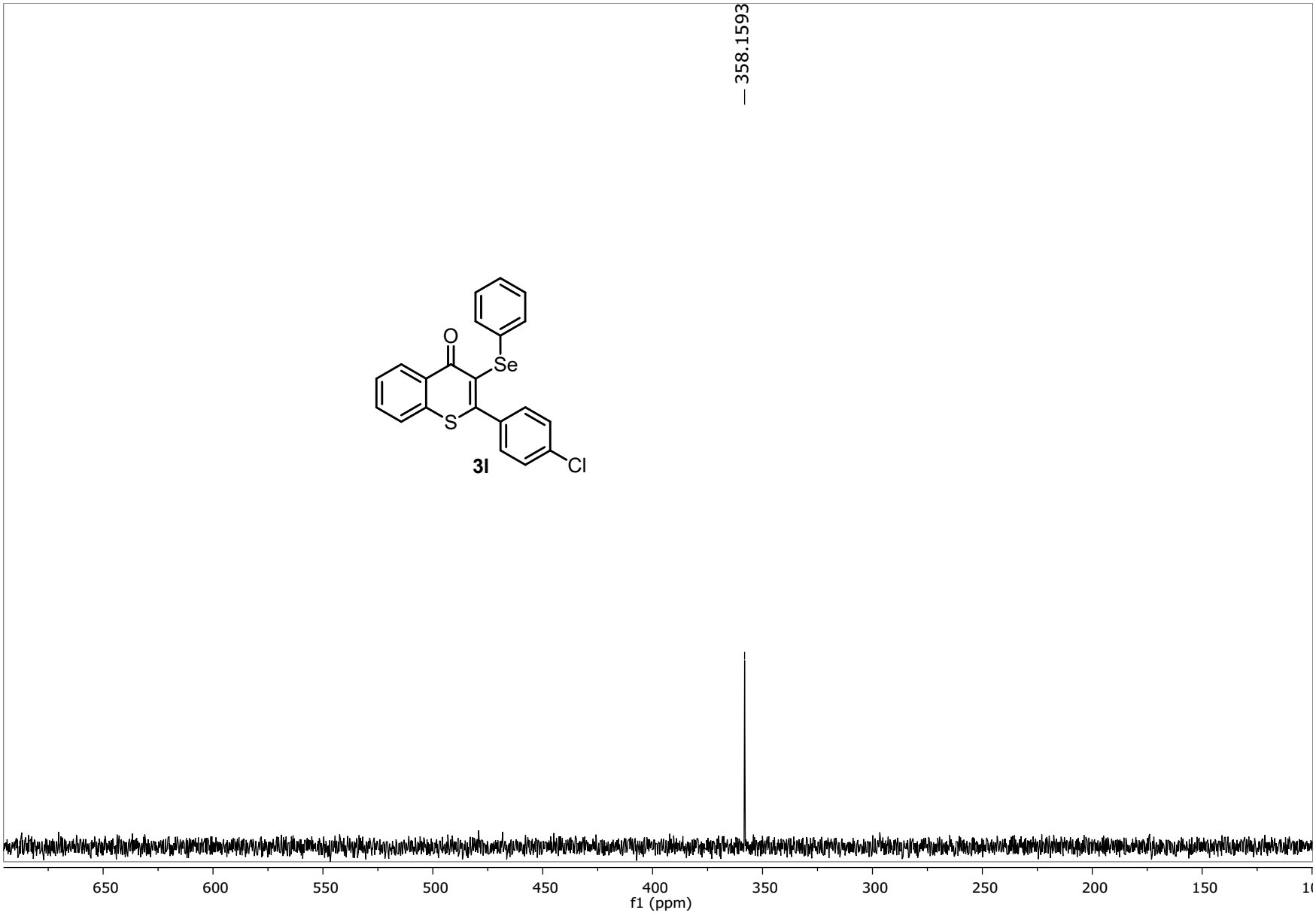

Figure S39: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3l**.

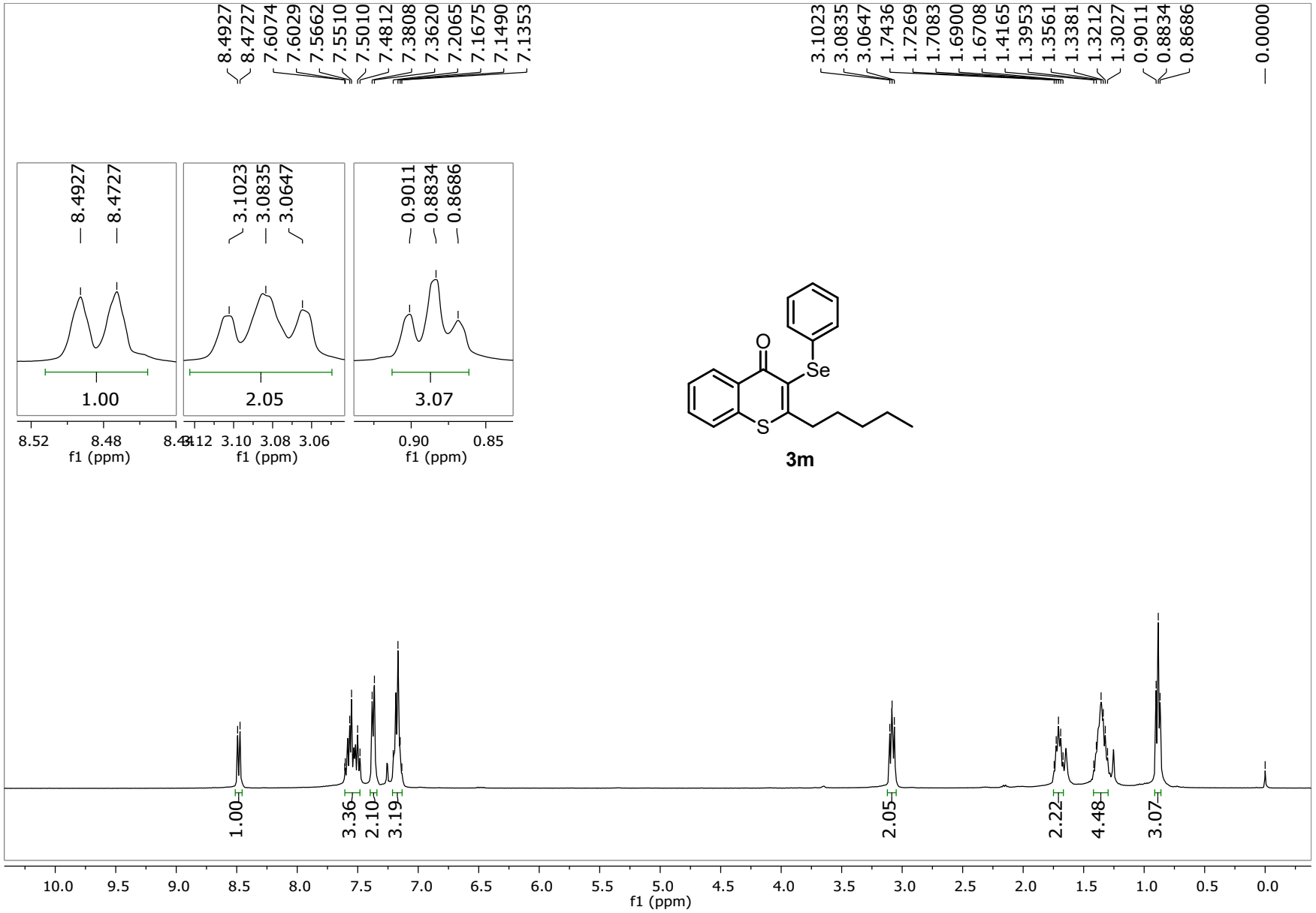

Figure S40: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **3m**.

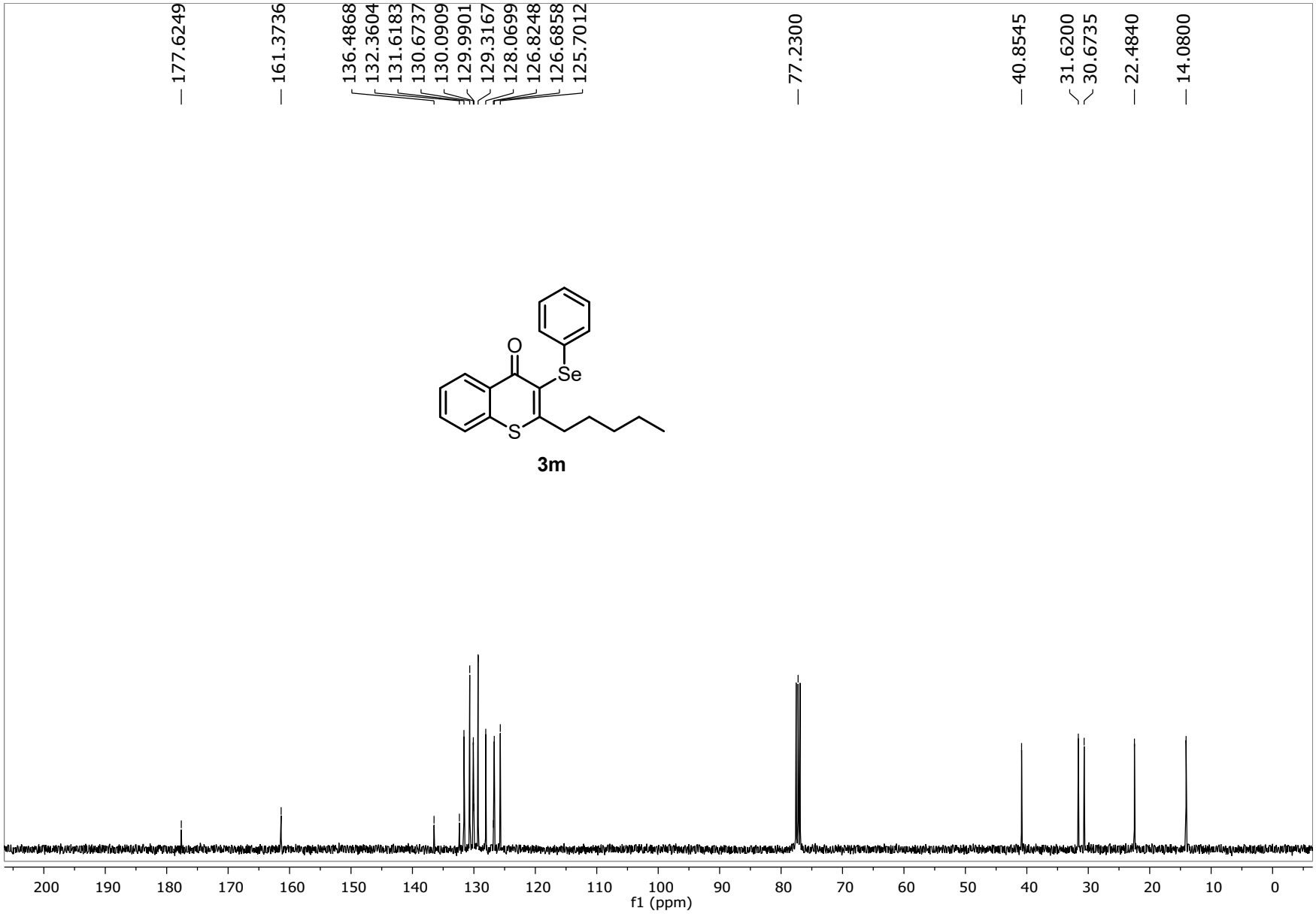

Figure S41: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **3m**.

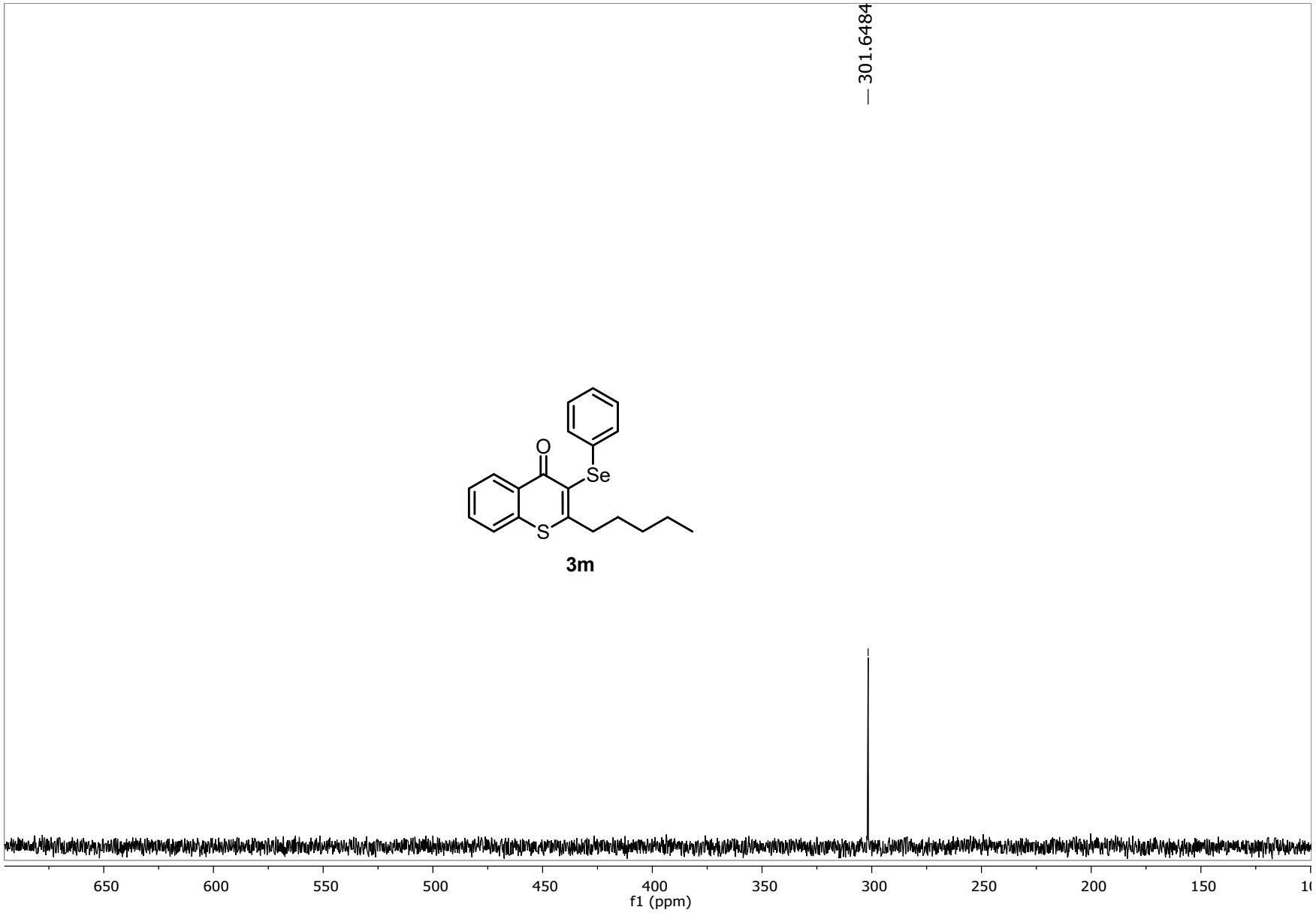

Figure S42: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **3m**.

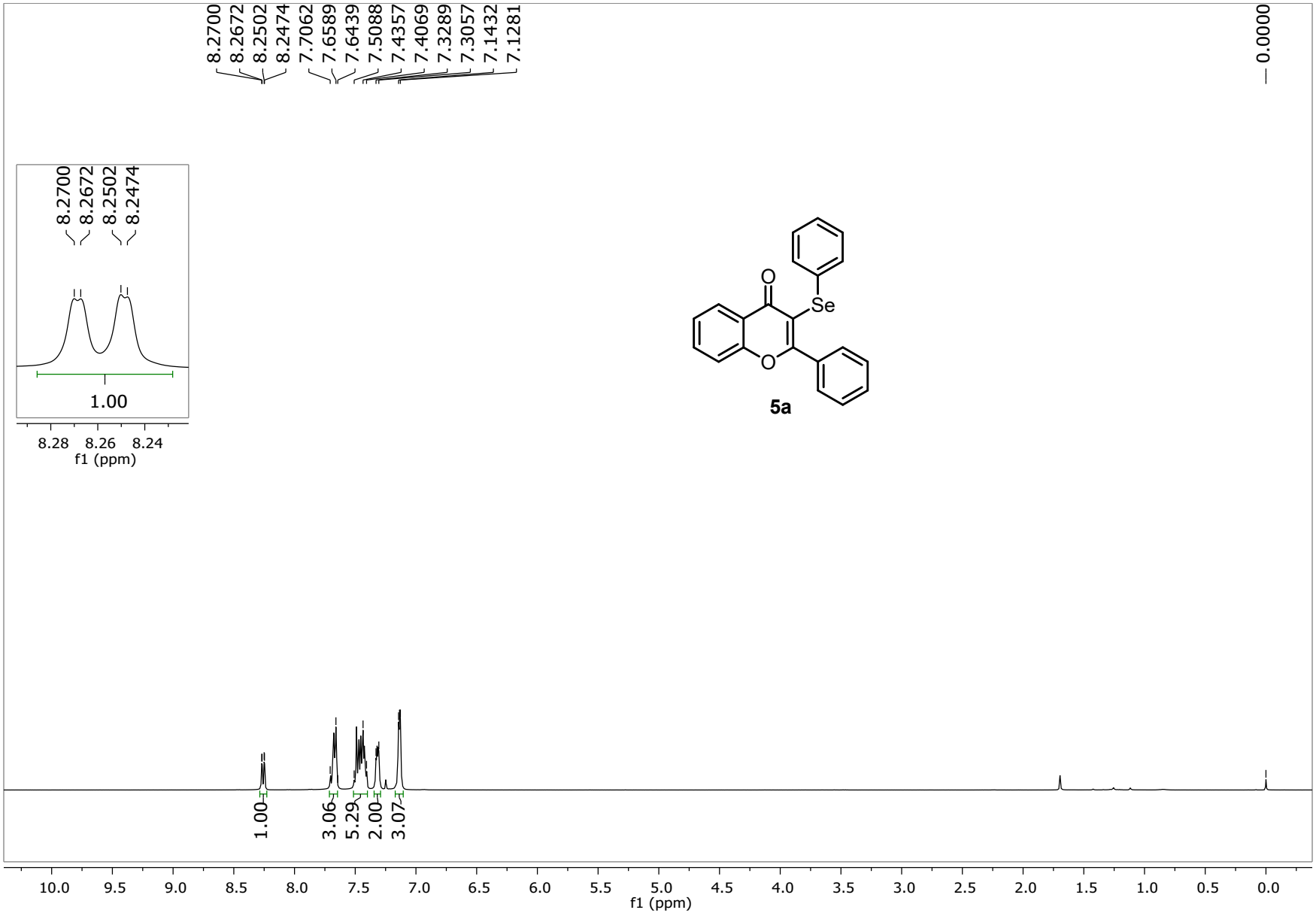

Figure S43: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5a**.

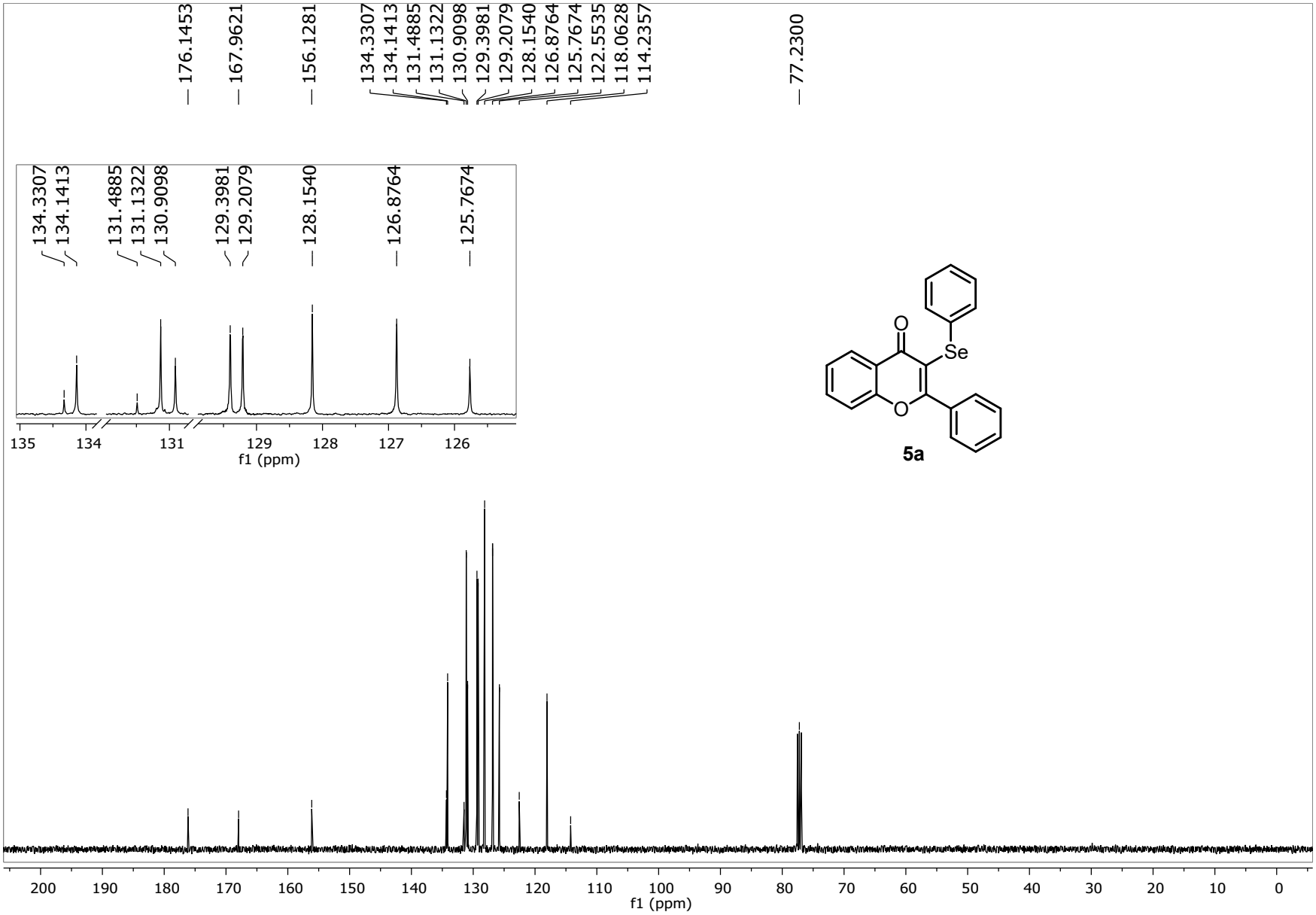

Figure S44: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5a**.

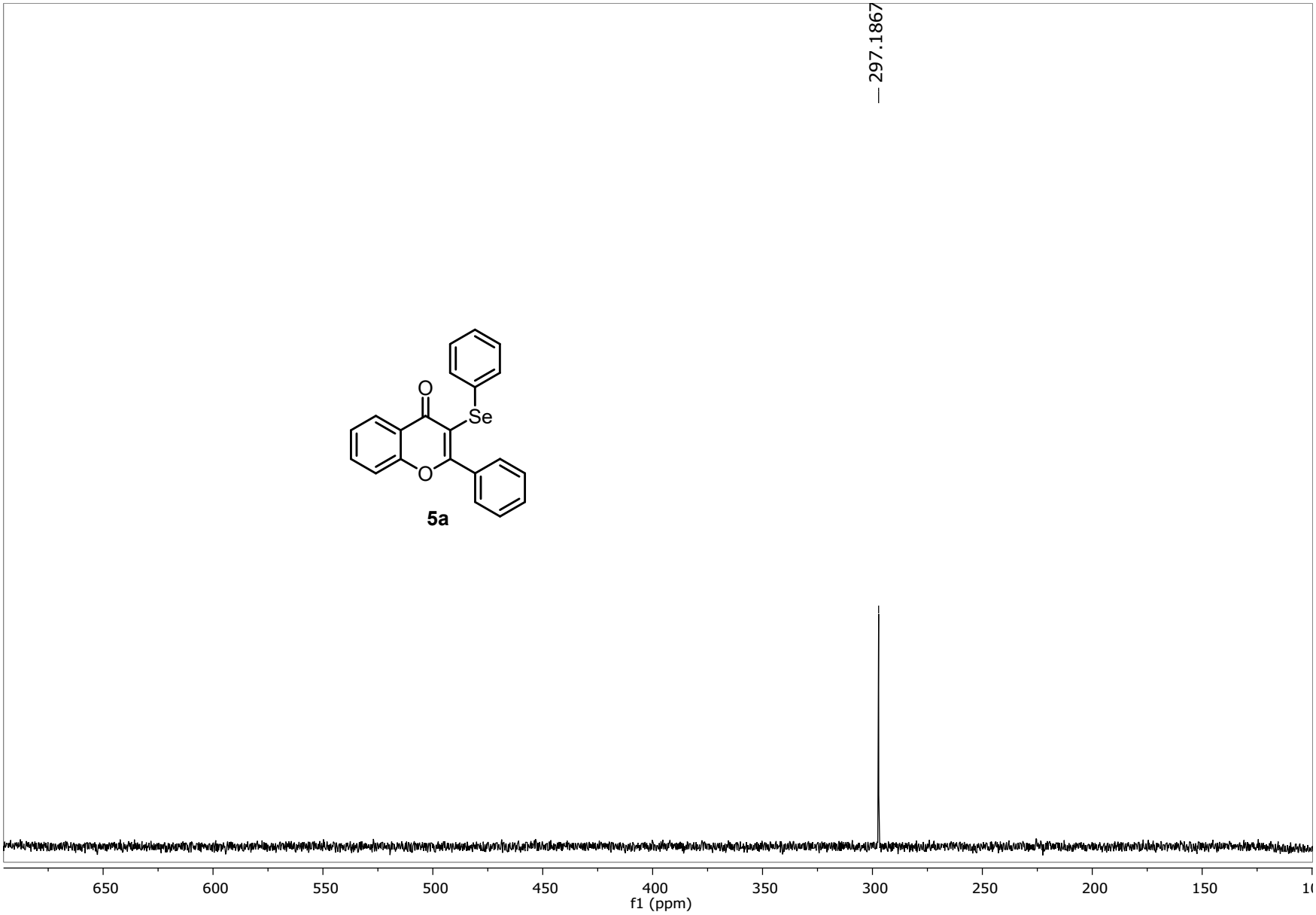

Figure S45: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5a**.

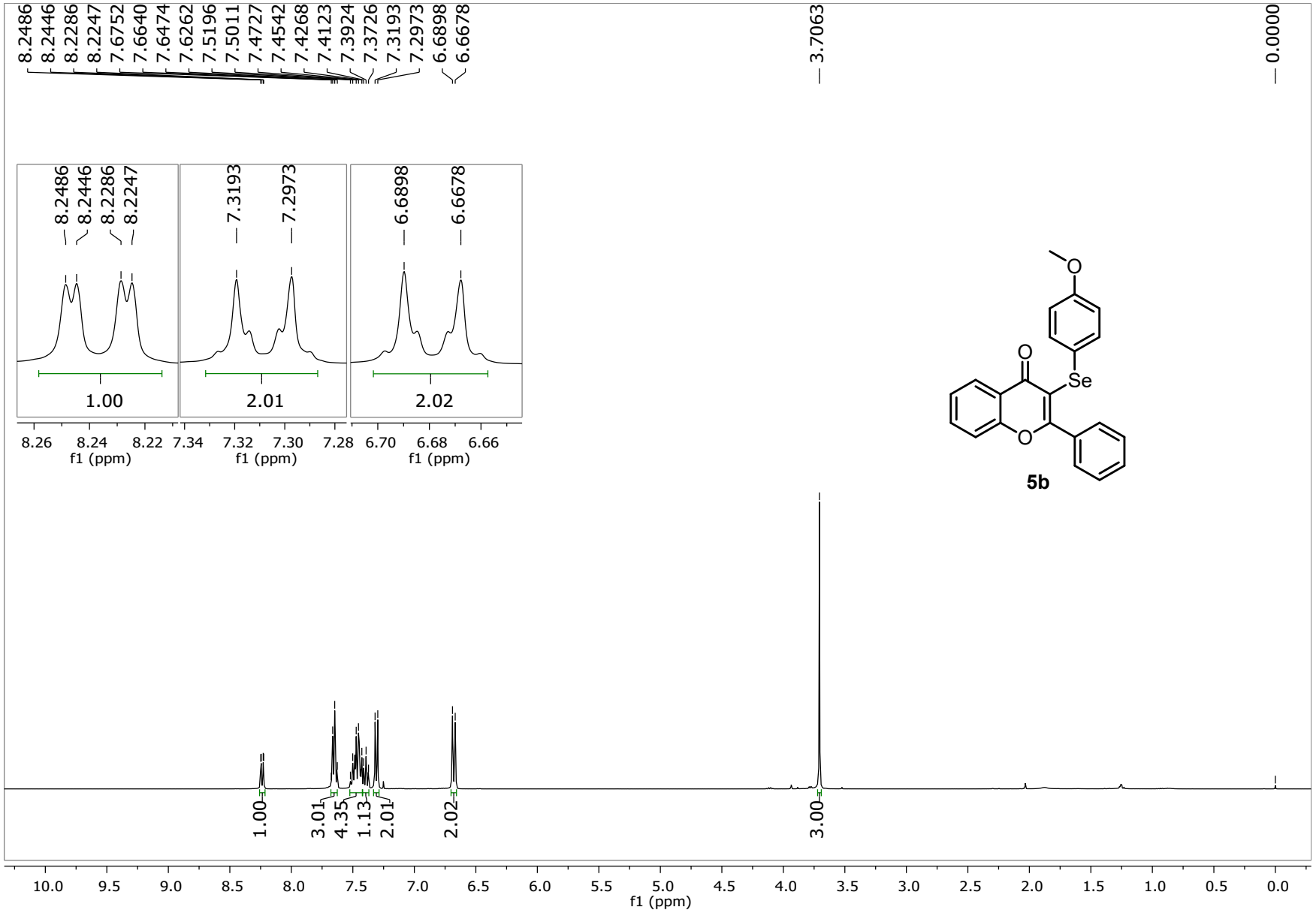

Figure S46: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5b**.

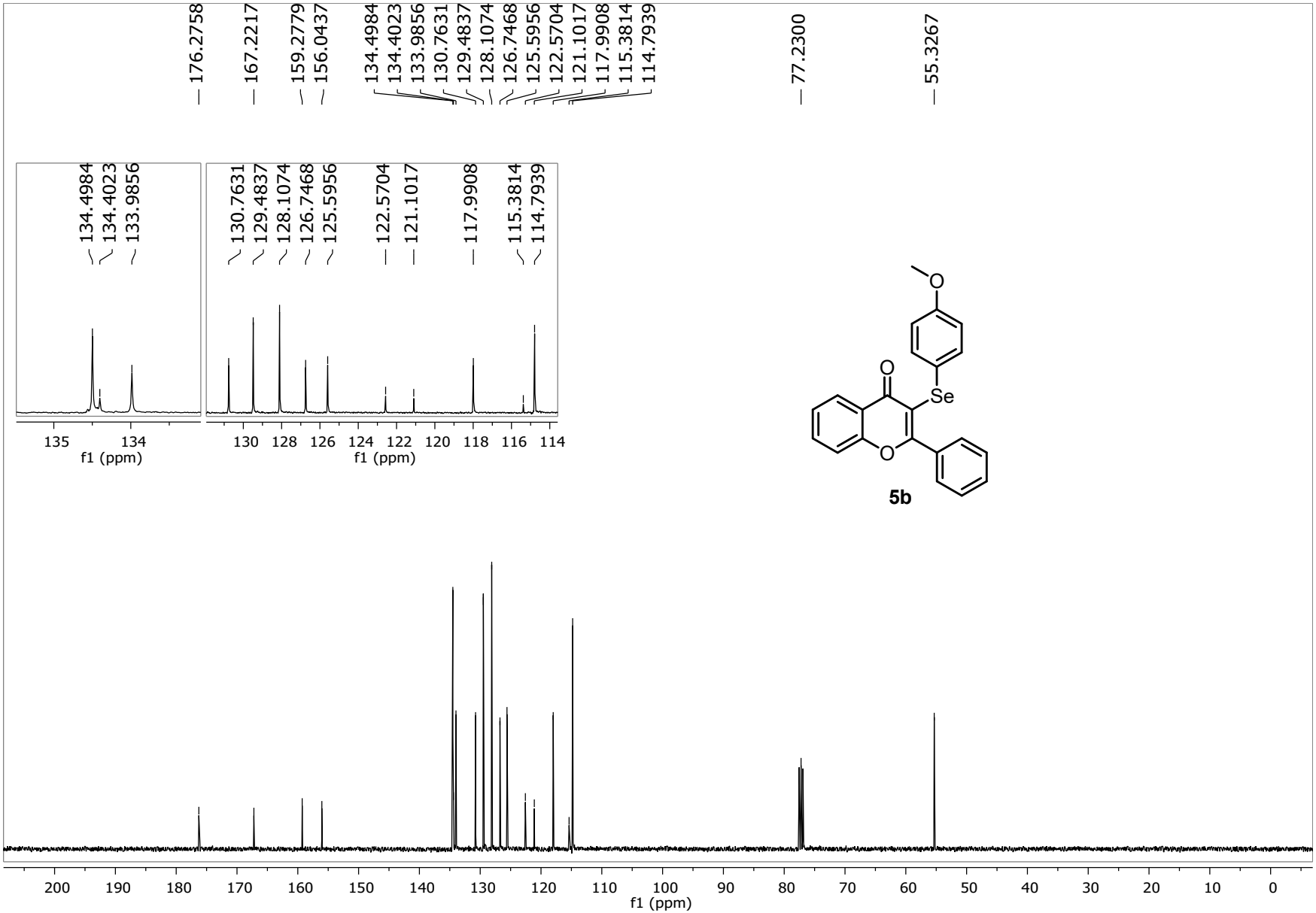

Figure S47: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5b**.

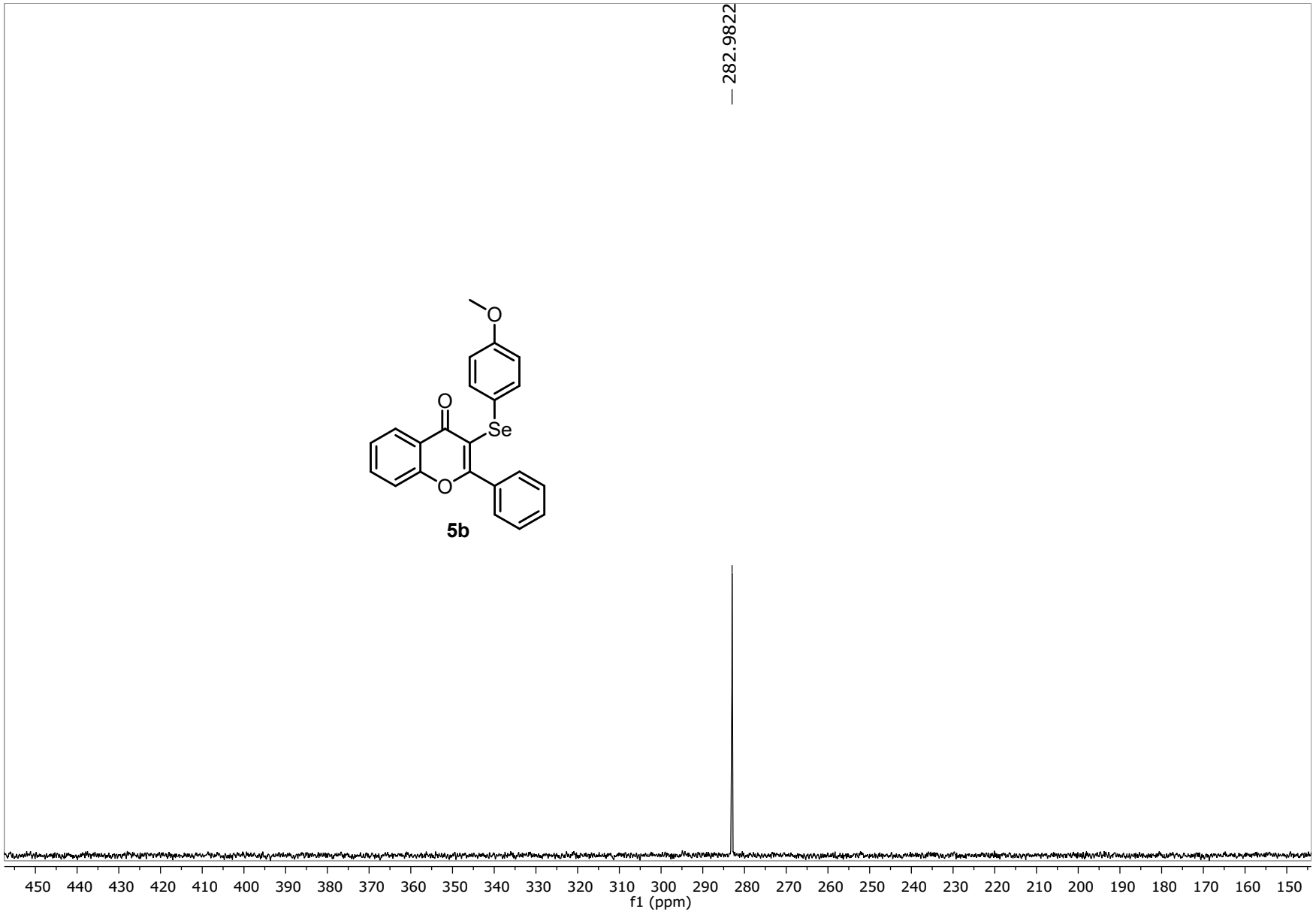

Figure S48: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5b**.

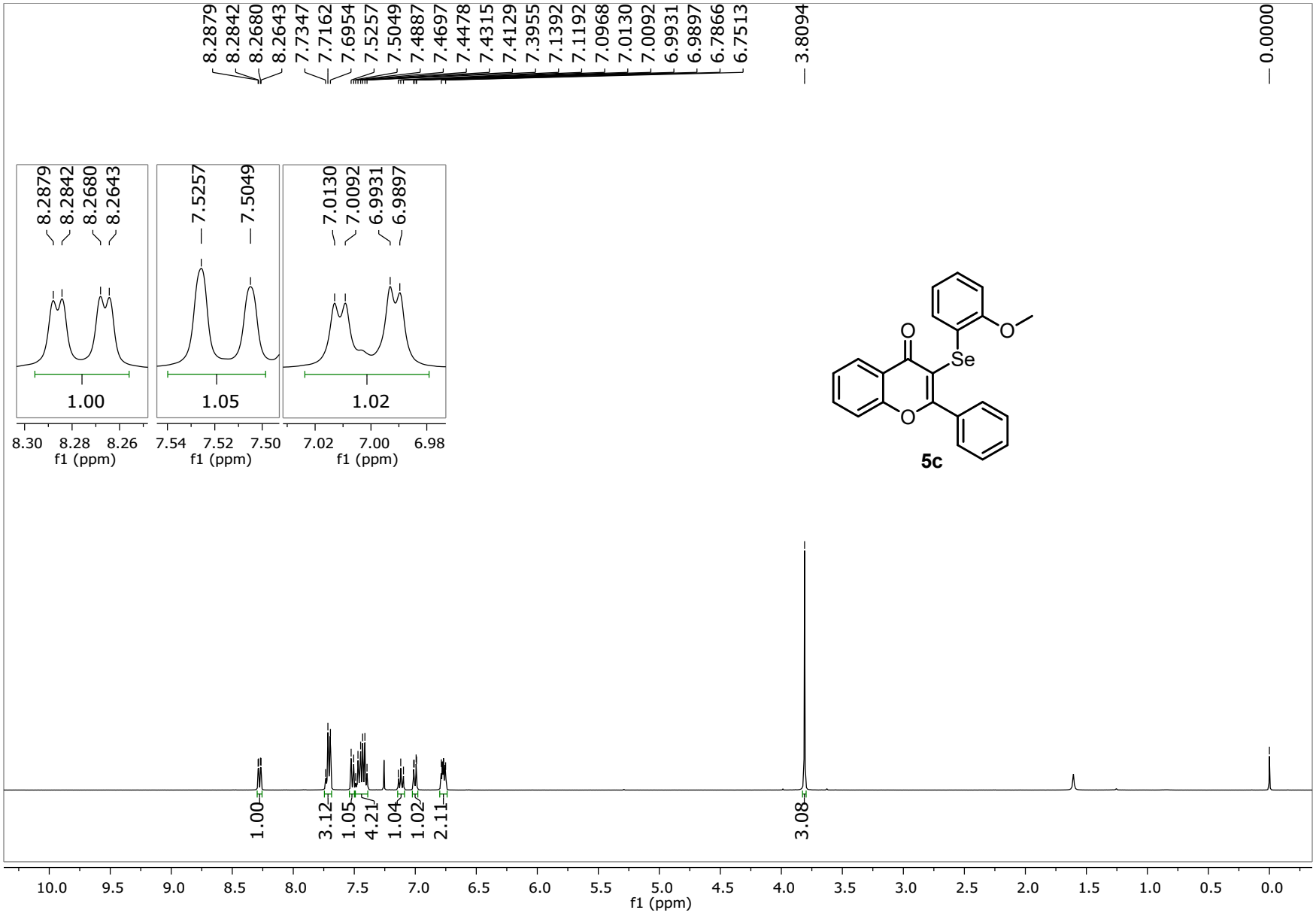

Figure S49: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5c**.

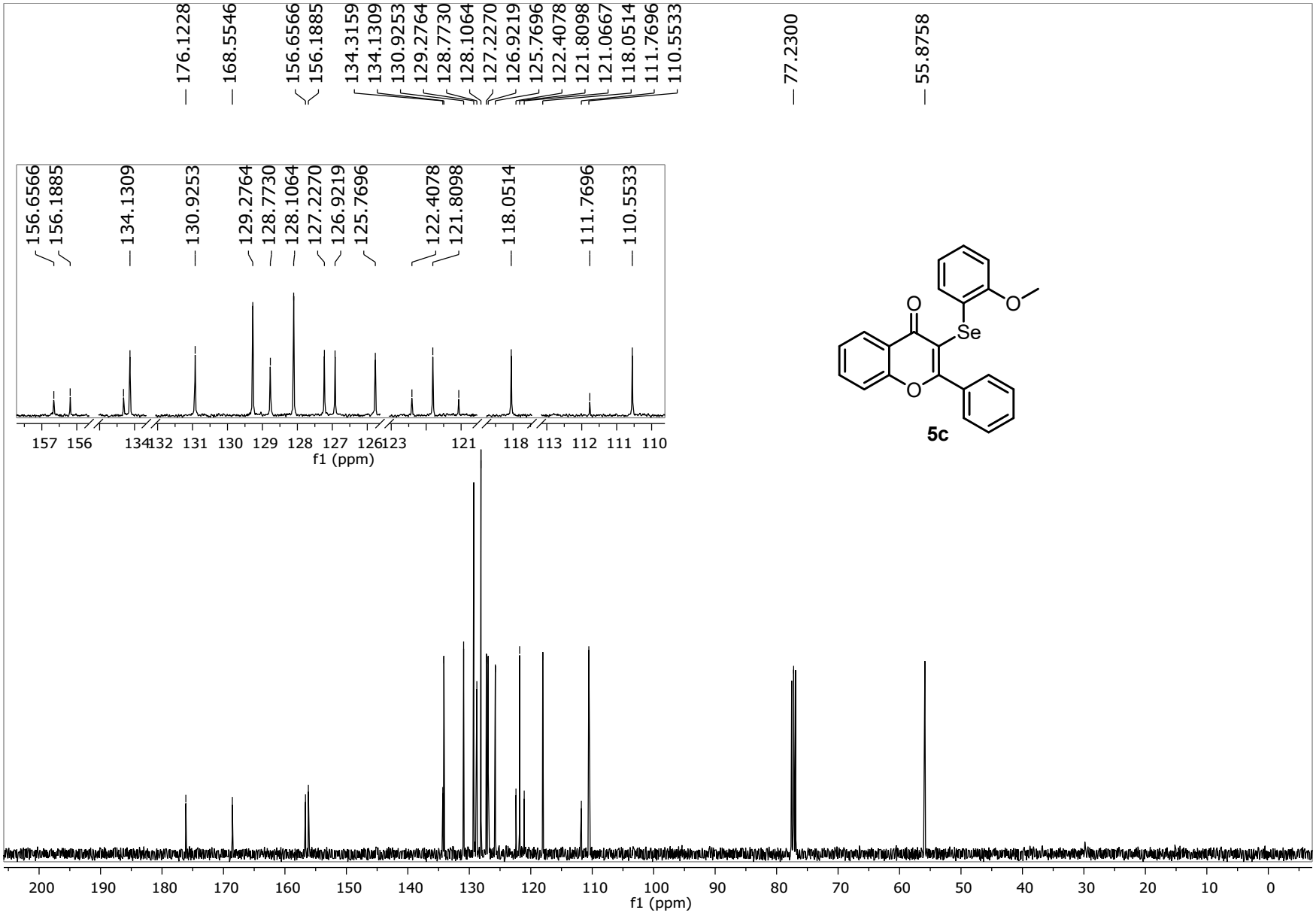

Figure S50: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5c**.

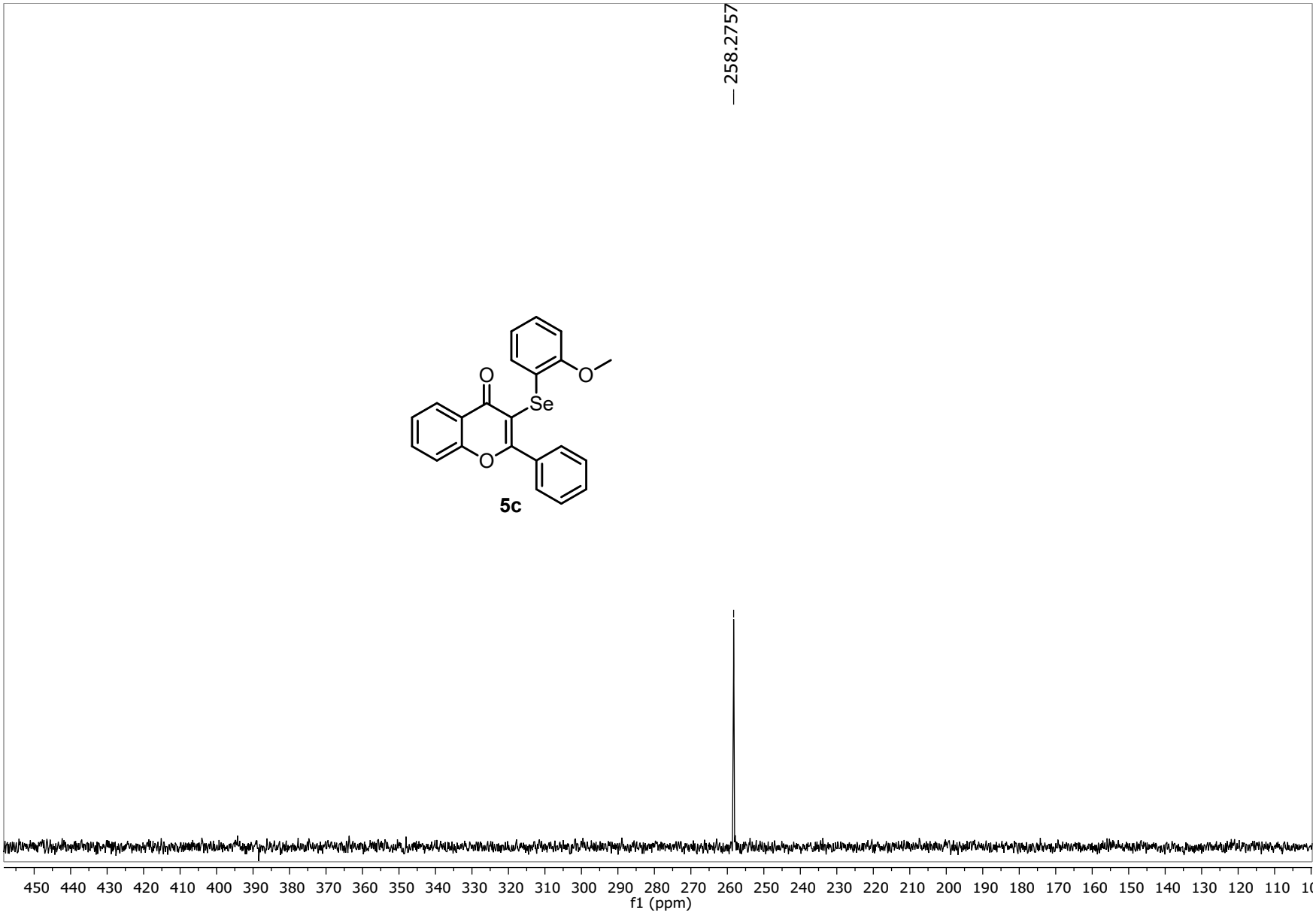

Figure S51: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5c**.

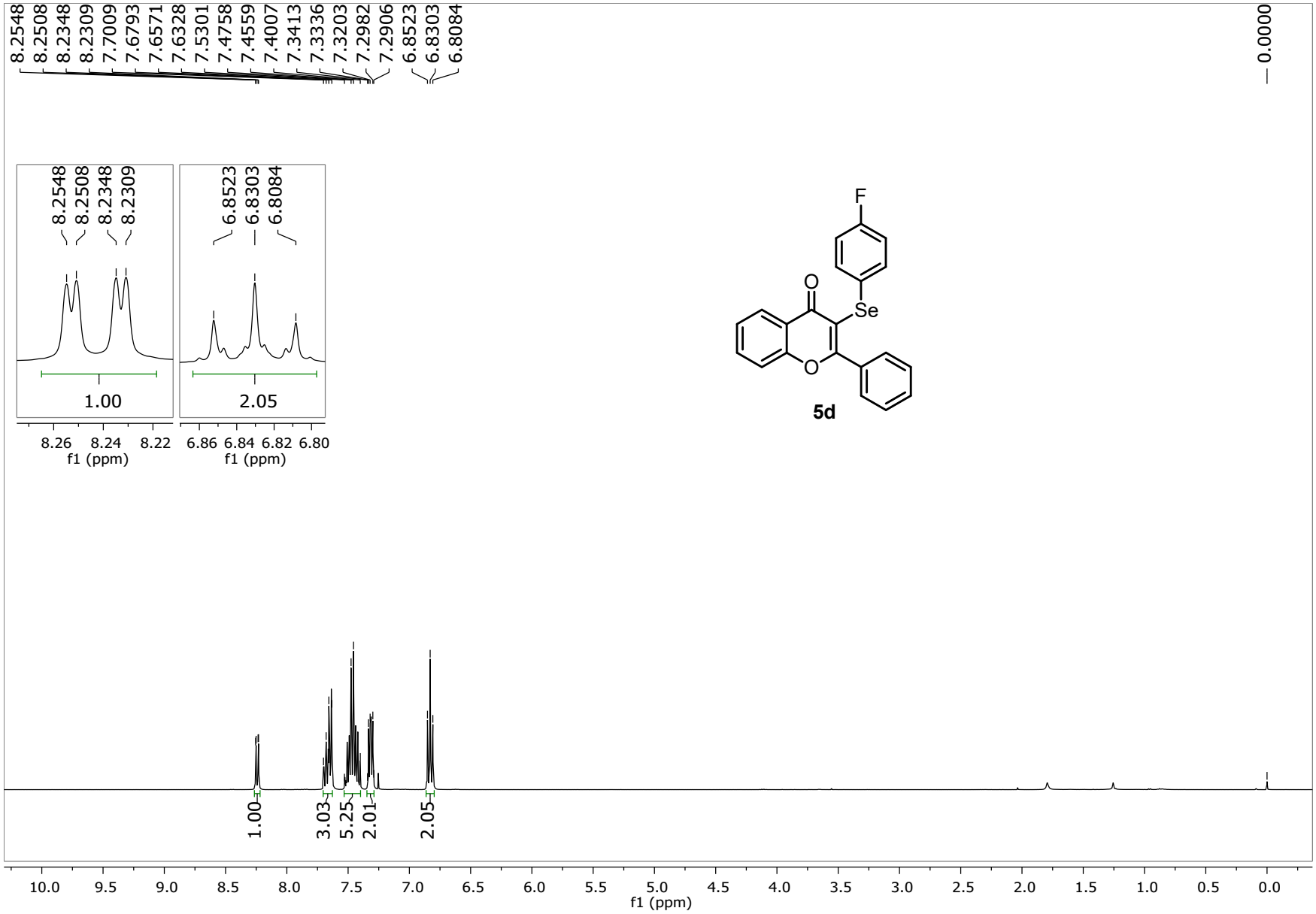

Figure S52: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5d**.

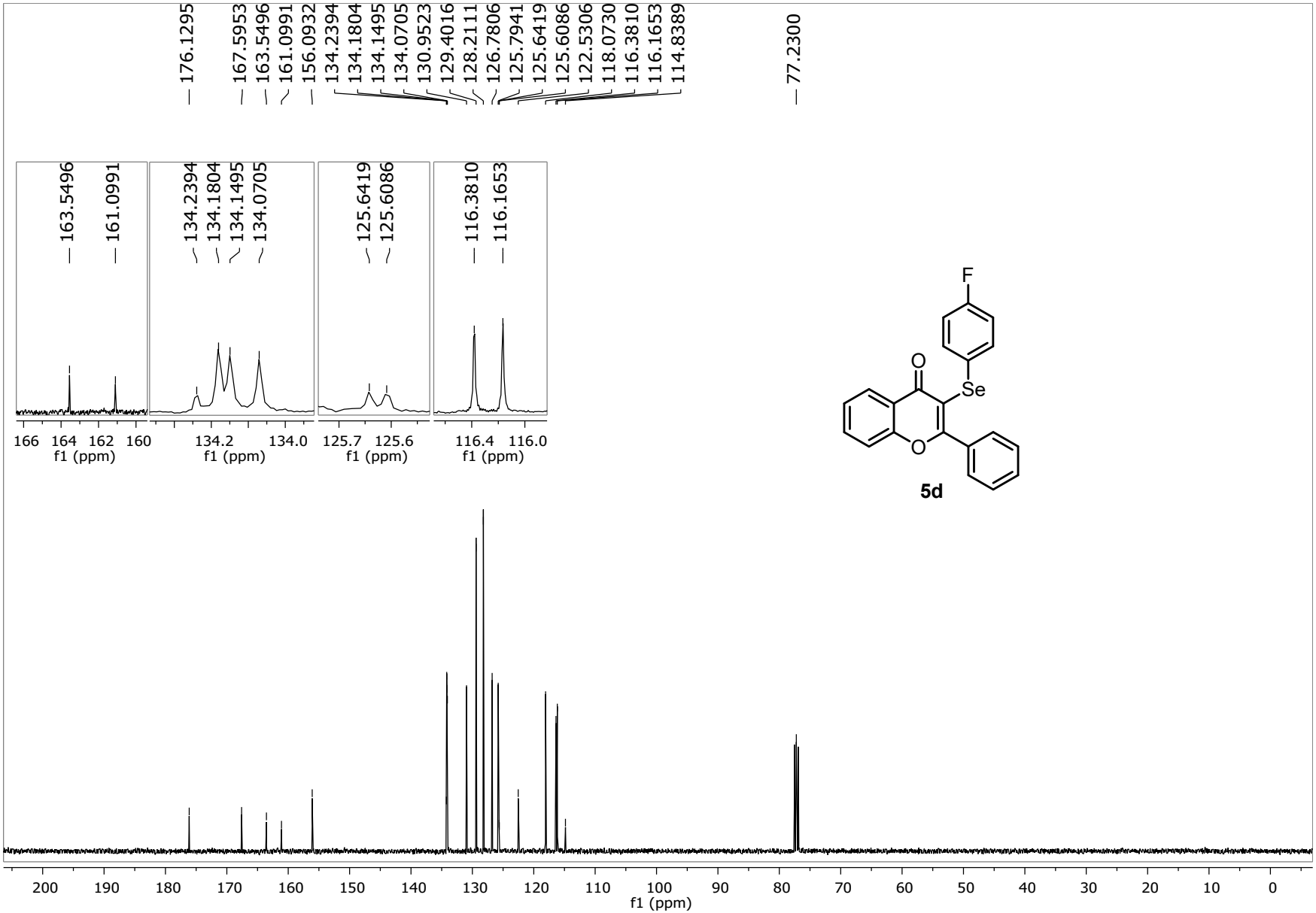

Figure S53: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5d**.

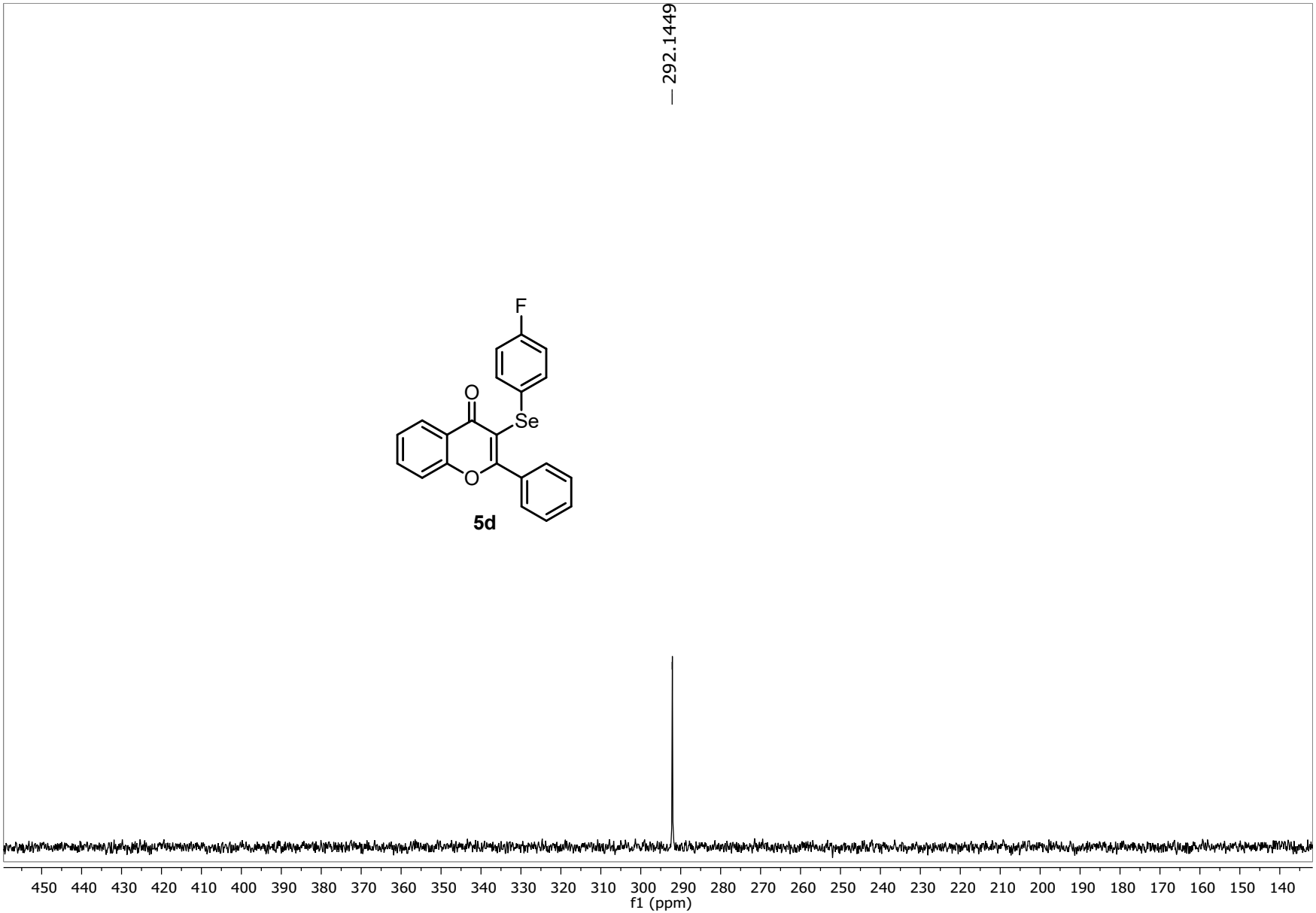

Figure S54: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5d**.

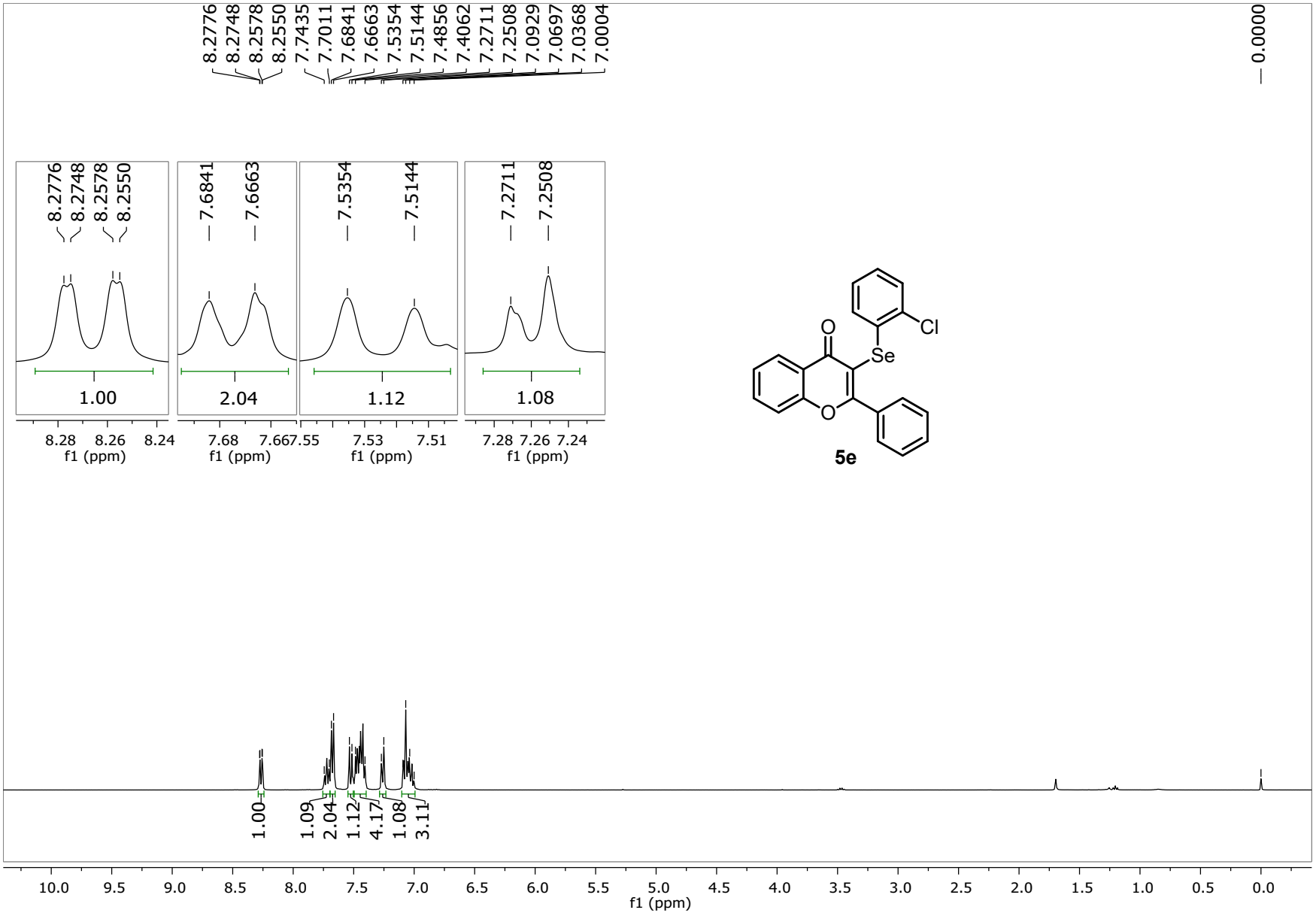

Figure S55: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5e**.

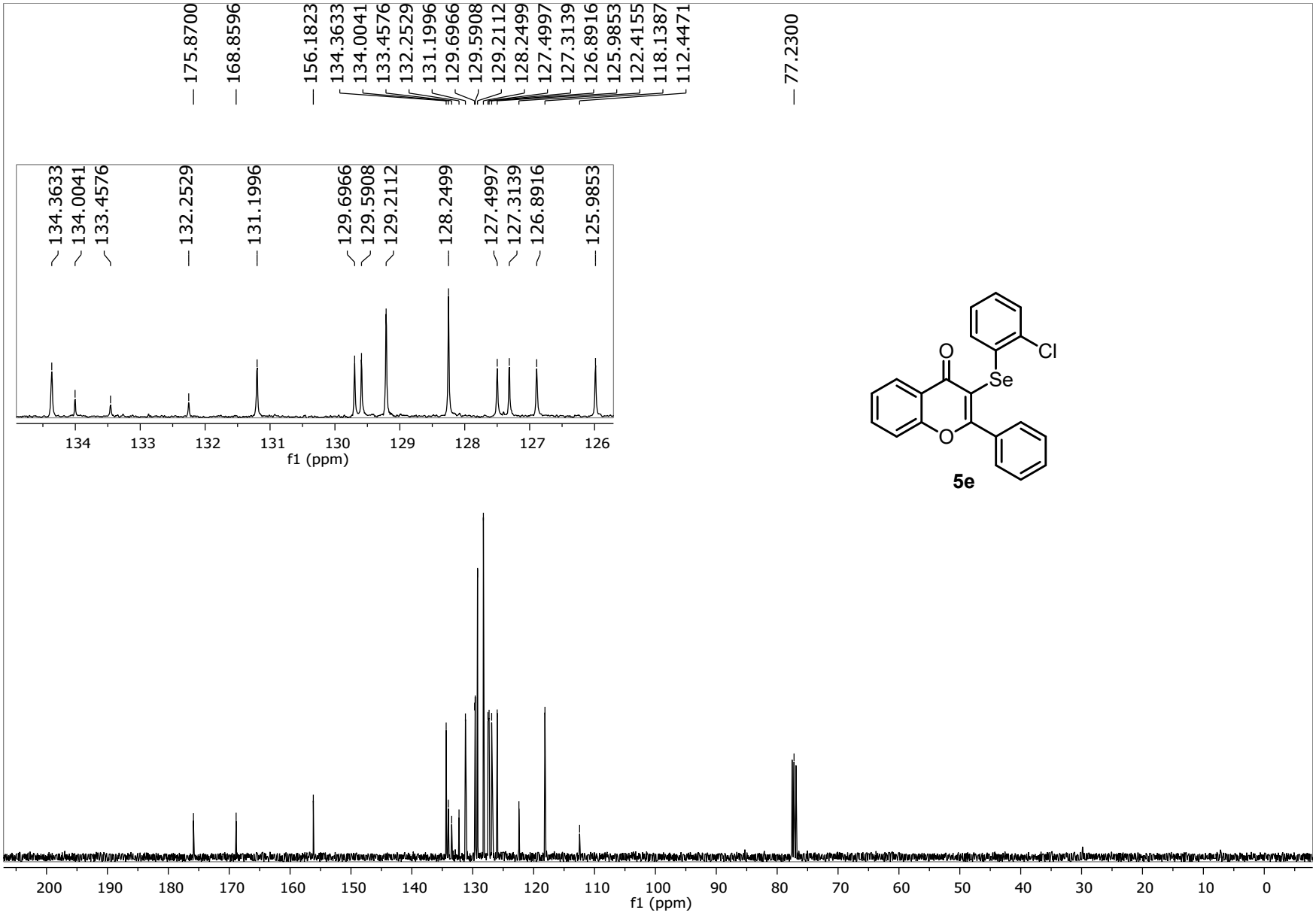

Figure S56: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5e**.

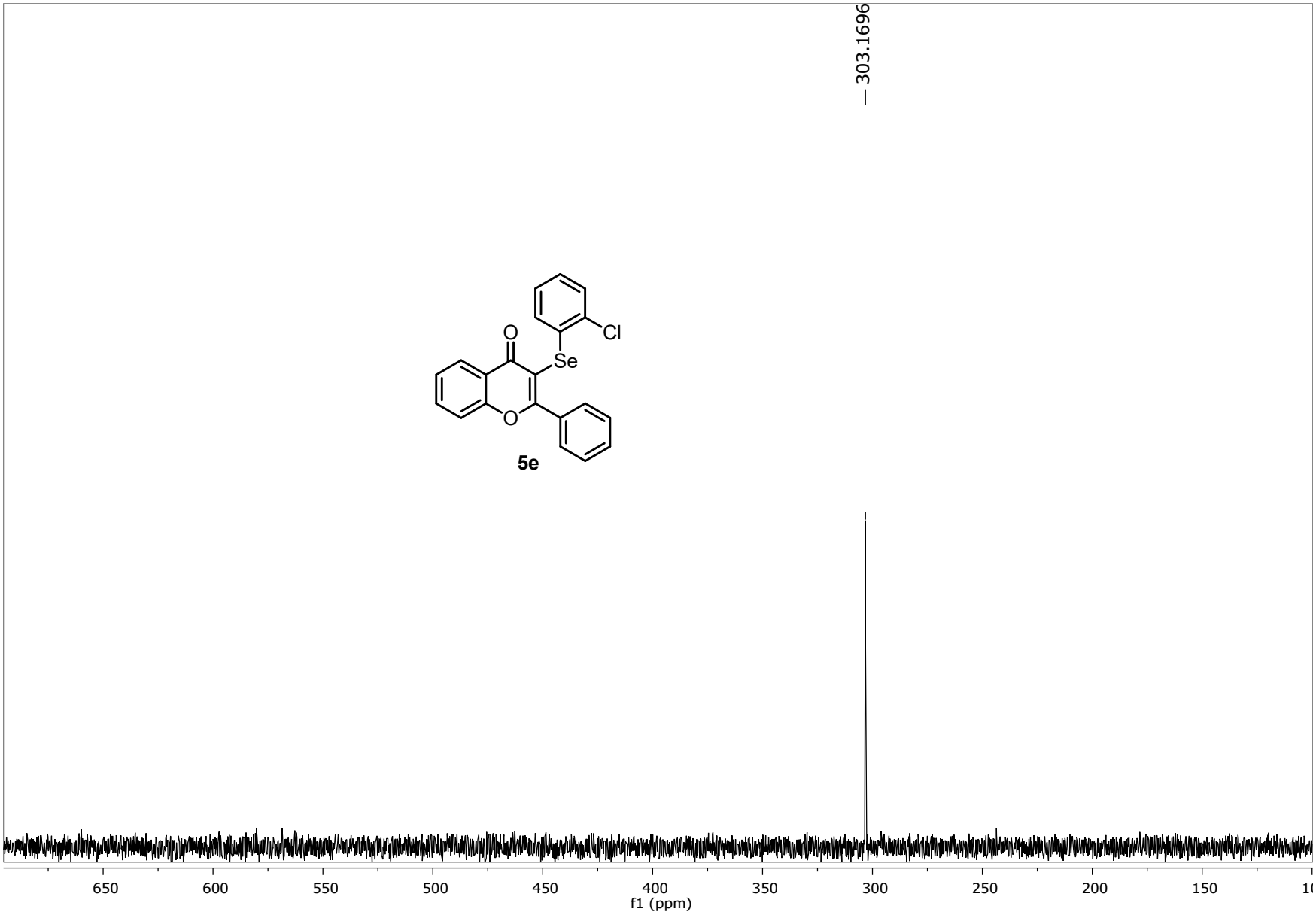

Figure S57: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5e**.

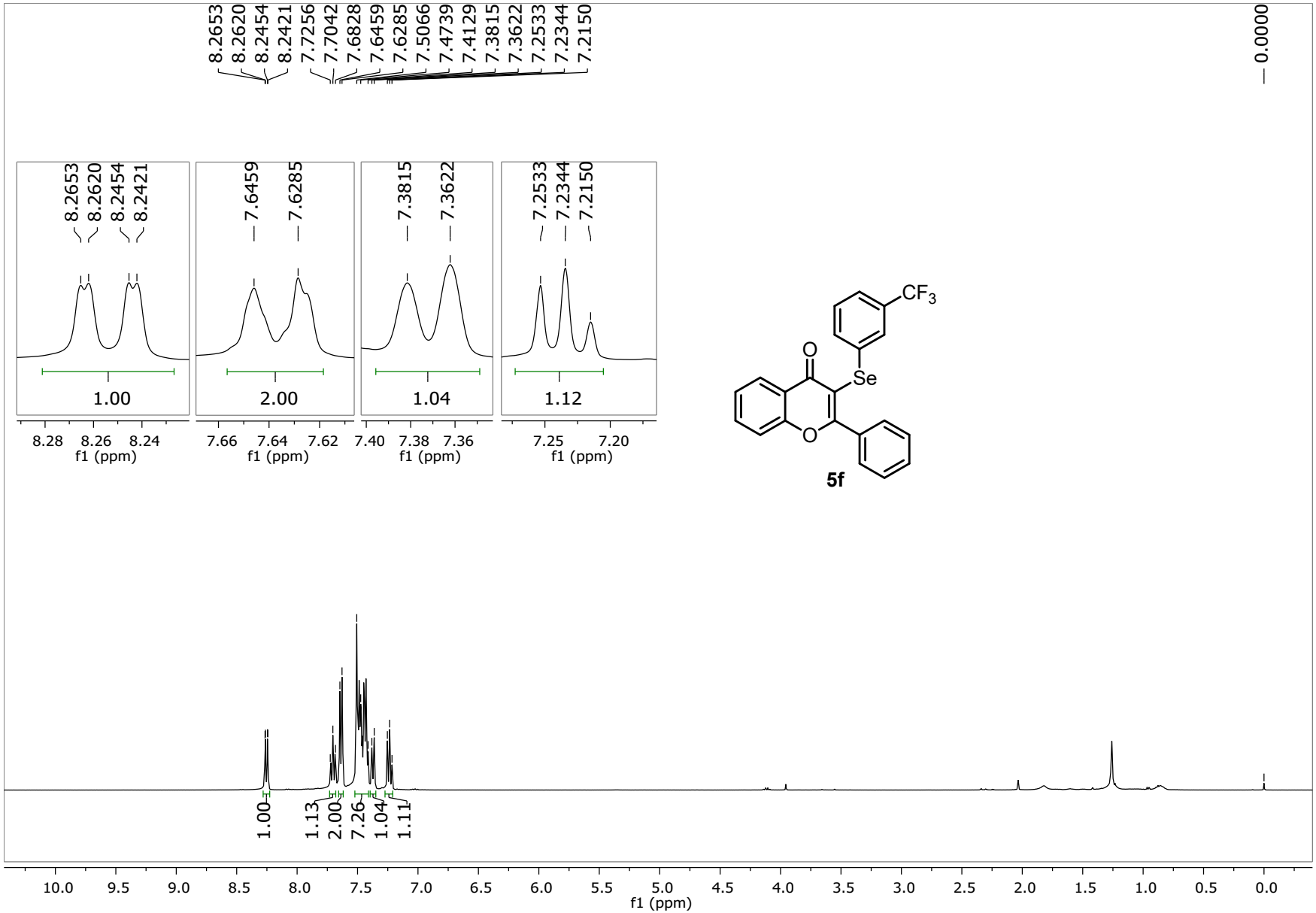

Figure S58: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5e**.

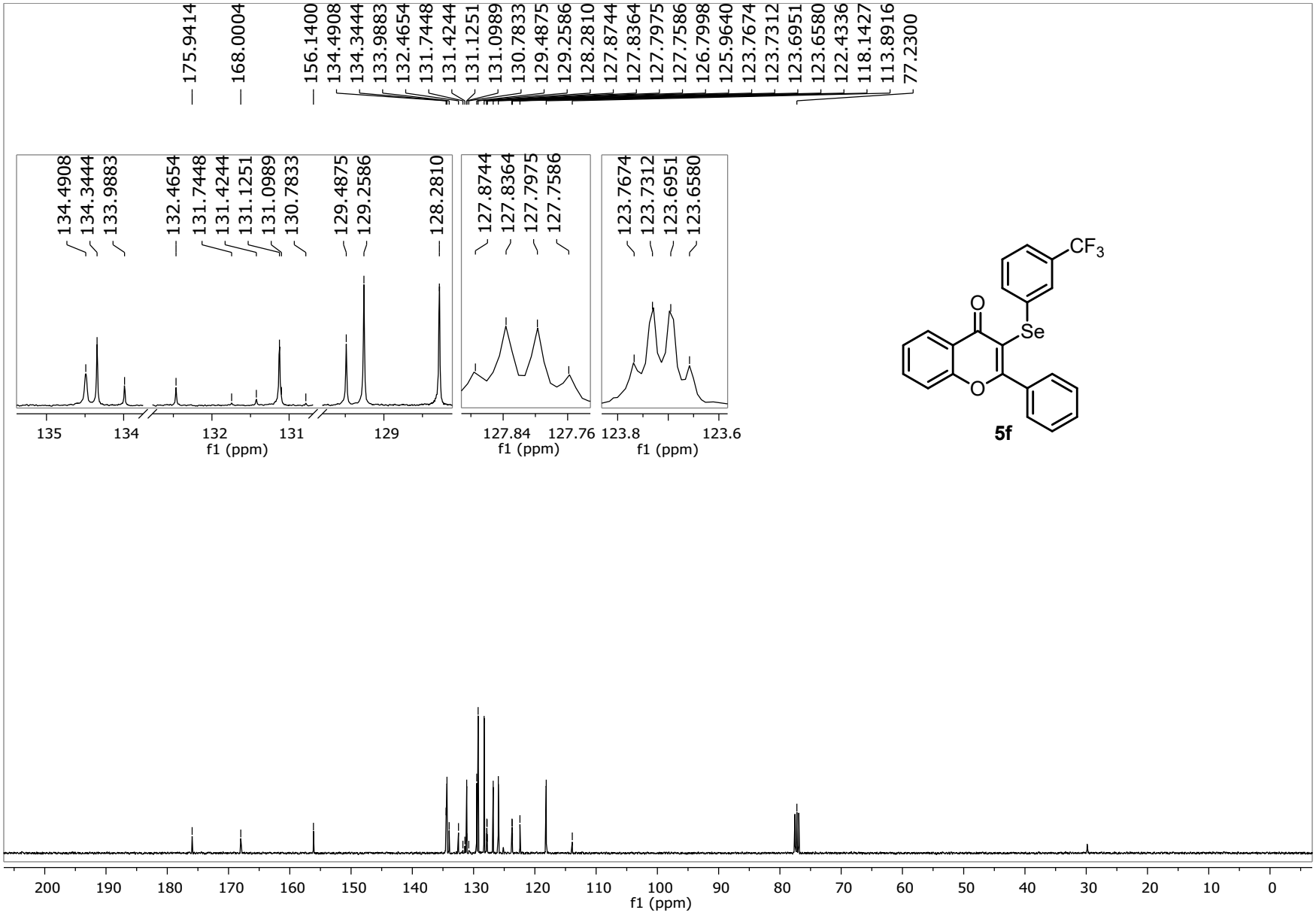

Figure S59: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5f**.

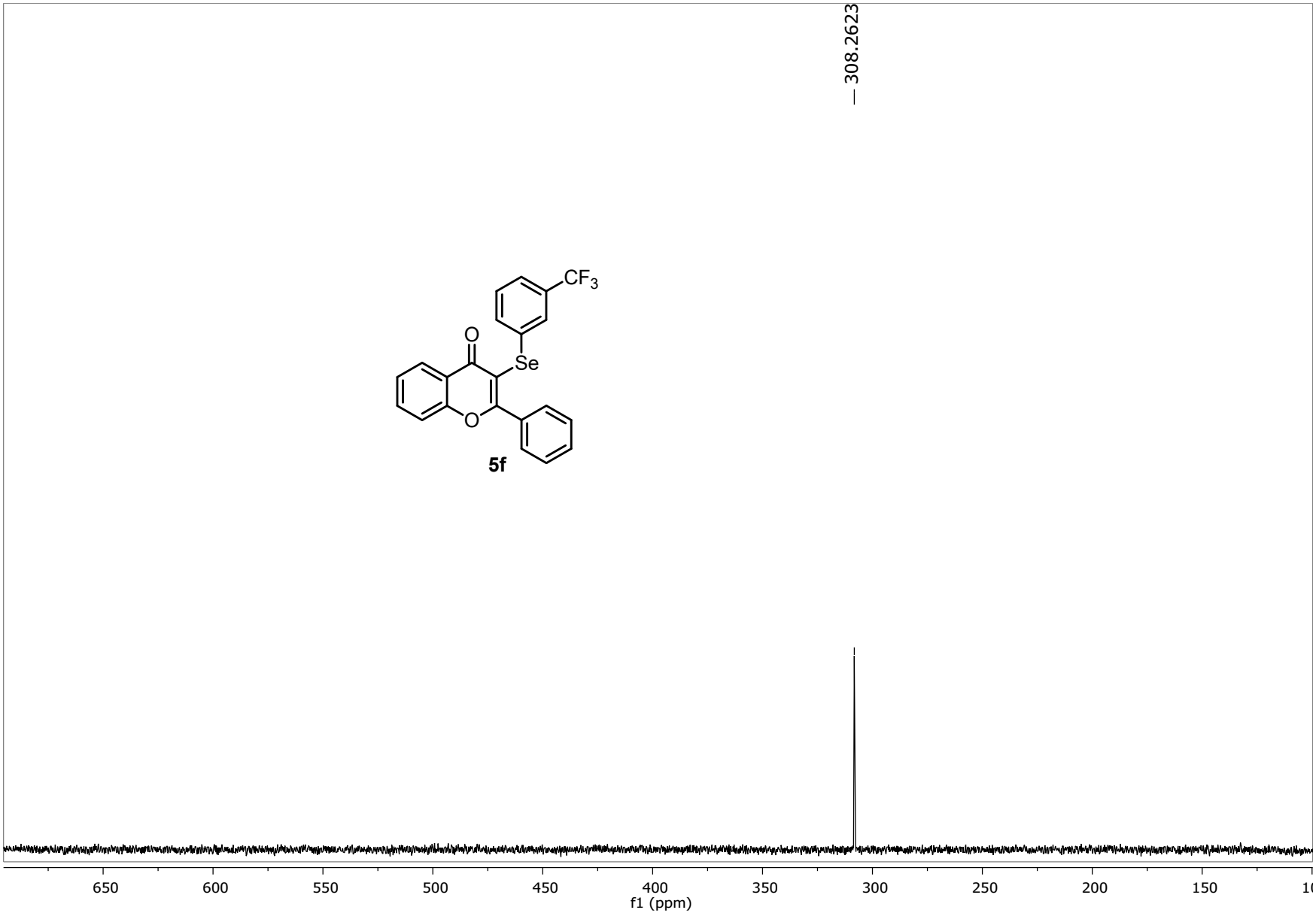

Figure S560: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5f**.

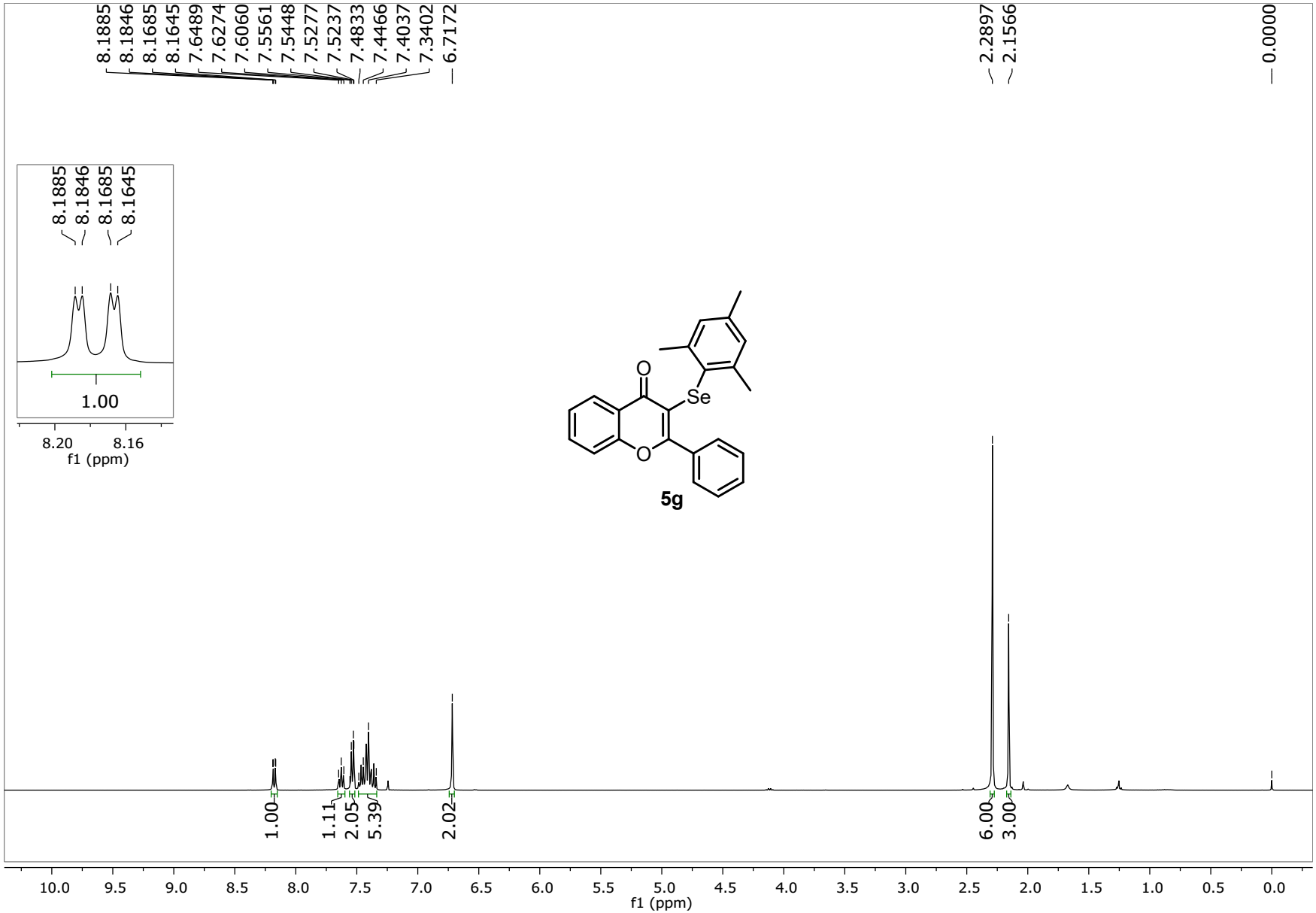

Figure S61: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5g**.

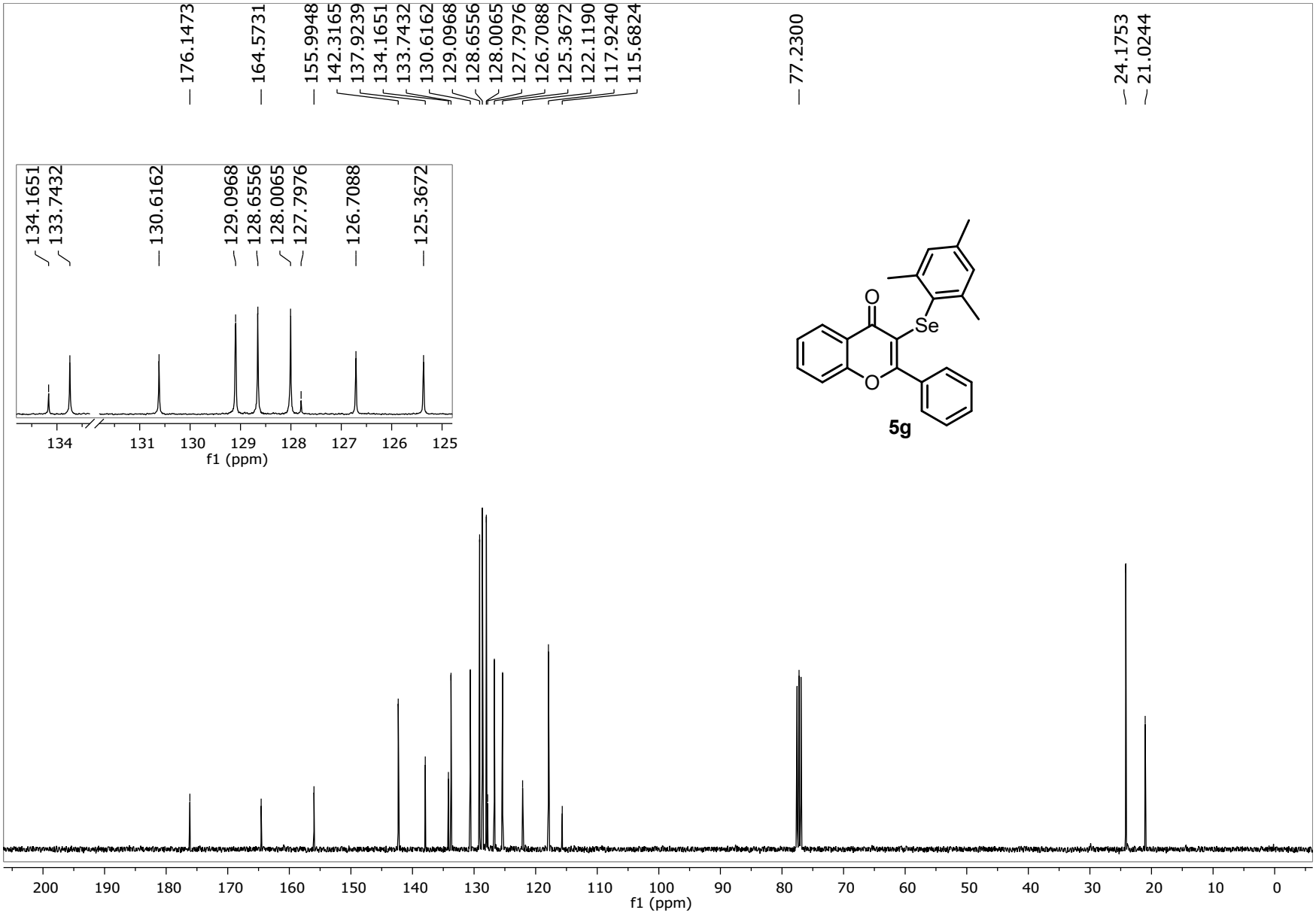

Figure S62: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5g**.

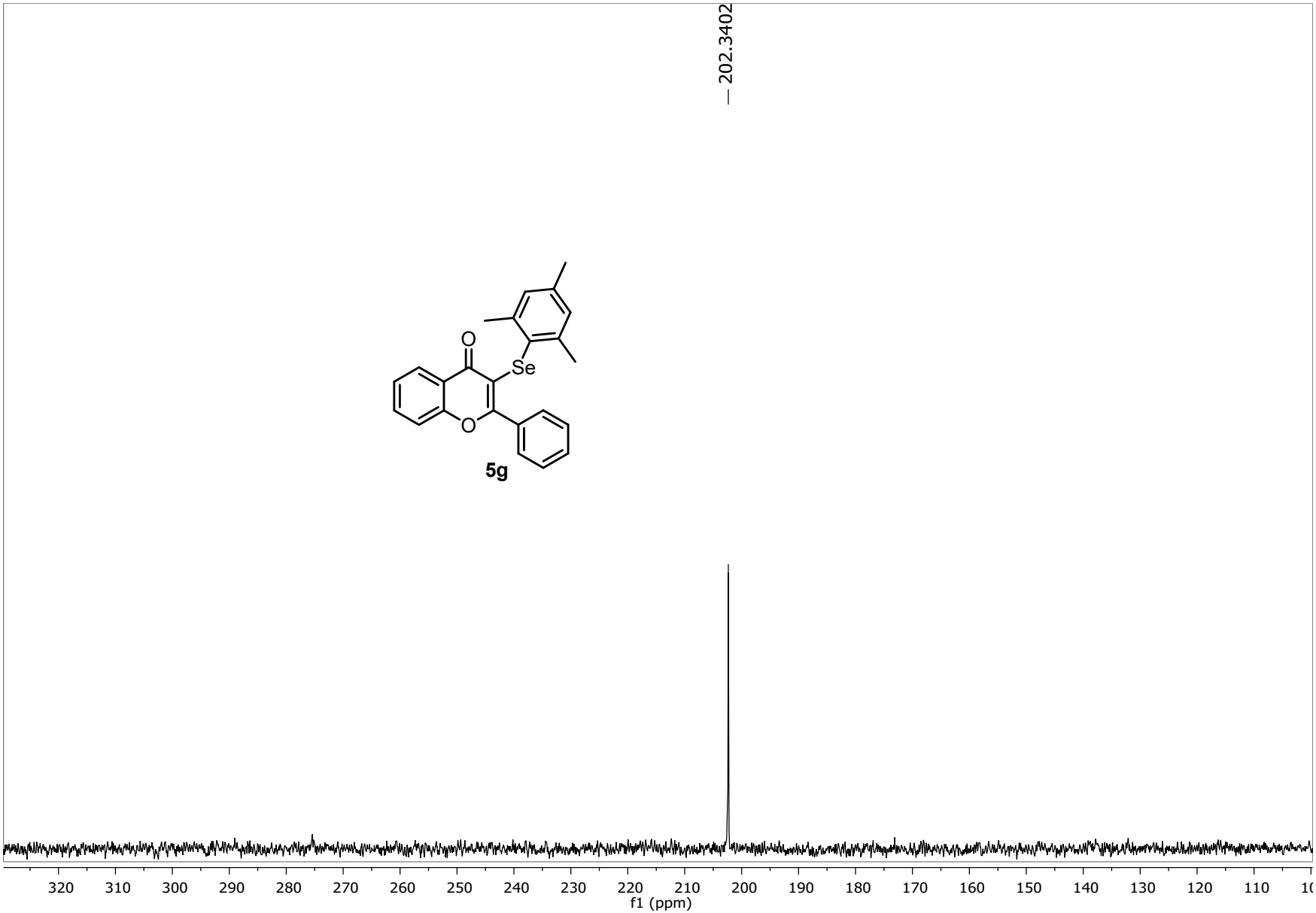

Figure S563: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5g**.

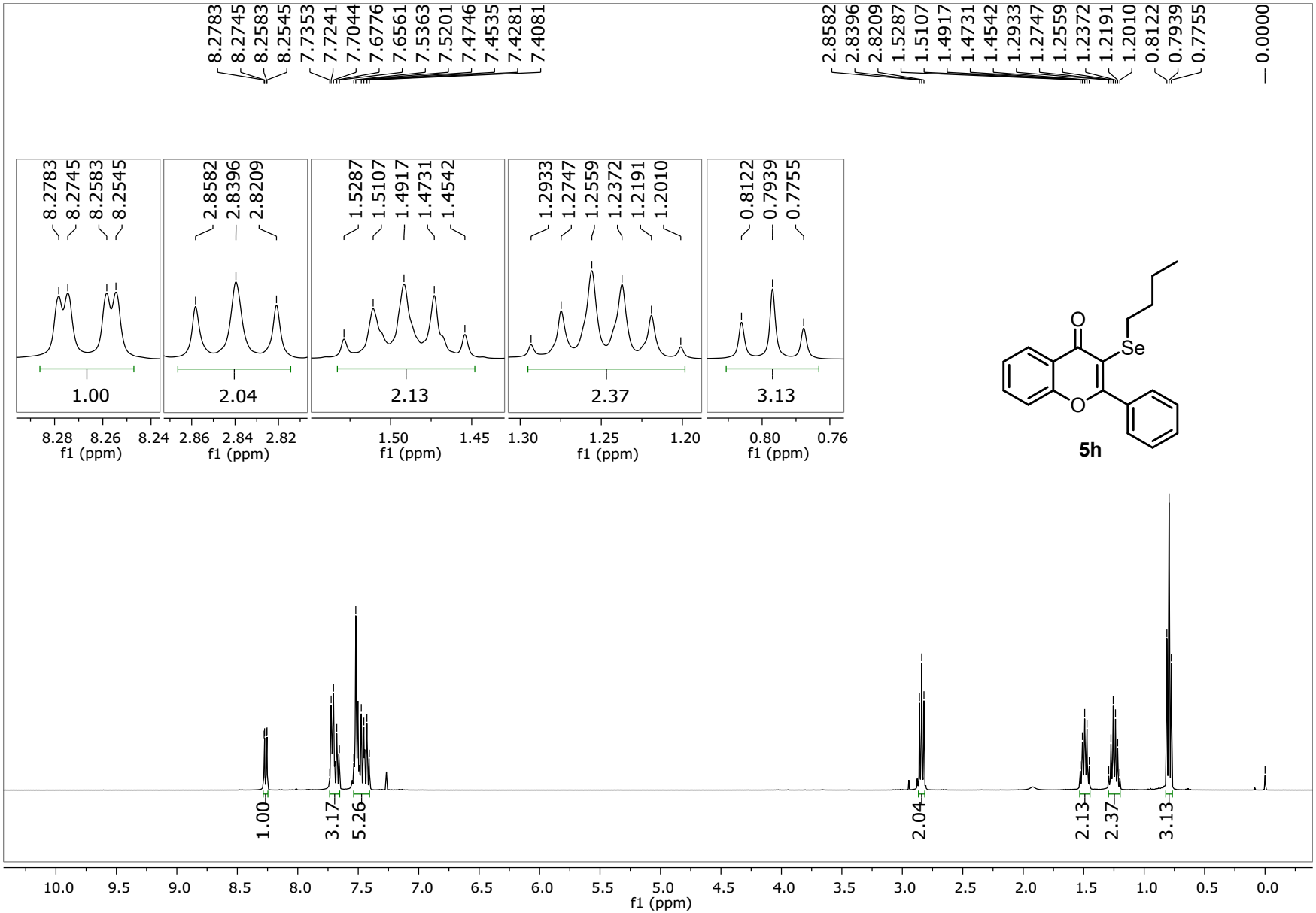

Figure S64: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5h**.

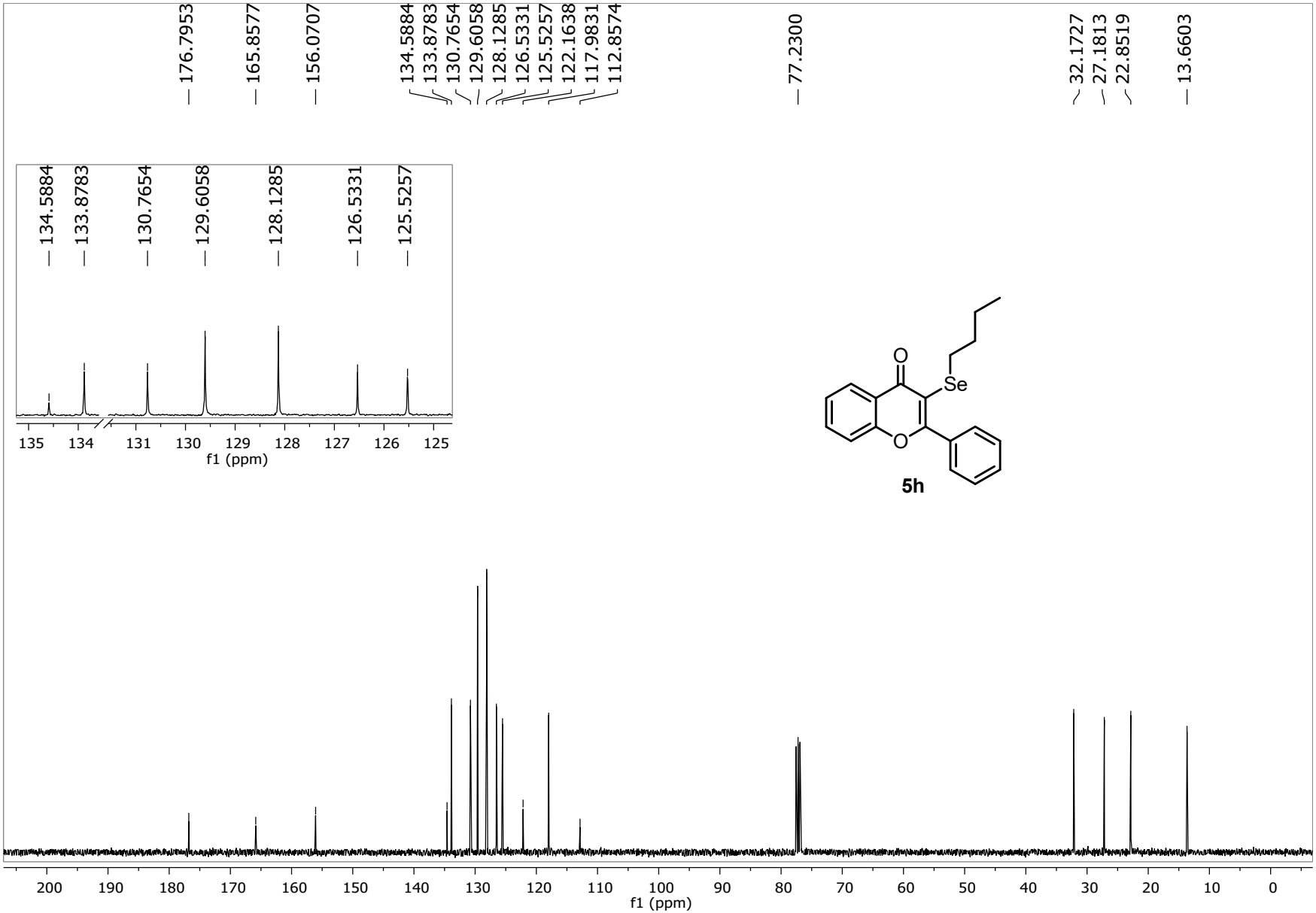

Figure S65: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5h**.

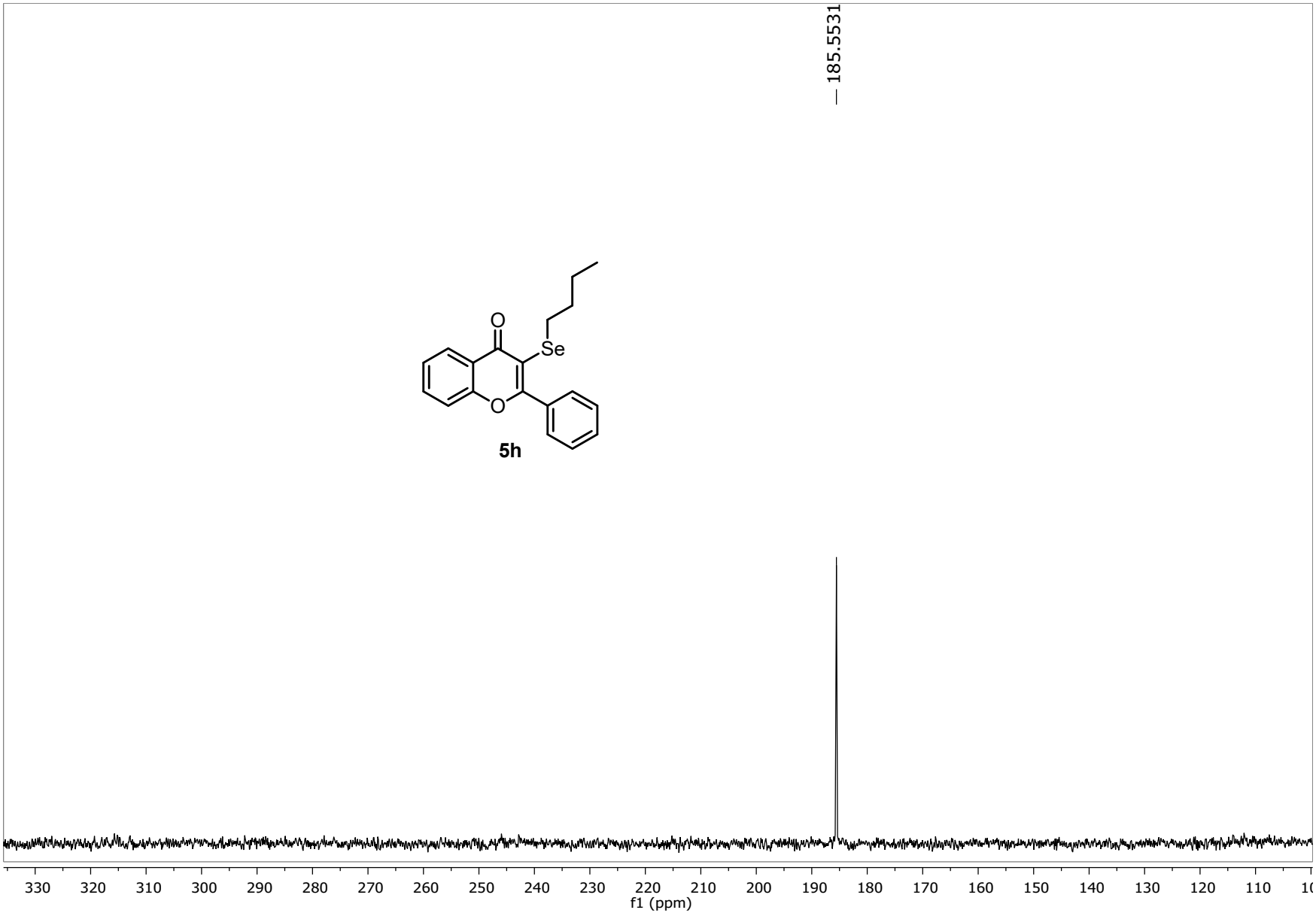

Figure S66: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5h**.

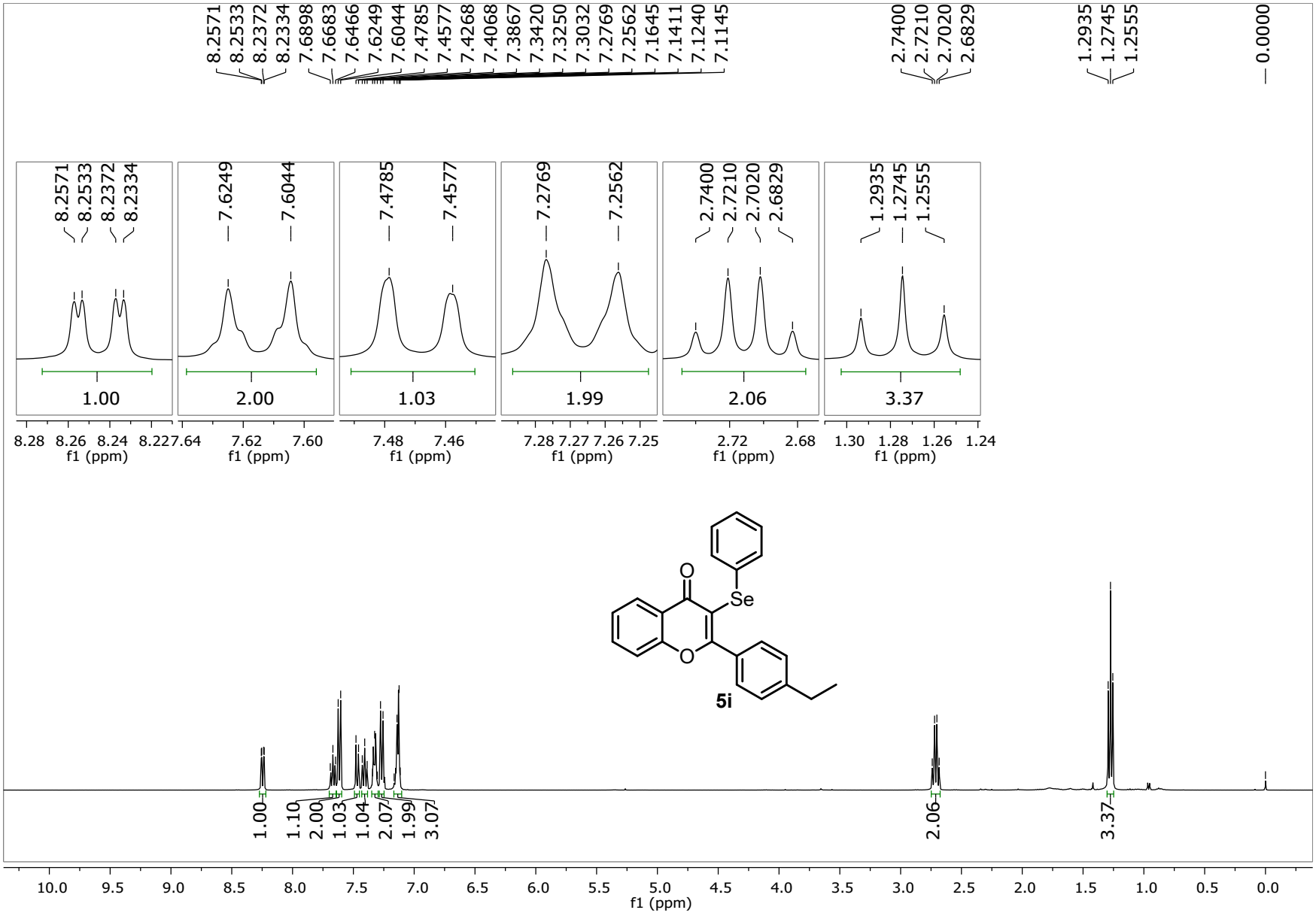

Figure S67: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5i**.

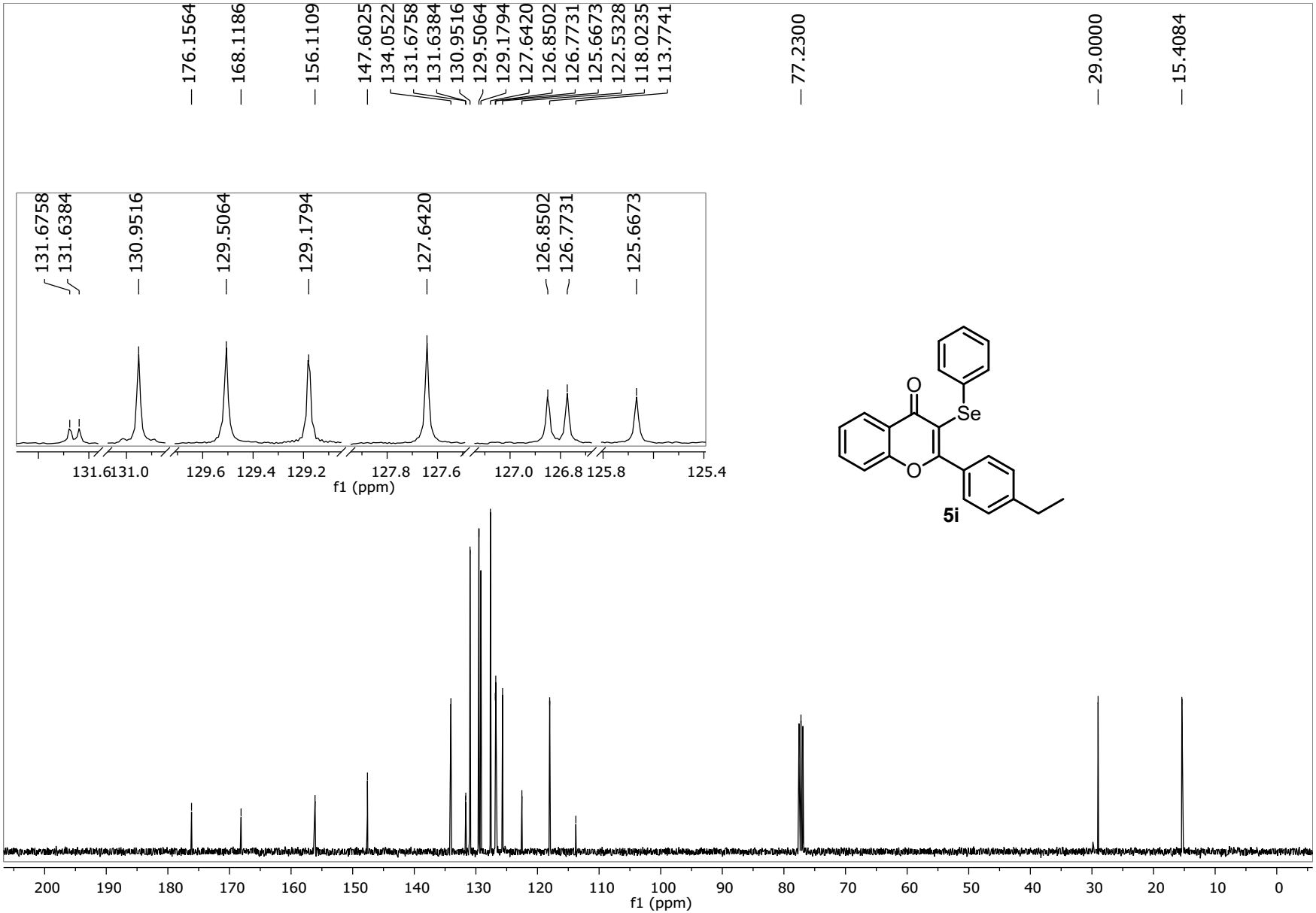

Figure S68: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5i**.

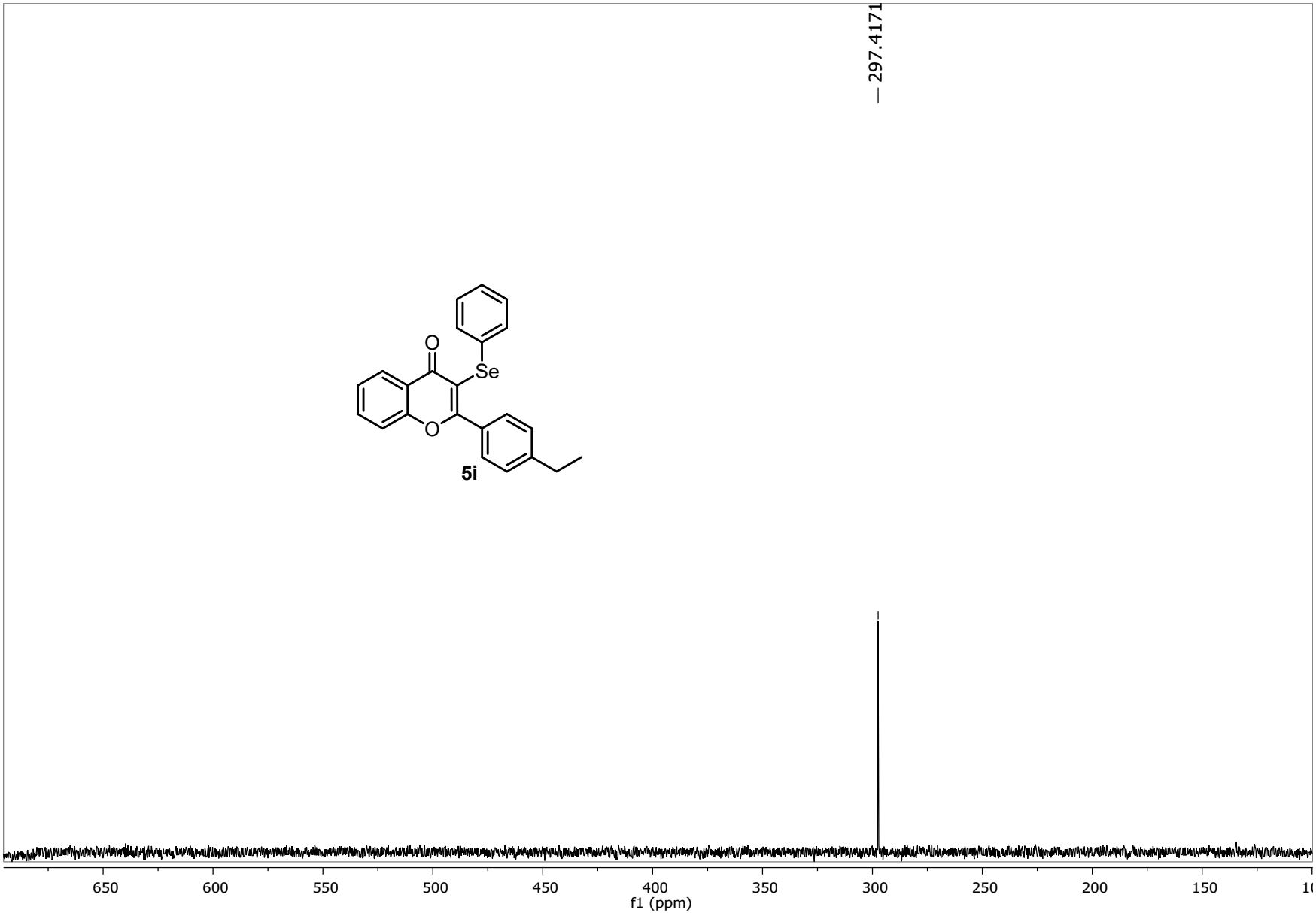

Figure S69: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5i**.

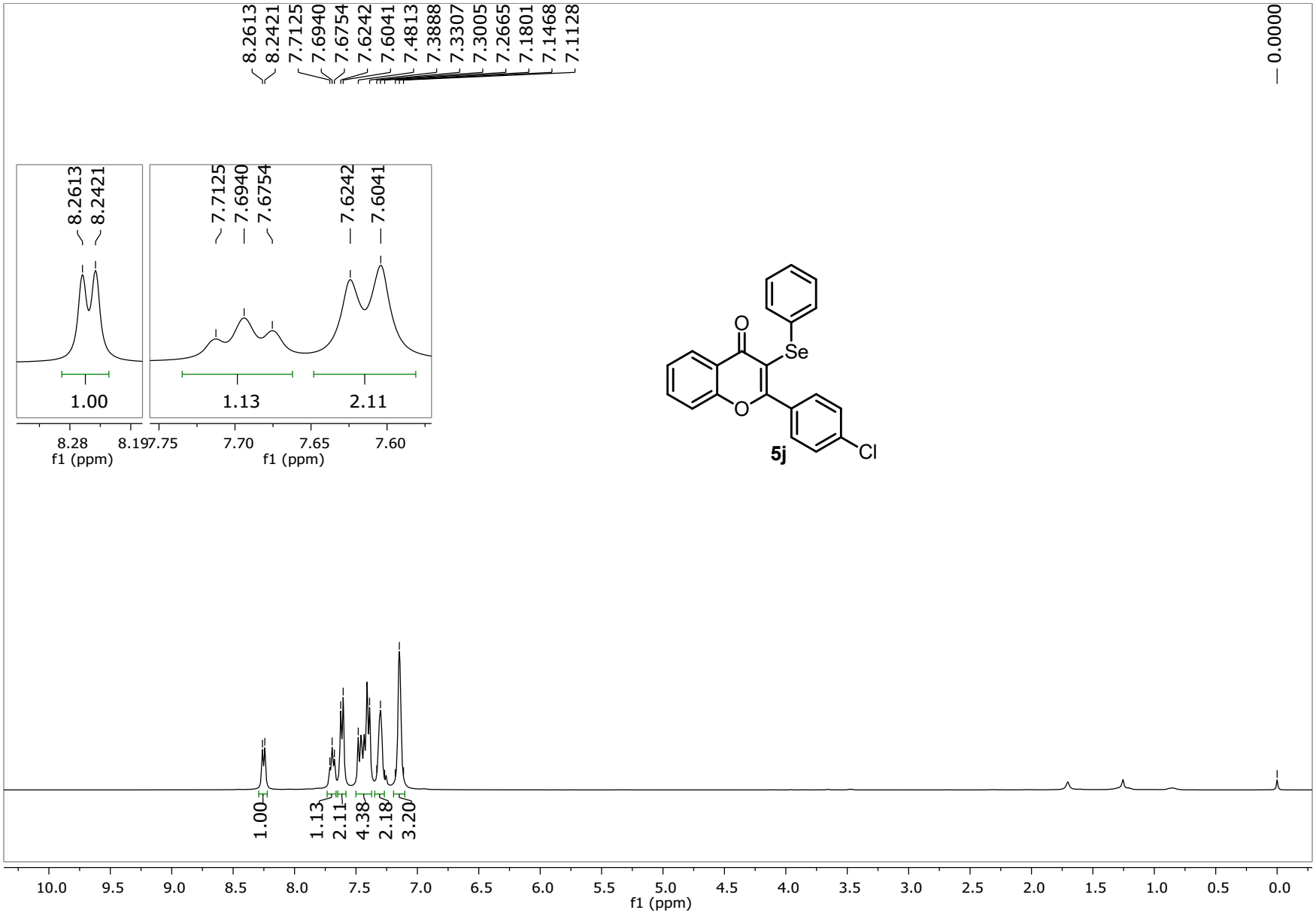

Figure S70: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5j**.

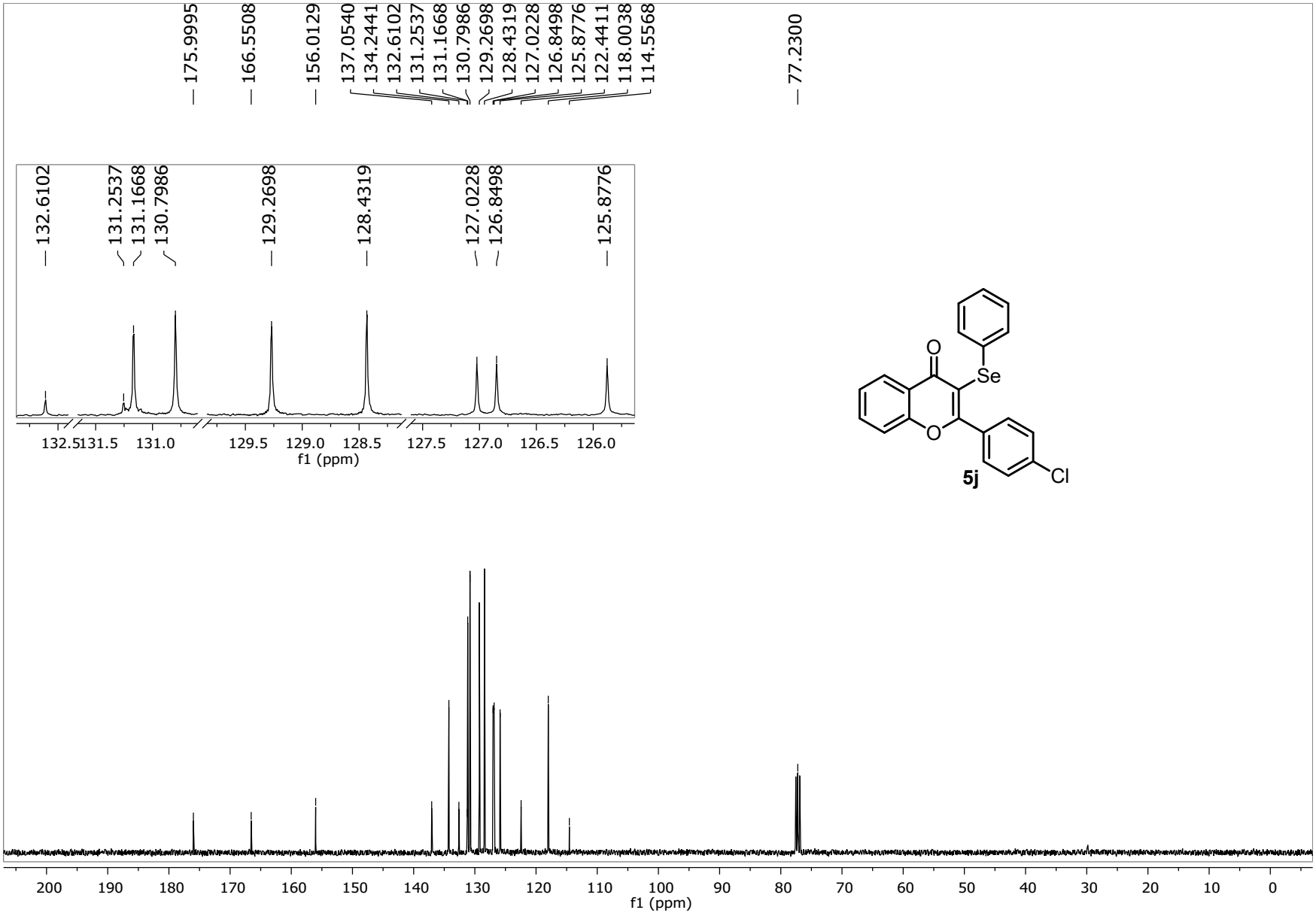

Figure S71: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5j**.

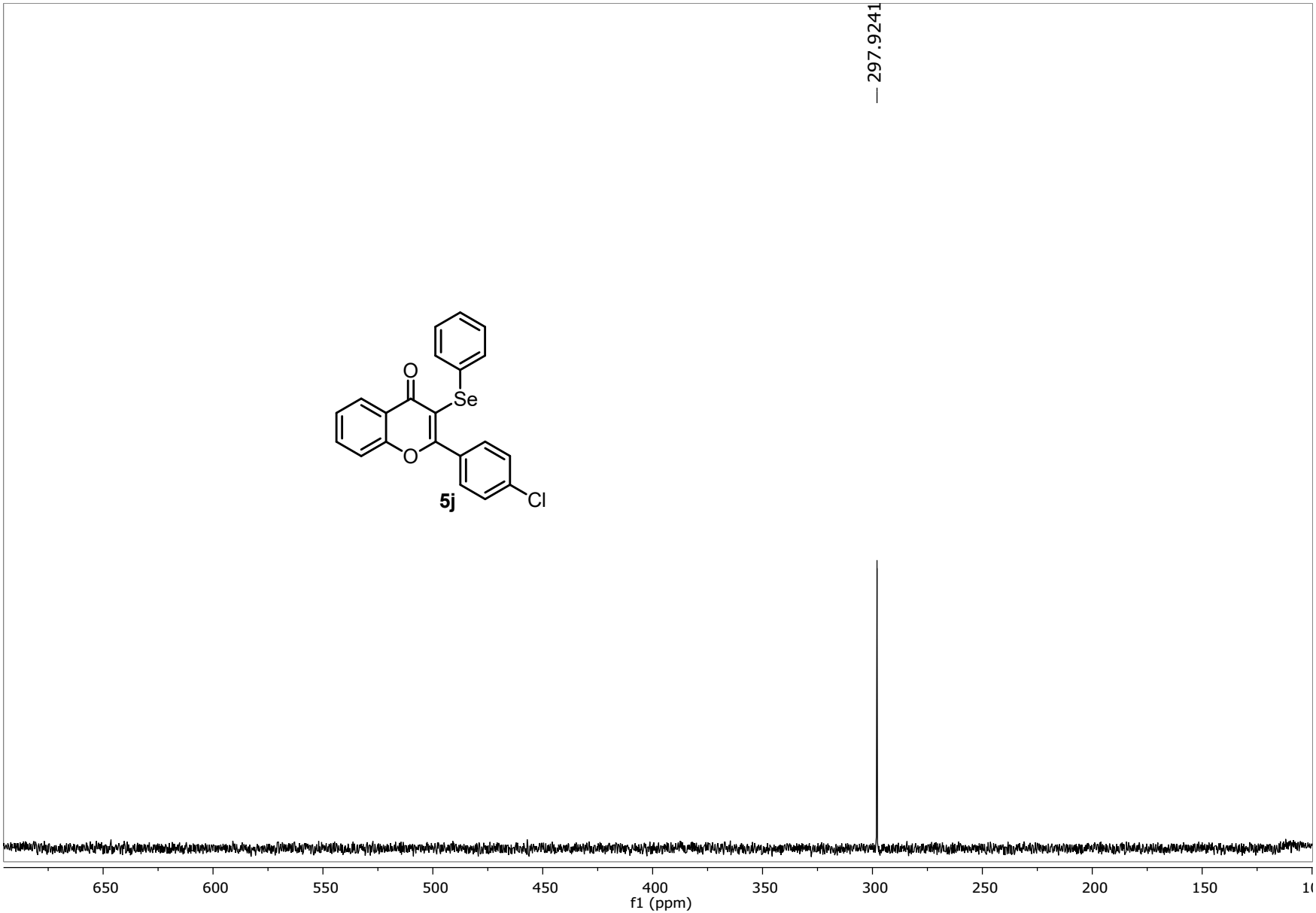

Figure S72: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5j**.

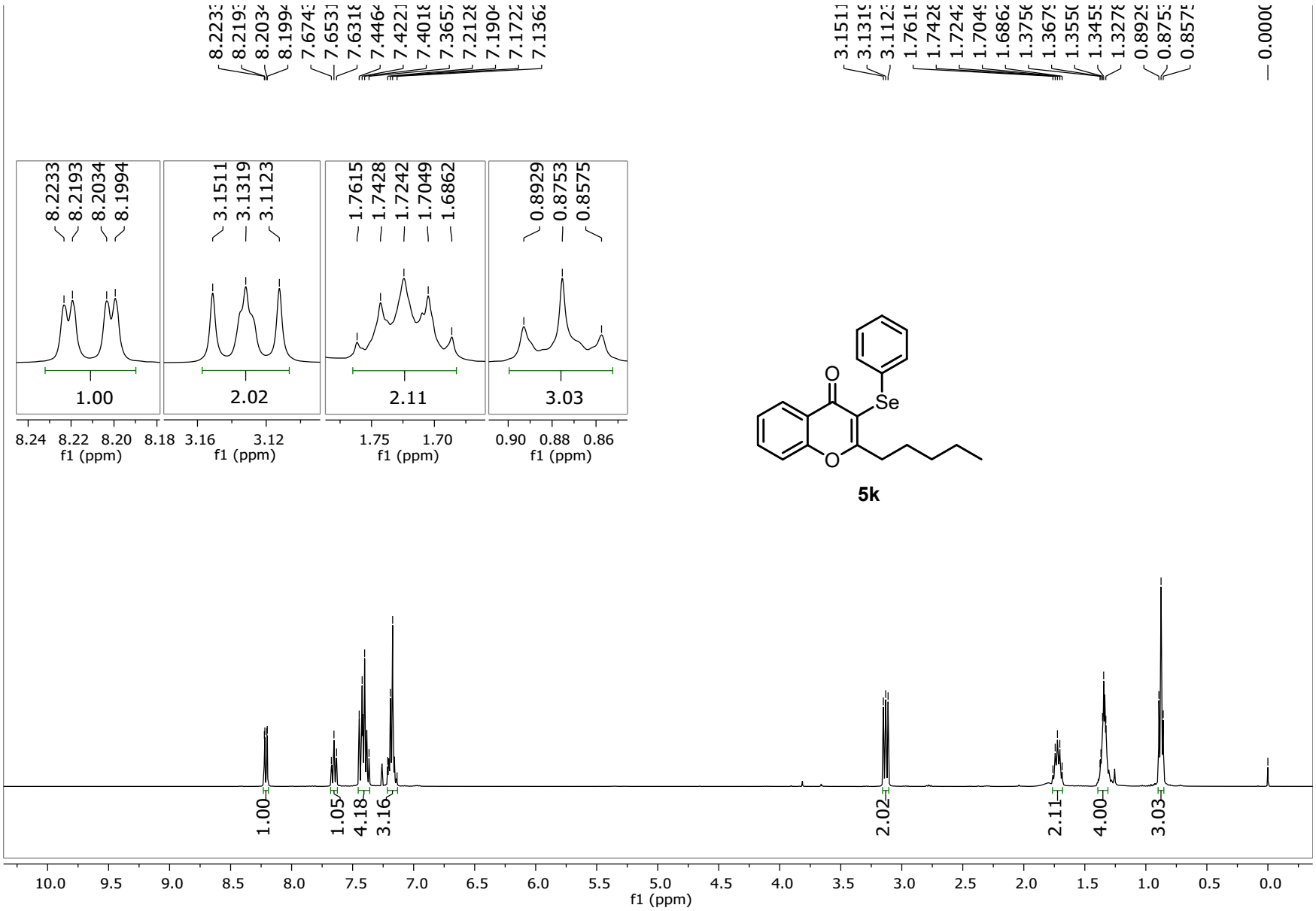

Figure S73: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **5k**.

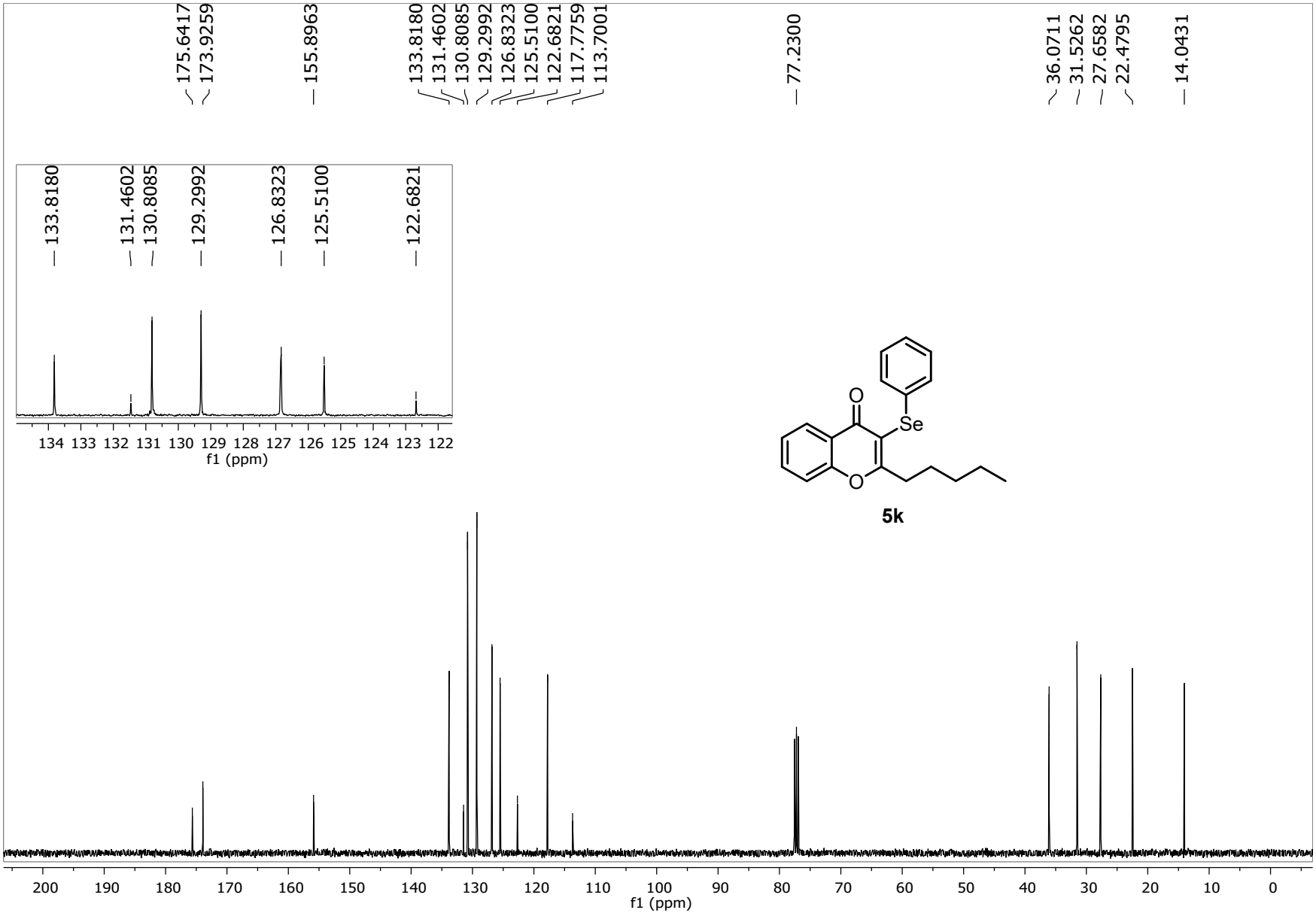

Figure S74: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **5k**.

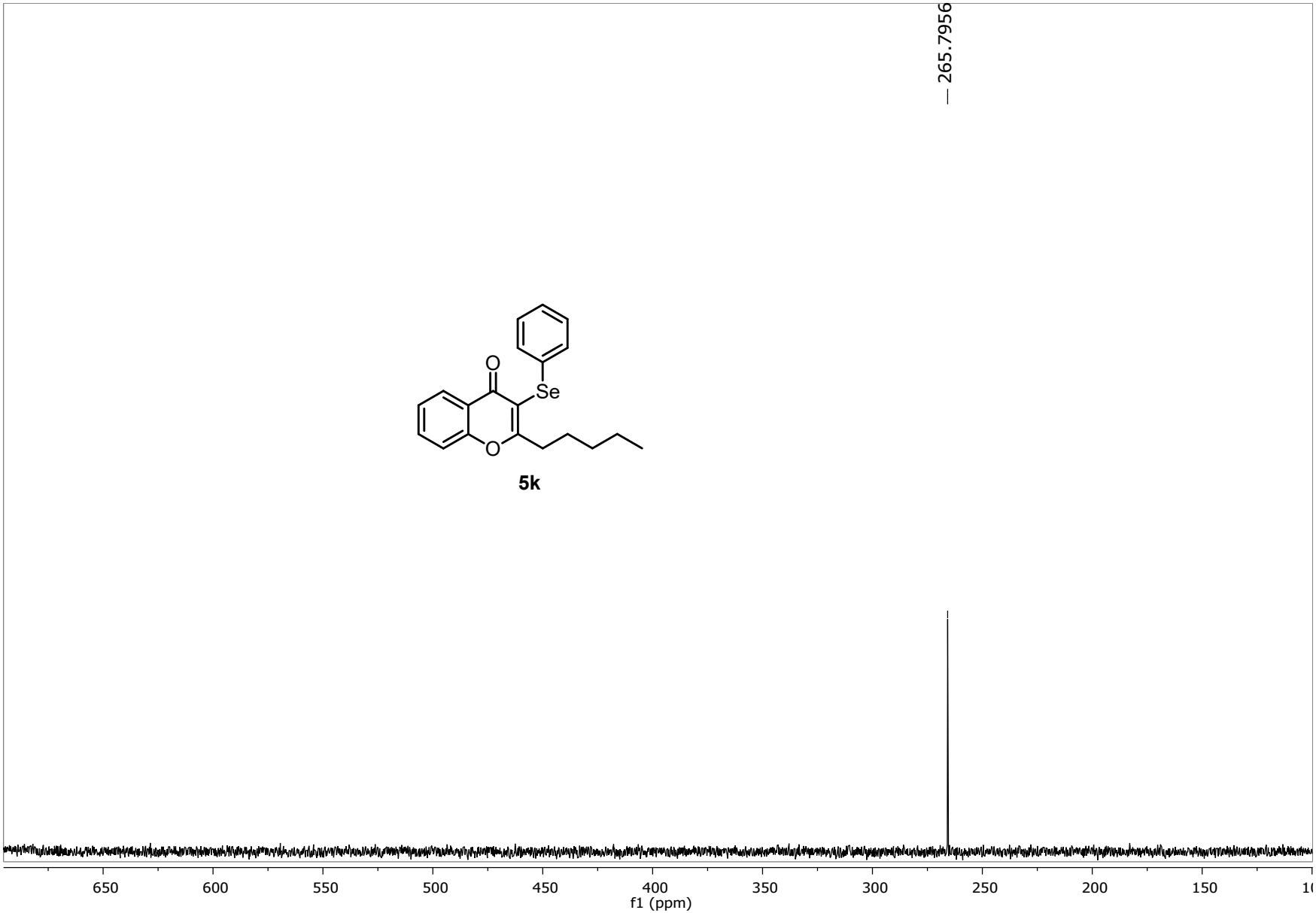

Figure S75: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **5k**.

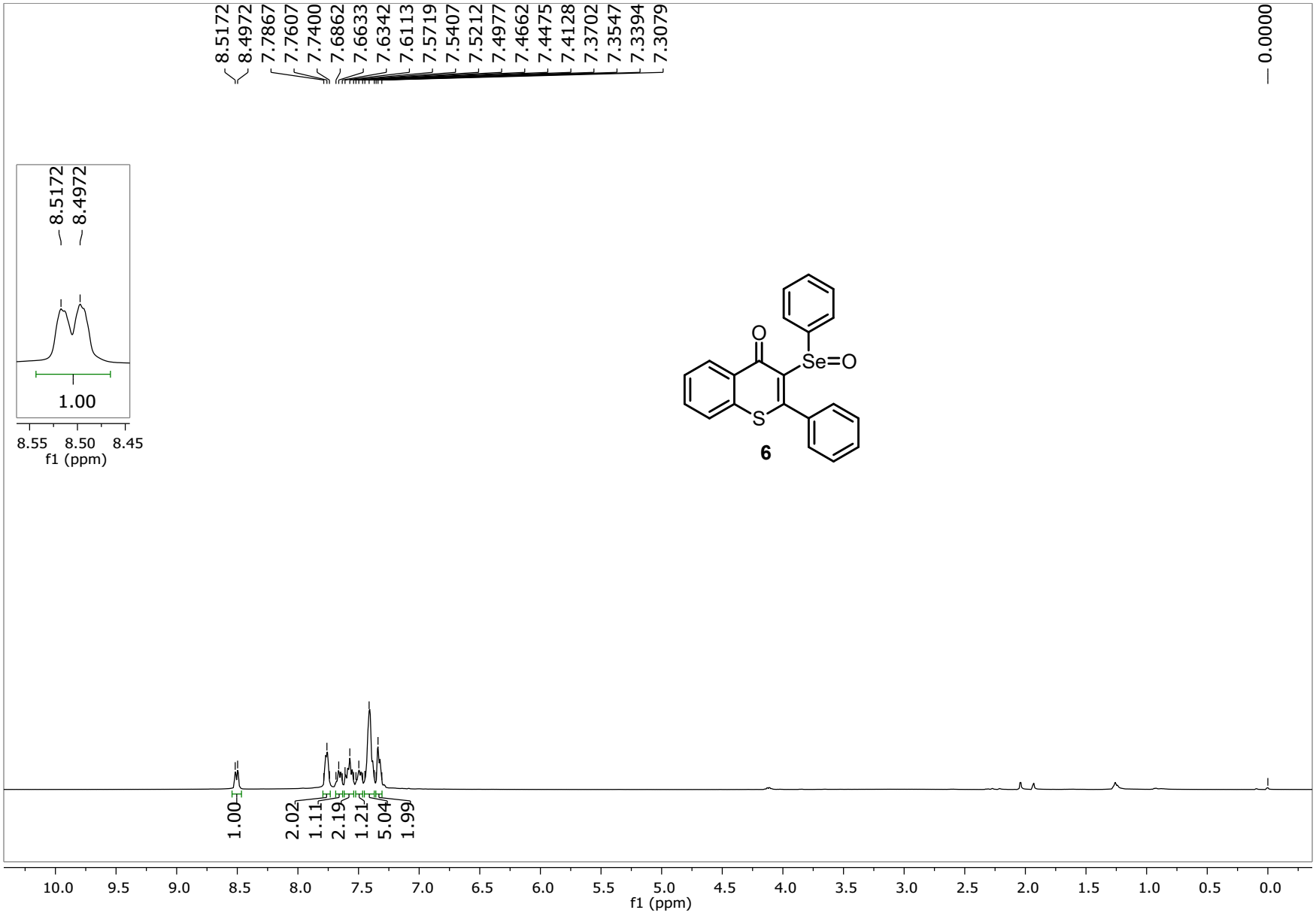

Figure S76: ^{1}H NMR (400 MHz, $CDCl_3$) spectrum of compound **6**.

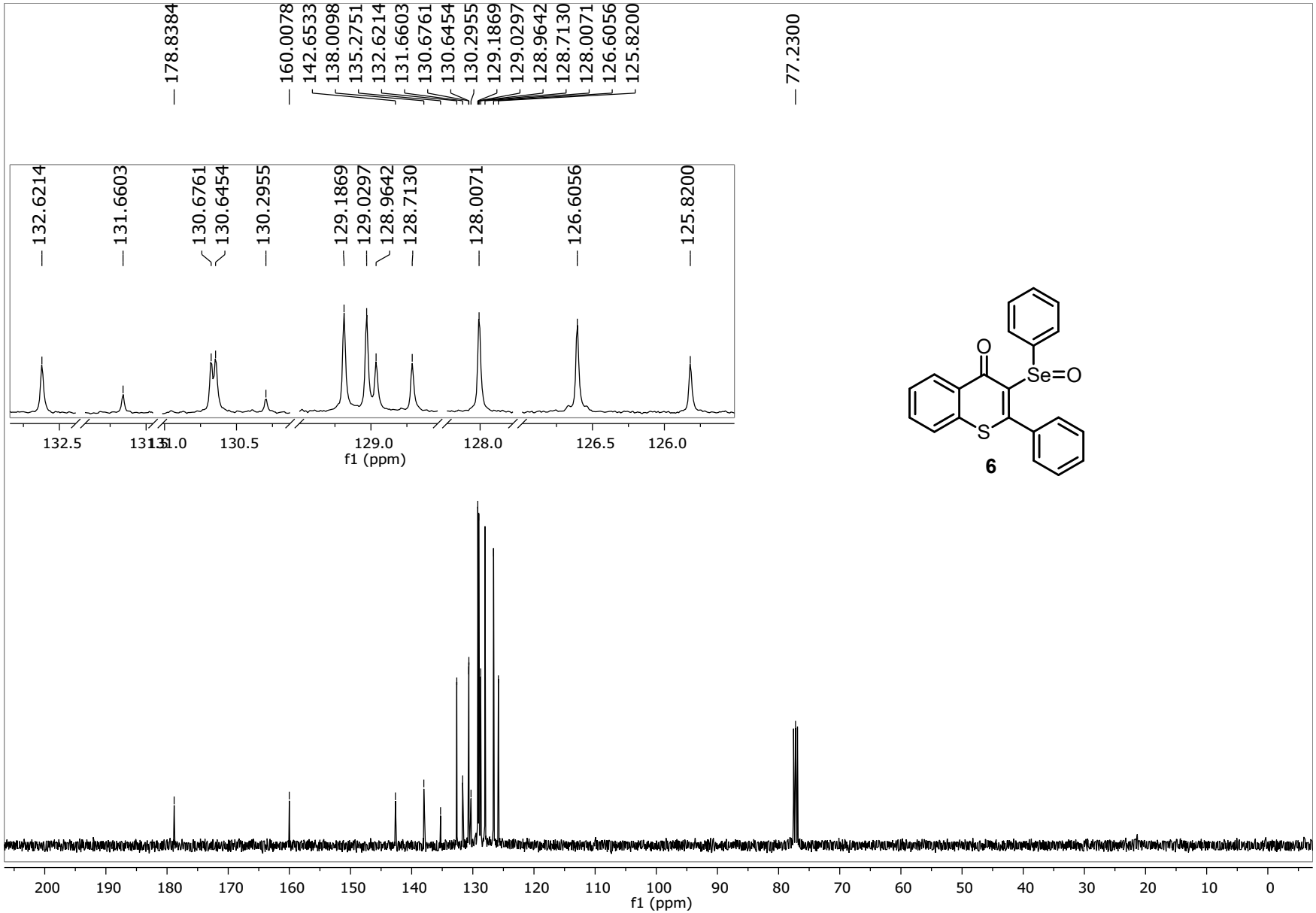

Figure S77: $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$) spectrum of compound **6**.

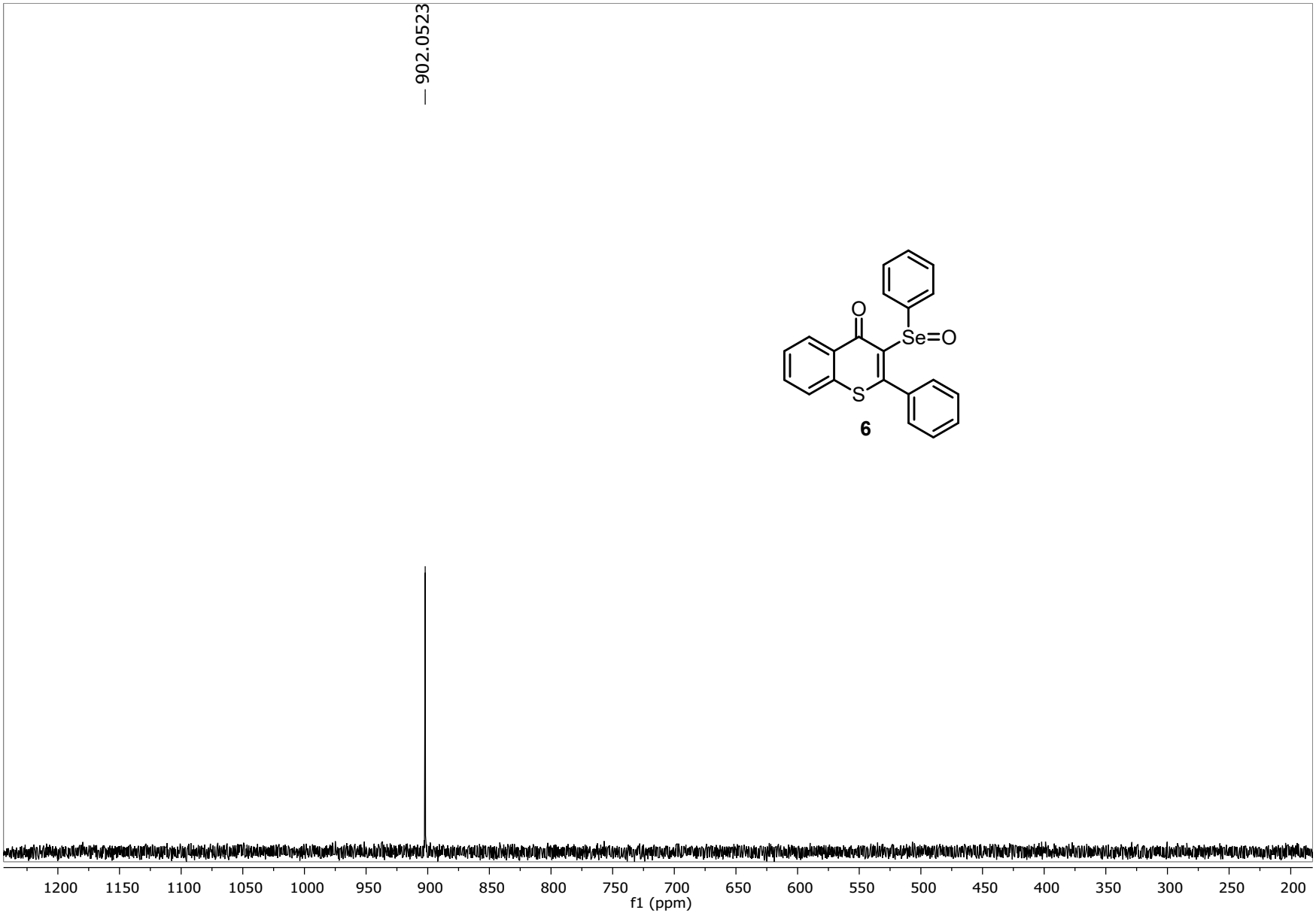

Figure S78: $^{77}Se\{^{1}H\}$ NMR (76 MHz, $CDCl_3$) spectrum of compound **6**.