

SUPPORTING INFORMATION

MCR scaffolds get hotter with ^{18}F - Labeling

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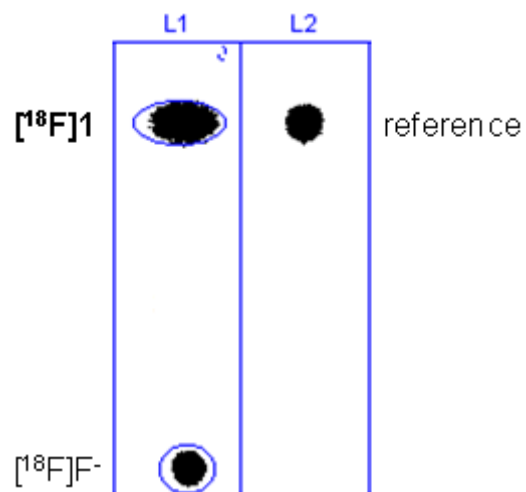


Figure S1. Example of the radio-TLC profile of 4- $[^{18}\text{F}]$ fluorobenzaldehyde $[^{18}\text{F}]1$.

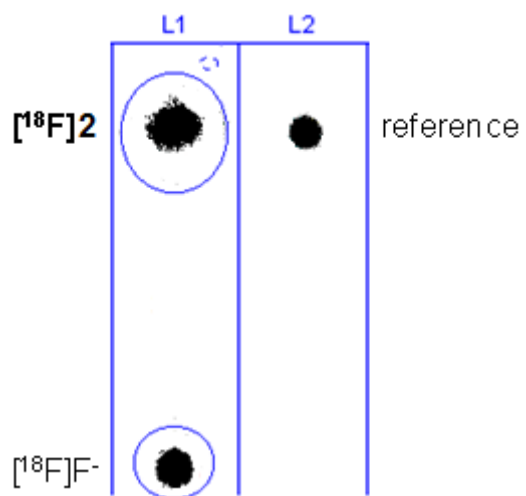


Figure S2. Example of the radio-TLC profile of 4- $[^{18}\text{F}]$ fluorobenzonitrile $[^{18}\text{F}]2$.

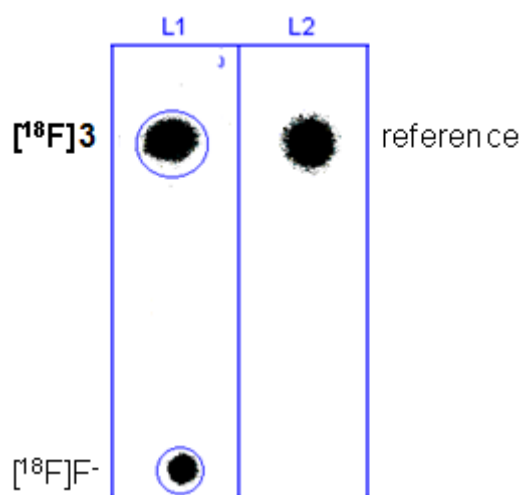


Figure S3. Example of the radio-TLC profile of 4- ^{18}F fluoro-1,2-dimethoxybenzene ^{18}F 3.

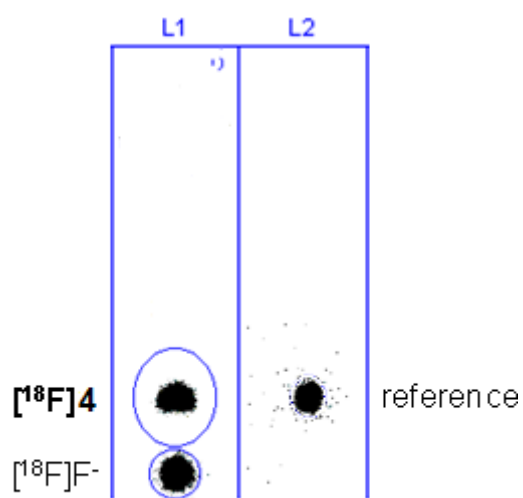


Figure S4. Example of the radio-TLC profile of *N*-(tert-butyl)-2-(4- ^{18}F fluorophenyl)-2-(2-oxoazetidin-1-yl)acetamide ^{18}F 4.

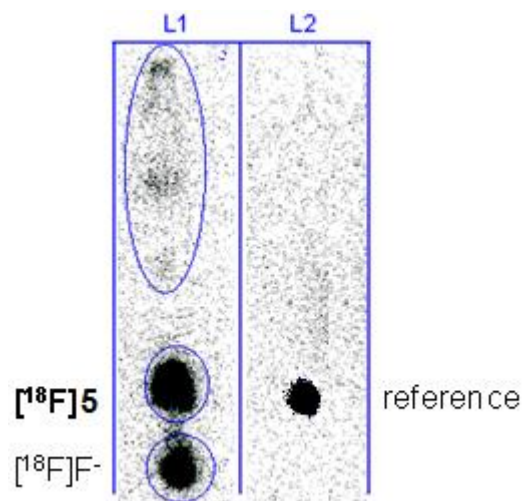


Figure S5. Example of the radio-TLC profile of *N*-(4-bromobenzyl)-2-(4-[¹⁸F]fluorophenyl)-2-(2-oxoazetidin-1-yl) [¹⁸F]5.

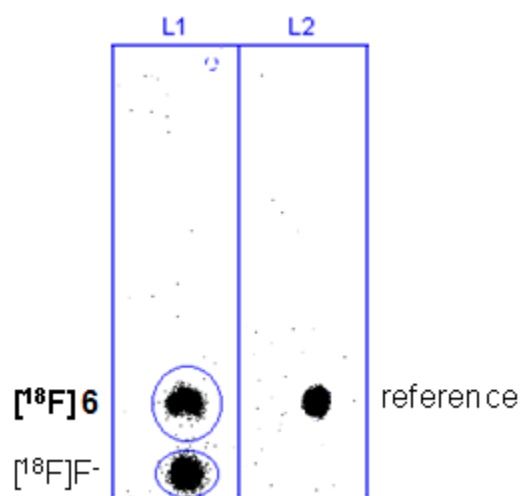


Figure S6. Example of the radio-TLC profile of 4-((1-(benzo[d][1,3]dioxol-5-ylmethyl)-1H-tetrazol-5-yl)(4-[¹⁸F]fluorophenyl)methyl)morpholine [¹⁸F]6.

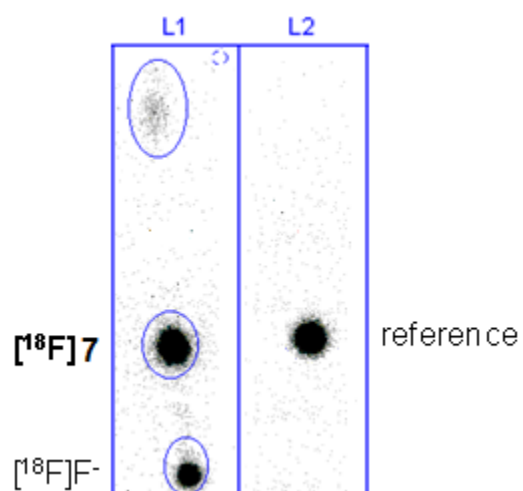


Figure S7. Example of the radio-TLC profile of 4-((1-(2,6-dimethylphenyl)-1H-tetrazol-5-yl)(4-[¹⁸F]fluorophenyl)methyl)morpholine [¹⁸F]7.

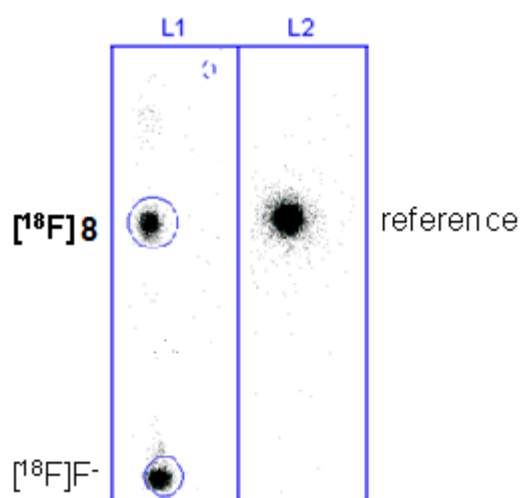


Figure S8. Example of the radio-TLC profile of 1-(1-benzyl-1H-tetrazol-5-yl)-N-(4-chlorobenzyl)-1-(4-[¹⁸F]fluorophenyl)methanamine [¹⁸F]8.

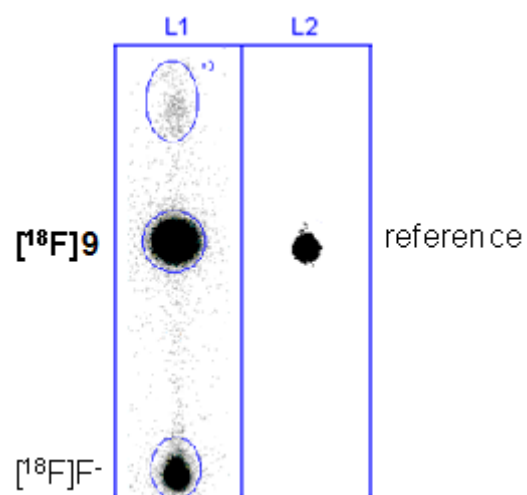


Figure S9. Example of the radio-TLC profile of 5-(4-[^{18}F]fluorophenyl)oxazole [^{18}F]9.

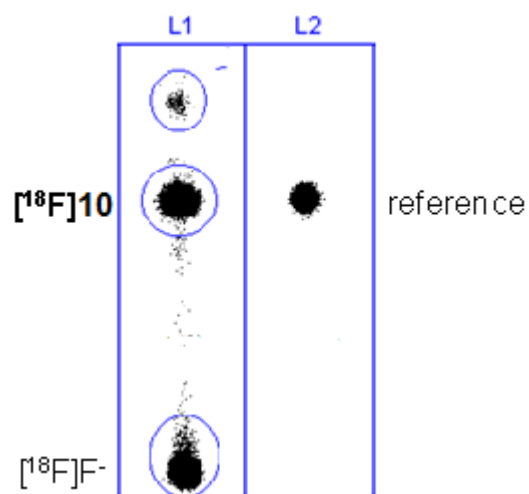


Figure S10. Example of the radio-TLC profile of 5-(3-[^{18}F]fluorophenyl)oxazole [^{18}F]10.

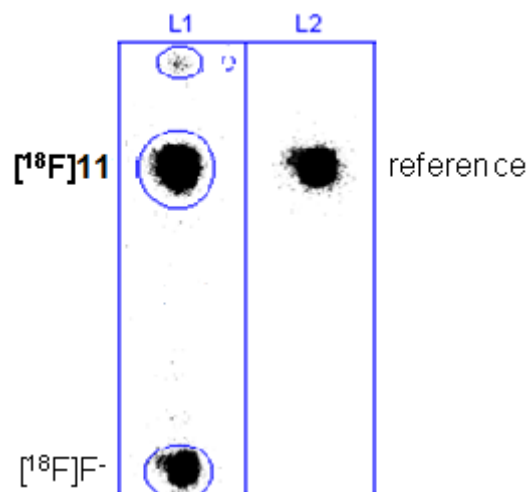


Figure S11. Example of the radio-TLC profile of 1-(4-[¹⁸F]fluorophenyl)-2-oxo-2-((3,4,5-trimethoxybenzyl)amino)ethyl 3-bromo-2-methylbenzoate [¹⁸F]11.

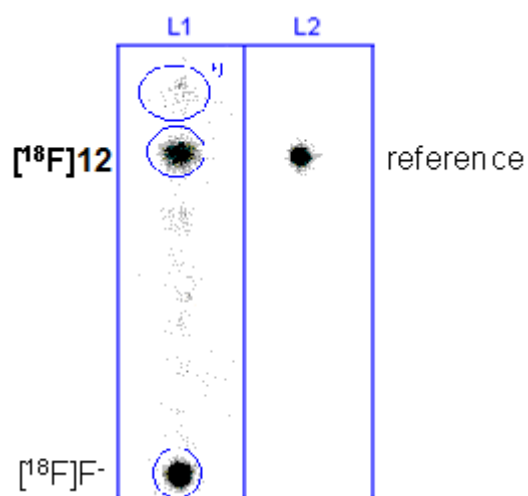


Figure S12. Example of the radio-TLC profile of 2-((benzo[d][1,3]dioxol-5-ylmethyl)amino)-1-(4-[¹⁸F]fluorophenyl)-2-oxoethyl 2,4-dimethylbenzoate [¹⁸F]12

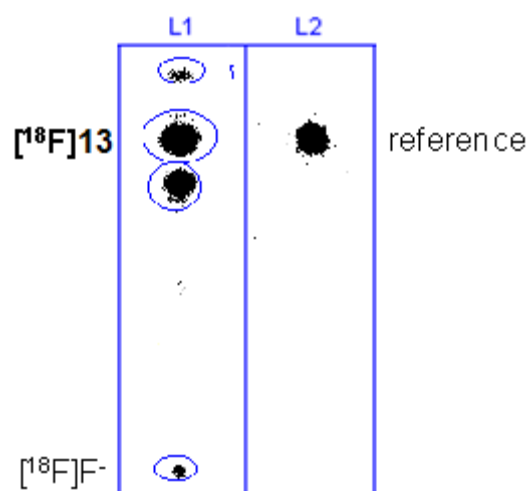


Figure S13. Example of the radio-TLC profile of 2-(benzylamino)-1-(4-[¹⁸F]fluorophenyl)-2-oxoethyl cyclohexanecarboxylate [¹⁸F]13.

Table S1. TLC-SG retention factor (R_f) profiles for the tested compounds

Compound	R_f	Hexane:ethyl acetate ratio
[^{18/19} F]1	0.85	2:1
[^{18/19} F]2	0.85	2:1
[^{18/19} F]3	0.80	2:1
[^{18/19} F]4	0.40	1:1
[^{18/19} F]5	0.30	1:1
[^{18/19} F]6	0.35	2:1
[^{18/19} F]7	0.40	2:1
[^{18/19} F]8	0.60	2:1
[^{18/19} F]9	0.50	2:1
[^{18/19} F]10	0.65	2:1
[^{18/19} F]11	0.75	2:1
[^{18/19} F]12	0.8	2:1
[¹⁹ F]13	0.85	2:1
[¹⁸ F]F ⁻	0.0	1:1; 2:1
copper-[¹⁸ F]fluoride complex	1.0	1:1; 2:1

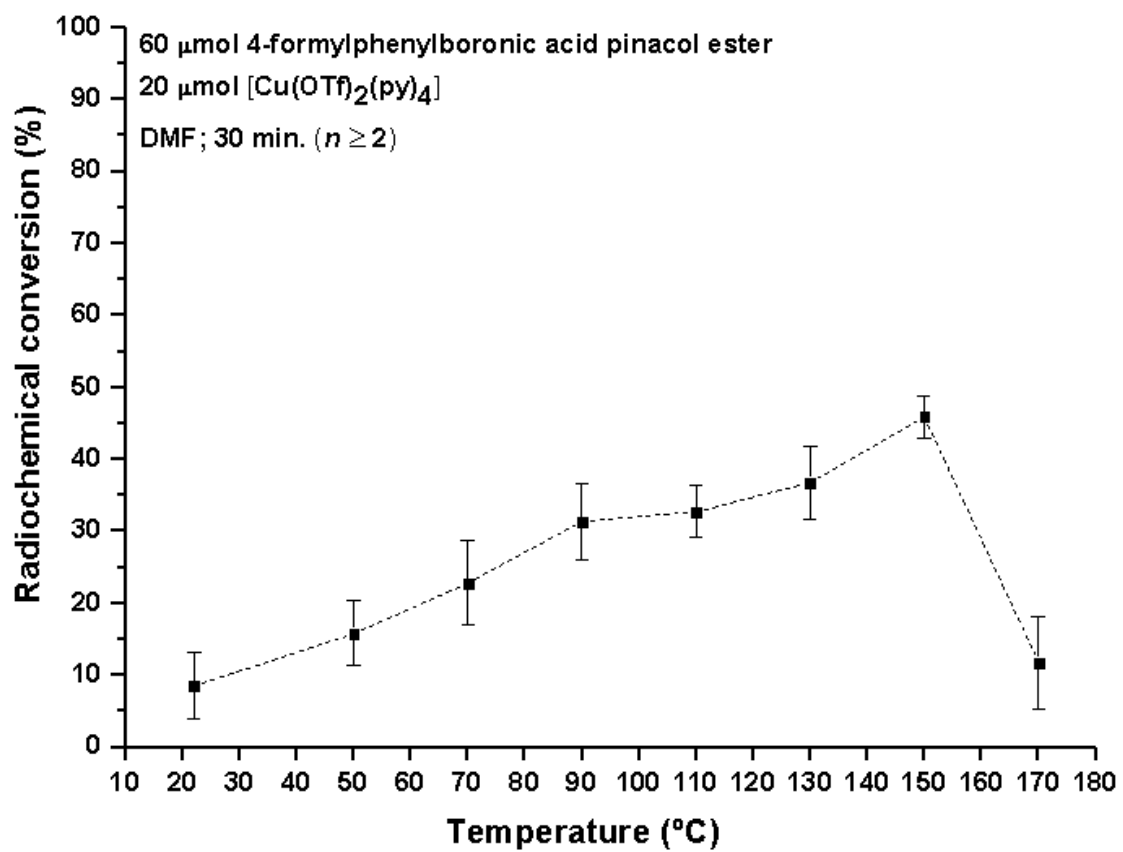
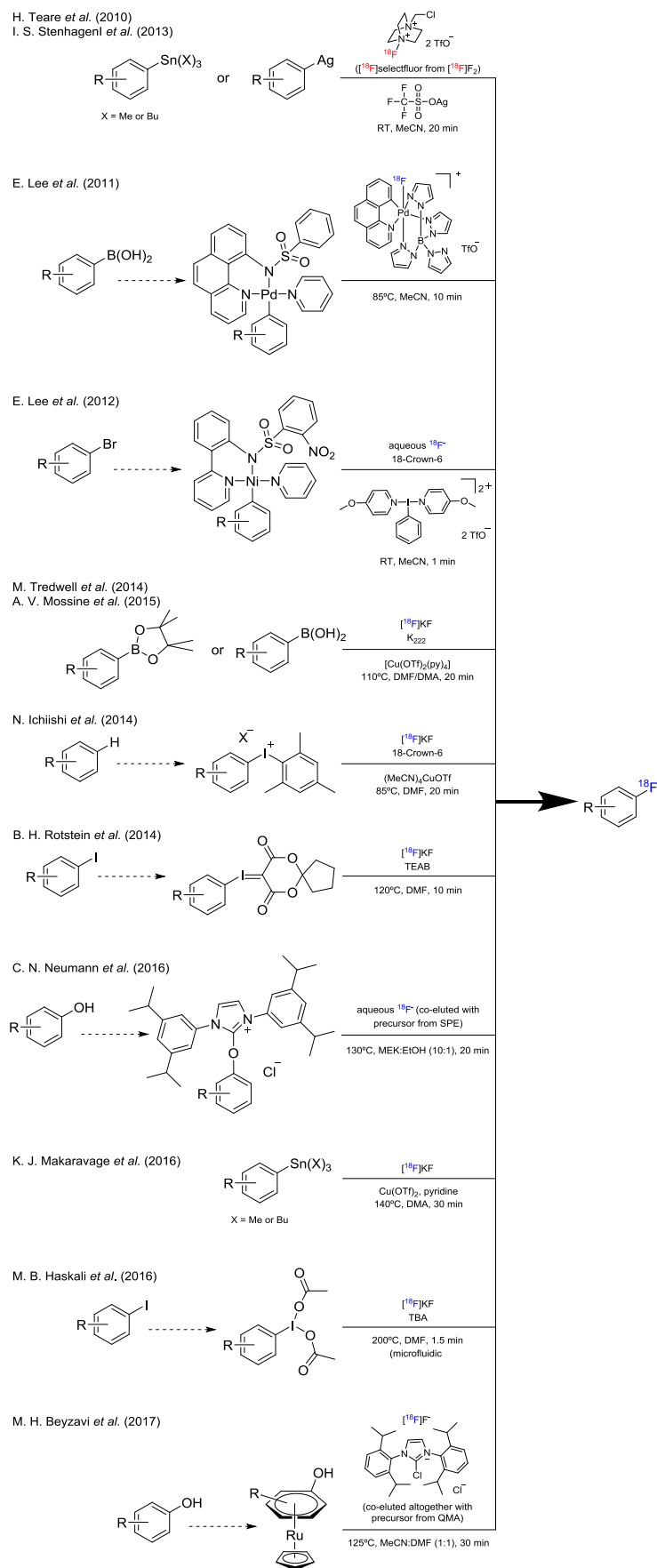
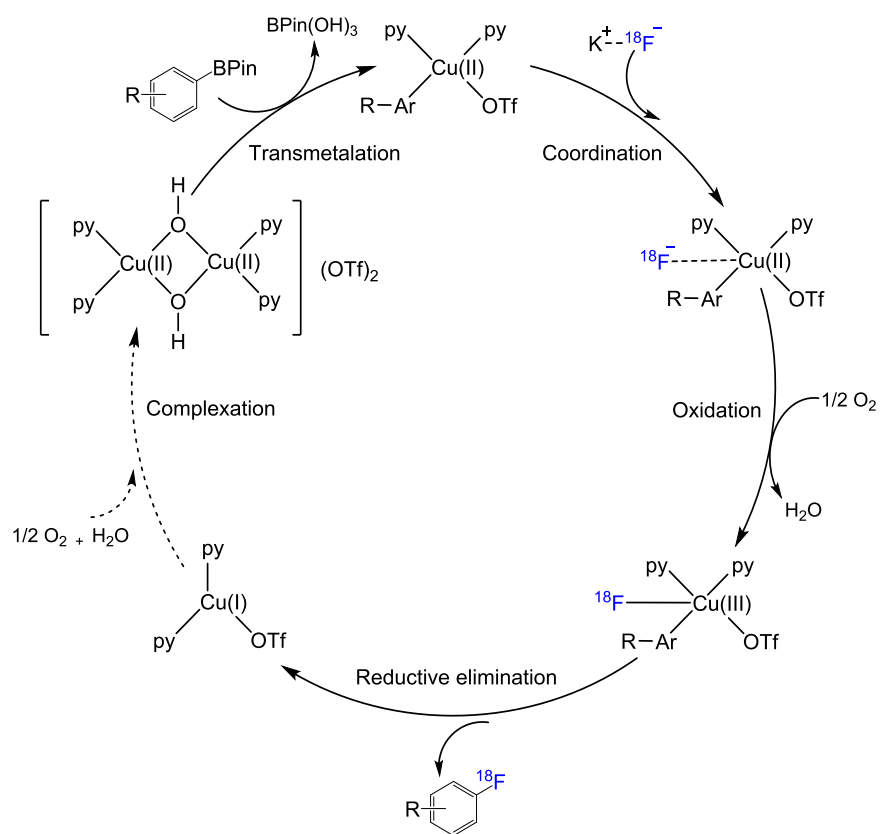


Figure S14. Effect of temperature in RCC of $[\text{}^{18}\text{F}]\mathbf{1}$.



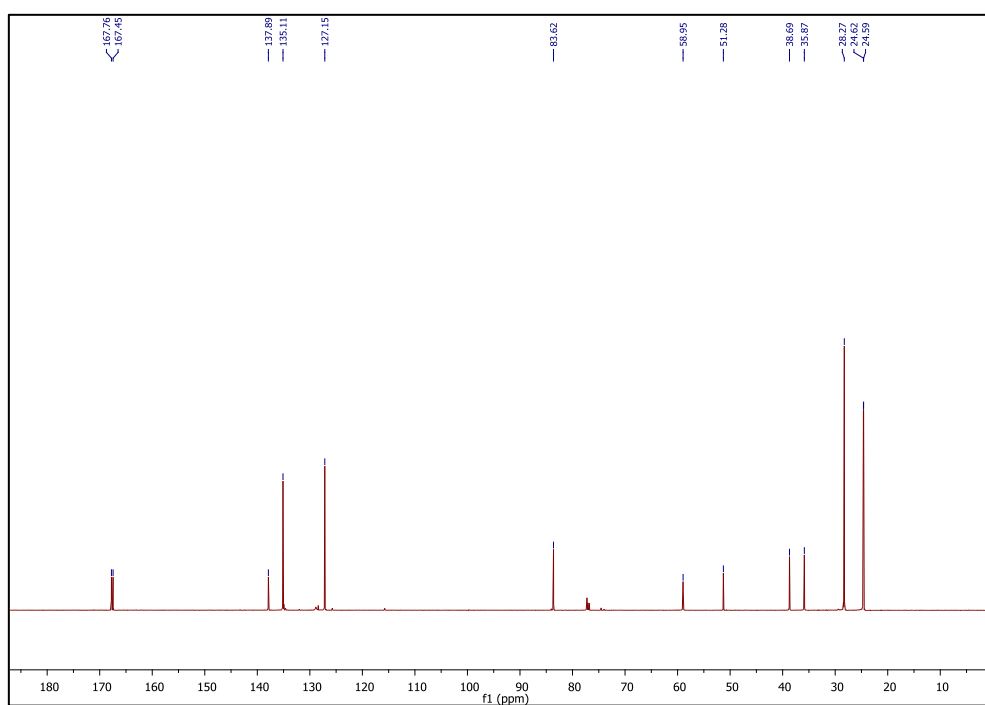
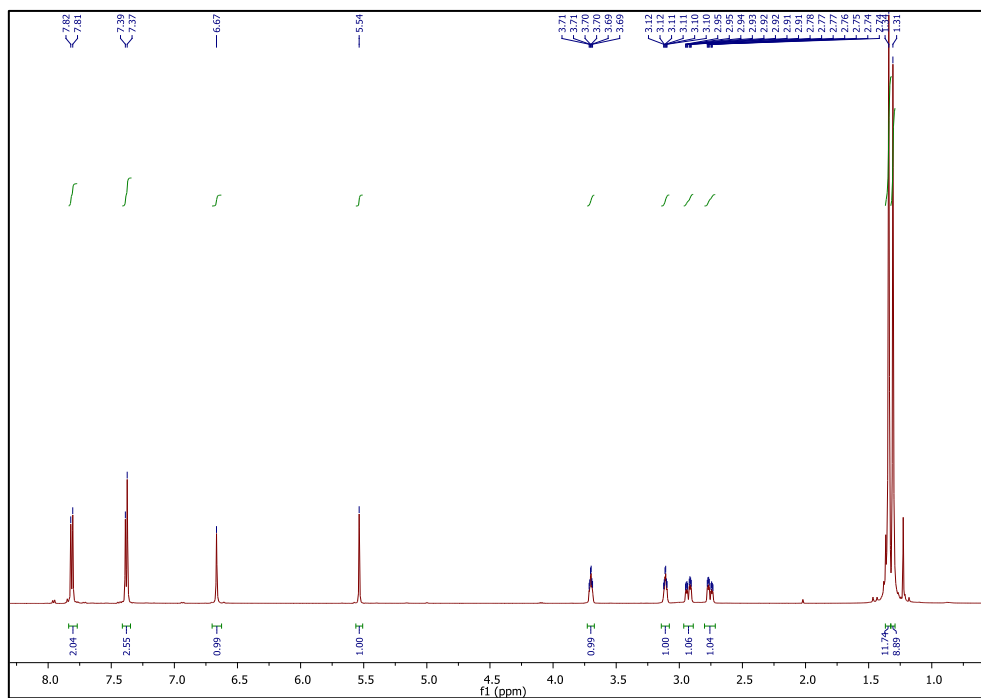
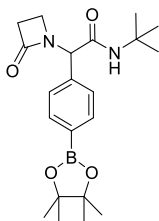
Scheme S1. Recent late-stage strategies for the ^{18}F -fluorination of (hetero)arenes.



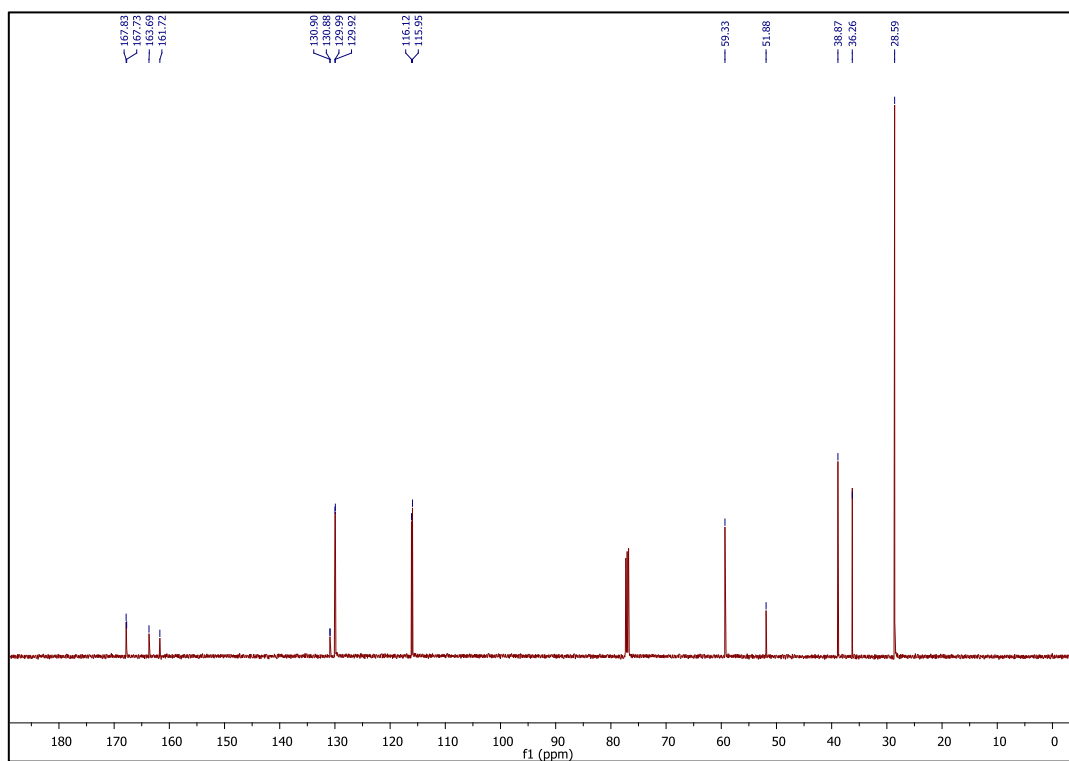
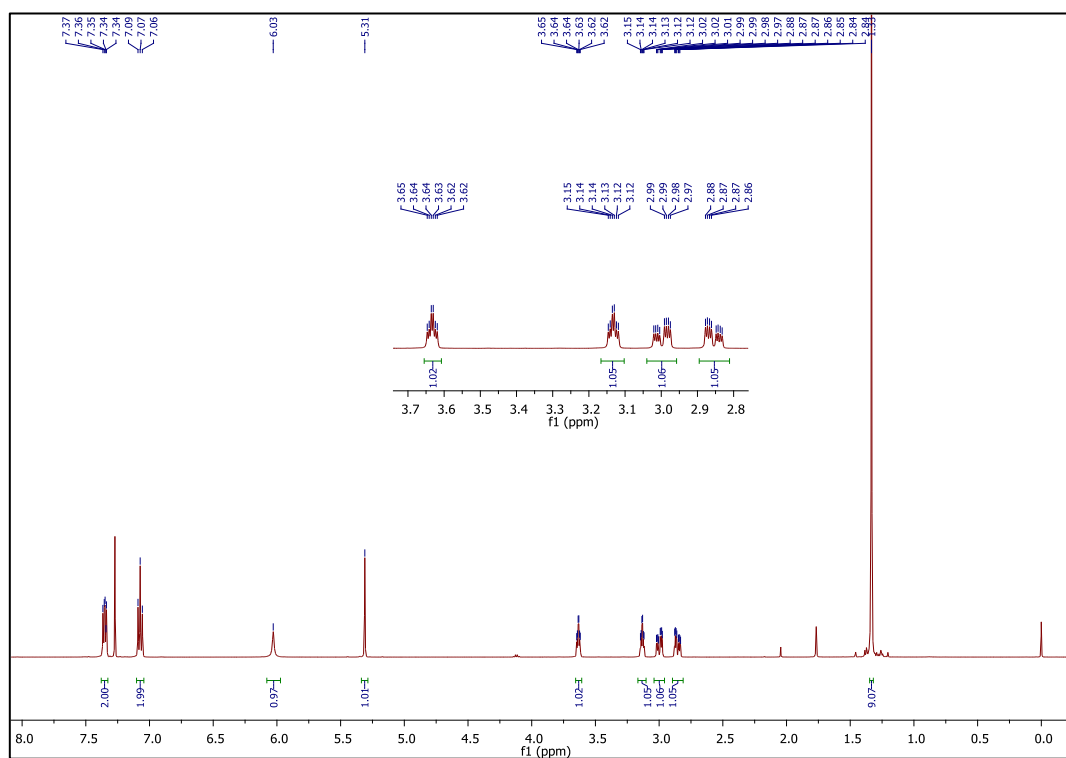
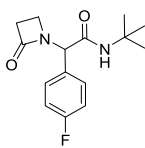
Scheme S2. Proposed mechanism for copper-mediated oxidative ^{18}F -fluorination of aryl boronic esters.

Spectra of compounds

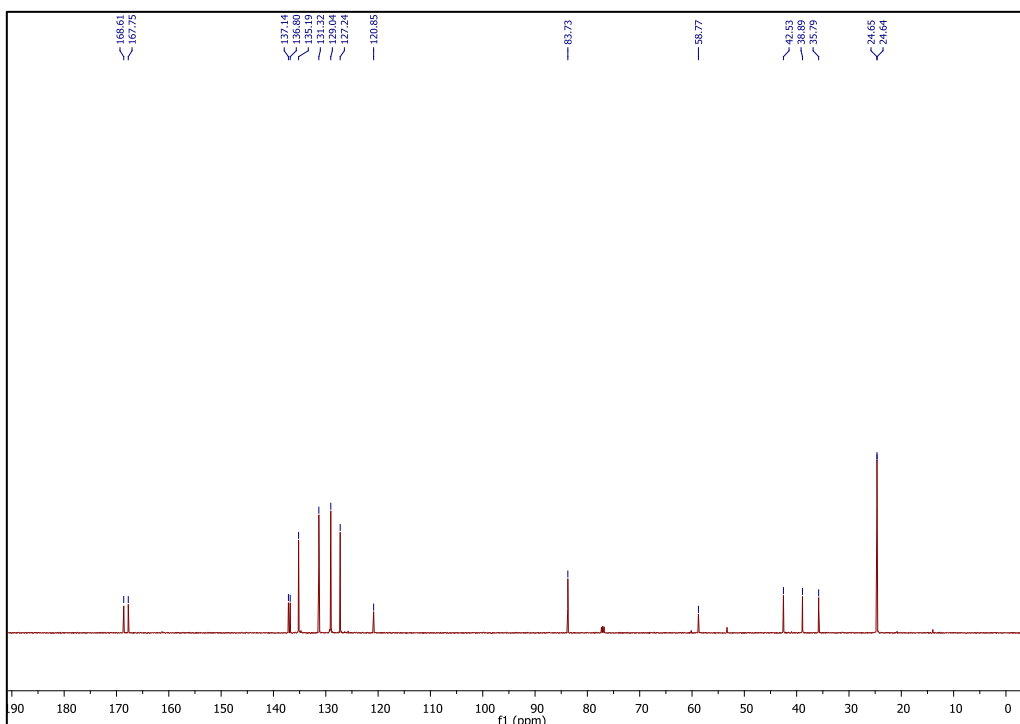
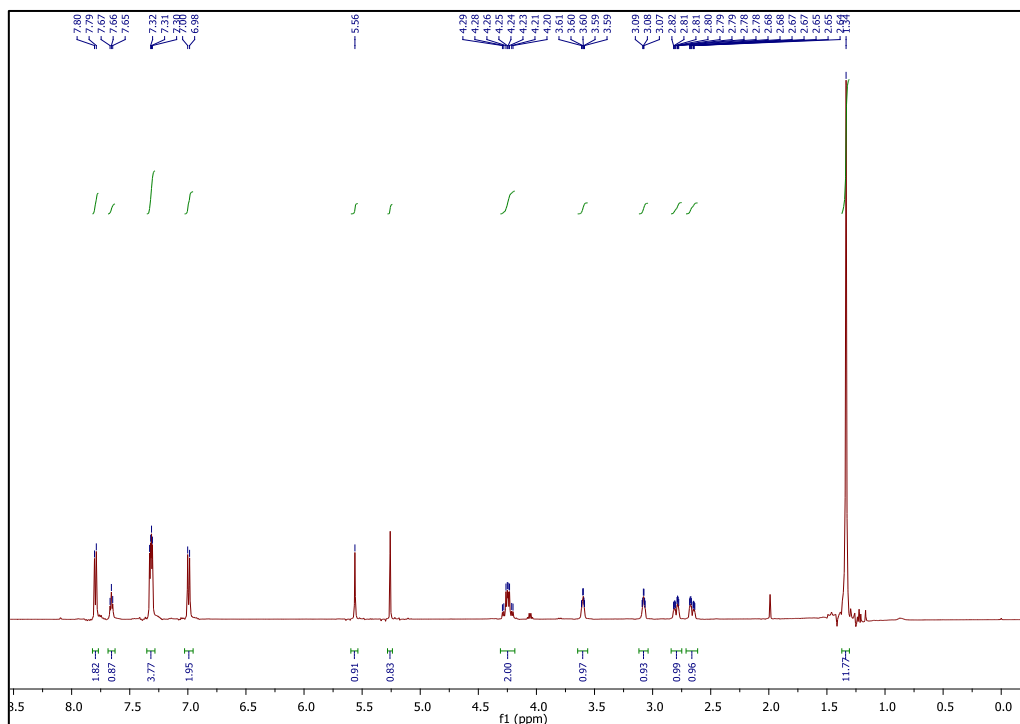
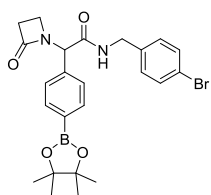
N-(tert-butyl)-2-(2-oxoazetidin-1-yl)-2-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)acetamide (4):



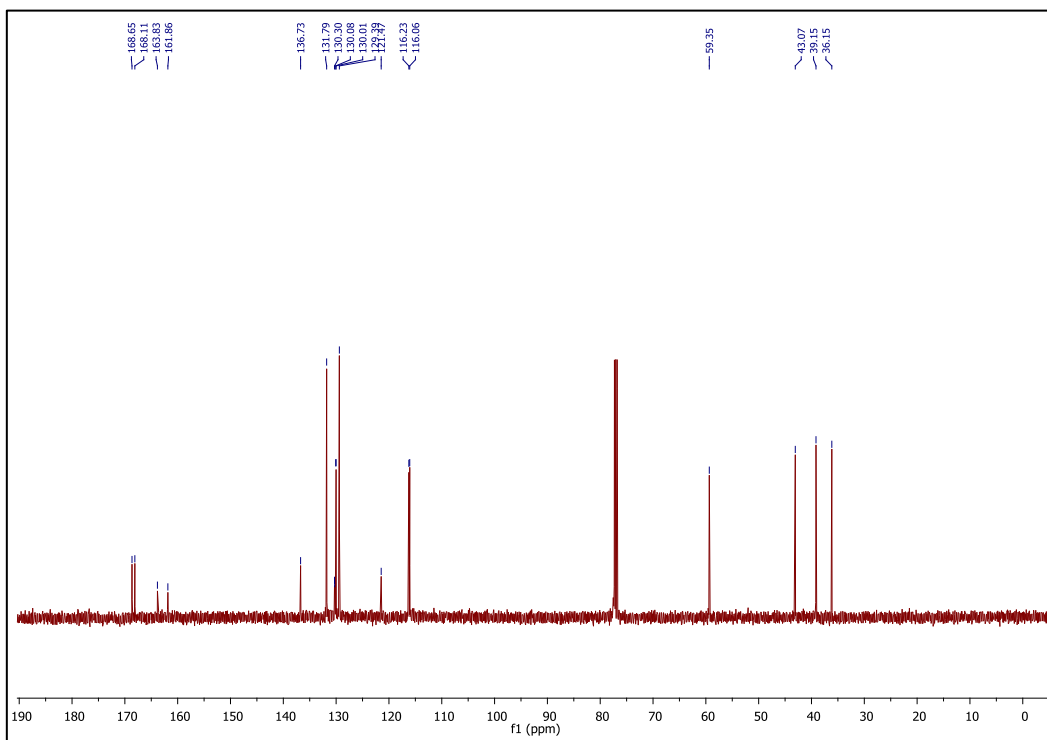
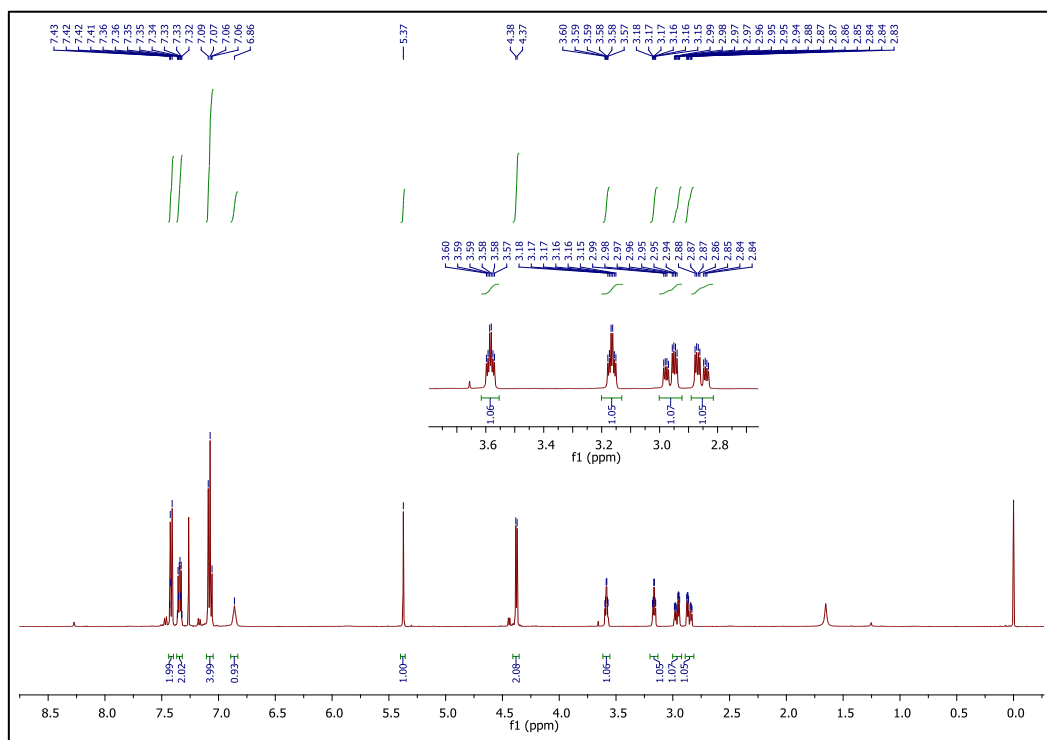
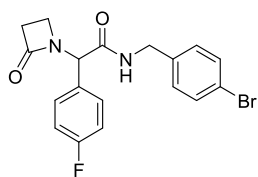
N-(tert-butyl)-2-(4-fluorophenyl)-2-(2-oxoazetidin-1-yl)acetamide ([¹⁹F]4):



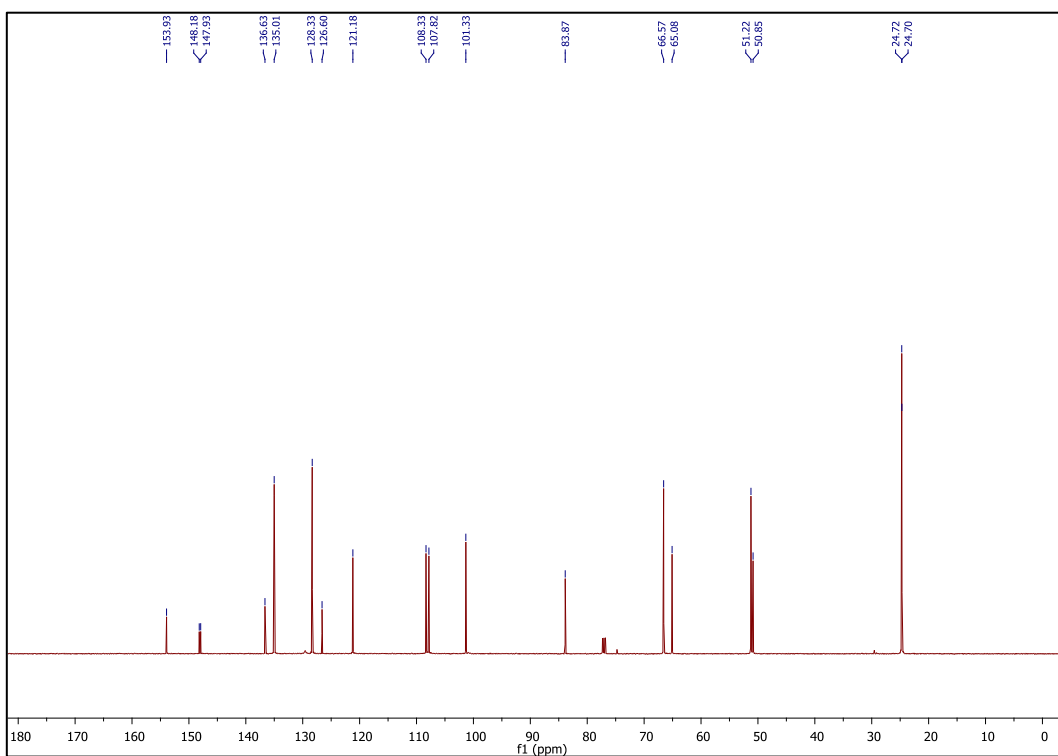
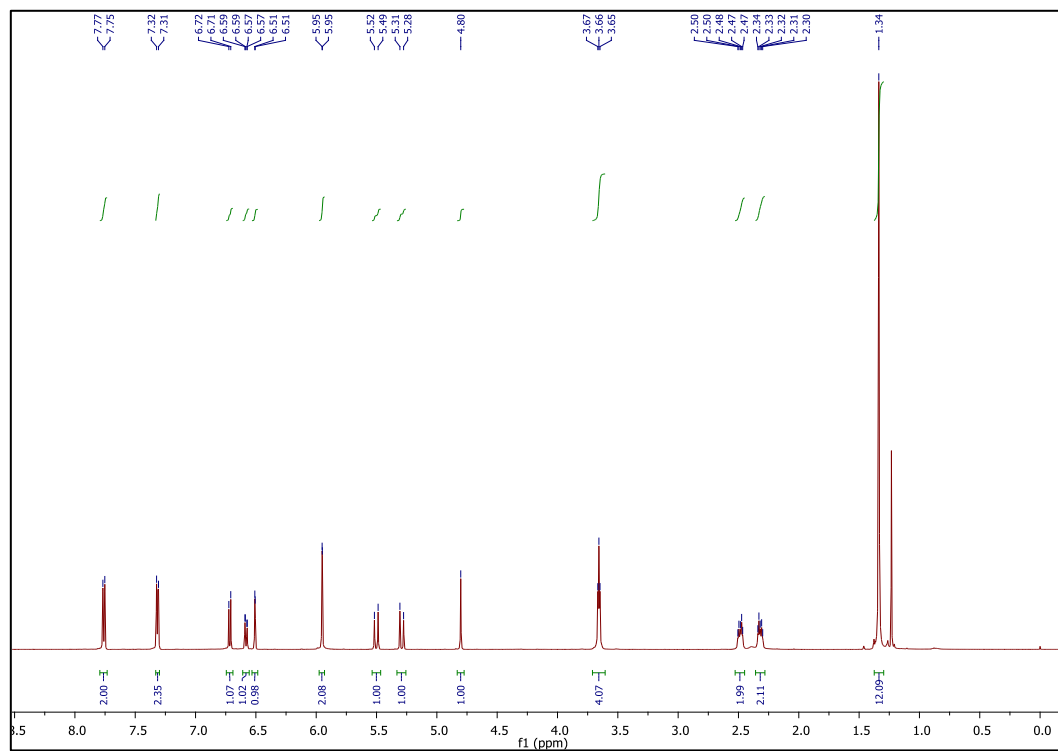
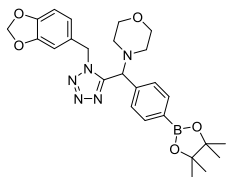
N-(4-bromobenzyl)-2-(2-oxoazetidin-1-yl)-2-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)acetamide
(5):



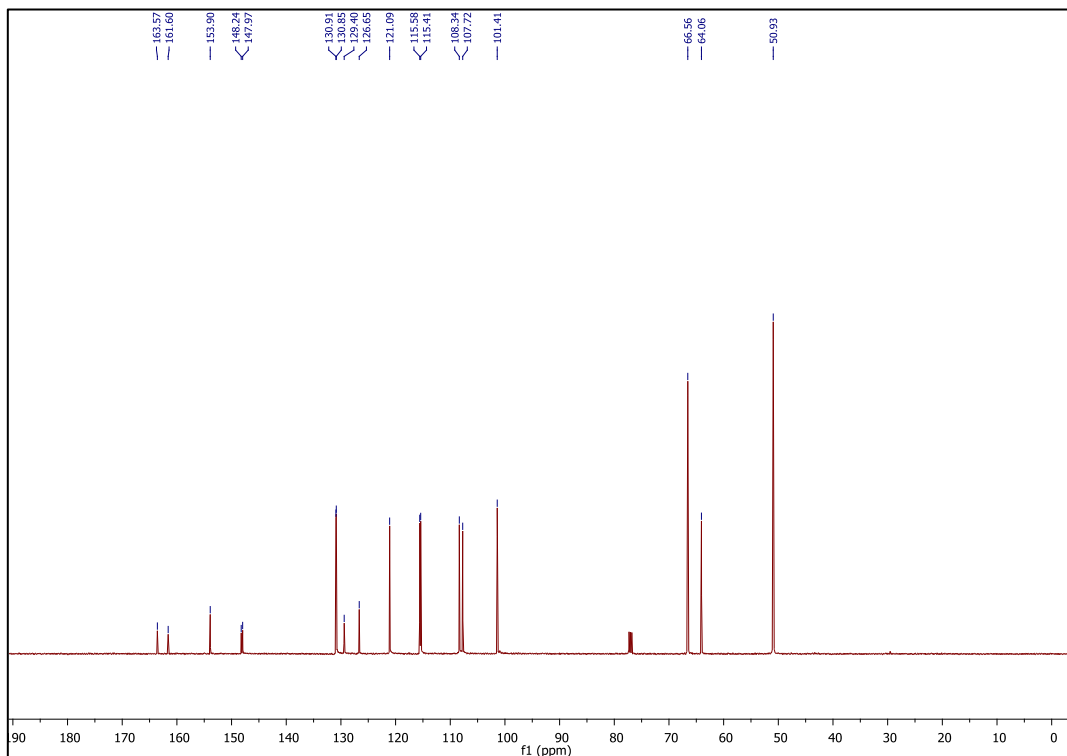
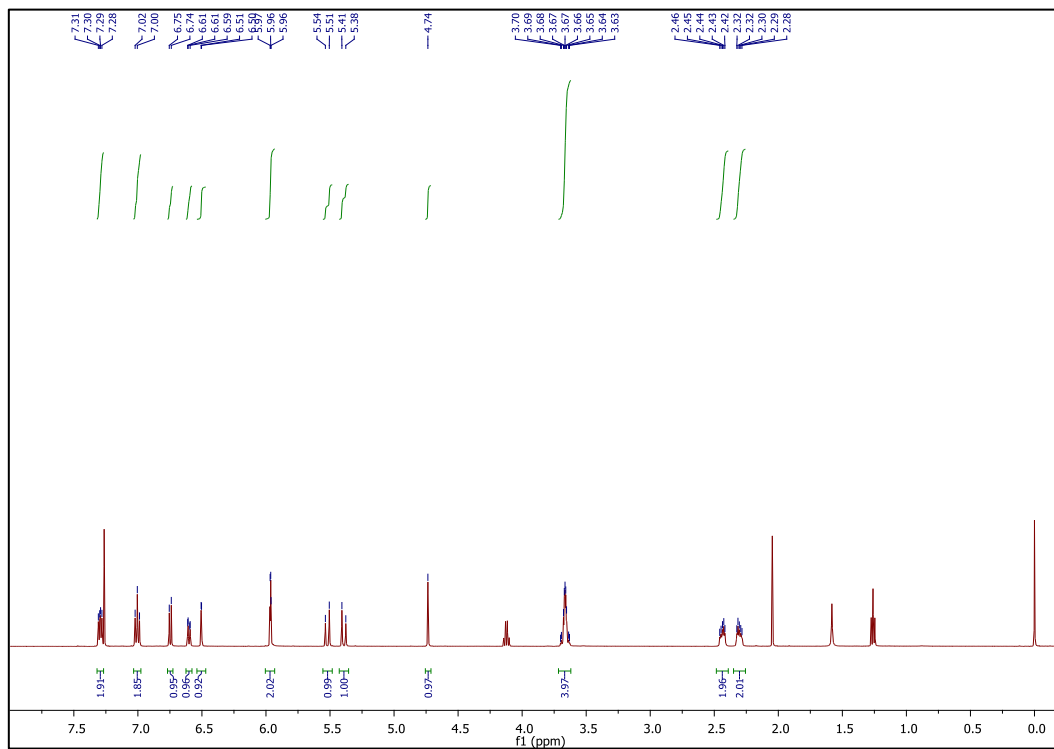
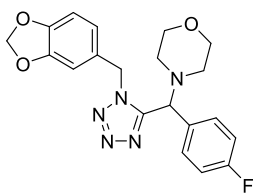
N-(4-bromobenzyl)-2-(4-fluorophenyl)-2-(2-oxoazetidin-1-yl) ($[^{19}\text{F}]5$):



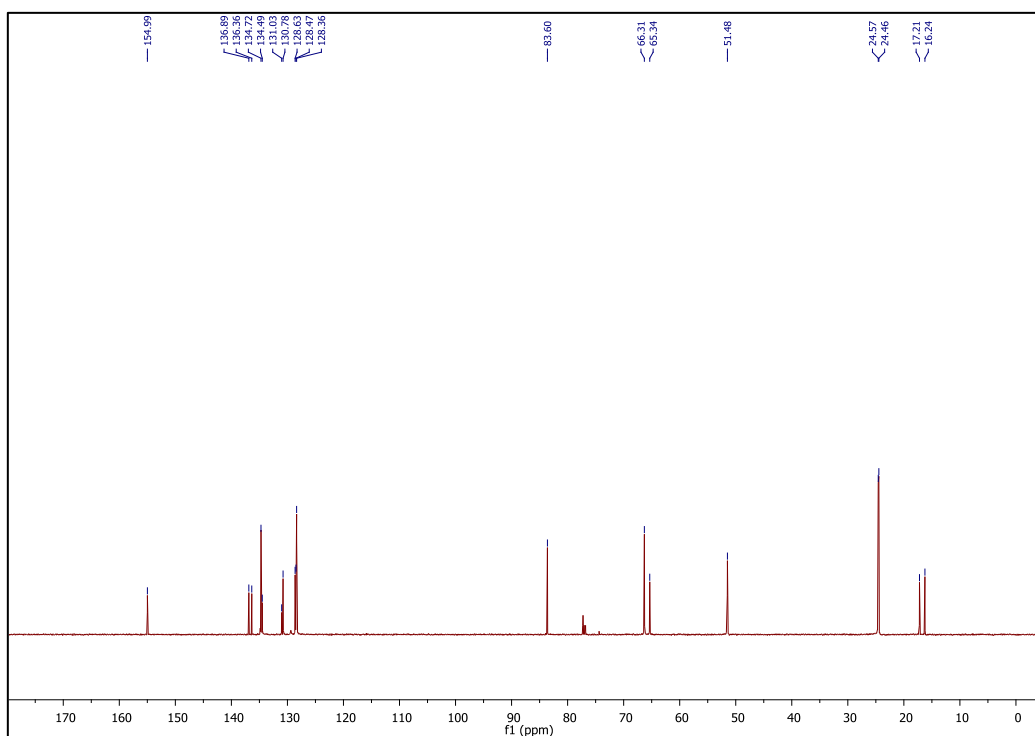
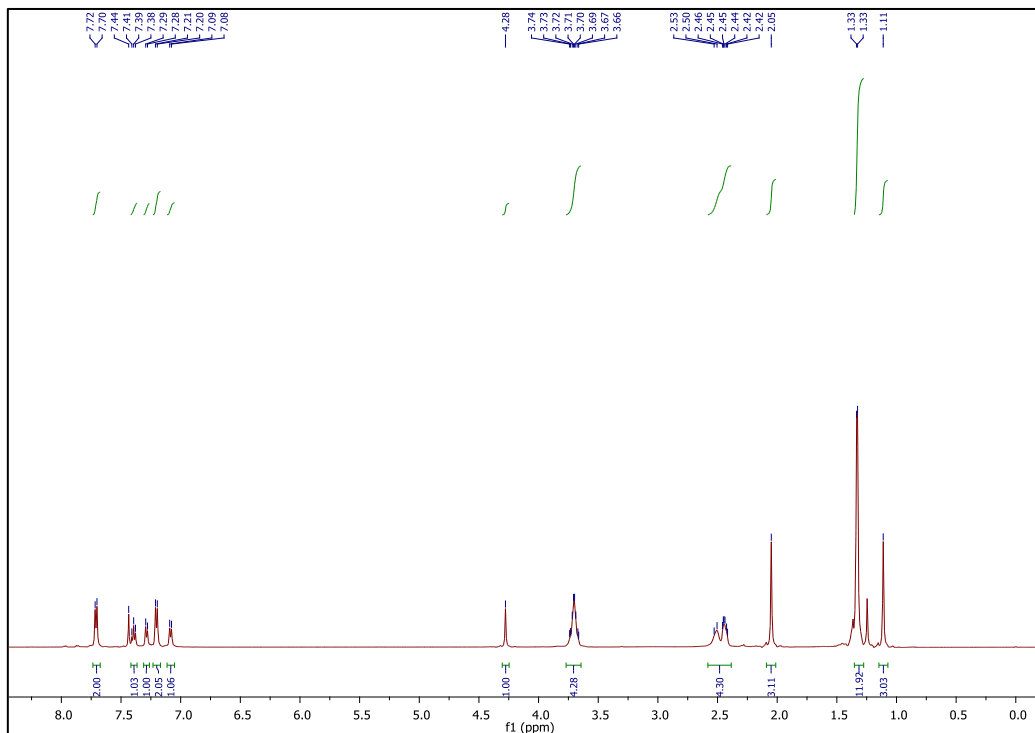
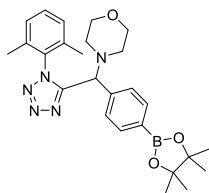
4-((1-(benzo[d][1,3]dioxol-5-ylmethyl)-1H-tetrazol-5-yl)(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)methyl)morpholine (6):



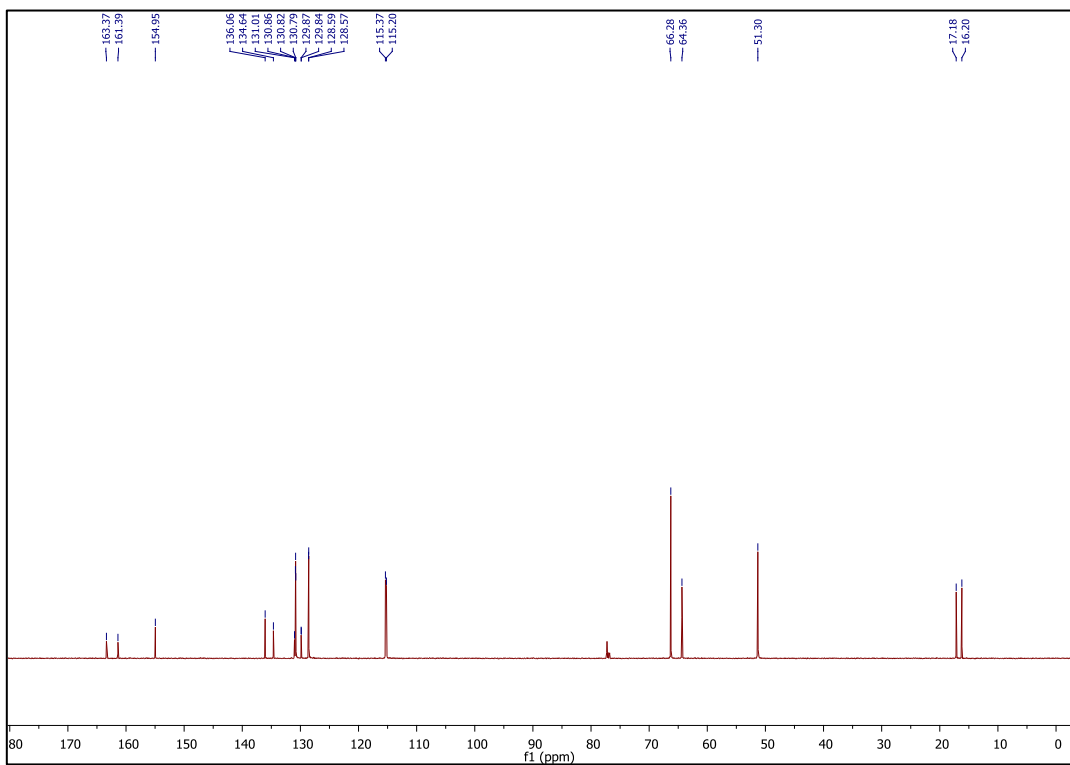
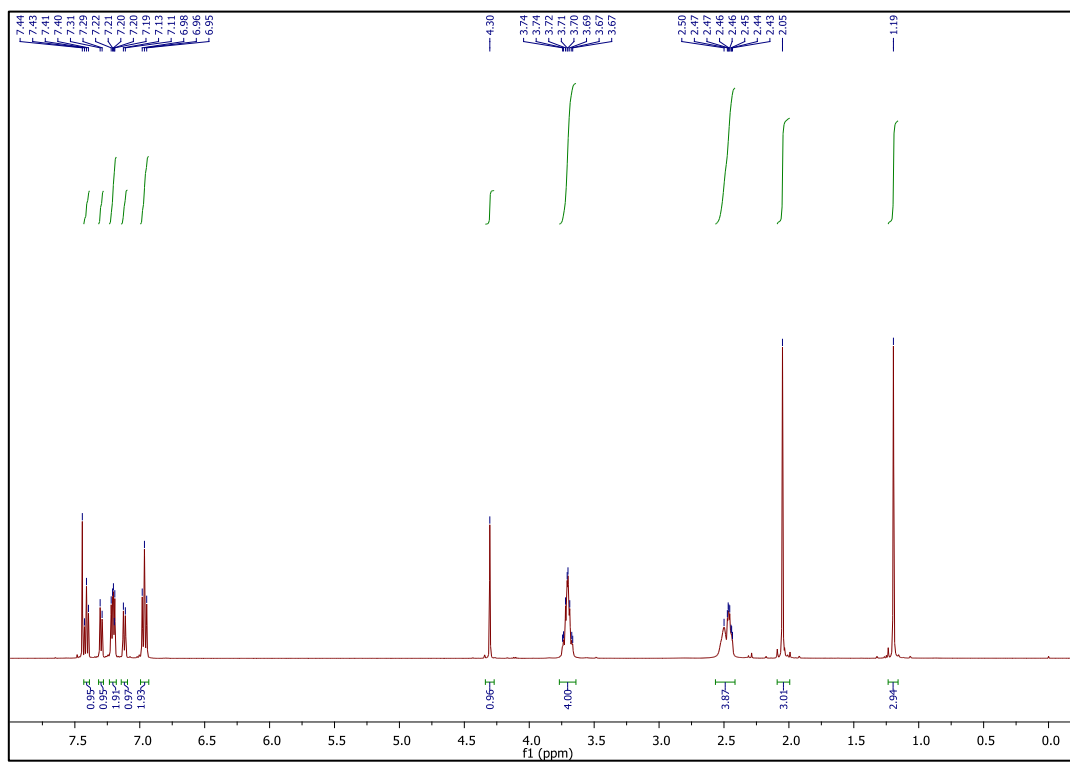
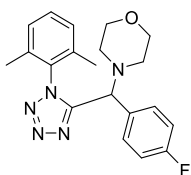
4-((1-(benzo[d][1,3]dioxol-5-ylmethyl)-1H-tetrazol-5-yl)(4-fluorophenyl)methyl)morpholine ($[^{19}\text{F}]6$):



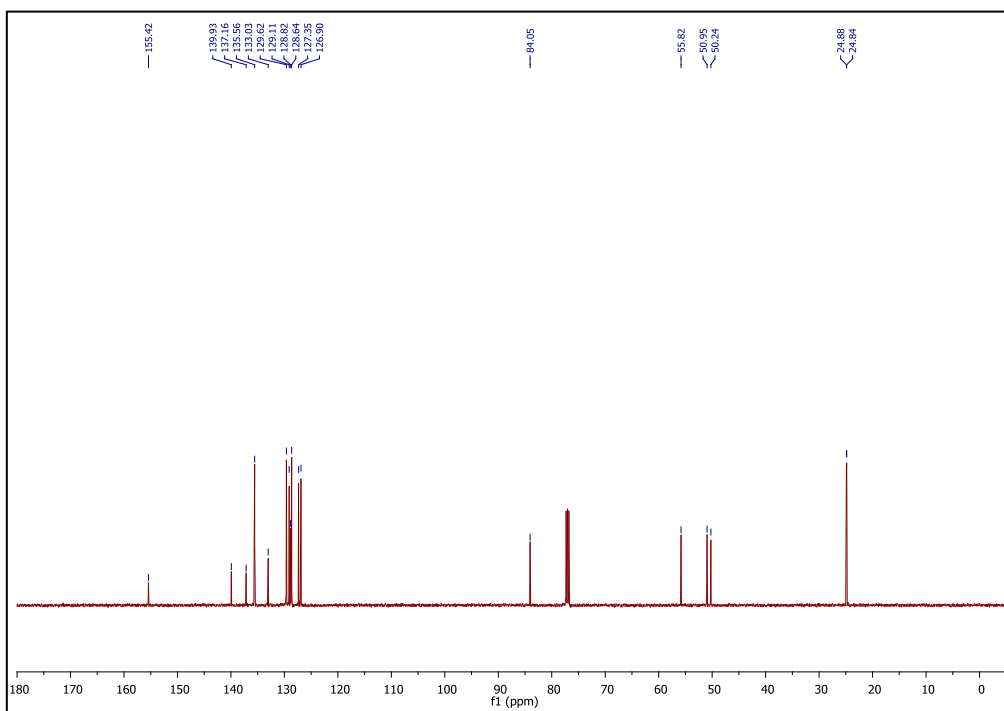
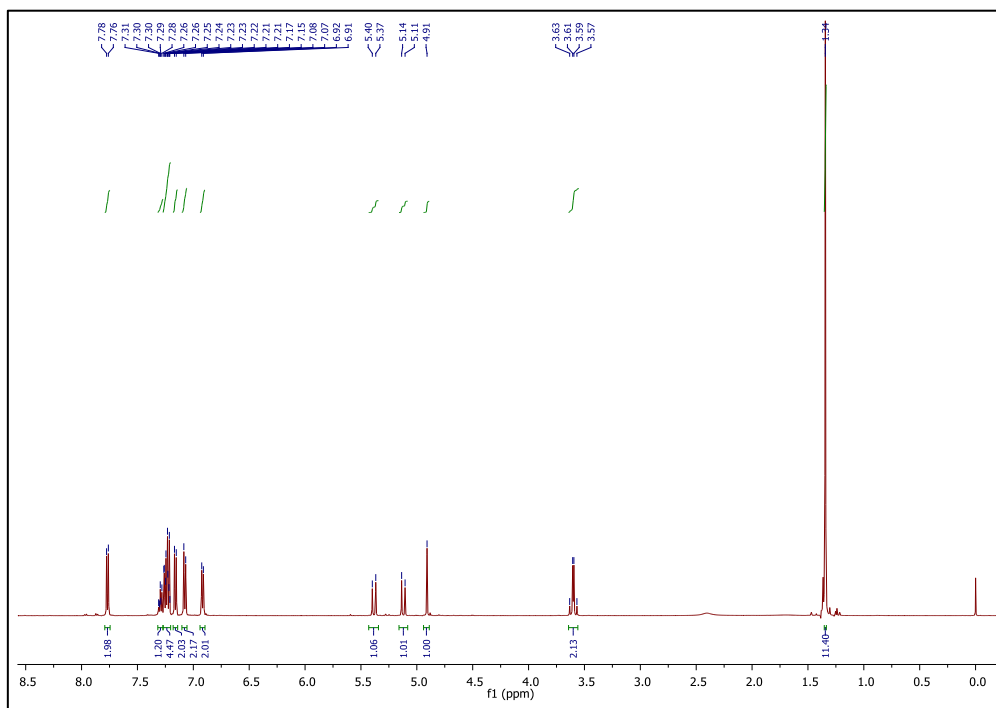
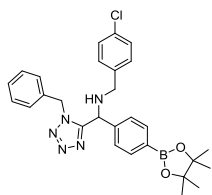
4-((1-(2,6-dimethylphenyl)-1H-tetrazol-5-yl)(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)methyl)morpholine (7):



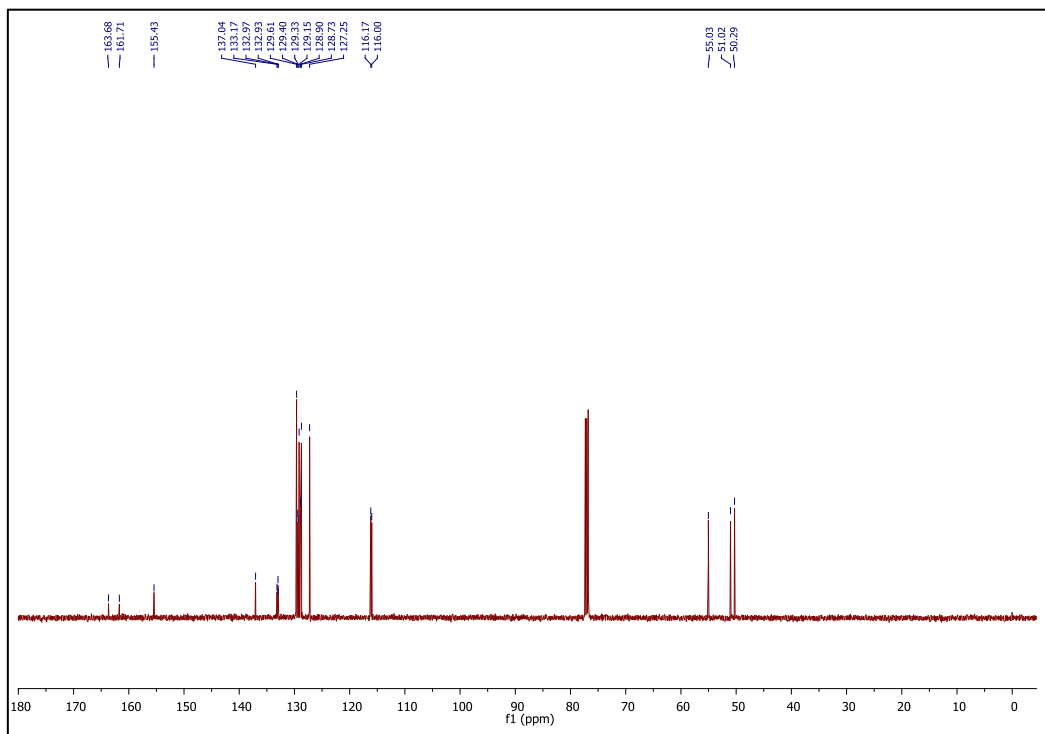
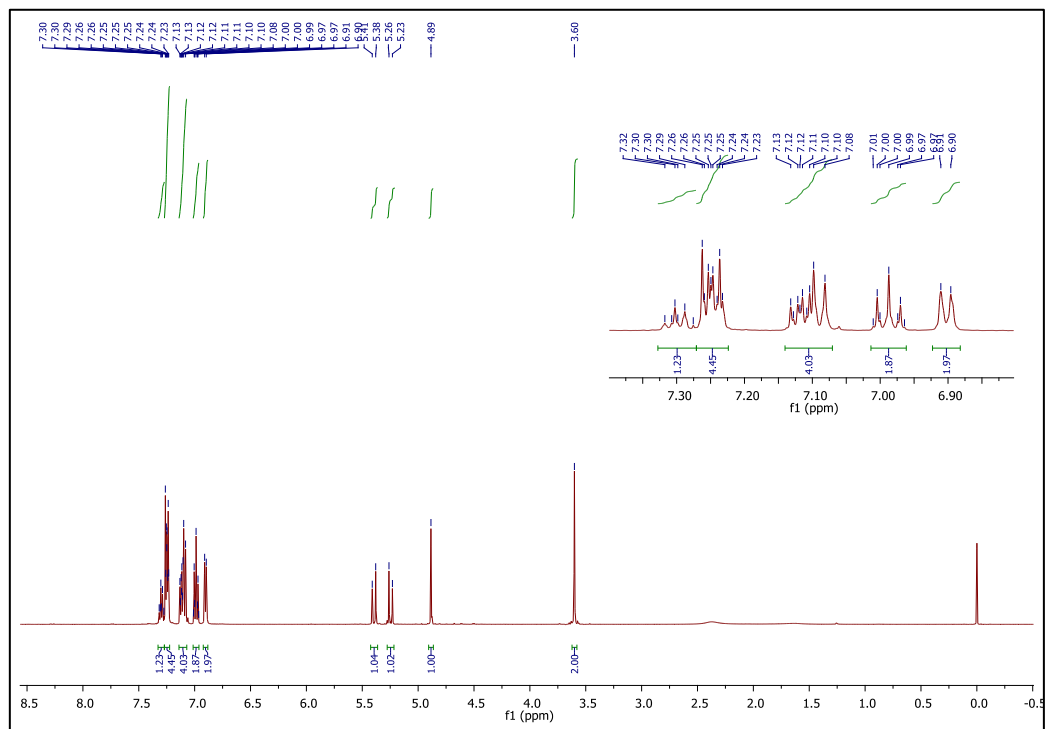
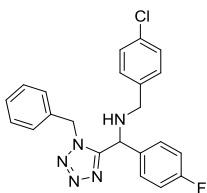
4-((1-(2,6-dimethylphenyl)-1H-tetrazol-5-yl)(4-fluorophenyl)methyl)morpholine ($[^{19}\text{F}]7$):



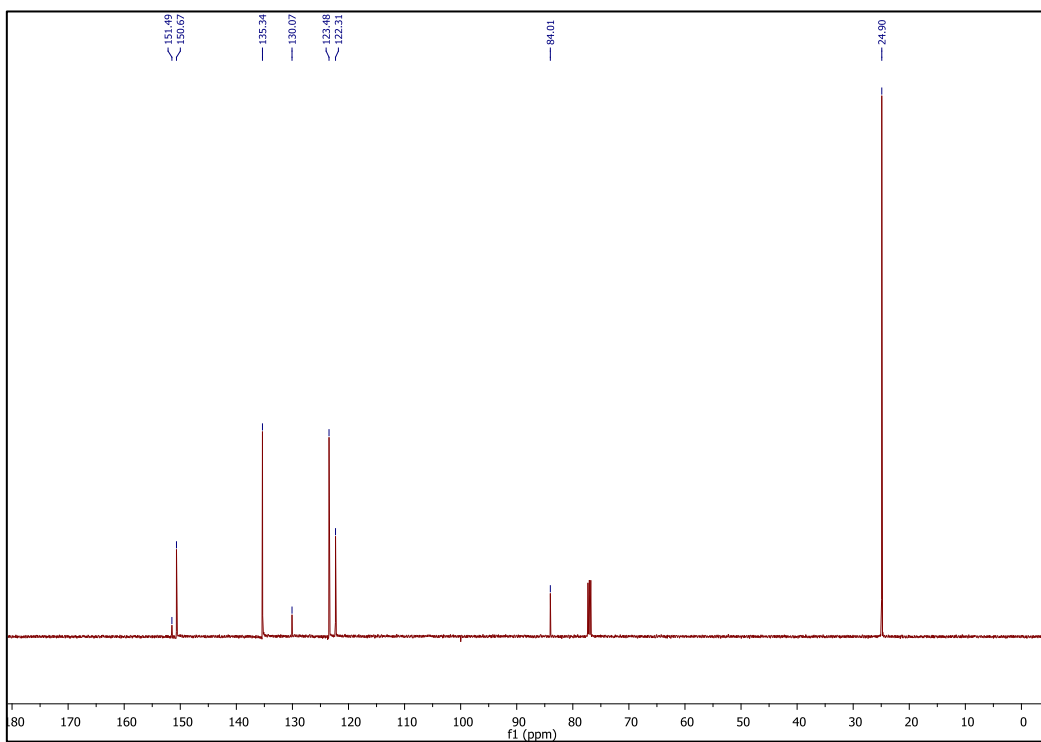
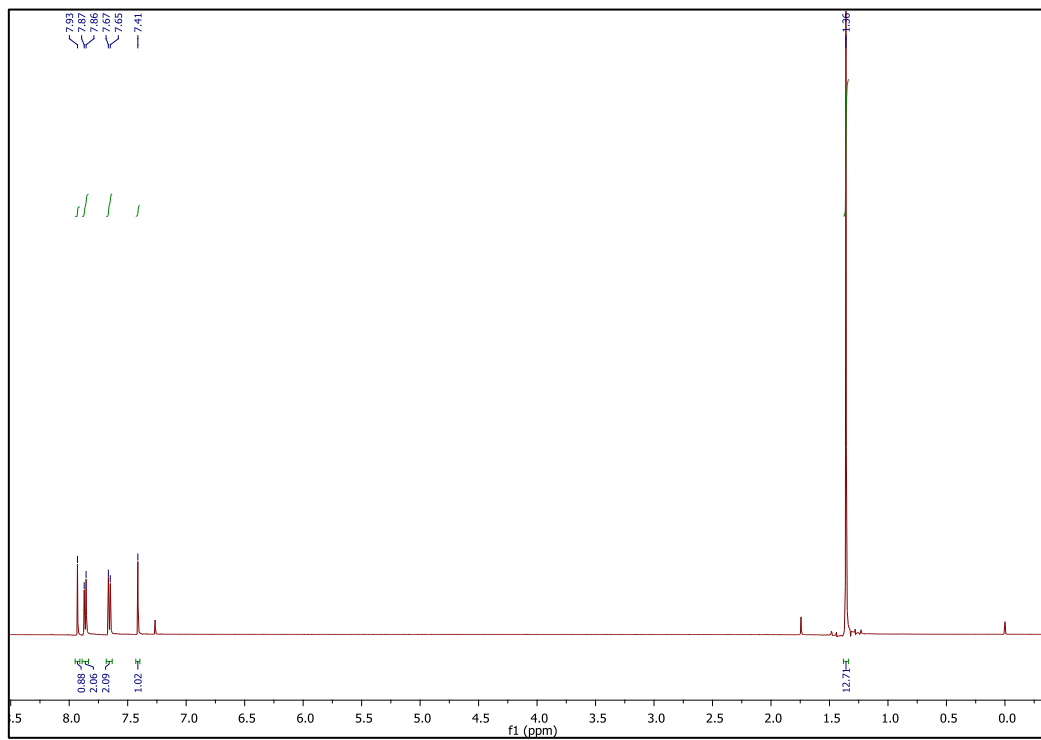
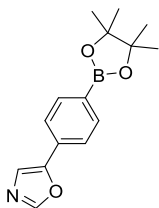
1-(1-benzyl-1H-tetrazol-5-yl)-N-(4-chlorobenzyl)-1-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)methanamine (8):



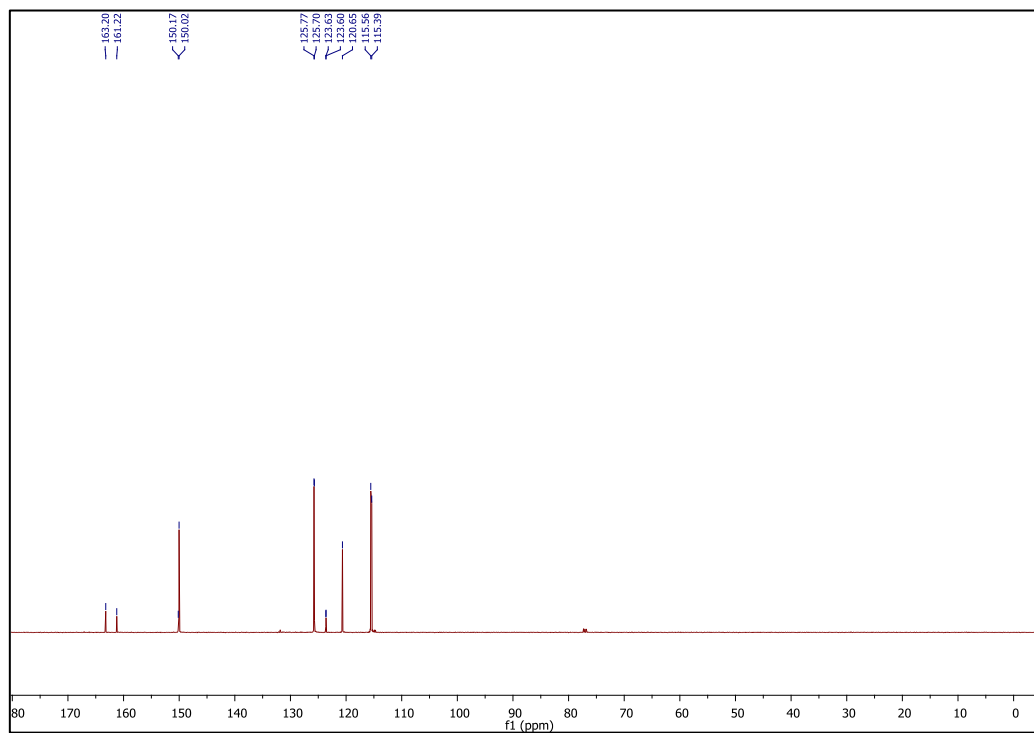
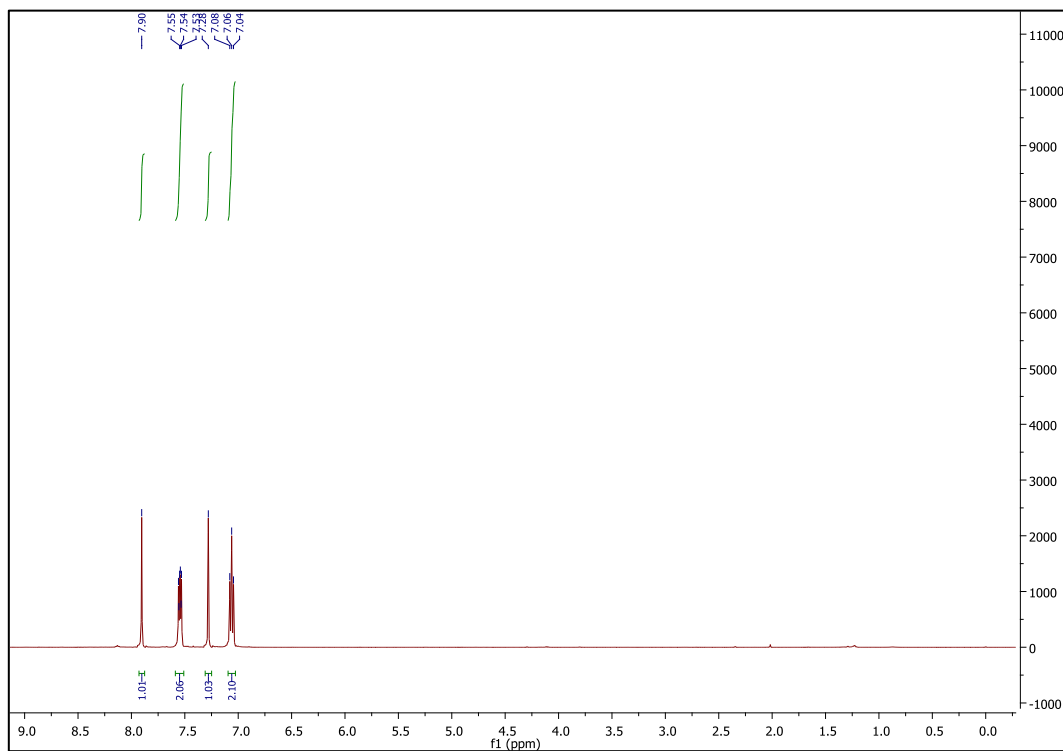
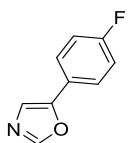
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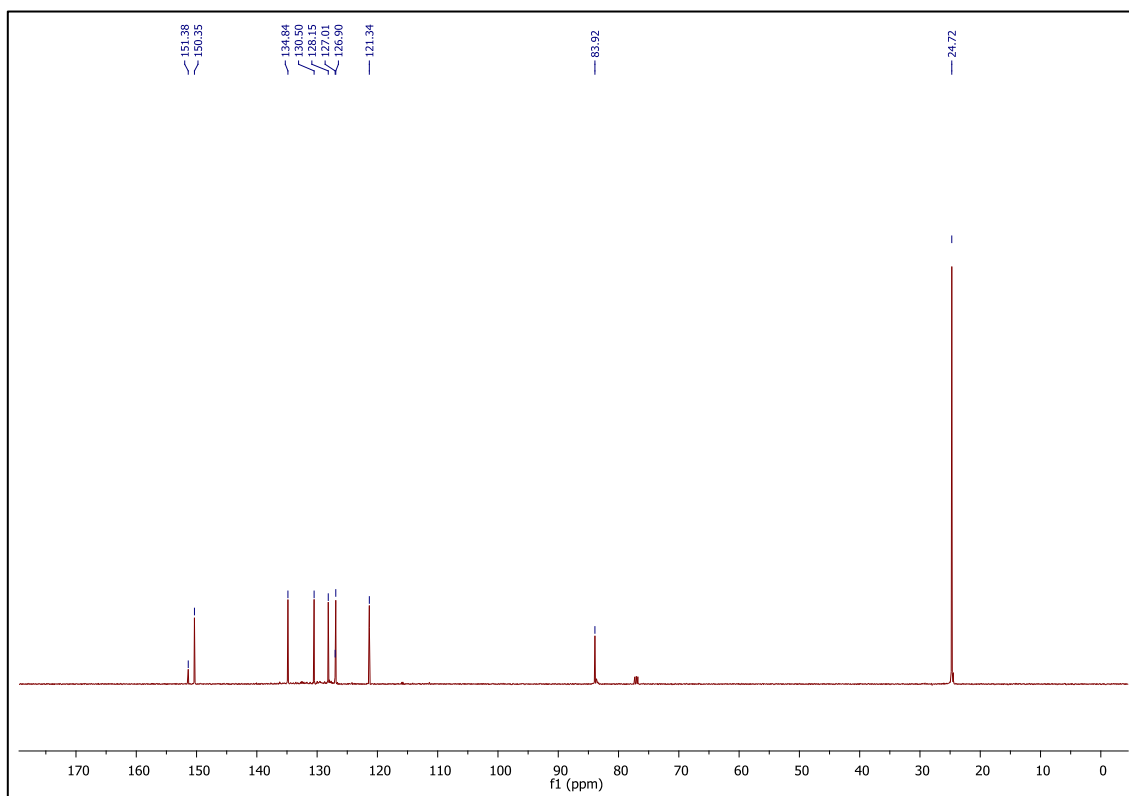
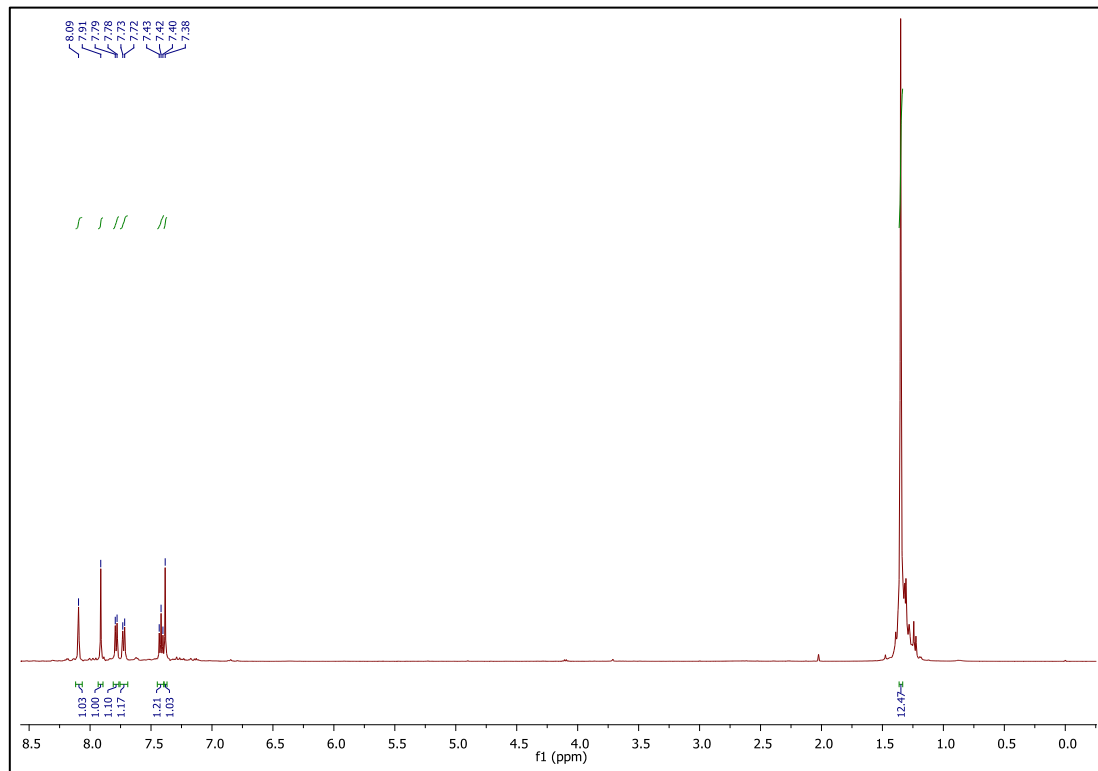
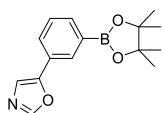
5-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)oxazole (9):



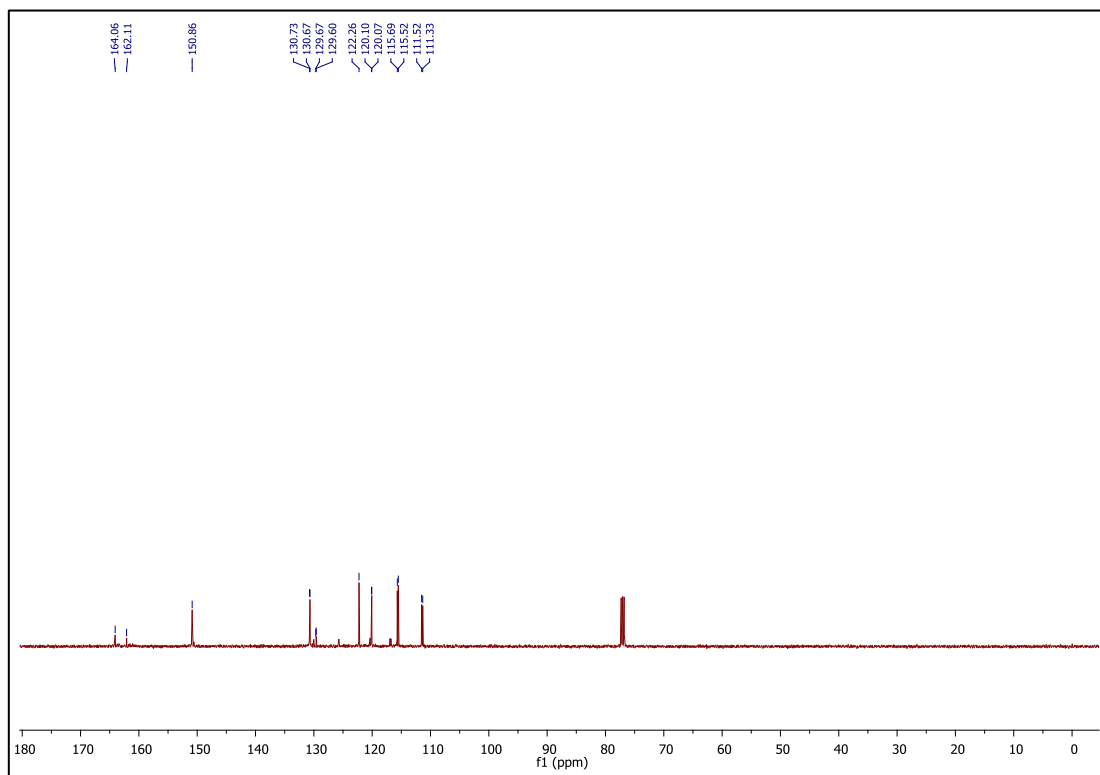
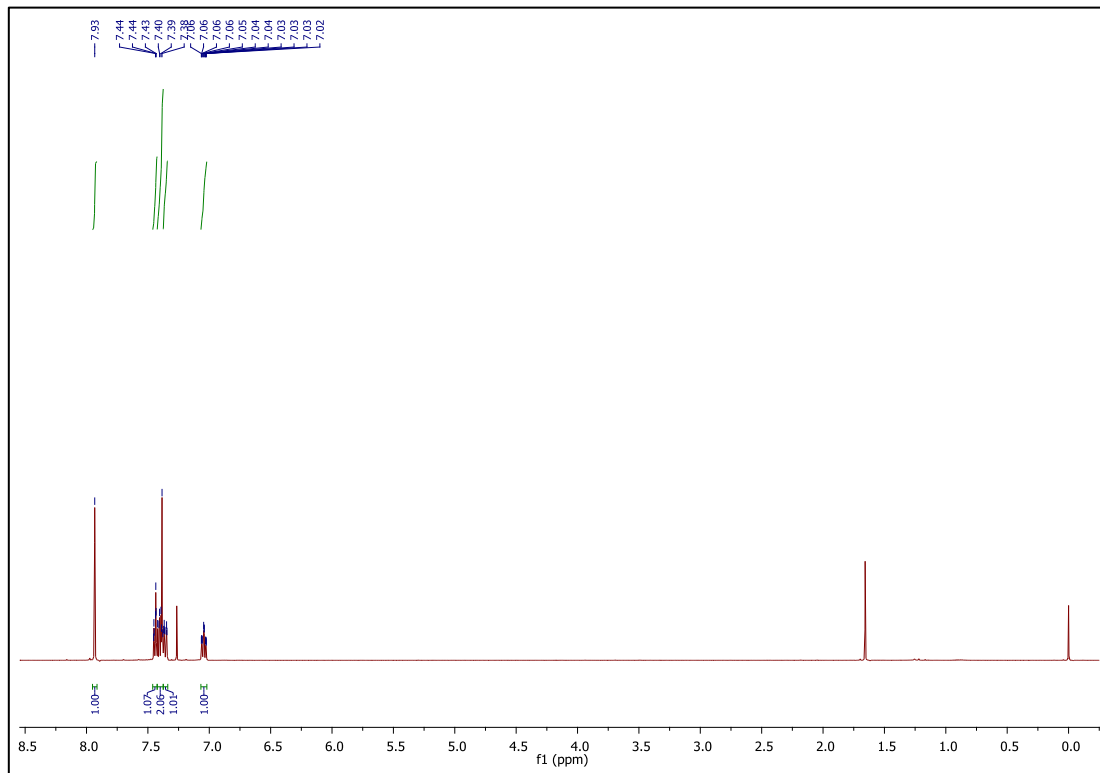
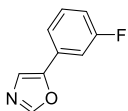
5-(4-fluorophenyl)oxazole ($[^{19}\text{F}]9$):



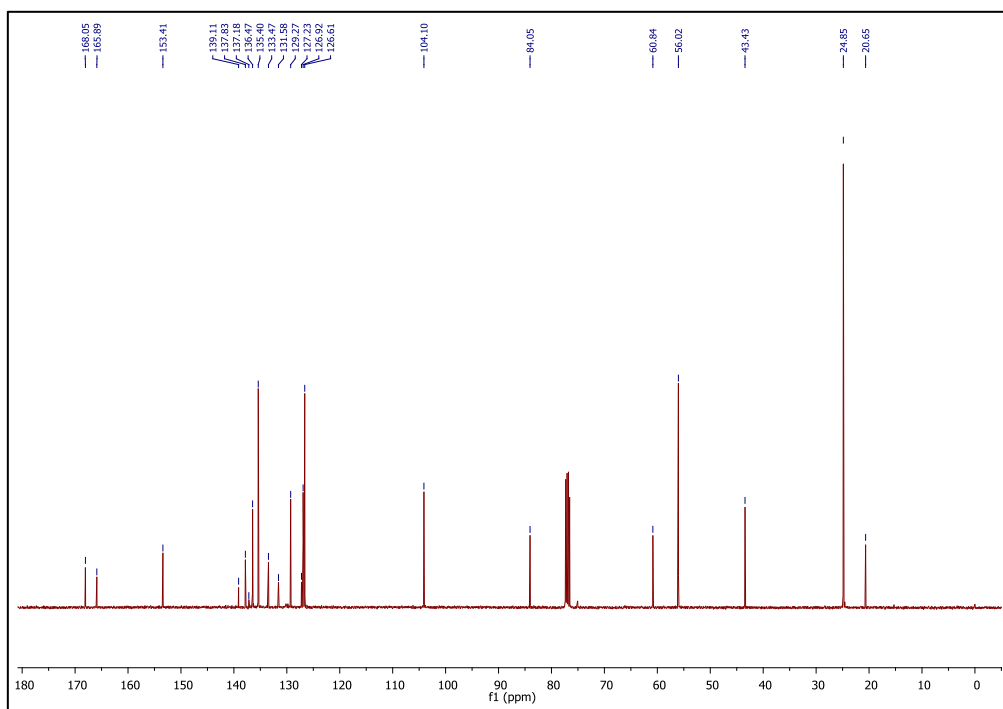
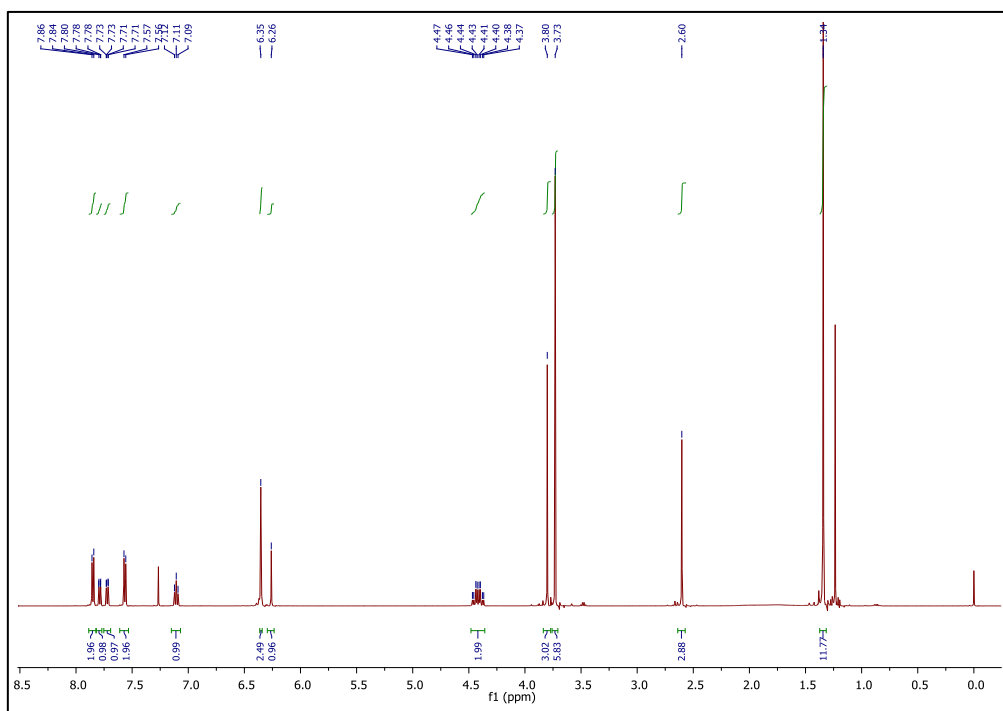
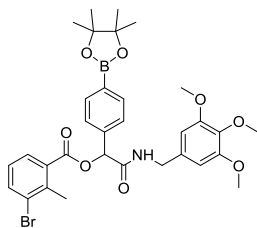
5-(3-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)oxazole (10):



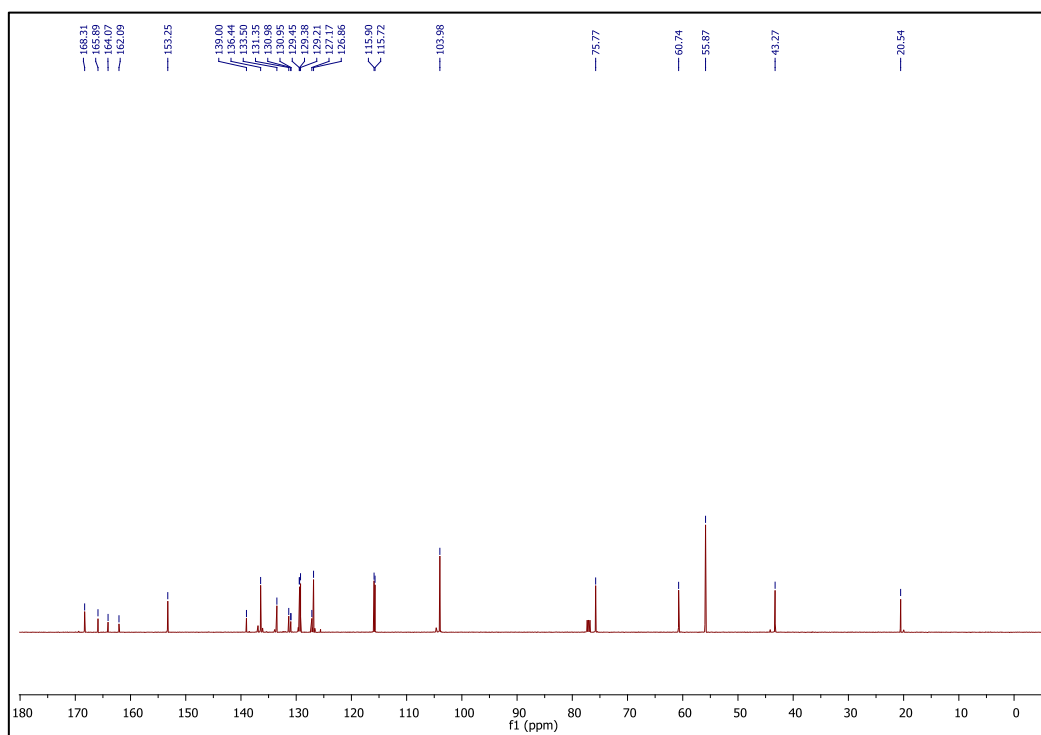
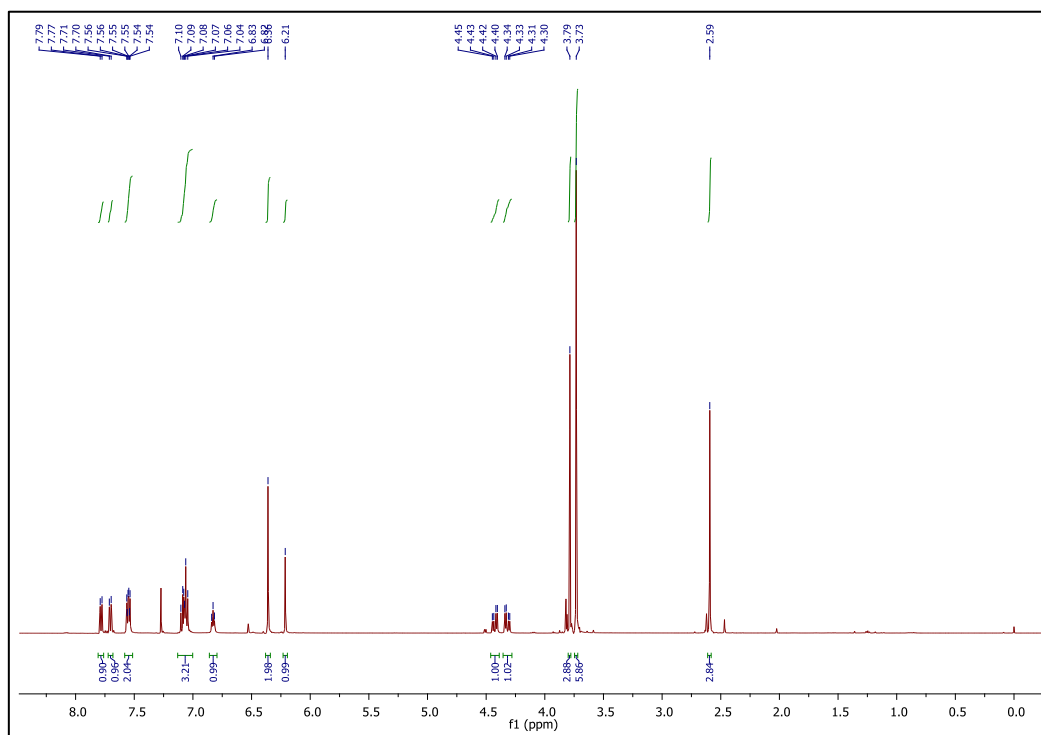
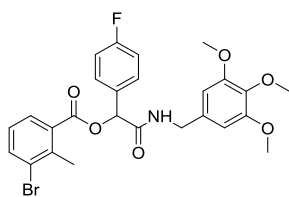
5-(3-fluorophenyl)oxazole ($[^{19}\text{F}]10$):



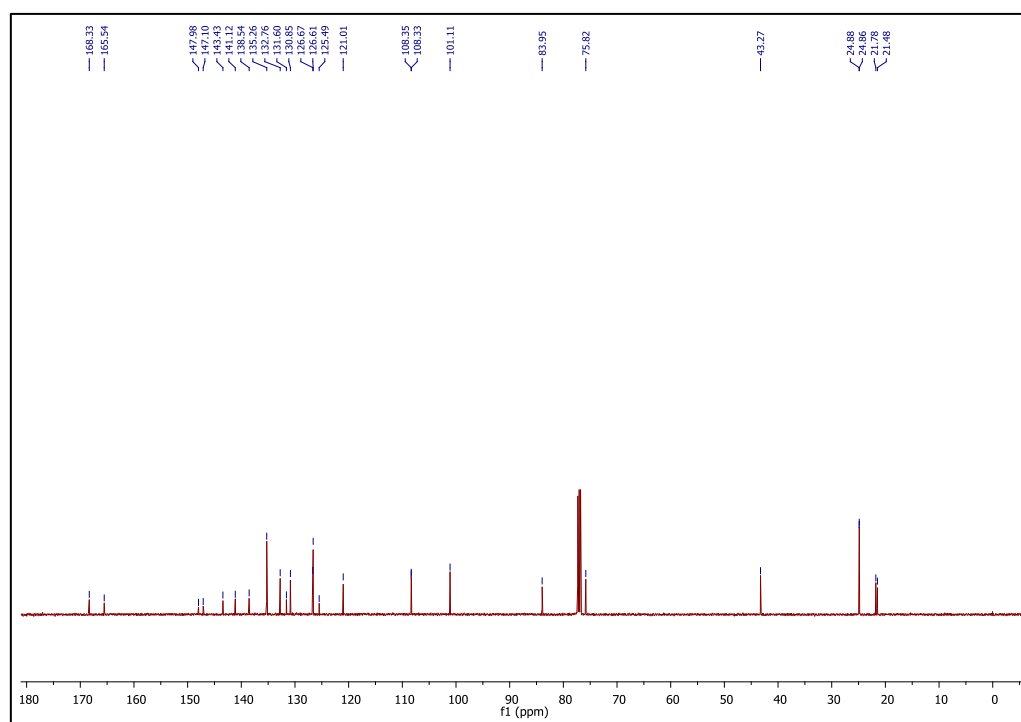
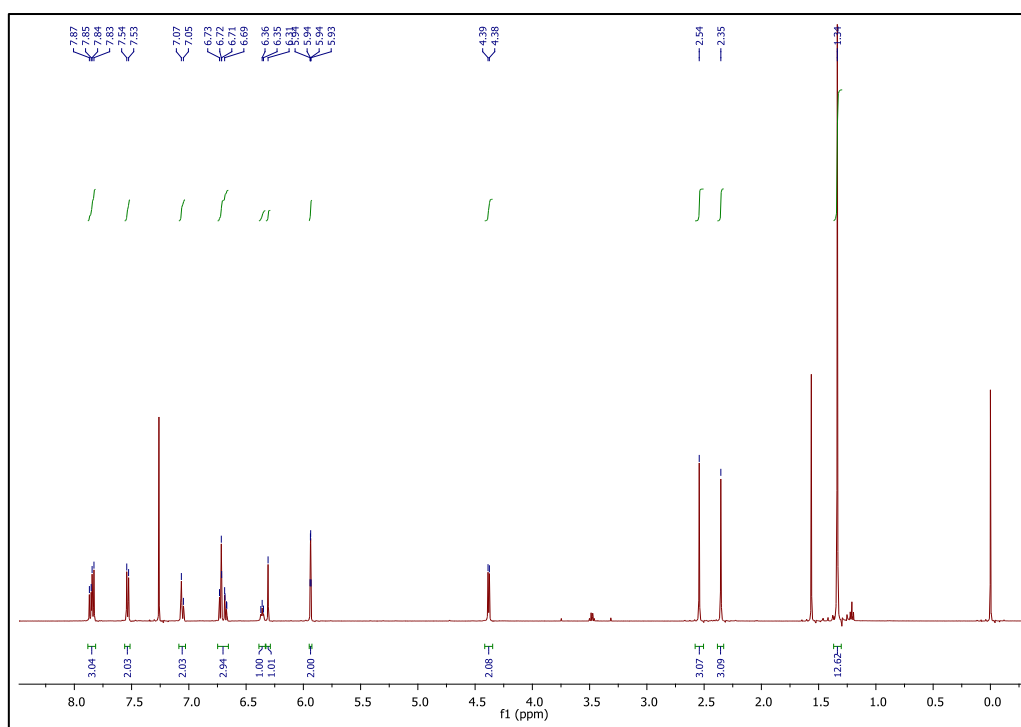
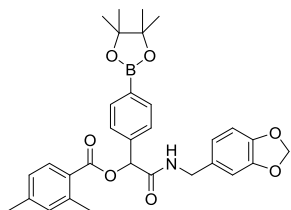
2-oxo-1-(4-(4,4,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)-2-((3,4,5-trimethoxybenzyl)amino)ethyl 3-bromo-2-methylbenzoate (11):



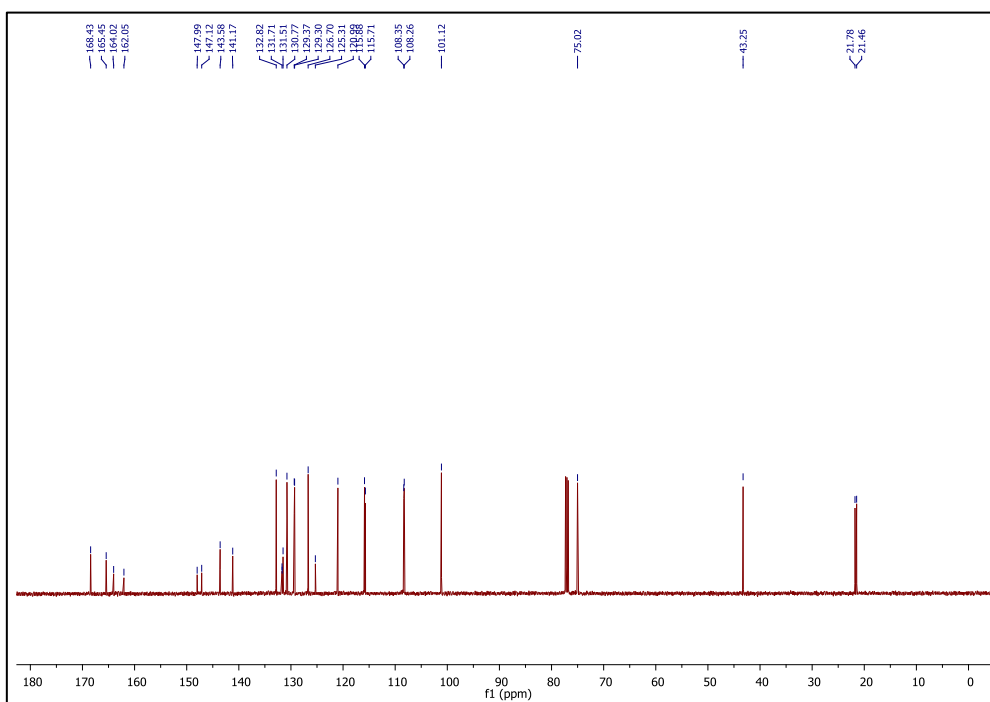
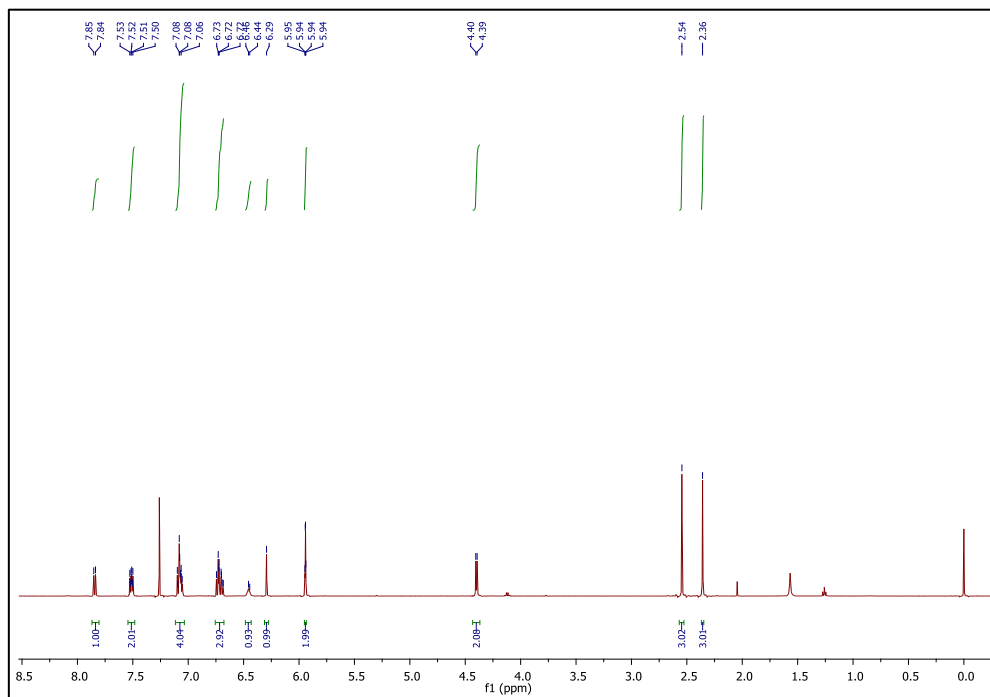
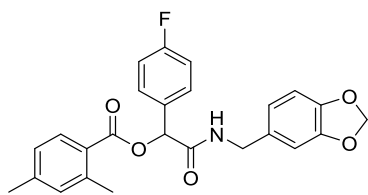
1-(4-fluorophenyl)-2-oxo-2-((3,4,5-trimethoxybenzyl)amino)ethyl 3-bromo-2-methylbenzoate ($[^{19}\text{F}]11$):



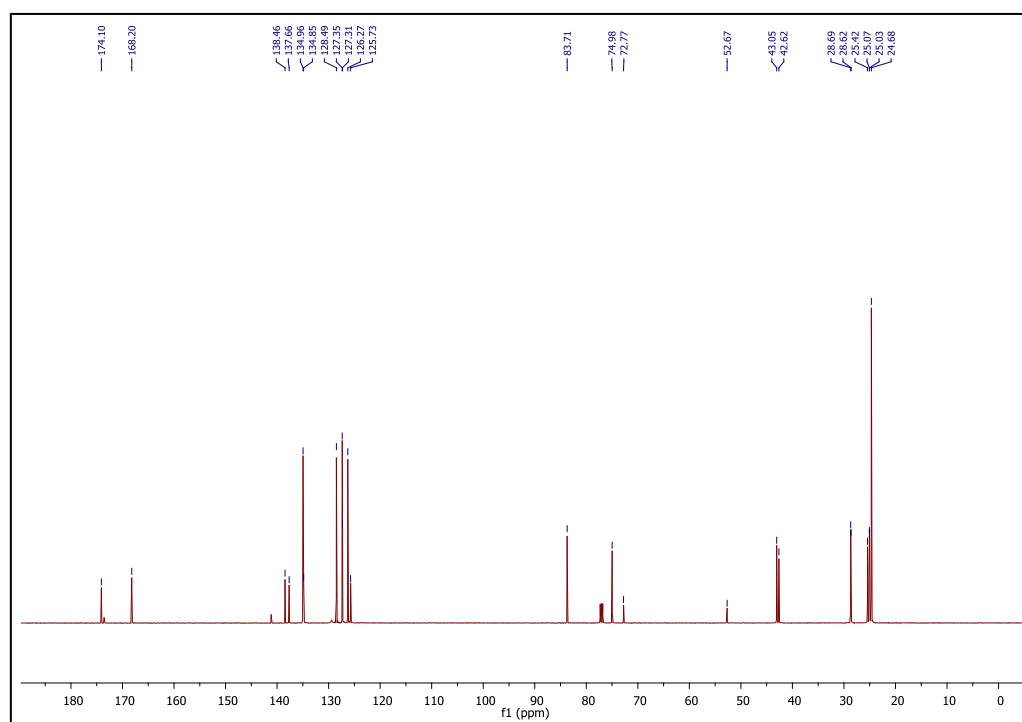
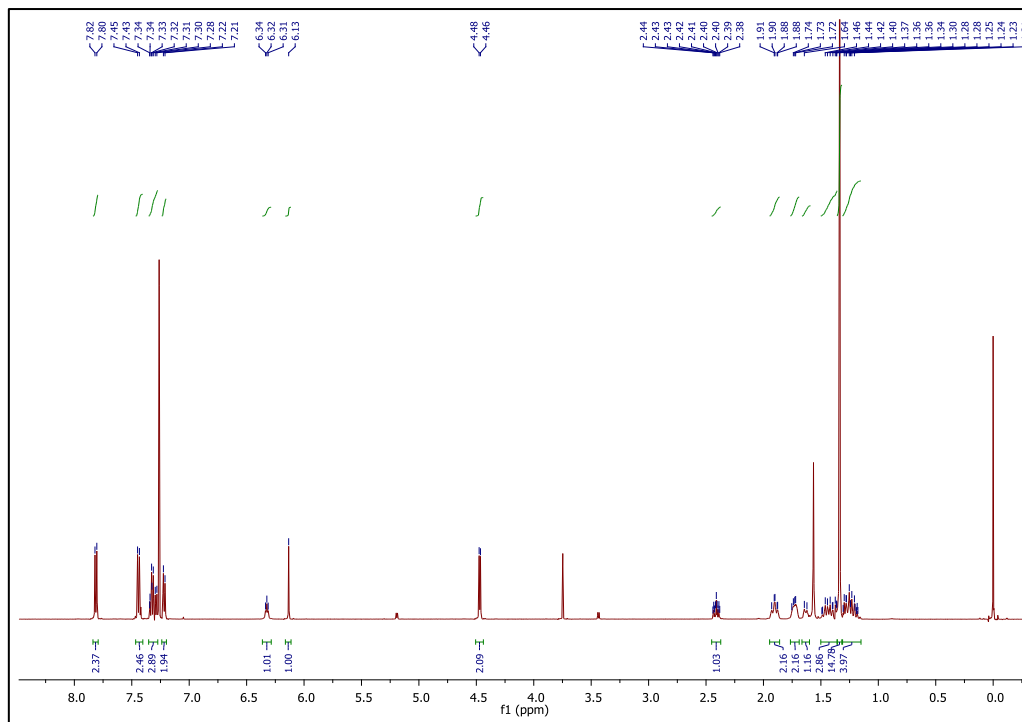
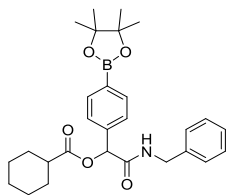
2-((benzo[d][1,3]dioxol-5-ylmethyl)amino)-2-oxo-1-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)ethyl 2,4-dimethylbenzoate (12):



2-((benzo[d][1,3]dioxol-5-ylmethyl)amino)-1-(4-fluorophenyl)-2-oxoethyl 2,4-dimethylbenzoate ($[^{19}\text{F}]12$):



2-(benzylamino)-2-oxo-1-(4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl)ethyl cyclohexanecarboxylate
(13):



2-(benzylamino)-1-(4-fluorophenyl)-2-oxoethyl cyclohexanecarboxylate ($[^{19}\text{F}]\mathbf{13}$):

