Synthesis of Simple 3,3-diarylazetidines from N-Boc-3-aryl-azetidinols using Friedel-Crafts Arylation Conditions

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Supporting Information

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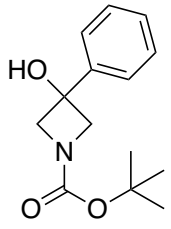
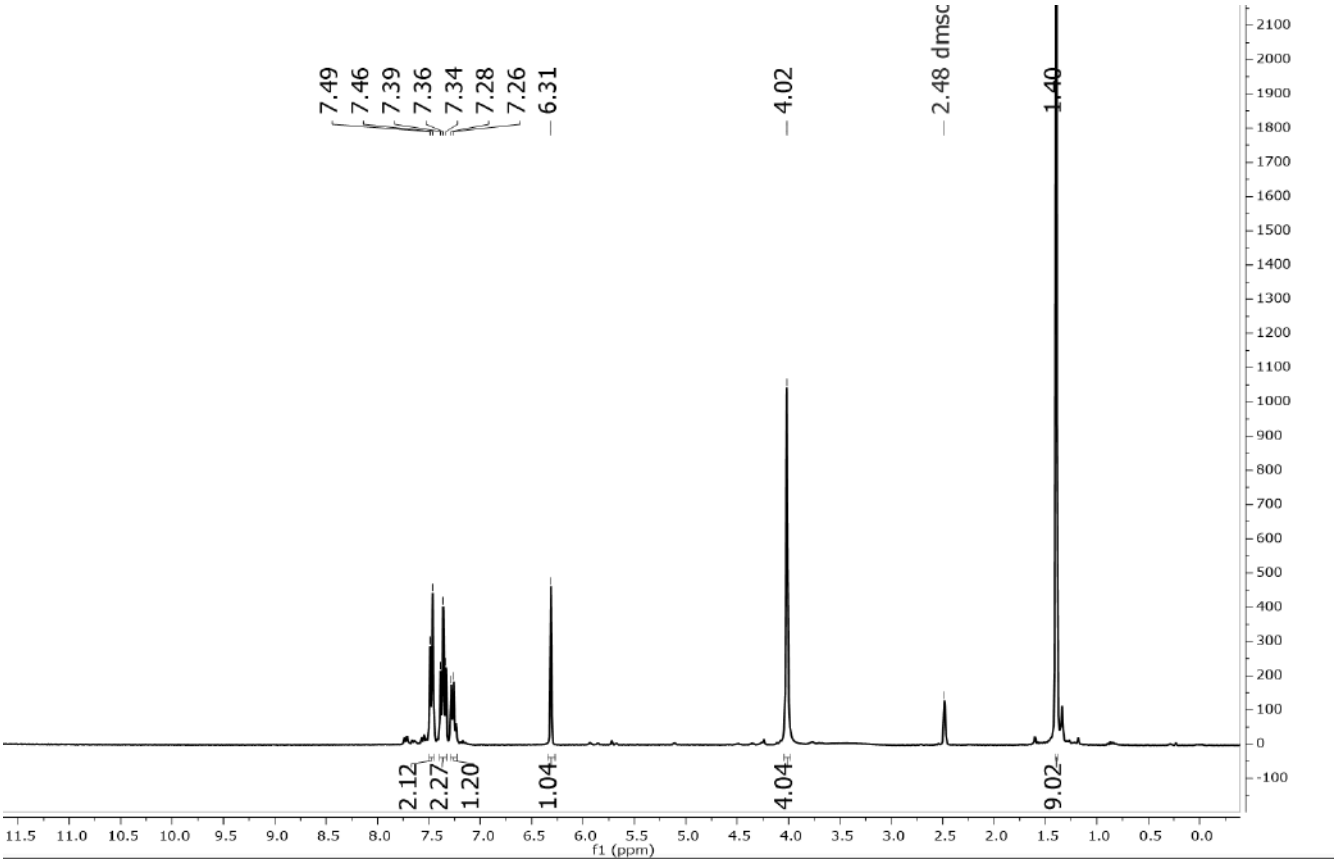
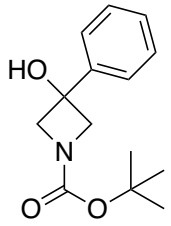
N-Boc-3-Phenyl-3-azetidinol (**2a**).



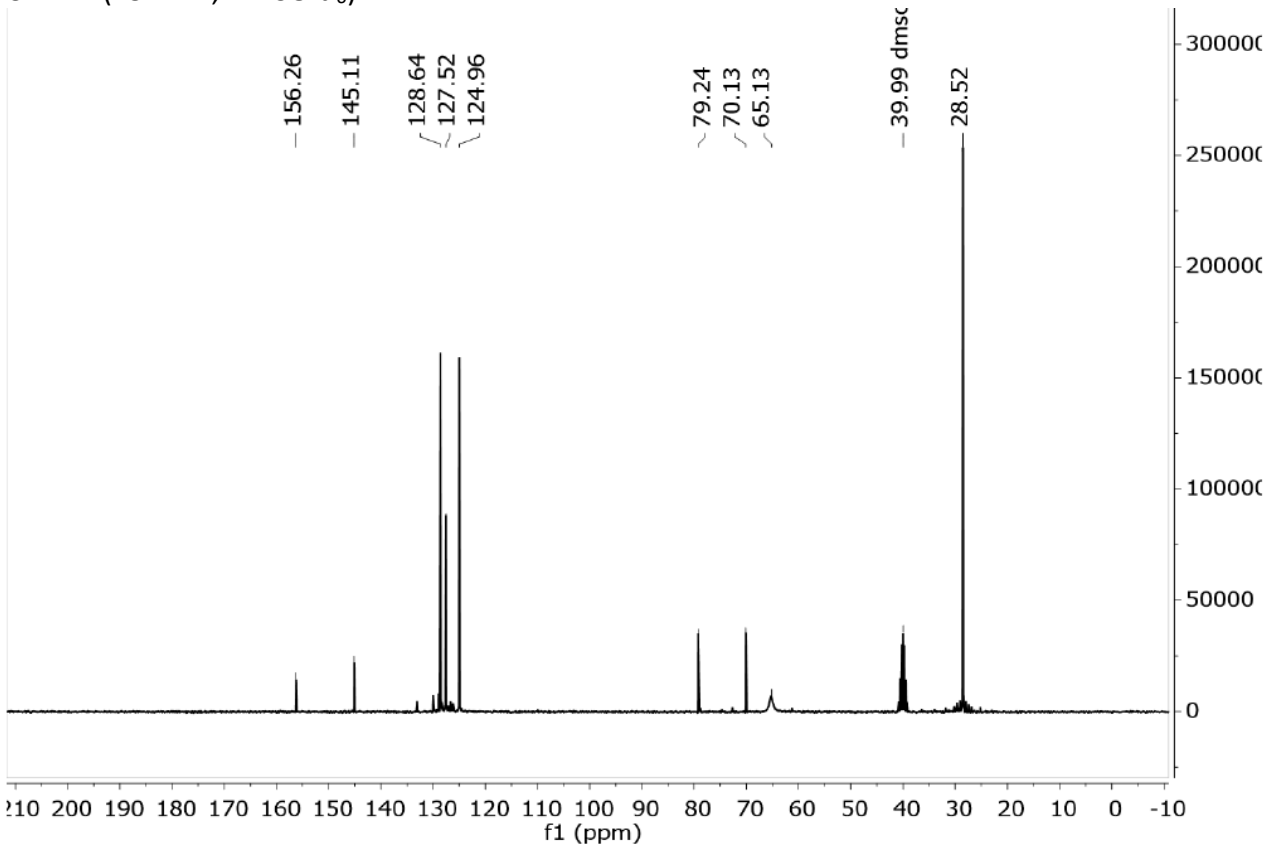
^{1}H NMR (300 MHz, DMSO-d_6)



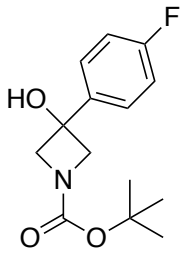
N-Boc-3-Phenyl-3-azetidinol (**2a**).



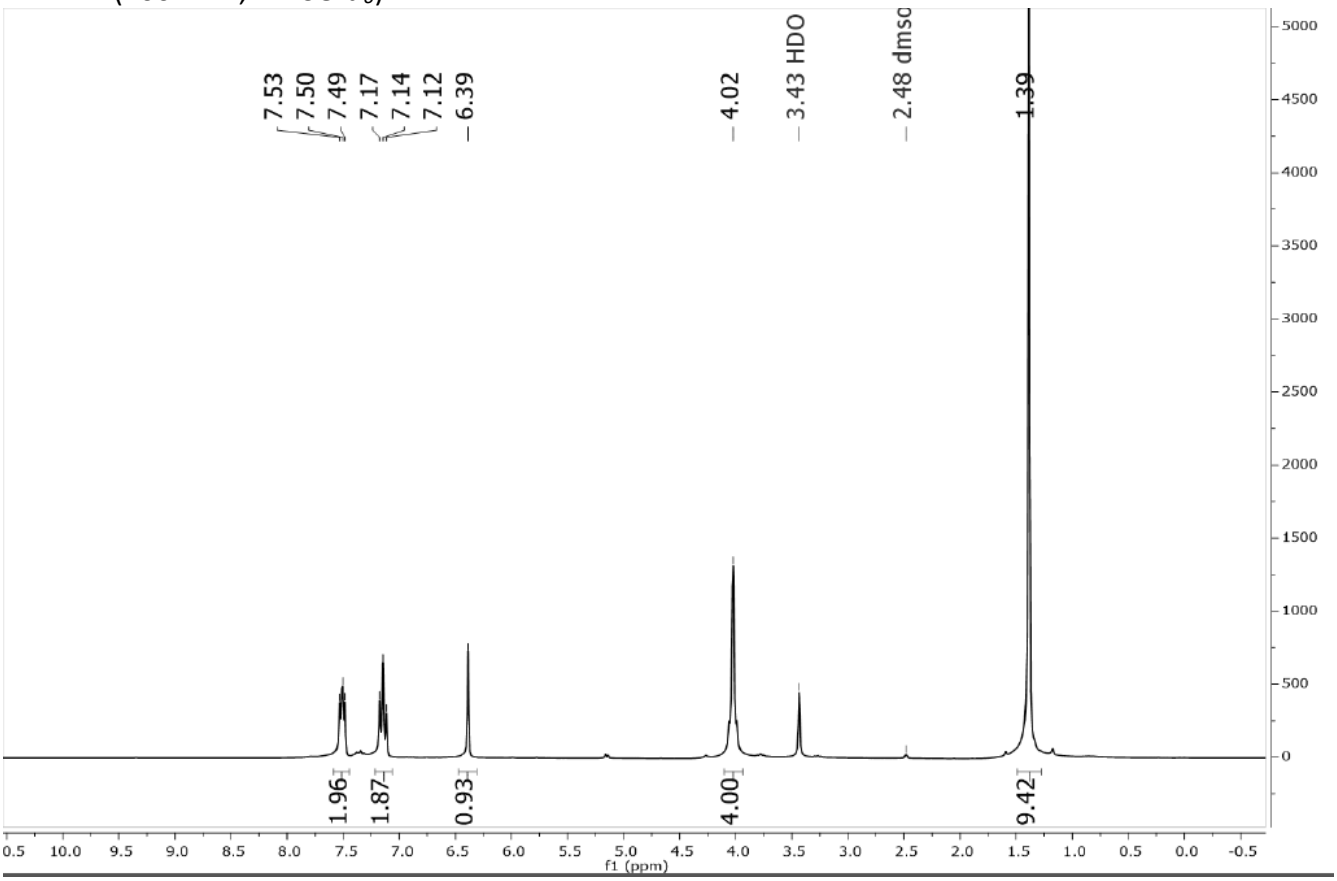
^{13}C NMR (75 MHz, DMSO-d_6)



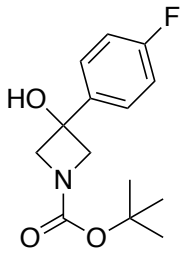
N-Boc-3-(4-fluorophenyl)-3-azetidinol (**2b**).



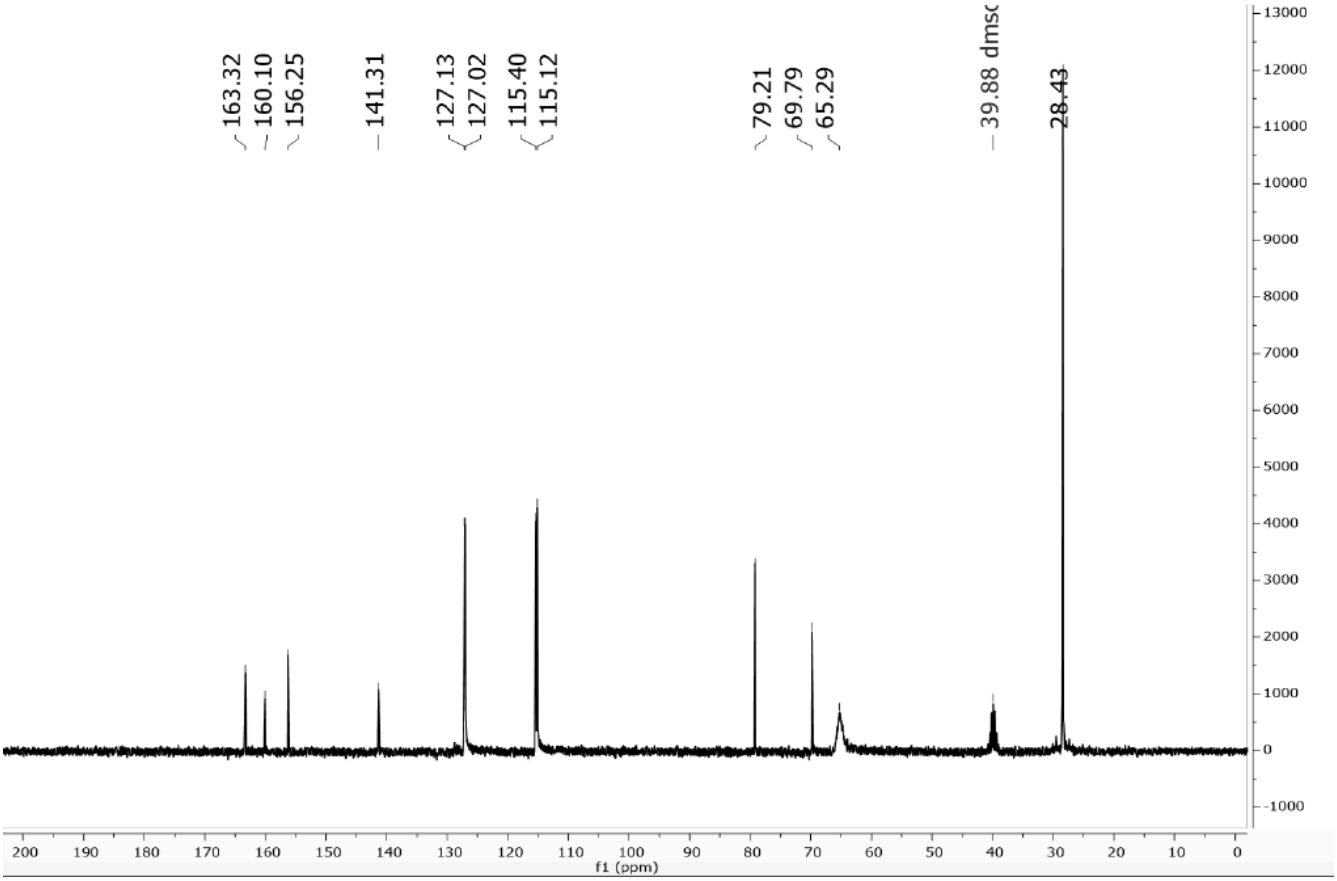
^{1}H NMR (400 MHz, DMSO-d_6)



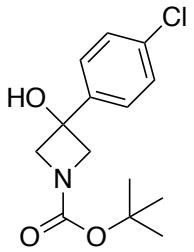
N-Boc-3-(4-fluorophenyl)-3-azetidinol (**2b**).



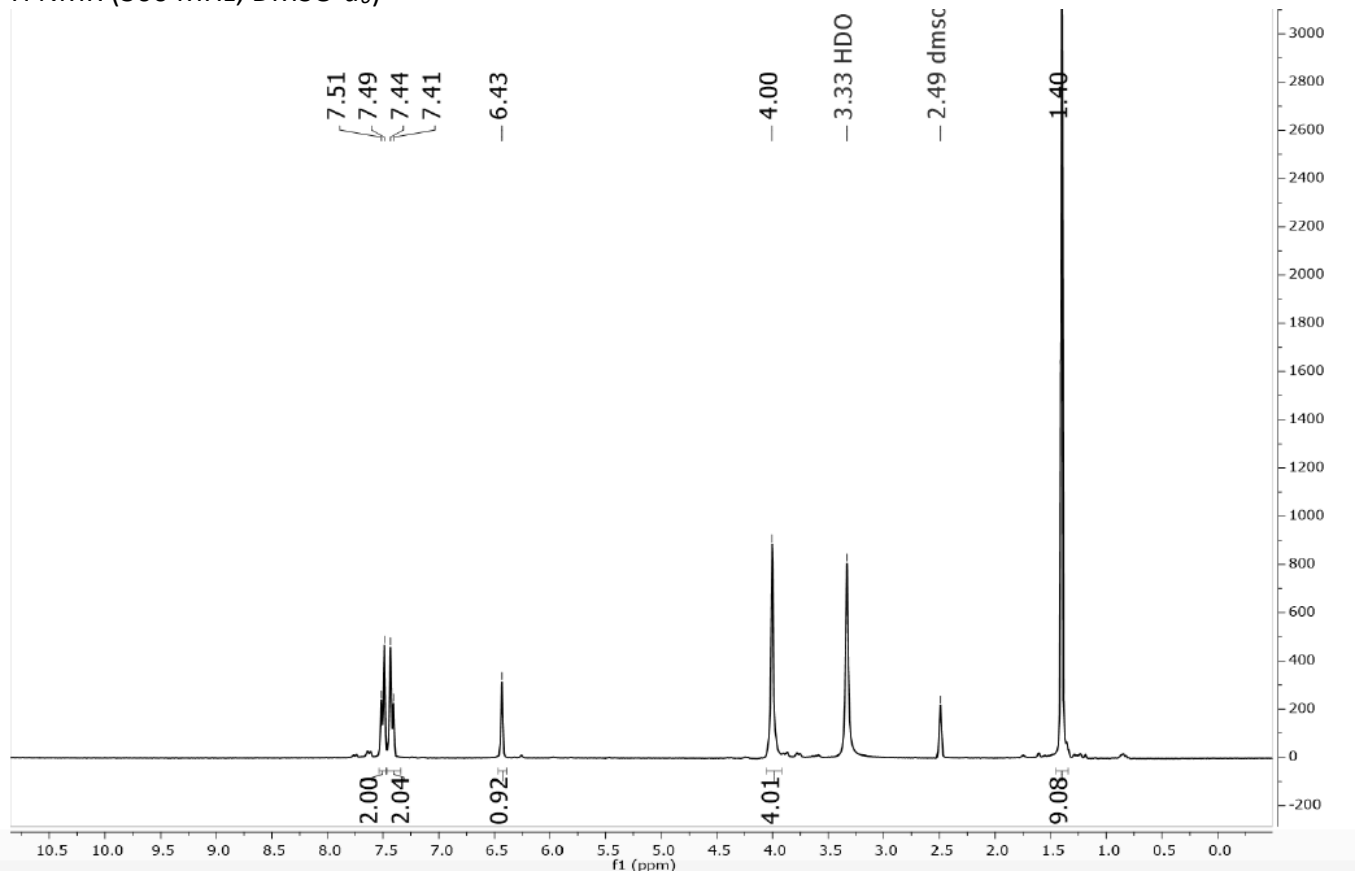
^{13}C NMR (100 MHz, DMSO-d_6)



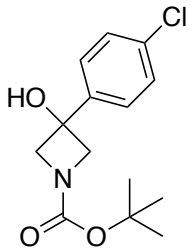
N-Boc-3-(4-chlorophenyl)-3-azetidinol (**2c**).



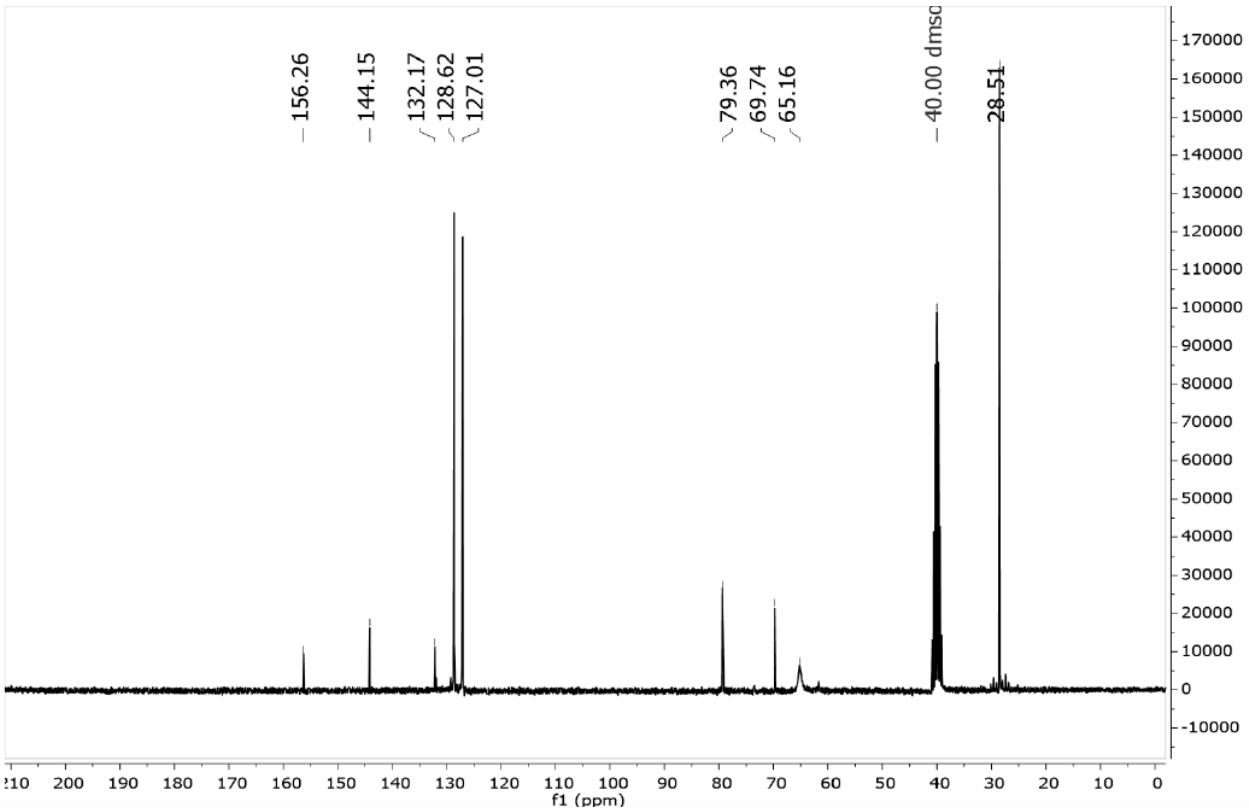
^{1}H NMR (300 MHz, DMSO-d_6)



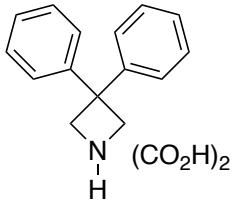
N-Boc-3-(4-chlorophenyl)-3-azetidinol (**2c**).



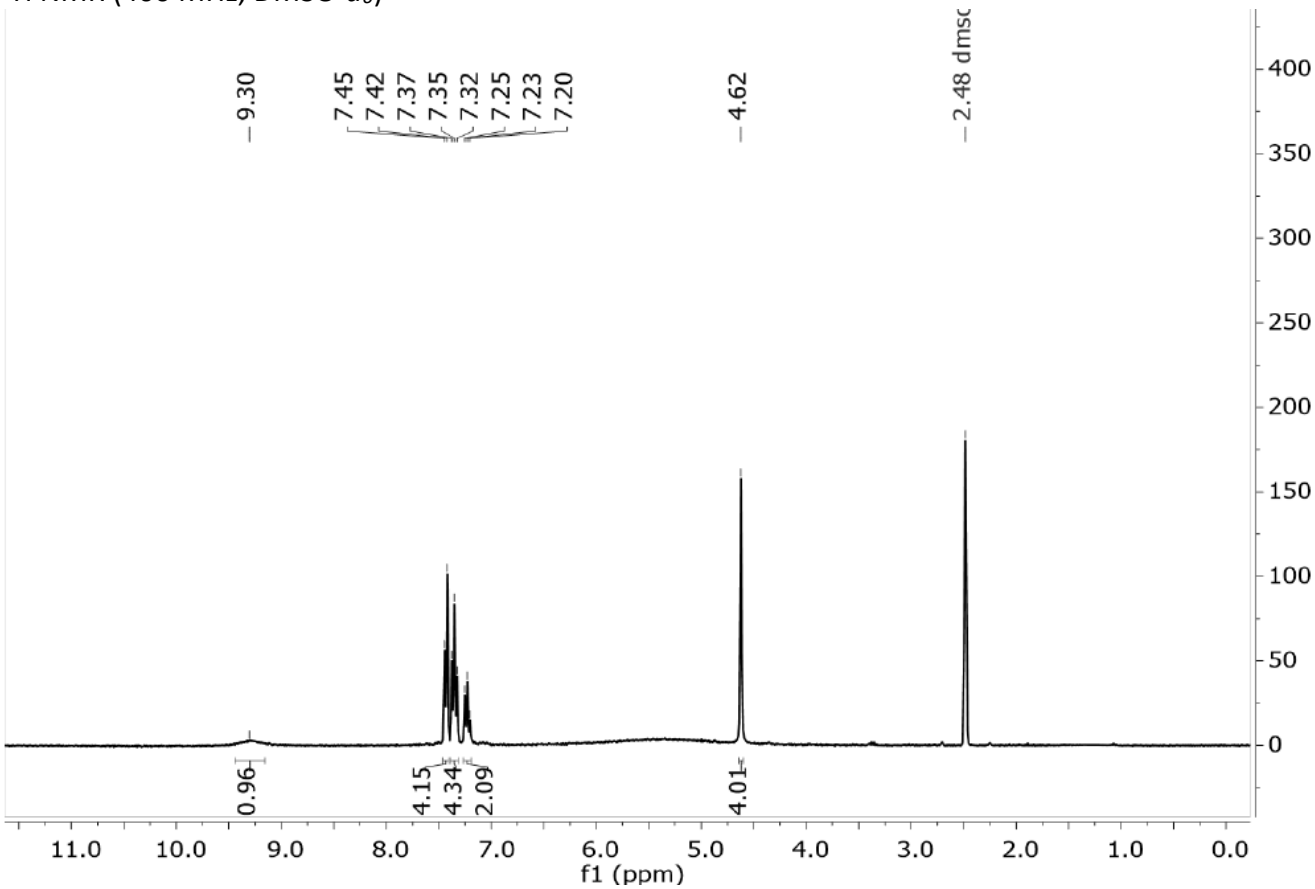
^{13}C NMR (75 MHz, DMSO-d_6)



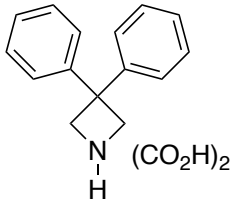
3,3-diphenyl-3-azetidine hydrogen oxalate (**3a**).



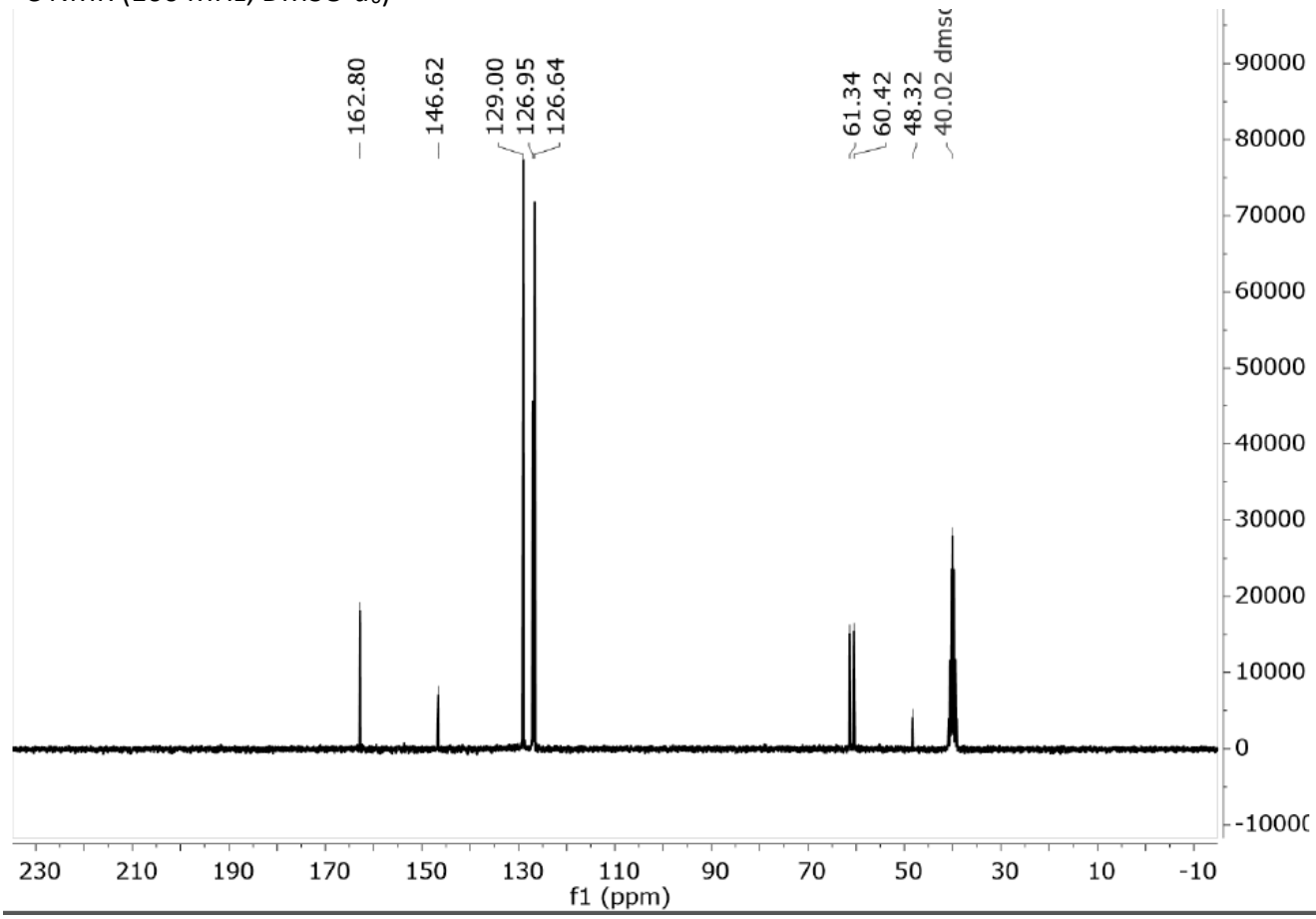
^{1}H NMR (400 MHz, DMSO-d_6)



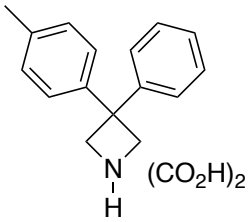
3,3-diphenyl-3-azetidine hydrogen oxalate (**3a**).



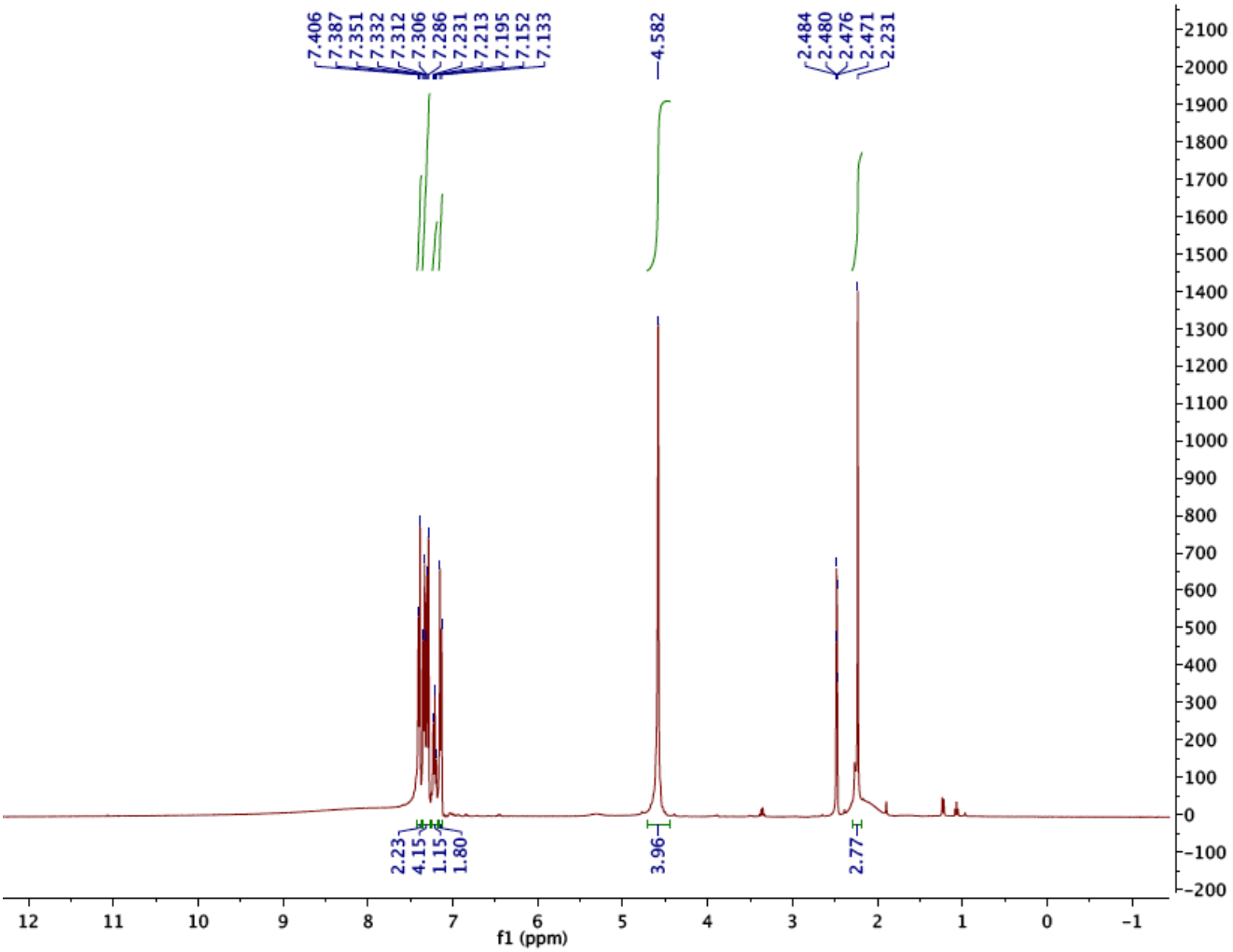
^{13}C NMR (100 MHz, DMSO-d_6)



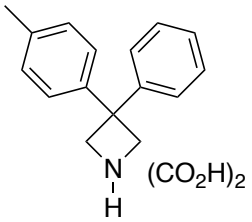
3-(4-methylphenyl)-3-phenylazetidine hydrogen oxalate (**3b**).



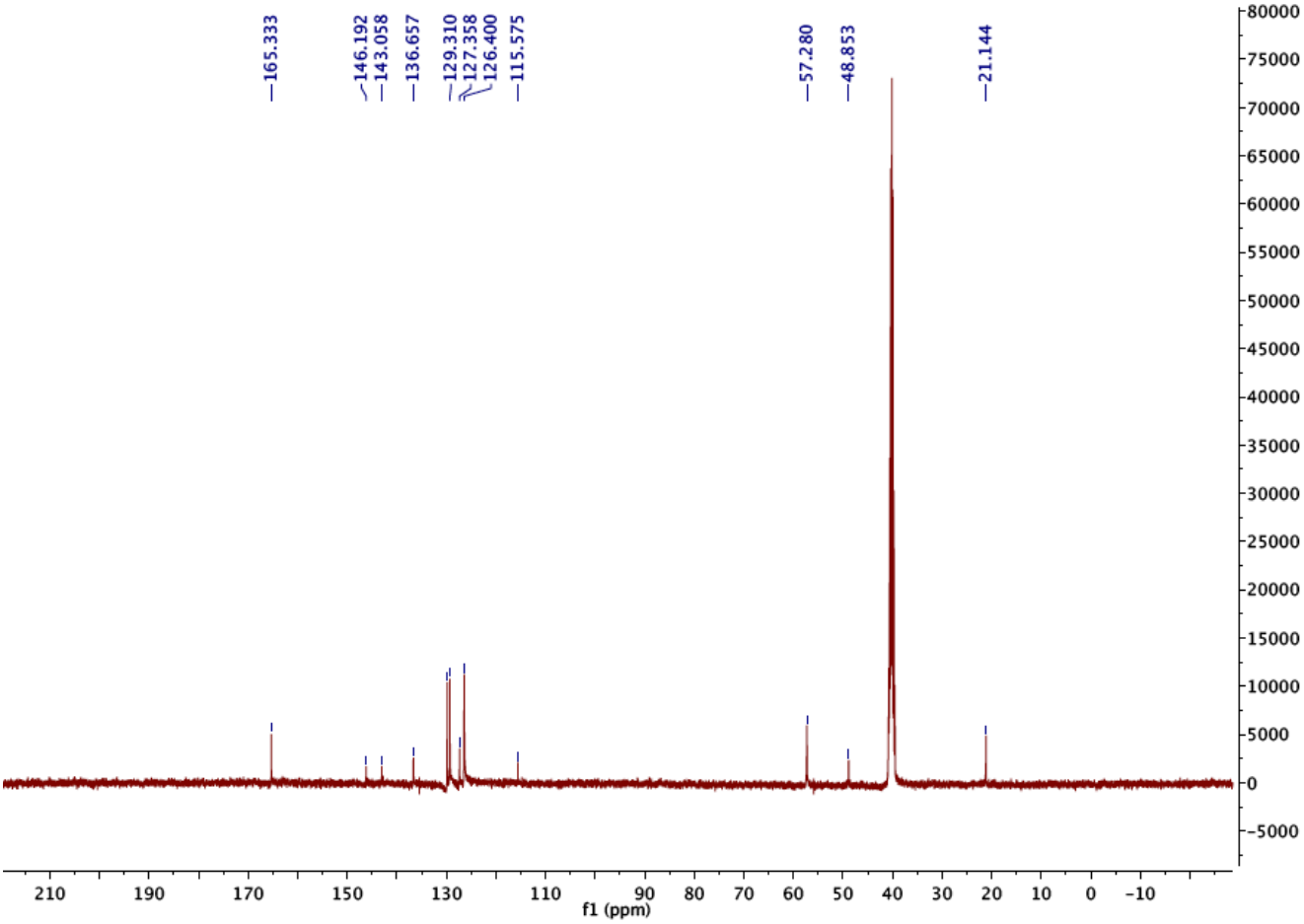
^{1}H NMR (400 MHz, DMSO-d_6)



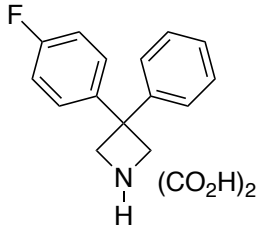
3-(4-methylphenyl)-3-phenylazetidine hydrogen oxalate (**3b**).



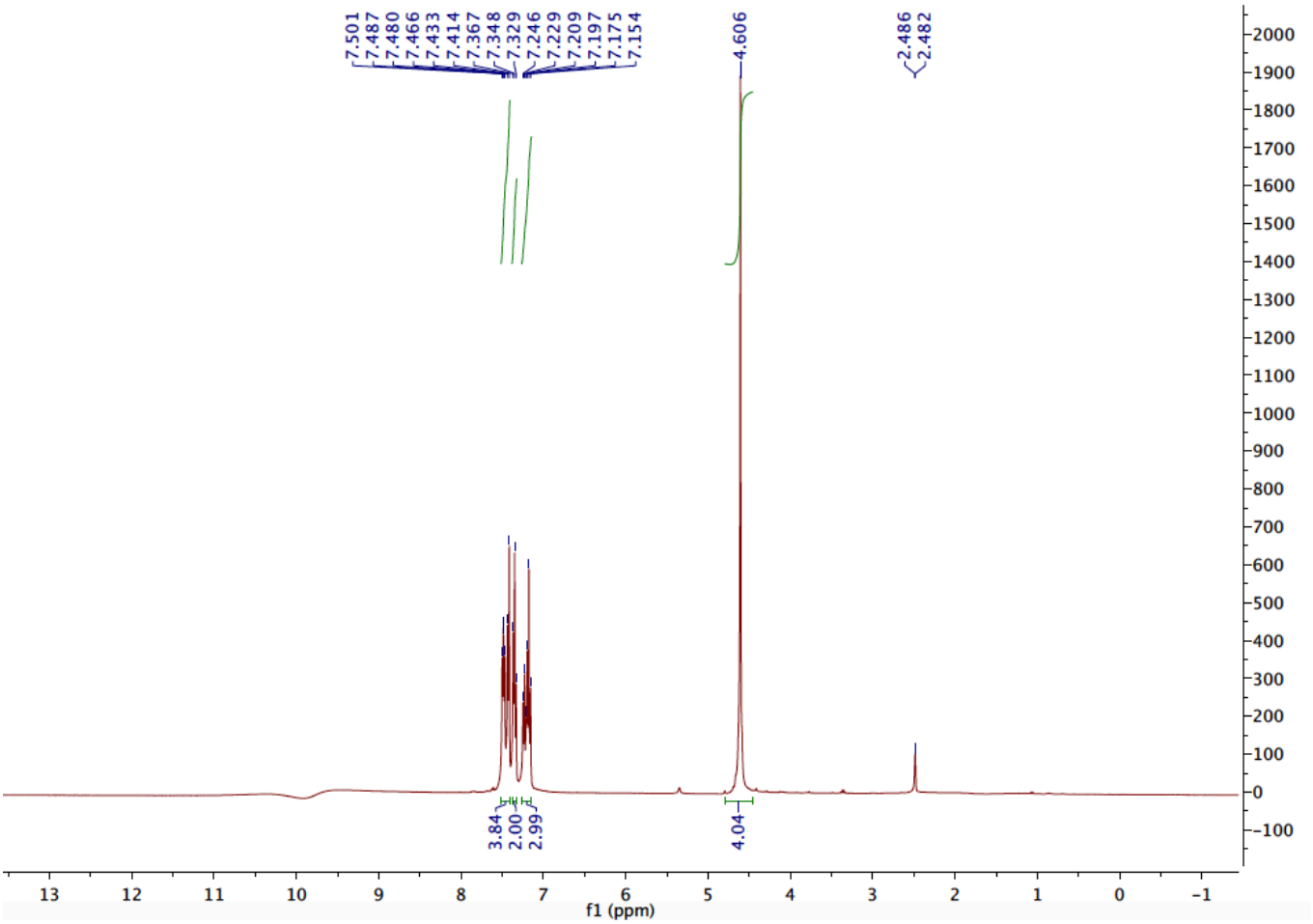
^{13}C NMR (100 MHz, DMSO-d_6)



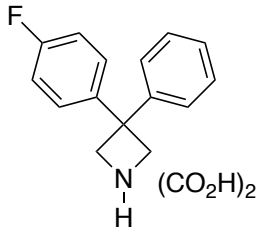
3-(4-fluorophenyl)-3-phenylazetidine hydrogen oxalate (**3c, 3f**).



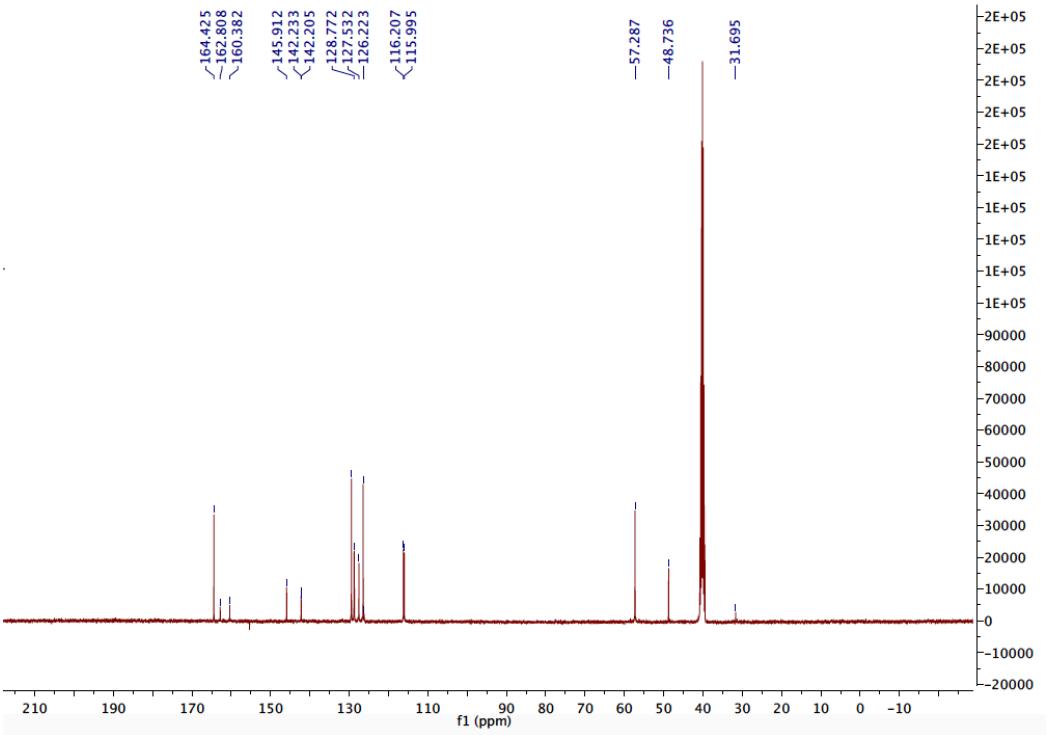
^{1}H NMR (400 MHz, DMSO-d_6)



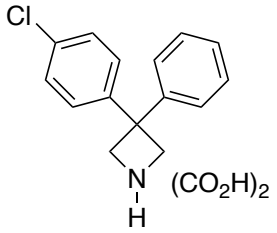
3-(4-fluorophenyl)-3-phenylazetidine hydrogen oxalate (**3c, 3f**).



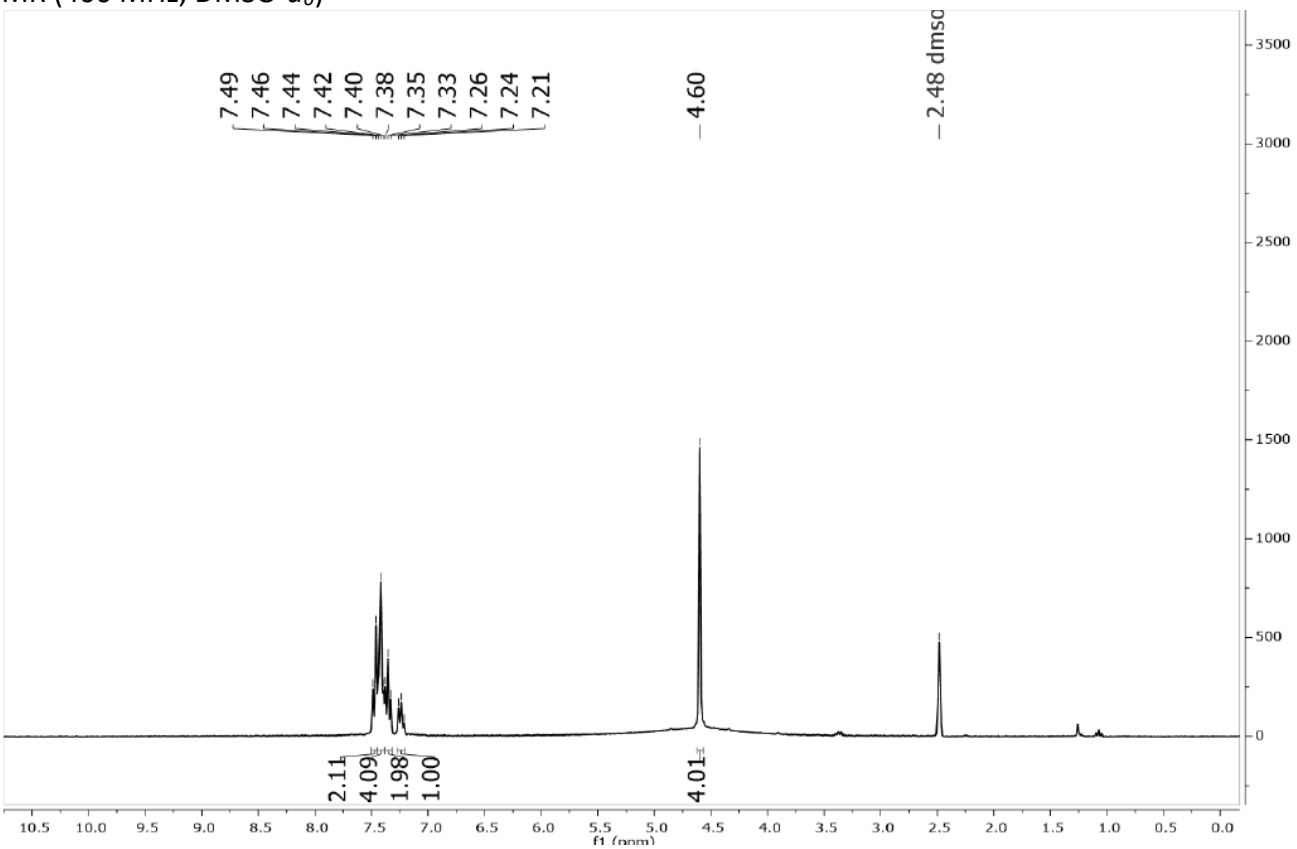
^{13}C NMR (100 MHz, DMSO-d_6)



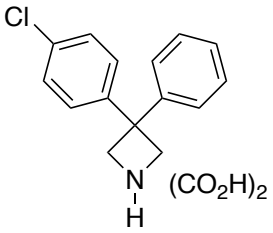
3-(4-chlorophenyl)-3-phenylazetidine hydrogen oxalate (**3d, 3k**).



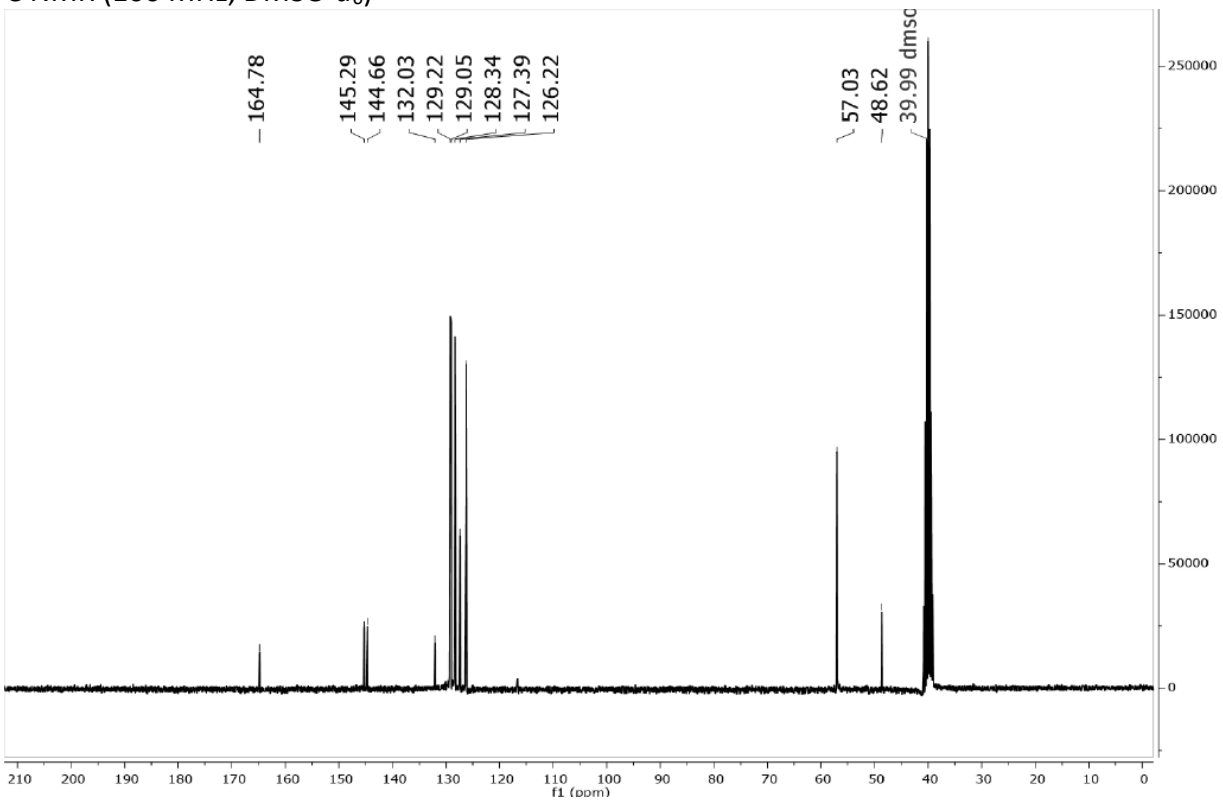
^{1}H NMR (400 MHz, DMSO-d_6)



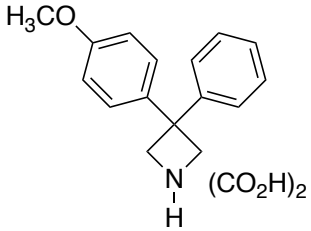
3-(4-chlorophenyl)-3-phenylazetidine hydrogen oxalate (**3d, 3k**).



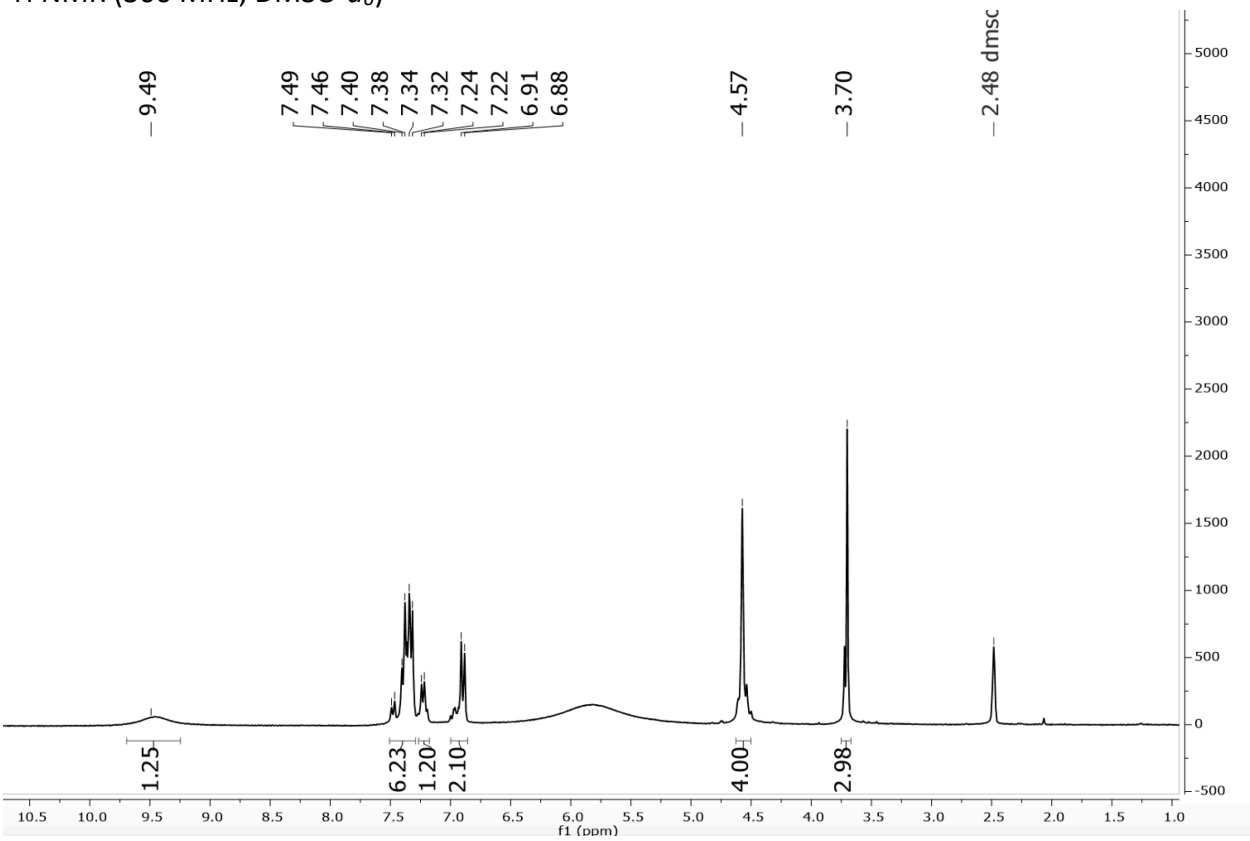
^{13}C NMR (100 MHz, DMSO-d_6)



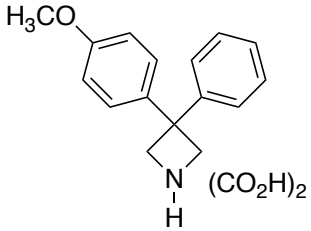
3-(4-Methoxyphenyl)-3-phenylazetidine hydrogen oxalate (**3e**).



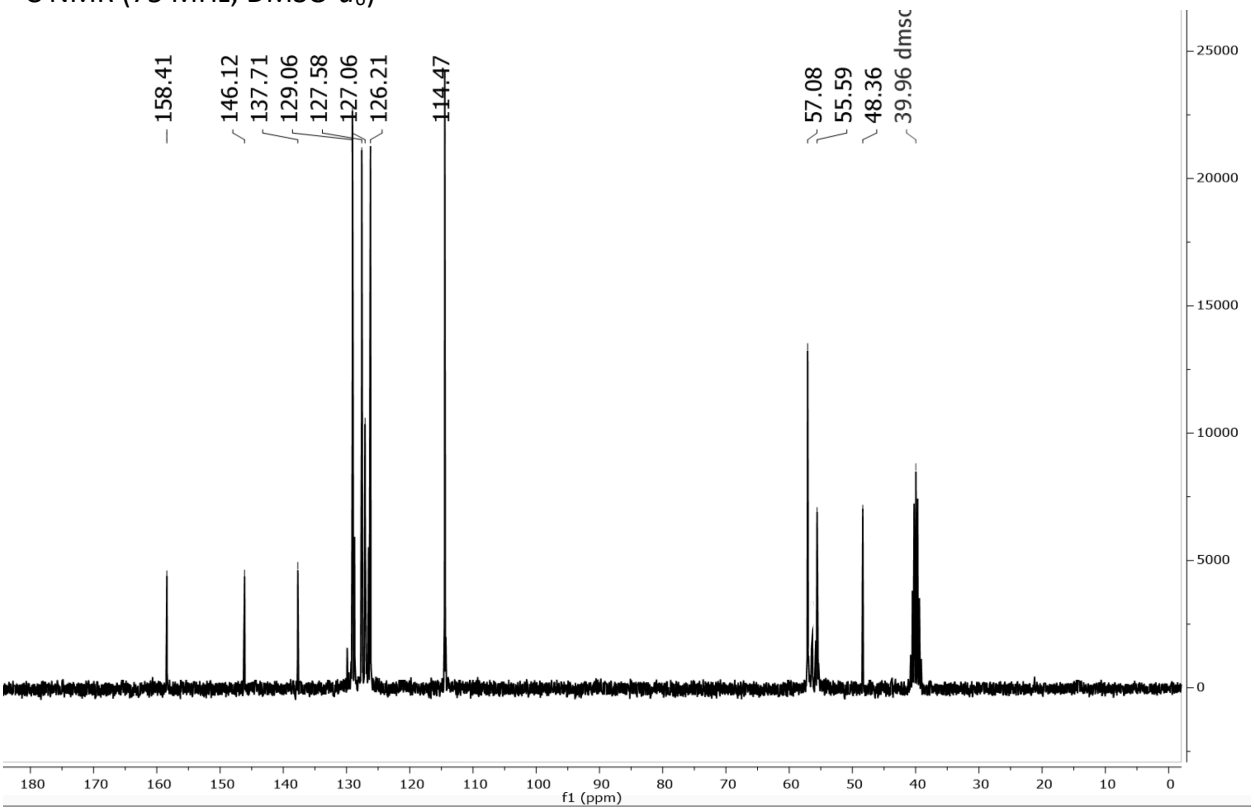
^{1}H NMR (300 MHz, DMSO-d_6)



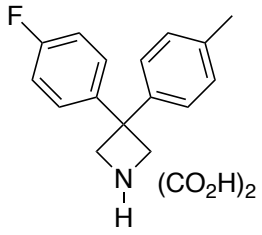
3-(4-Methoxyphenyl)-3-phenylazetidine hydrogen oxalate (**3e**).



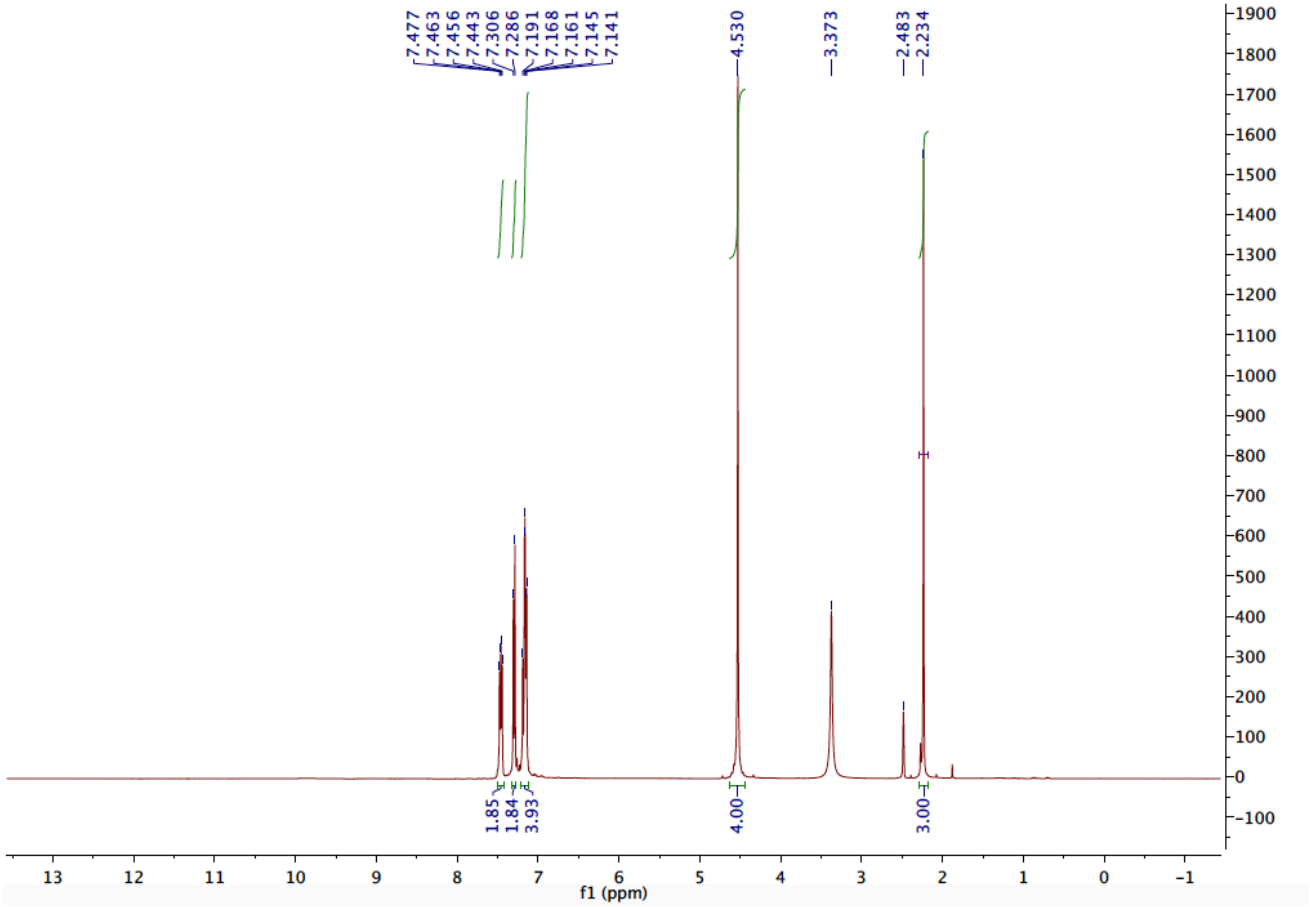
^{13}C NMR (75 MHz, DMSO-d_6)



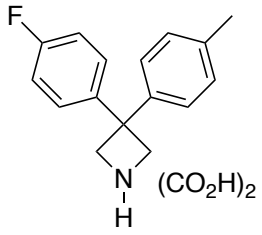
3-(4-Fluorophenyl)-3-(4-methylphenyl)azetidine hydrogen oxalate (**3g**).



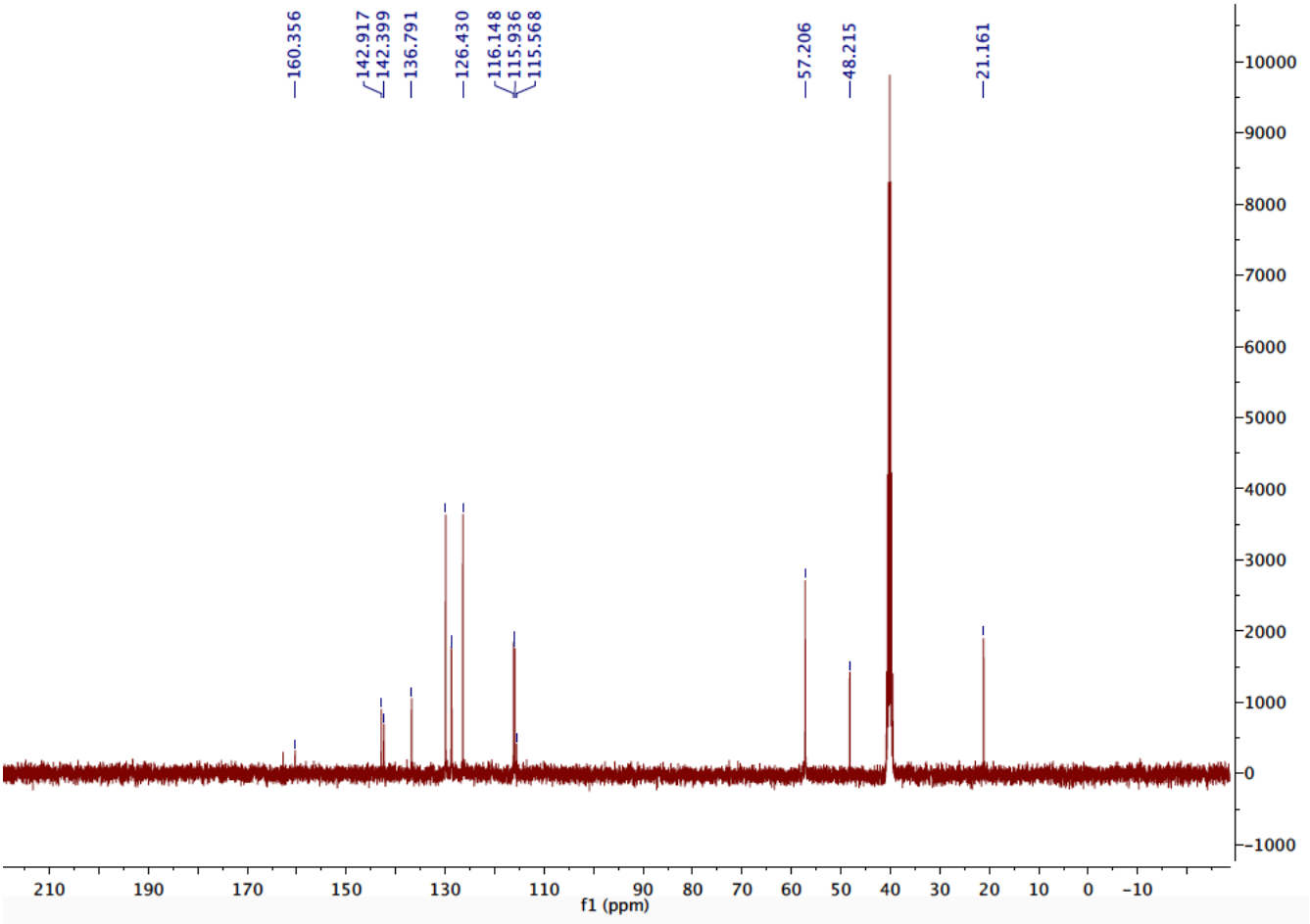
^{1}H NMR (300 MHz, DMSO-d_6)



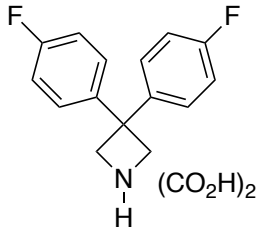
3-(4-Fluorophenyl)-3-(4-methylphenyl)azetidine hydrogen oxalate (**3g**).



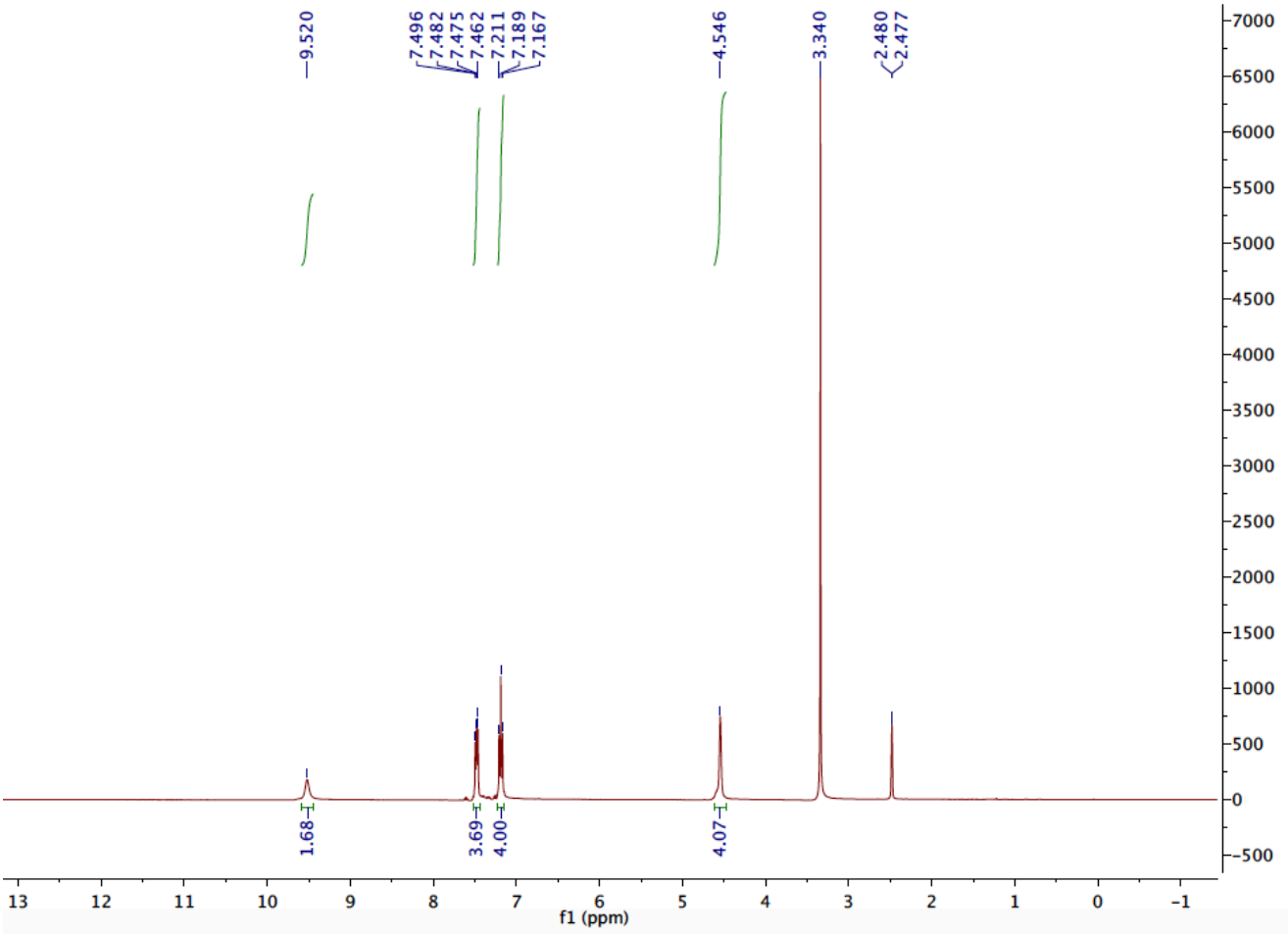
^{13}C NMR (300 MHz, DMSO-d_6)



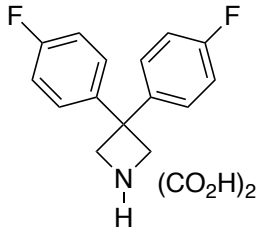
3,3-Di-(4-fluorophenyl)azetidine hydrogen oxalate (**3h**).



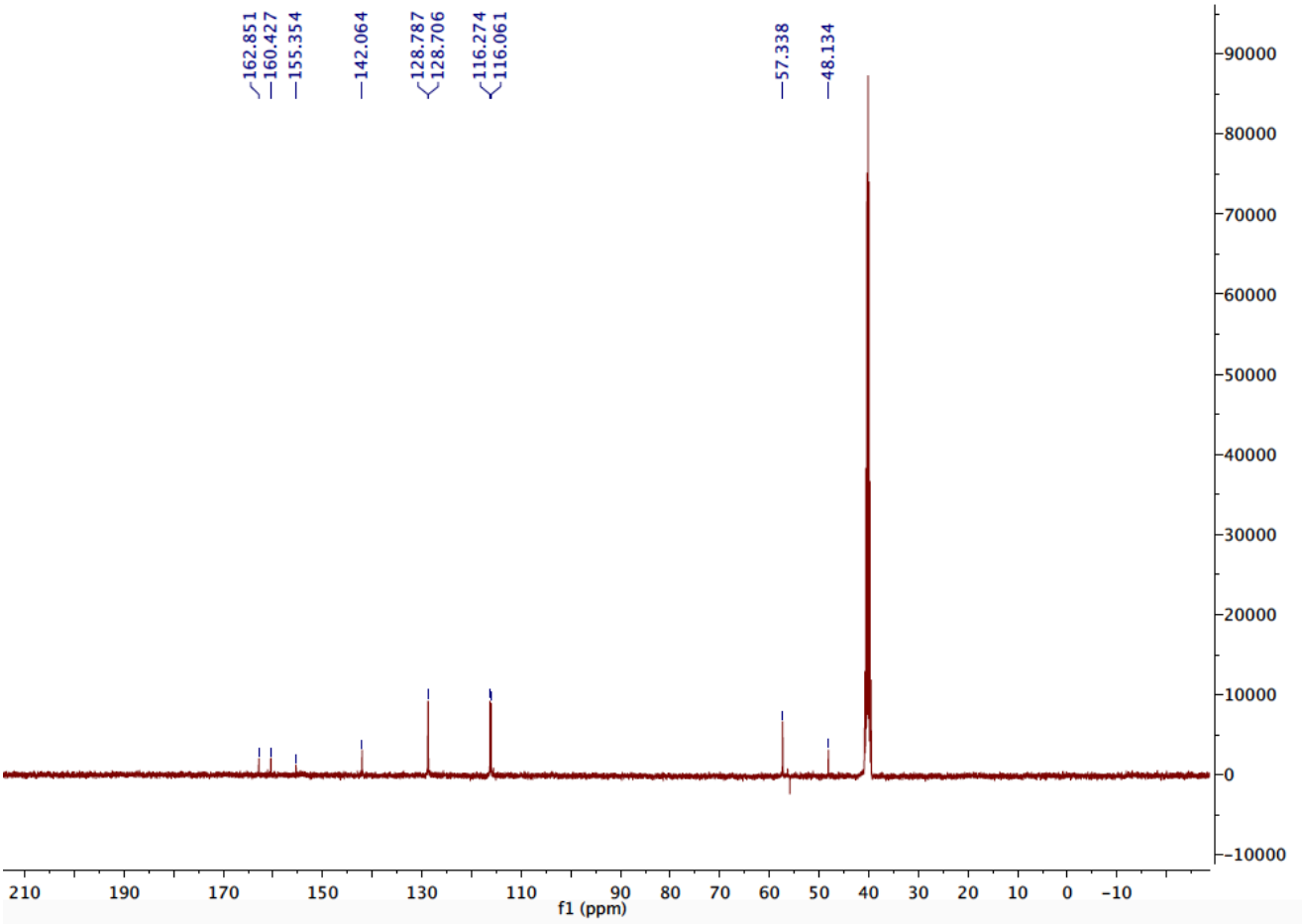
^{1}H NMR (300 MHz, DMSO-d_6)



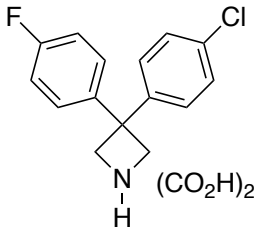
3,3-Di-(4-fluorophenyl)azetidine hydrogen oxalate (**3h**).



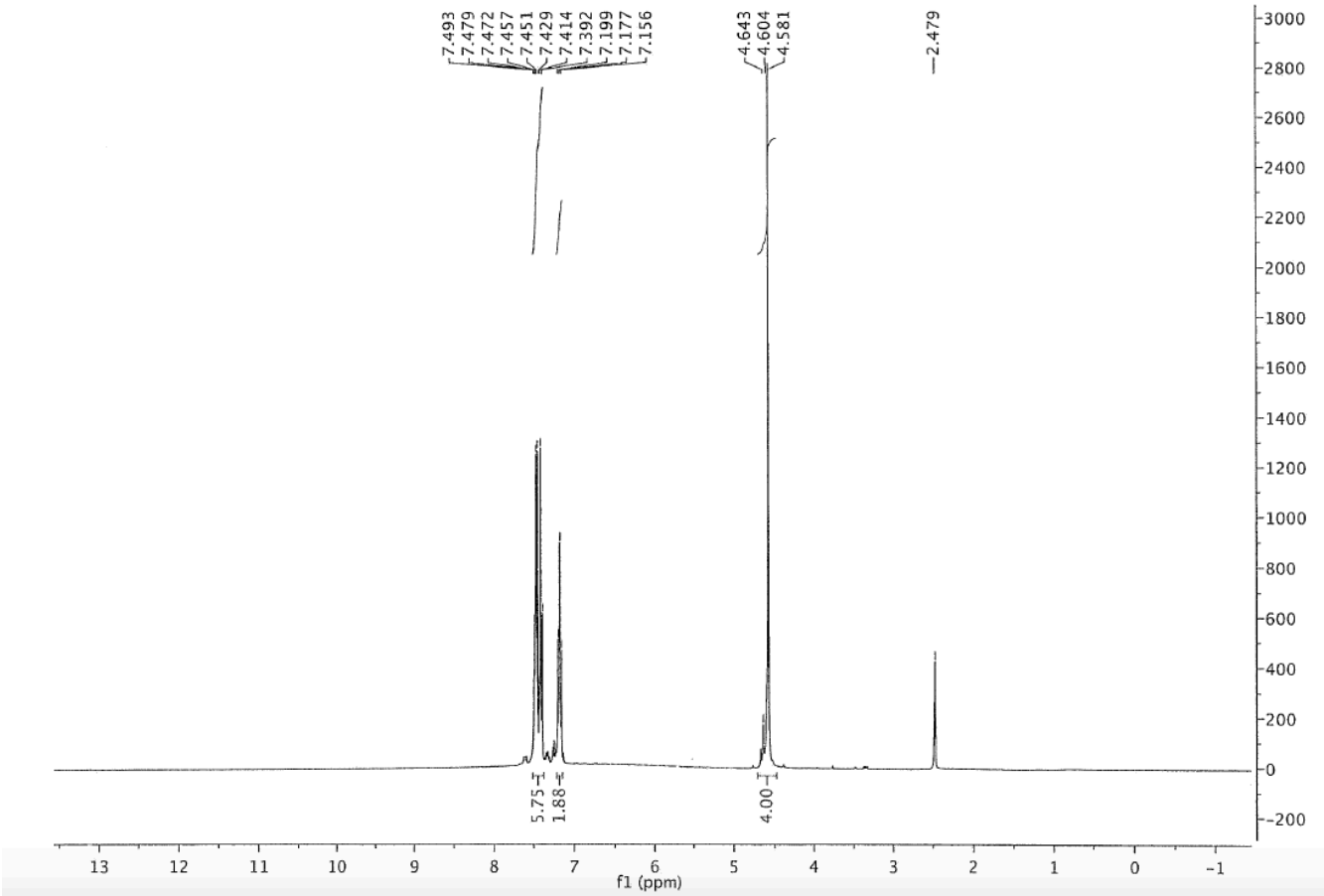
^{13}C NMR (75 MHz, DMSO-d_6)



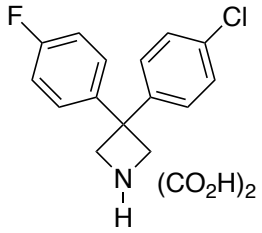
3-(4-Chlorophenyl)-3-(4-fluorophenyl)azetidine hydrogen oxalate (**3i, 3m**).



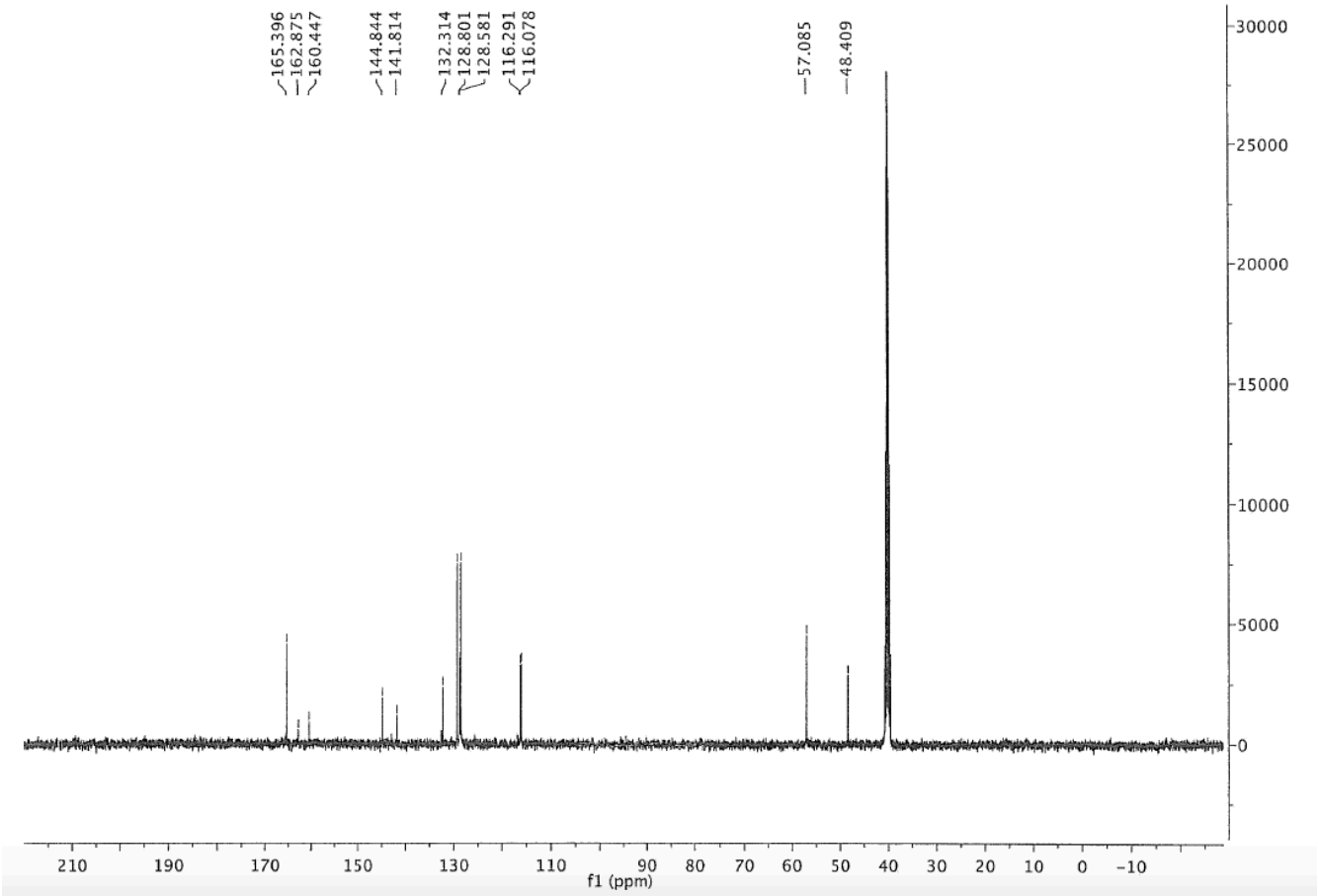
^{1}H NMR (300 MHz, DMSO-d_6)



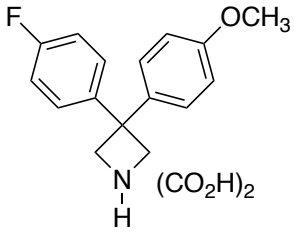
3-(4-Chlorophenyl)-3-(4-fluorophenyl)azetidine hydrogen oxalate (**3i, 3m**).



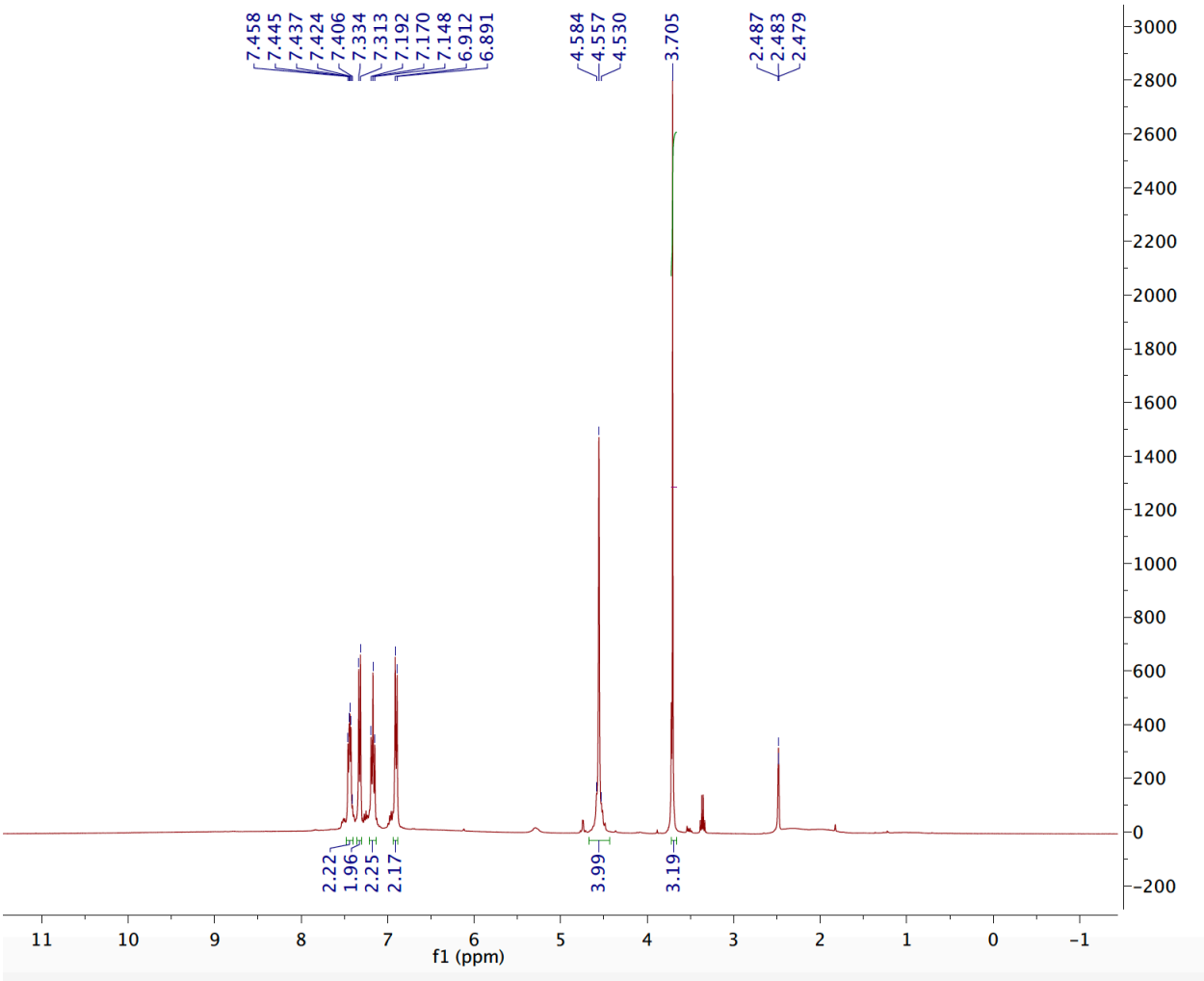
^{13}C NMR (75 MHz, DMSO-d_6)



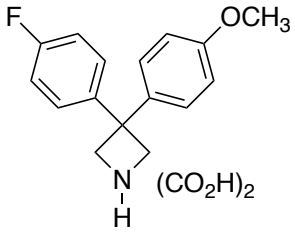
3-(4-Fluorophenyl)-3-(4-methoxyphenyl)-3-azetidine hydrogen oxalate (**3j**).



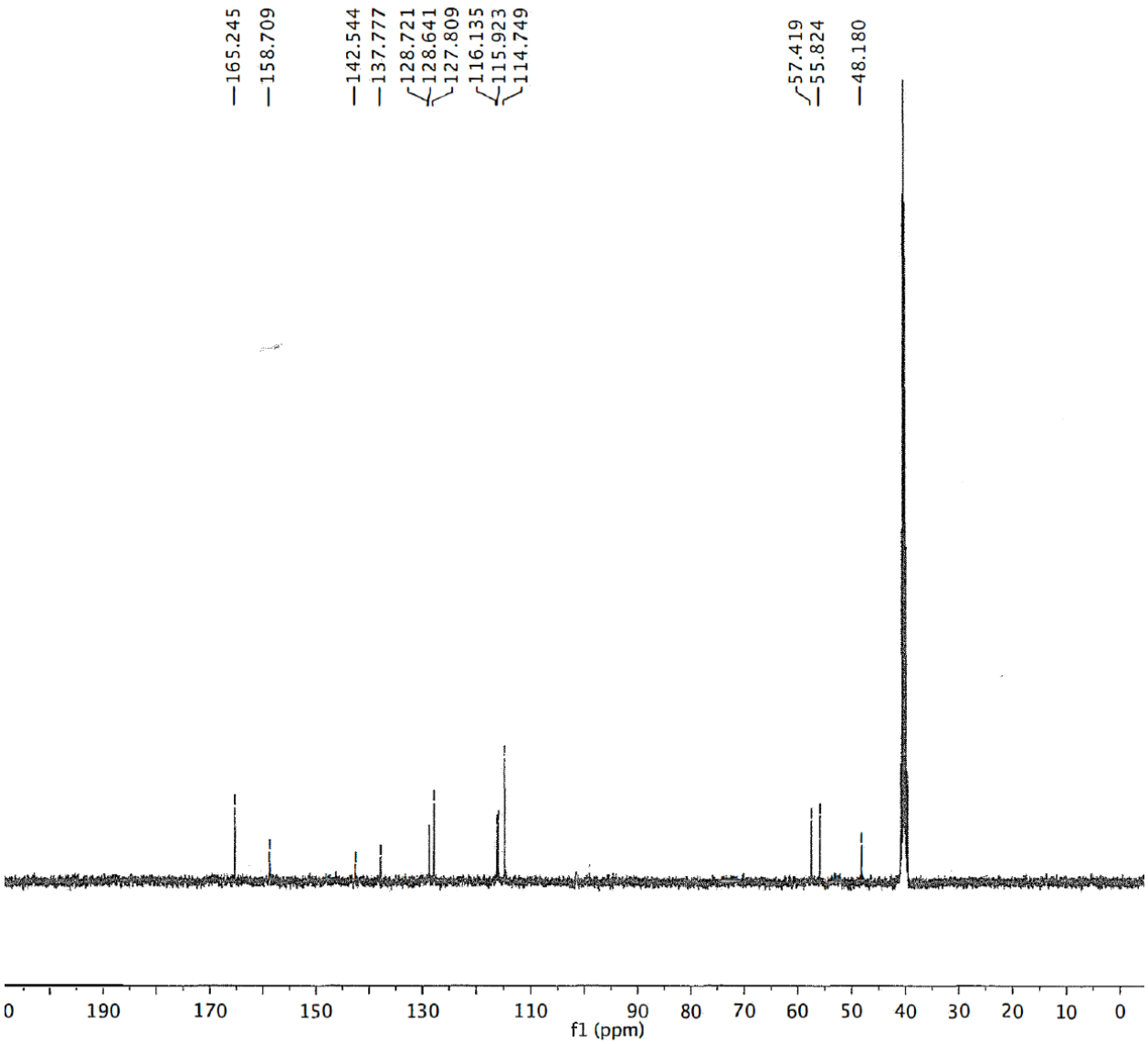
^{1}H NMR (300 MHz, DMSO-d_6)



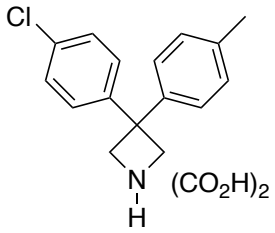
3-(4-Fluorophenyl)-3-(4-methoxyphenyl)-3-azetidine hydrogen oxalate (**3j**).



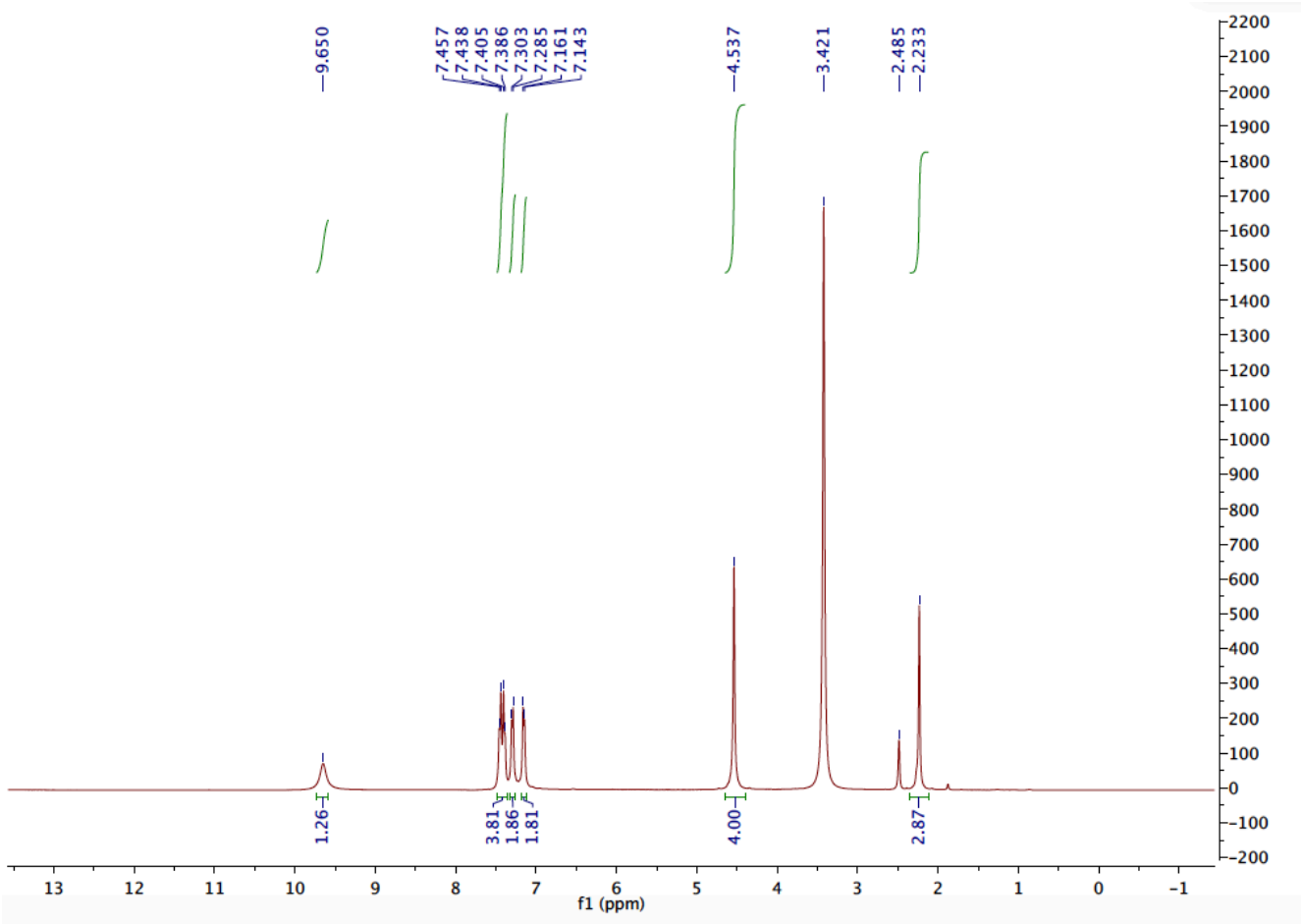
^{13}C NMR (75 MHz, DMSO-d_6)



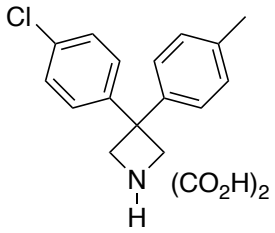
3-(4-Chlorophenyl)-3-(4-methylphenyl)-3-azetidine hydrogen oxalate (**3l**).



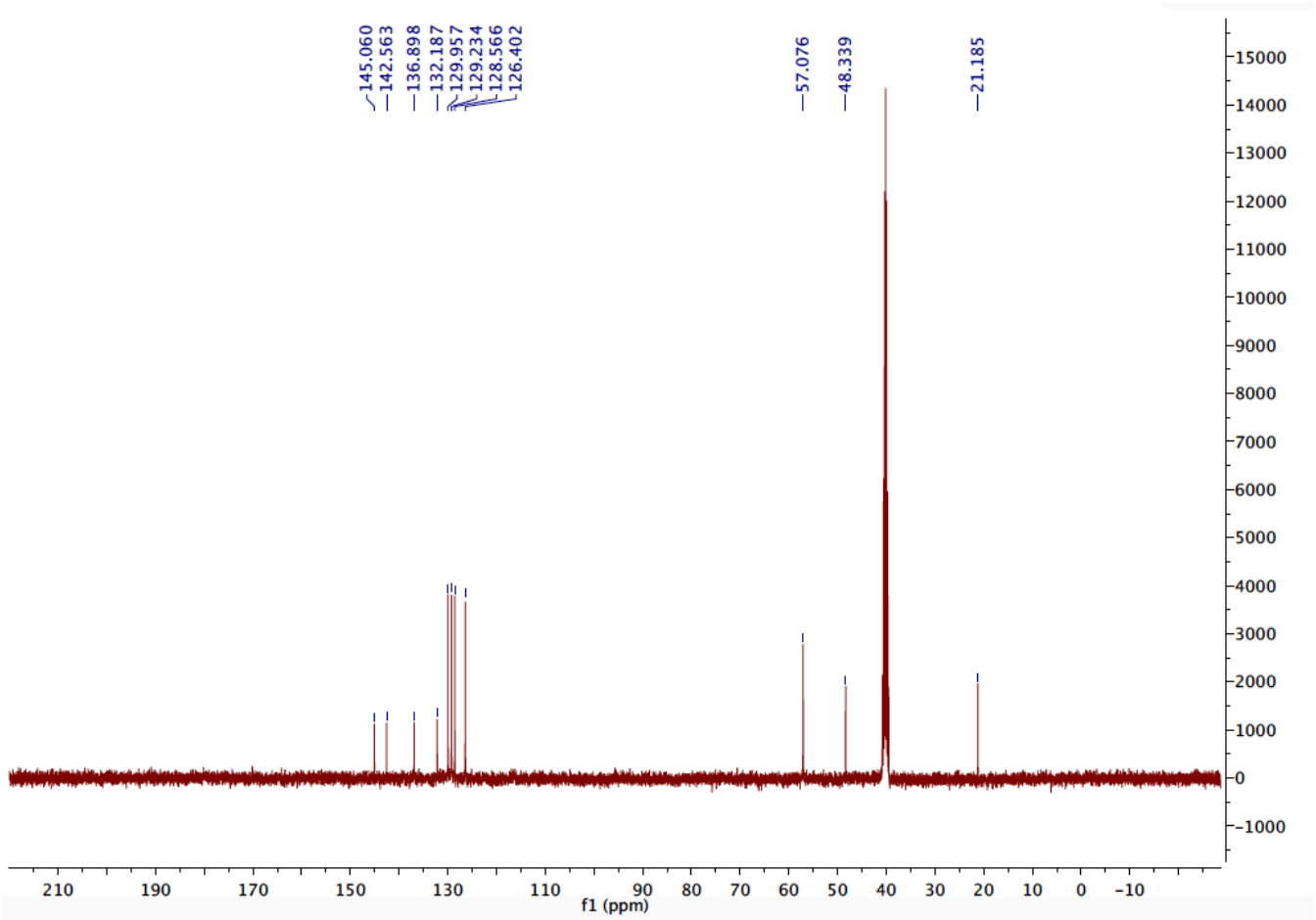
^{1}H NMR (300 MHz, DMSO-d_6)



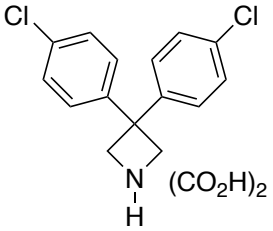
3-(4-Chlorophenyl)-3-(4-methylphenyl)-3-azetidine hydrogen oxalate (**3l**).



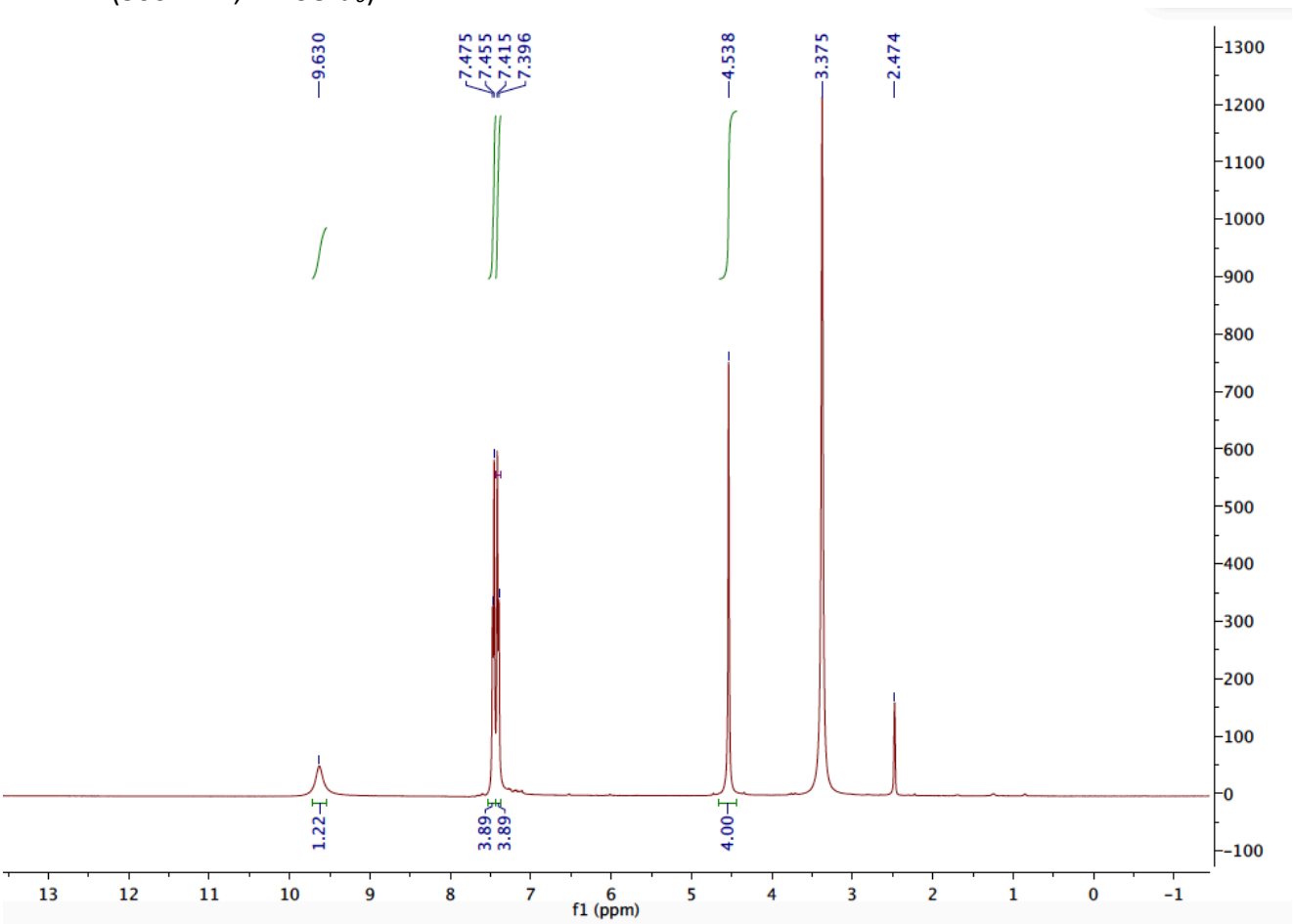
^{13}C NMR (75 MHz, DMSO-d_6)



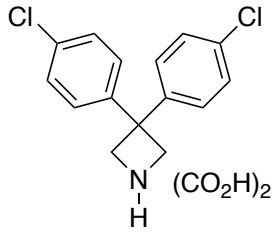
3,3-Di-(4-chlorophenyl)-azetidine hydrogen oxalate (**3n**).



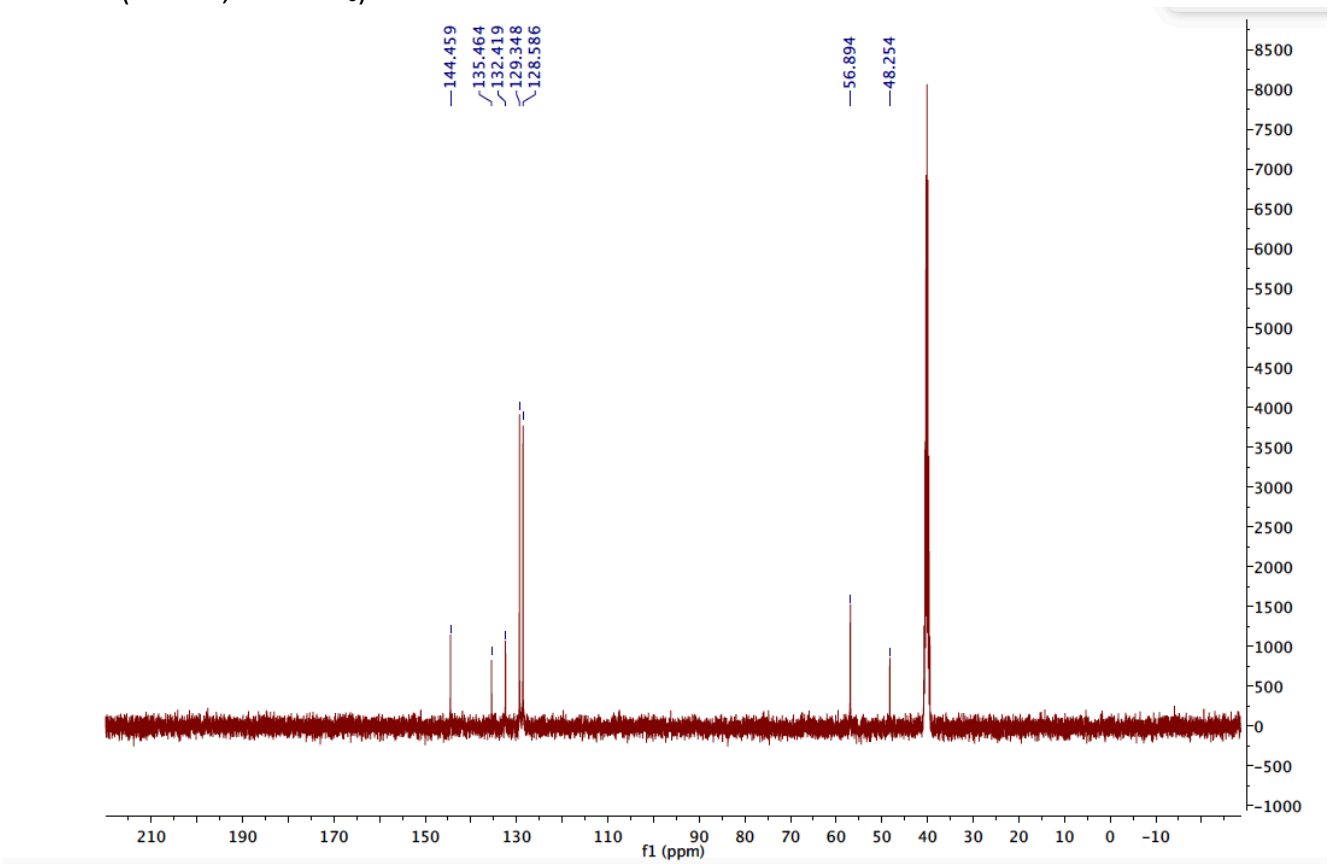
^{1}H NMR (300 MHz, DMSO-d_6)



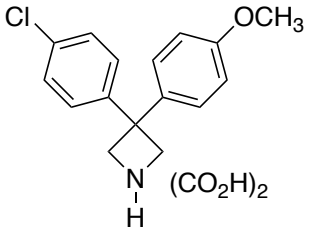
3,3-Di-(4-chlorophenyl)-azetidine hydrogen oxalate (**3n**).



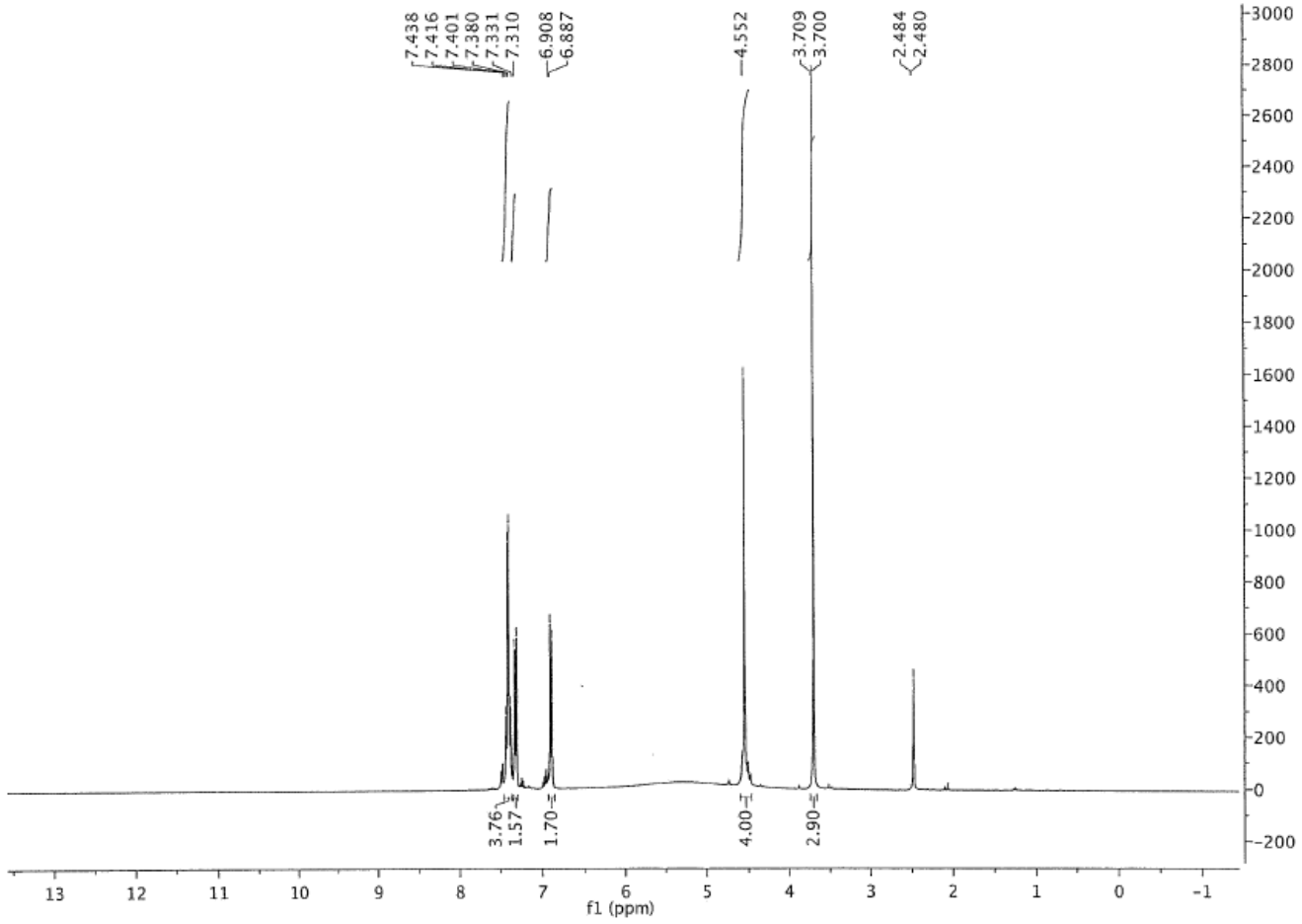
^{13}C NMR (75MHz, DMSO-d_6)



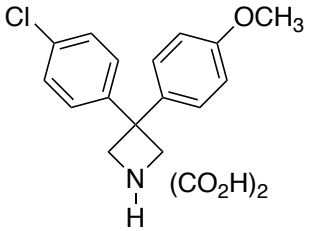
3-(4-Chlorophenyl)-3-(4-methoxyphenyl)-3-azetidine hydrogen oxalate (**3o**).



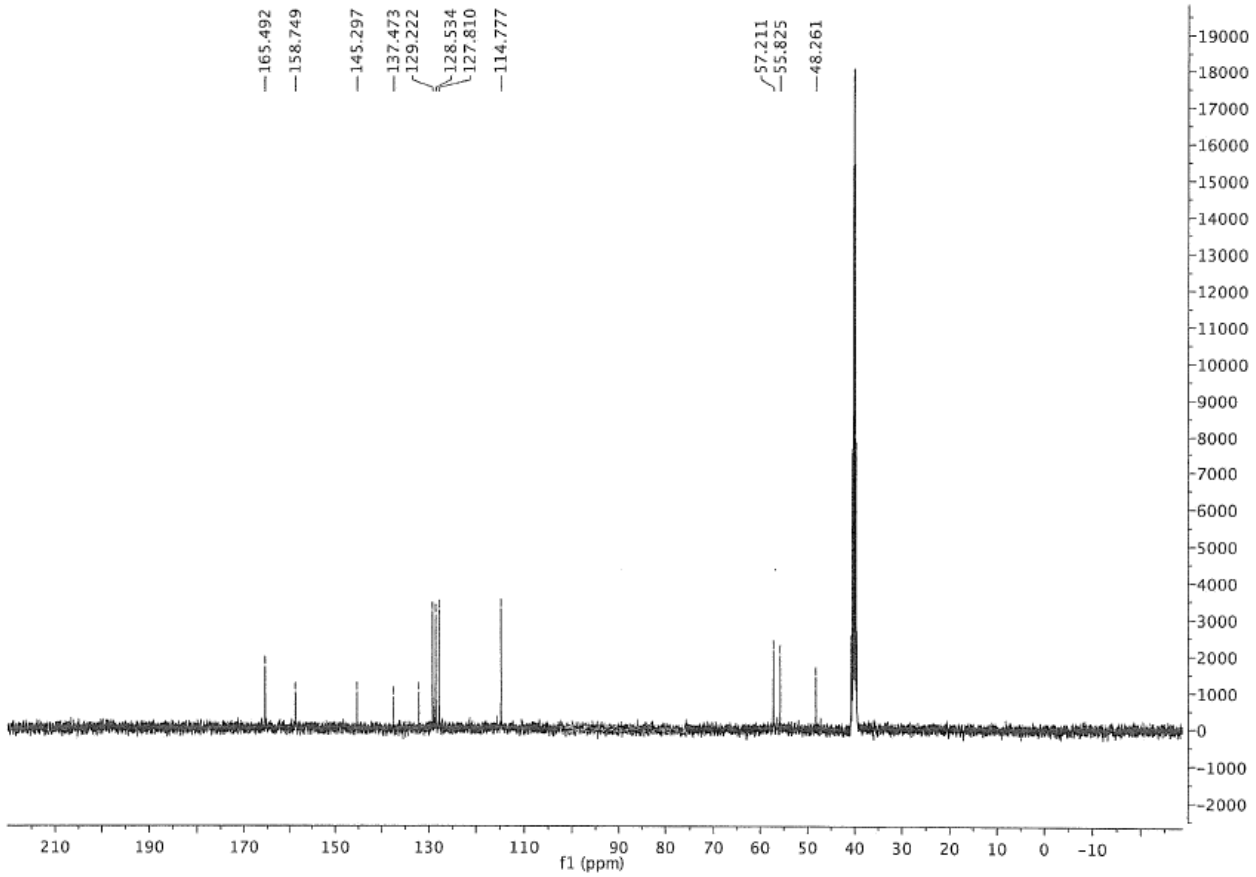
^{1}H NMR (300 MHz, DMSO-d_6)



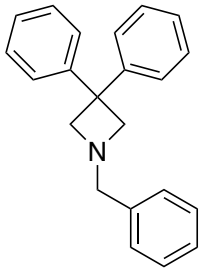
3-(4-Chlorophenyl)-3-(4-methoxyphenyl)-3-azetidine hydrogen oxalate (**3o**).



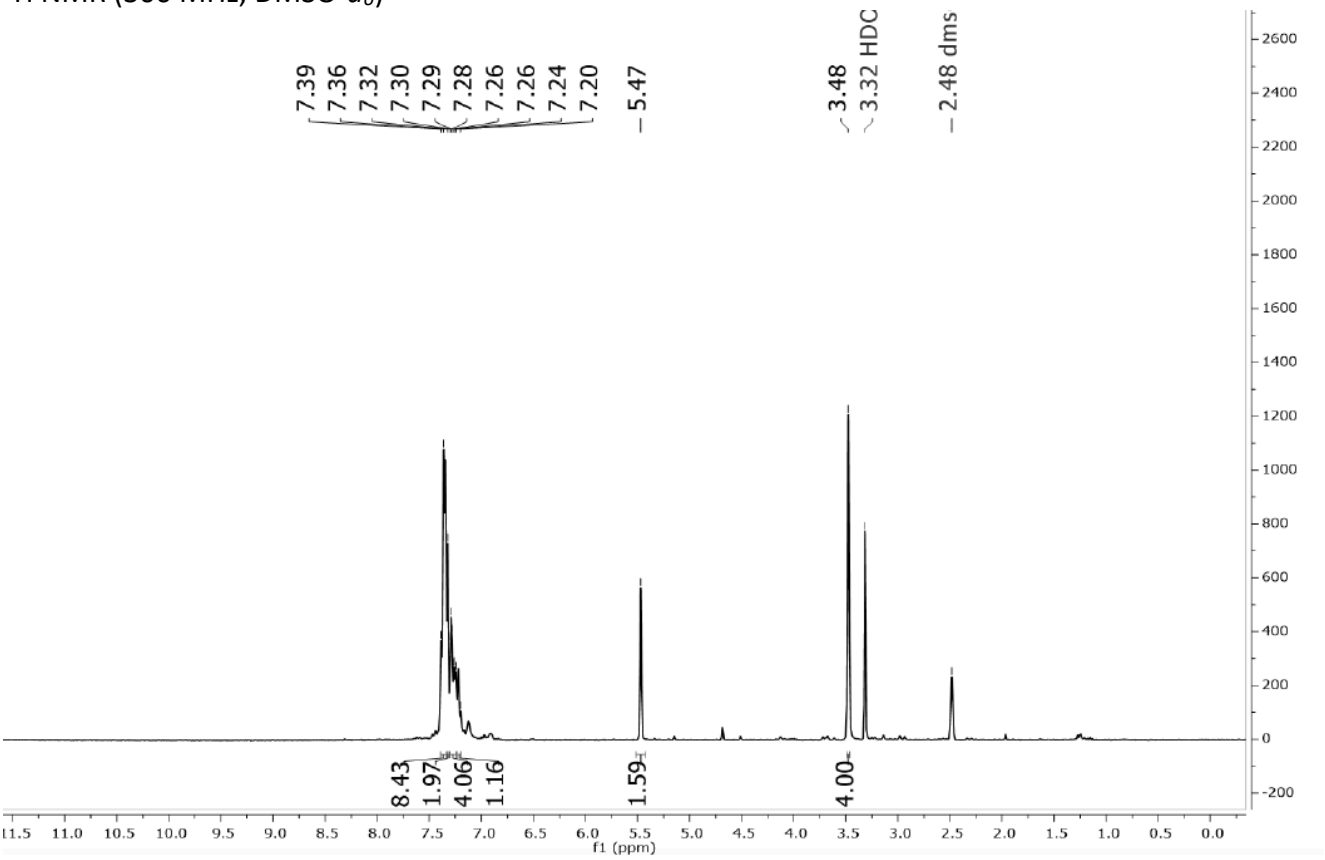
^{13}C NMR (75 MHz, DMSO-d_6)



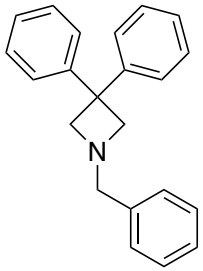
N-Benzyl-3,3-diphenylazetidine (**4**).



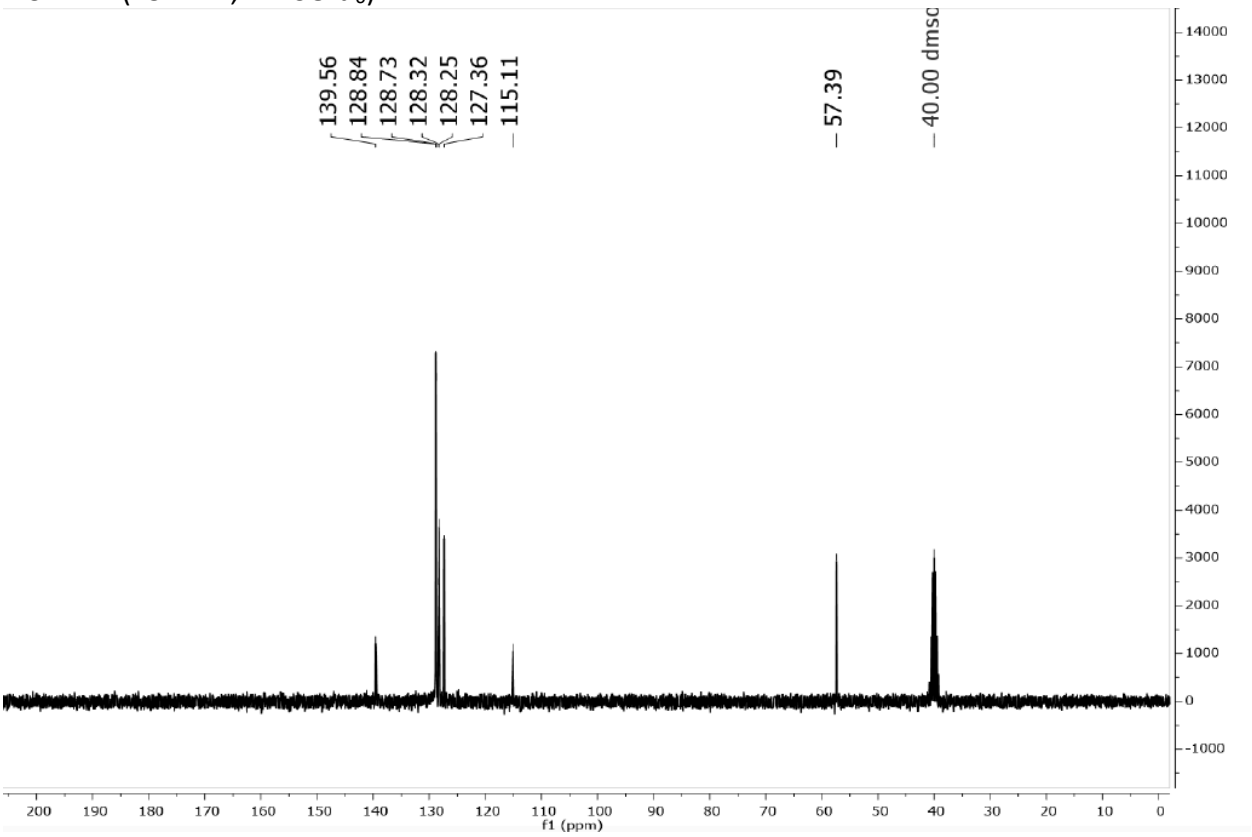
^{1}H NMR (300 MHz, DMSO-d_6)



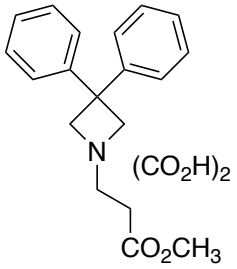
N-Benzyl-3,3-diphenylazetidine (**4**).



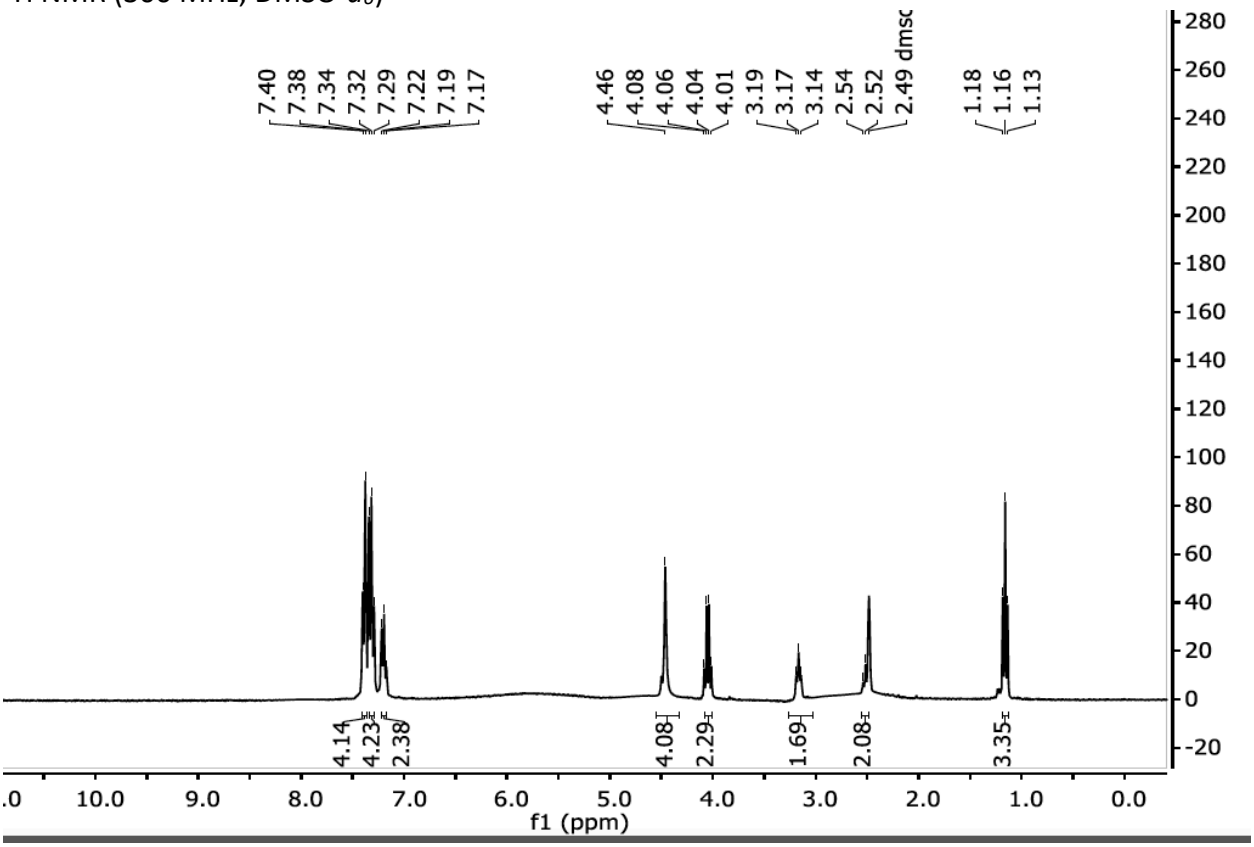
^{13}C NMR (75 MHz, DMSO-d_6)



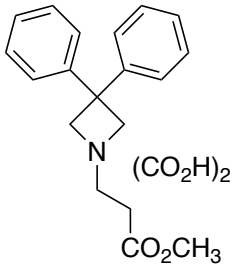
Ethyl-3-(3,3-diphenylazetidinyl)proprionate (**5**).



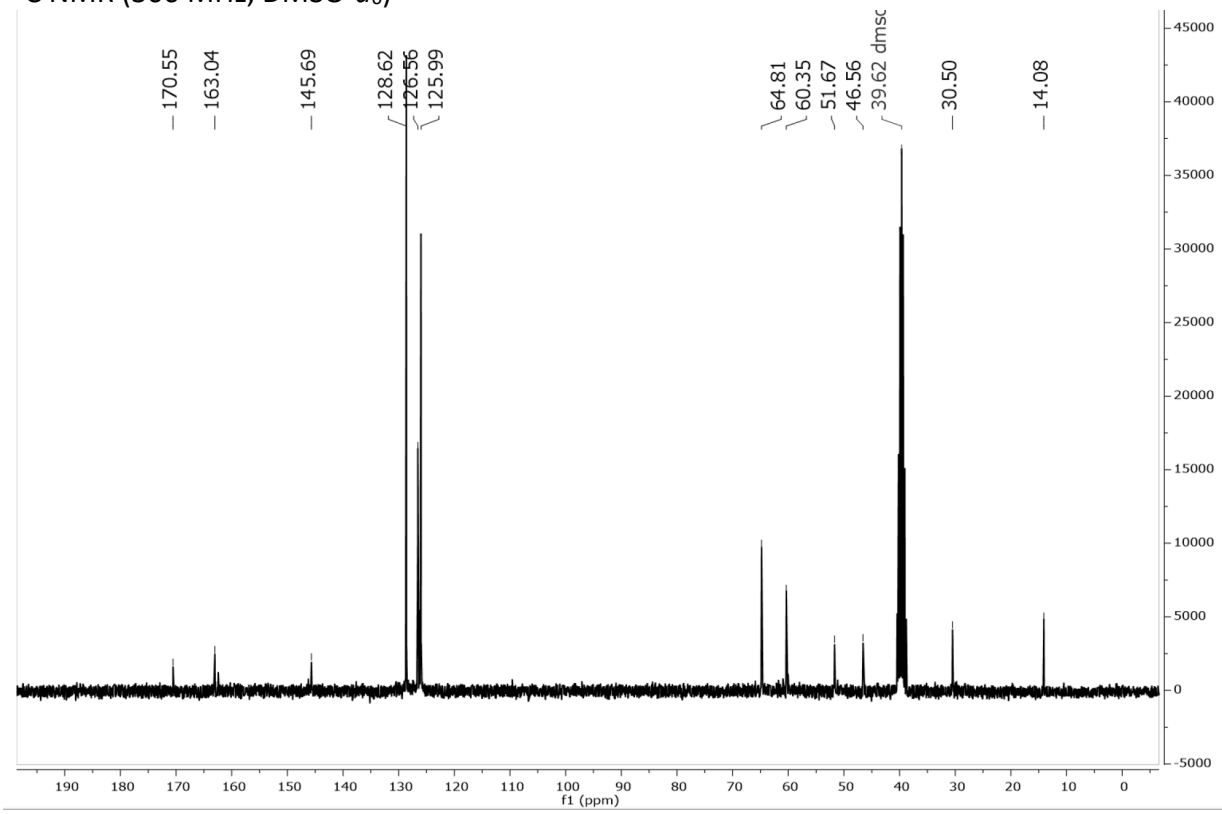
^{1}H NMR (300 MHz, DMSO-d_6)



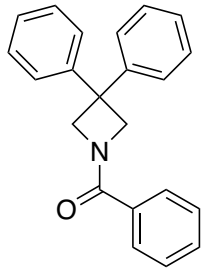
Ethyl-3-(3,3-diphenylazetidinyl)proprionate (**5**).



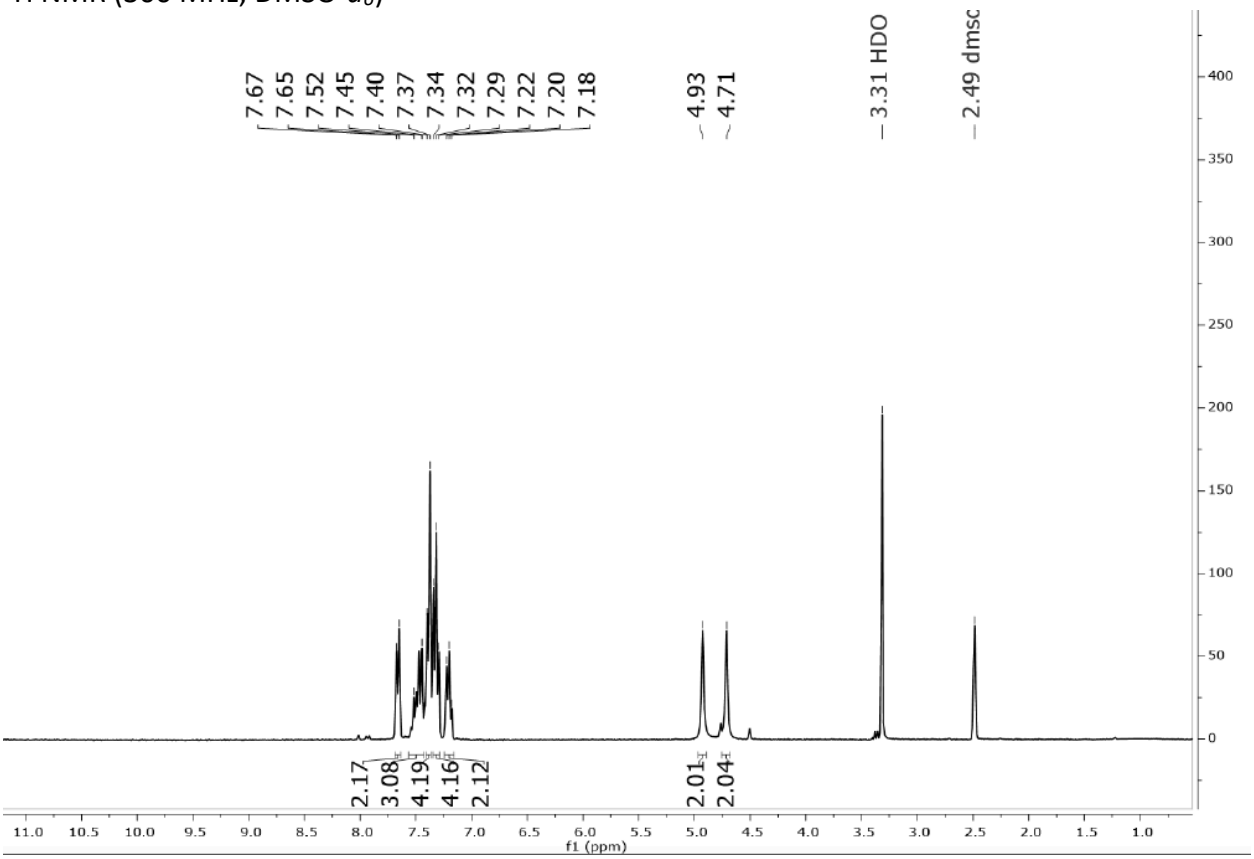
^{13}C NMR (300 MHz, DMSO-d_6)



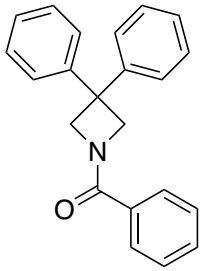
N-Benzoyl-3,3-diphenylazetidine (**6**).



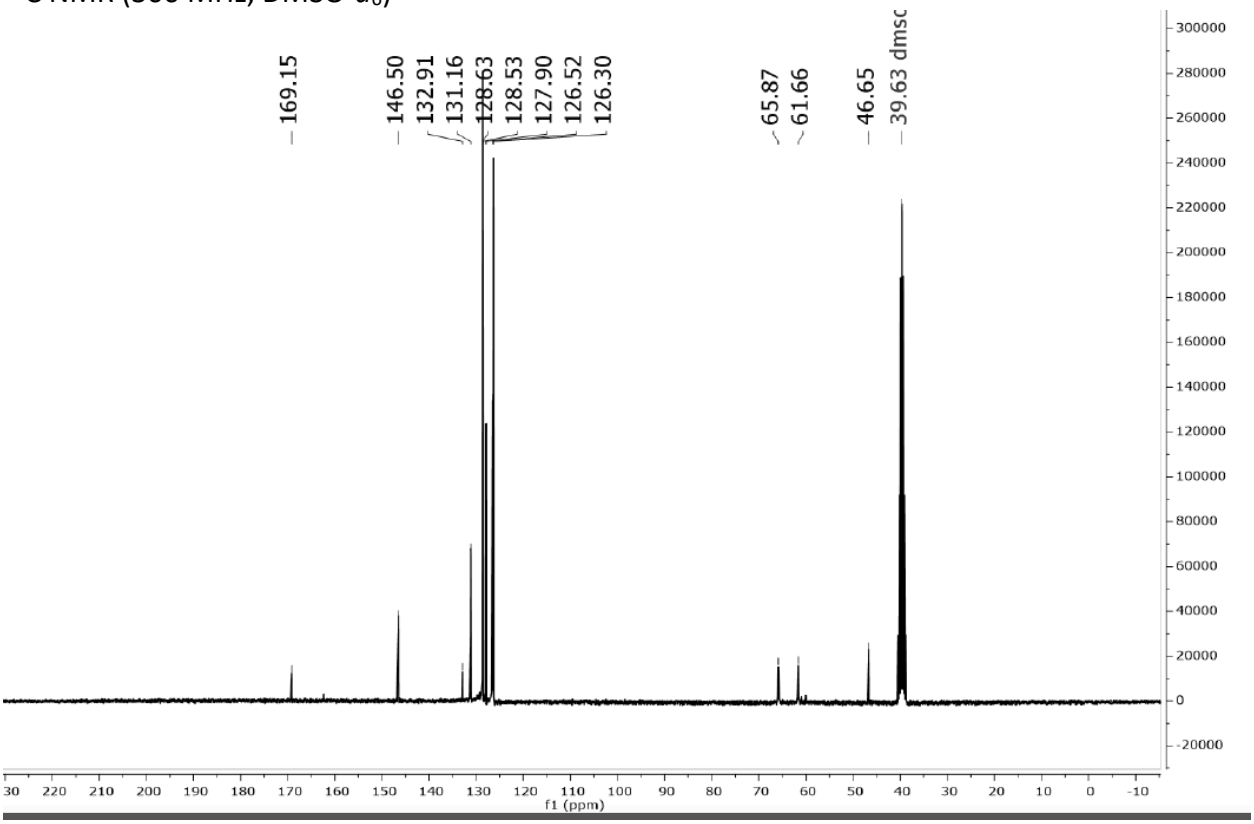
^{1}H NMR (300 MHz, DMSO-d_6)



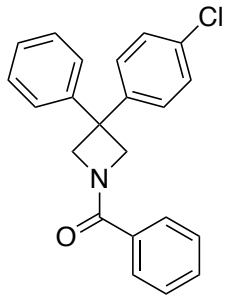
N-Benzoyl-3,3-diphenylazetidine (**6**).



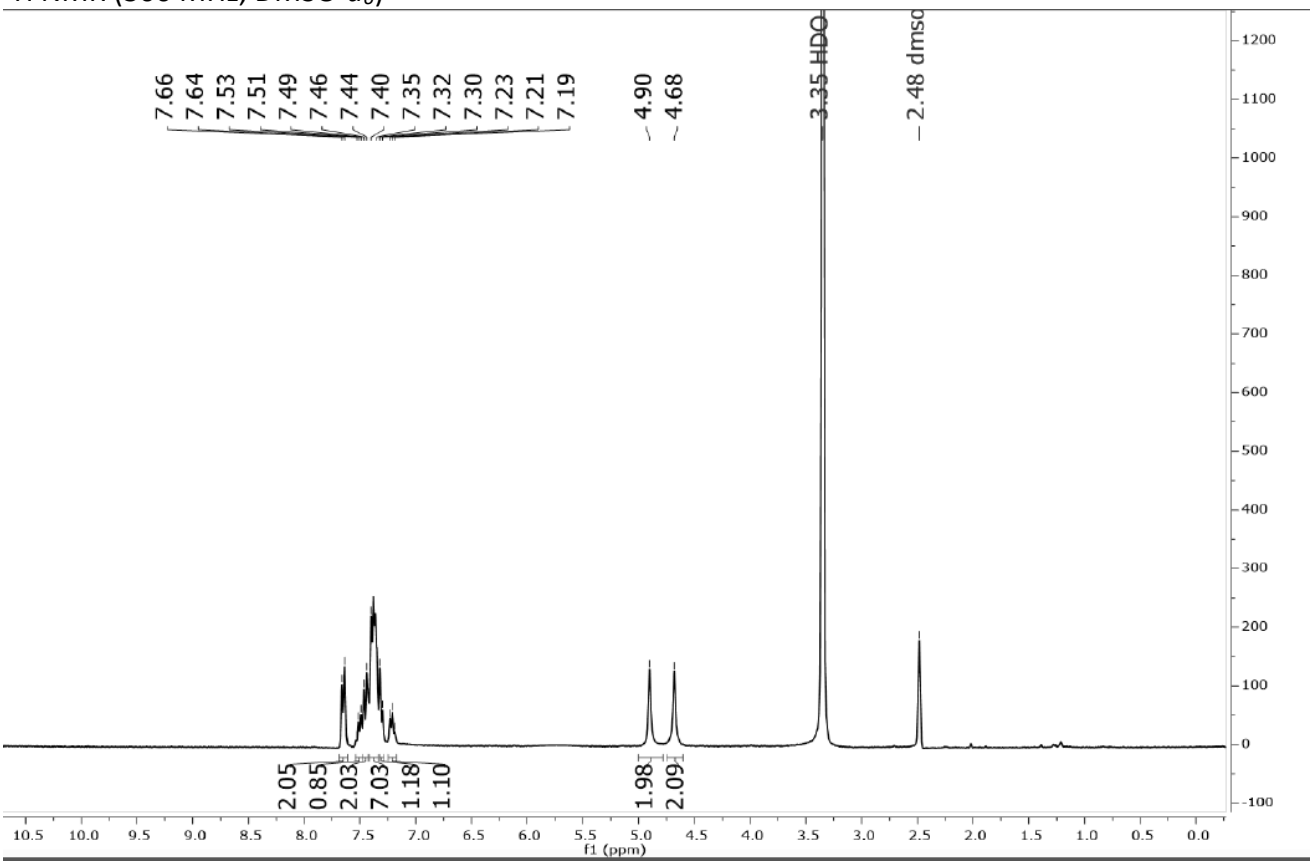
^{13}C NMR (300 MHz, DMSO-d_6)



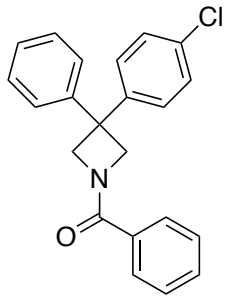
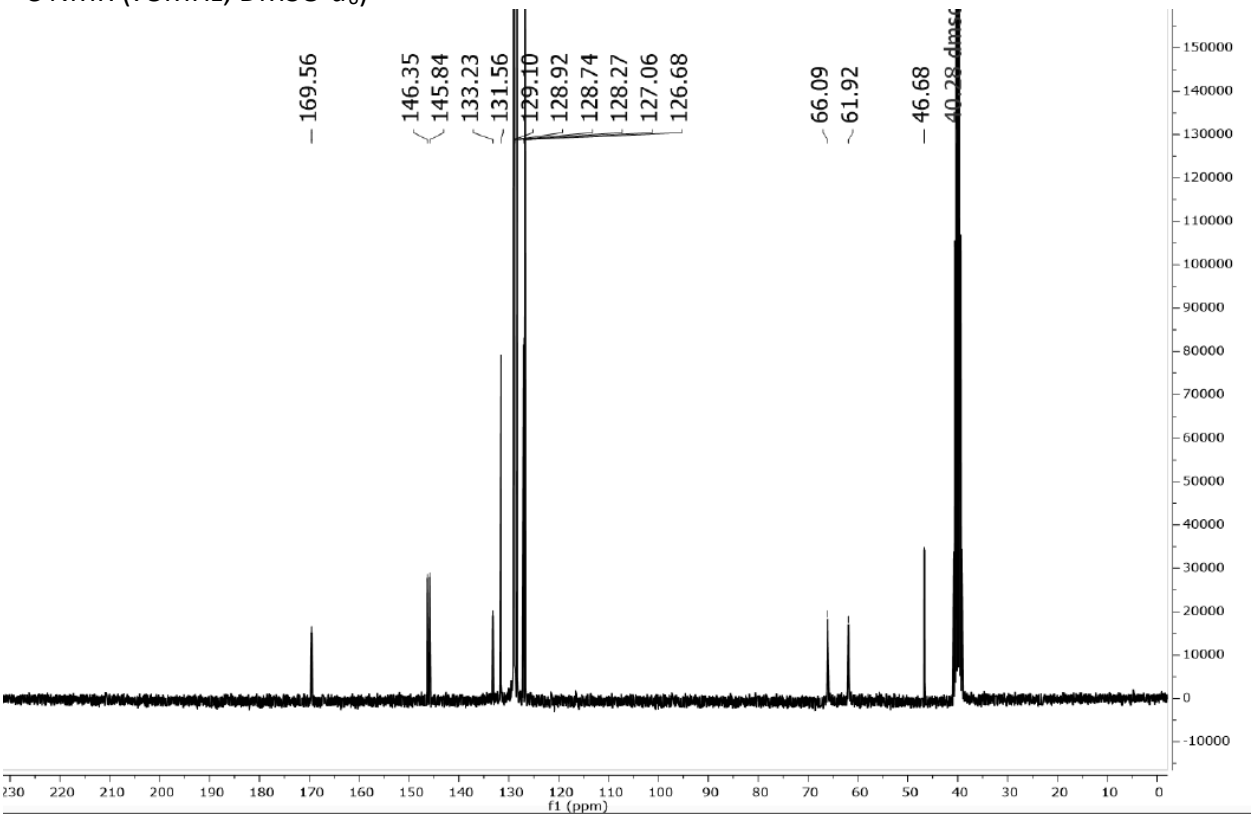
N-Benzoyl-3-(4-chlorophenyl)-3-phenylazetidine hydrogen oxalate (**7**).



^{1}H NMR (300 MHz, DMSO-d_6)



N-Benzoyl-3-(4-chlorophenyl)-3-phenylazetidine (**7**).



^{13}C NMR (75MHz, DMSO-d_6)