

Supporting Information
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Supporting Information

One-pot synthesis of functionalized β -fluoroalkylated Mannich-type products from *N*-aryl *N,O*-acetals

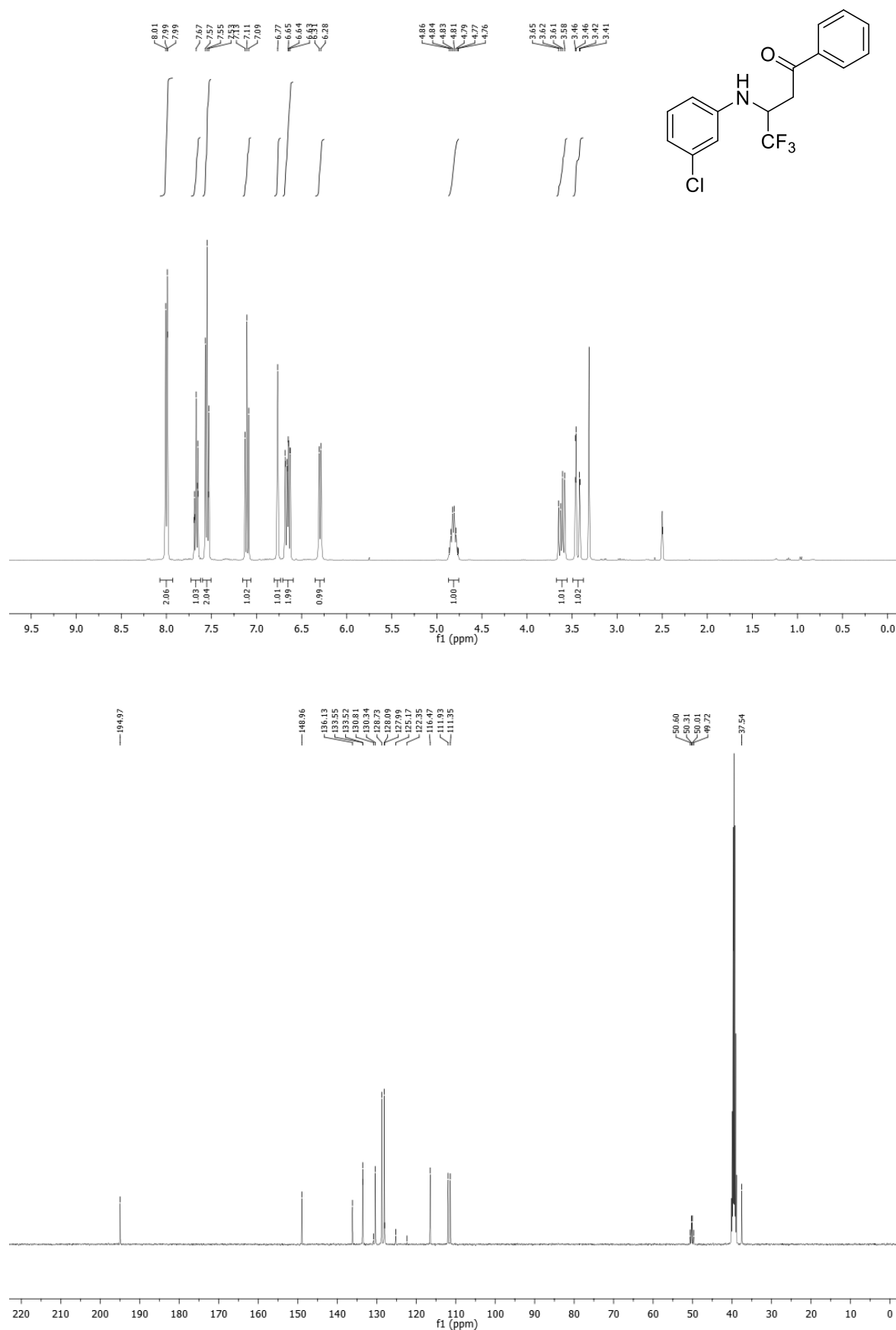
Swetlana Wunder,^a Amrei Deutsch,^a Carl Deutsch*^b, Anja Hoffmann-Röder*^a

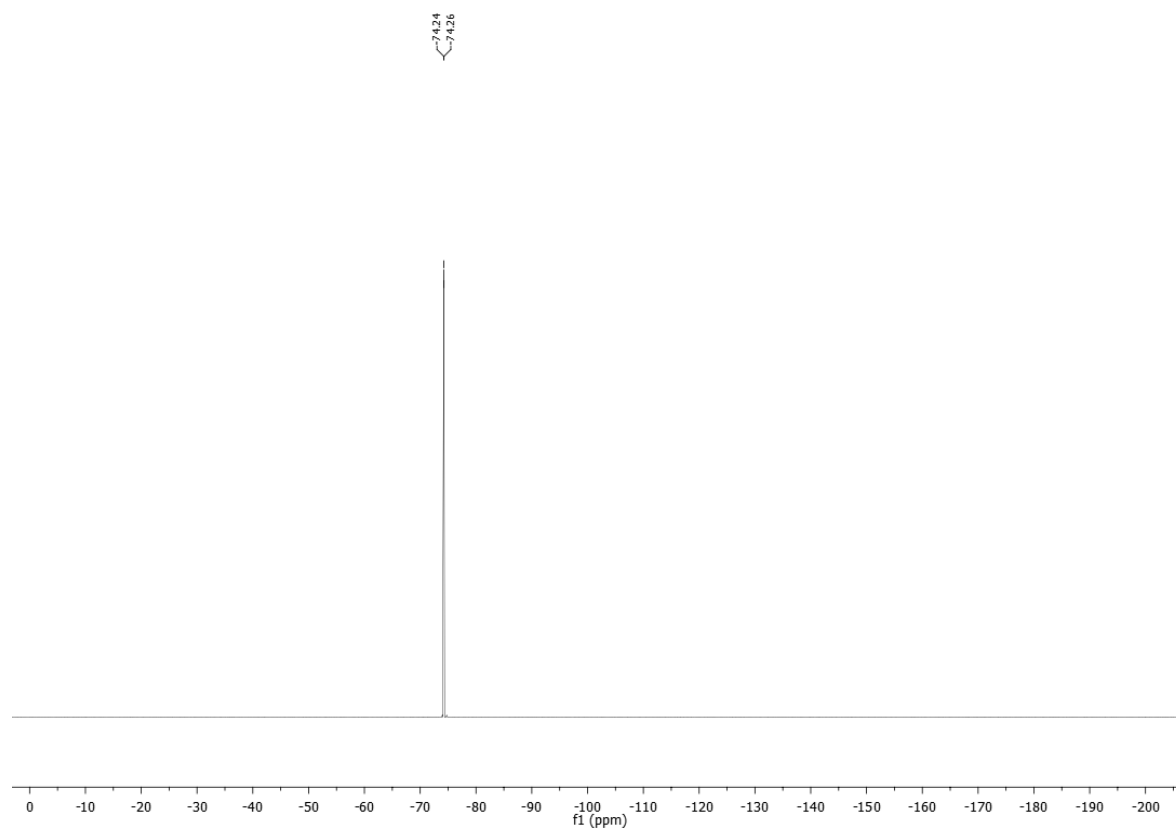
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^b Medicinal Chemistry, Merck, Frankfurter Str. 250, 64293 Darmstadt, Germany

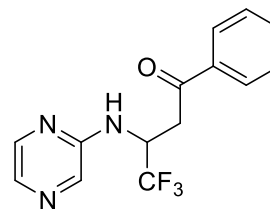
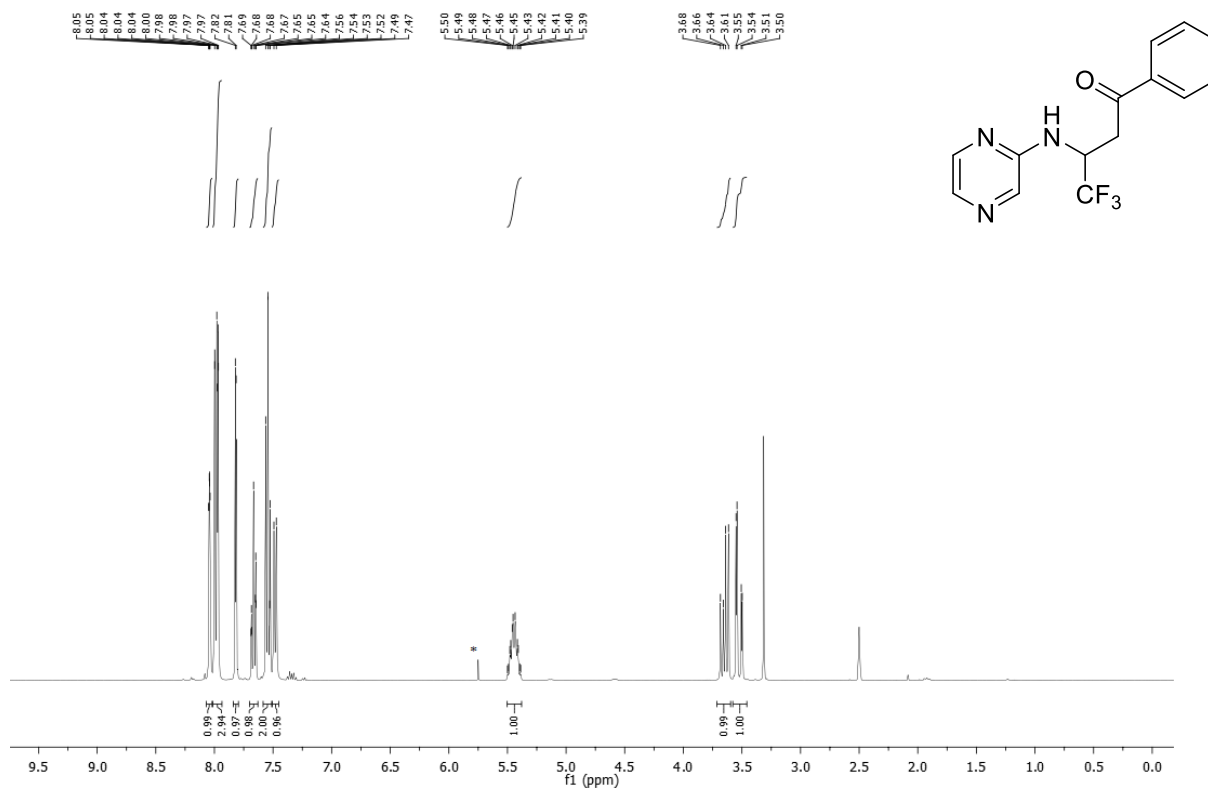
1. ^1H -NMR ^{13}C -NMR and ^{19}F -NMR spectra

3-((3-Chlorophenyl)amino)-4,4,4-trifluoro-1-phenylbutan-1-one (2a)

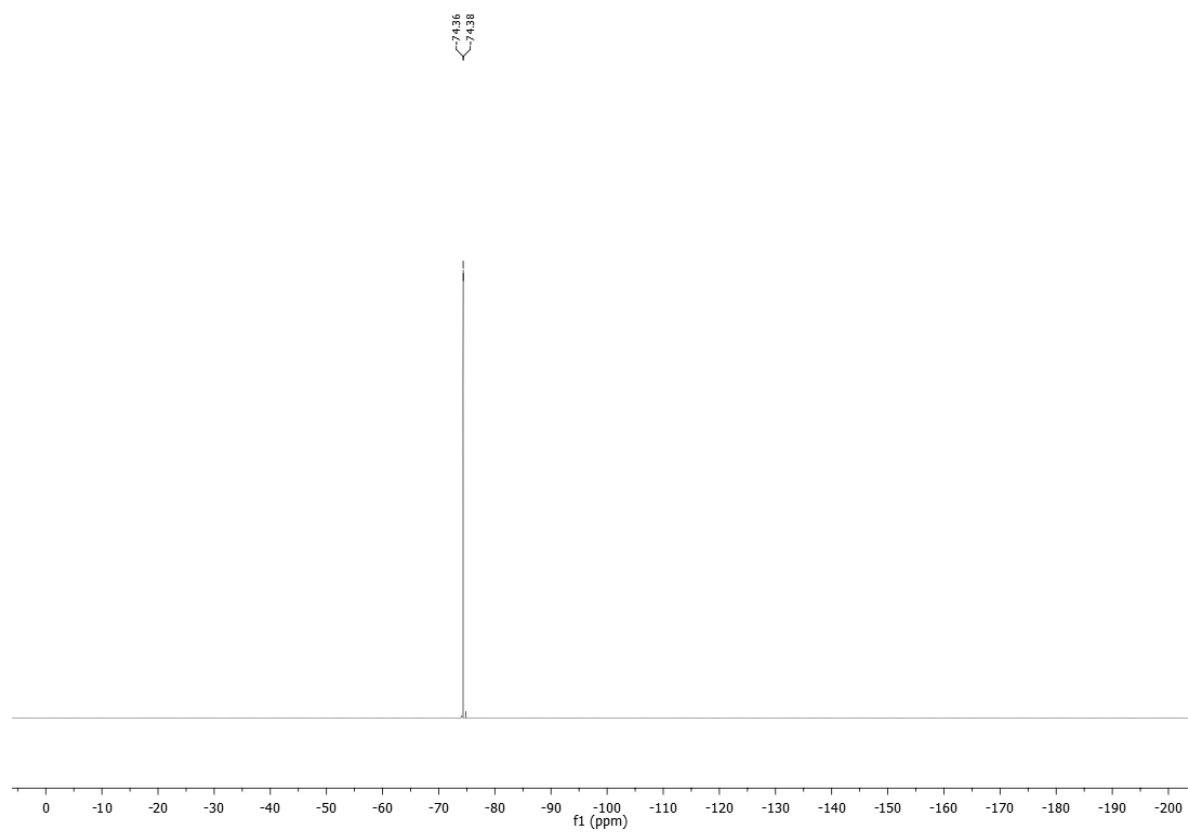
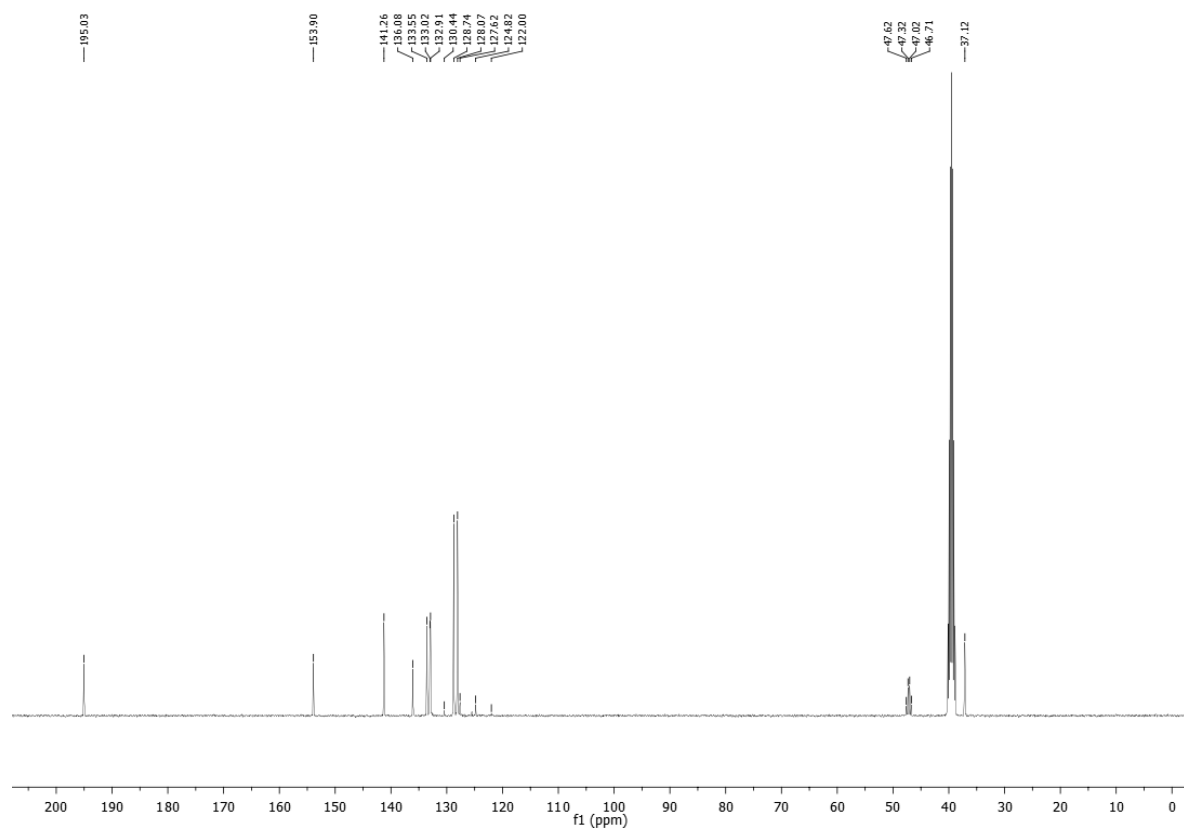




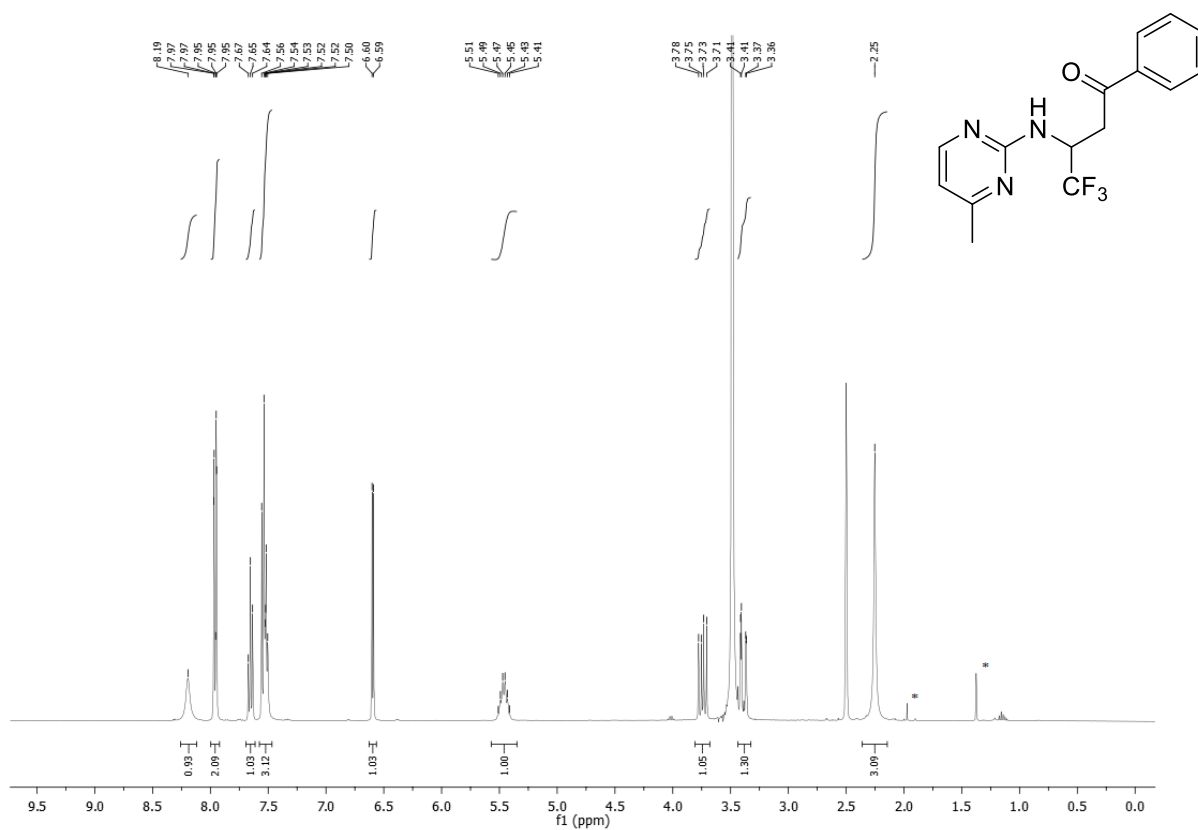
4,4,4-Trifluoro-1-phenyl-3-(pyrazin-2-ylamino)butan-1-one (2b)



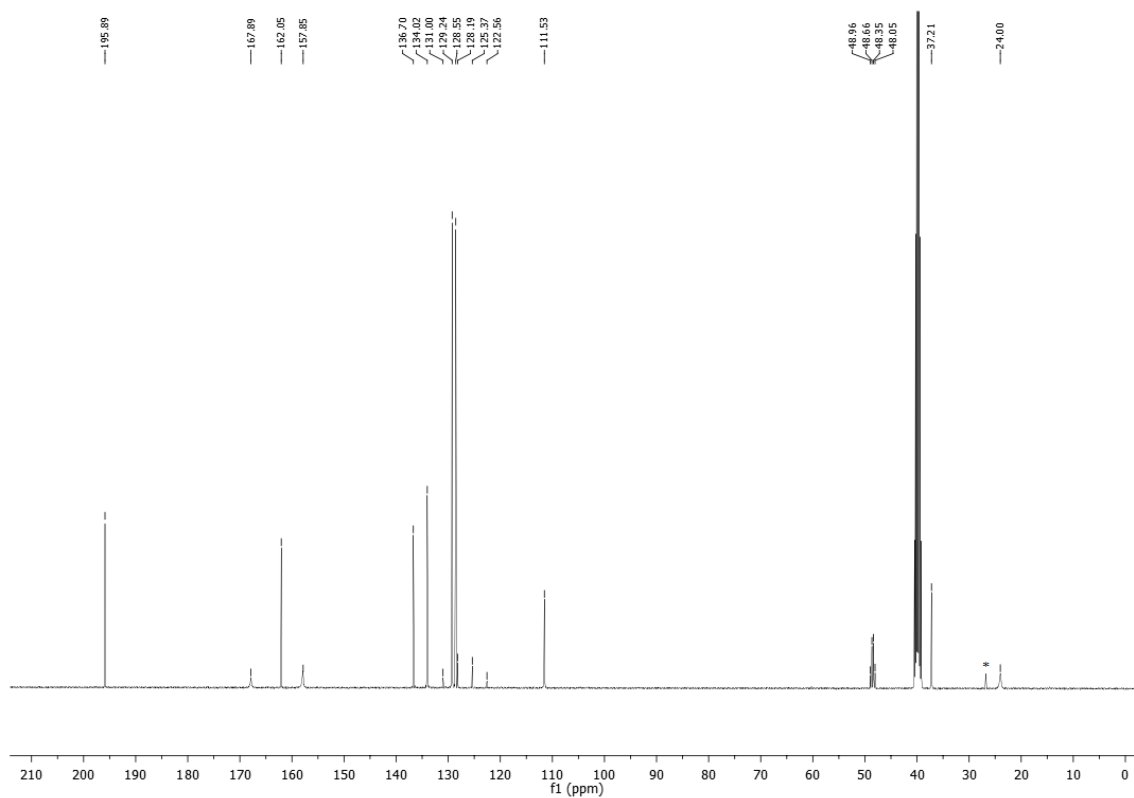
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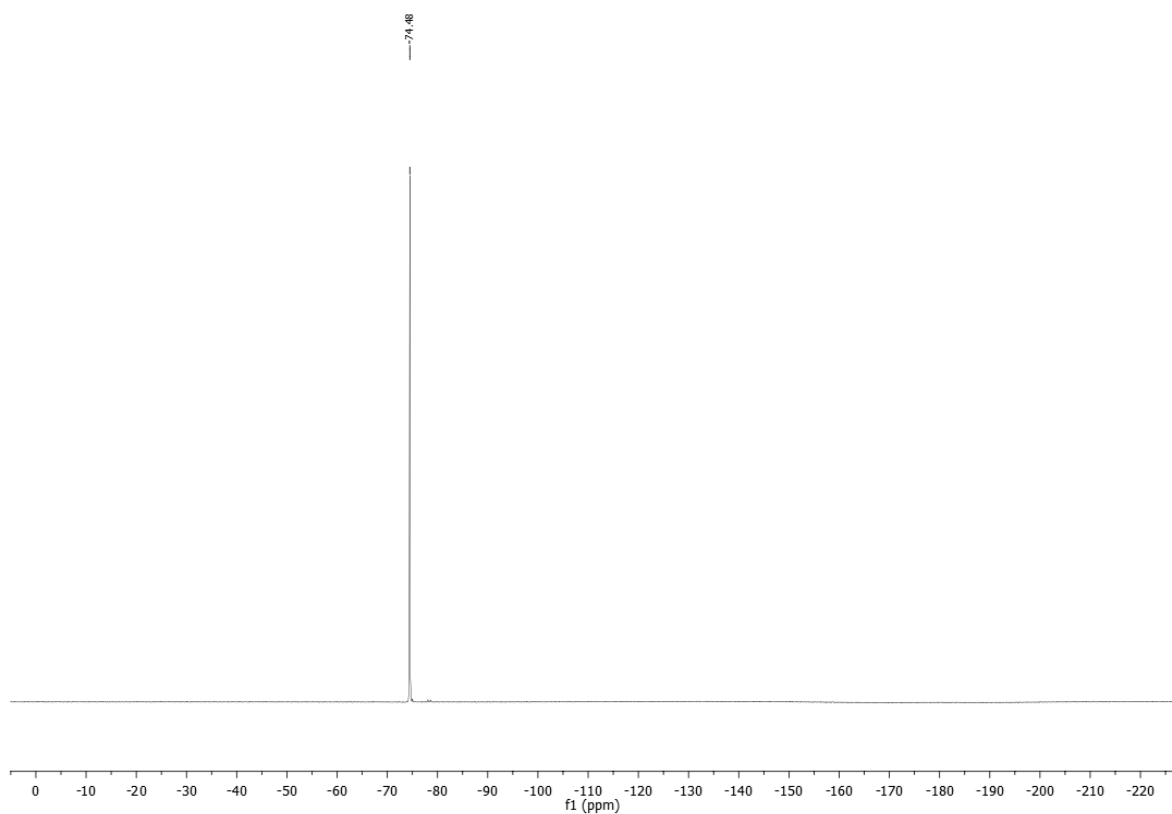
4,4,4-Trifluoro-3-(4-methylpyrimidin-2-ylamino)-1-phenylbutan-1-one (2c)



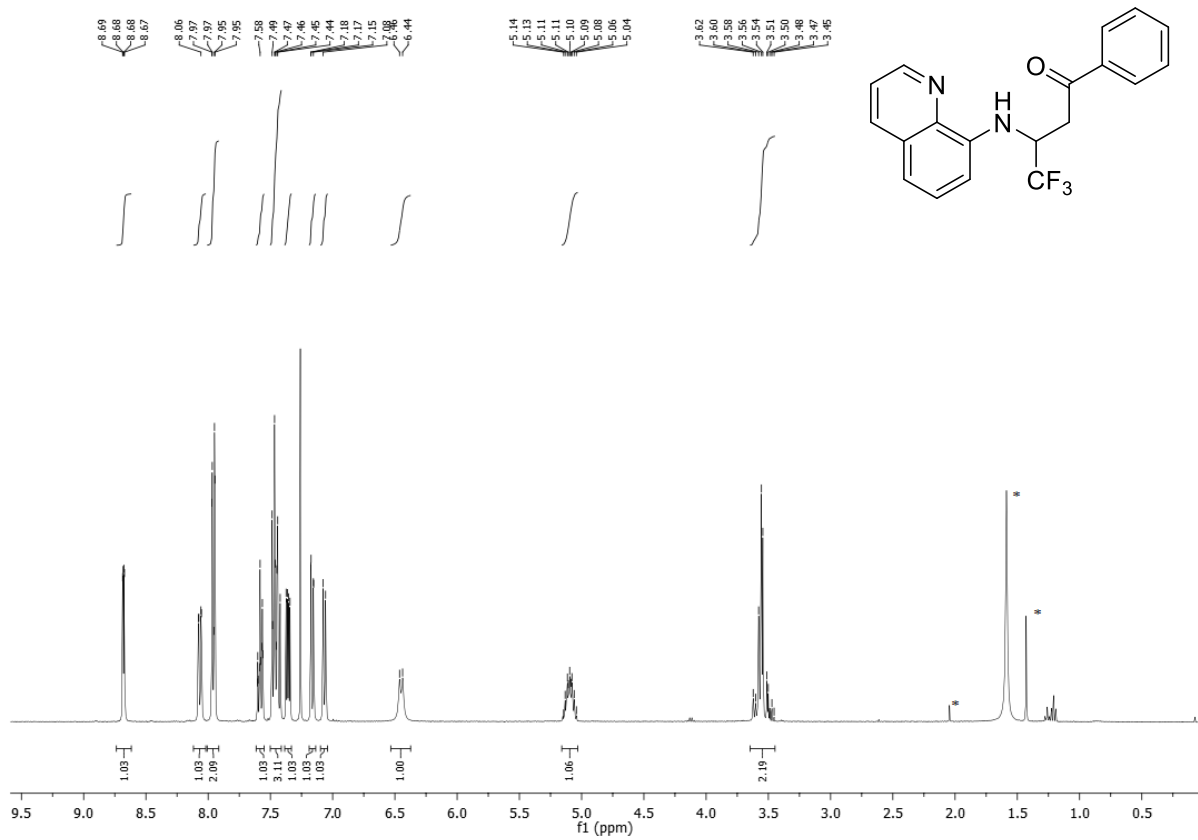
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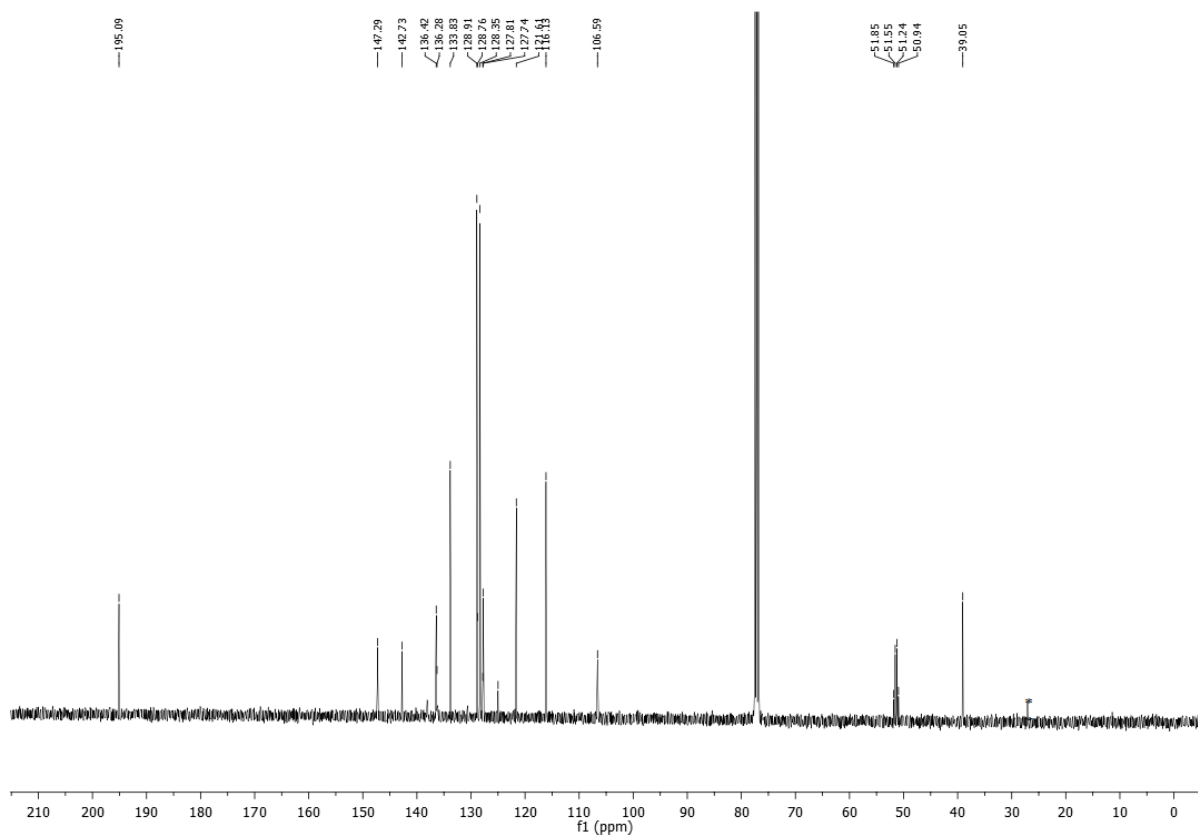
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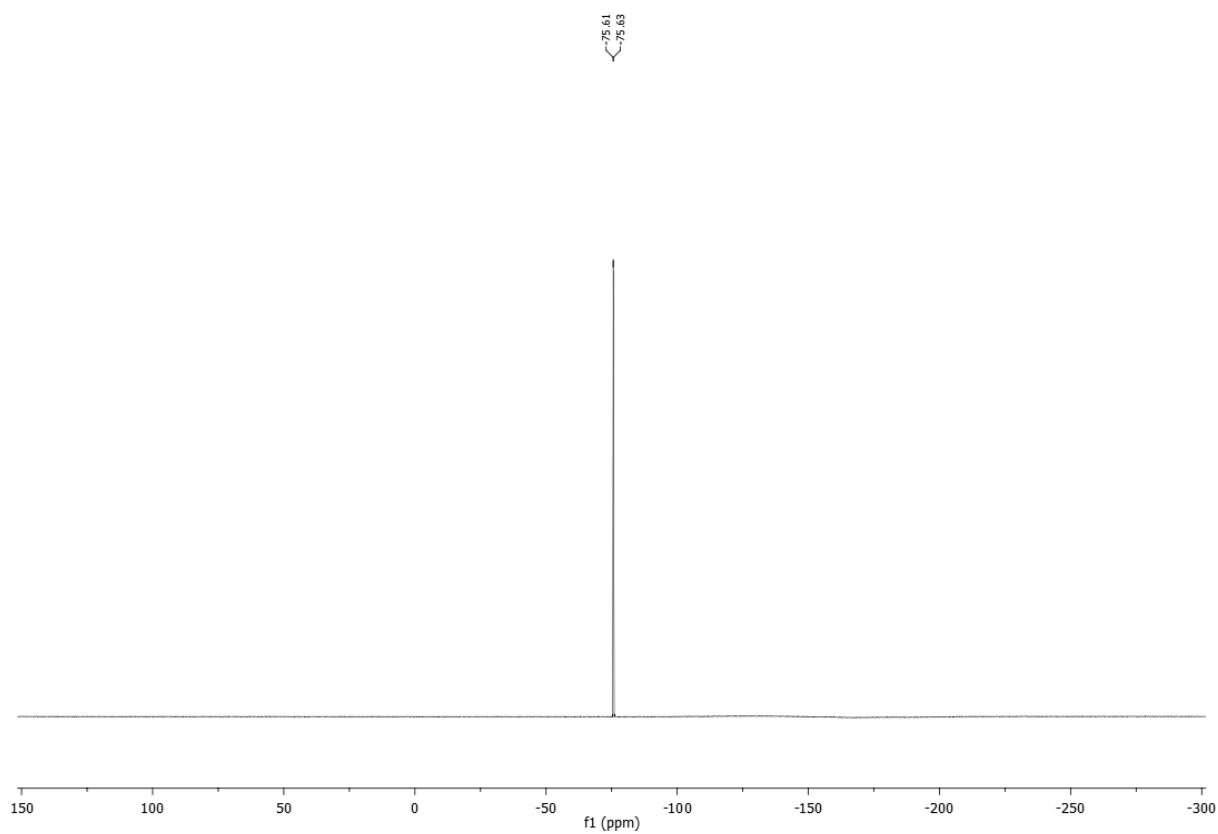
4,4,4-Trifluoro-1-phenyl-3-(quinolin-8-ylamino)butan-1-one (2d)



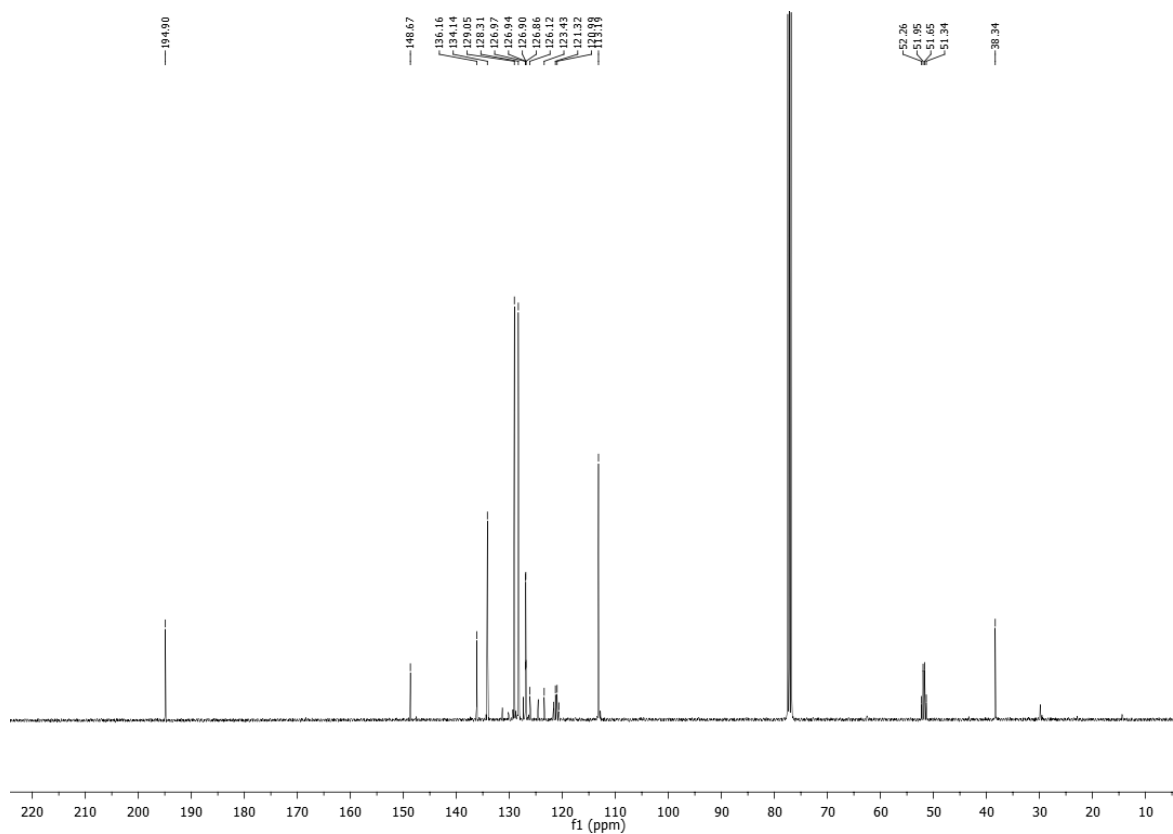
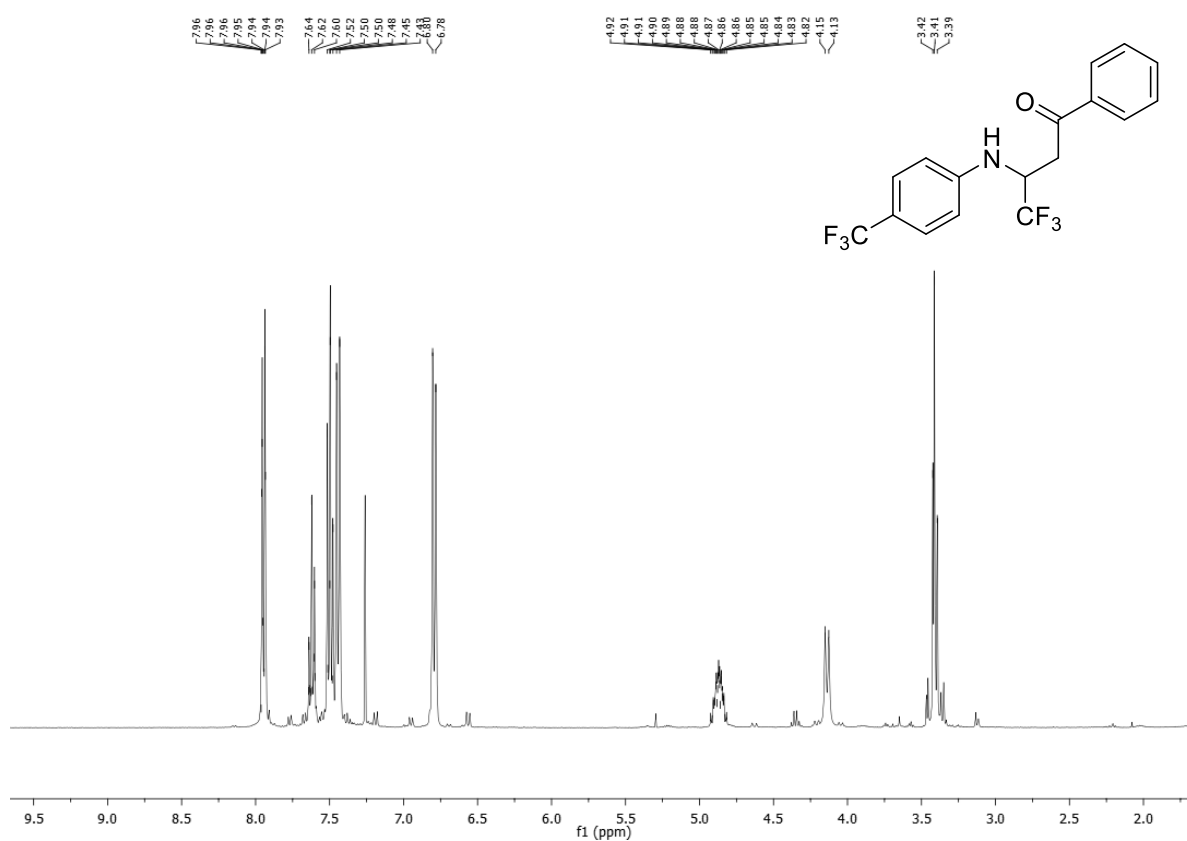
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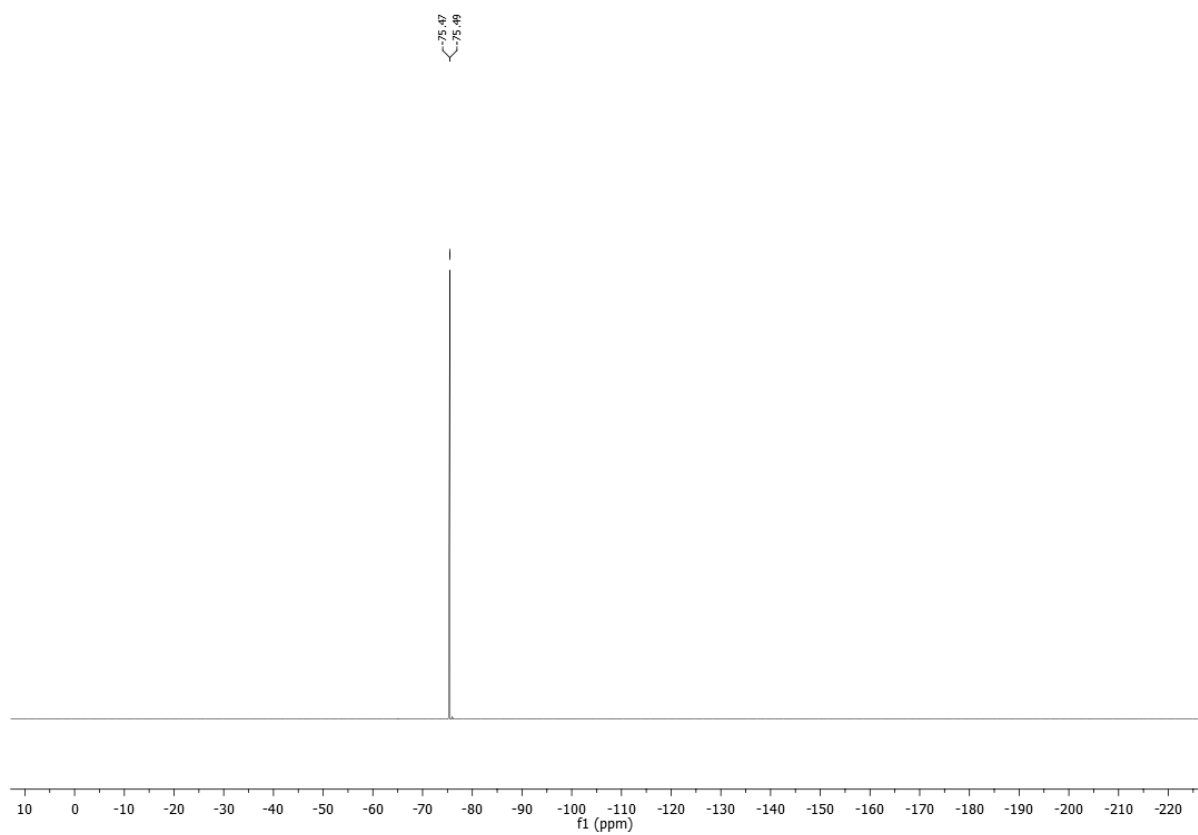
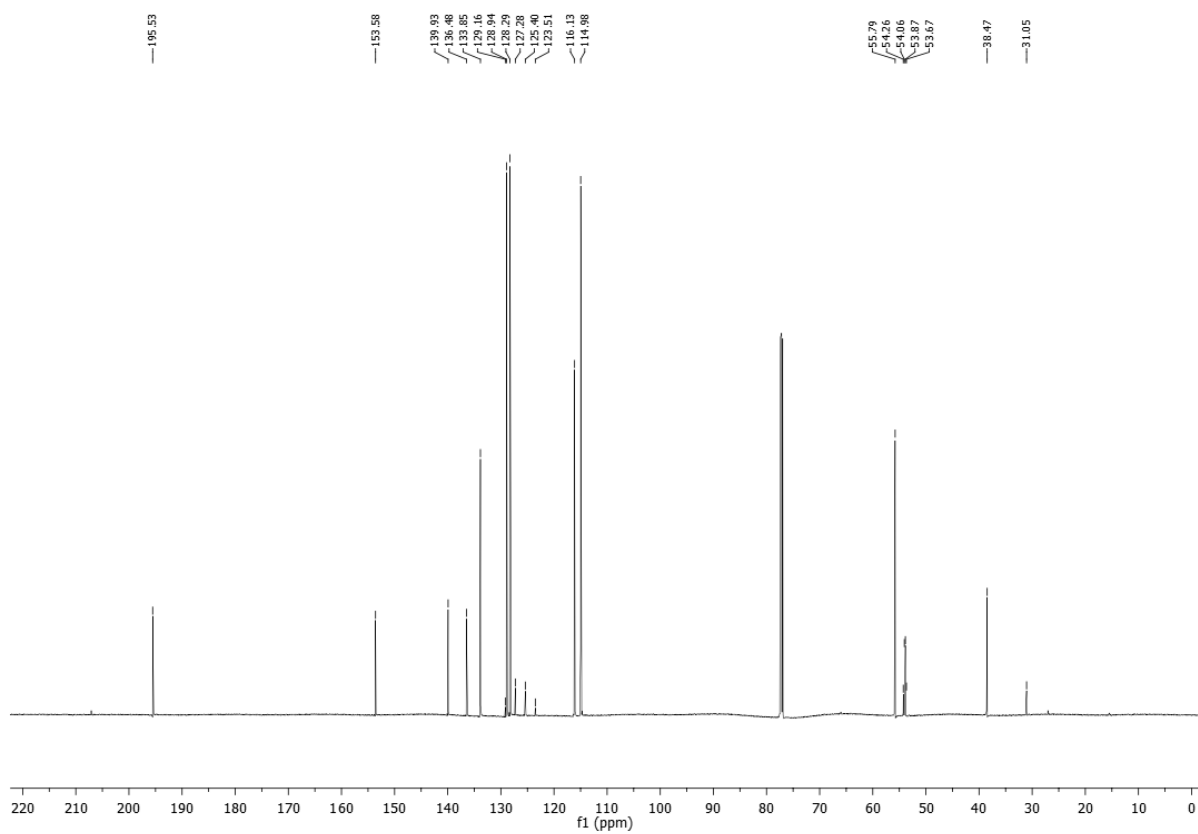
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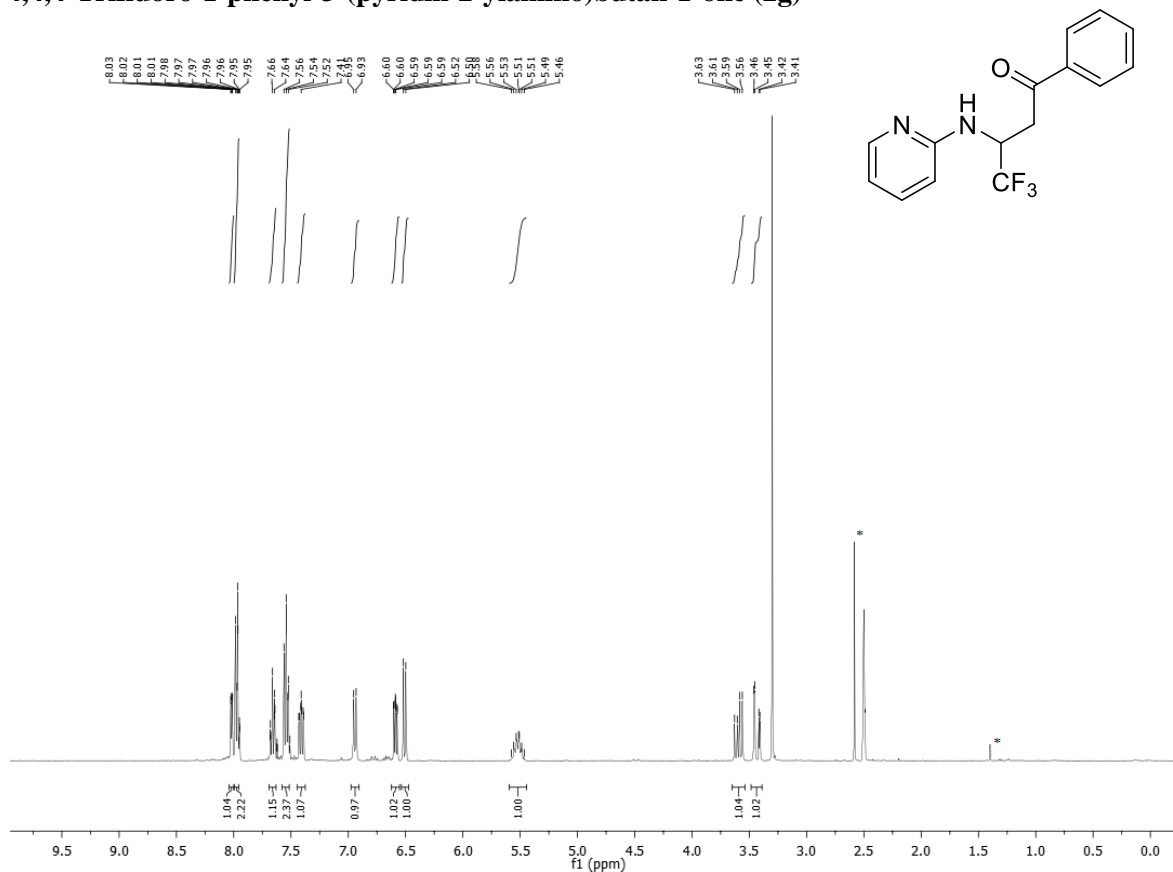
4,4,4-Trifluoro-1-phenyl-3-((4-(trifluoromethyl)phenyl)amino)butan-1-one (2e)



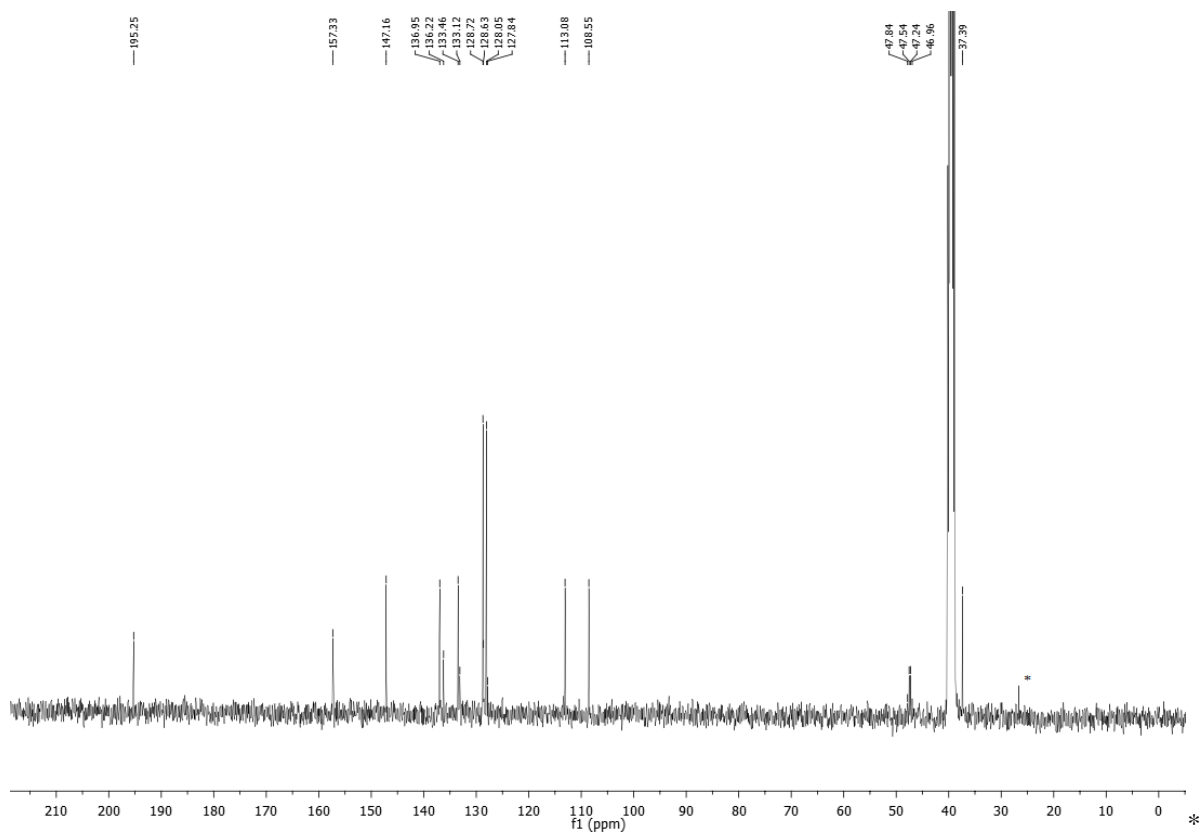




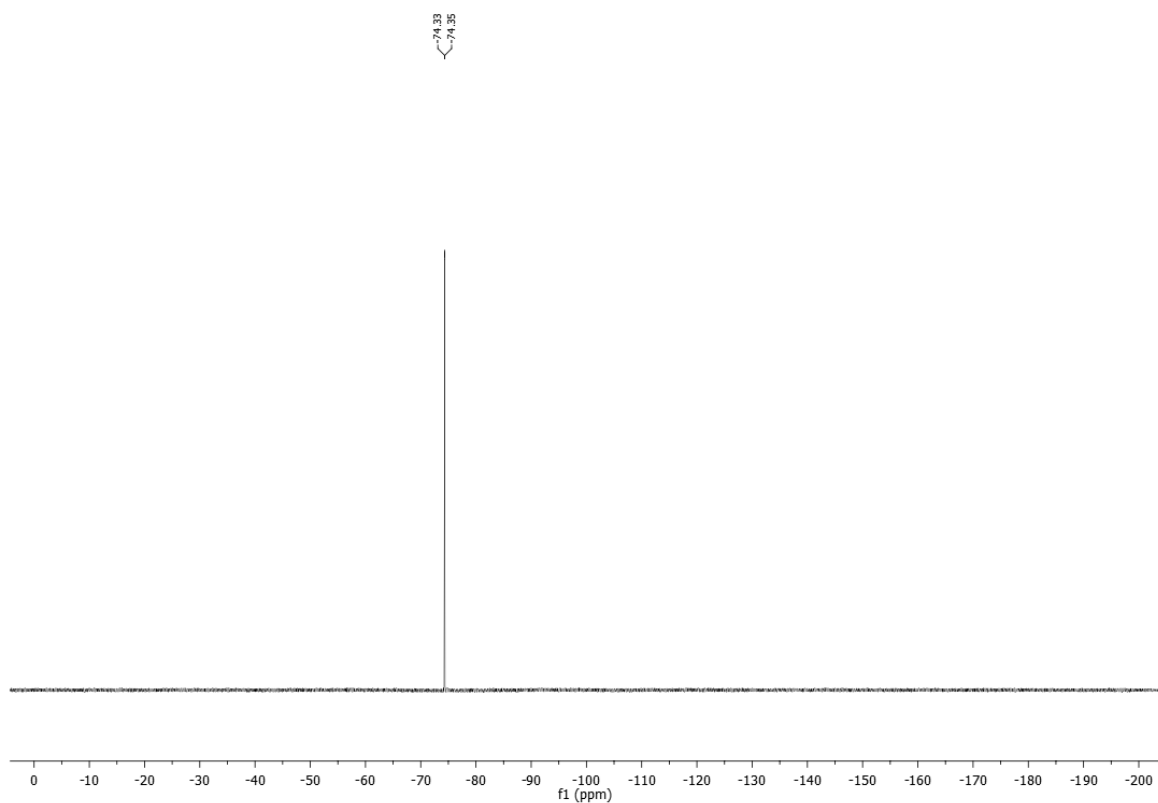
4,4,4-Trifluoro-1-phenyl-3-(pyridin-2-ylamino)butan-1-one (2g)



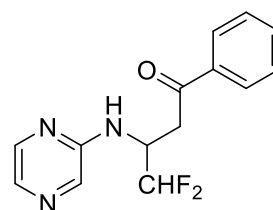
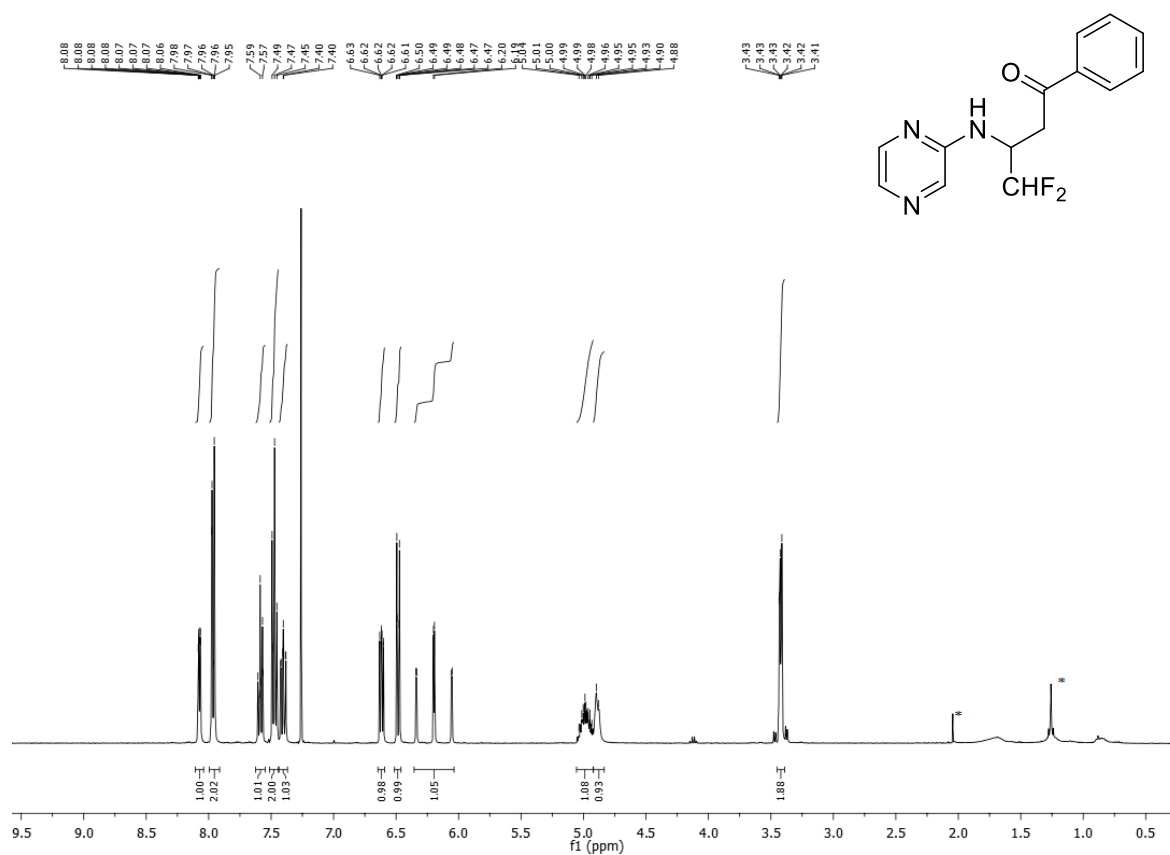
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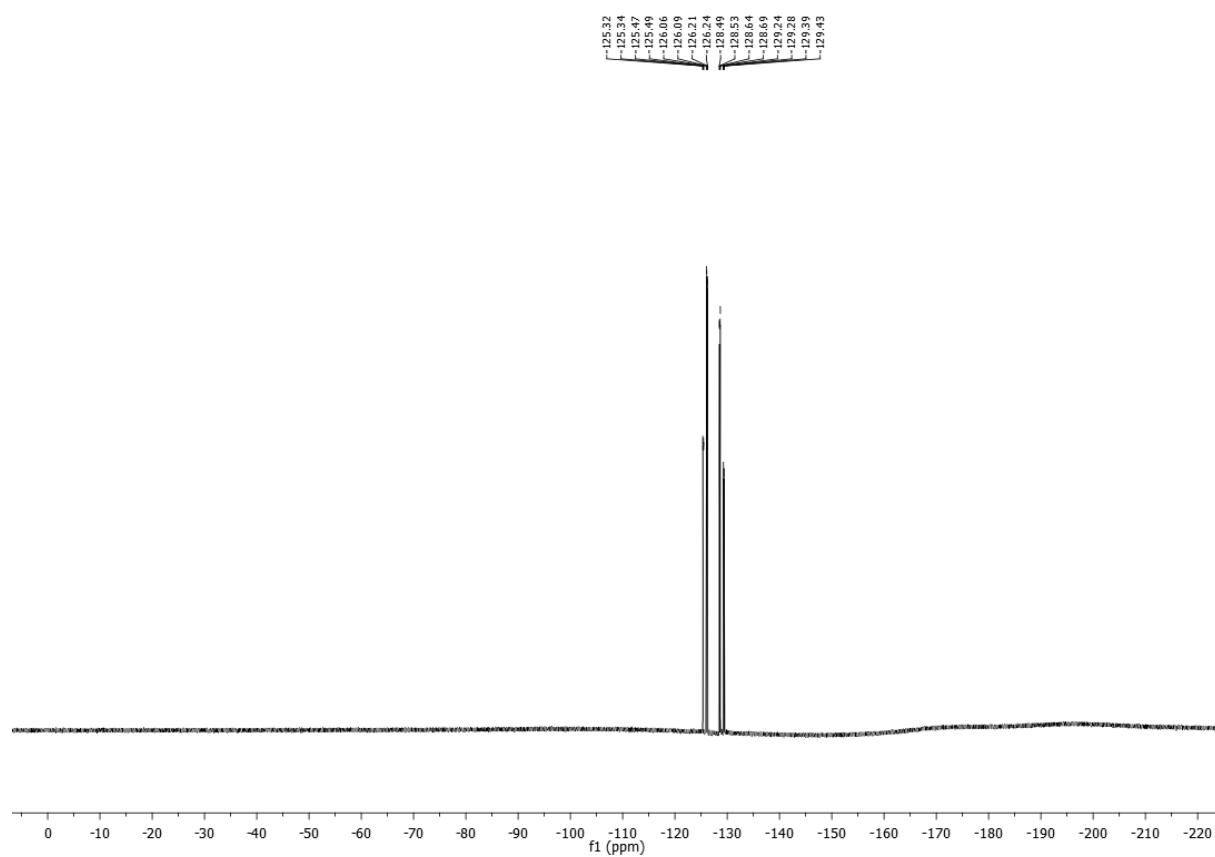
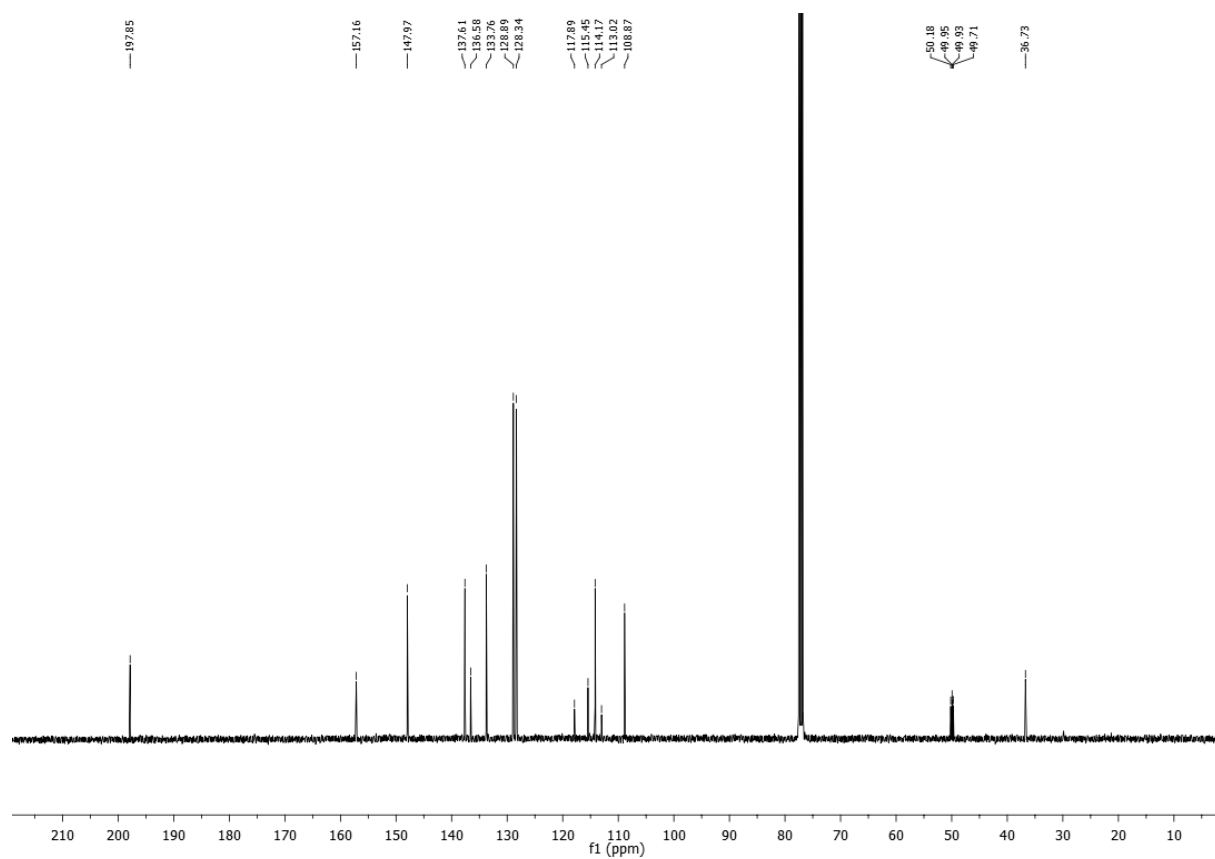
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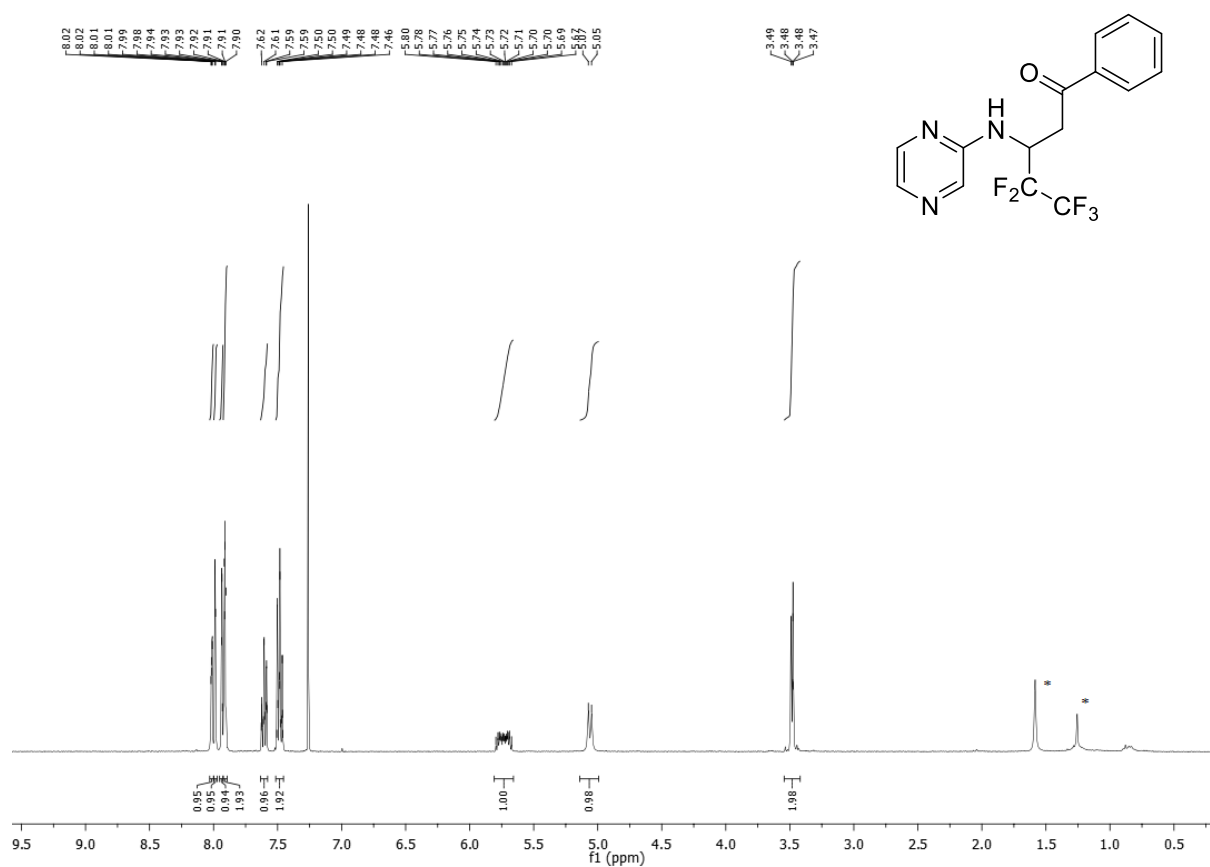
4,4-Difluoro-1-phenyl-3-(pyridin-2-ylamino)butan-1-one (2h)



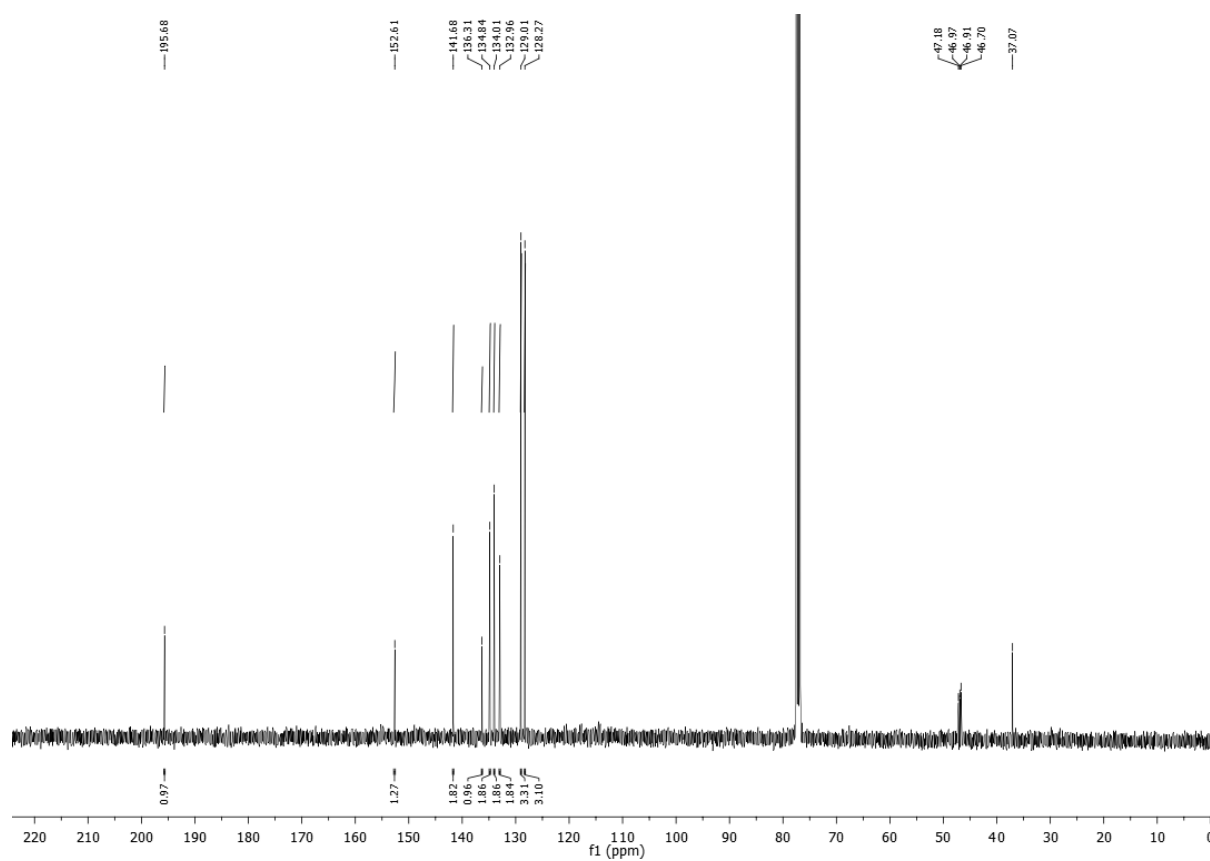
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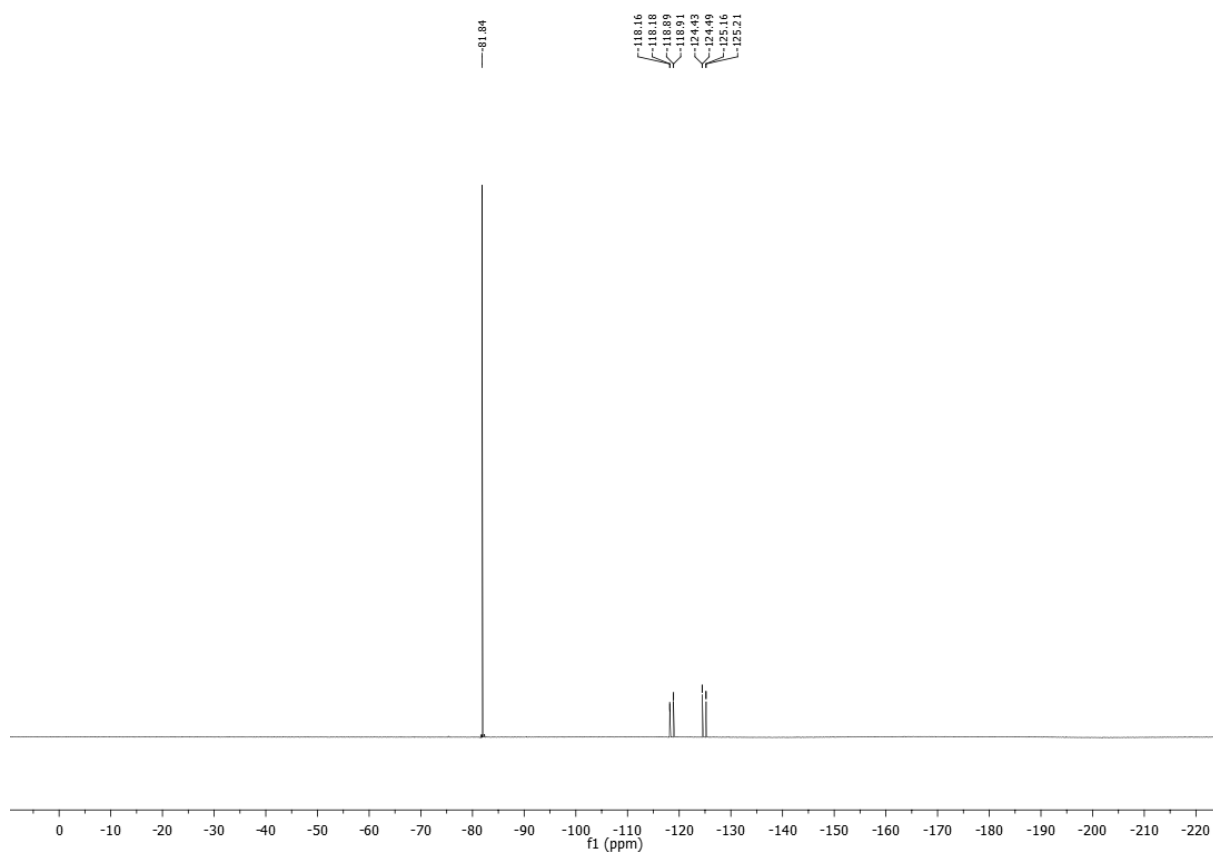


4,4,5,5,5-Pentafluoro-1-phenyl-3-(pyrazin-2-ylamino)pentan-1-one (2i)

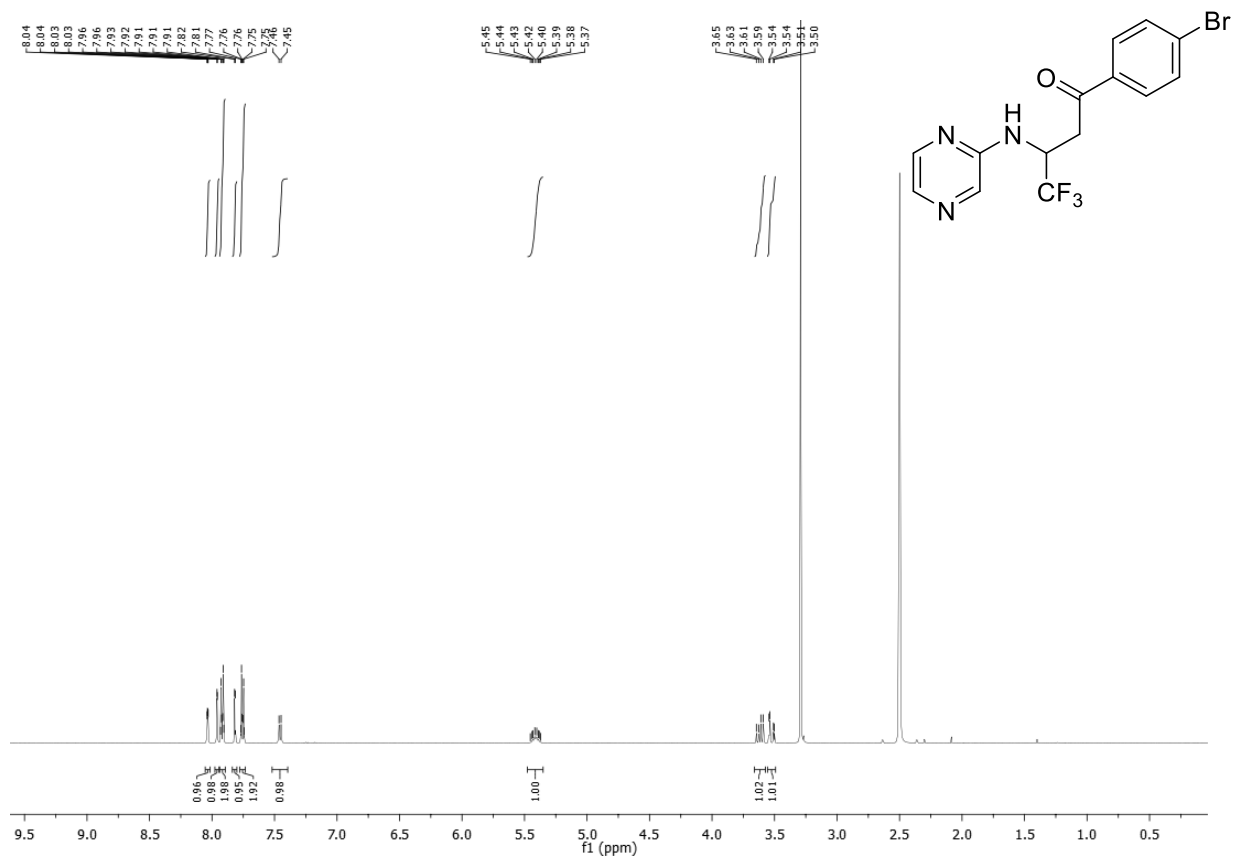


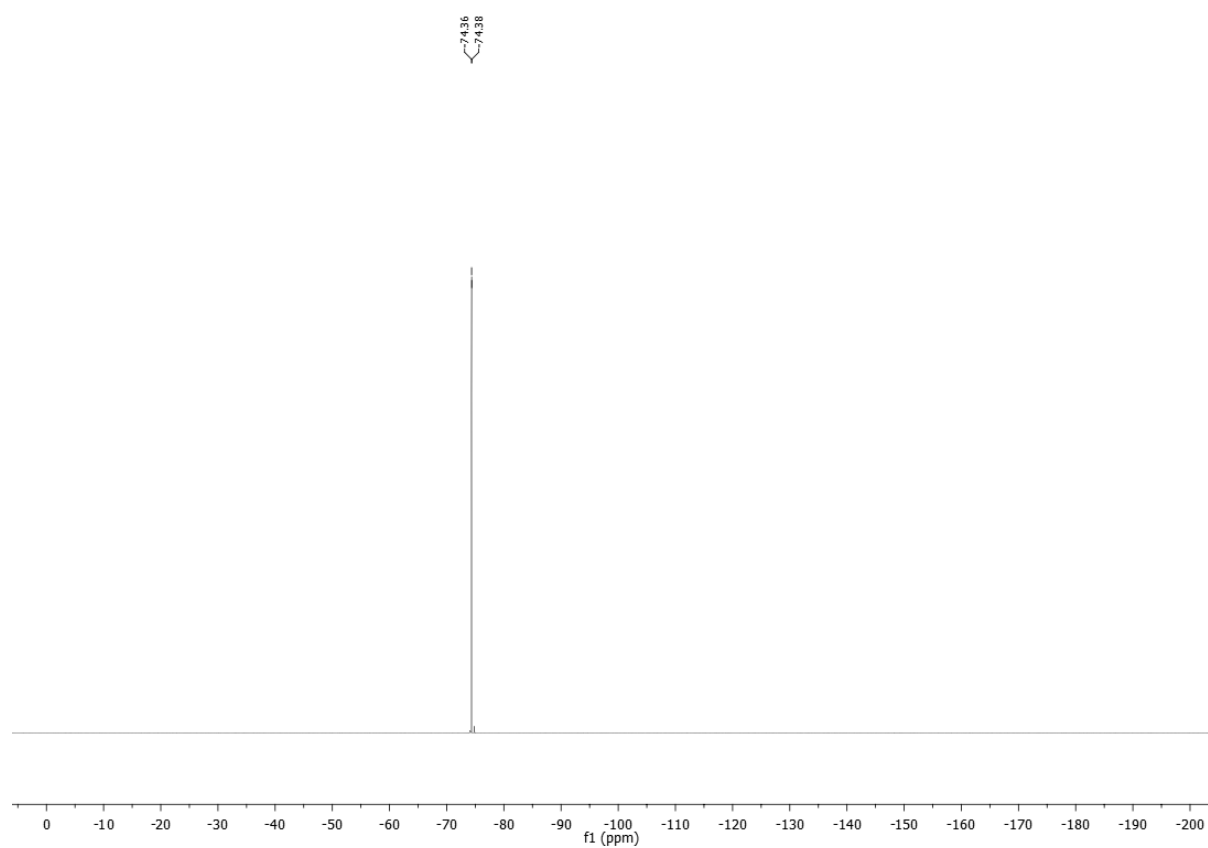
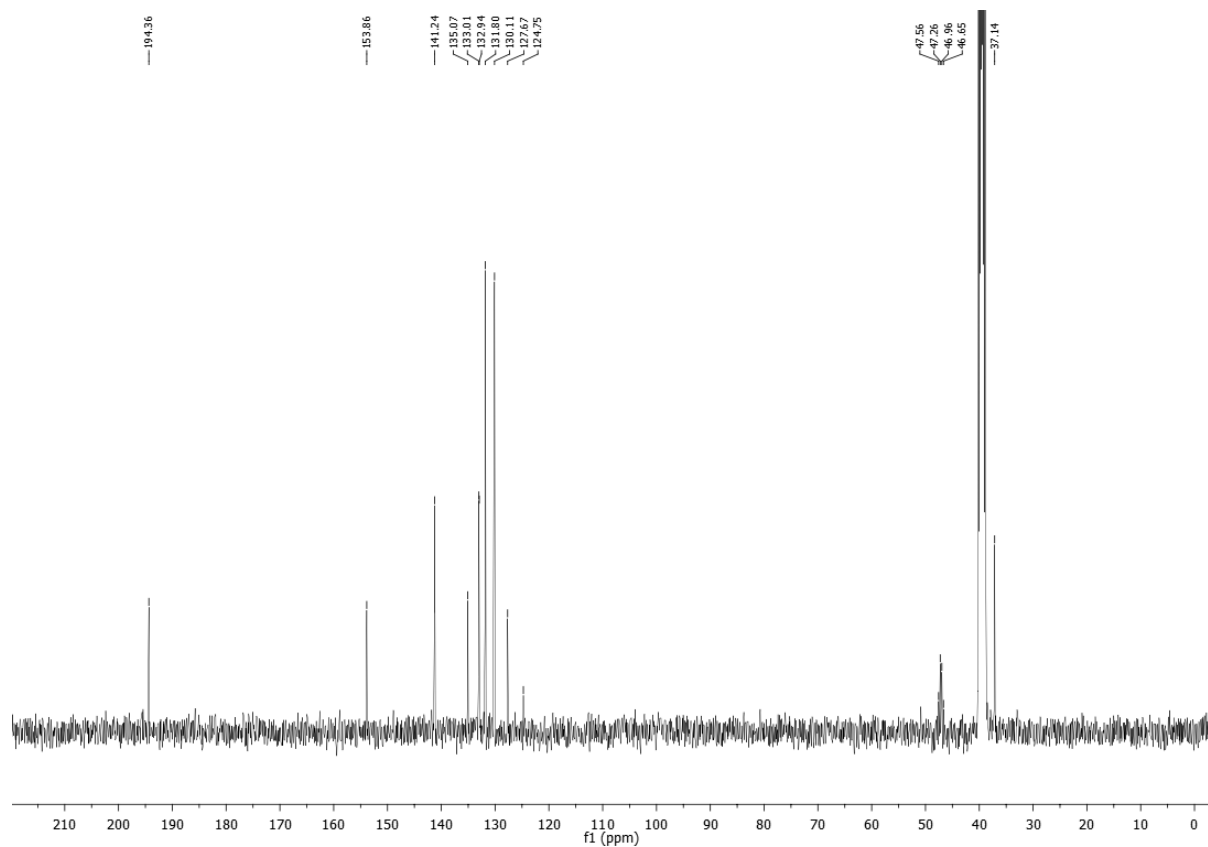
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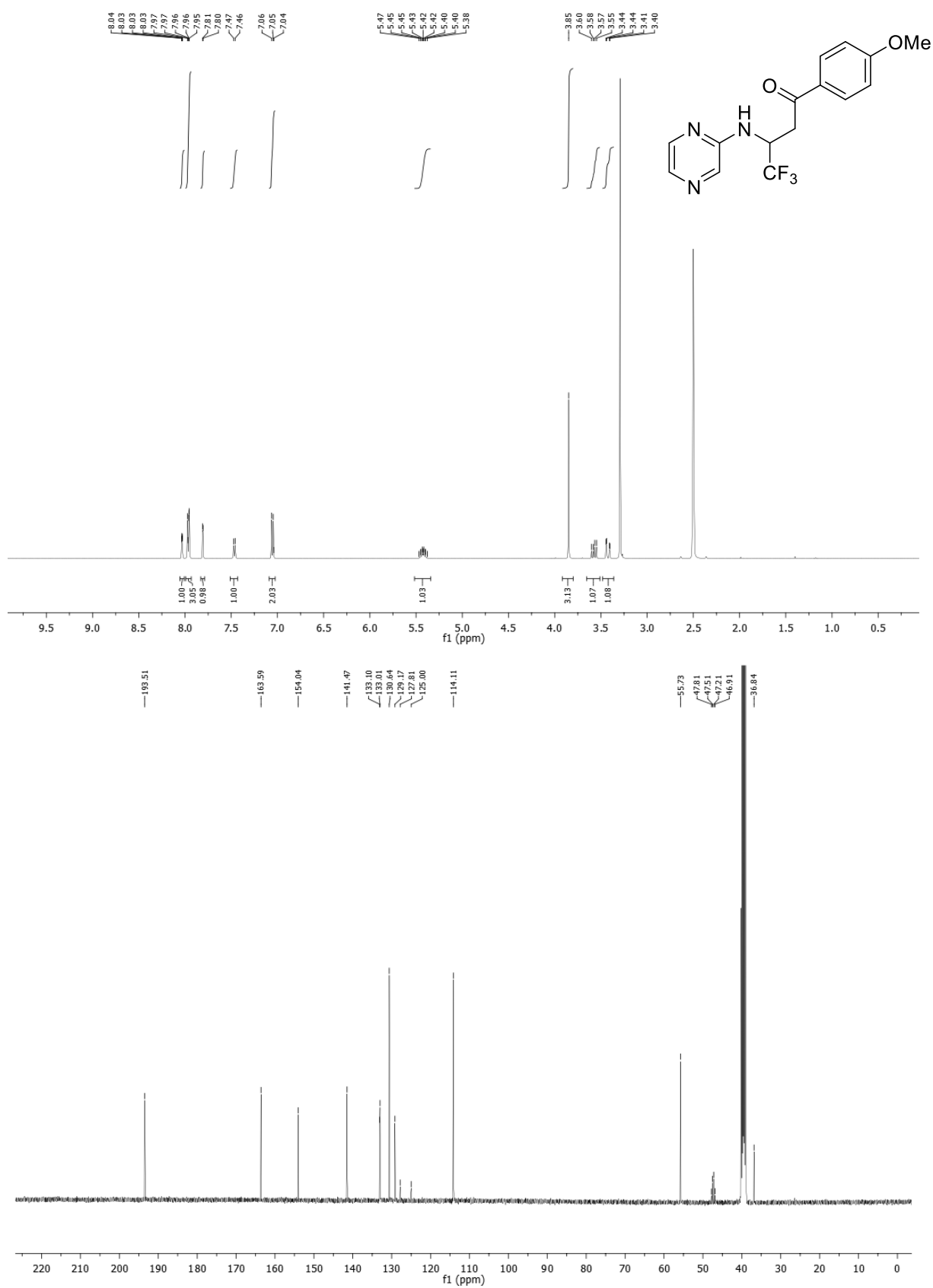


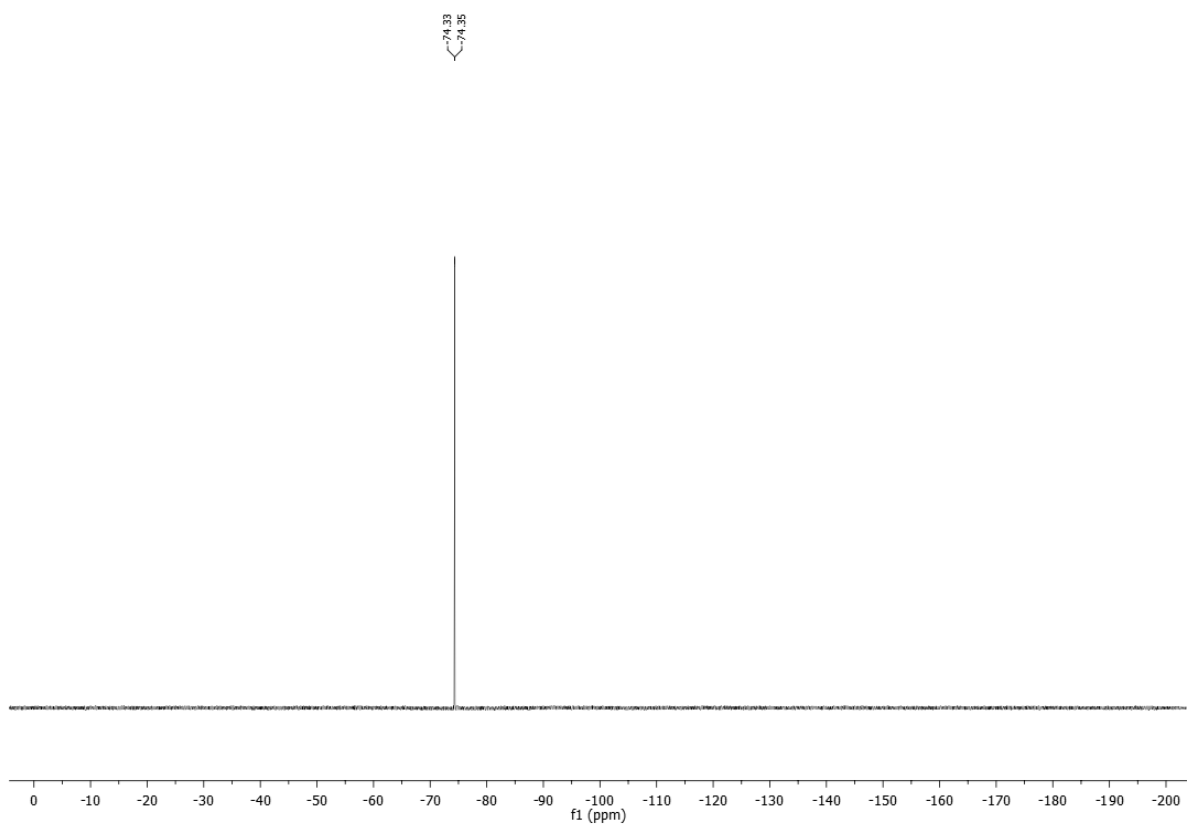
1-(4-Bromophenyl)-4,4,4-trifluoro-3-(pyrazin-2-ylamino)butan-1-one (3a)



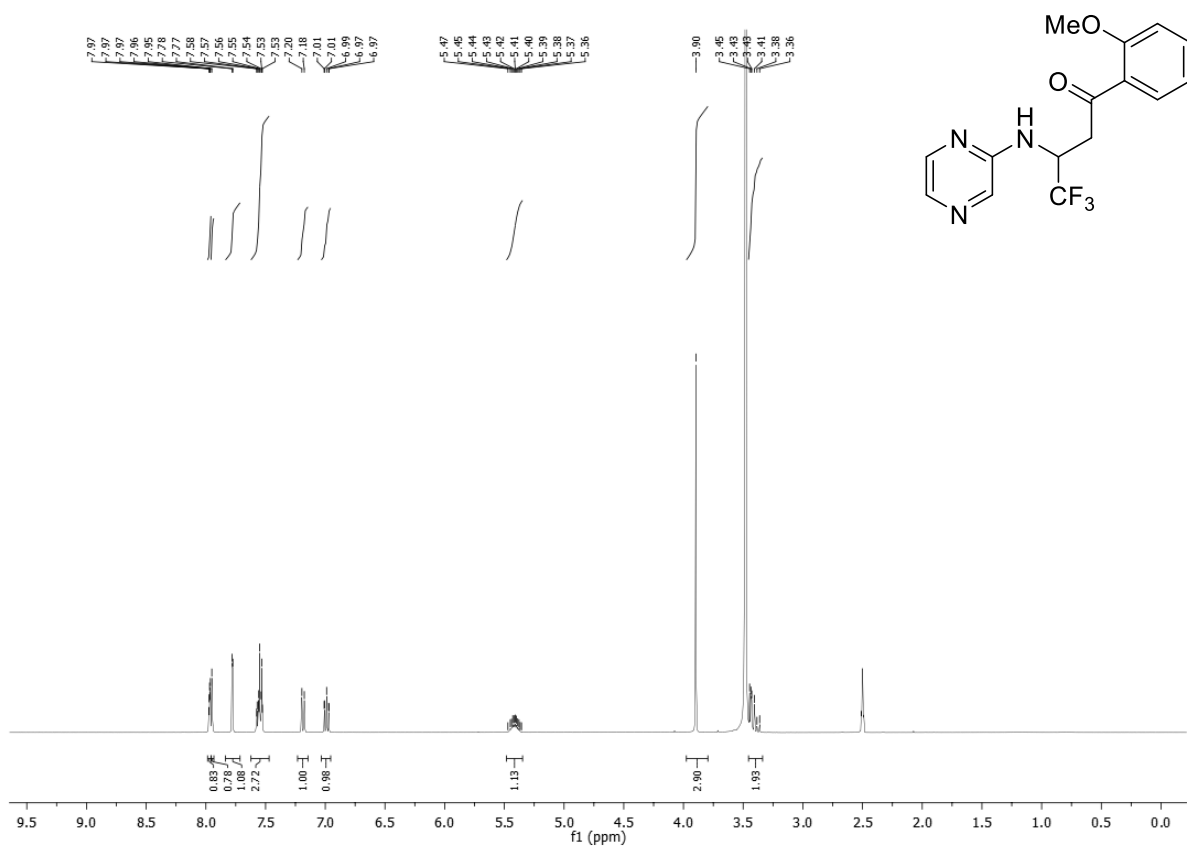


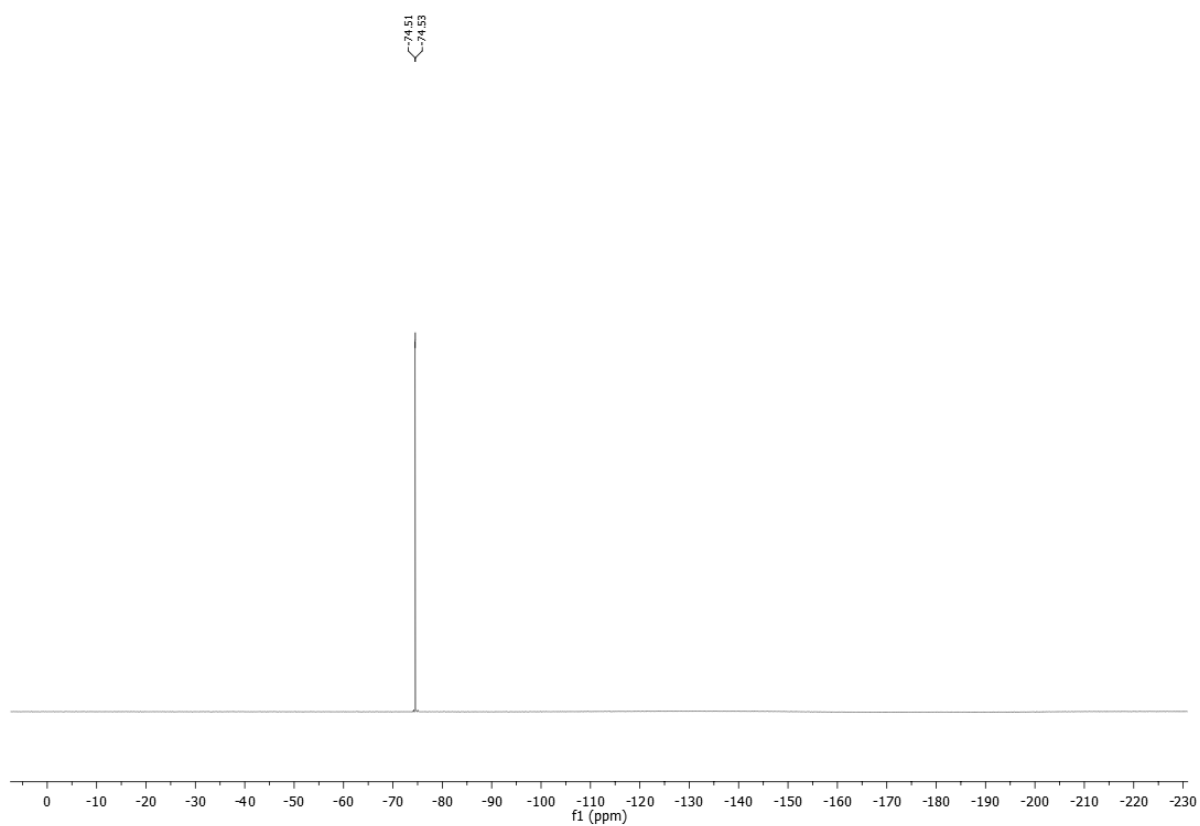
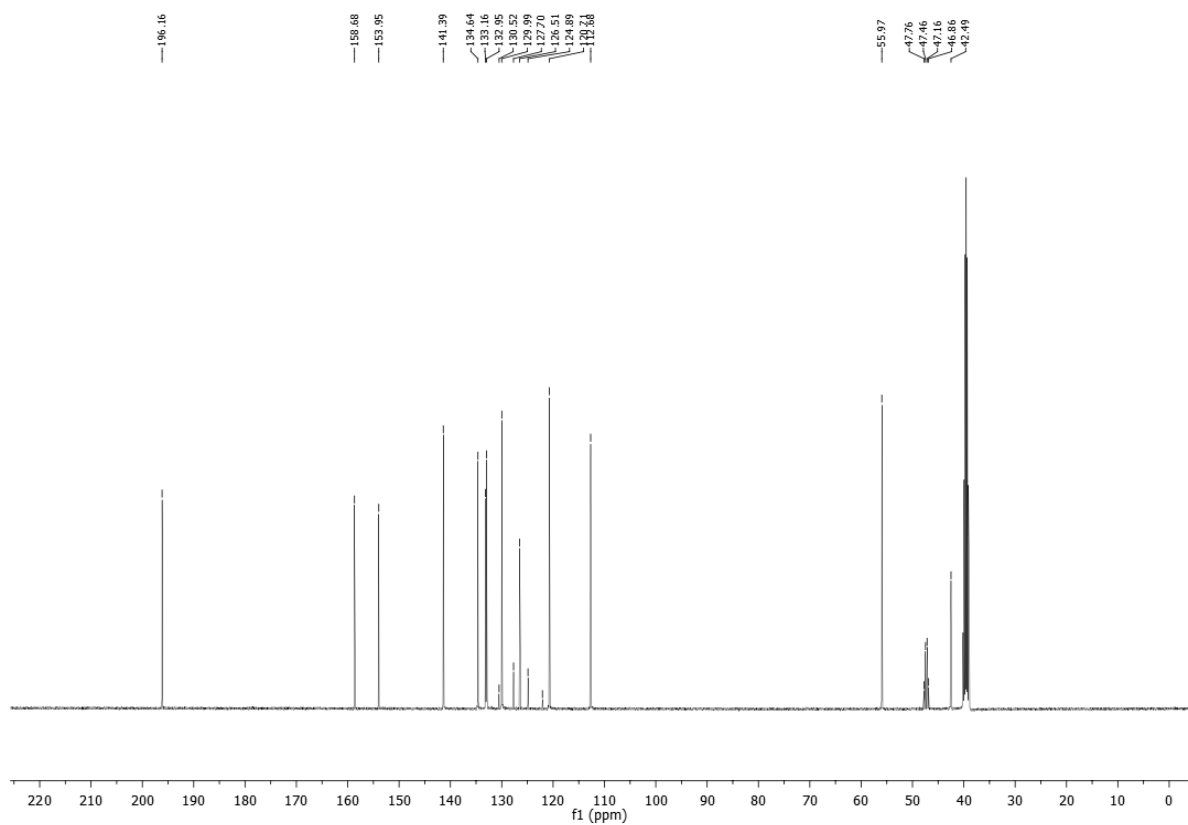
4,4,4-Trifluoro-1-(4-methoxyphenyl)-3-(pyrazin-2-ylamino)butan-1-one (3b)



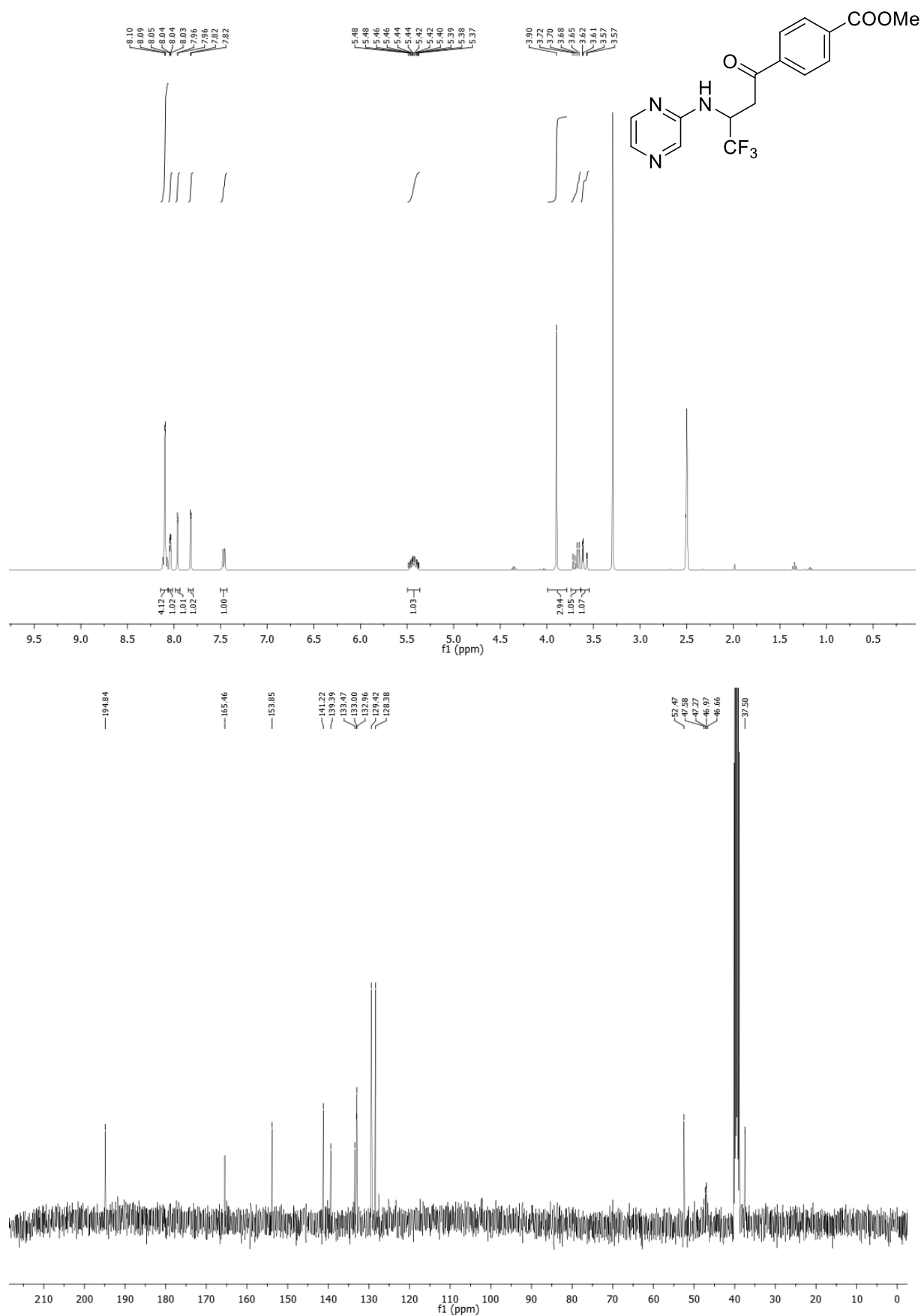


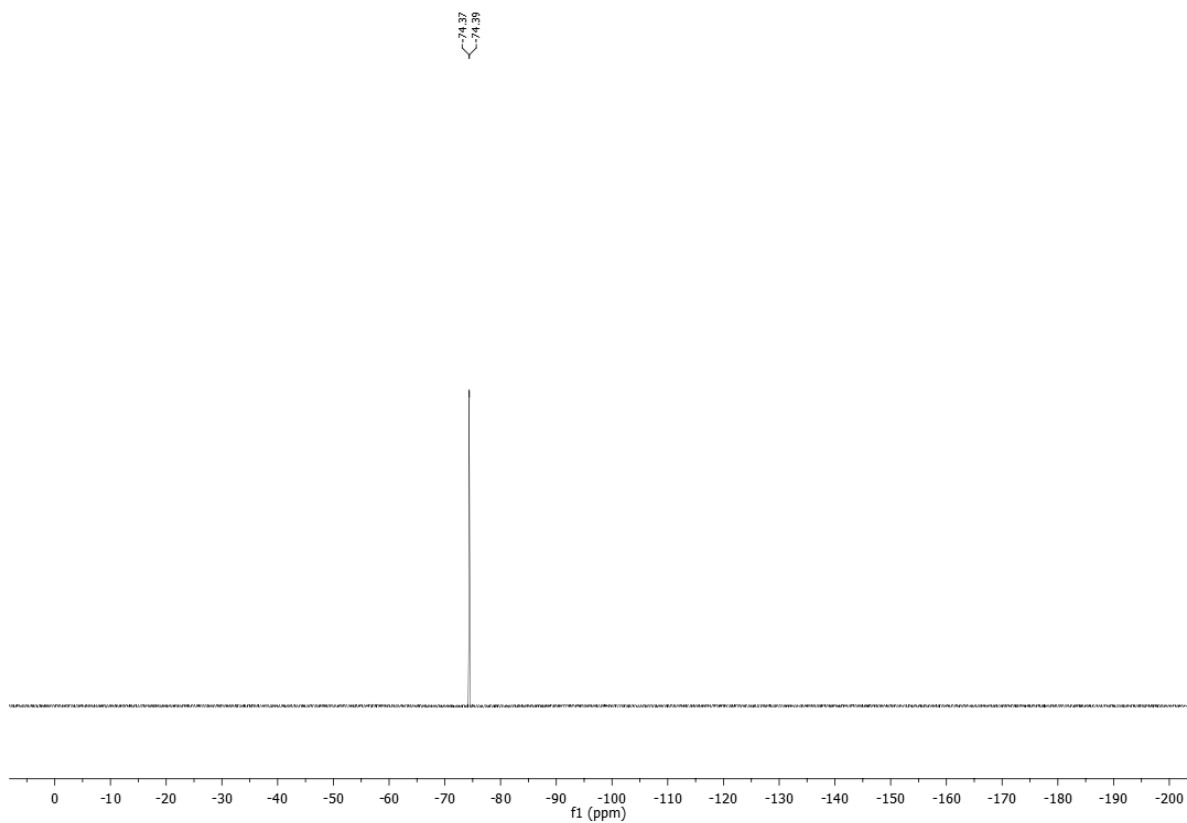
4,4,4-Trifluoro-1-(2-methoxyphenyl)-3-(pyrazin-2-ylamino)butan-1-one (3c)



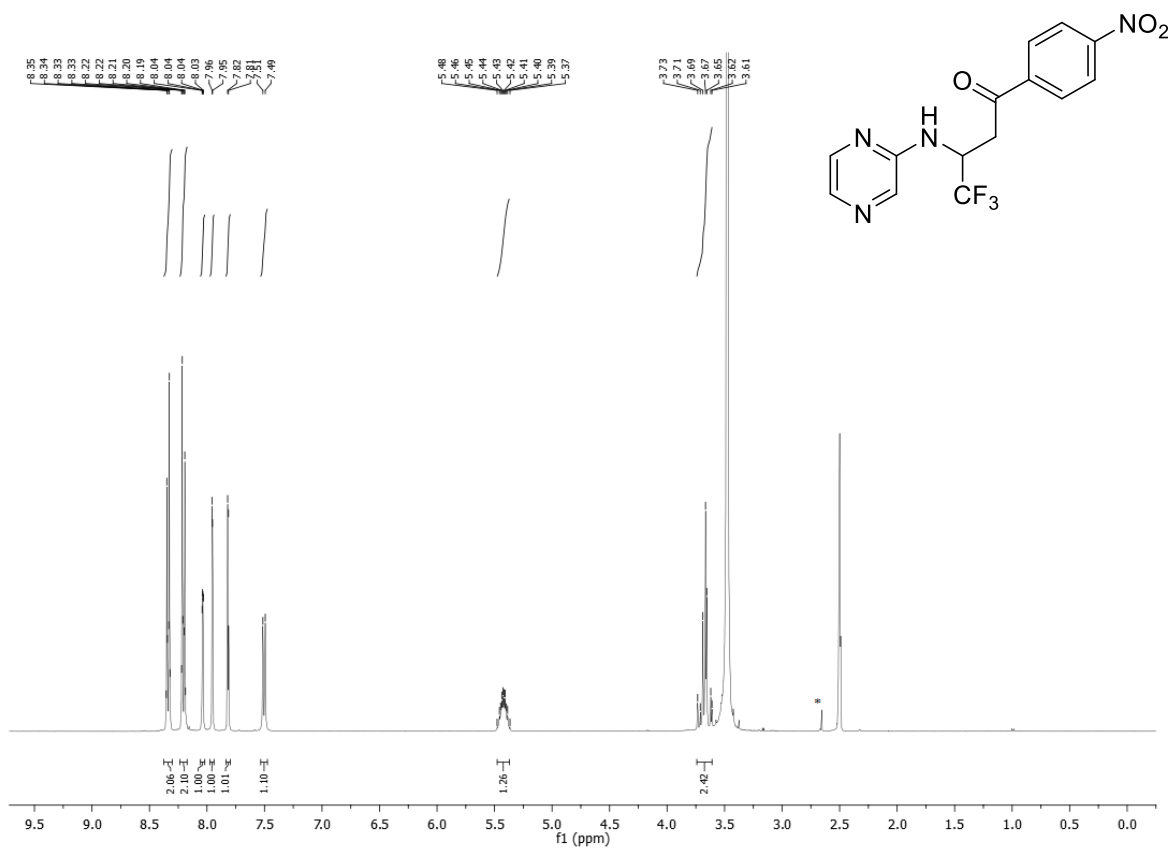


Methyl 4-(4,4,4-trifluoro-3-(pyrazin-2-ylamino)butanoyl)benzoate (3d)

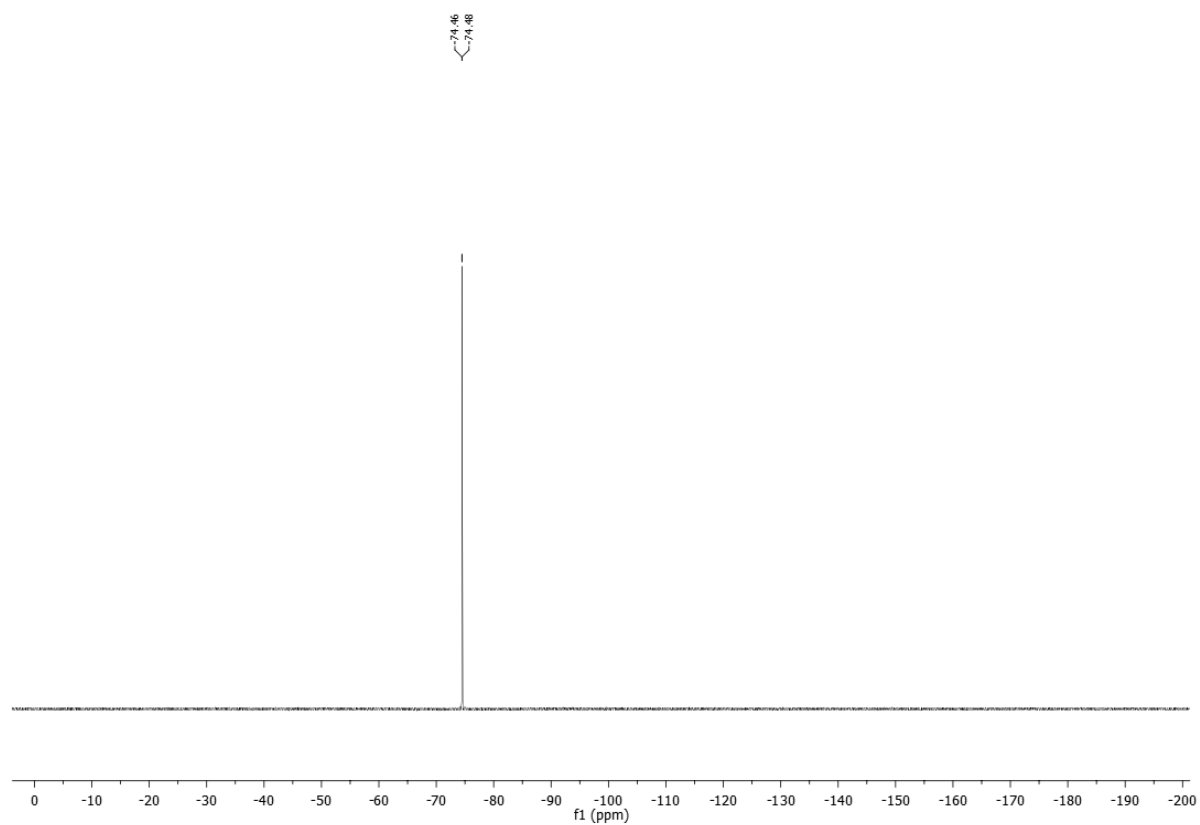
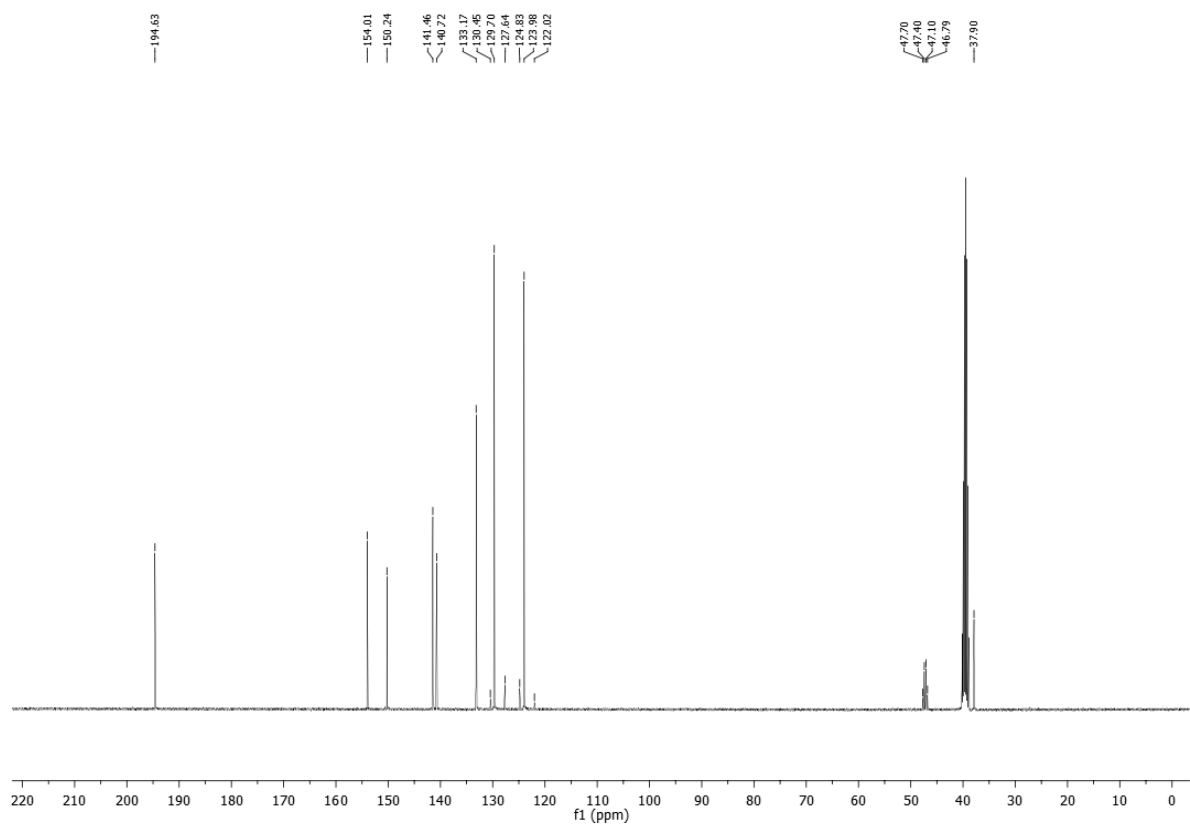




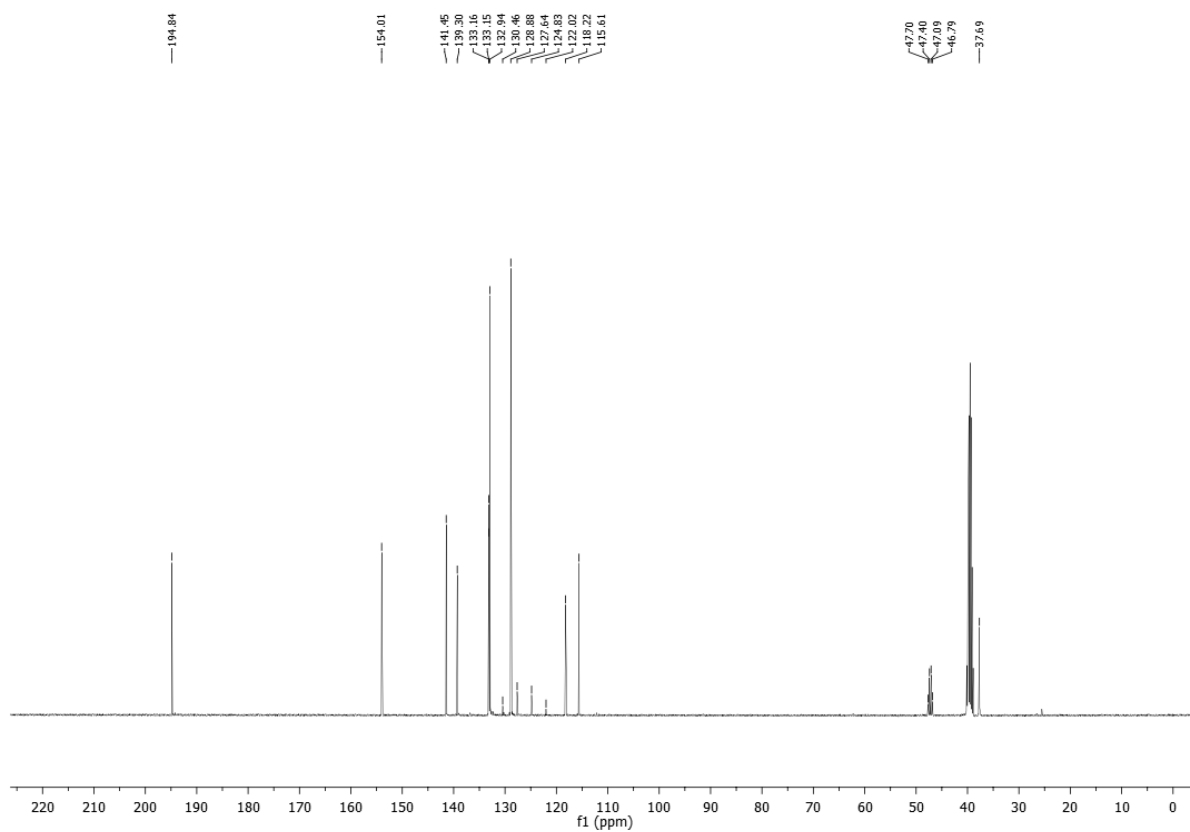
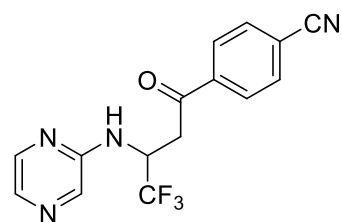
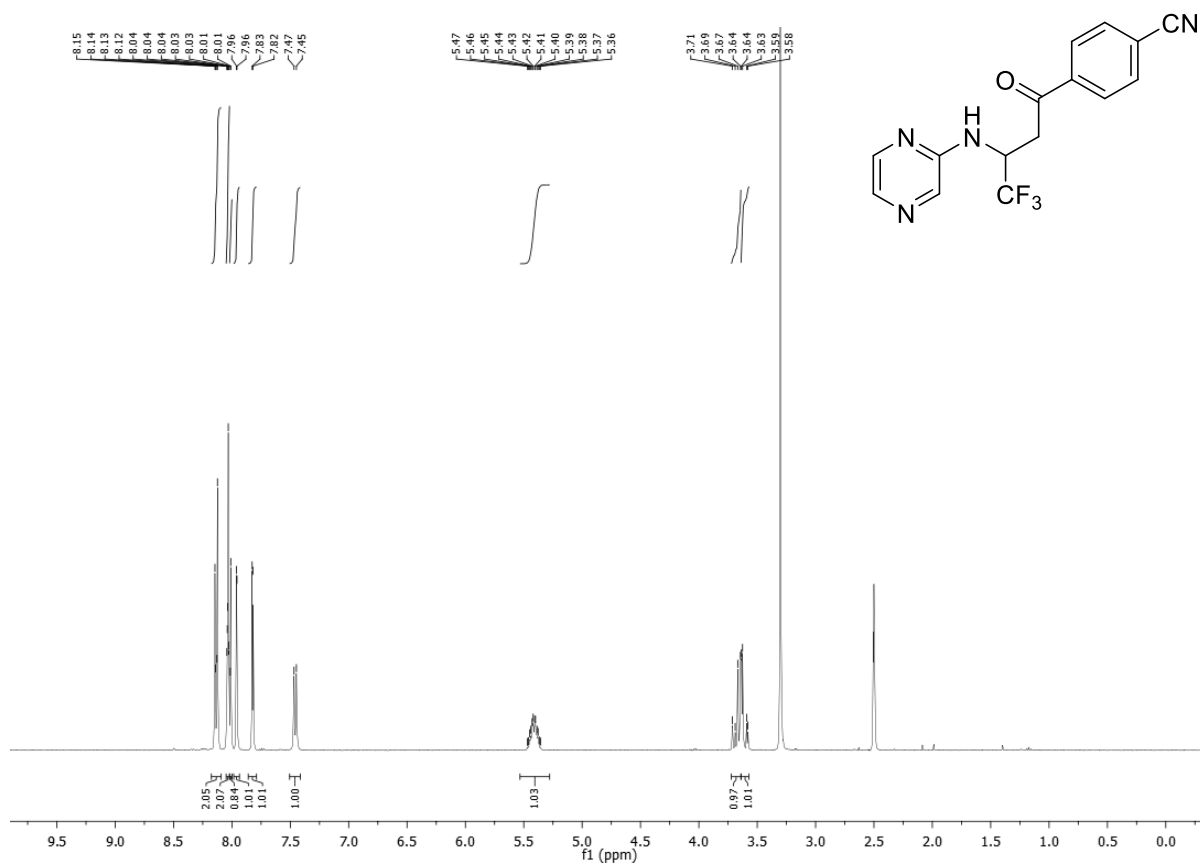
4,4,4-Trifluoro-1-(4-nitrophenyl)-3-(pyrazin-2-ylamino)butan-1-one (3e)

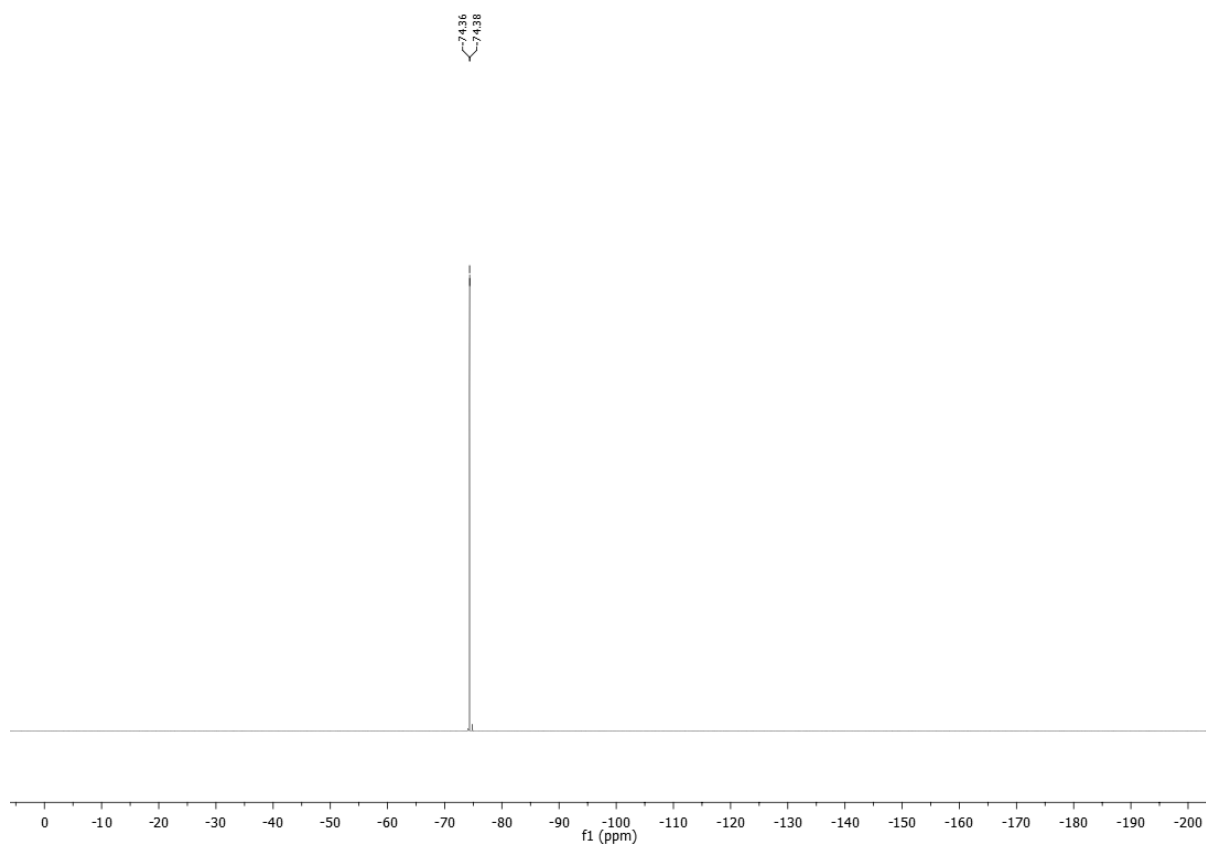


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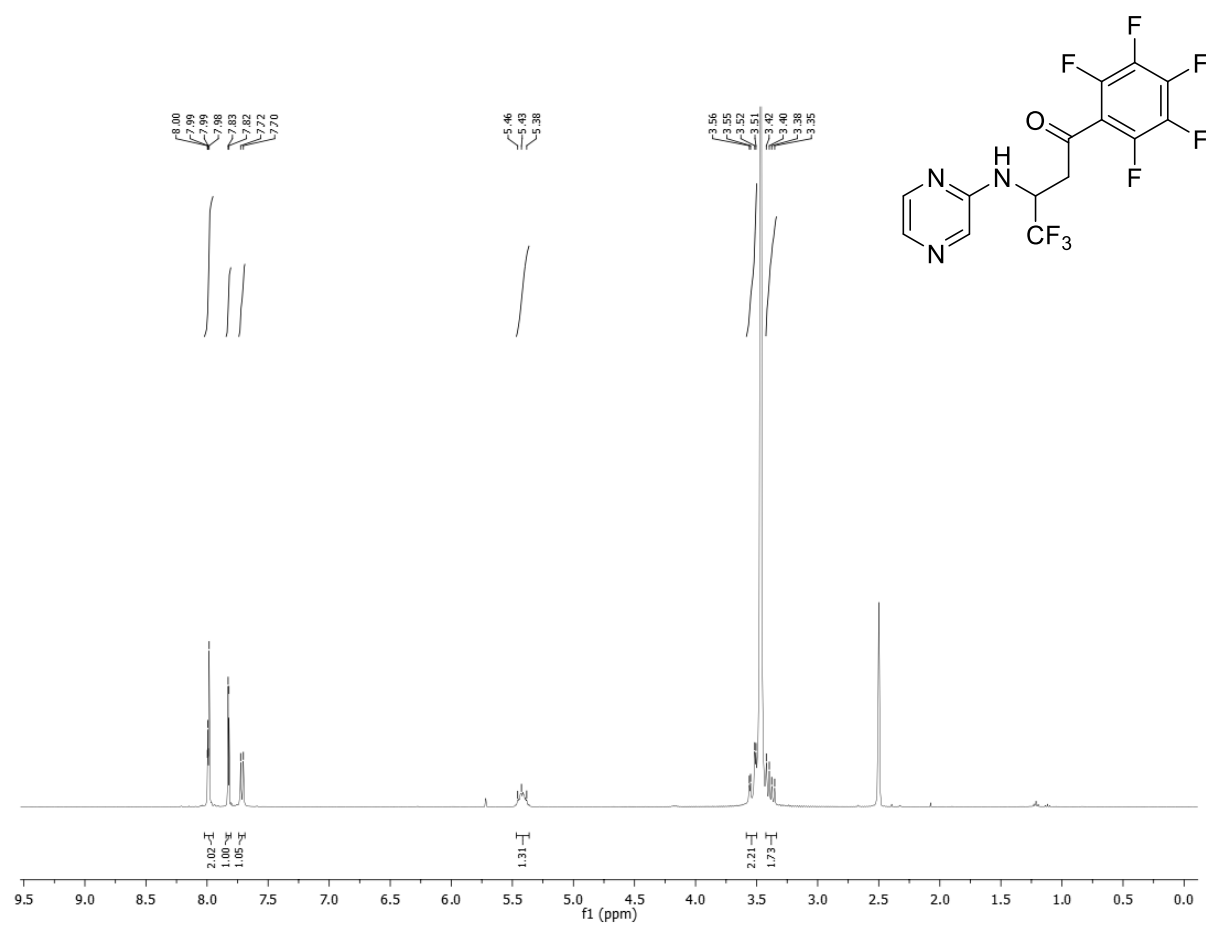


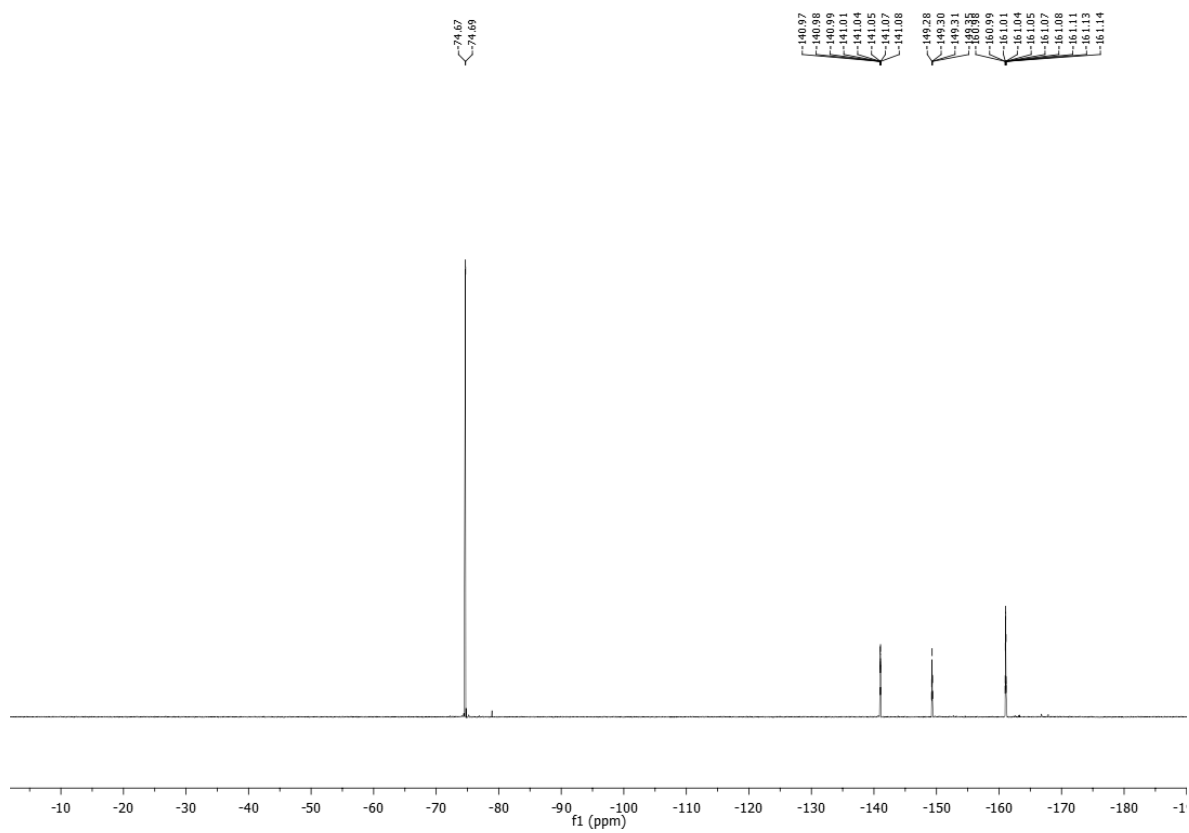
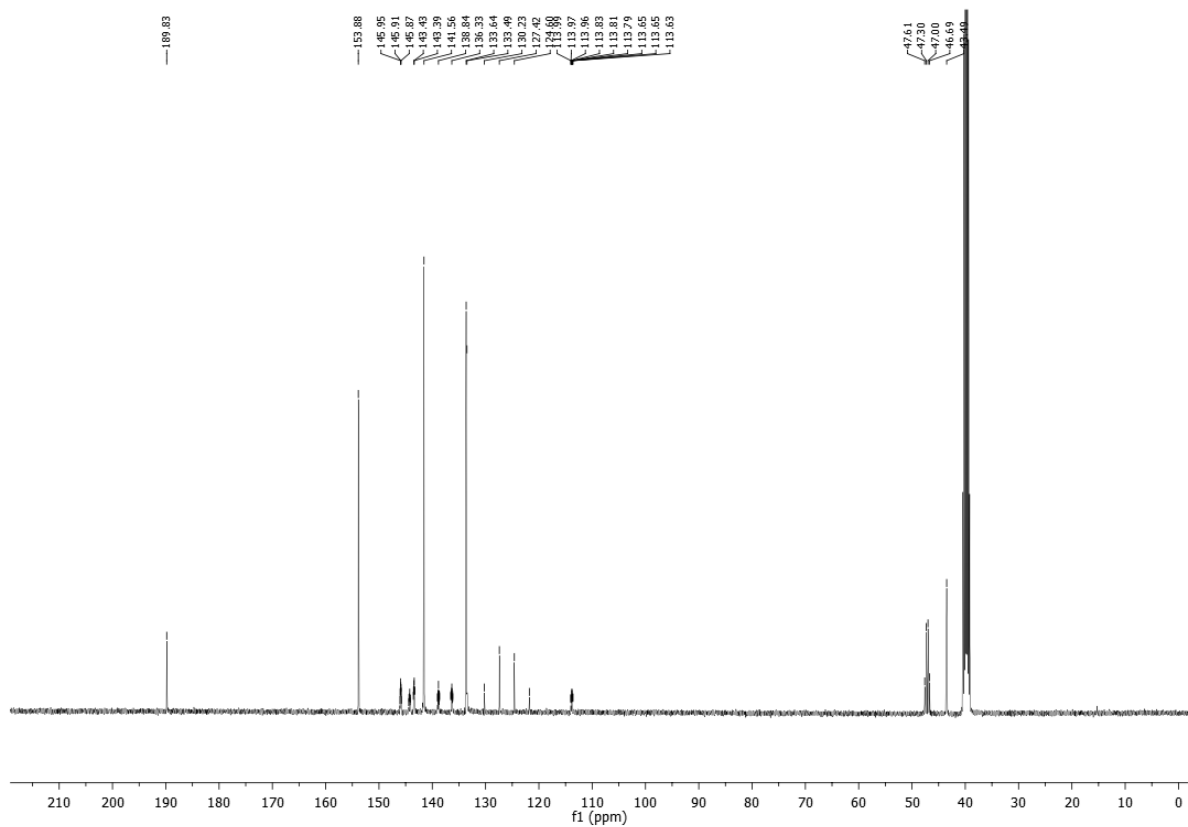
4-(4,4,4-Trifluoro-3-(pyrazin-2-ylamino)butanoyl)benzonitrile (3f)



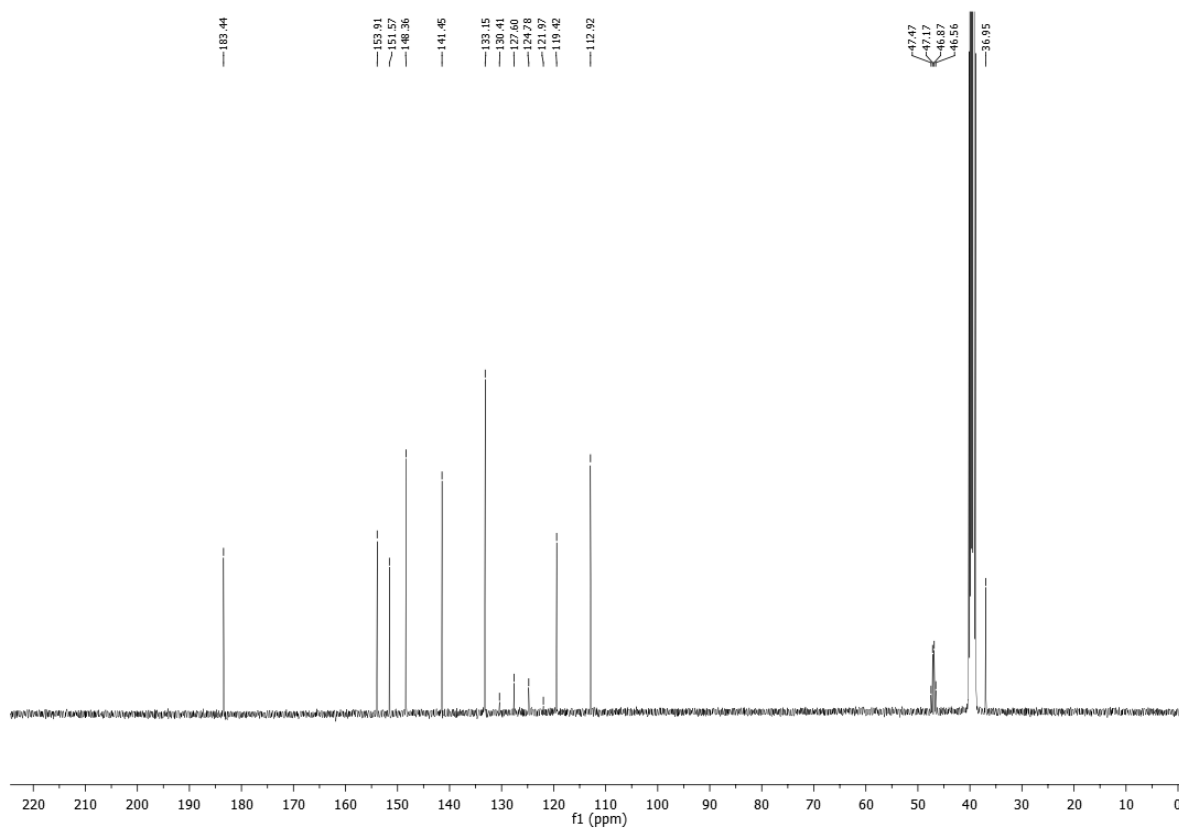
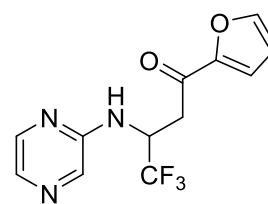
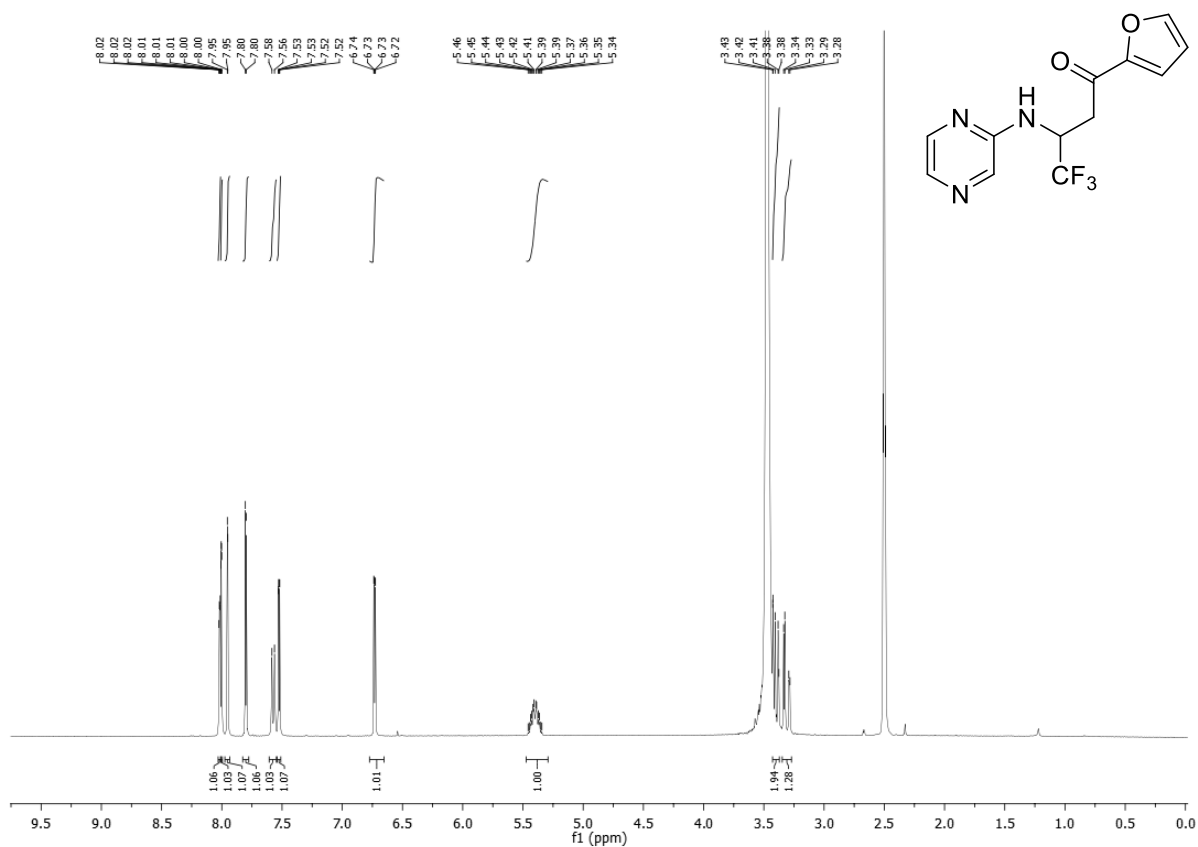


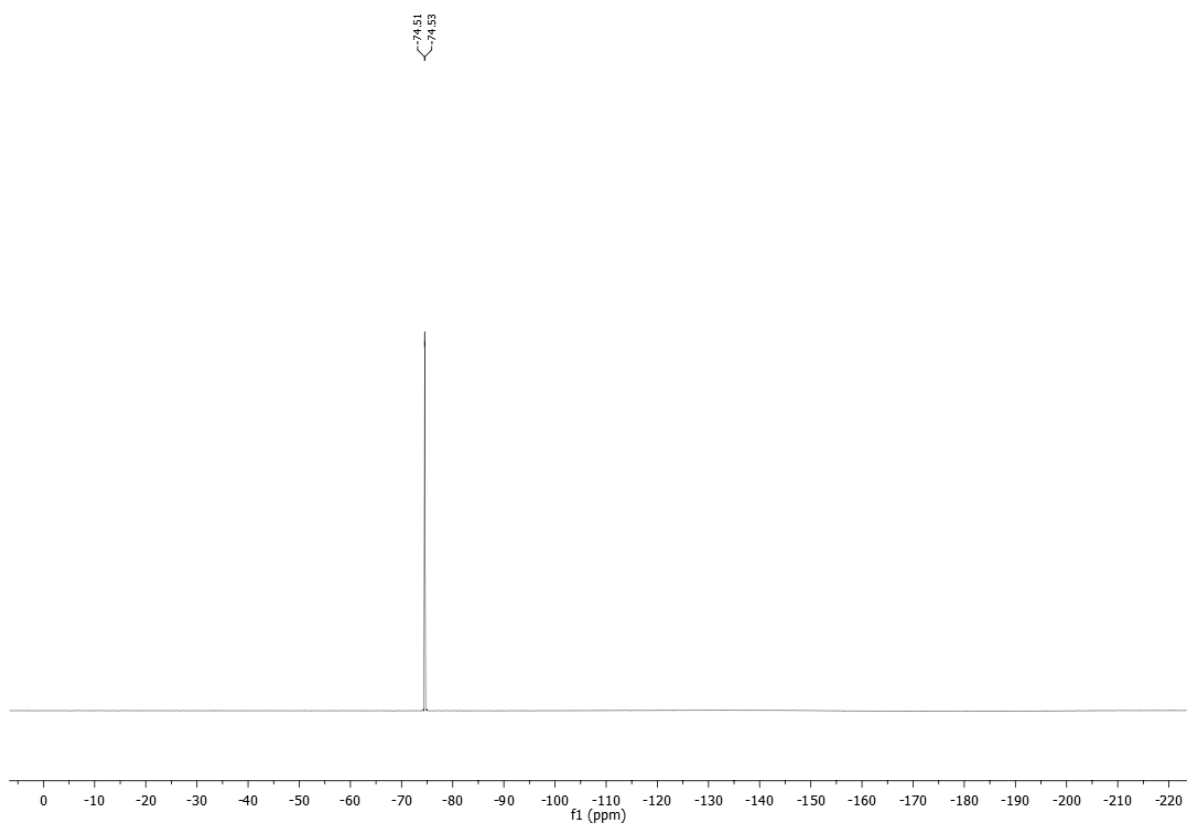
4,4,4-Trifluoro-1-(perfluorophenyl)-3-(pyrazin-2-ylamino)butan-1-one (3g)





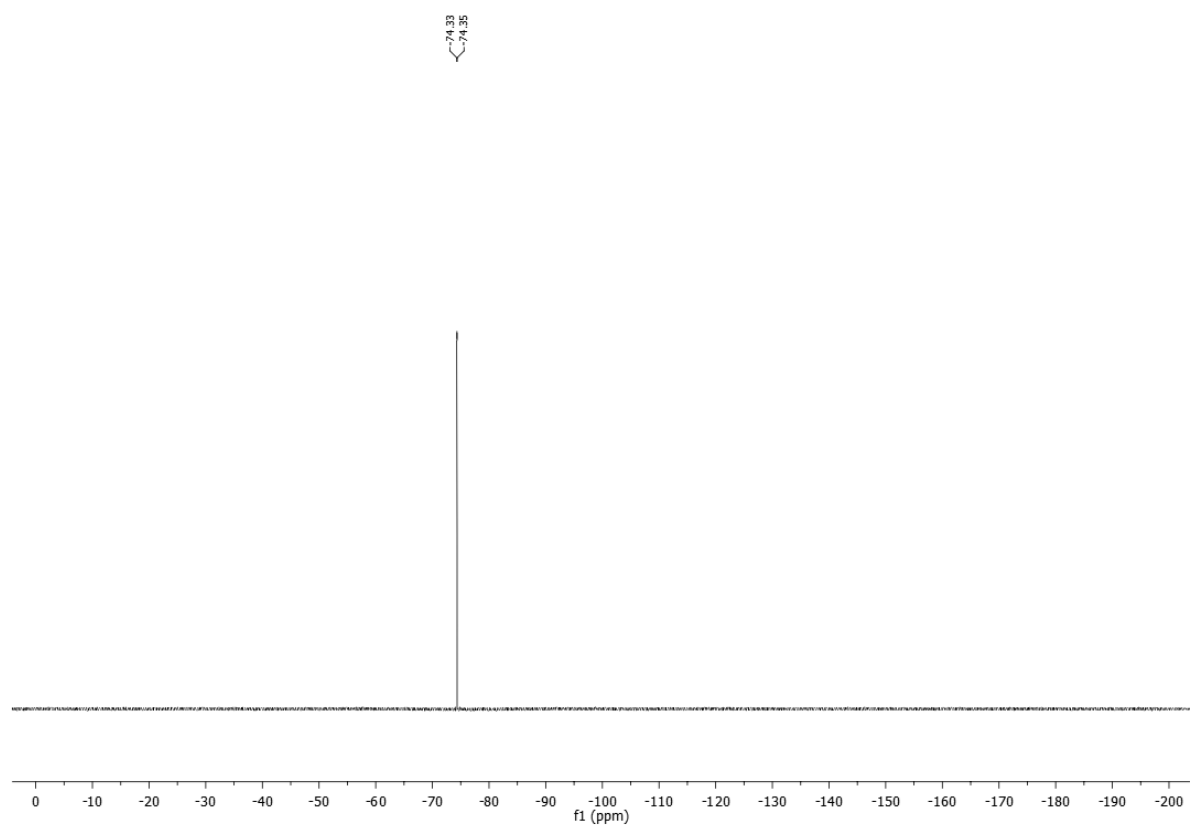
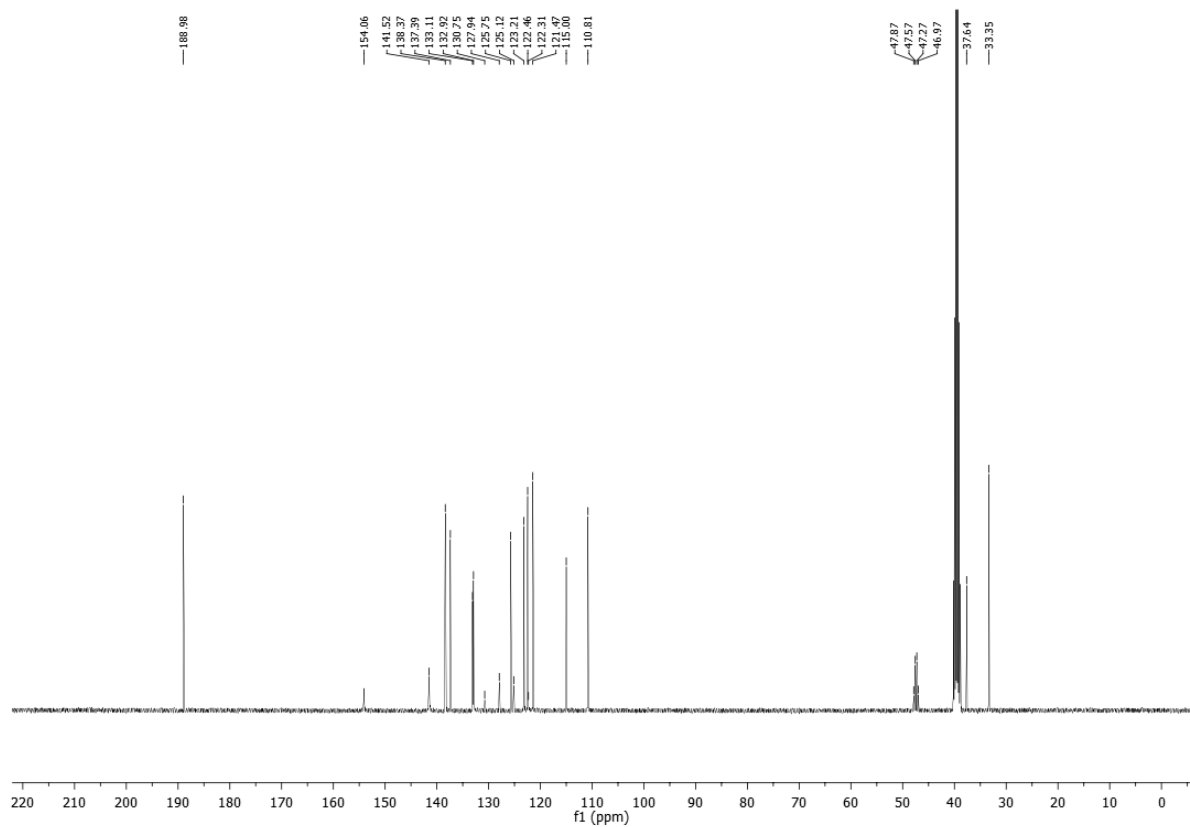
4,4,4-Trifluoro-1-(furan-2-yl)-3-(pyrazin-2-ylamino)butan-1-one (3h)



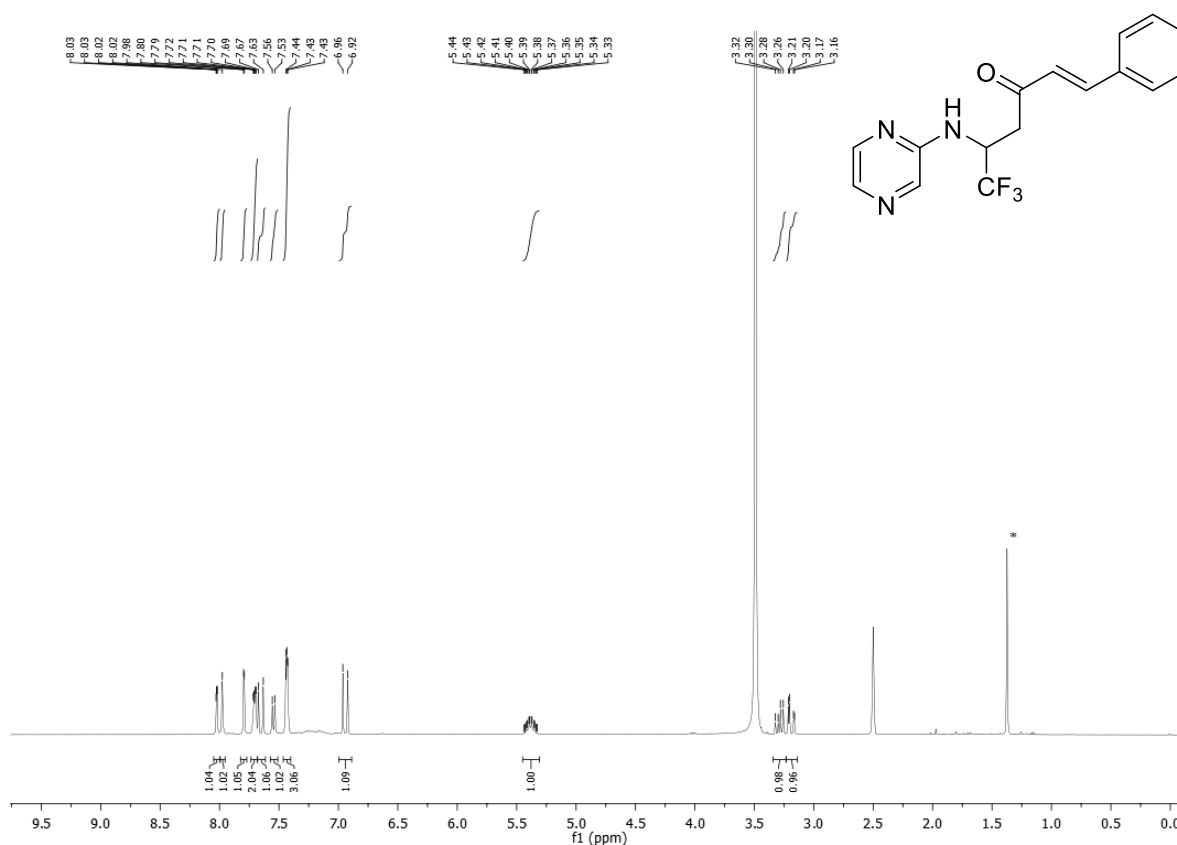


4,4,4-Trifluoro-1-(1-methyl-1H-indol-3-yl)-3-(pyrazin-2-ylamino)butan-1-one (3i)

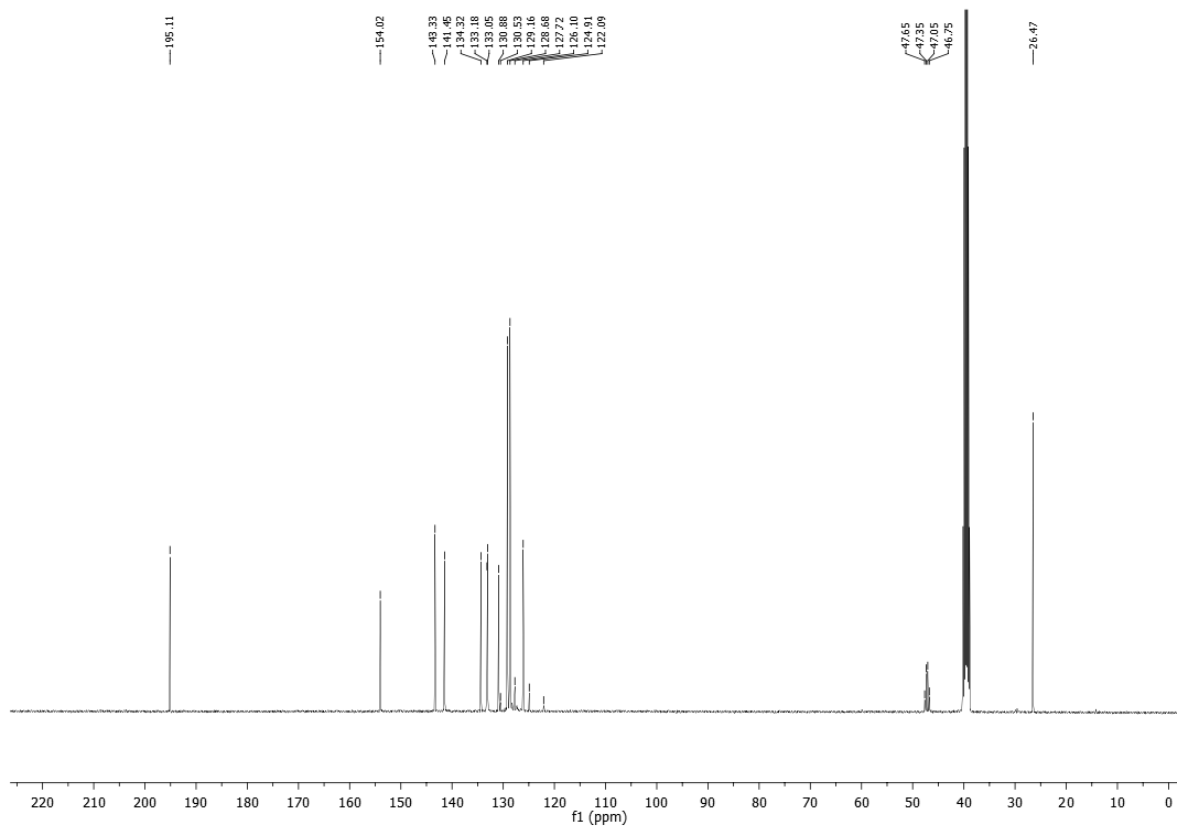


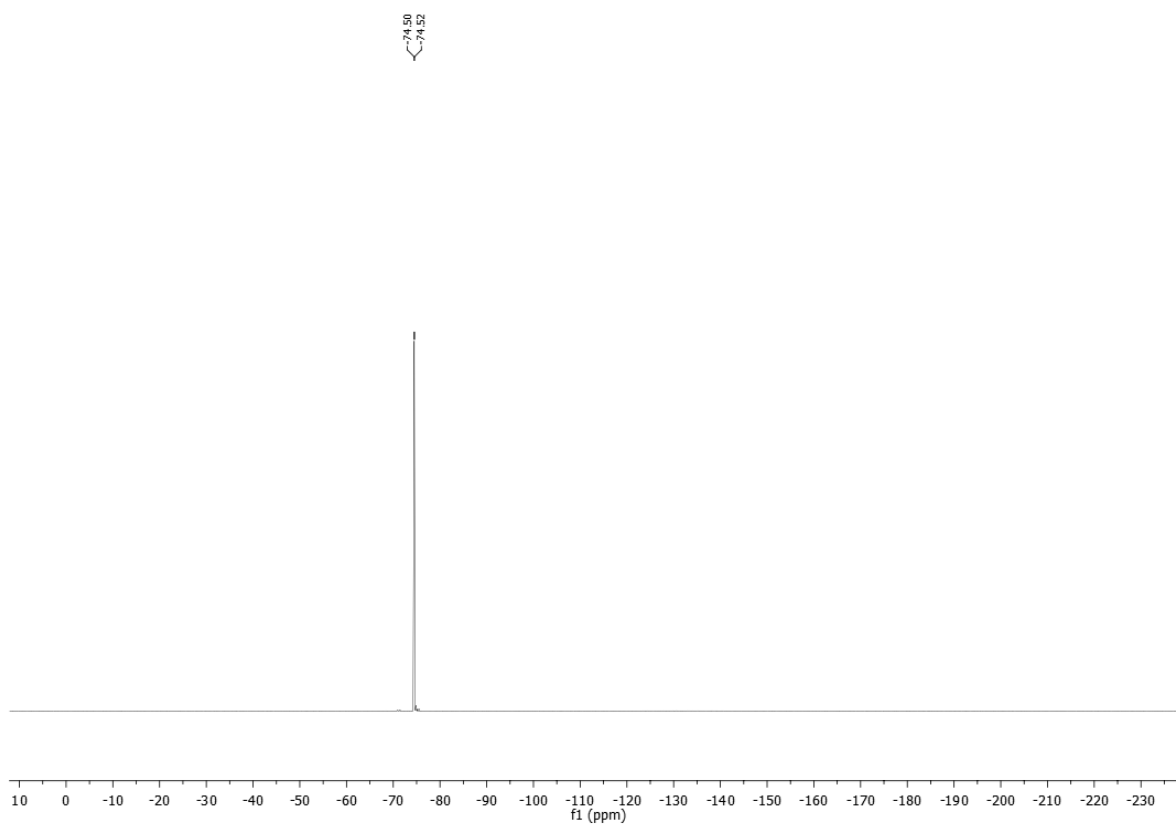


(E)-6,6,6-trifluoro-1-phenyl-5-(pyrazin-2-ylamino)hex-1-en-3-one (3j)

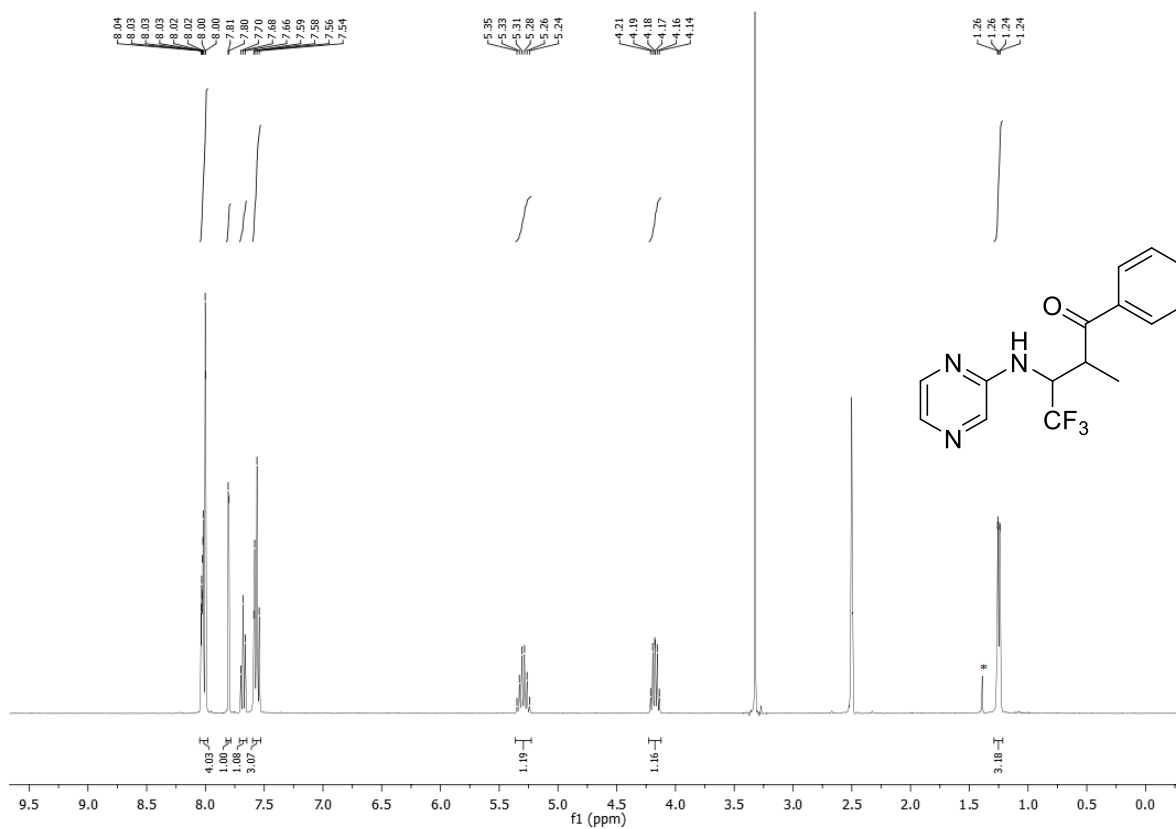


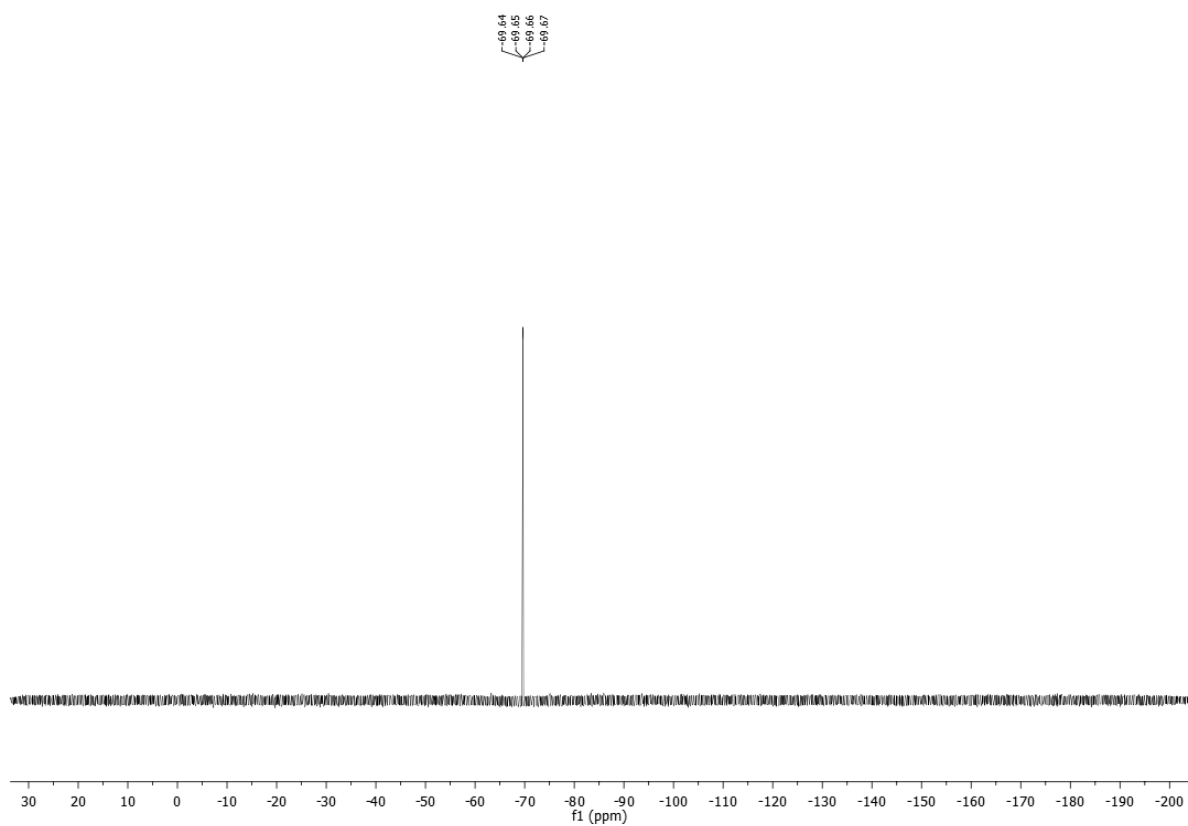
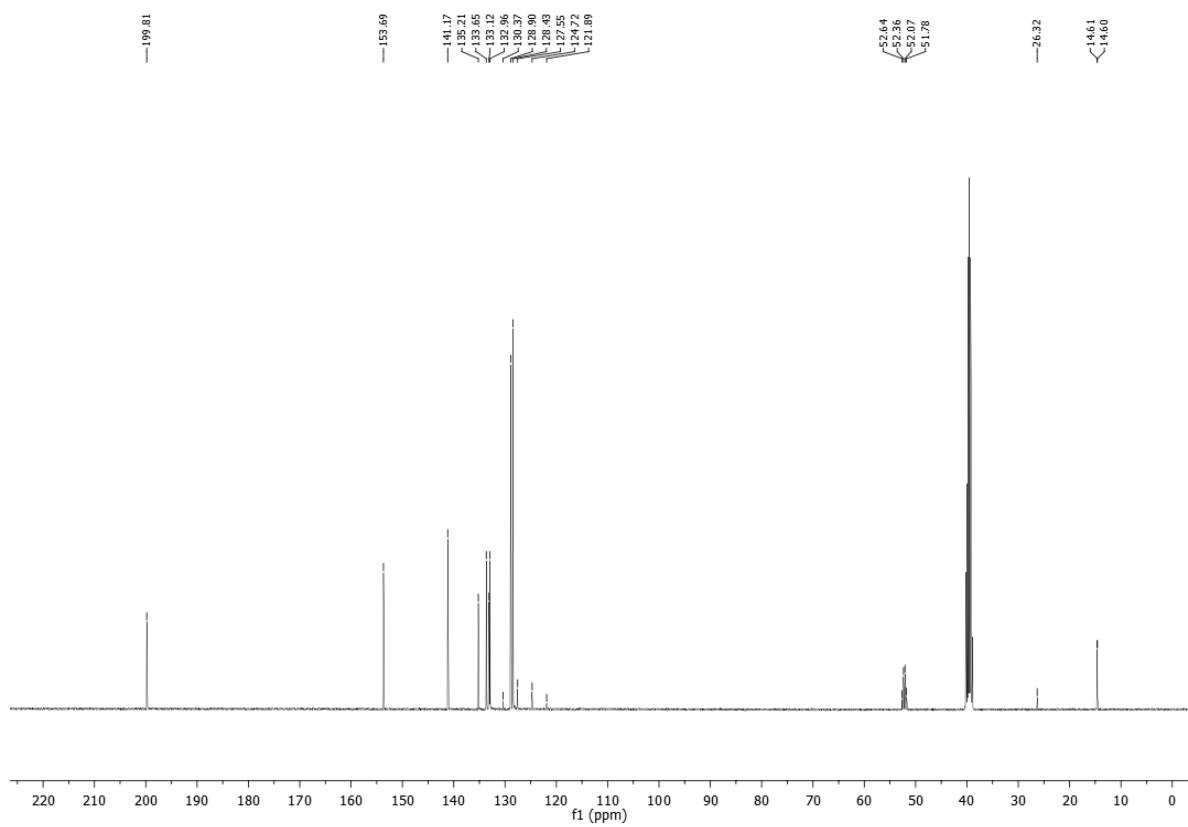
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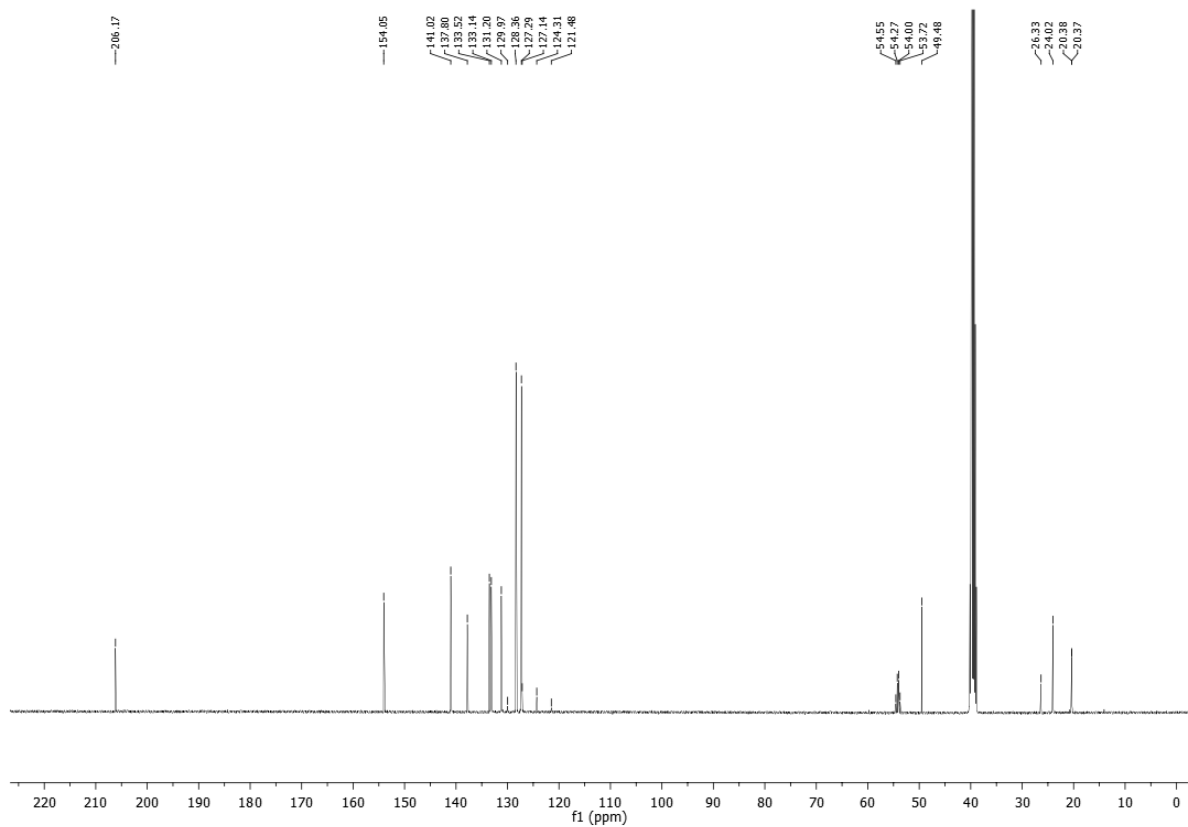
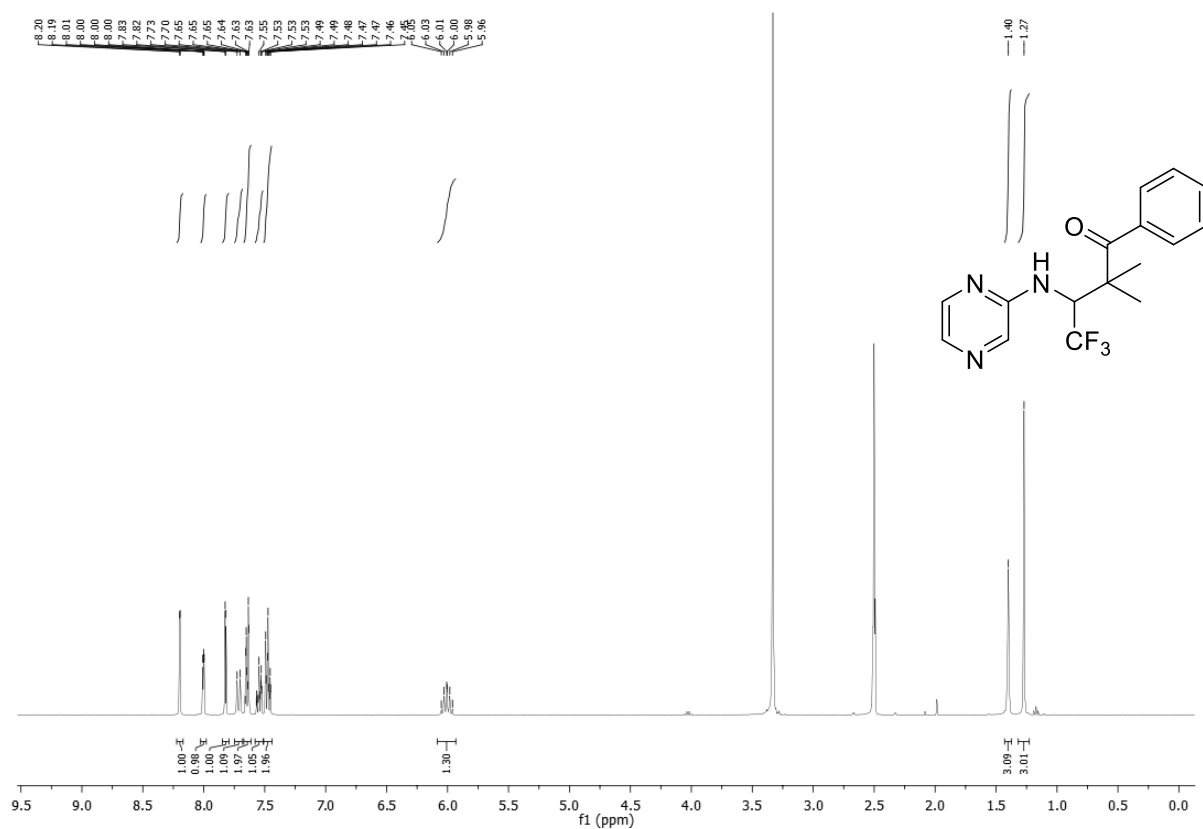


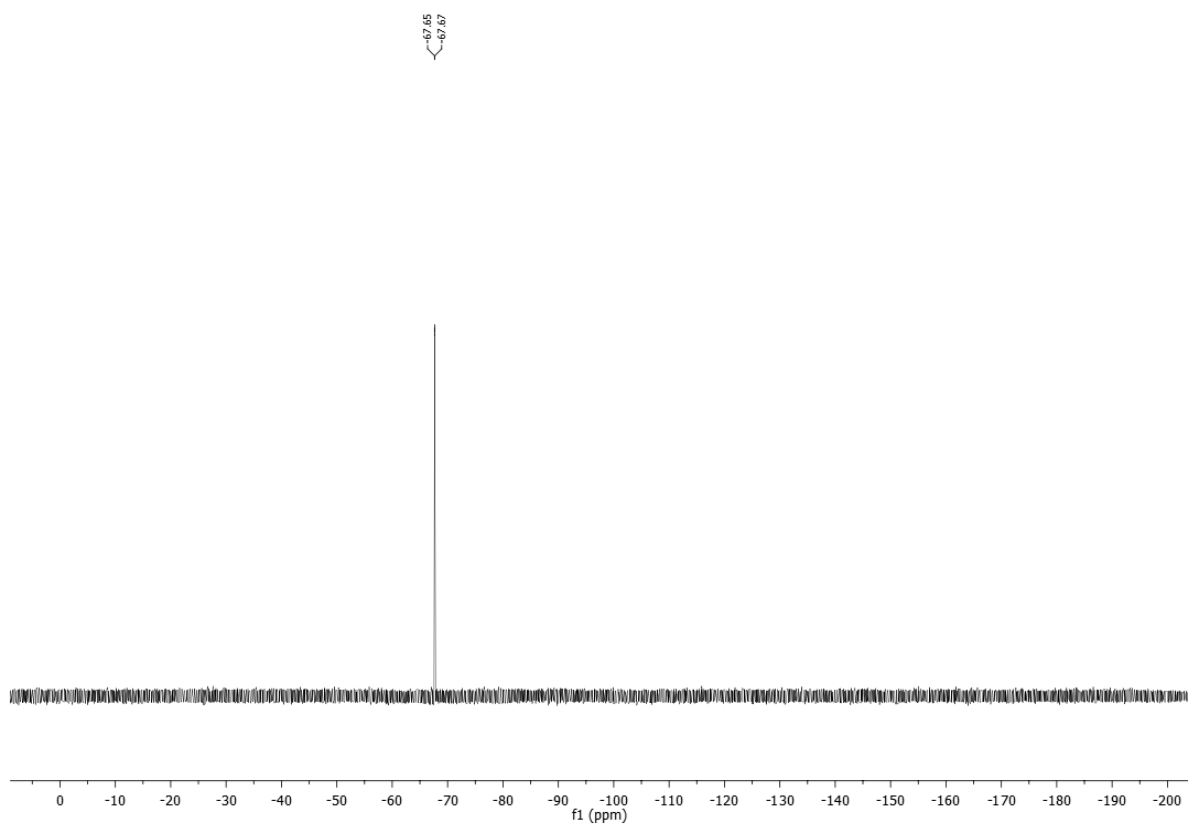
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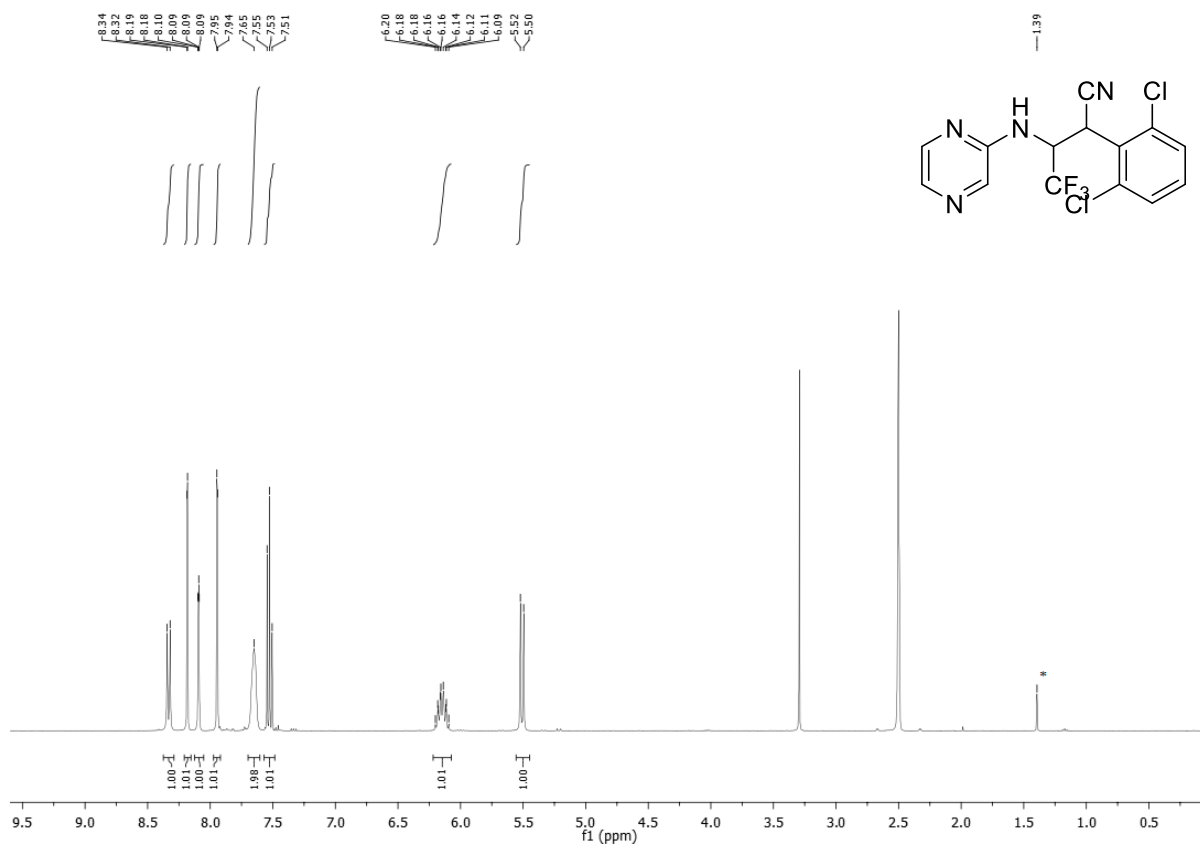


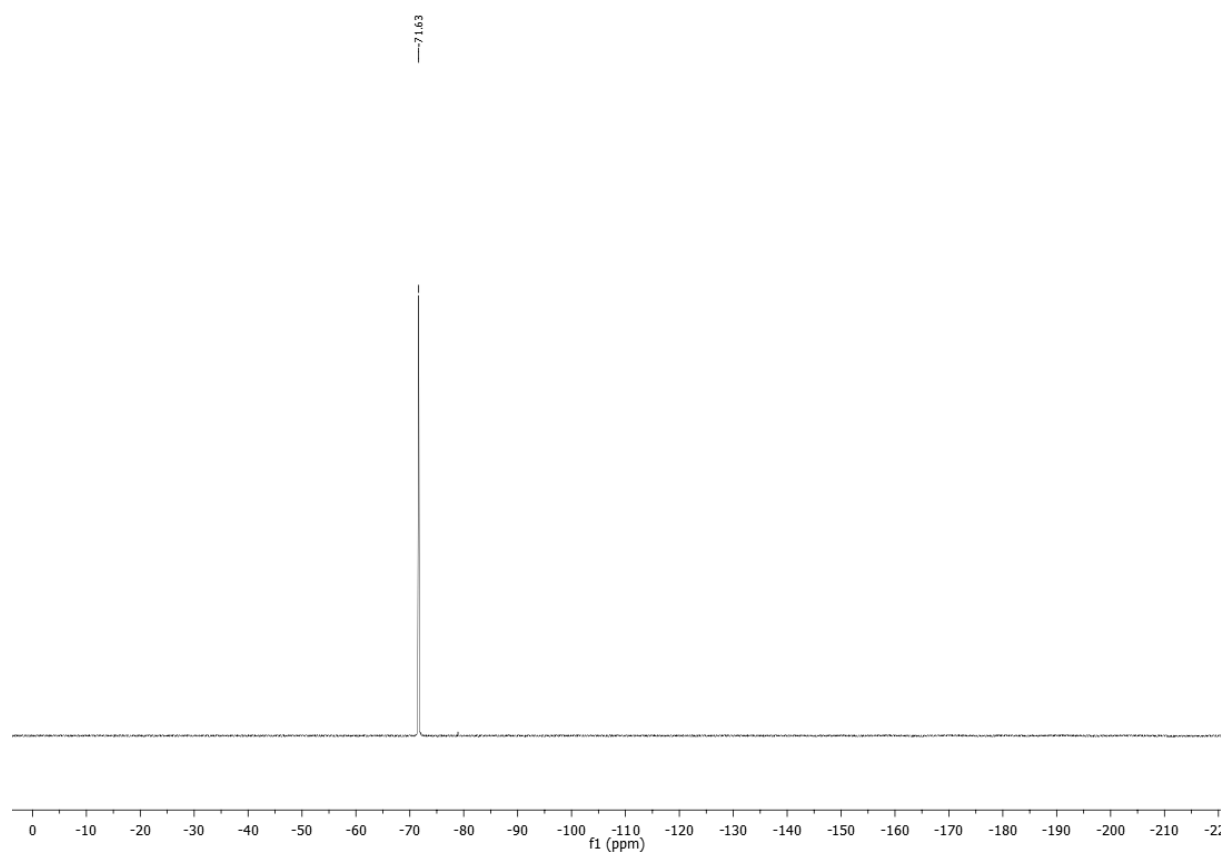
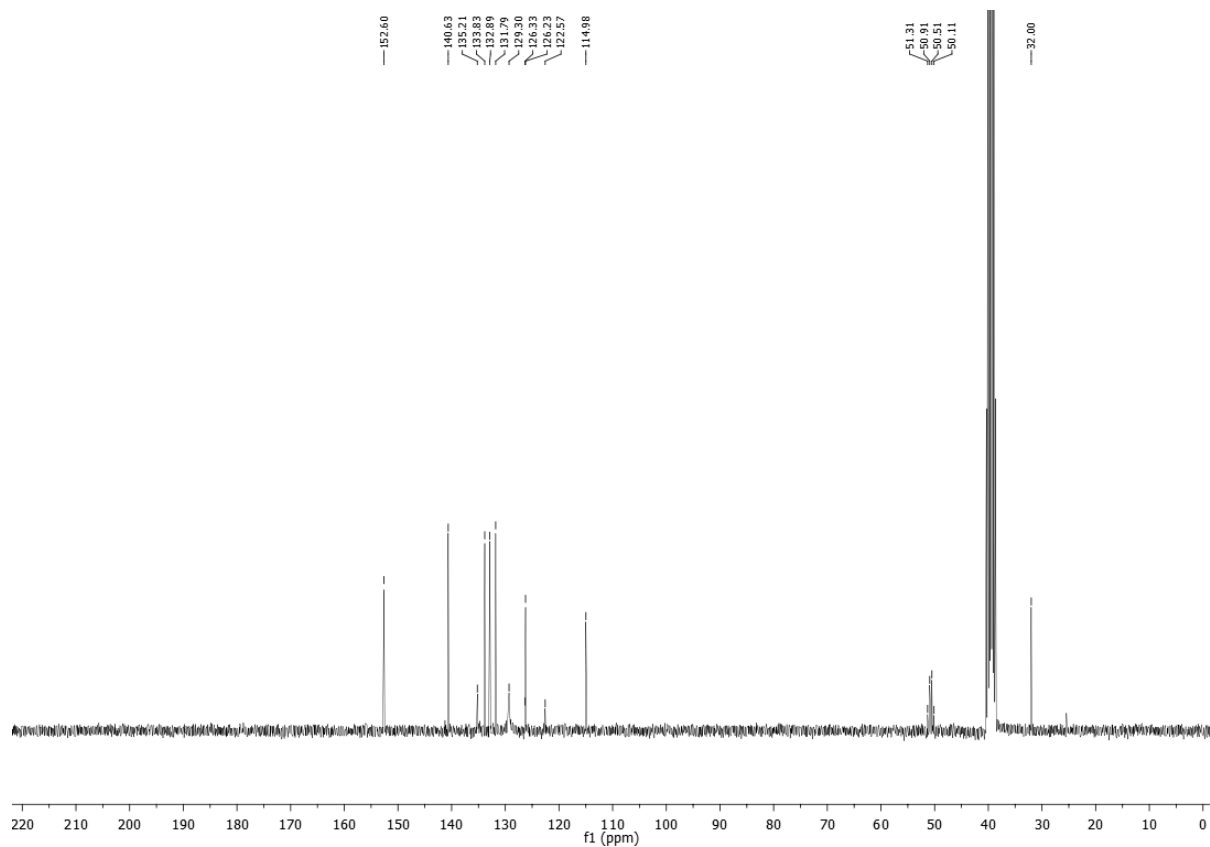
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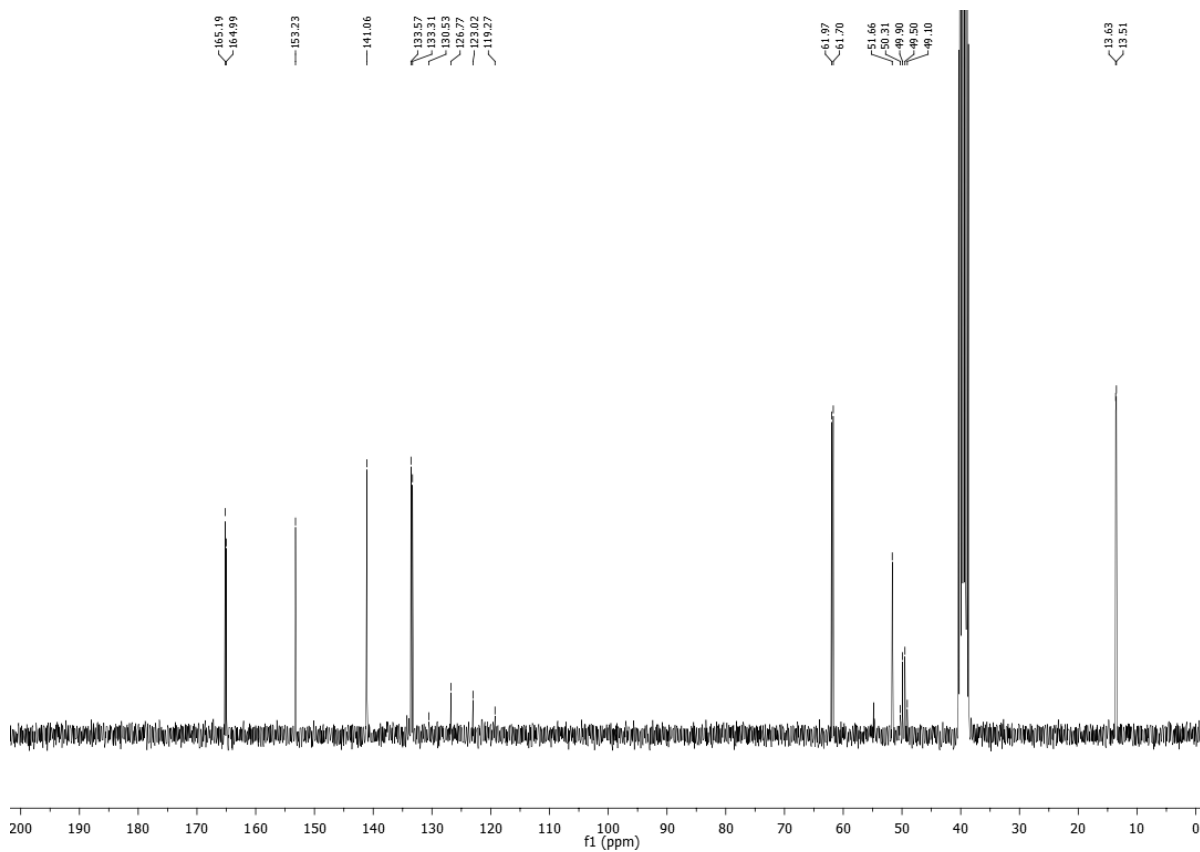
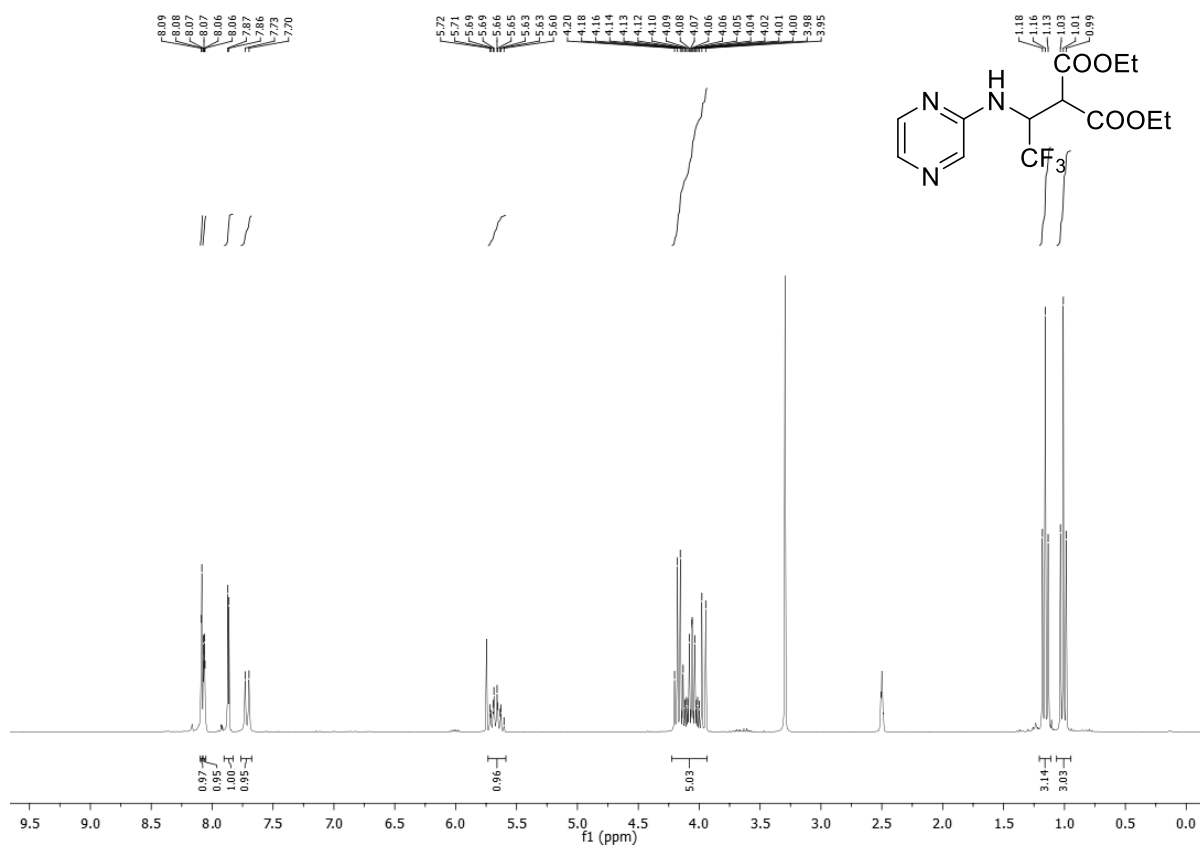


2-(2,6-Dichlorophenyl)-4,4,4-trifluoro-3-(pyrazin-2-ylamino)butanenitrile (3m)





Diethyl 2-(2,2,2-trifluoro-1-(pyrazin-2-ylamino)ethyl)malonate (3n)



Ethyl 4,4,4-trifluoro-3-(pyrazin-2-ylamino)butanoate (3o)

