

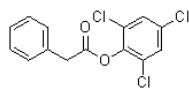
Uniting C1-Ammonium Enolates and Transition Metal Electrophiles via Cooperative Catalysis: The Direct, Asymmetric α -Allylation of Aryl Acetic Acid Esters.

Kevin J. Schwarz, Jessica L. Amos, J. Cullen Klein, Dung T. Do; Thomas N. Snaddon*

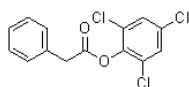
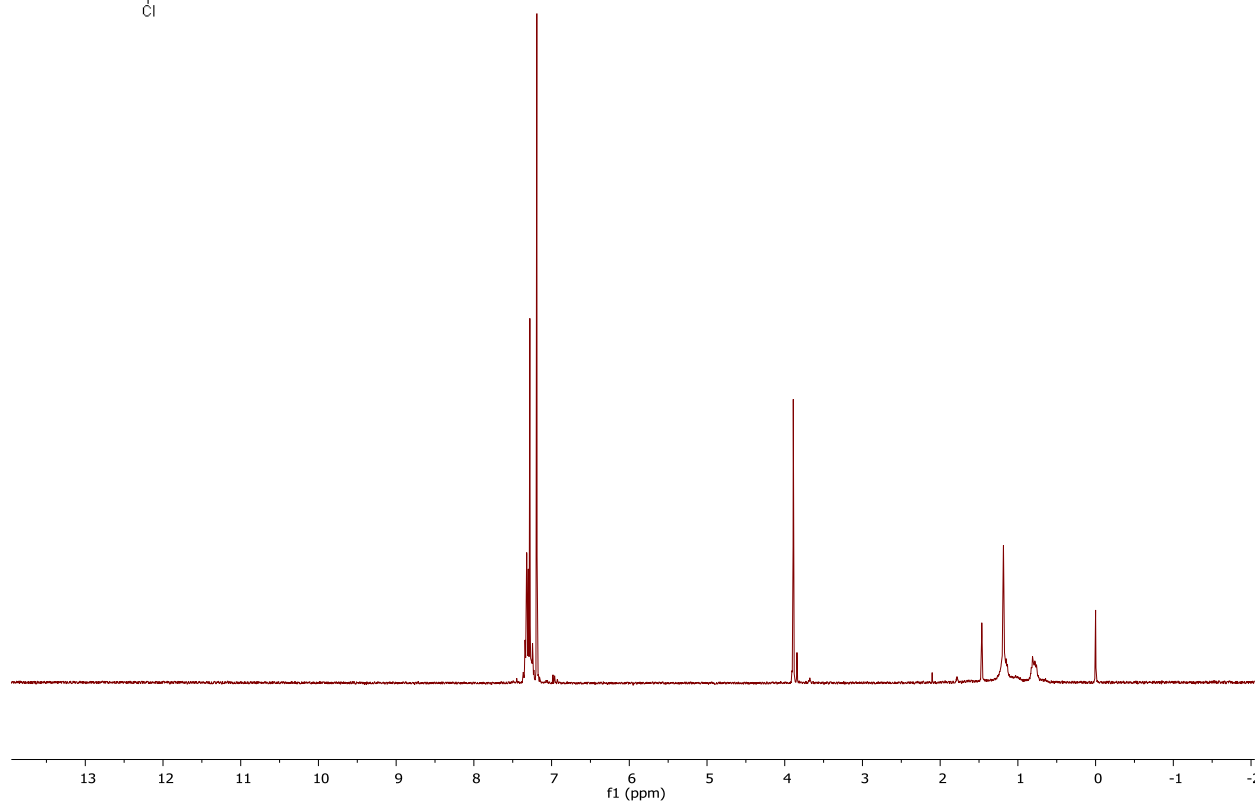
Department of Chemistry, Indiana University, 800 E. Kirkwood Ave., Bloomington, Indiana 47405, United States.

Corresponding Author: tsnaddon@indiana.edu

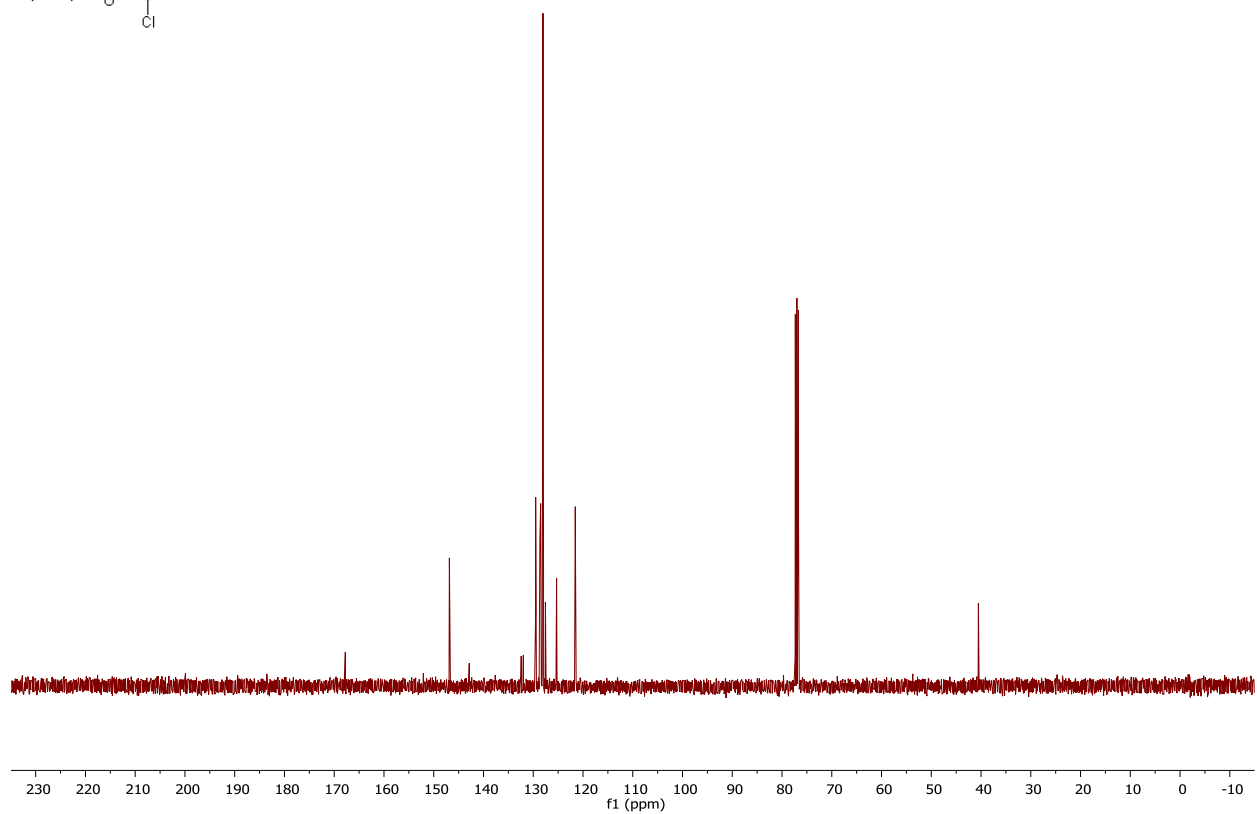
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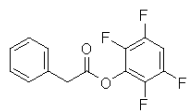


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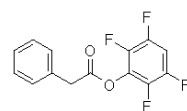
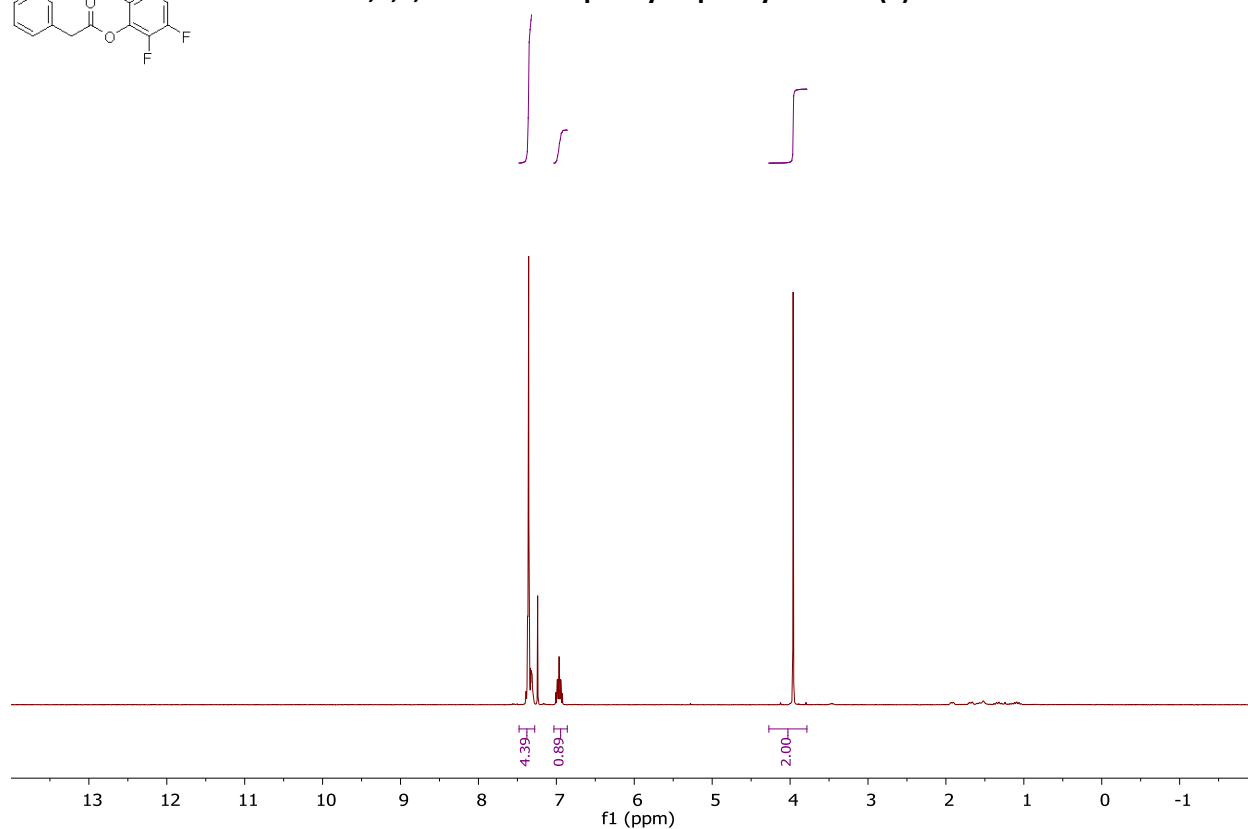


2,4,6-Trichlorophenyl 2-phenylacetate (2)

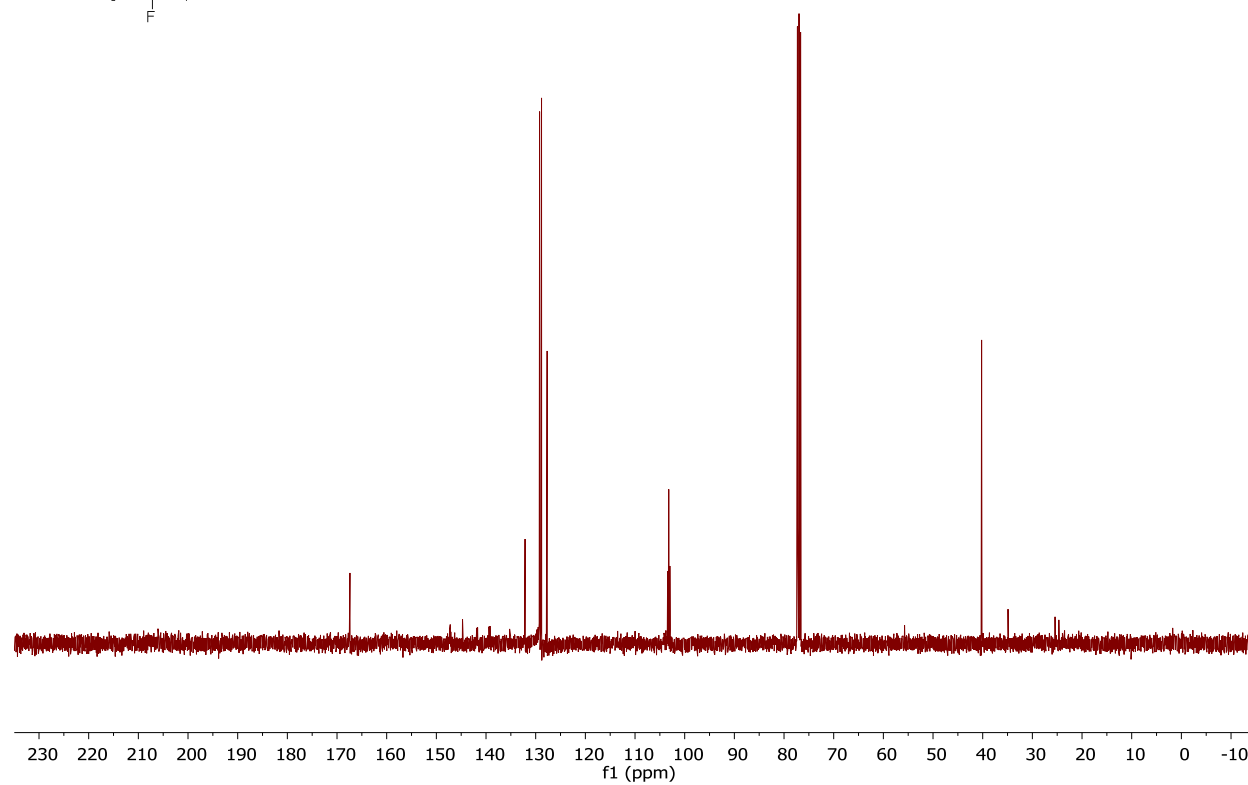




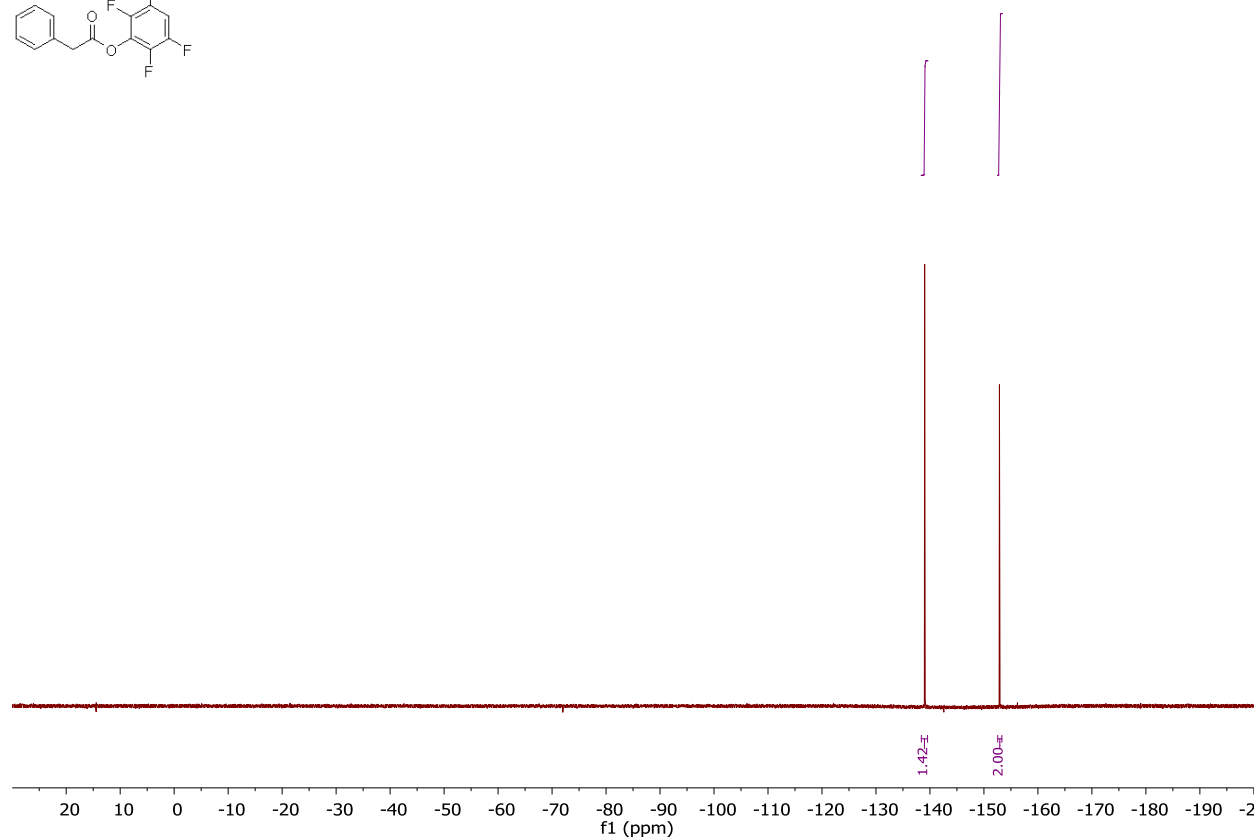
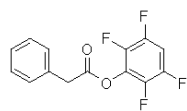
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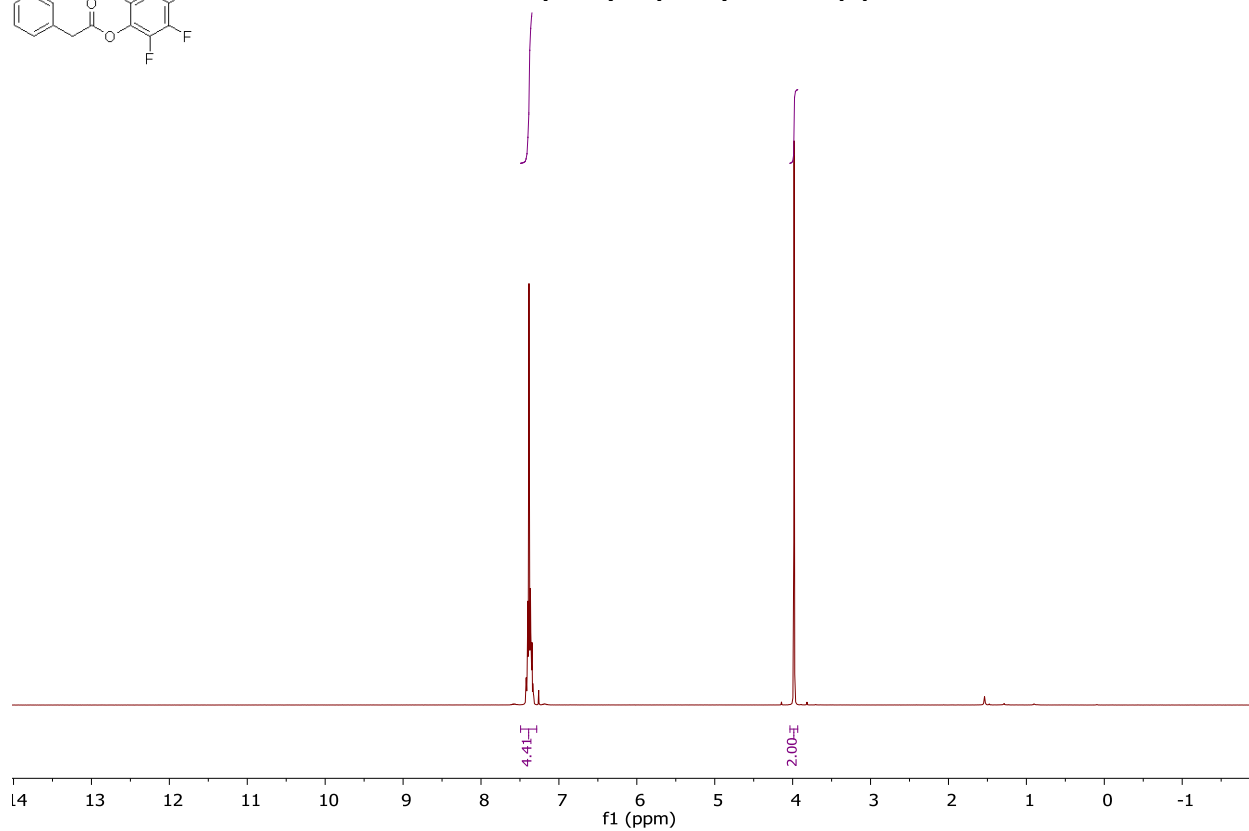
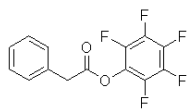
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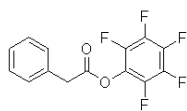


2,3,5,6-Tetrafluorophenyl 2-phenylacetate (3)

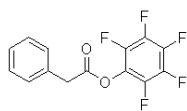
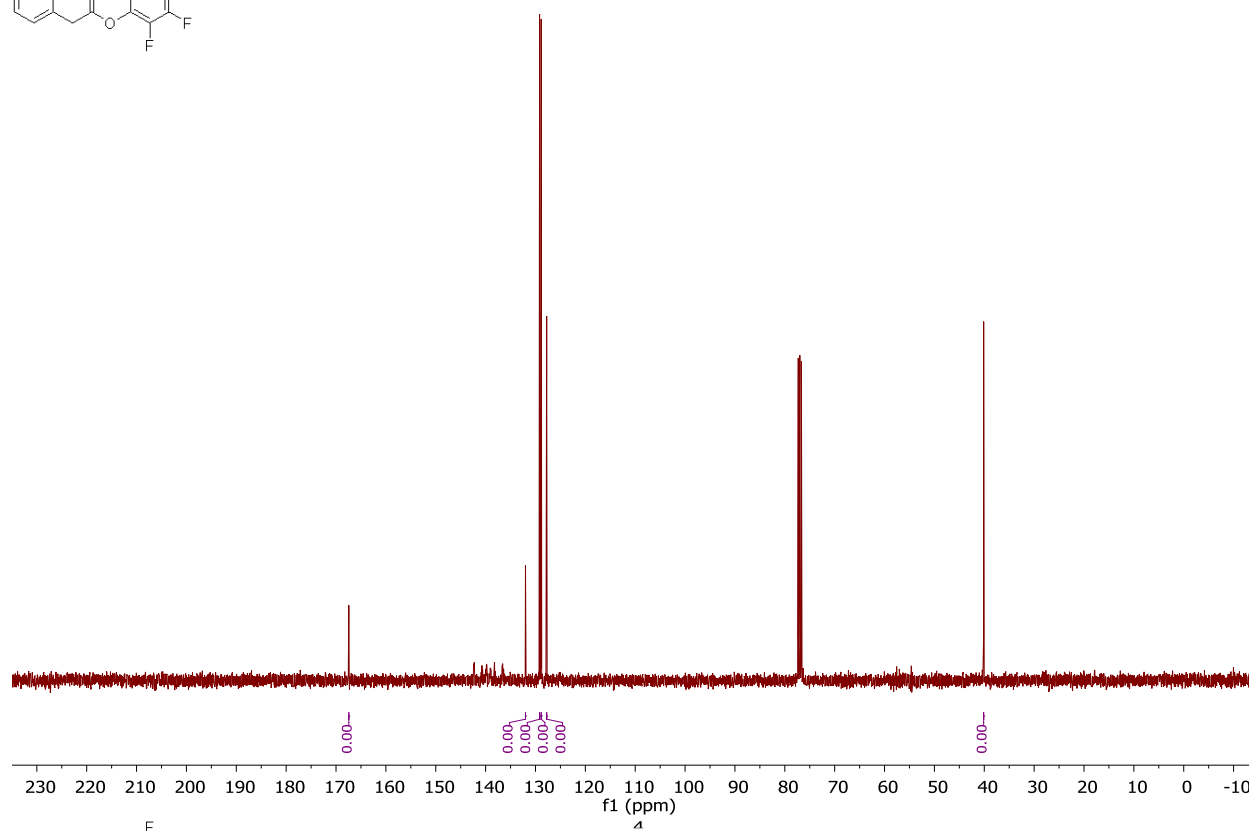


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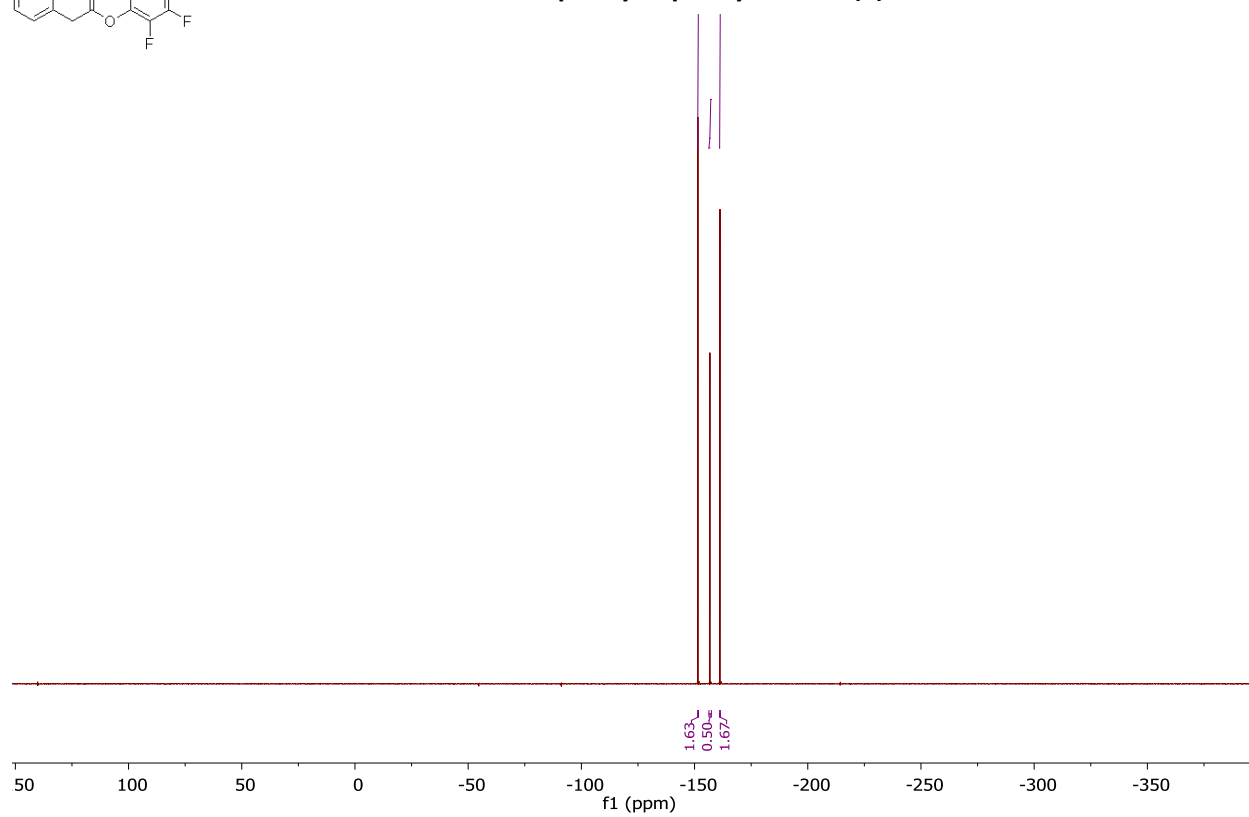


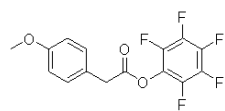


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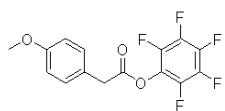
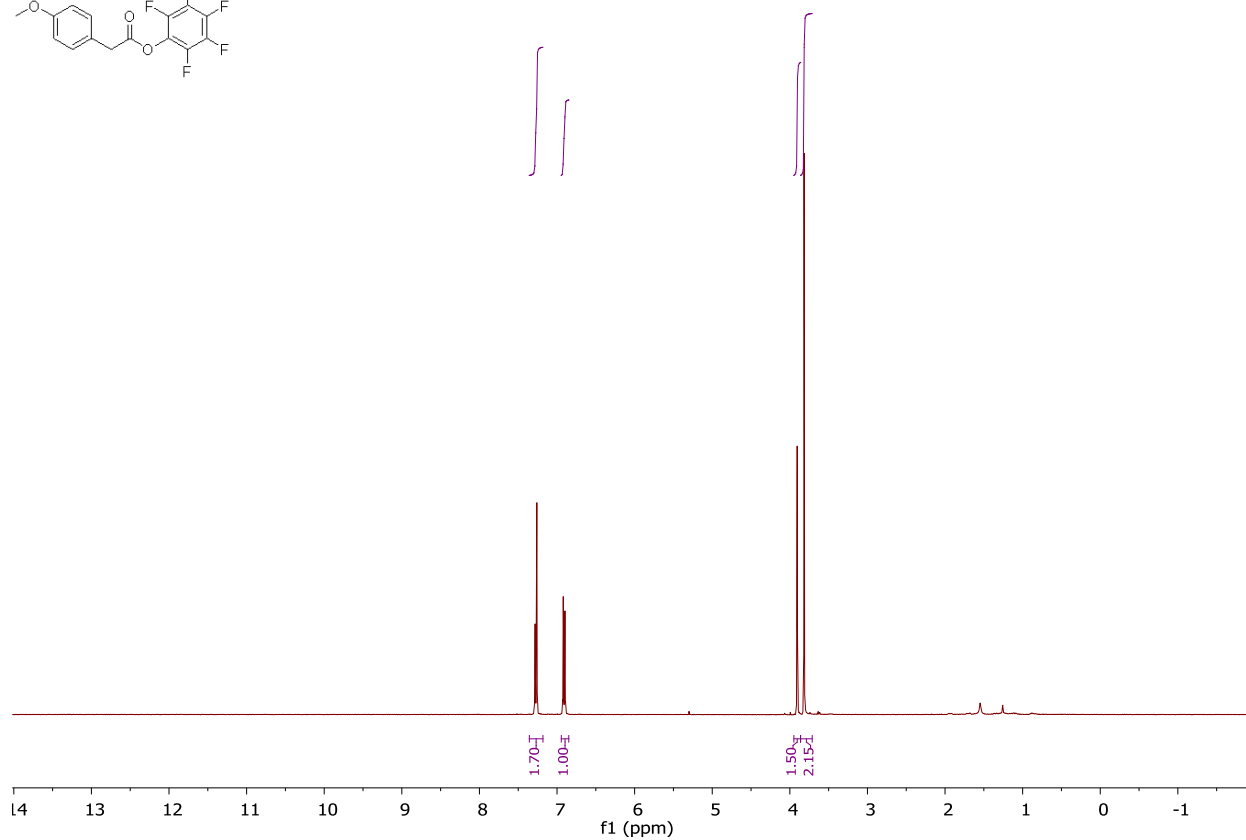


Pentafluorophenyl 2-phenylacetate (4)

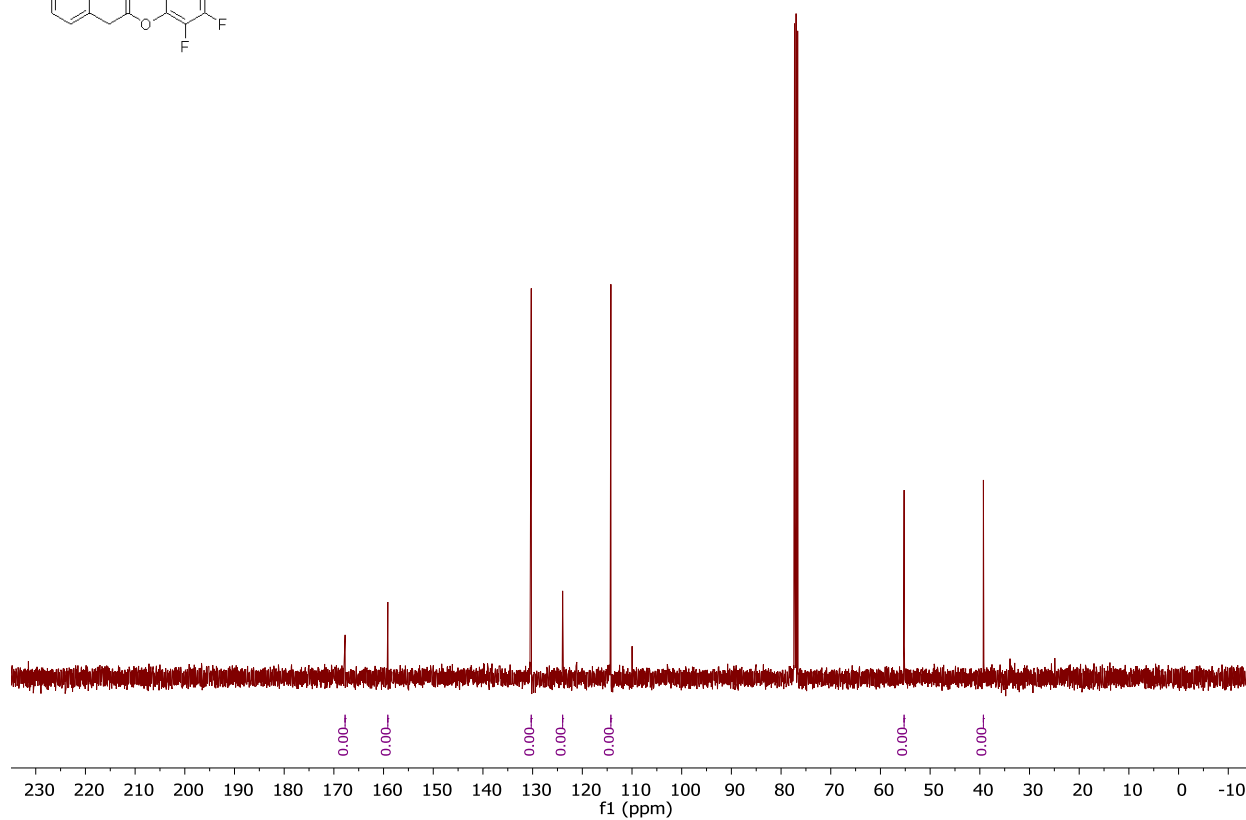


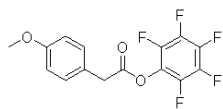


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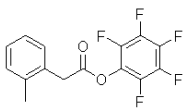
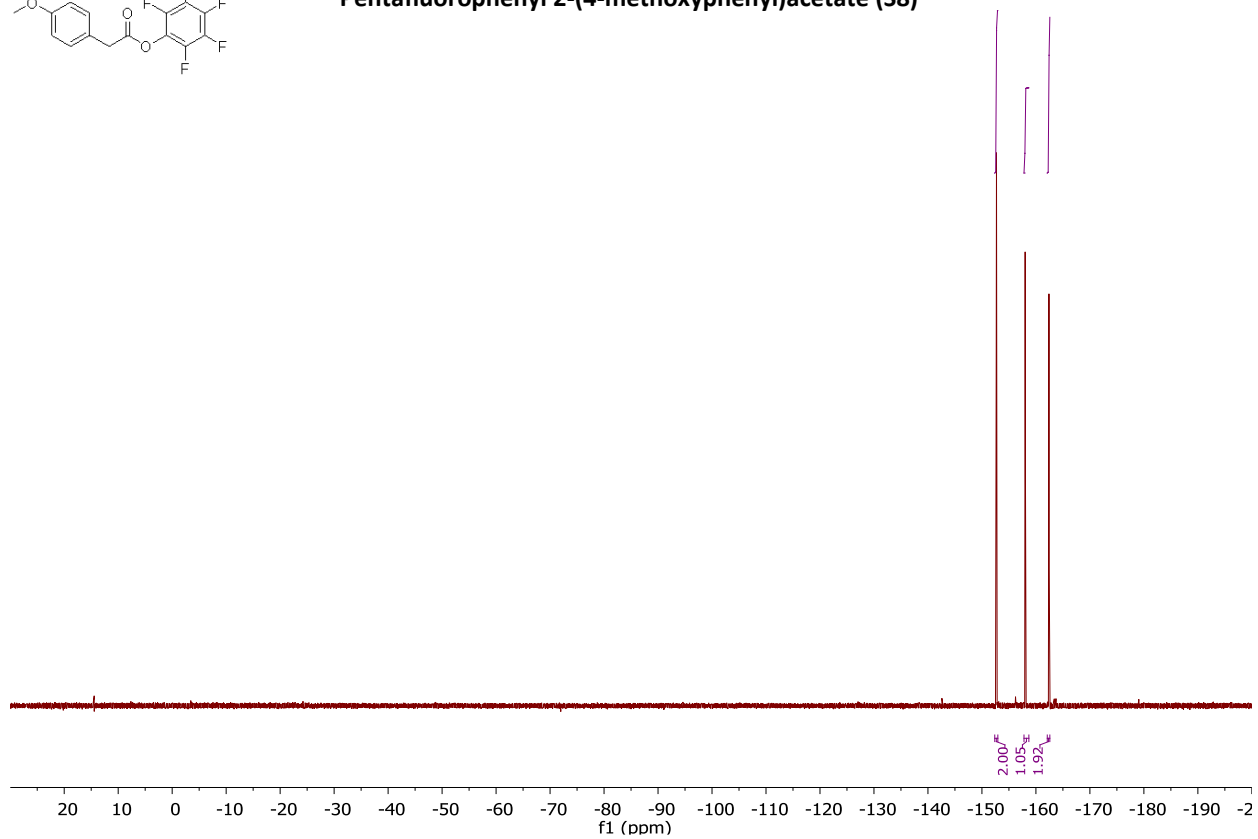


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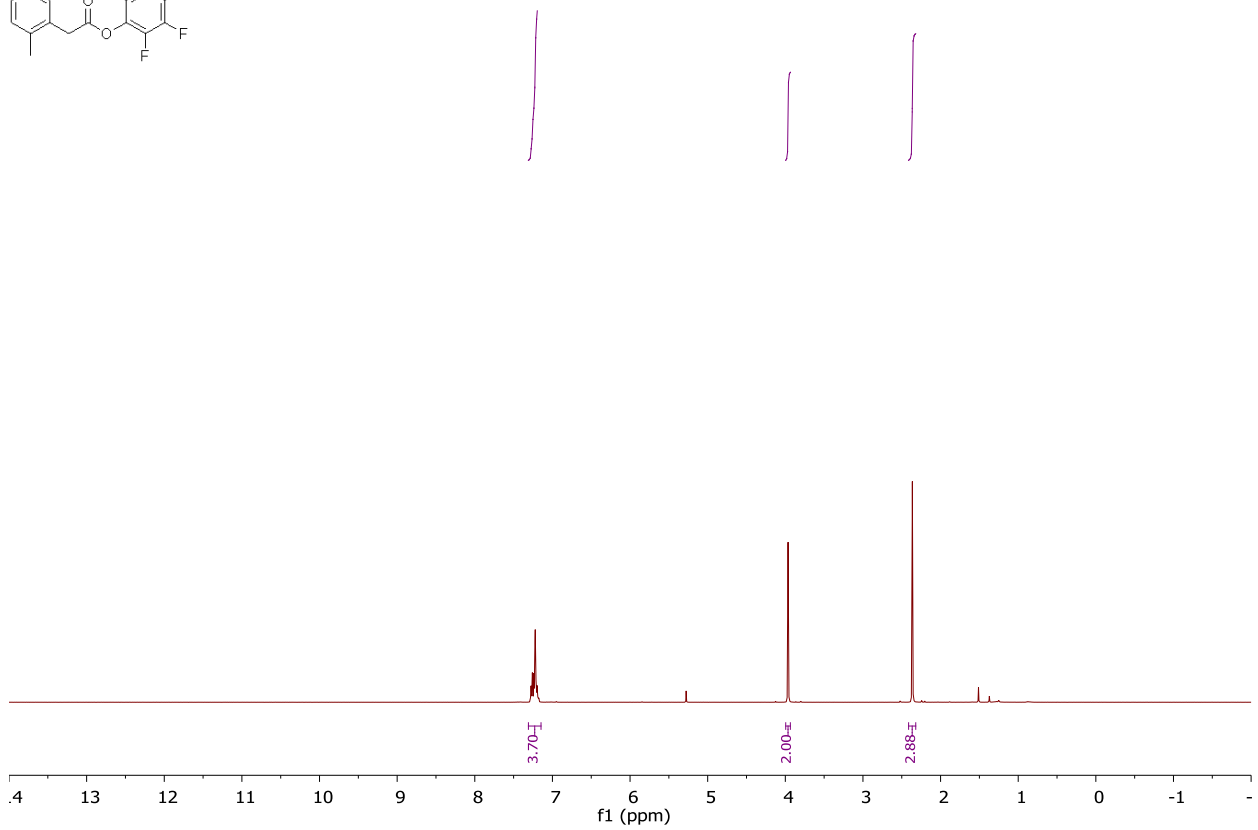


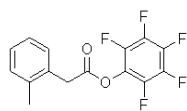


Pentafluorophenyl 2-(4-methoxyphenyl)acetate (S8)

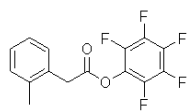
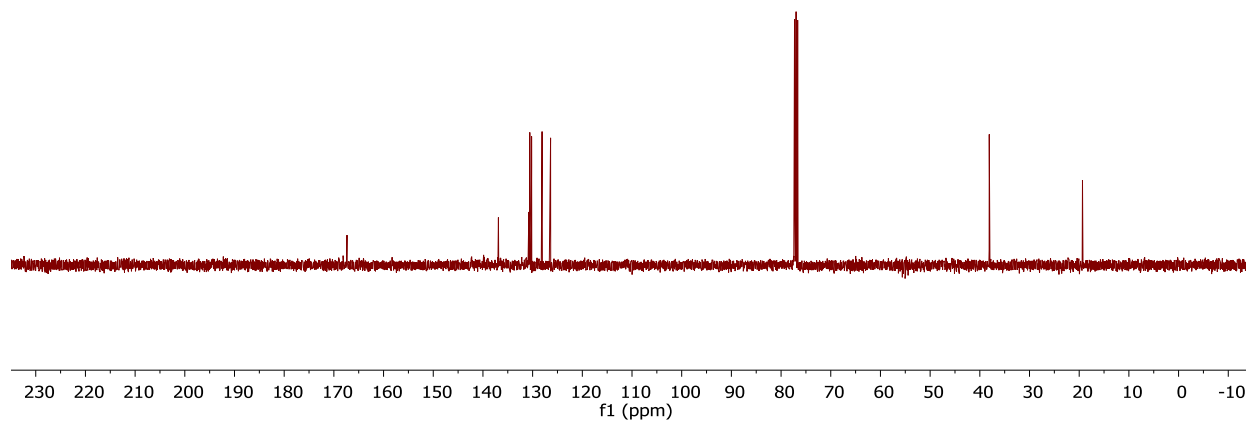


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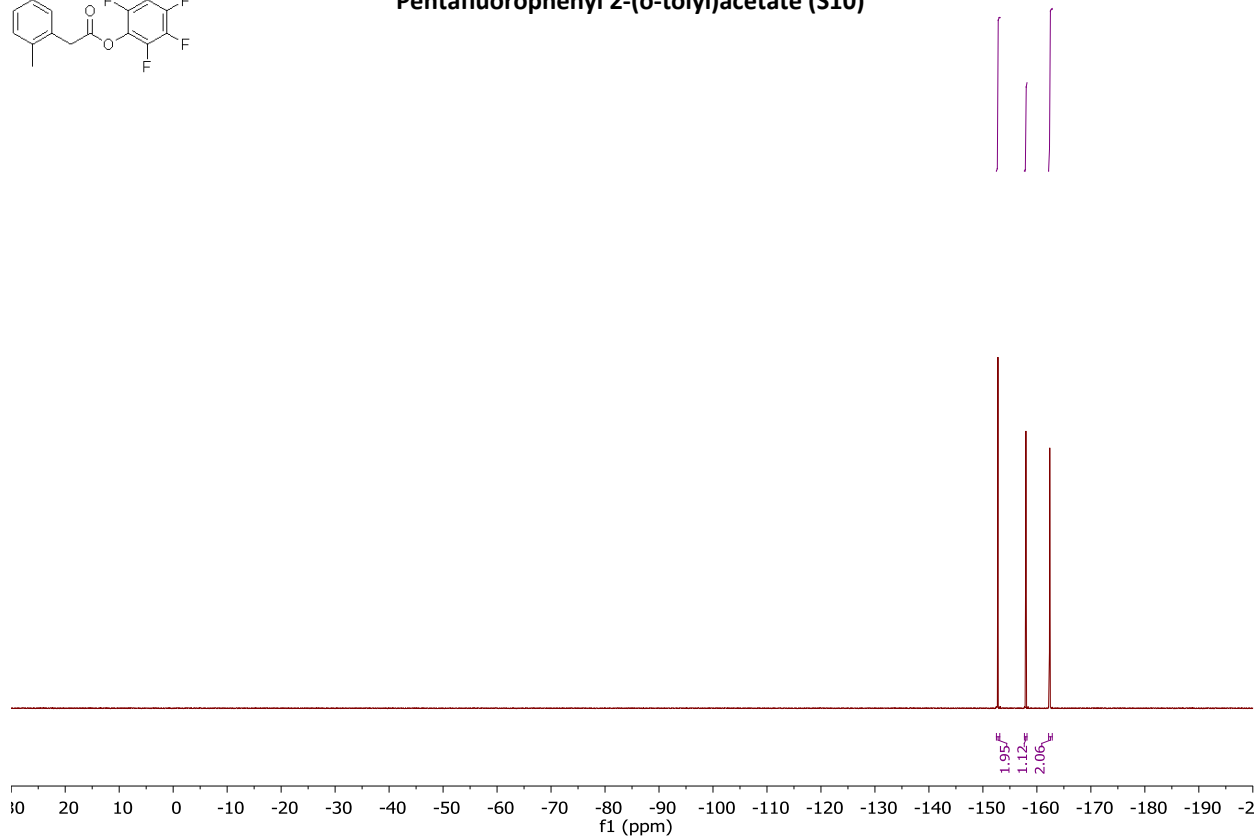


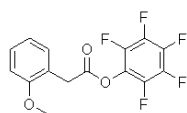


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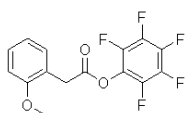
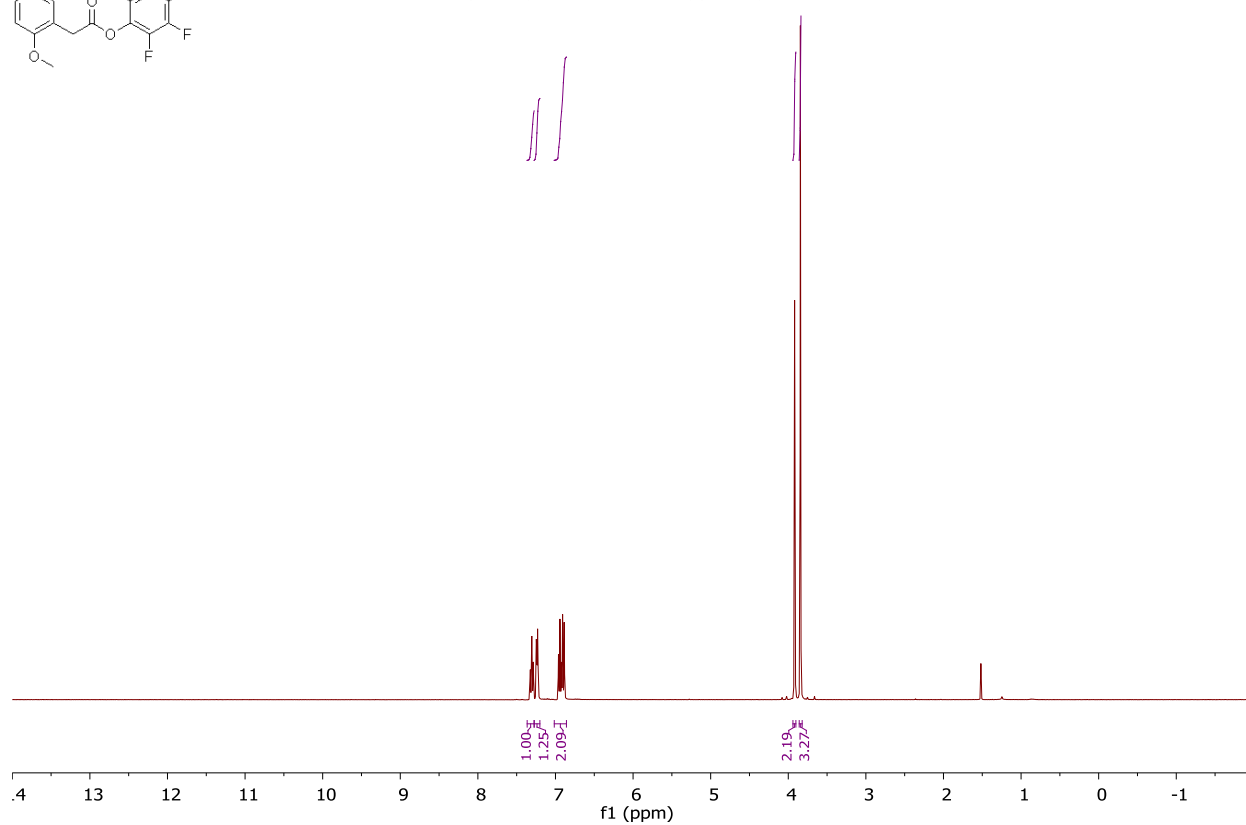


Pentafluorophenyl 2-(o-tolyl)acetate (S10)

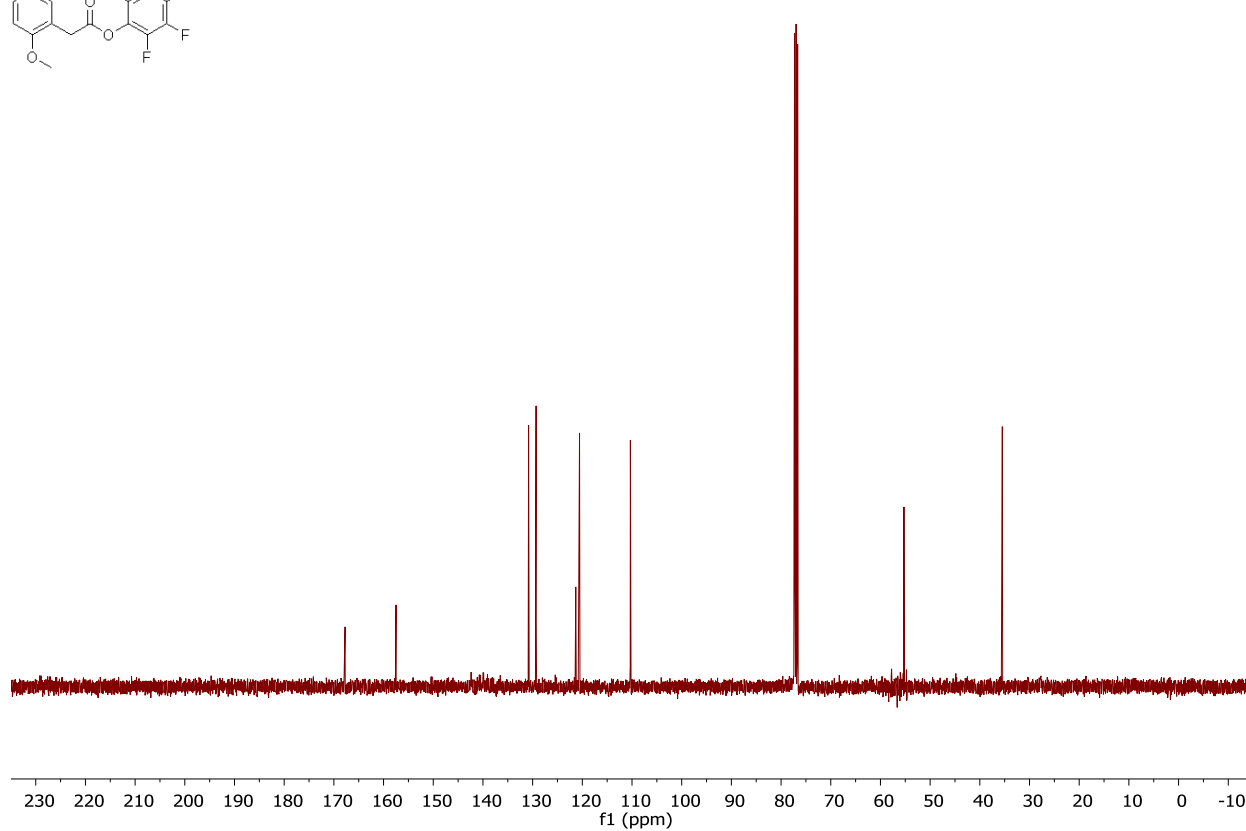


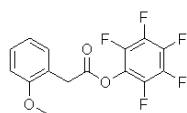


Pentafluorophenyl 2-(2-methoxyphenyl)acetate (S13)

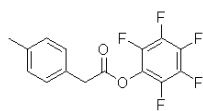
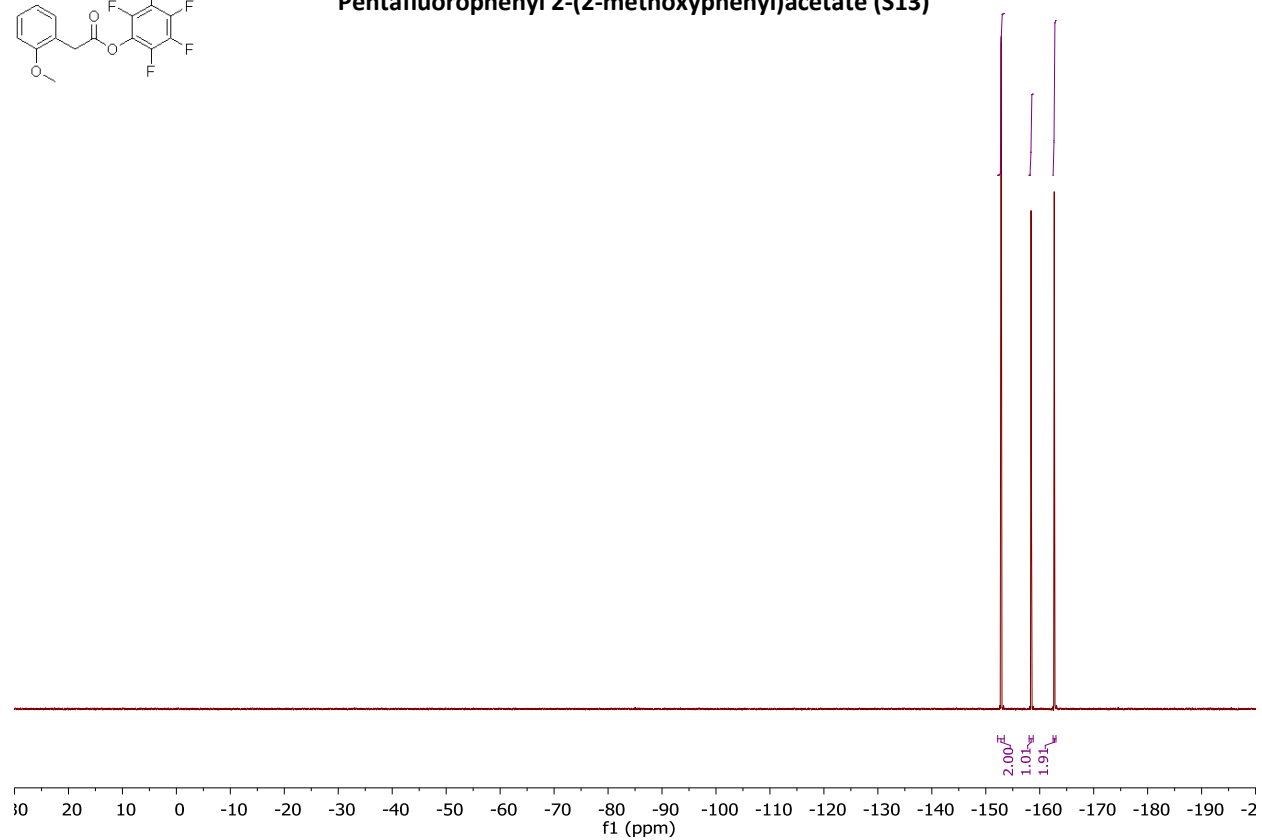


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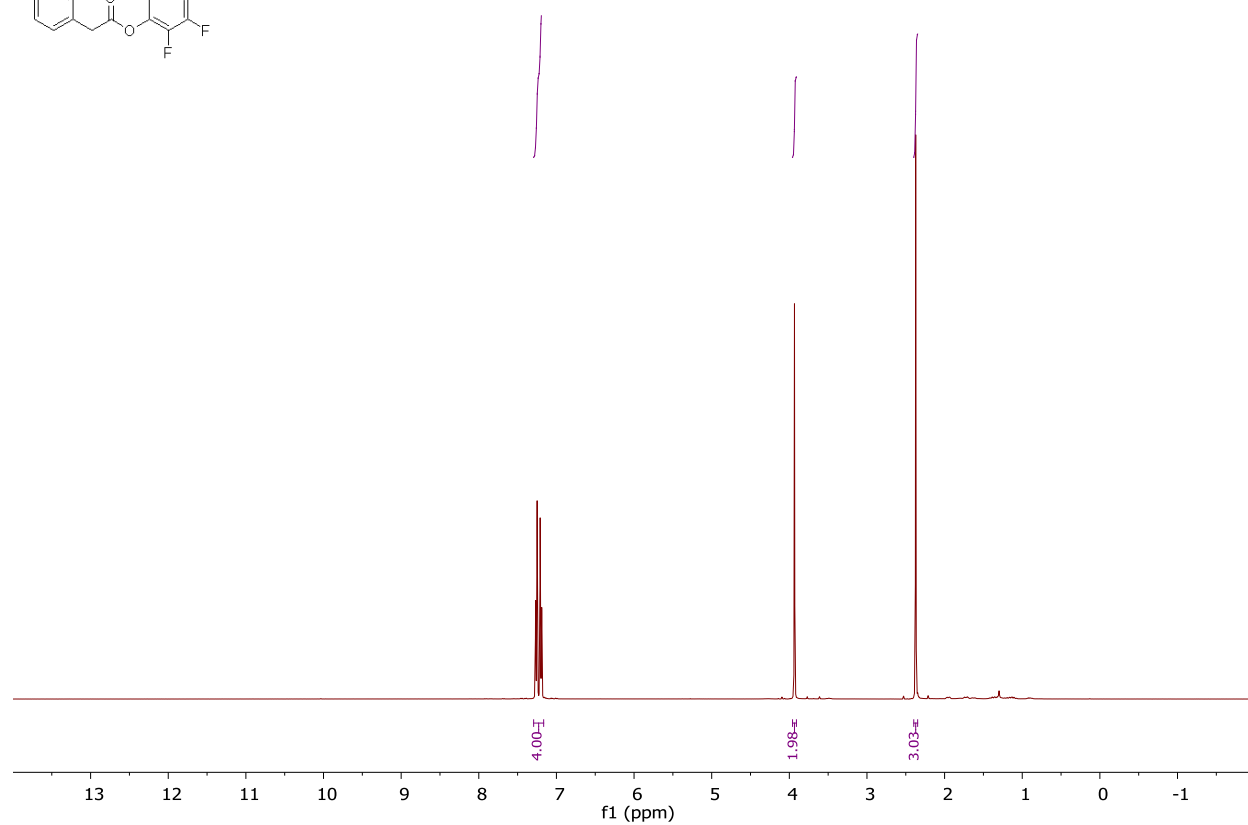


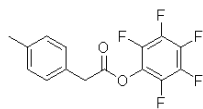


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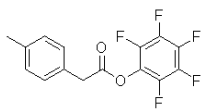
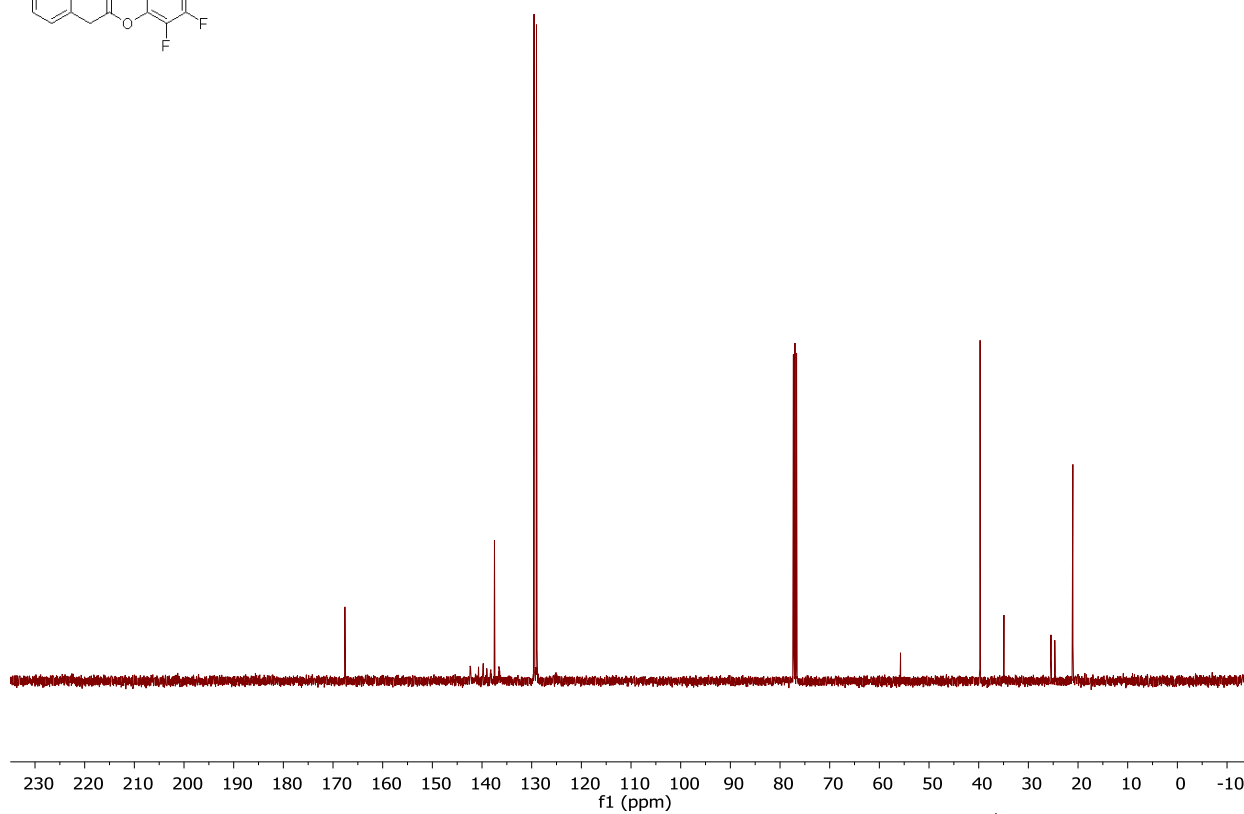


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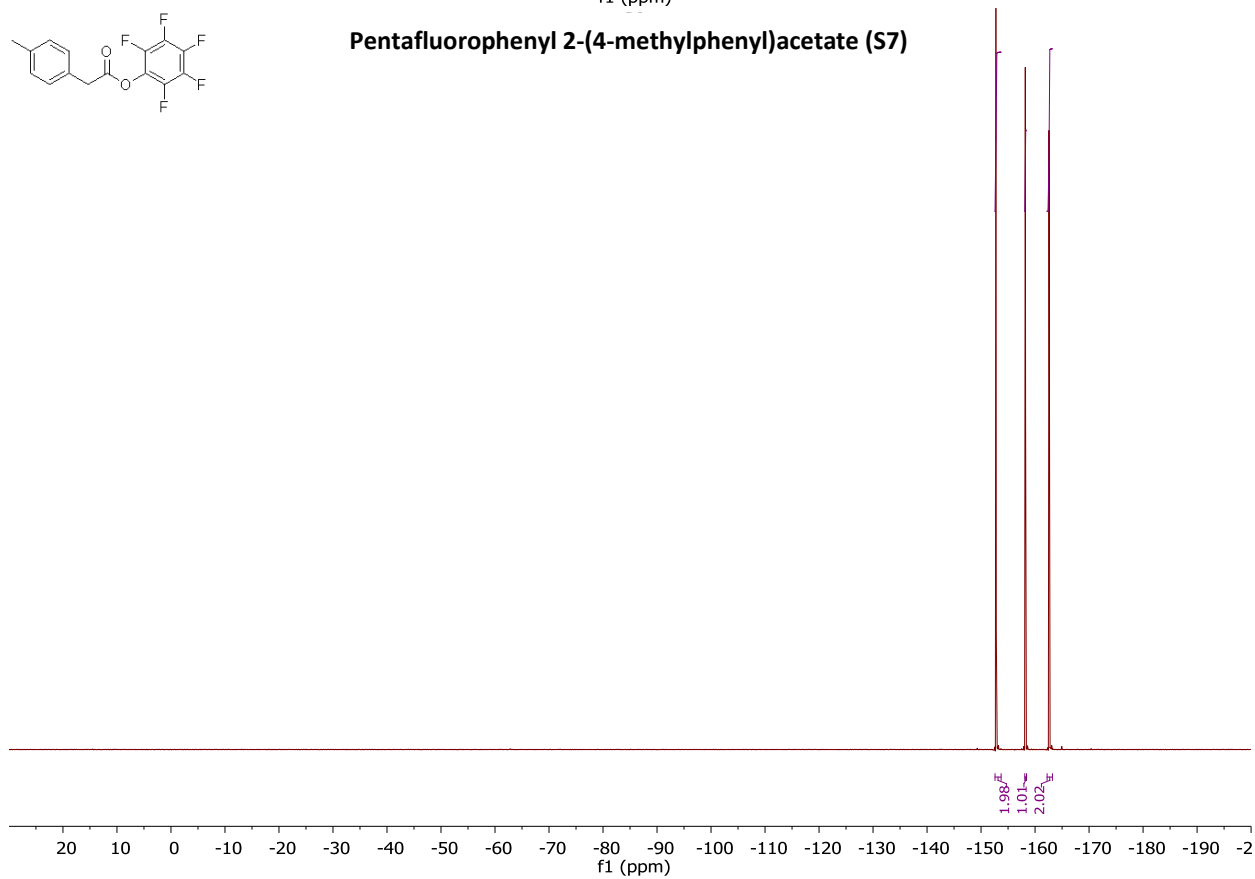


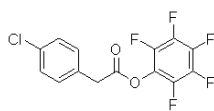


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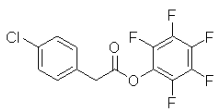
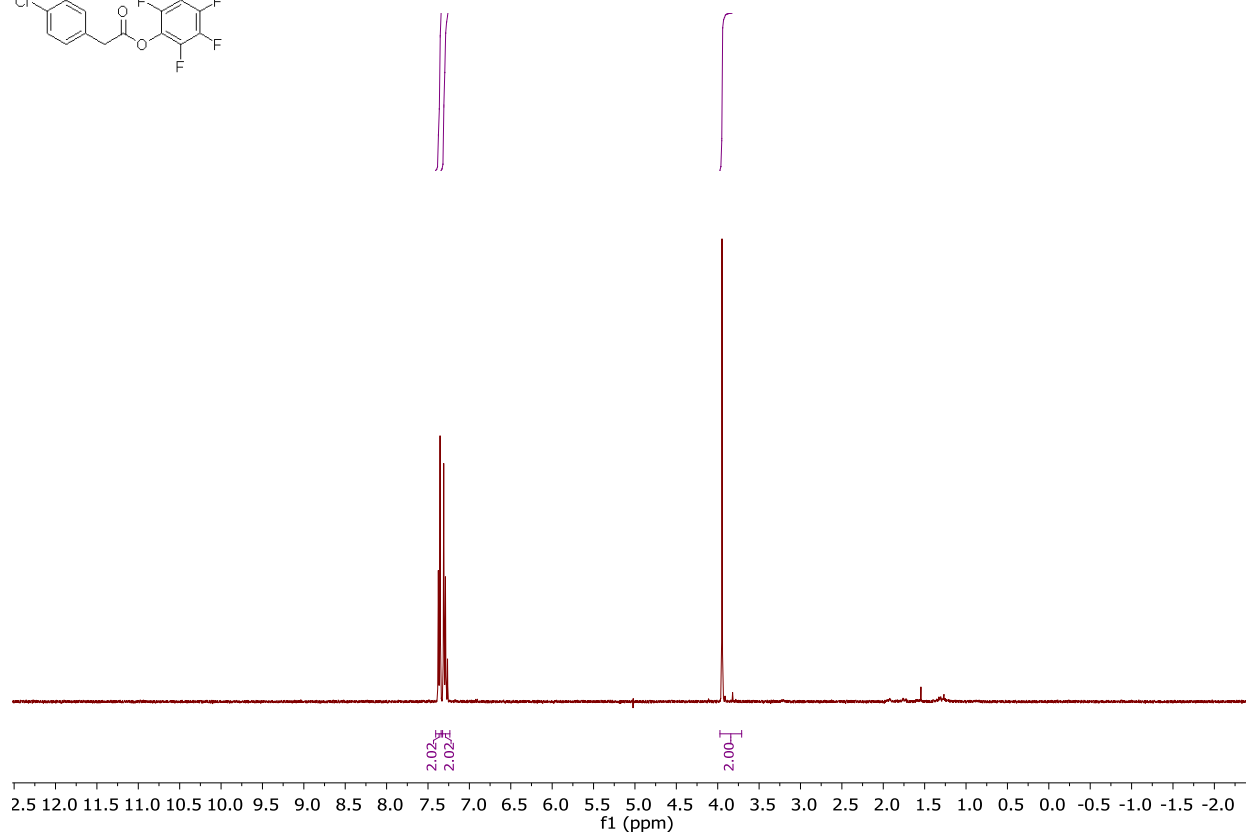


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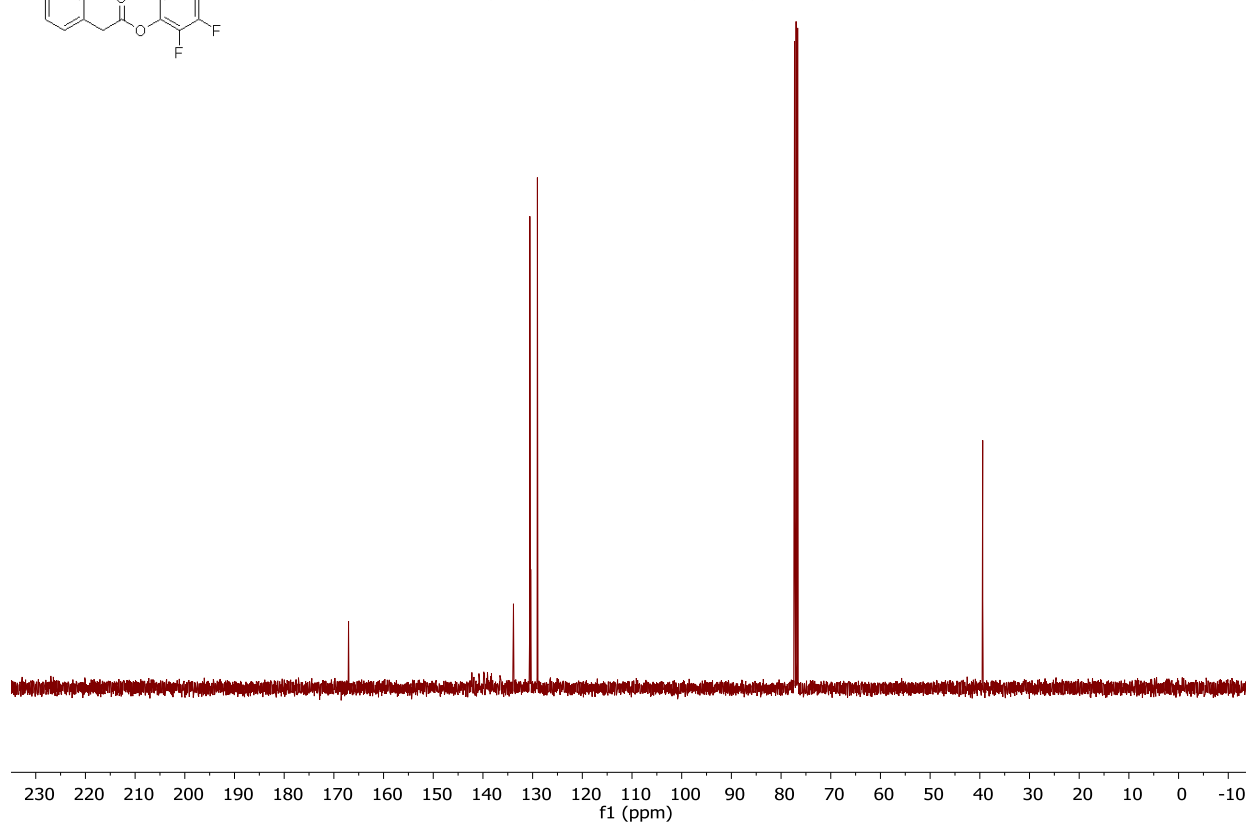


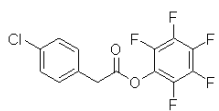


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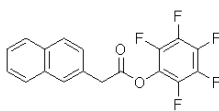
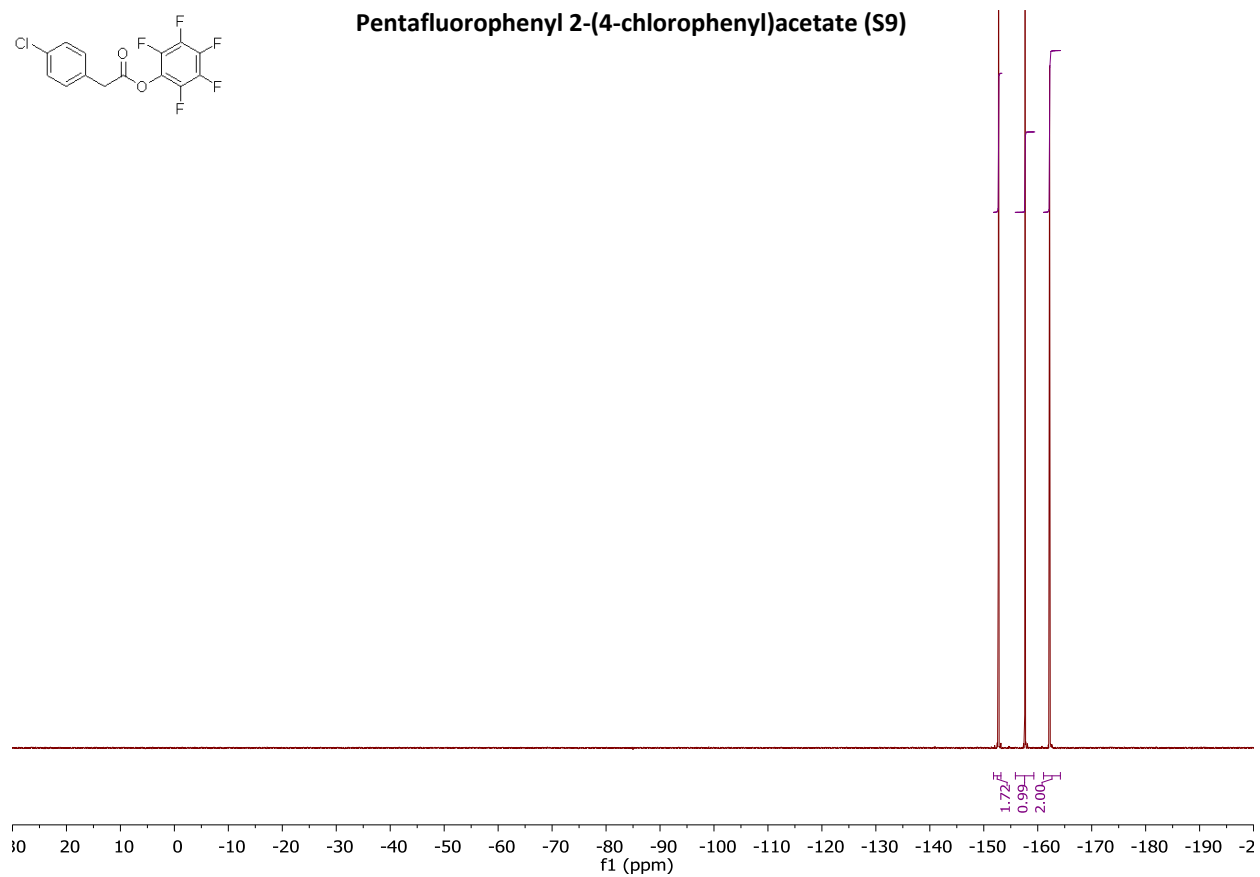


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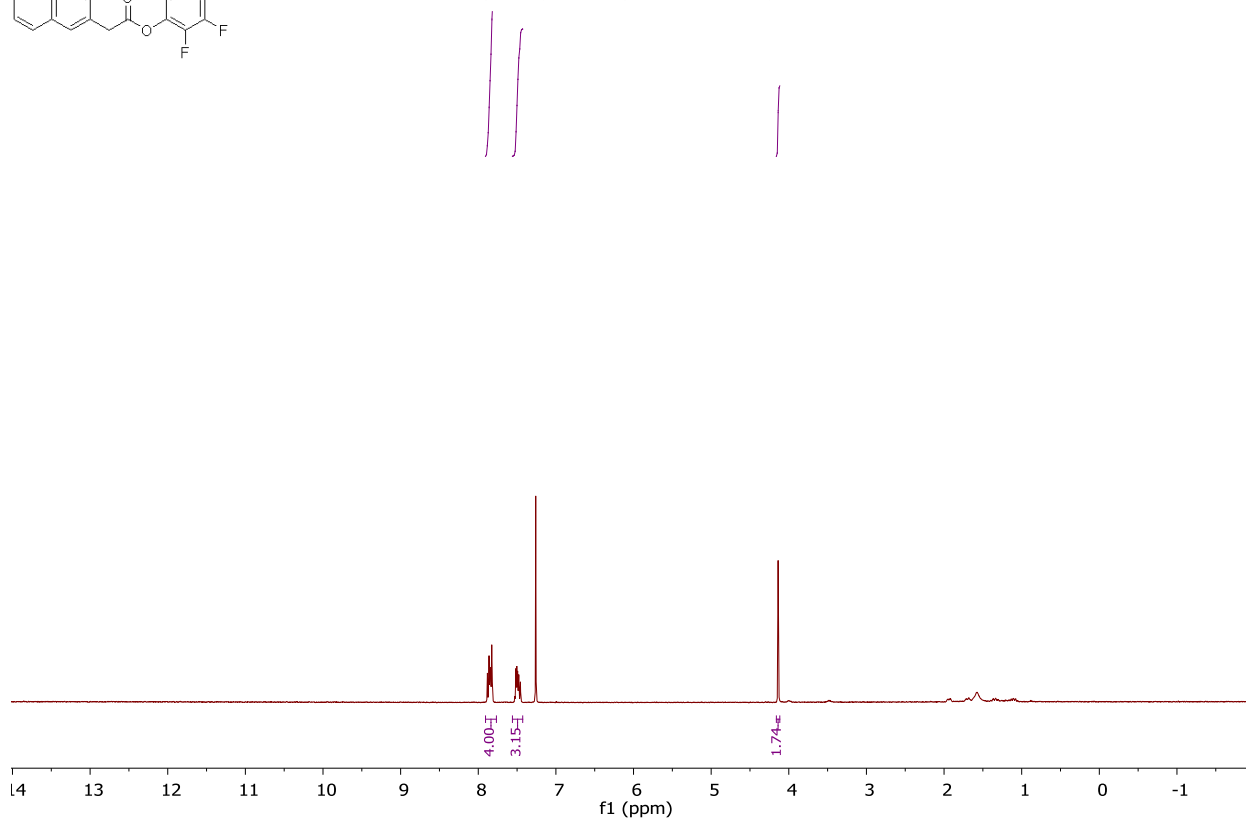


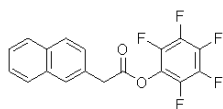


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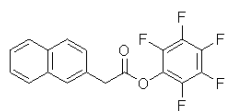
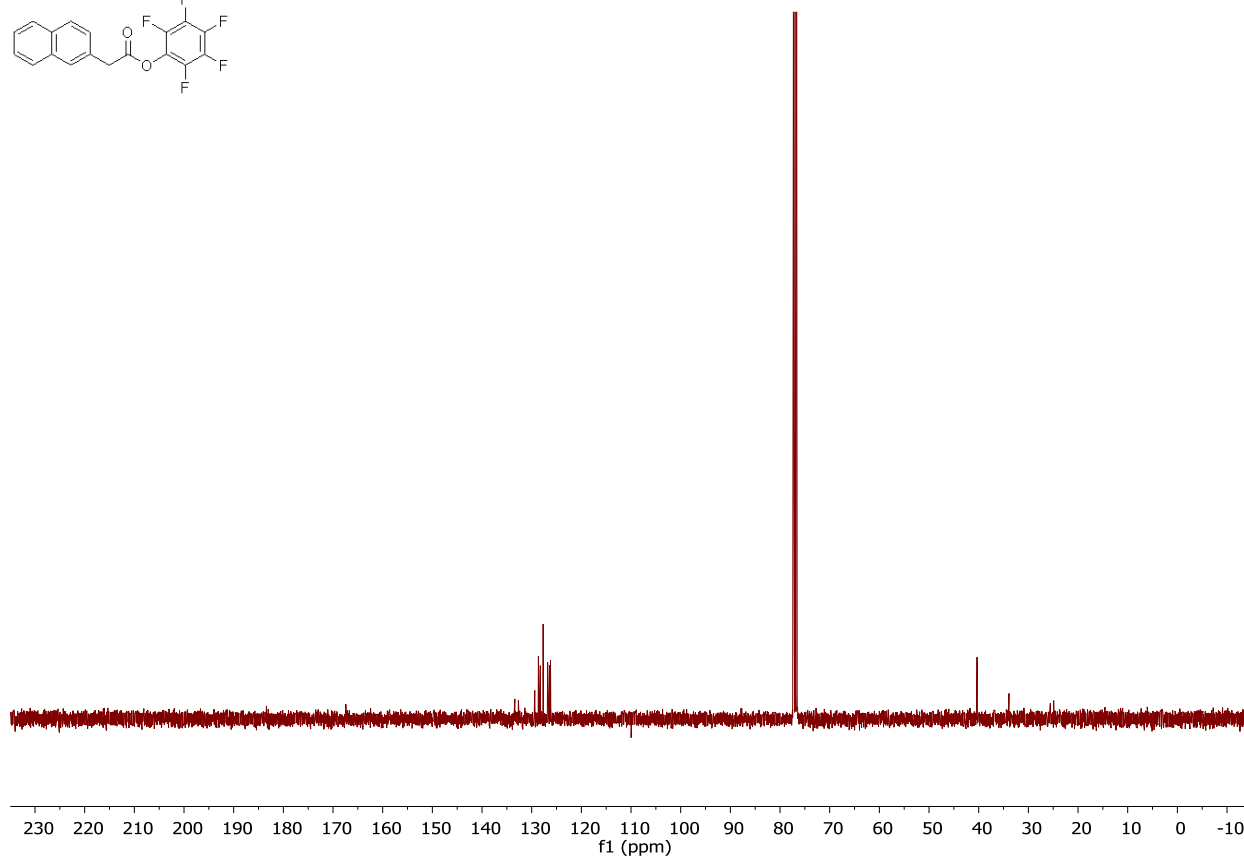


Pentafluorophenyl 2-(naphthalene-2-yl)acetate (S14)

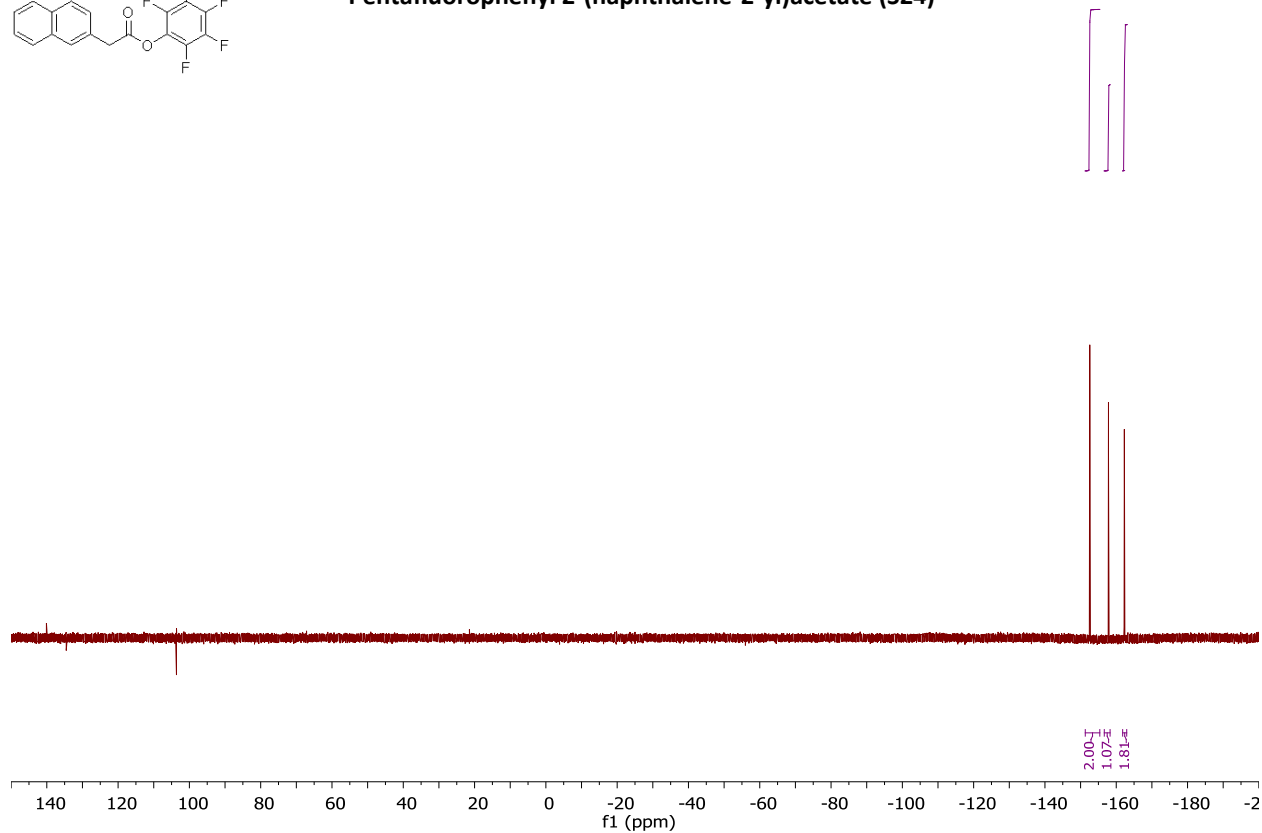


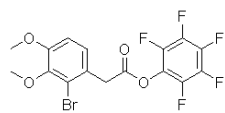


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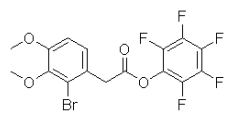
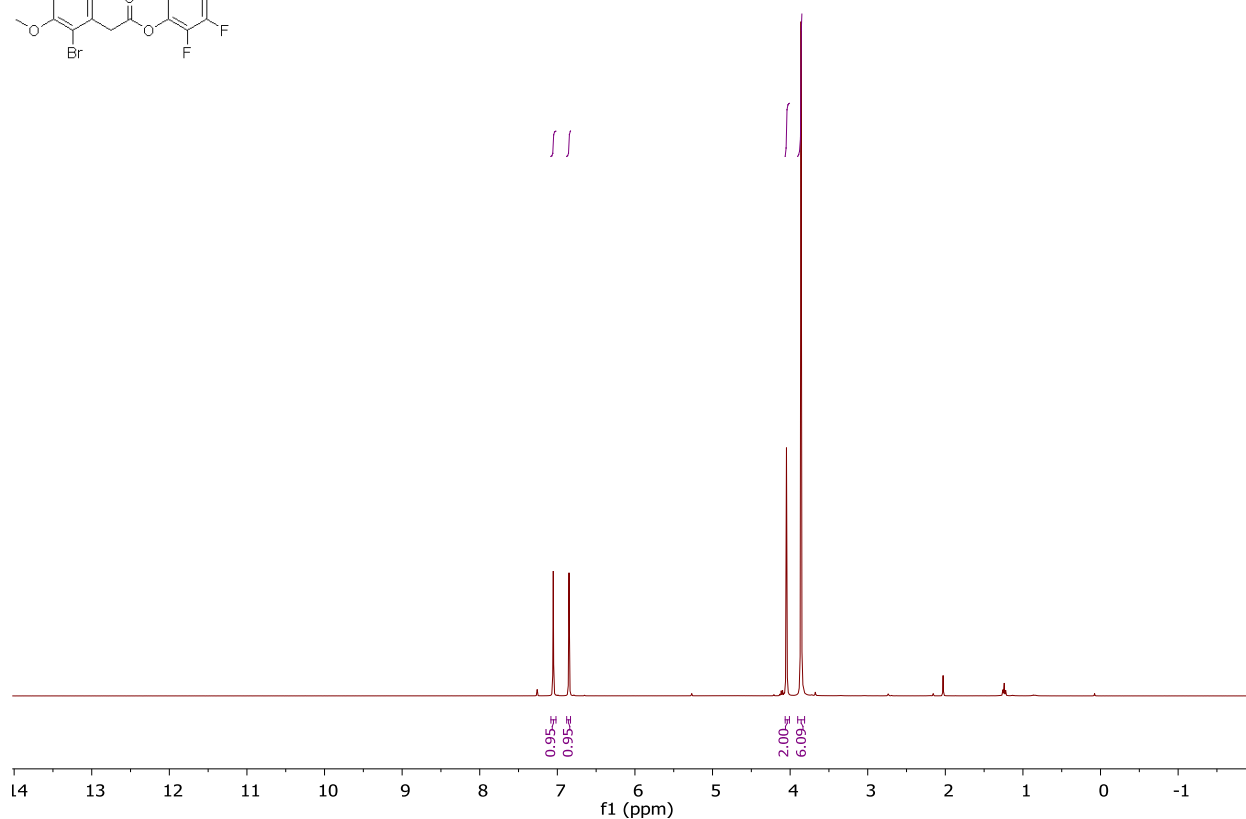


Pentafluorophenyl 2-(naphthalene-2-yl)acetate (S24)

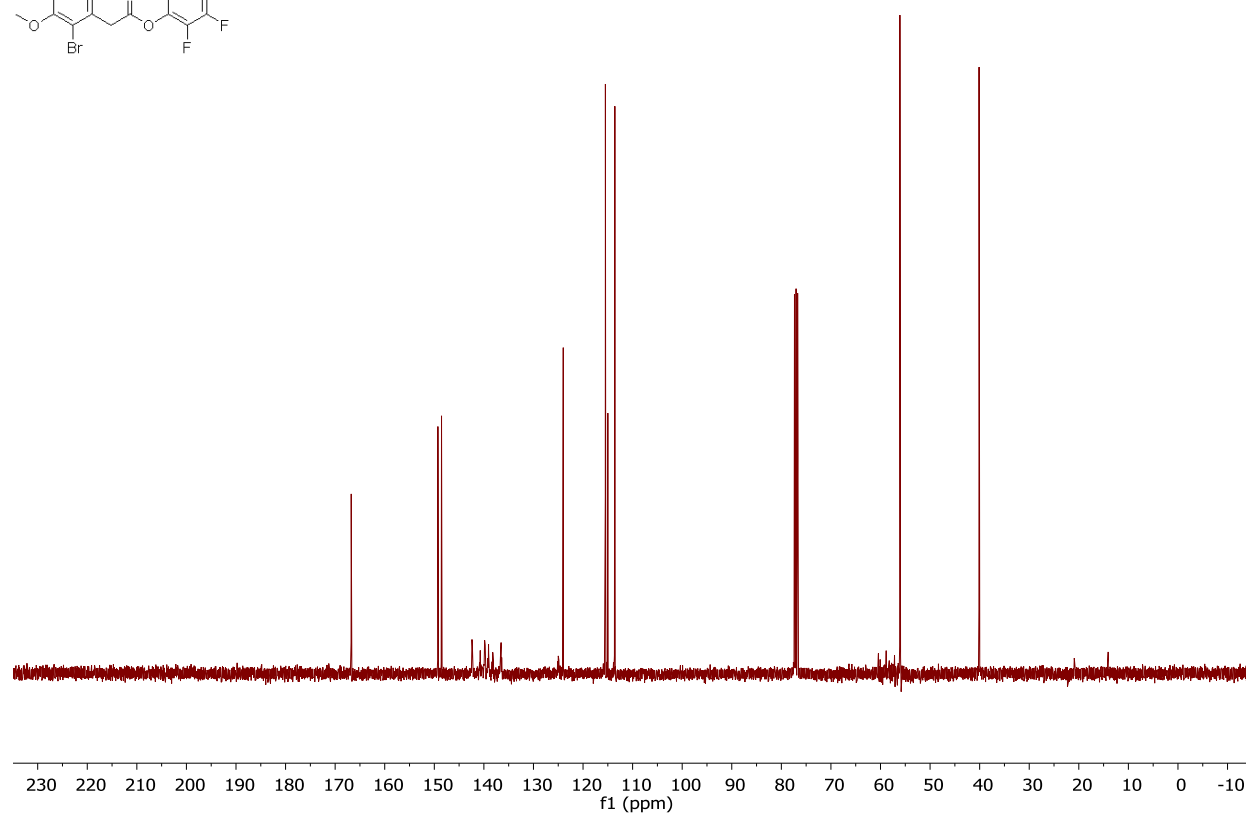




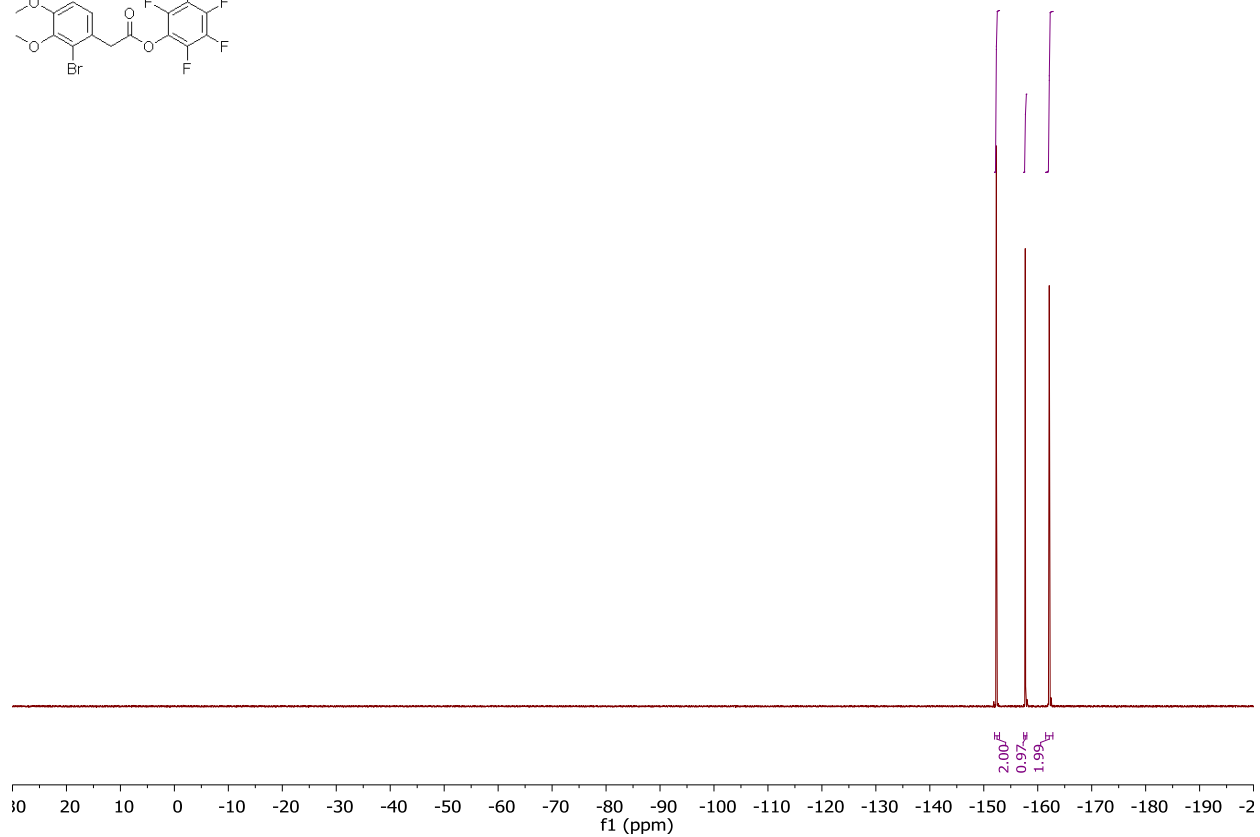
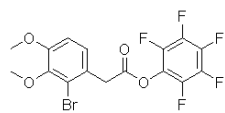
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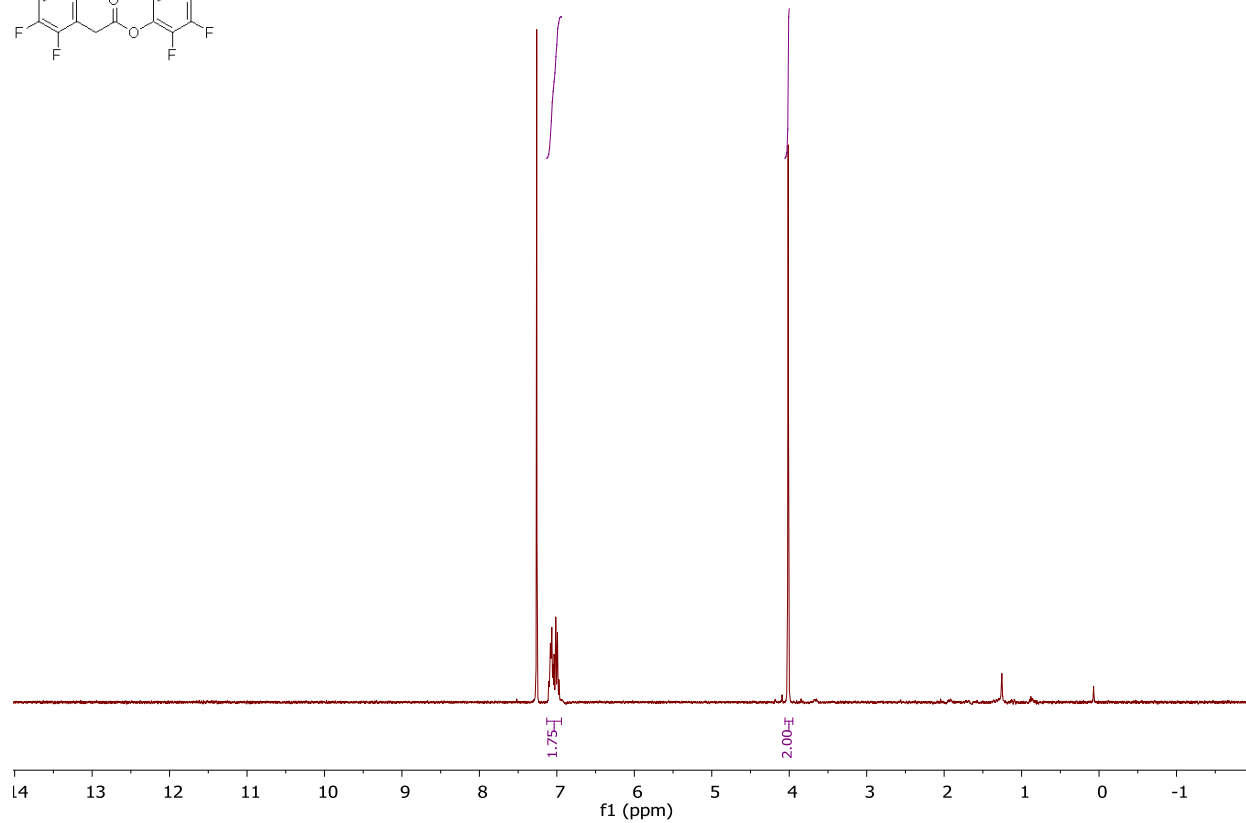
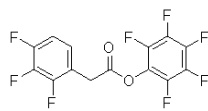
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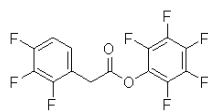


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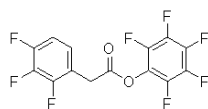
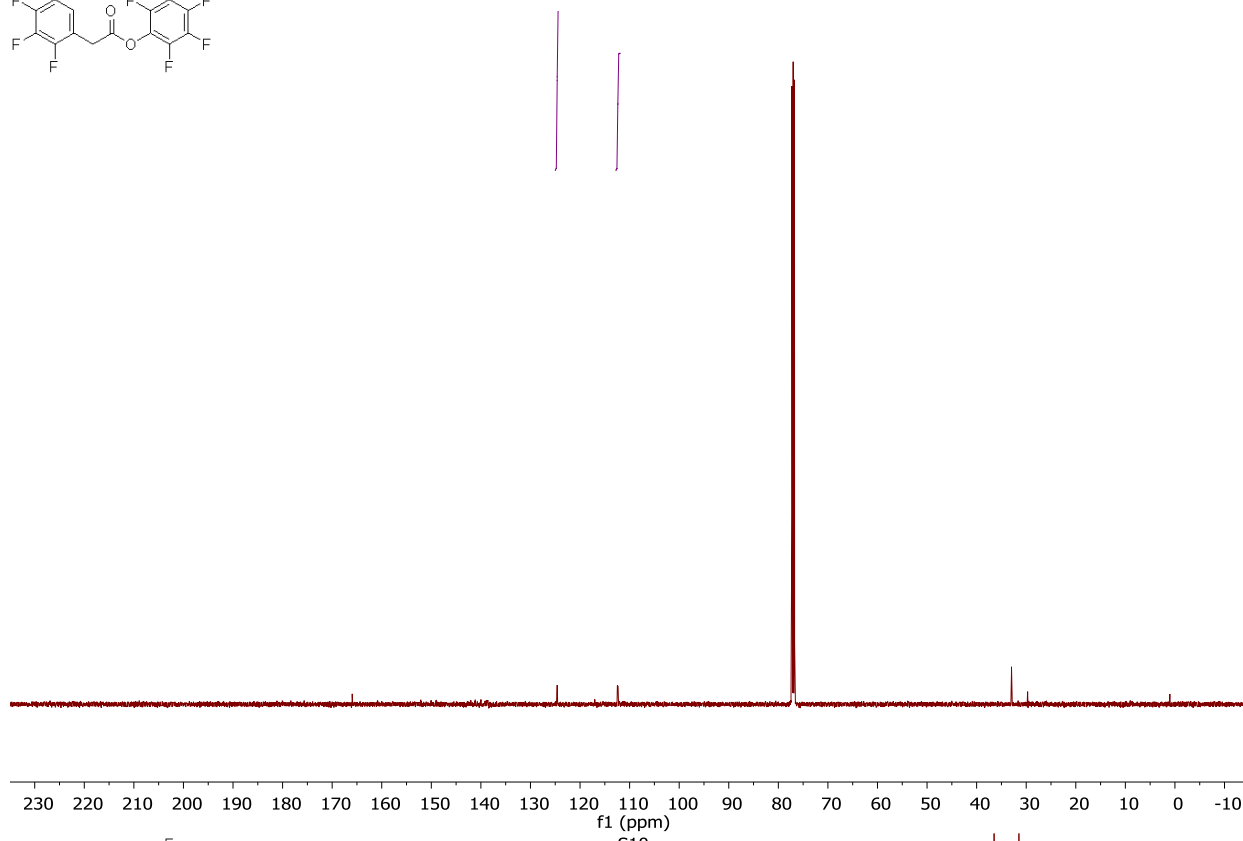


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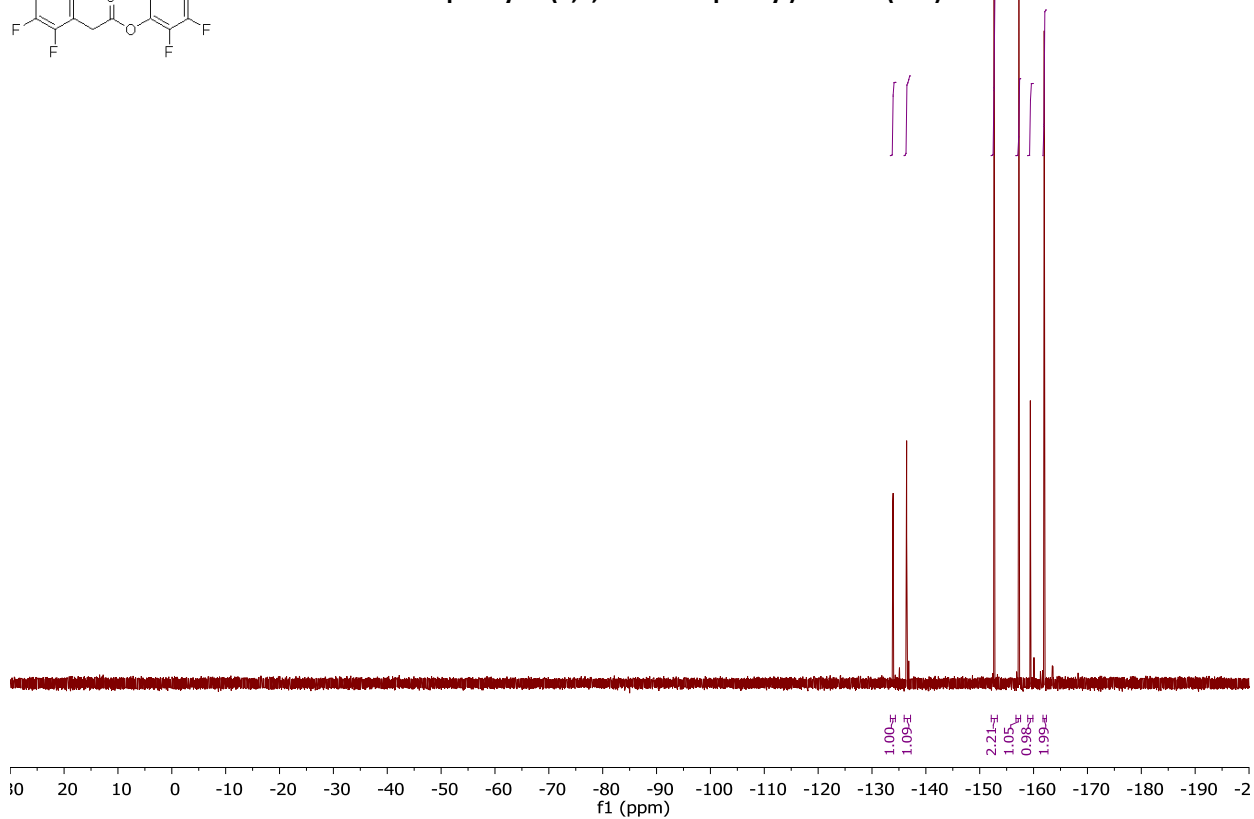


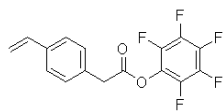


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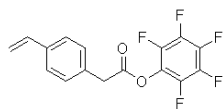
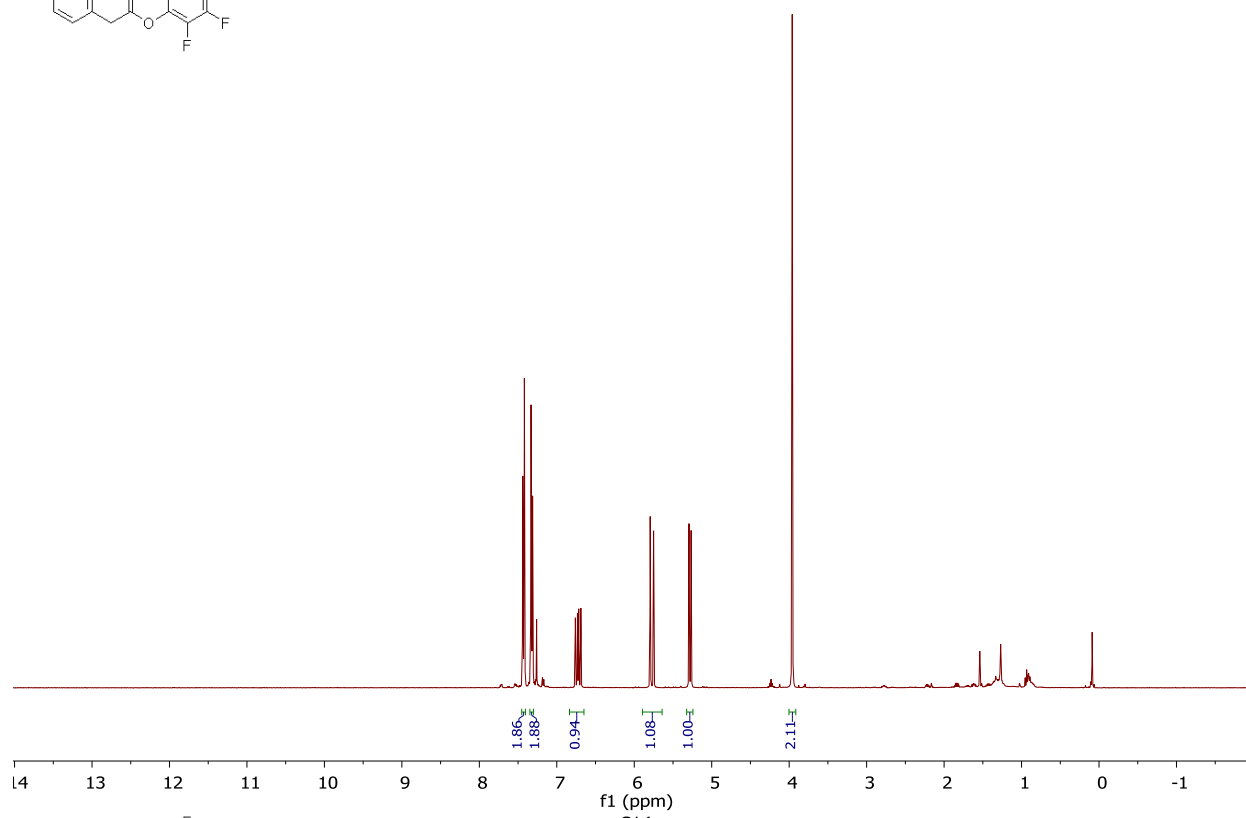


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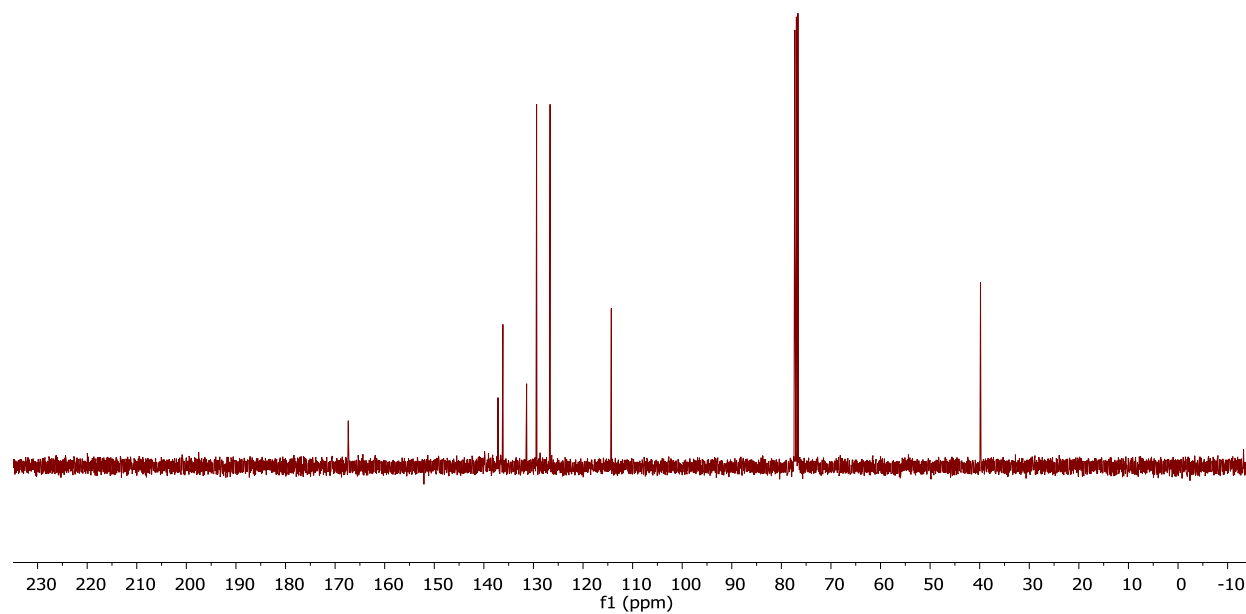


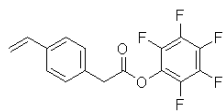


Pentafluorophenyl 2-(4-vinylphenyl)acetate (S12)

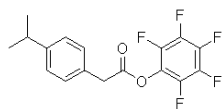
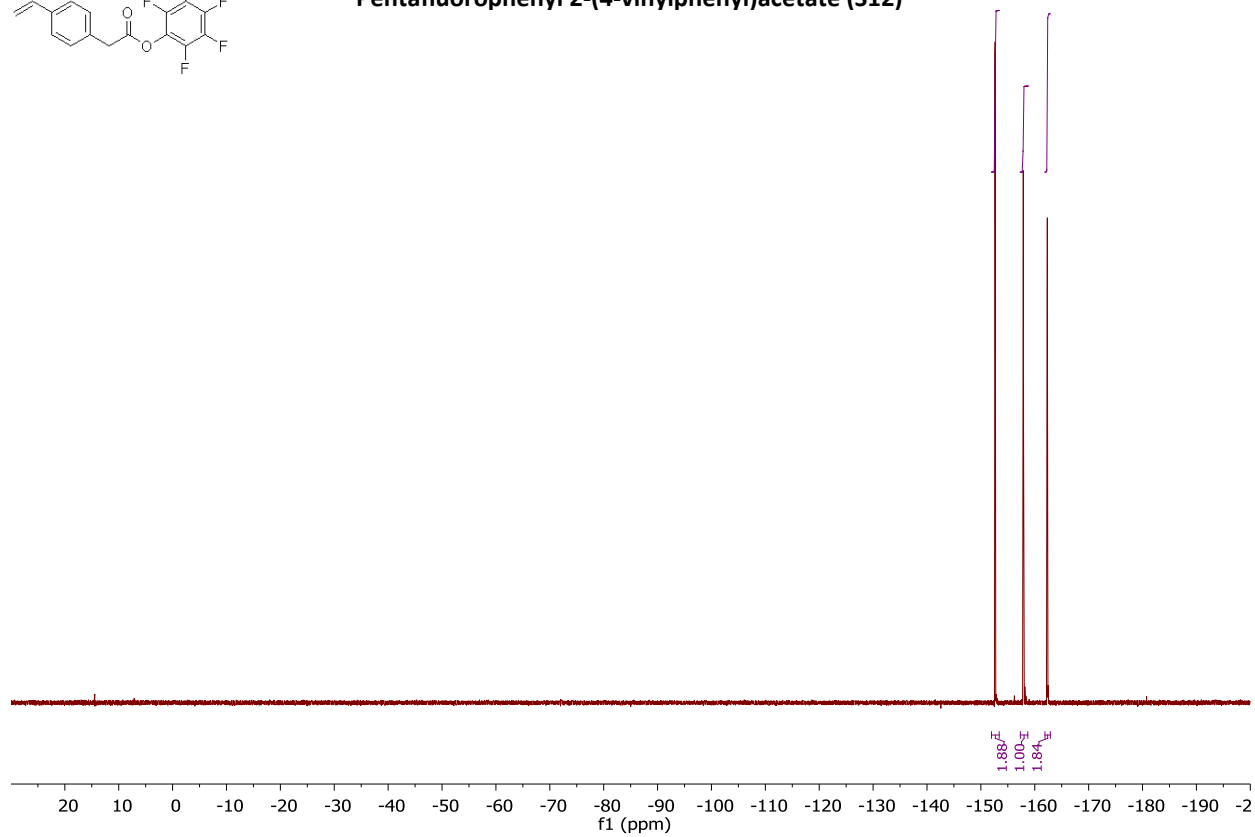


Pentafluorophenyl 2-(4-vinylphenyl)acetate (S12)

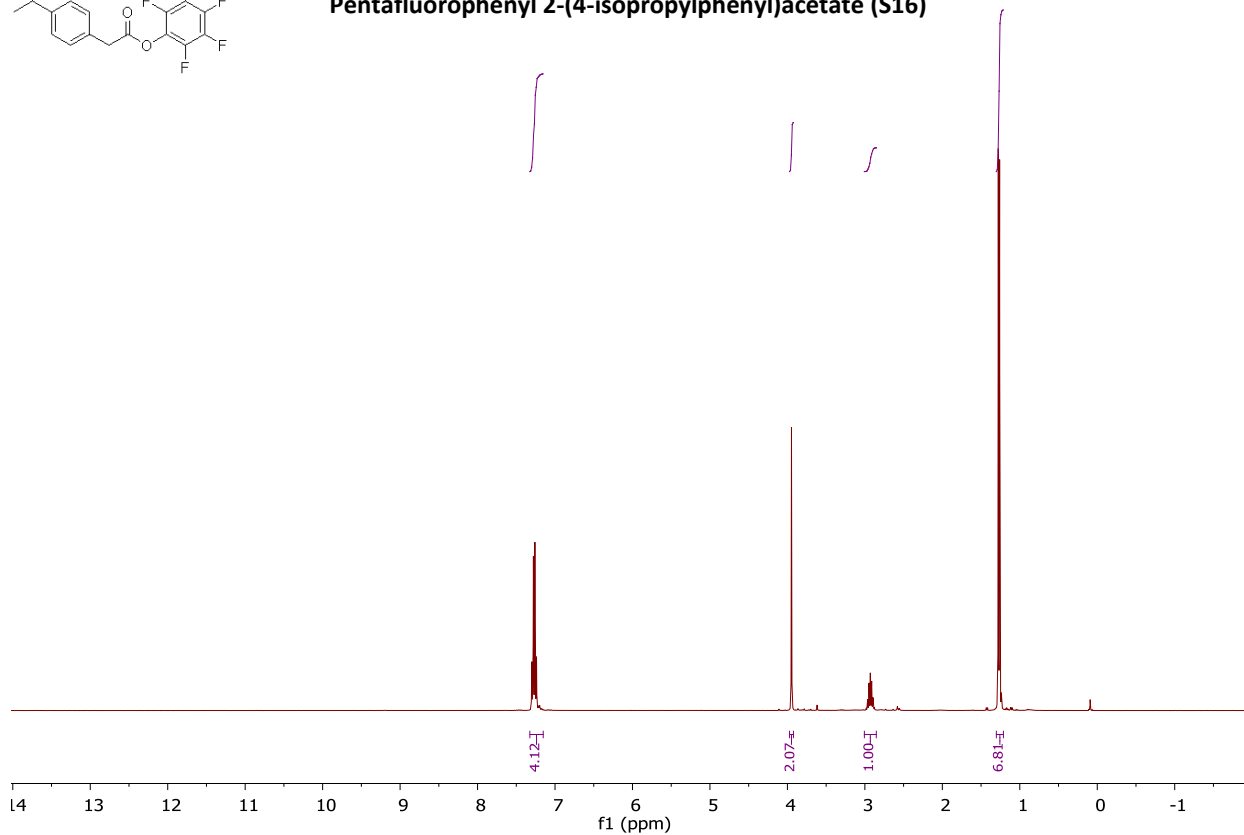


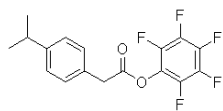


Pentafluorophenyl 2-(4-vinylphenyl)acetate (S12)

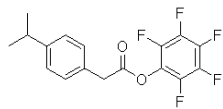
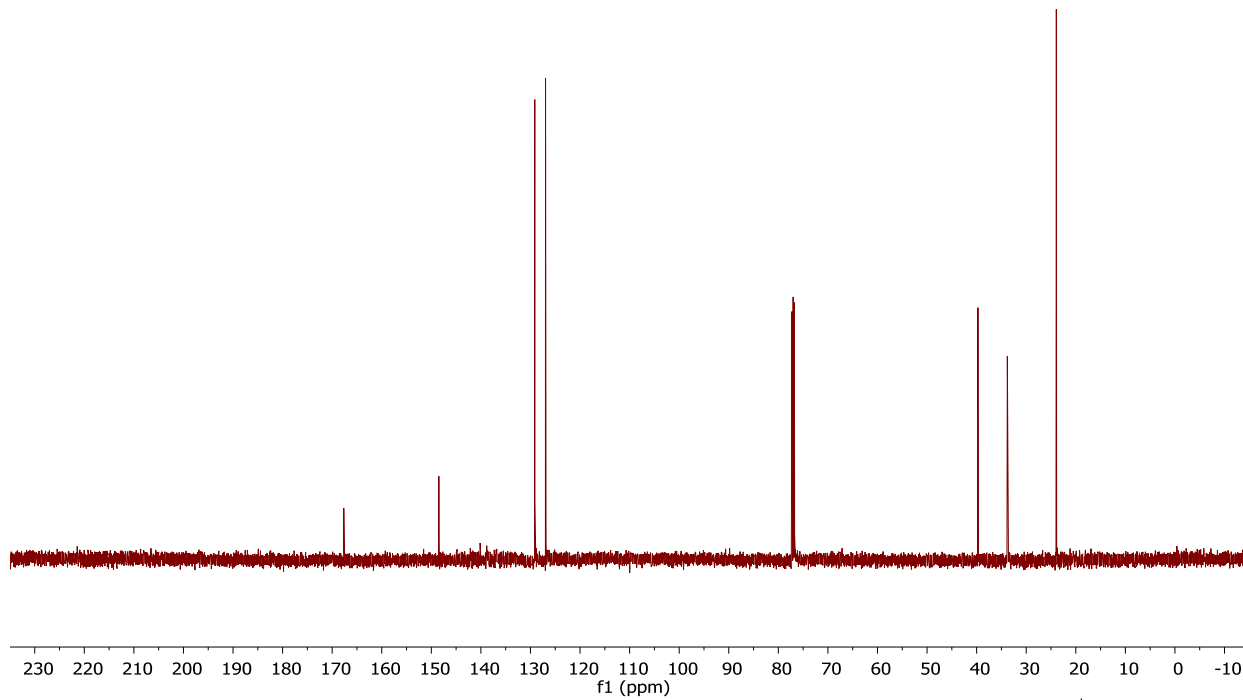


Pentafluorophenyl 2-(4-isopropylphenyl)acetate (S16)

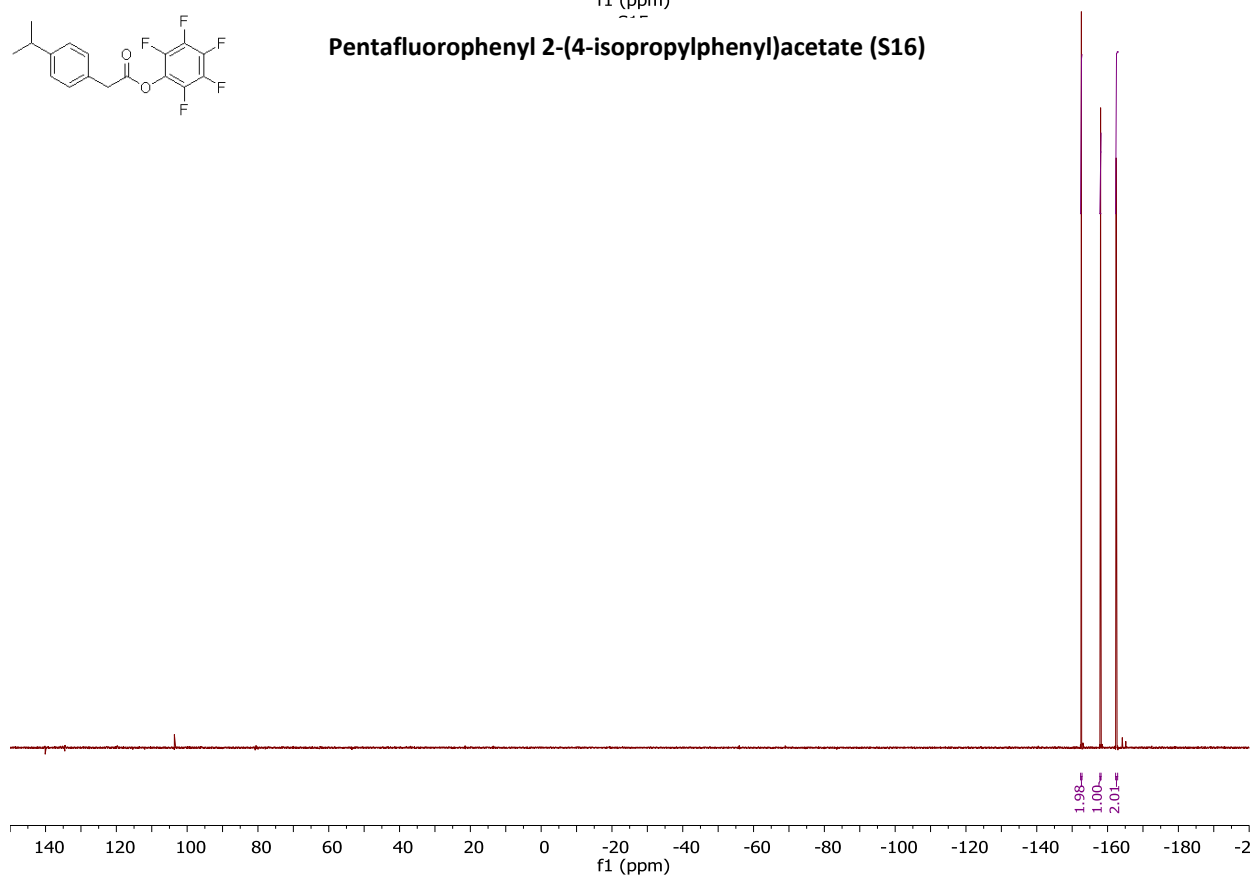


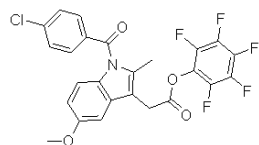


Pentafluorophenyl 2-(4-isopropylphenyl)acetate (S16)

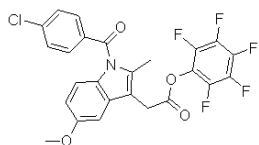
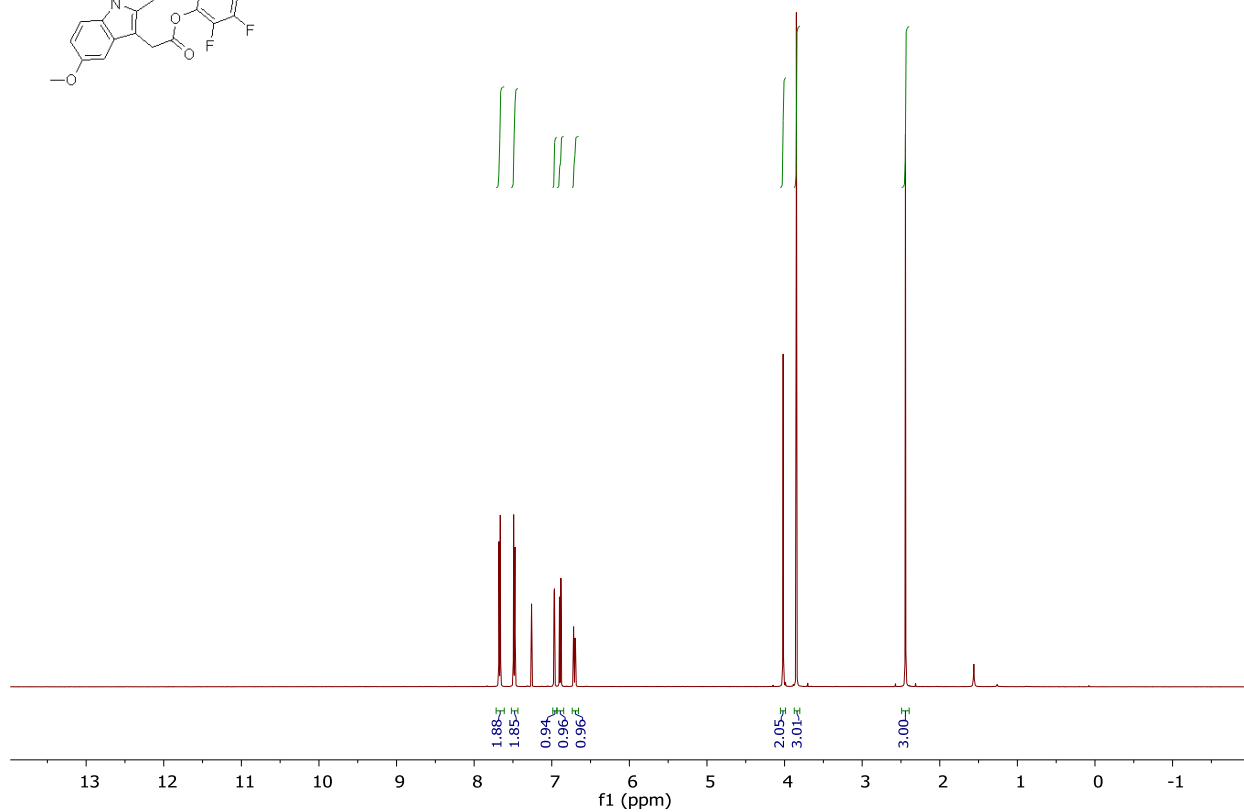


Pentafluorophenyl 2-(4-isopropylphenyl)acetate (S16)

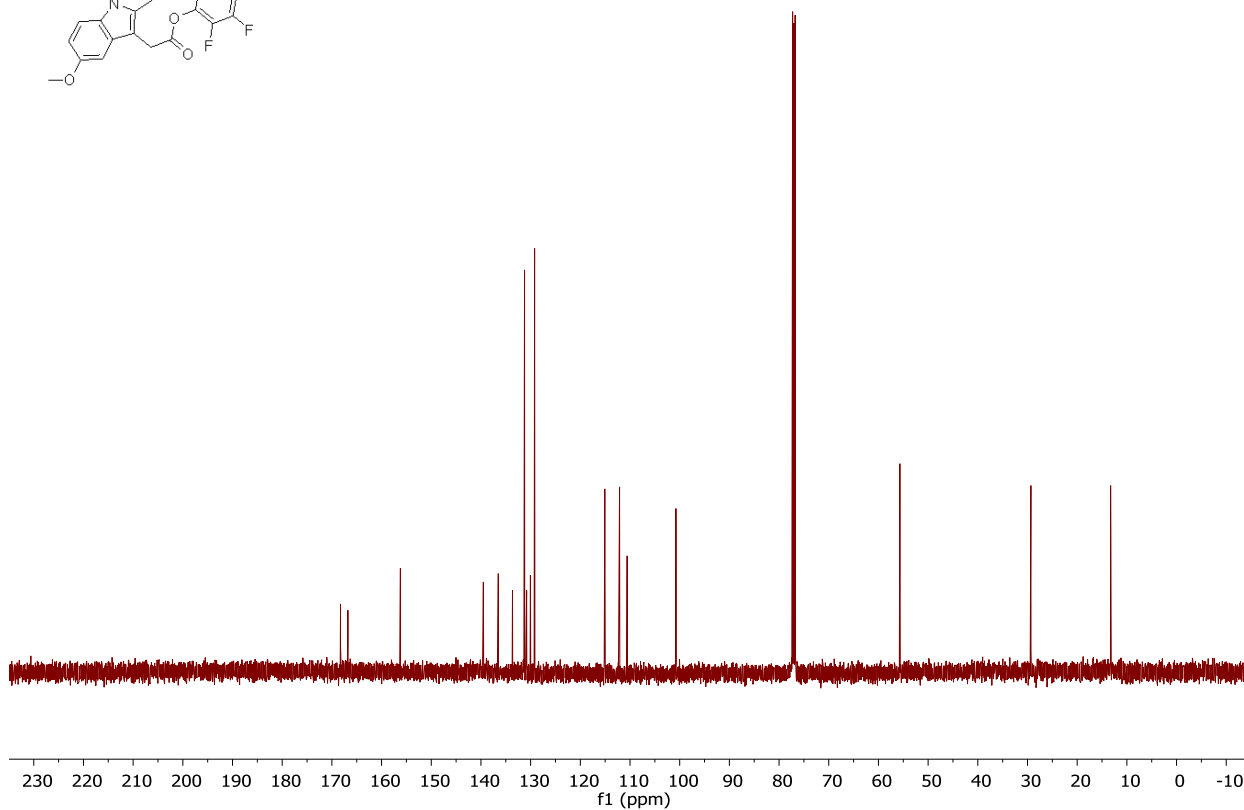


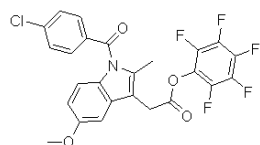


Indomethacin-pentafluorophenyl ester (S17)

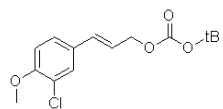
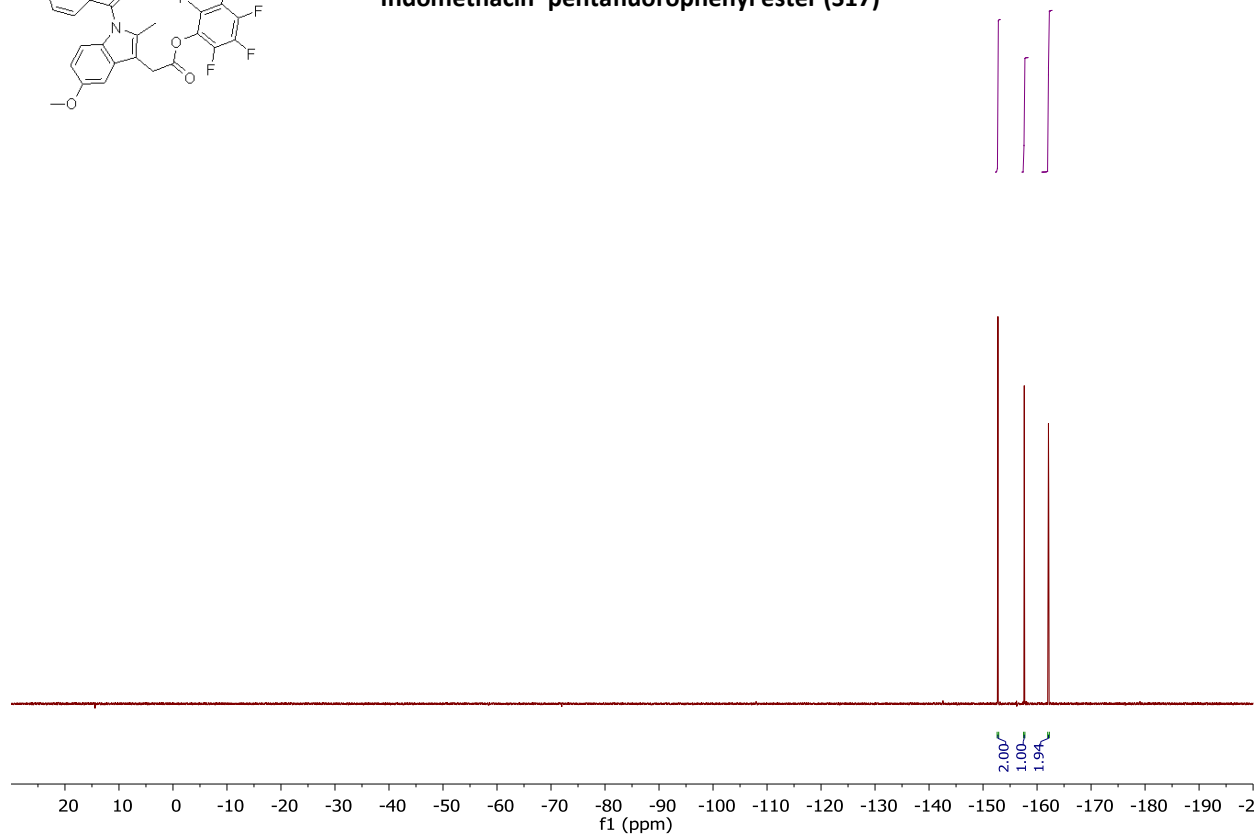


Indomethacin-pentafluorophenyl ester (S17)

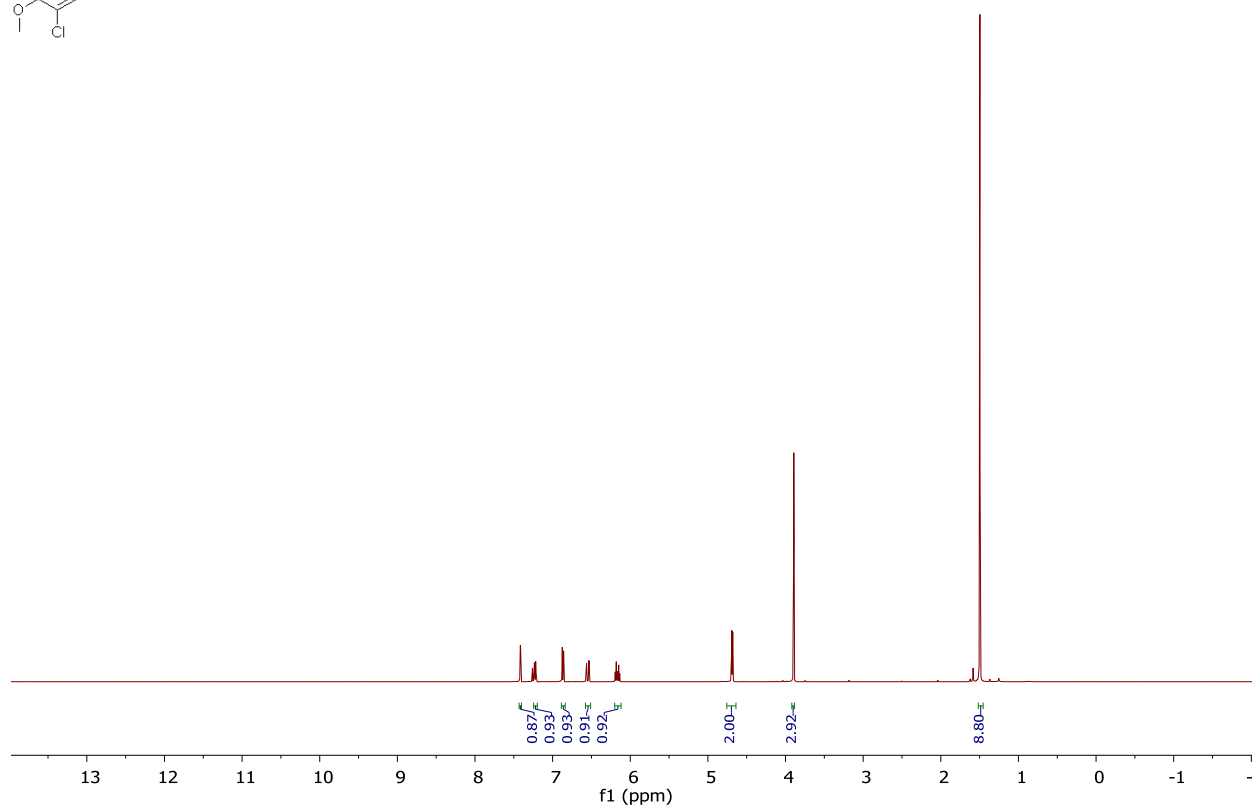


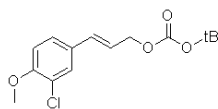


Indomethacin-pentafluorophenyl ester (S17)

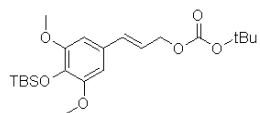
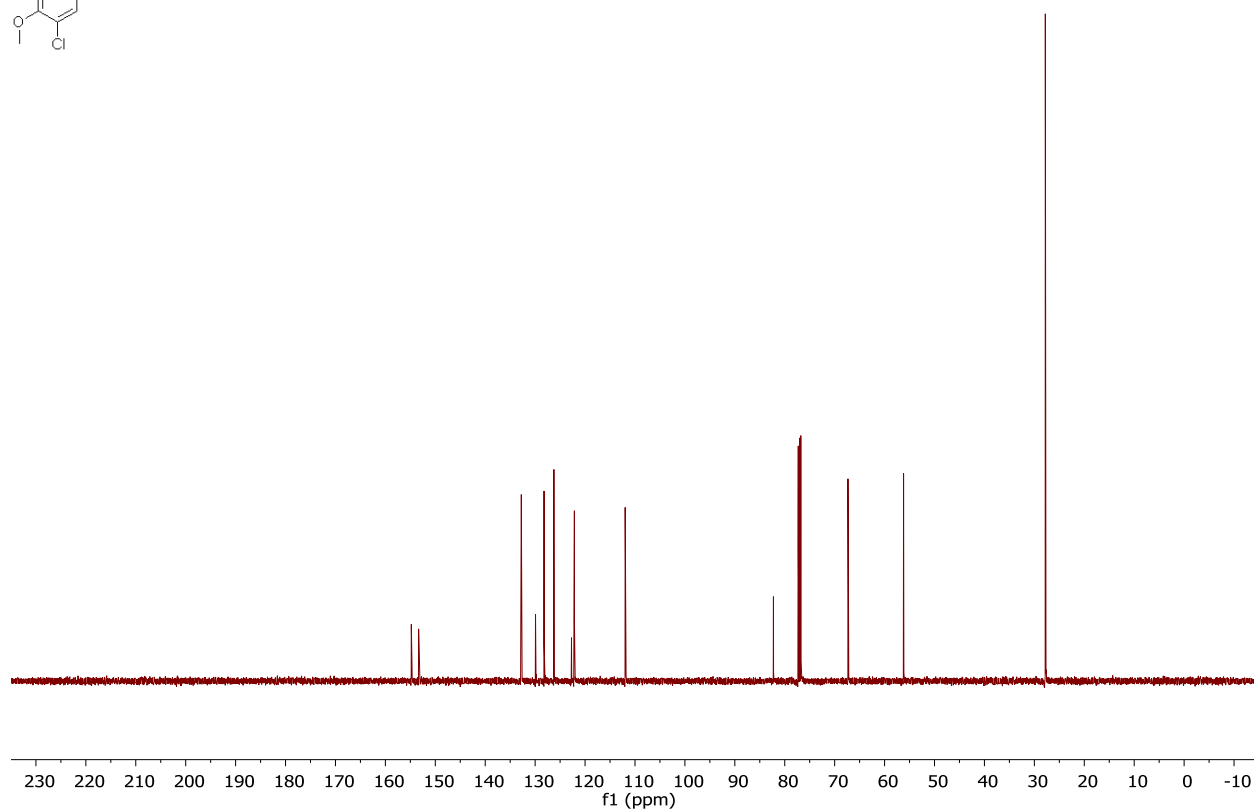


(E)-*tert*-Butyl 3-(3-chloro-4-methoxyphenyl)allyl carbonate (S23)

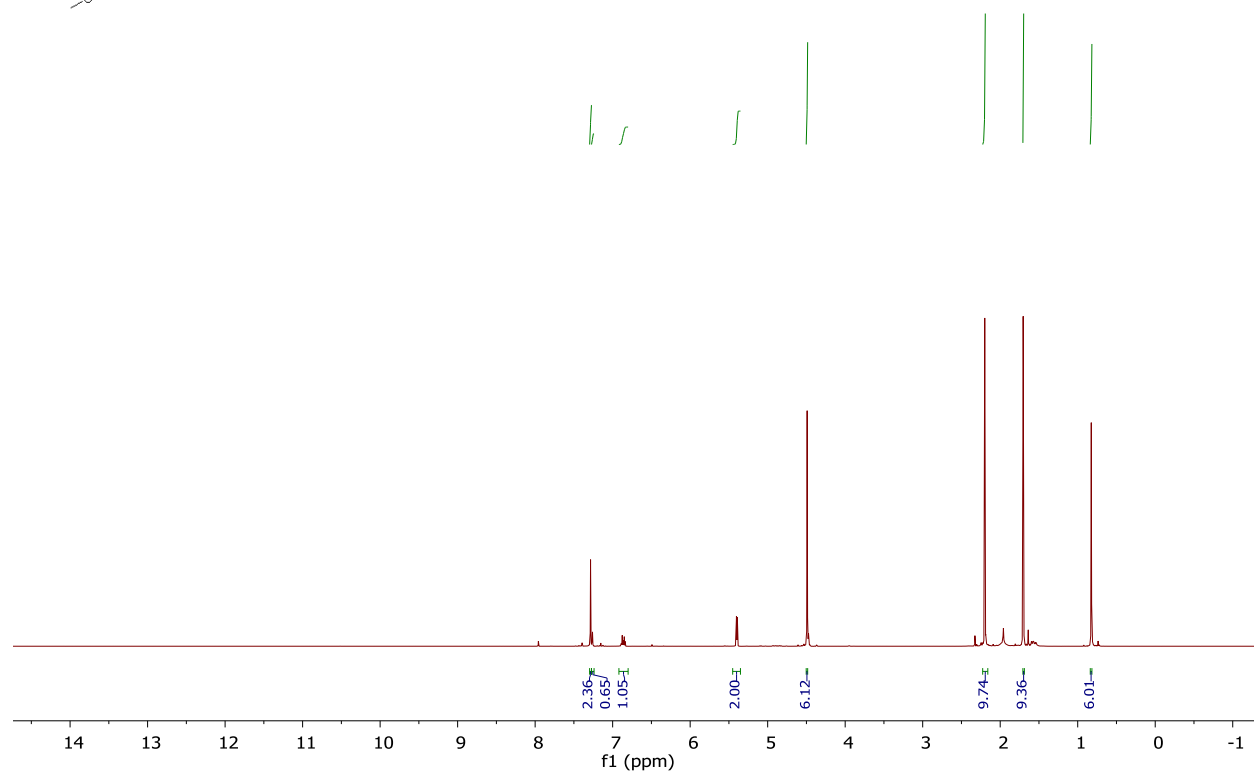


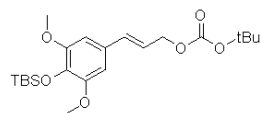


(E)-*tert*-Butyl 3-(3-chloro-4-methoxyphenyl)allyl carbonate (S23)

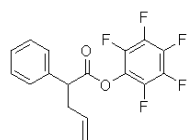
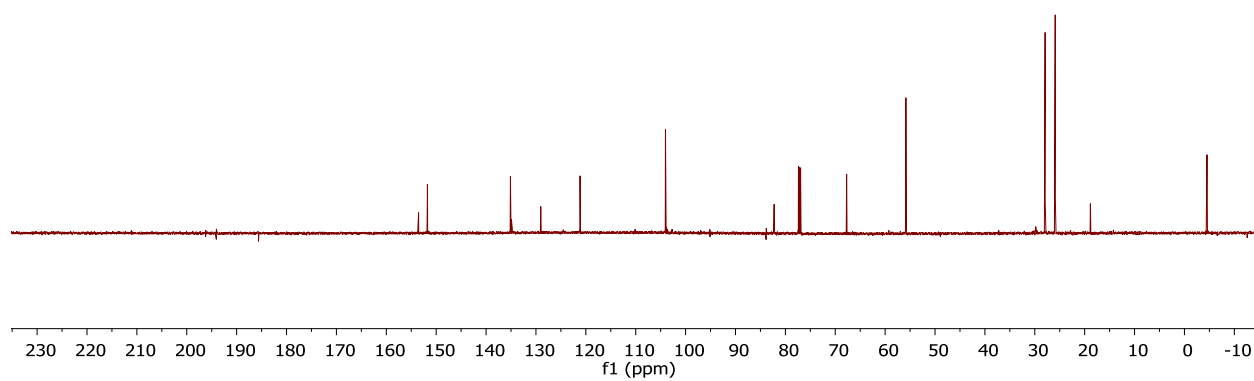


(E)-*tert*-Butyl 3-(4-((*tert*-butyldimethylsilyl)oxy)-3,5-dimethoxyphenyl)allyl carbonate (S24)

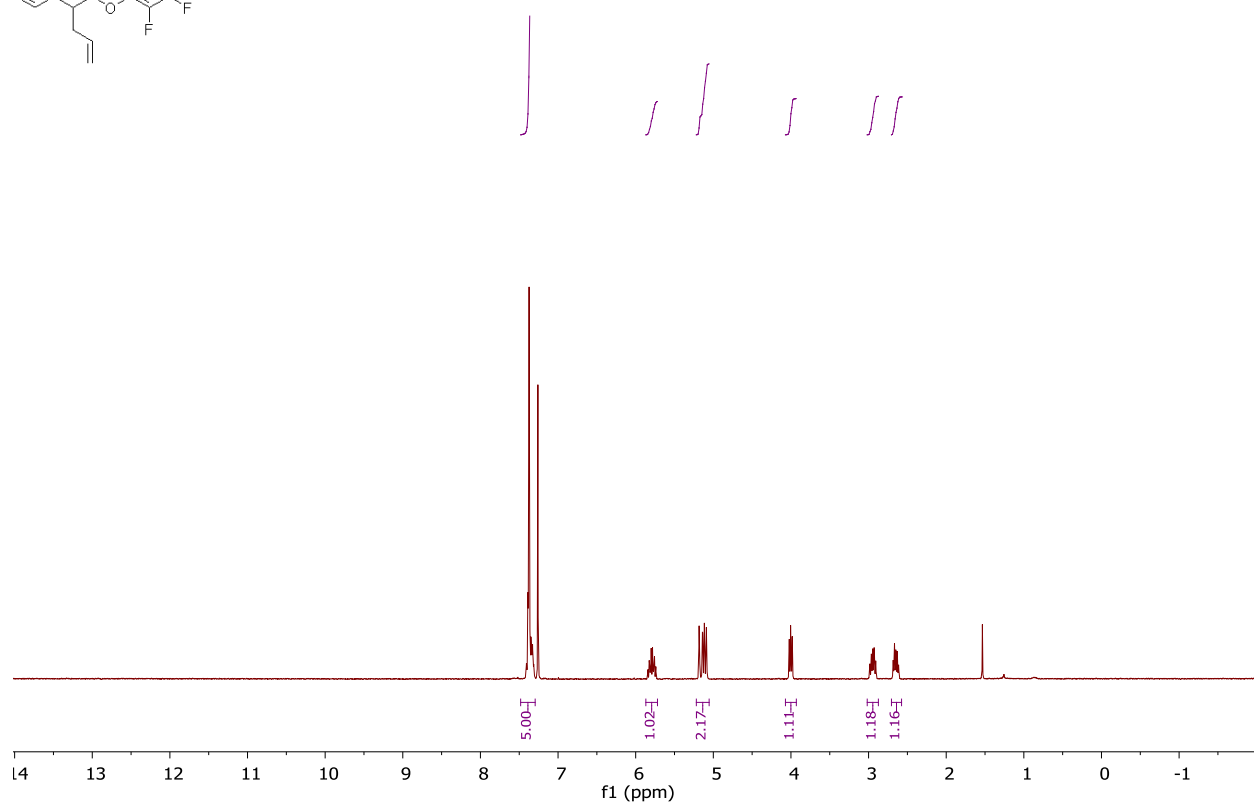


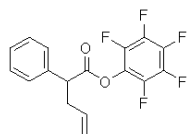


(E)-tert-Butyl 3-(4-((tert-butyldimethylsilyl)oxy)-3,5-dimethoxyphenyl)allyl carbonate (S24)

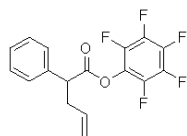
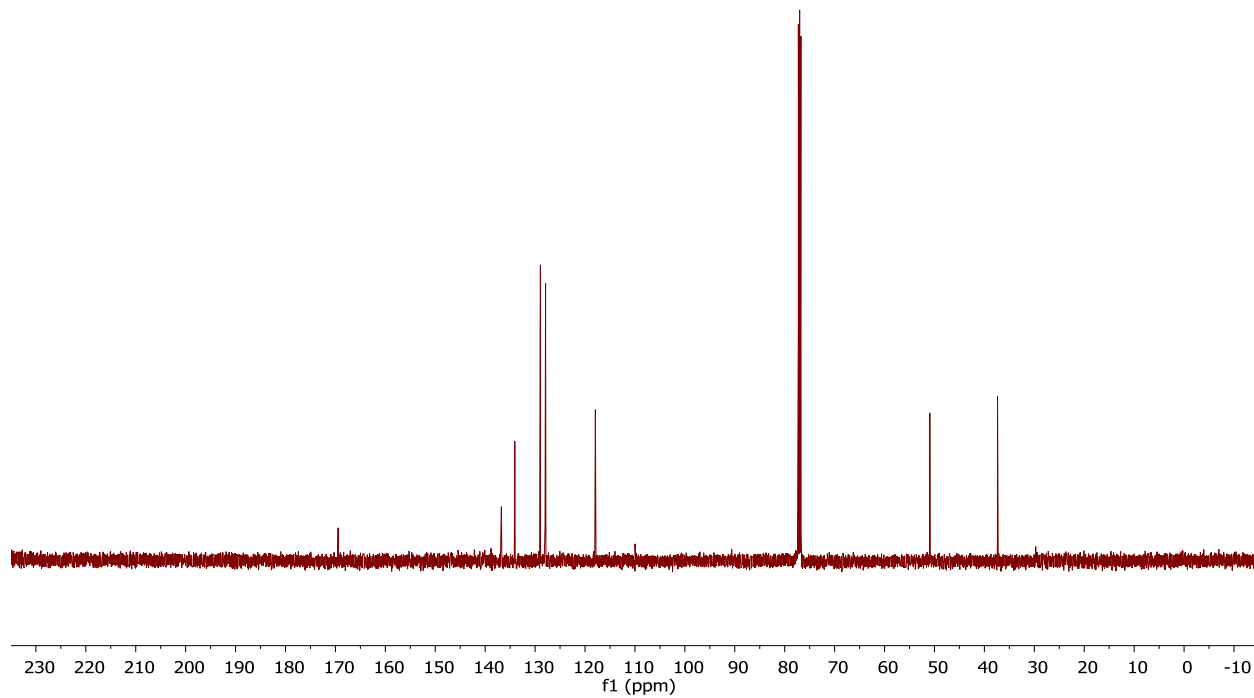


Pentafluorophenyl 2-phenylpent-4-enoate (6)

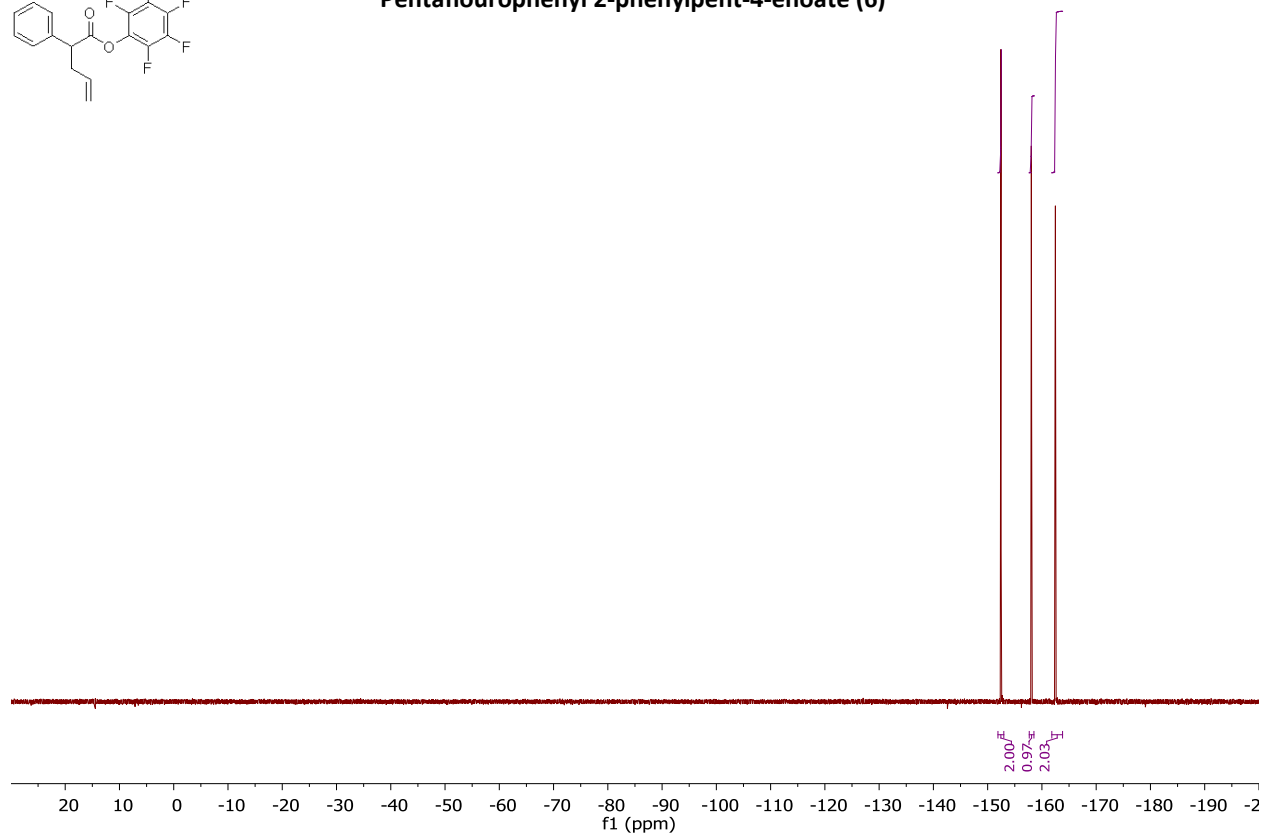


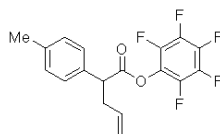


Pentafluorophenyl 2-phenylpent-4-enoate (6)

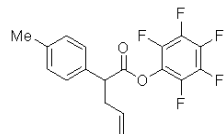
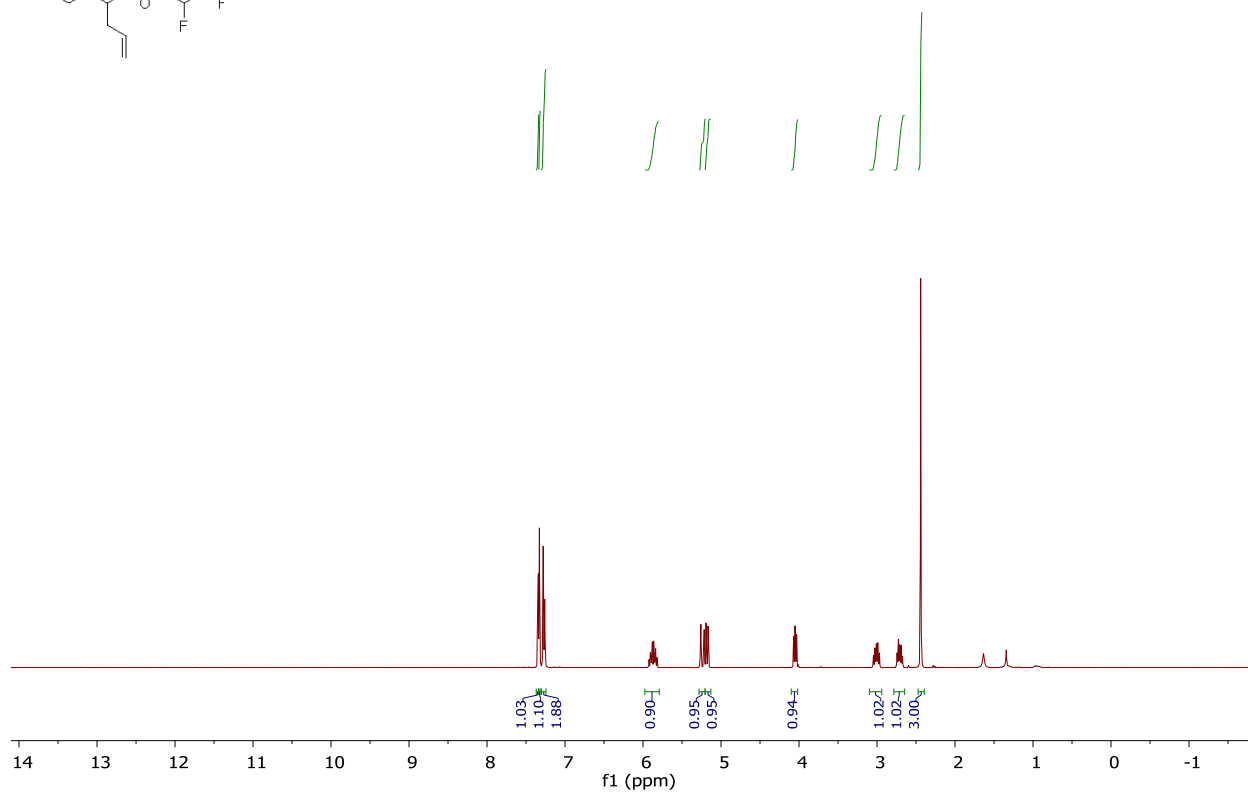


Pentafluorophenyl 2-phenylpent-4-enoate (6)

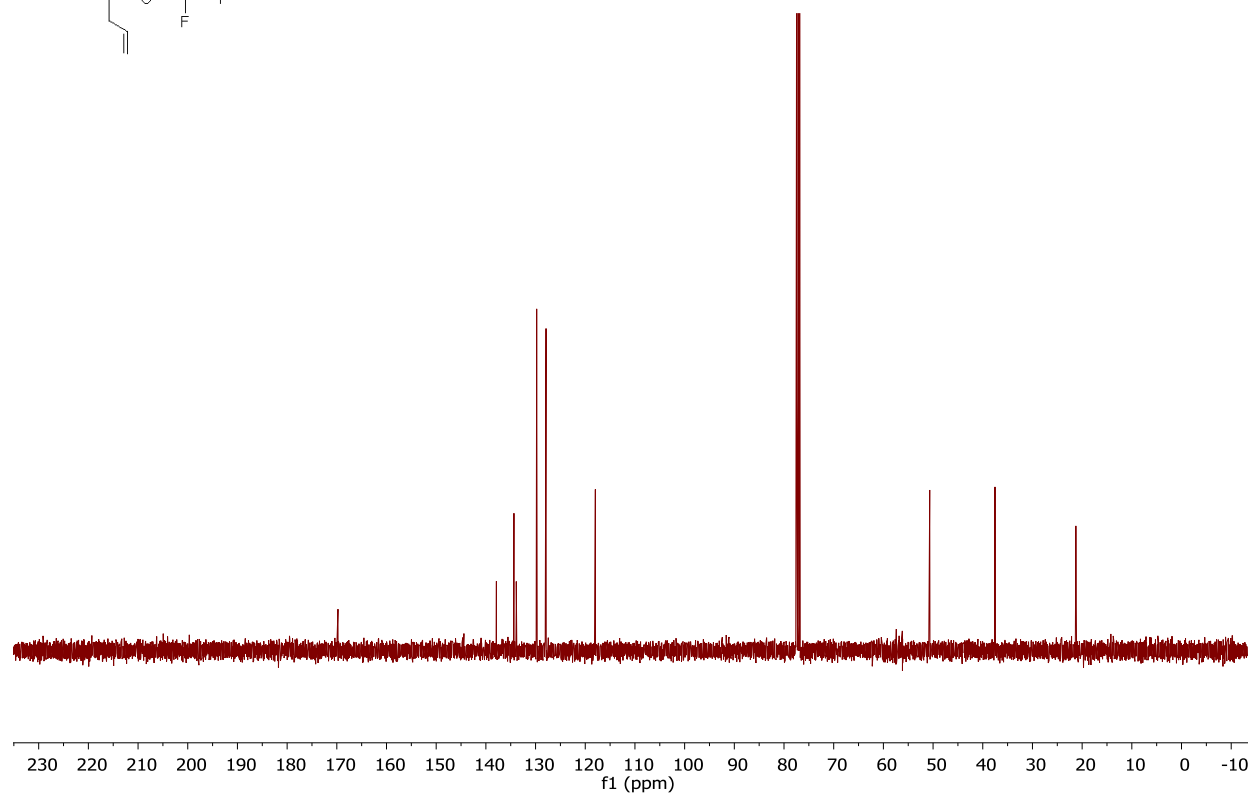


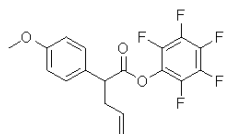


Pentafluorophenyl 2-(4-methylphenyl)pent-4-enoate (7)

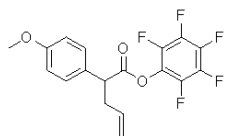
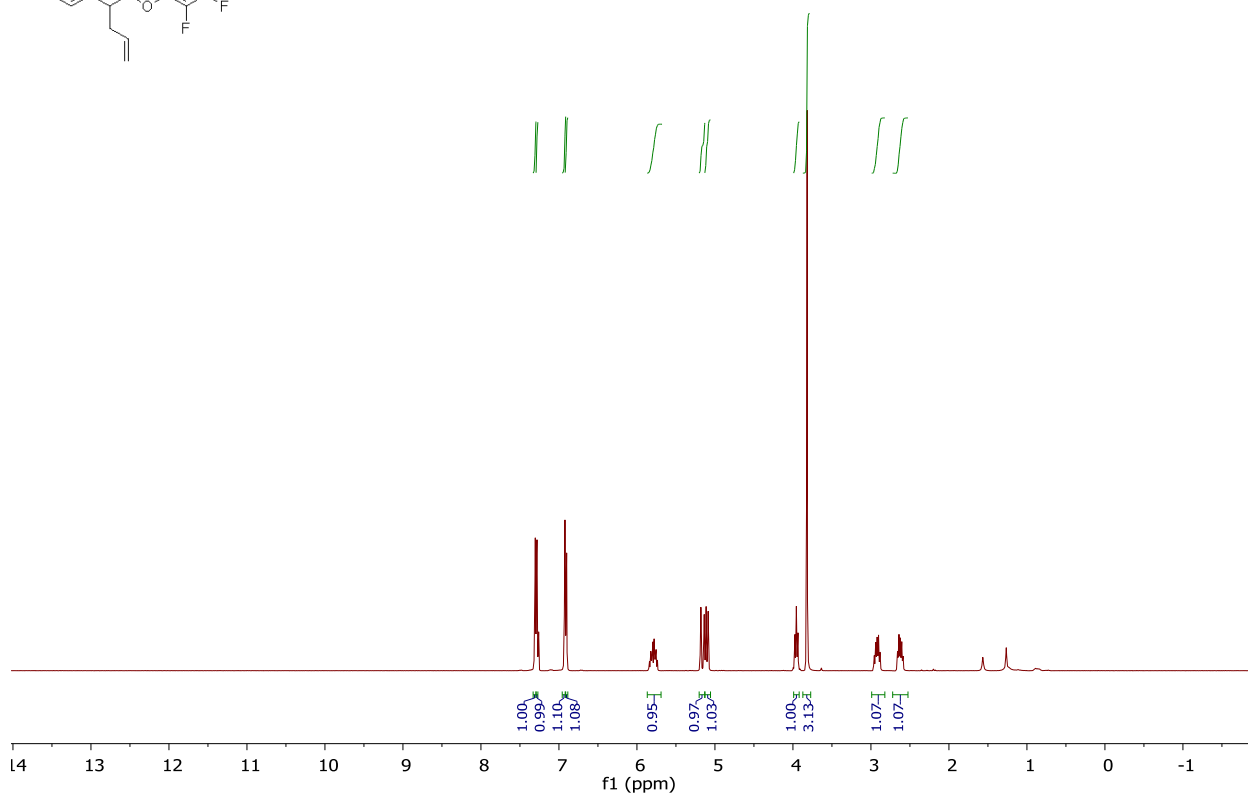


Pentafluorophenyl 2-(4-methylphenyl)pent-4-enoate (7)

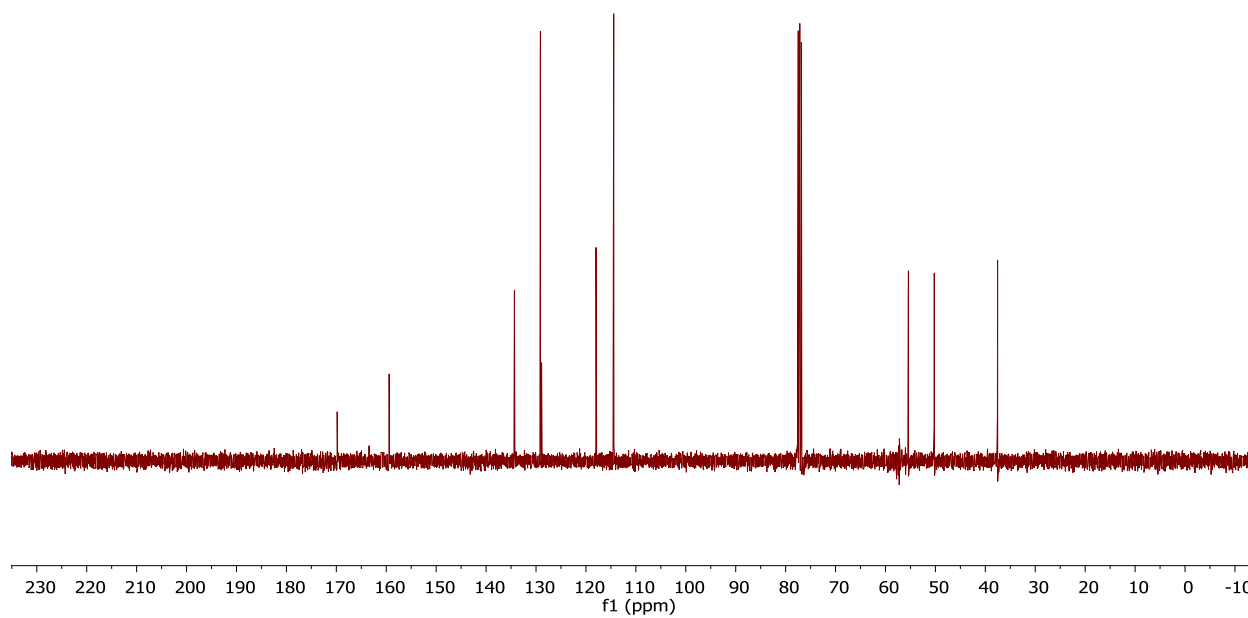


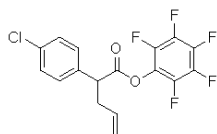


Pentafluorophenyl 2-(4-methoxyphenyl)pent-4-enoate (8)

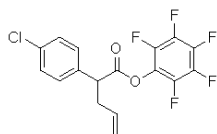
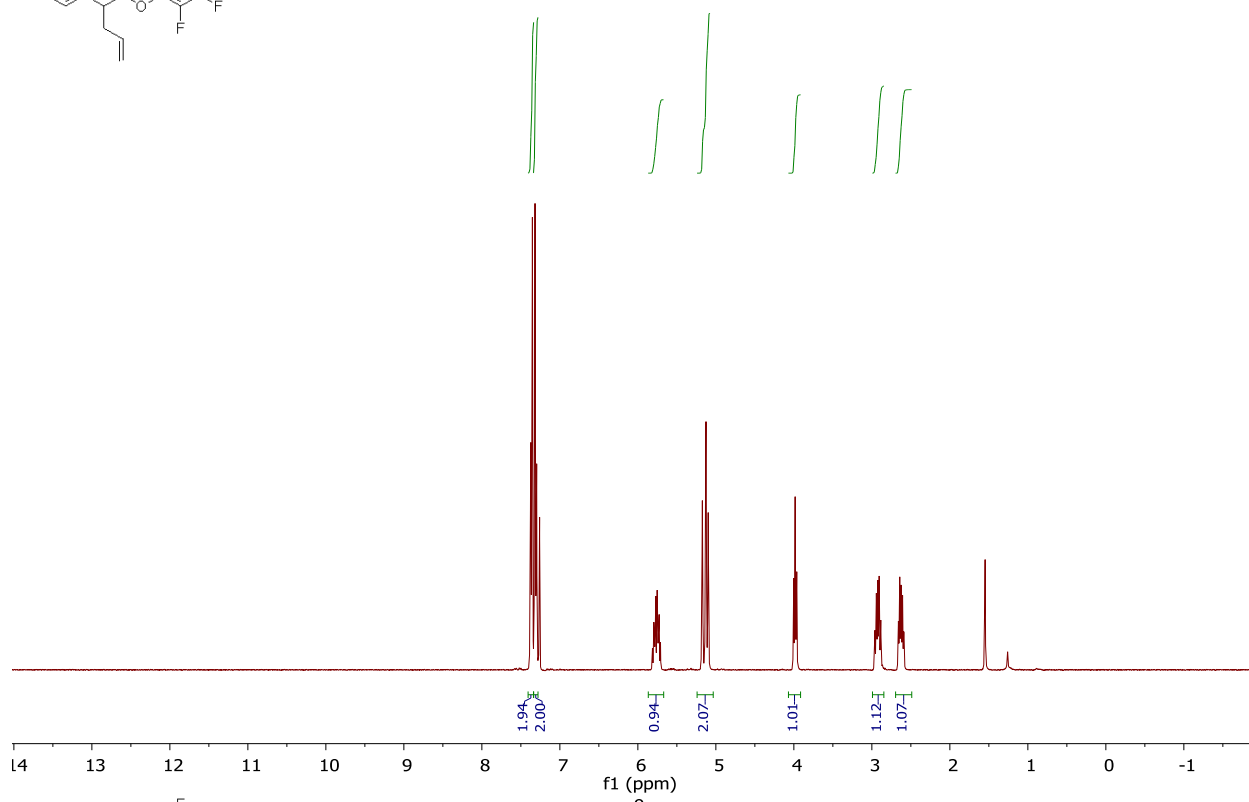


Pentafluorophenyl 2-(4-methoxyphenyl)pent-4-enoate (8)

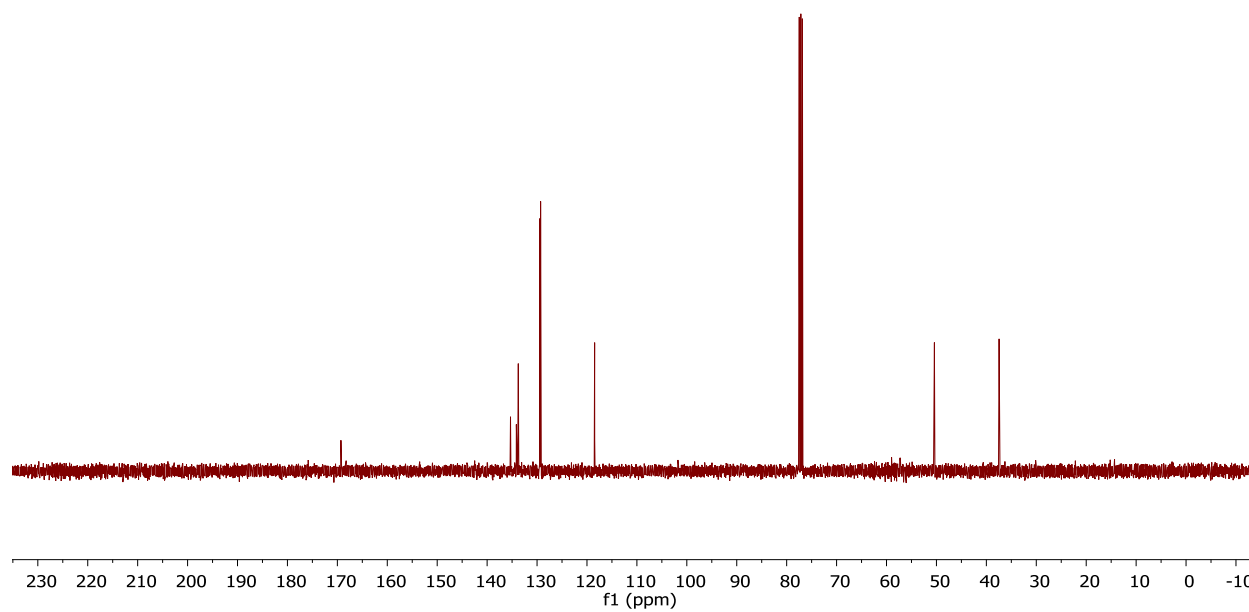


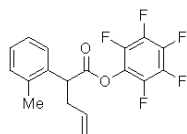


Pentafluorophenyl 2-(4-chlorophenyl)pent-4-enoate (9)

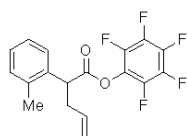
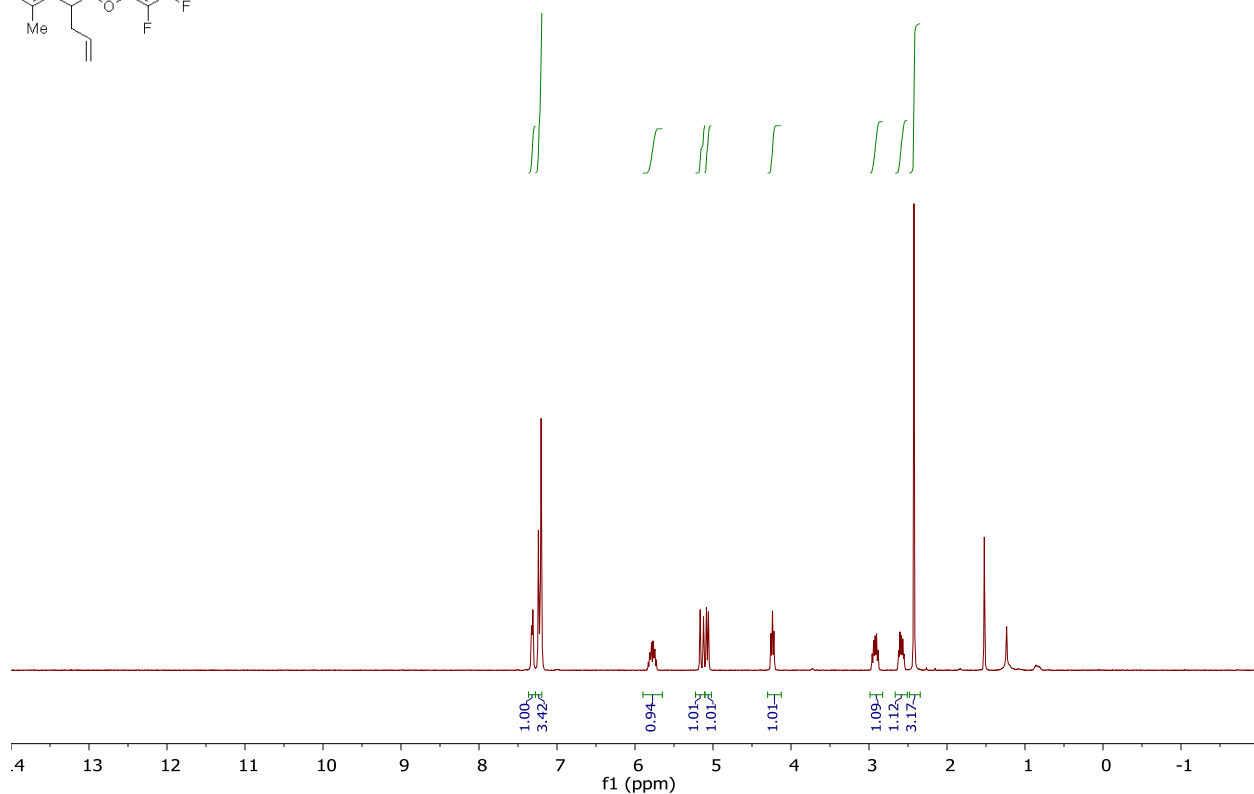


Pentafluorophenyl 2-(4-chlorophenyl)pent-4-enoate (9)

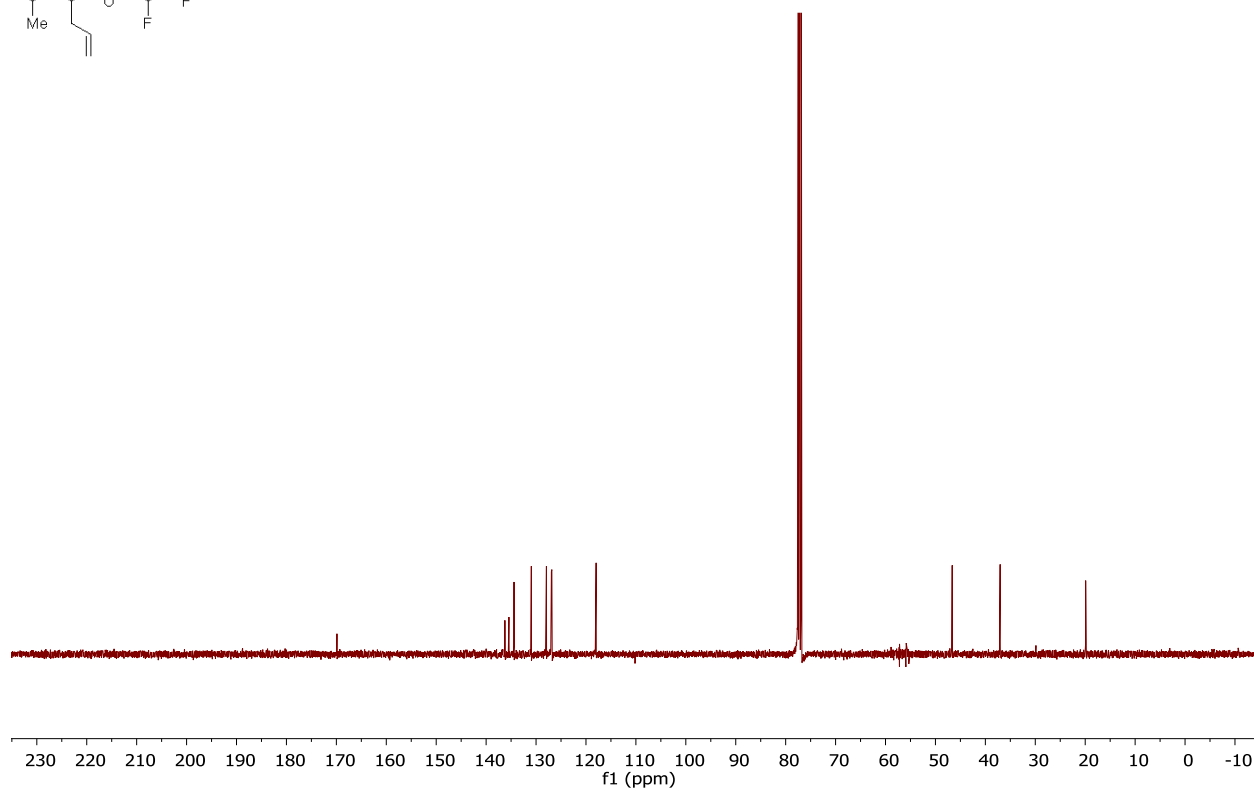


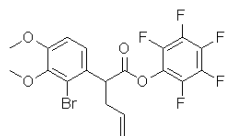


Pentafluorophenyl 2-(2-methylphenyl)pent-4-enoate (10)

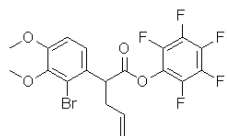
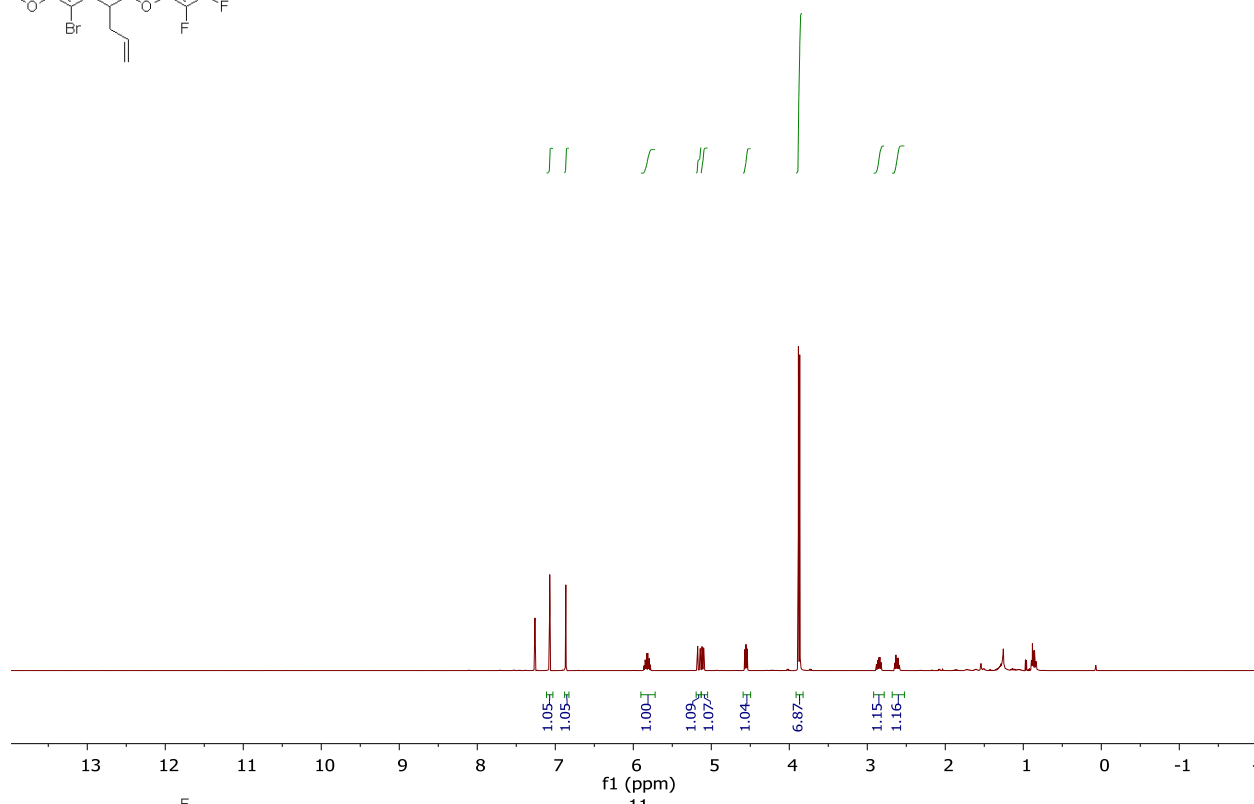


Pentafluorophenyl 2-(2-methylphenyl)pent-4-enoate (10)

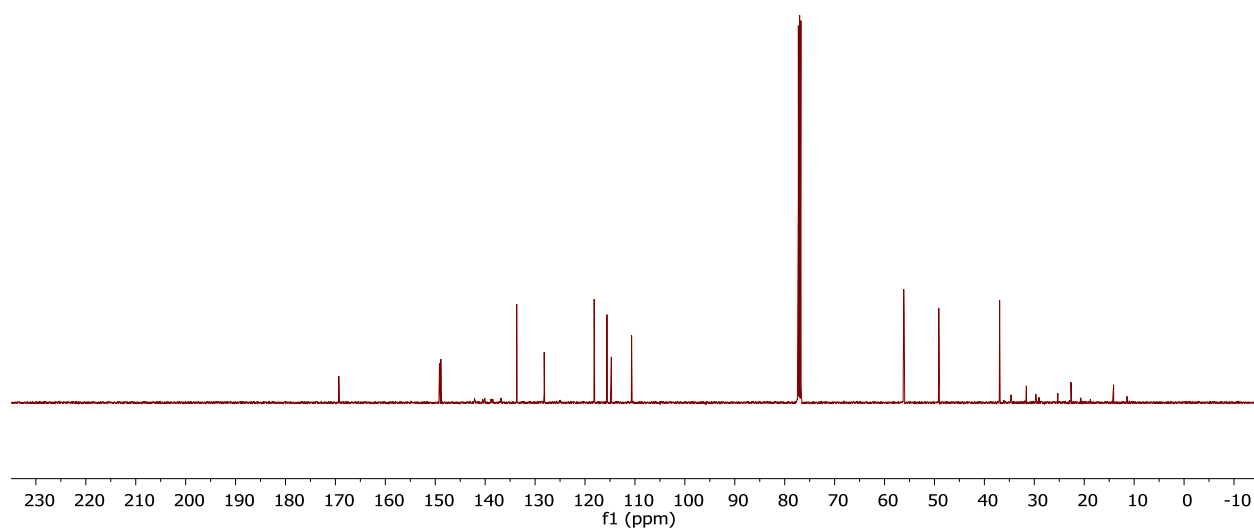


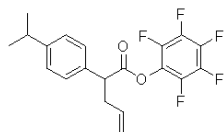


Pentafluorophenyl 2-(3,4-dimethoxy-2-bromophenyl)pent-4-enoate (11)

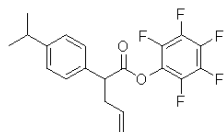
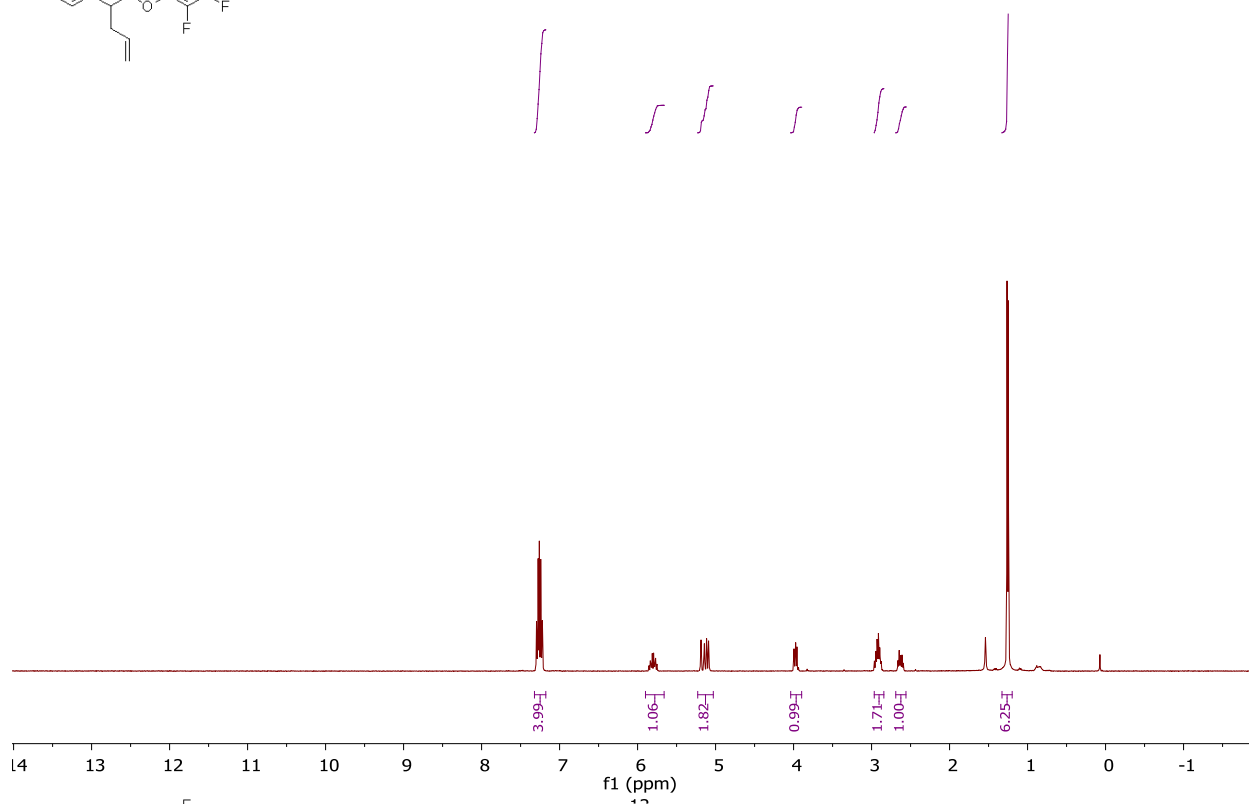


Pentafluorophenyl 2-(3,4-dimethoxy-2-bromophenyl)pent-4-enoate (11)

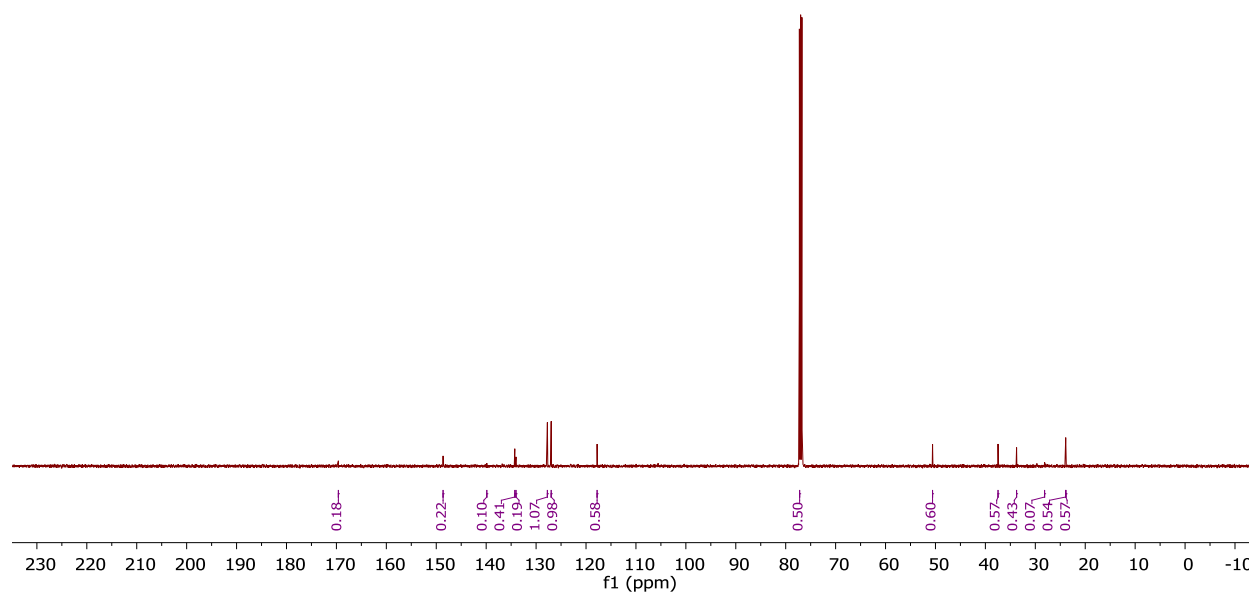


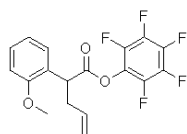


Pentafluorophenyl 2-(4-isopropylphenyl)pent-4-enoate (12)

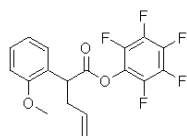
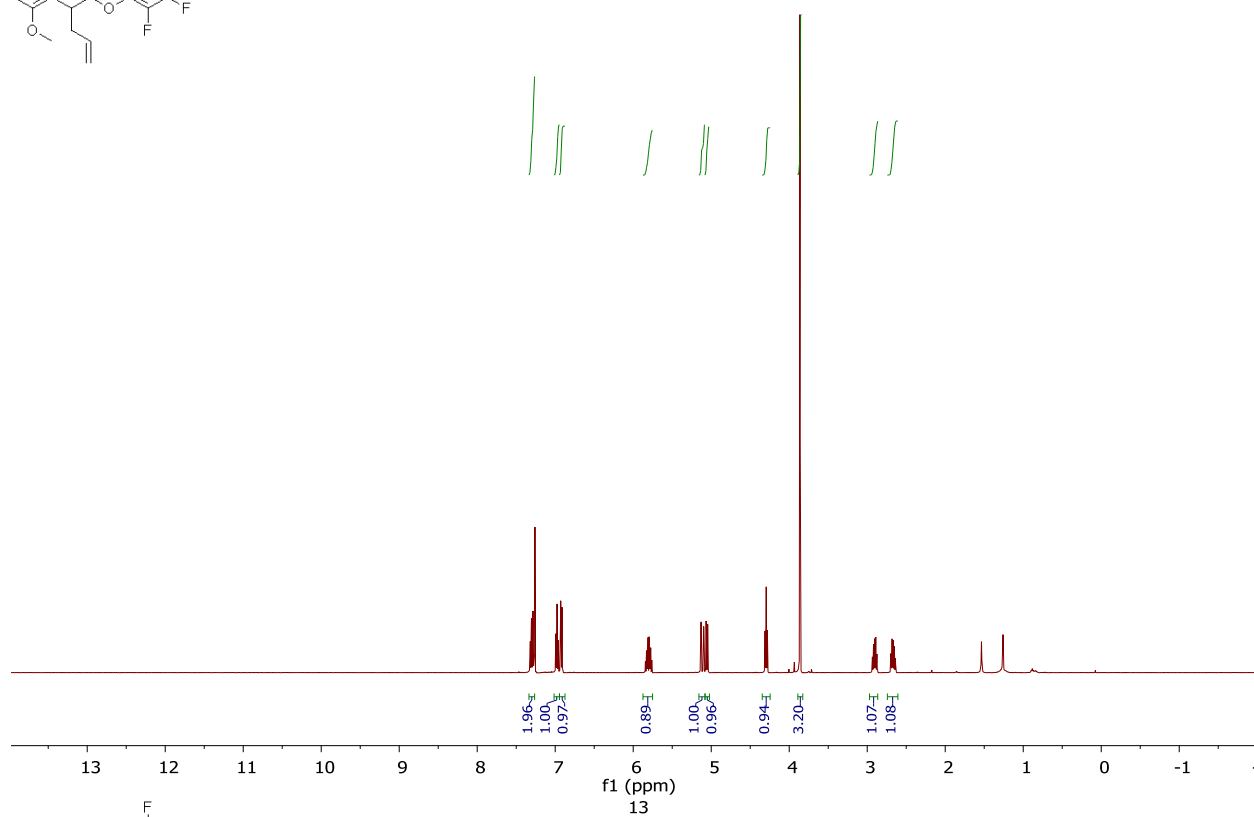


Pentafluorophenyl 2-(4-isopropylphenyl)pent-4-enoate (12)

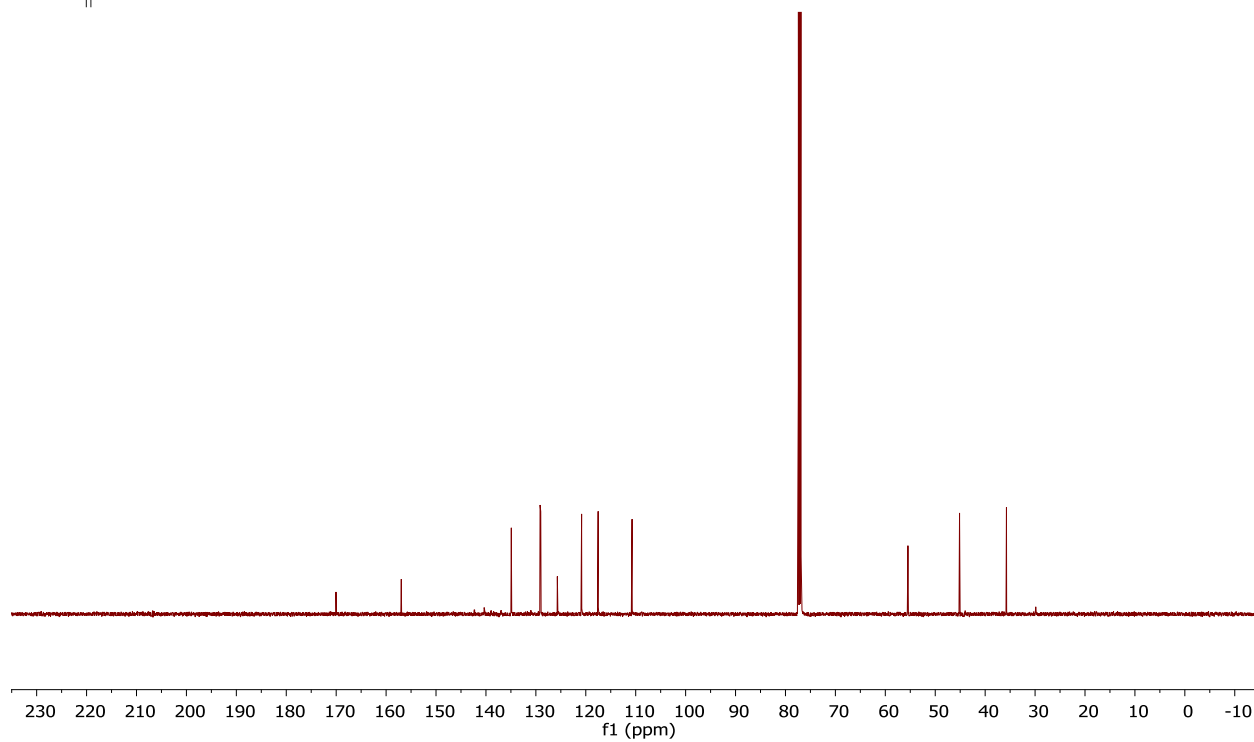


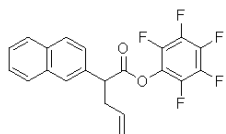


Pentafluorophenyl 2-(2-methoxyphenyl)pent-4-enoate (13)

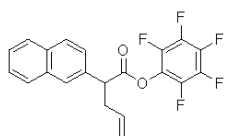
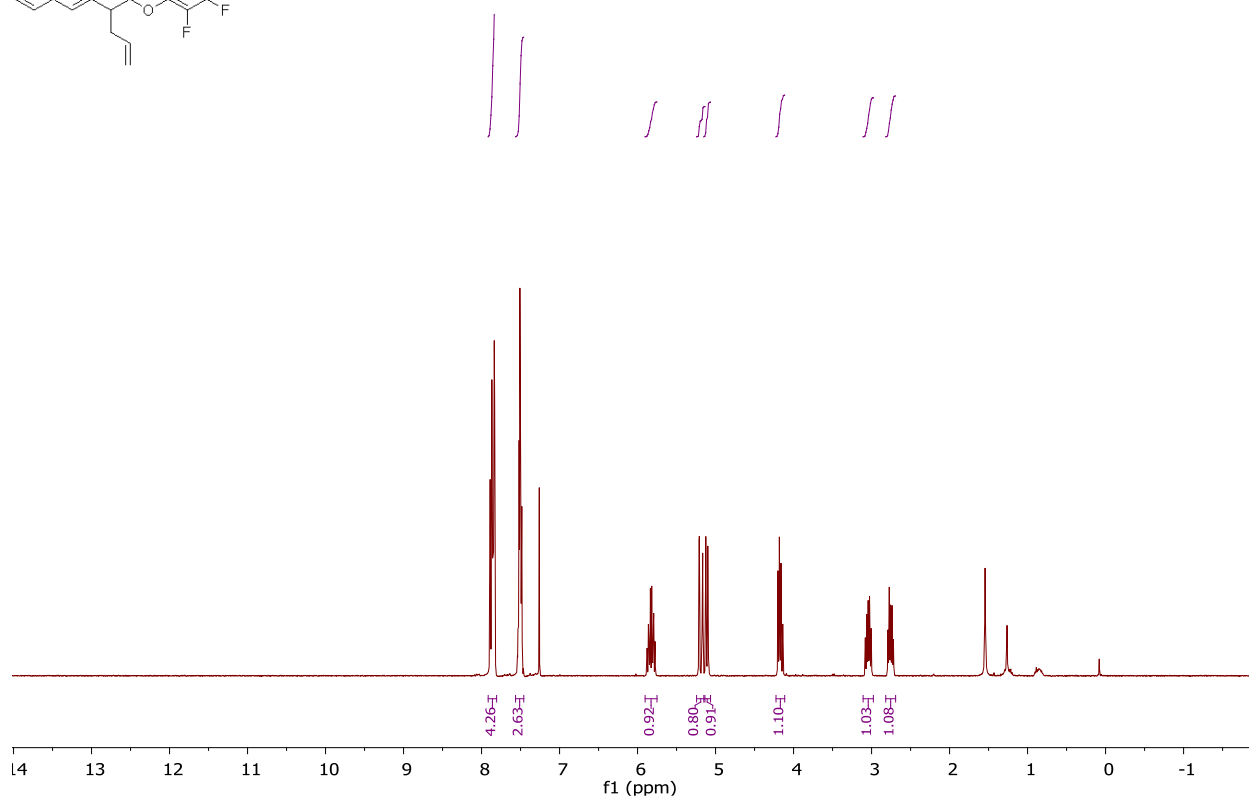


Pentafluorophenyl 2-(2-methoxyphenyl)pent-4-enoate (13)

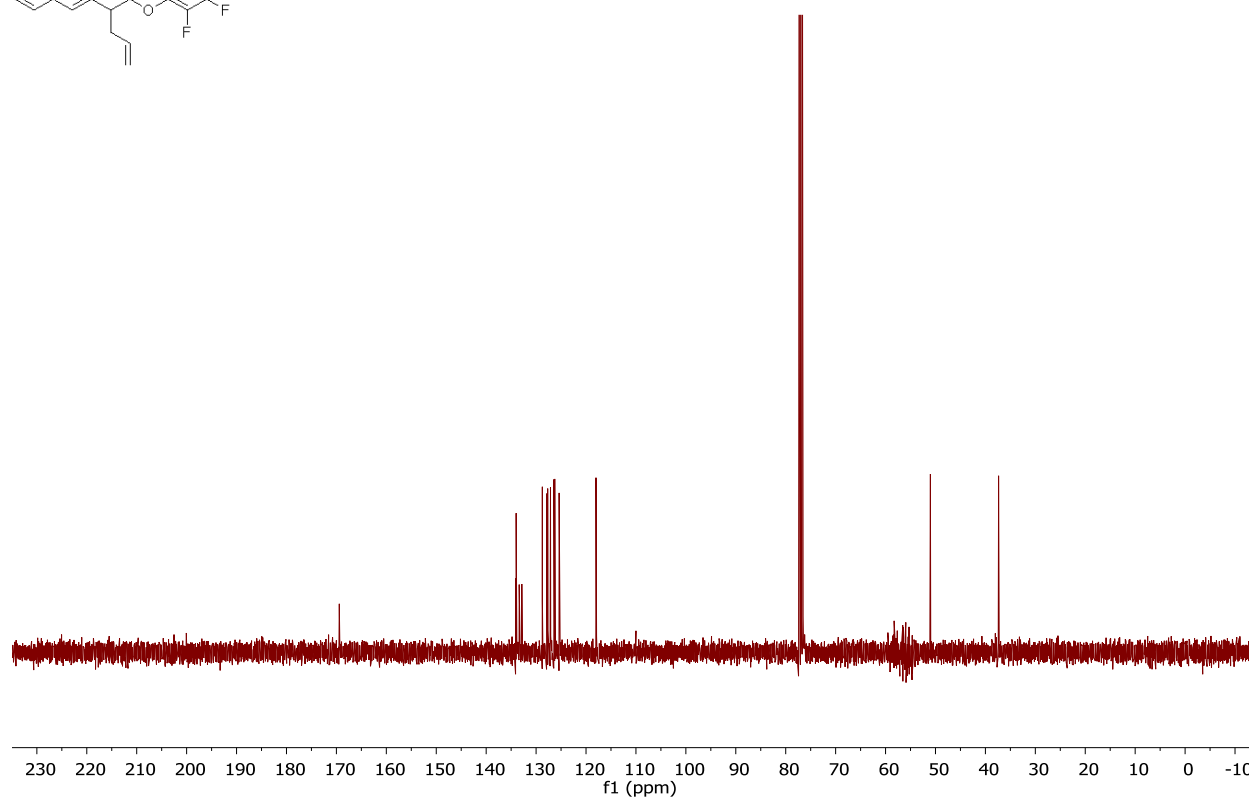


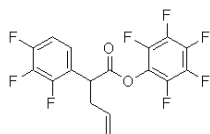


Pentafluorophenyl 2-(naphthalene-2-yl)pent-4-enoate (14)

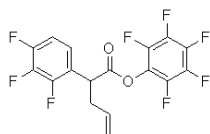
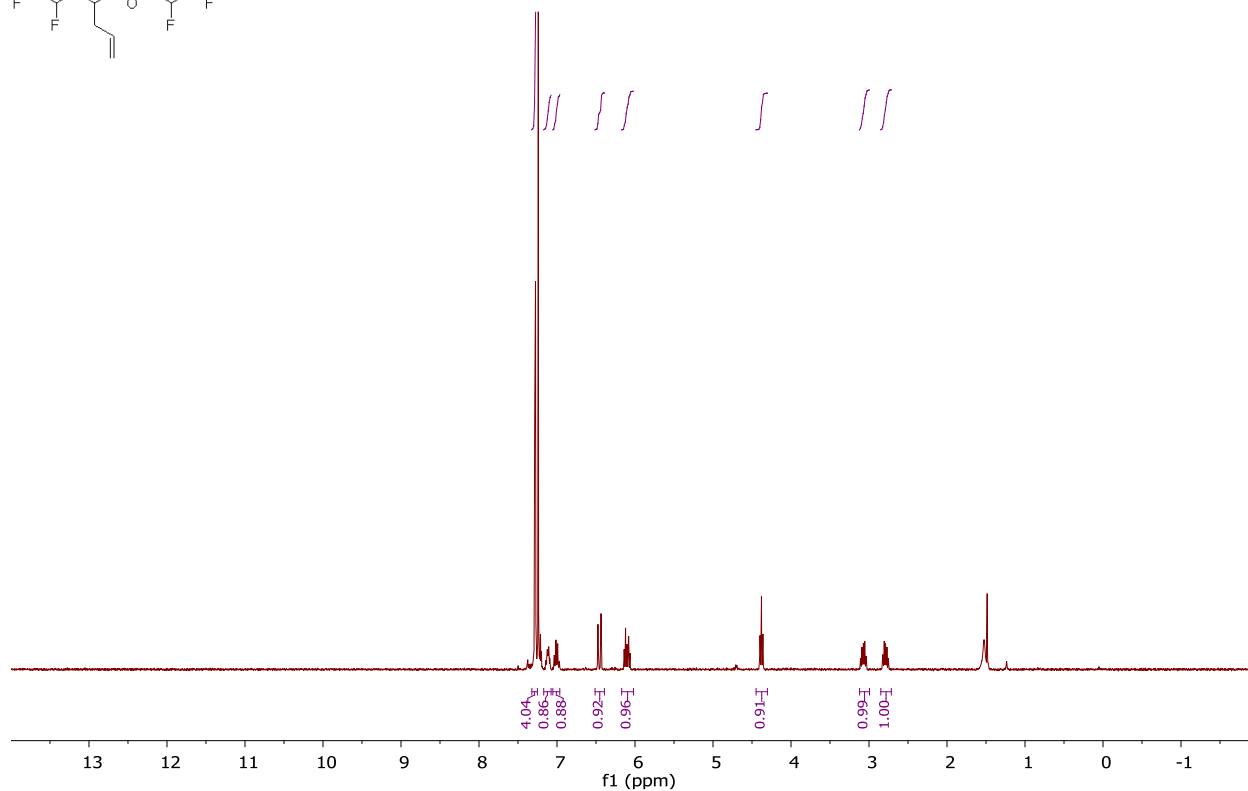


Pentafluorophenyl 2-(naphthalene-2-yl)pent-4-enoate (14)

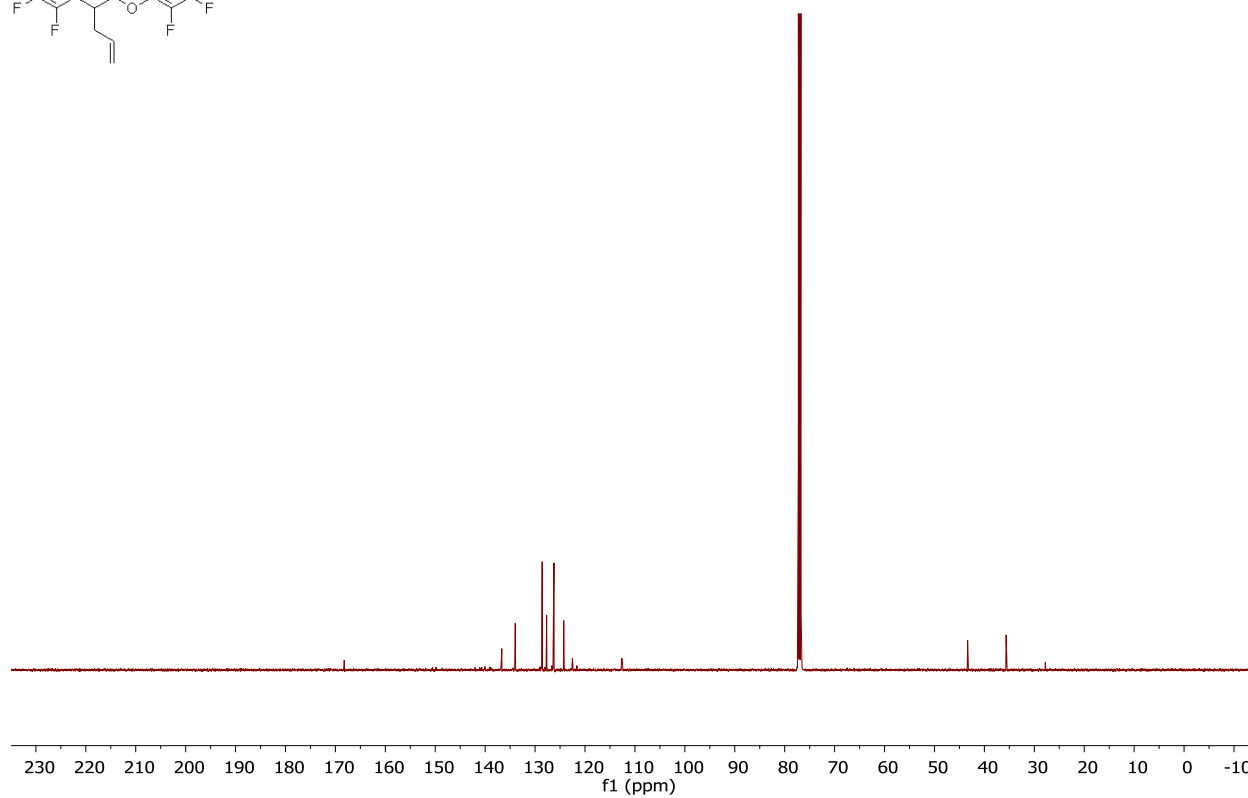


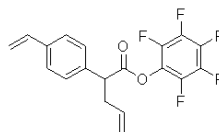


Pentafluorophenyl 2-(2,3,4-trifluorophenyl)pent-4-enoate (15)

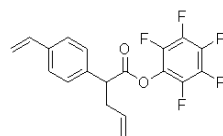
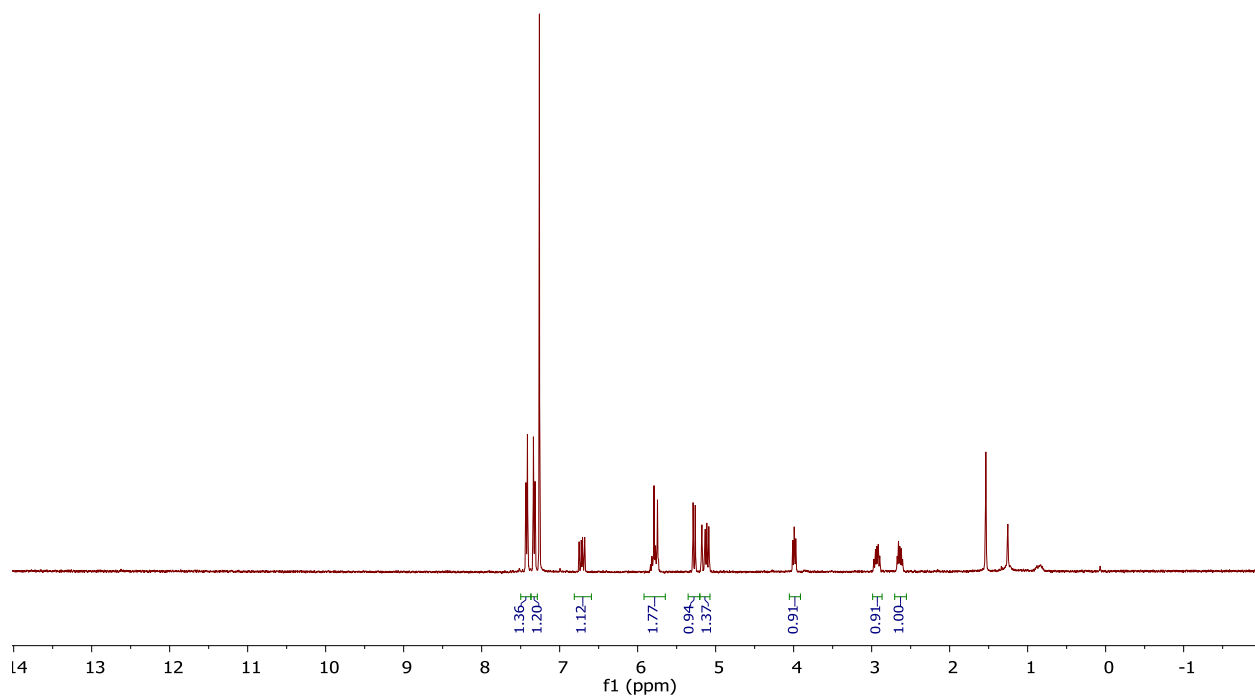


Pentafluorophenyl 2-(2,3,4-trifluorophenyl)pent-4-enoate (15)

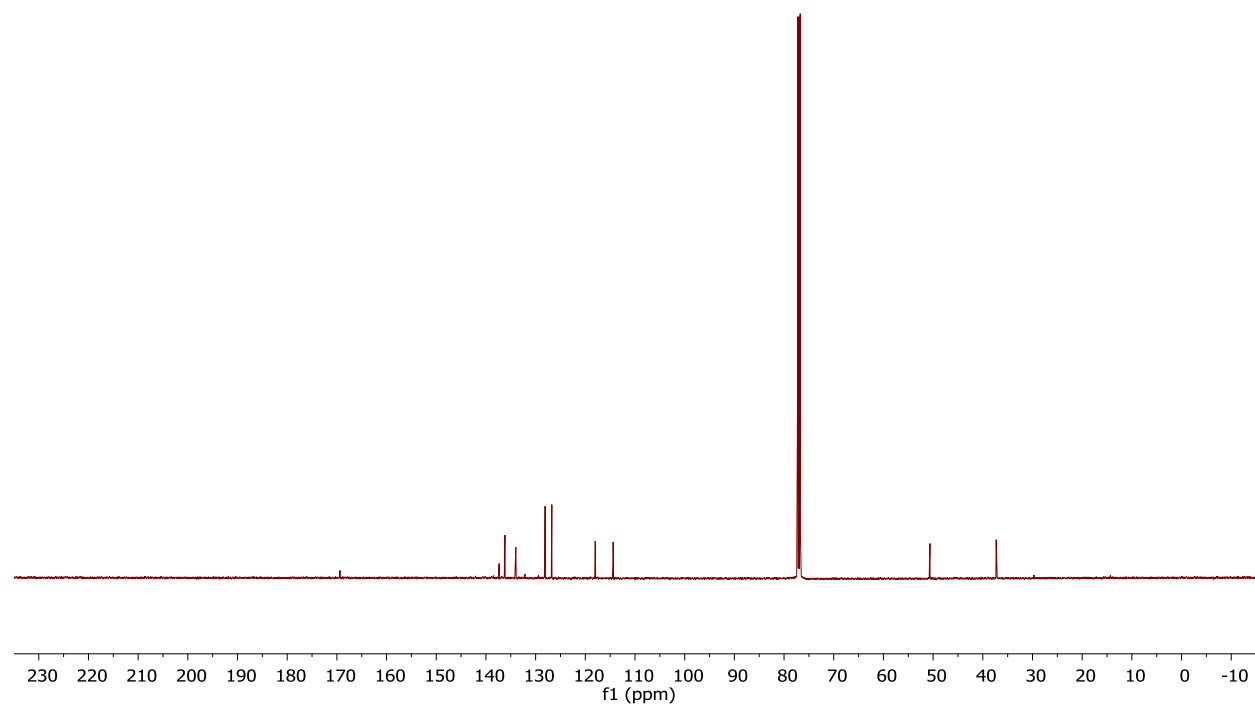


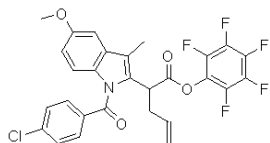


Pentafluorophenyl 2-(4-vinylphenyl)pent-4-enoate (16)

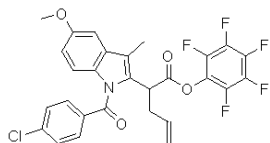
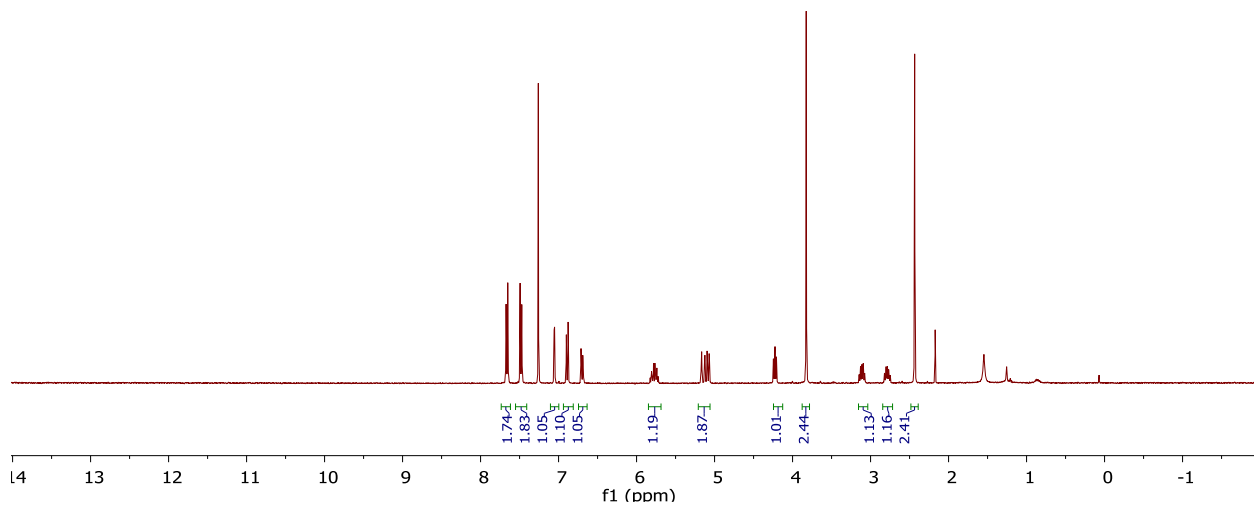


Pentafluorophenyl 2-(4-vinylphenyl)pent-4-enoate (16)

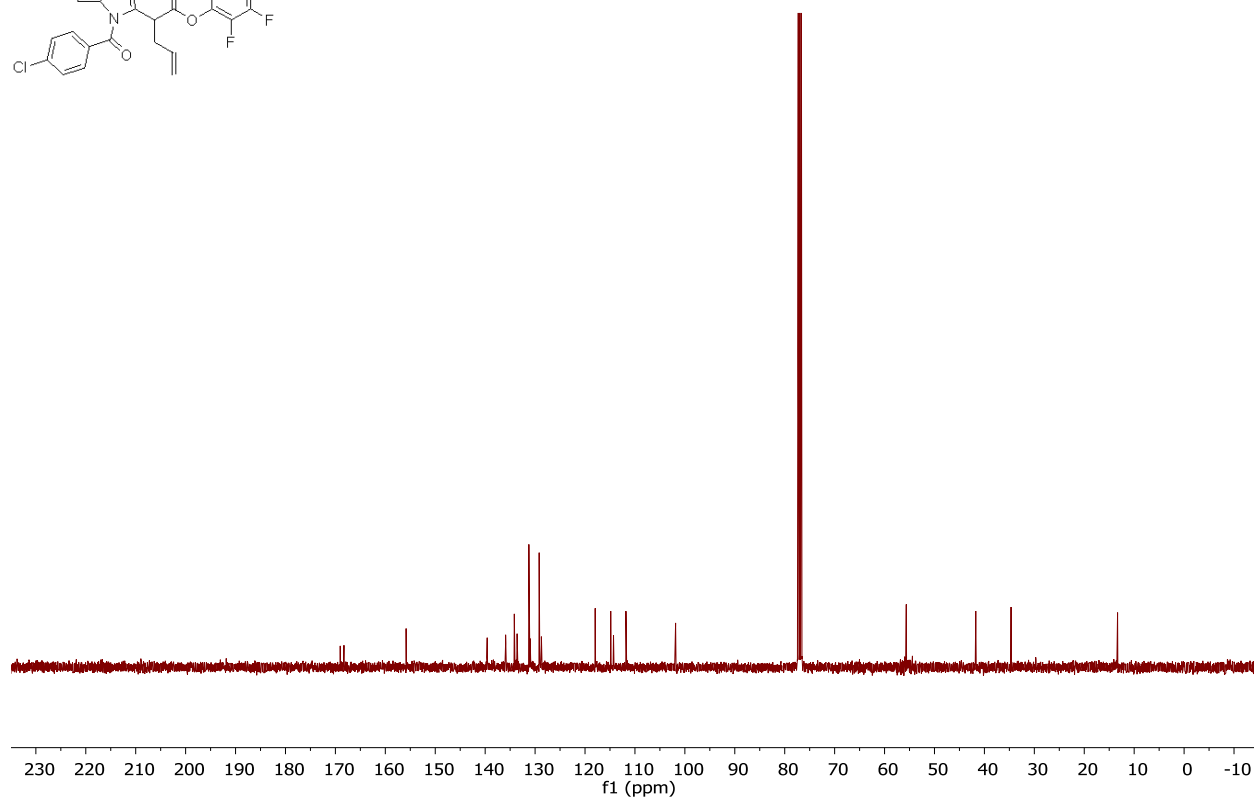


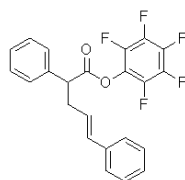


Pentafluorophenyl 2-(1-(4-chlorobenzoyl)-5-methoxy-1*H*-indol-2-yl)pent-4-enoate (17)

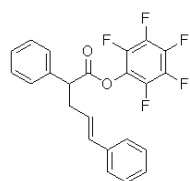
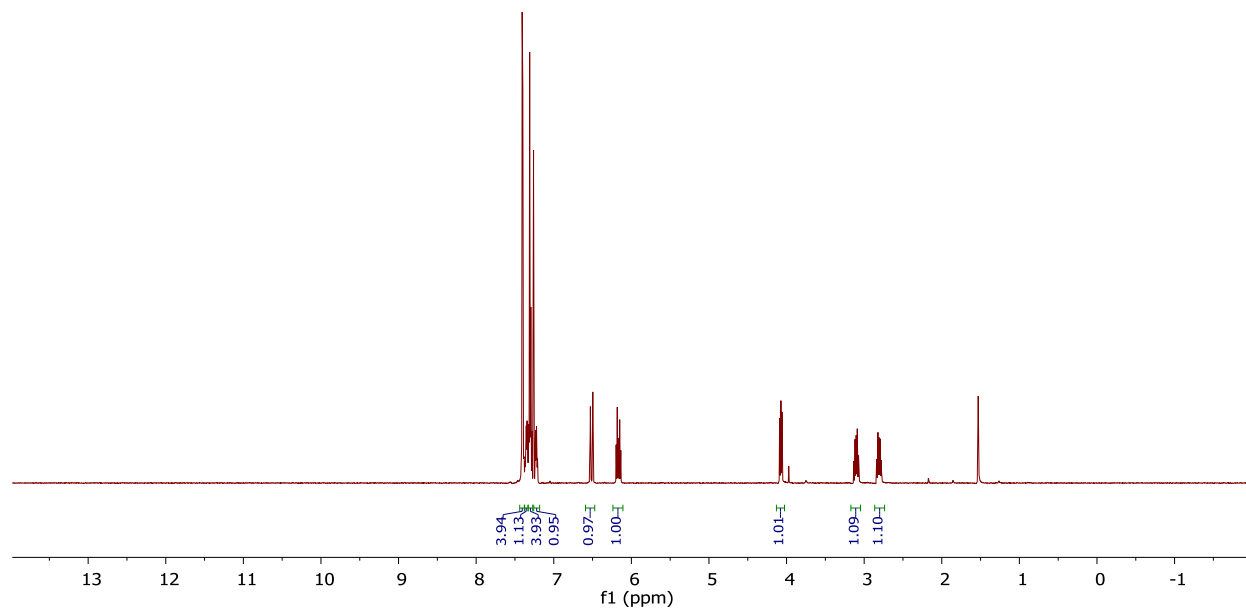


Pentafluorophenyl 2-(1-(4-chlorobenzoyl)-5-methoxy-1*H*-indol-2-yl)pent-4-enoate (17)

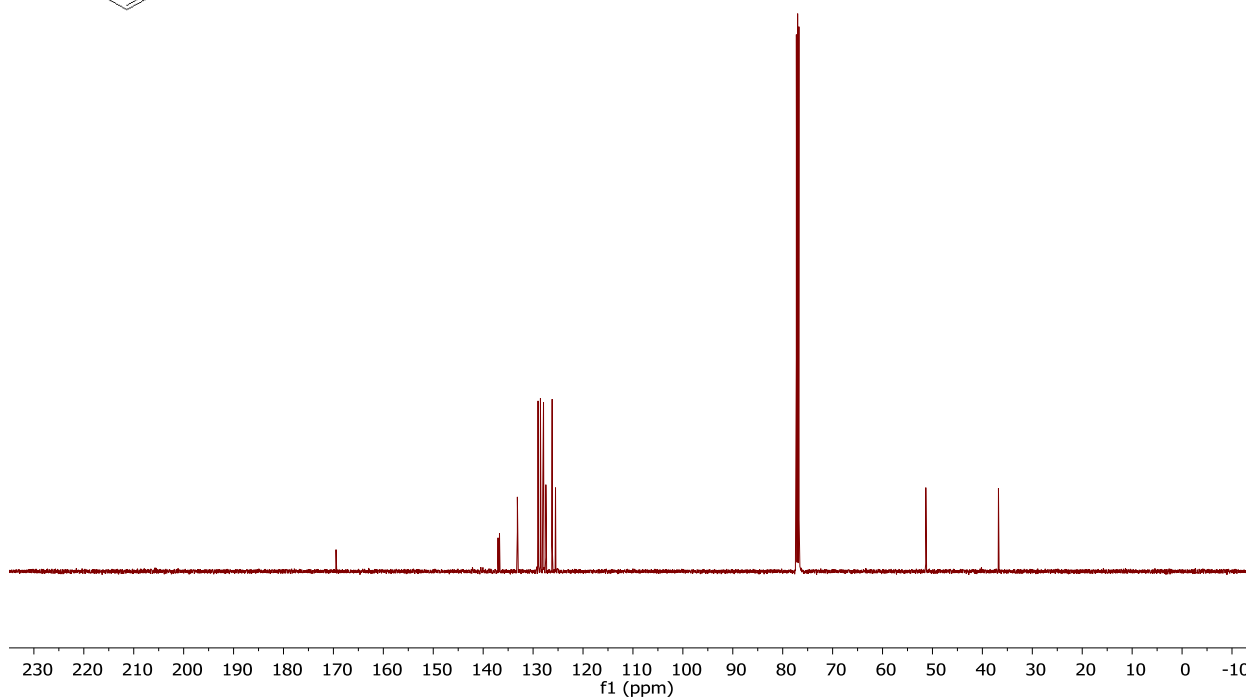


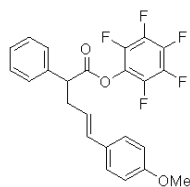


Pentafluorophenyl (E)-2,5-diphenylpent-4-enoate (18)

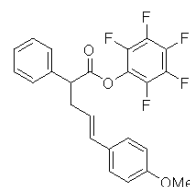
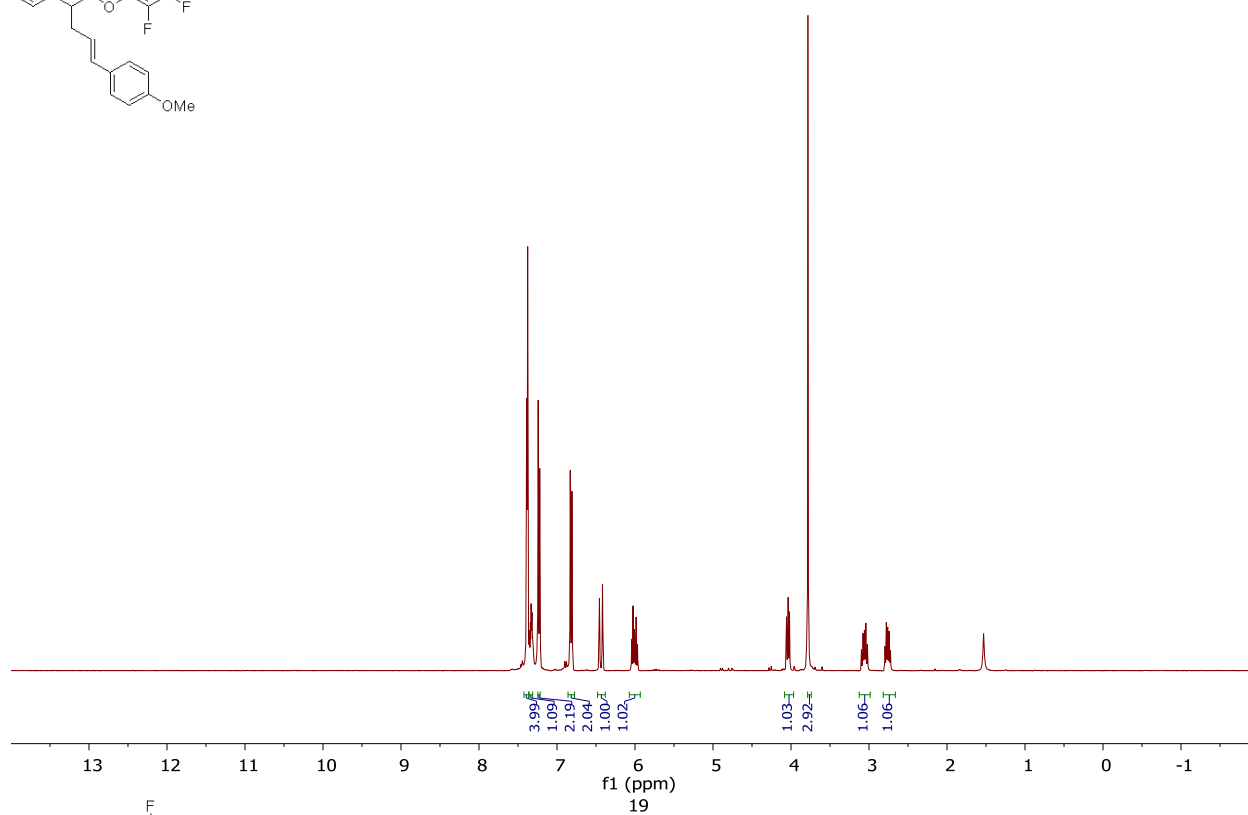


Pentafluorophenyl (E)-2,5-diphenylpent-4-enoate (18)

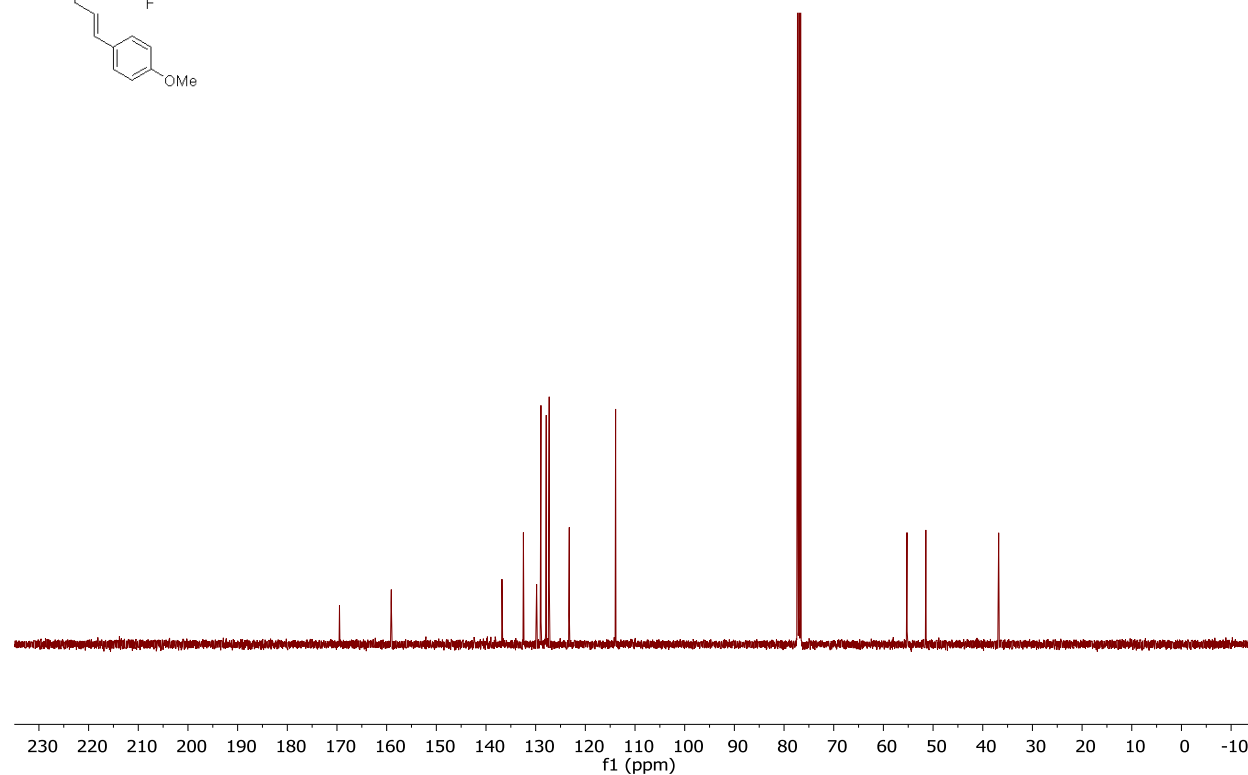


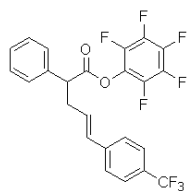


Pentafluorophenyl (E)-2-phenyl-5-(4-(methoxy)phenyl)pent-4-enoate (19)

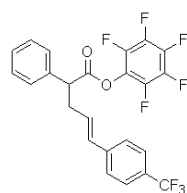
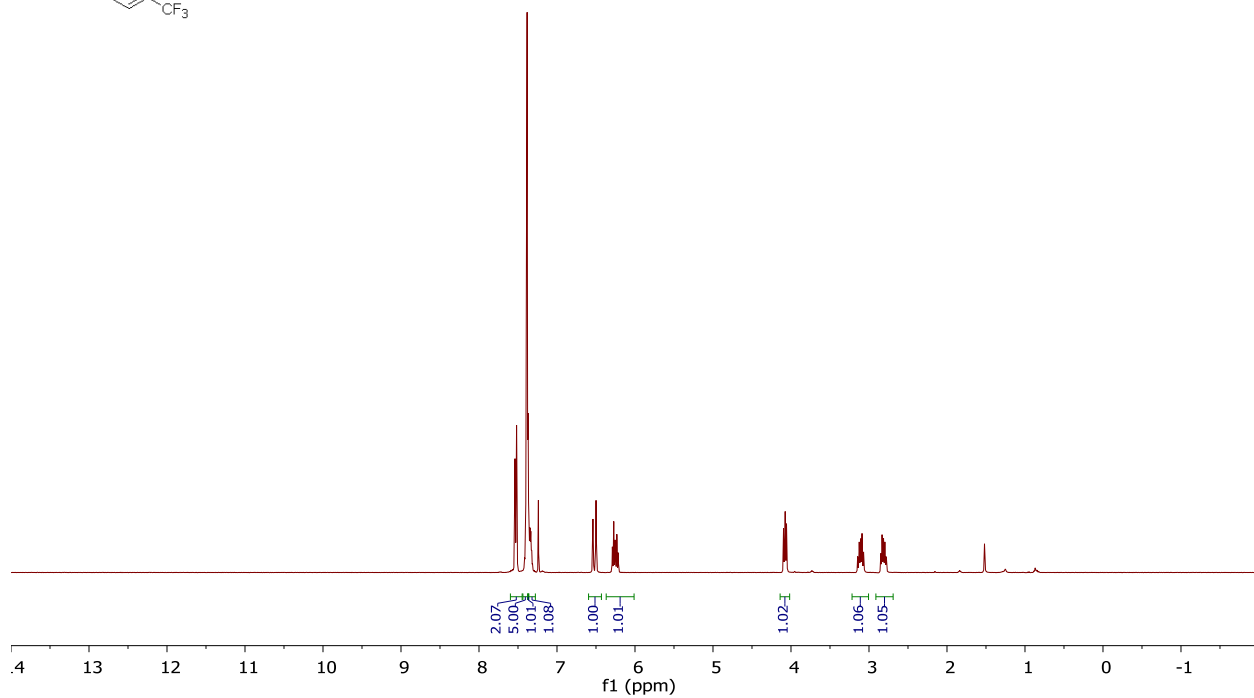


Pentafluorophenyl (E)-2-phenyl-5-(4-(methoxy)phenyl)pent-4-enoate (19)

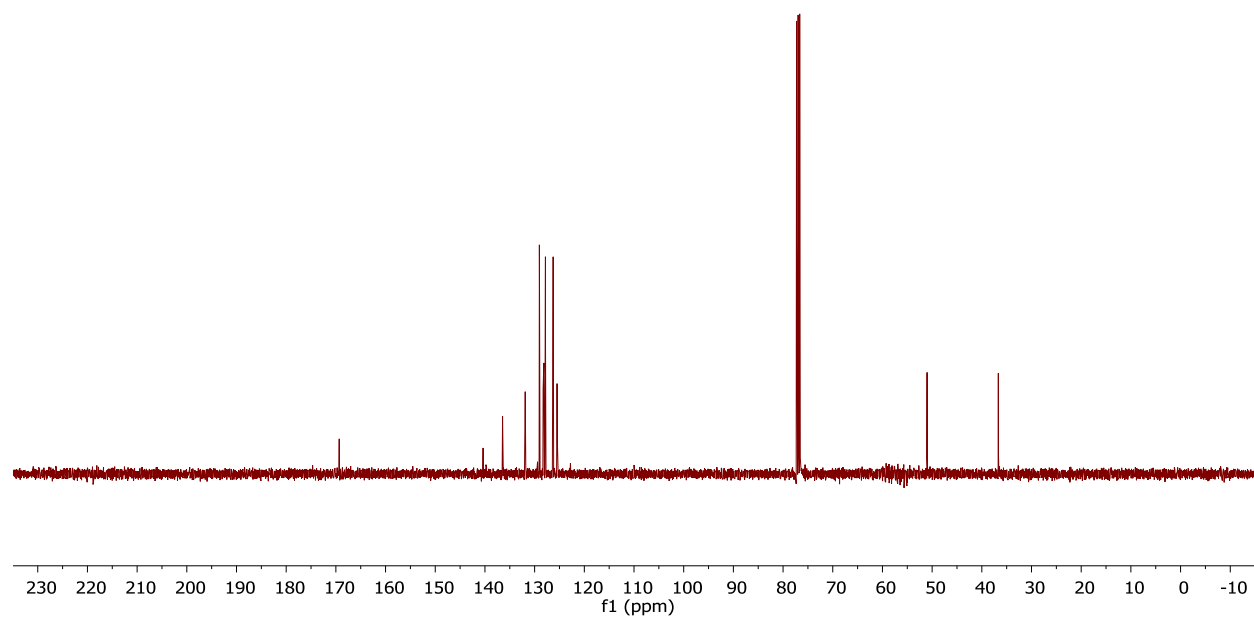


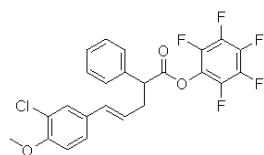


Pentafluorophenyl (E)-2-phenyl-5-(4-(trifluoromethyl)phenyl)pent-4-enoate (20)

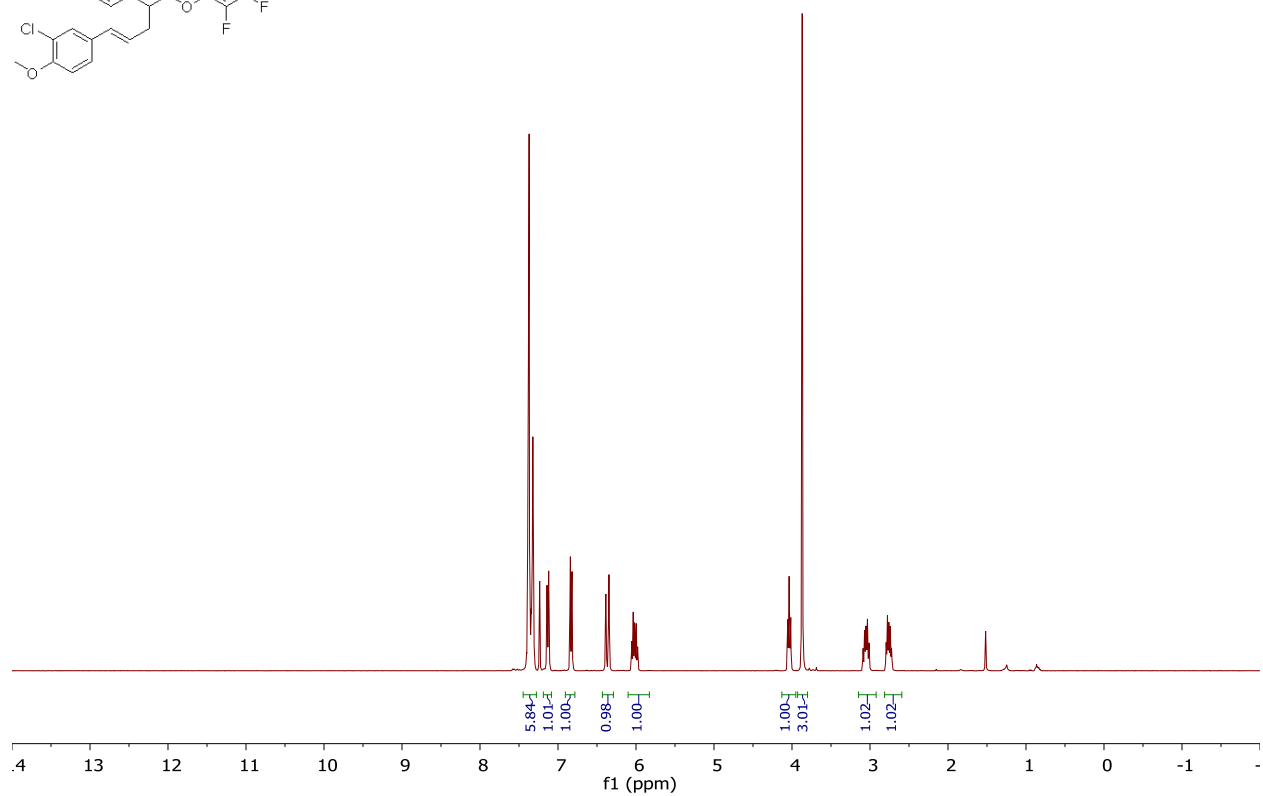


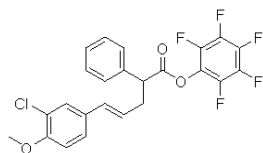
Pentafluorophenyl (E)-2-phenyl-5-(4-(trifluoromethyl)phenyl)pent-4-enoate (20)



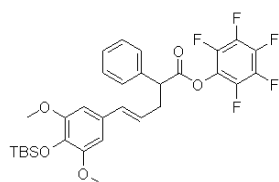
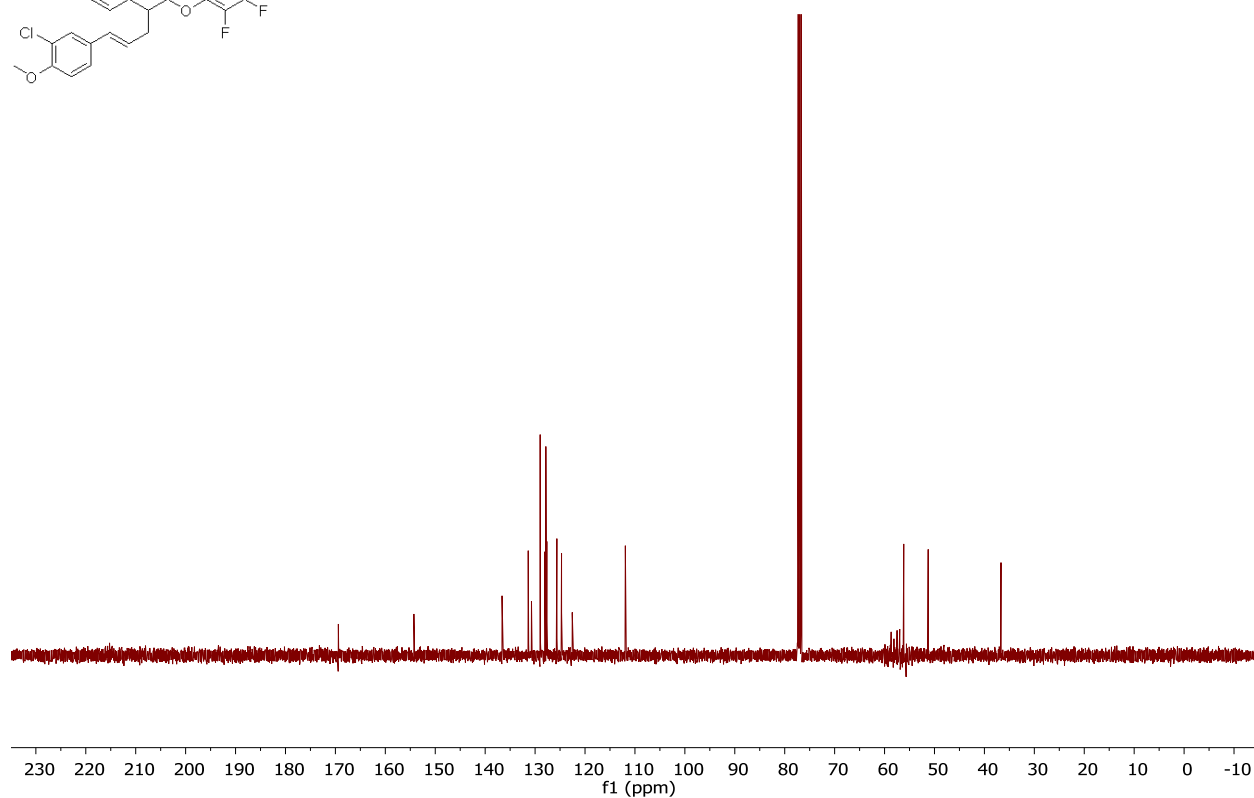


Pentafluorophenyl (E)-5-(3-chloro-4-methoxyphenyl)-2-phenylpent-4-enoate (21)

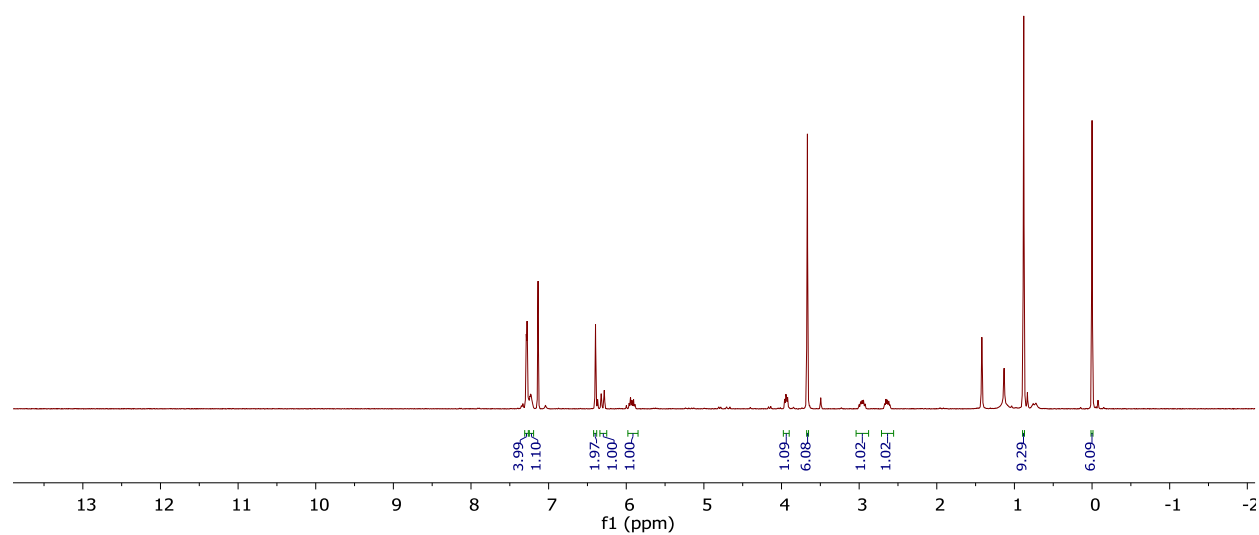


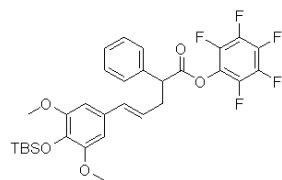


Pentafluorophenyl (E)-5-(3-chloro-4-methoxyphenyl)-2-phenylpent-4-enoate (21)

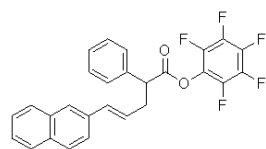
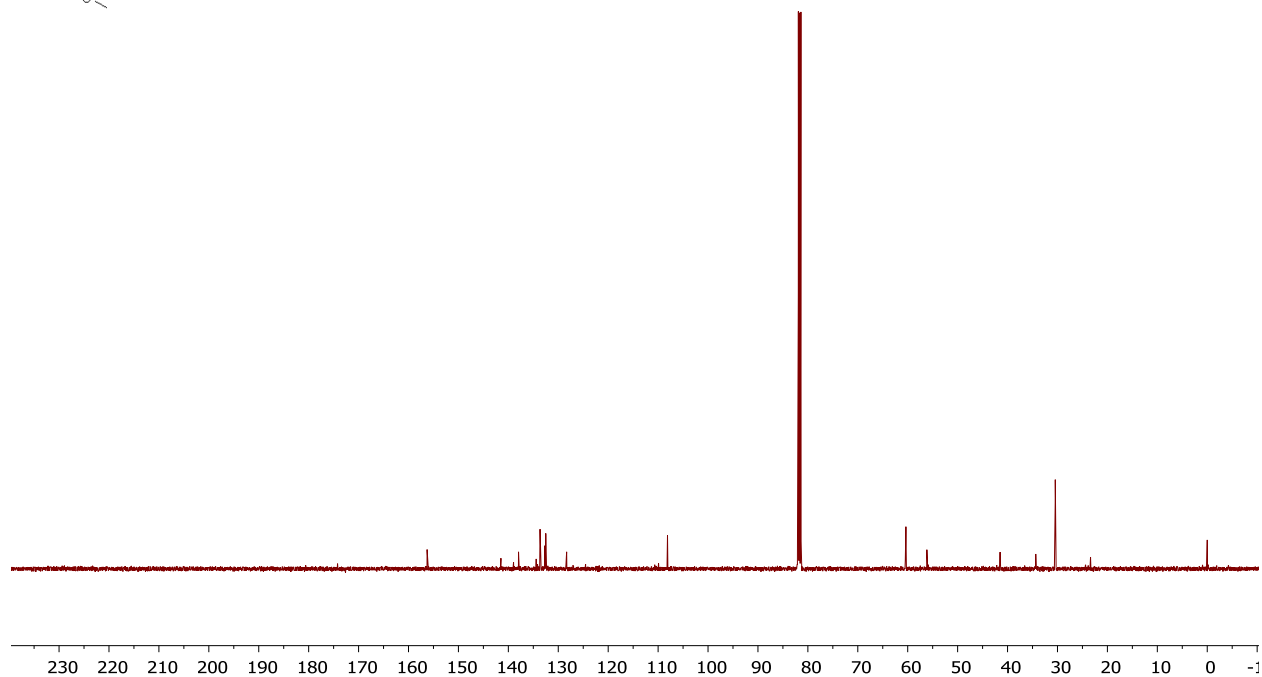


Pentafluorophenyl (E)-5-(4-((tert-butyldimethylsilyl)oxy)-3,5-dimethoxyphenyl)-2-phenylpent-4-enoate (22)

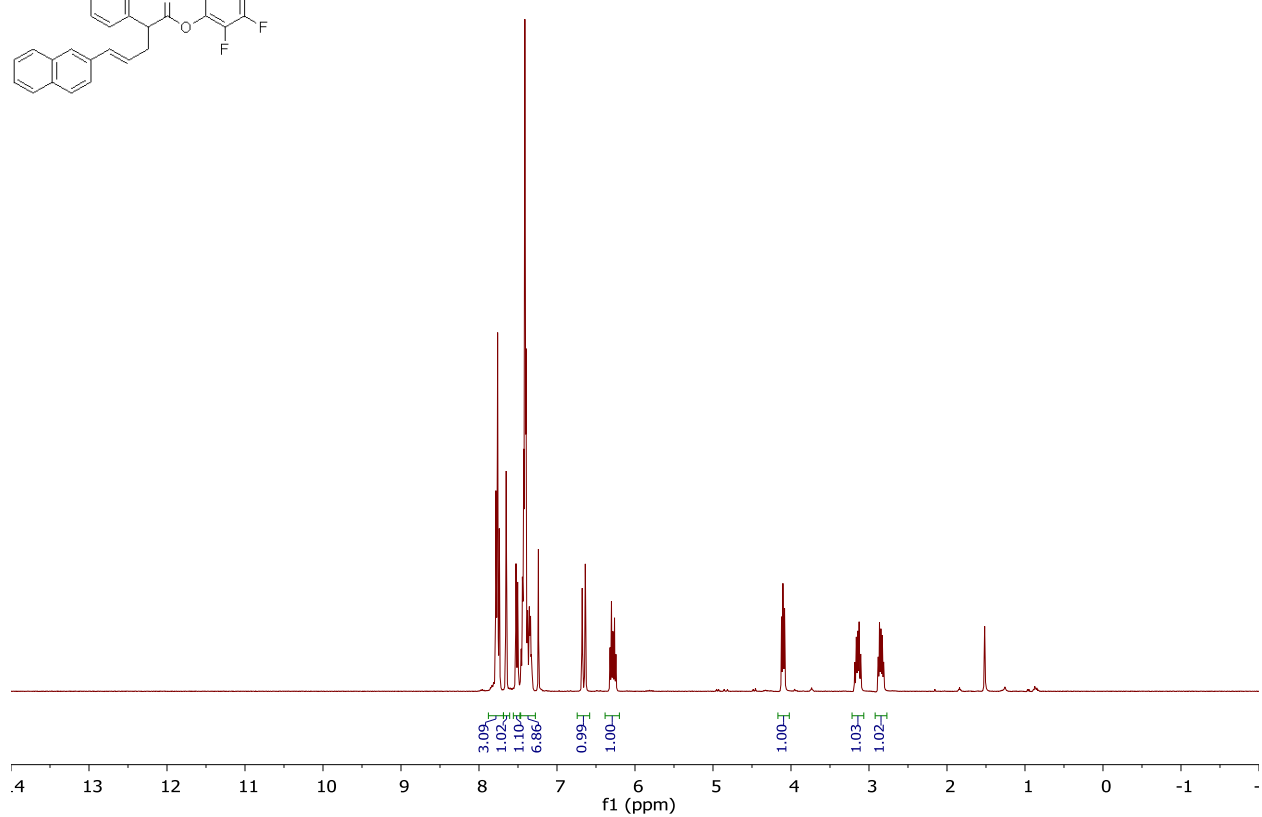


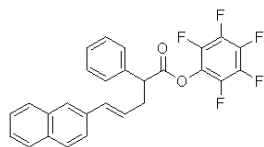


Pentafluorophenyl (E)-5-(4-((tert-butyldimethylsilyl)oxy)-3,5-dimethoxyphenyl)-2-phenylpent-4-enoate (22)

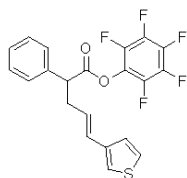
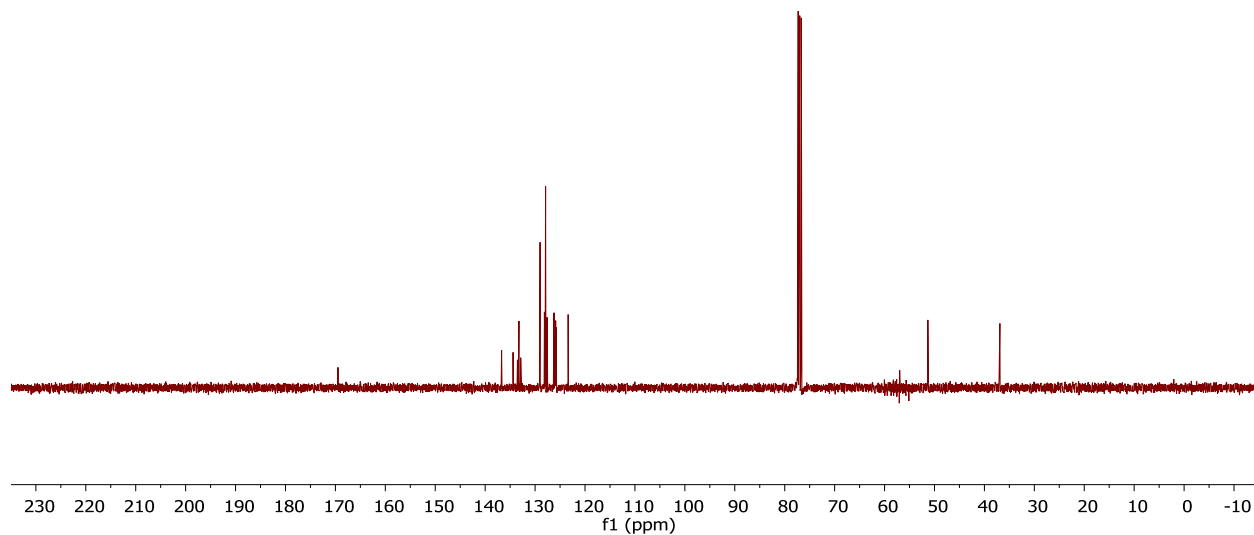


Pentafluorophenyl (E)-5-(naphthalen-2-yl)-2-phenylpent-4-enoate (23)

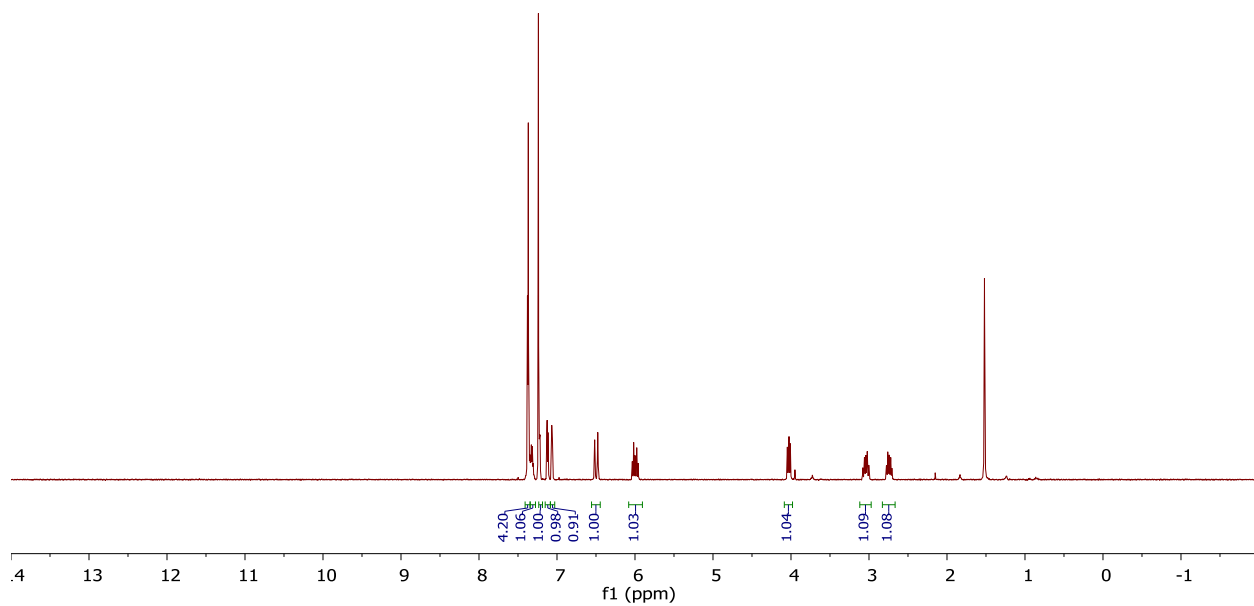


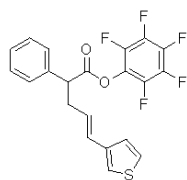


Pentafluorophenyl (E)-5-(naphthalen-2-yl)-2-phenylpent-4-enoate (23)



Pentafluorophenyl (E)-2-phenyl-5-(thiophen-3-yl)pent-4-enoate (24)





Pentafluorophenyl (E)-2-phenyl-5-(thiophen-3-yl)pent-4-enoate (24)

