

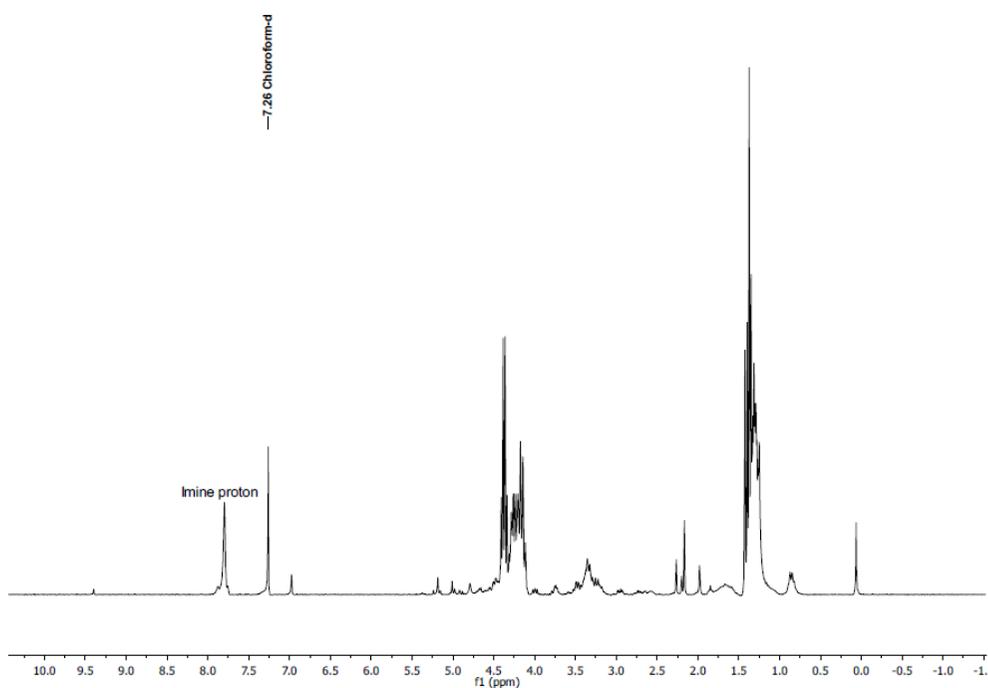
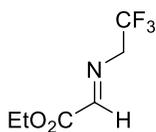
Anexo IV

Colección de espectros de RMN

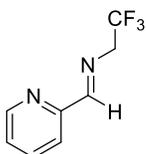
ANEXO IV.1 ILUROS DE AZOMETINO TRIFLUOROMETILADOS EN REACCIONES DE CICLOADICIÓN 1,3-DIPOLAR CATALÍTICA ASIMÉTRICA

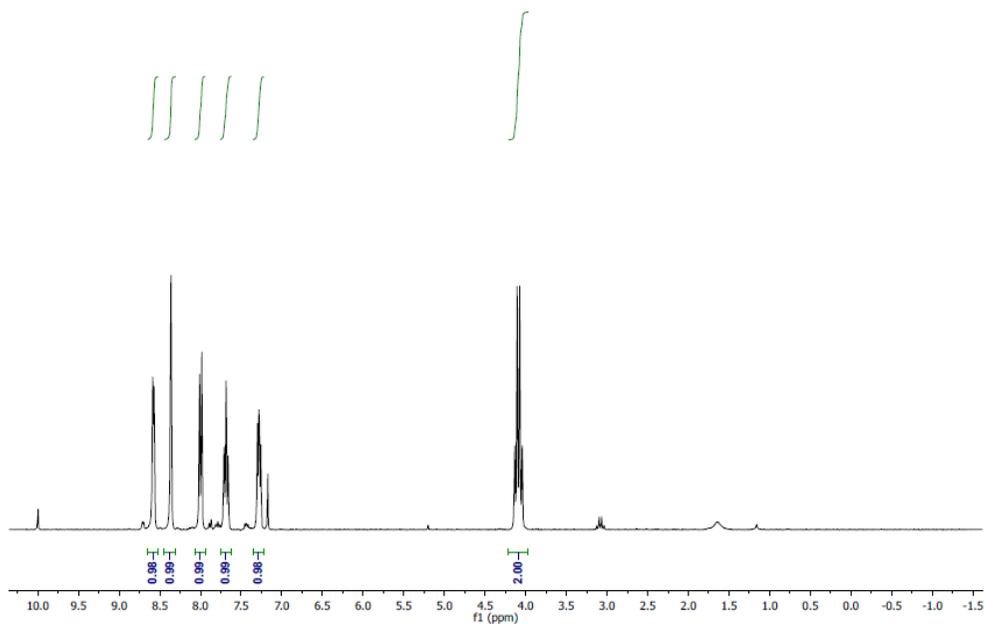
➤ Síntesis de las iminas fluoradas de partida

(*E*)-2-((2,2,2-trifluoroetil)imino)acetato de etilo (1r)

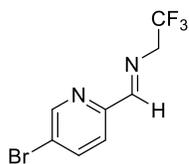


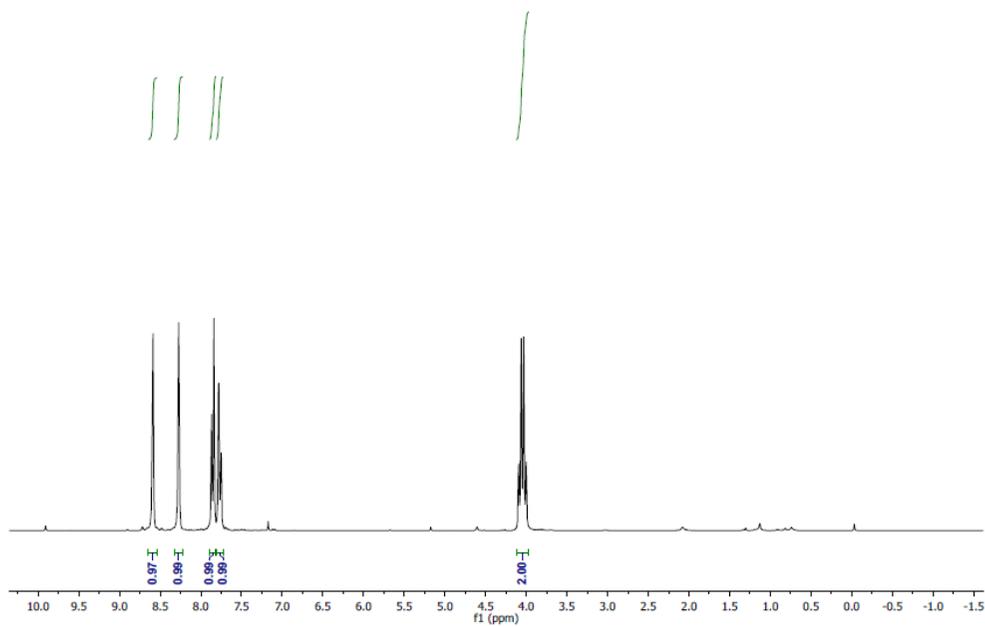
(*E*)-2,2,2-Trifluoro-*N*-(piridin-2-ilmetileno)etanamina (1s)



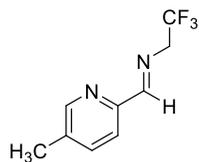


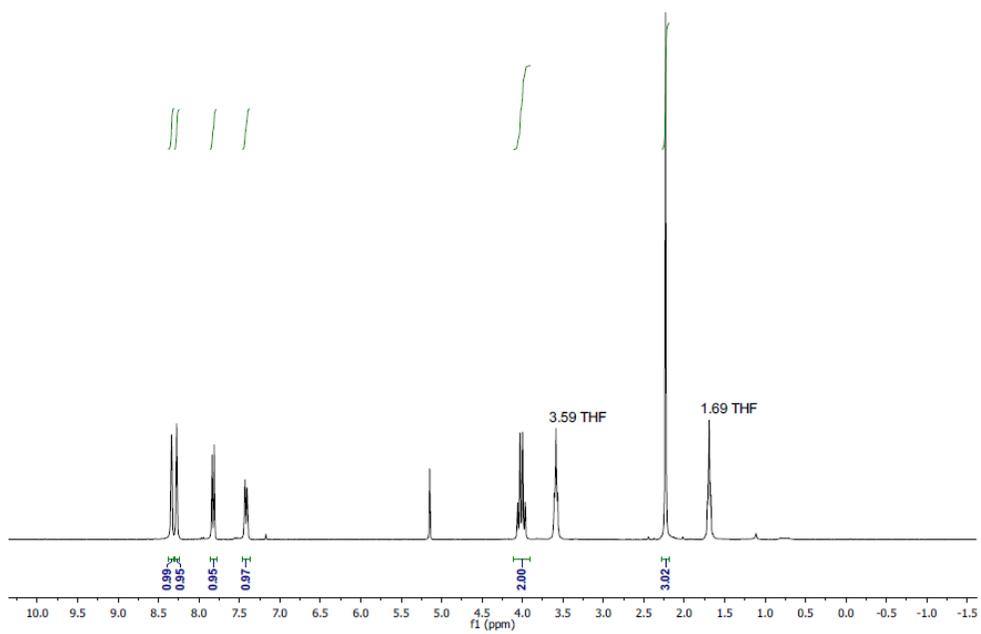
(E)-N-((5-Bromopiridin-2-il)metileno)-2,2,2-trifluoroetanamina (1t)



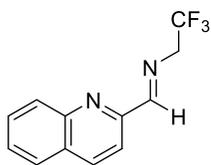


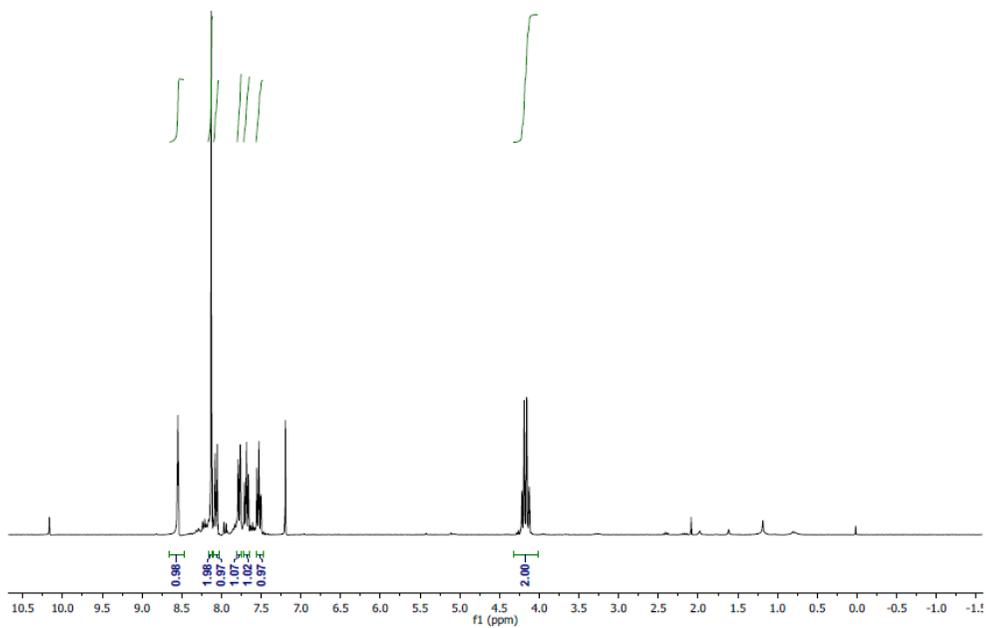
(E)-2,2,2-Trifluoro-N-((5-metilpiridin-2-il)metileno)etanamina (1u)



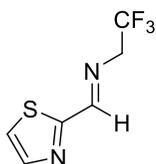


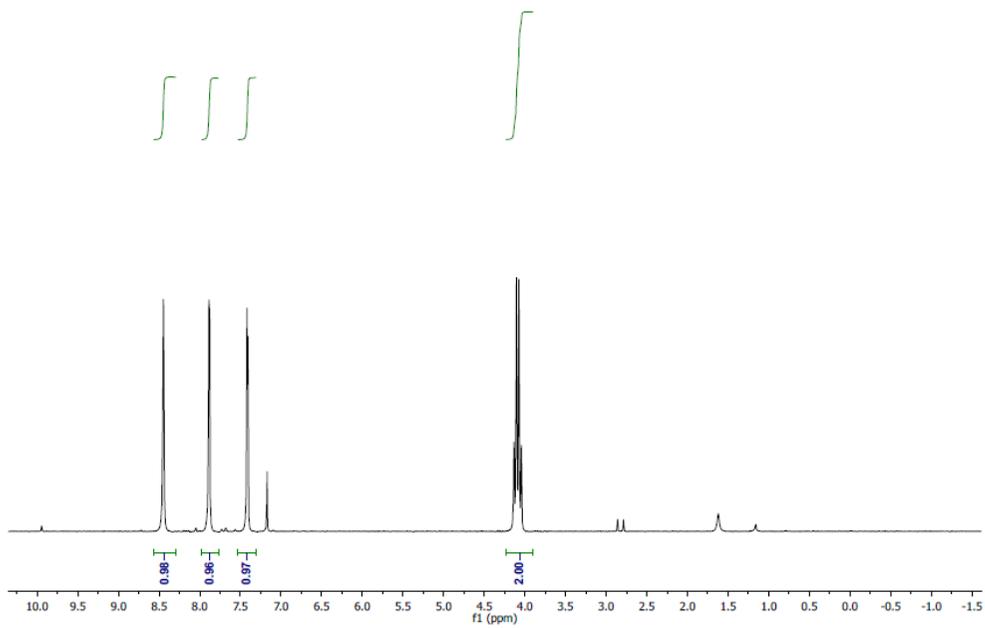
(E)-2,2,2-Trifluoro-N-(quinolin-2-ylmethylene)etanamina (1v)



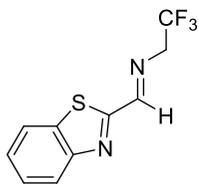


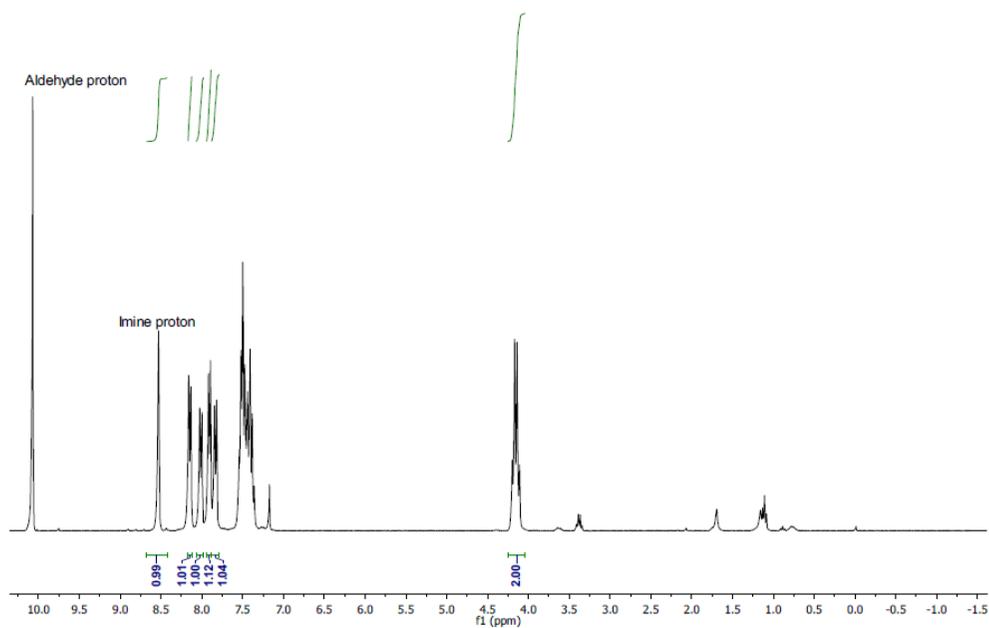
(E)-2,2,2-Trifluoro-N-(thiazol-2-ylmethylene)ethanimine (1w)



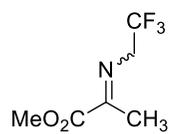


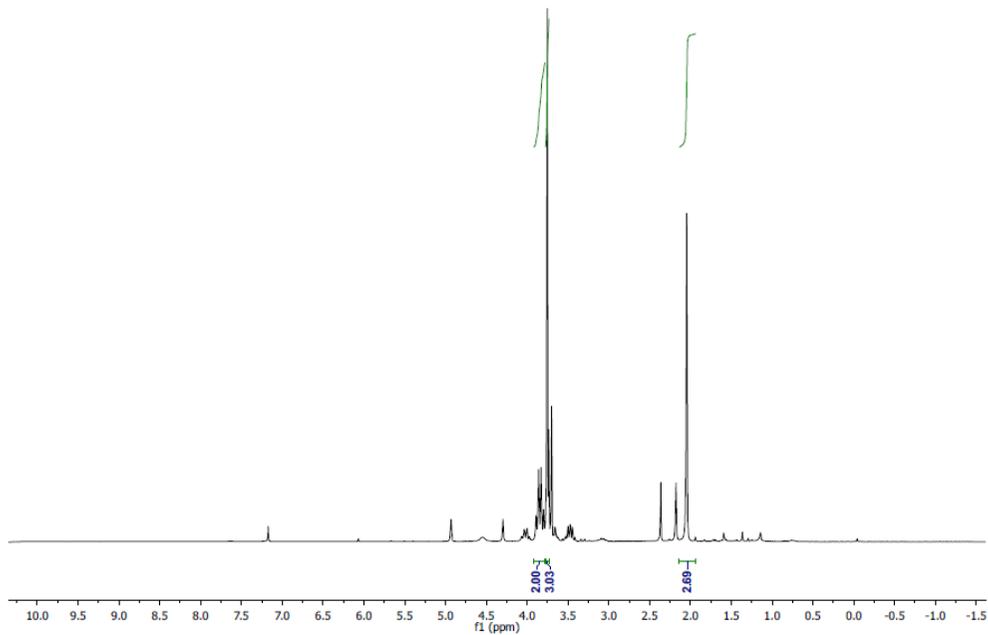
(E)-N-(Benzo[d]thiazol-2-ilmetileno)-2,2,2-trifluoroetanamina (1x)



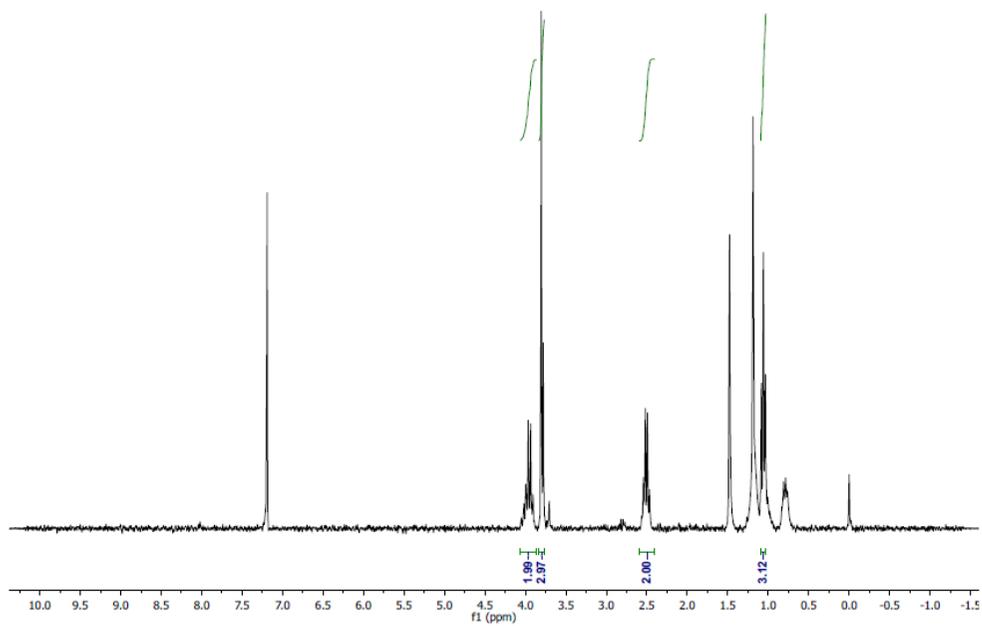
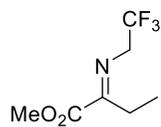


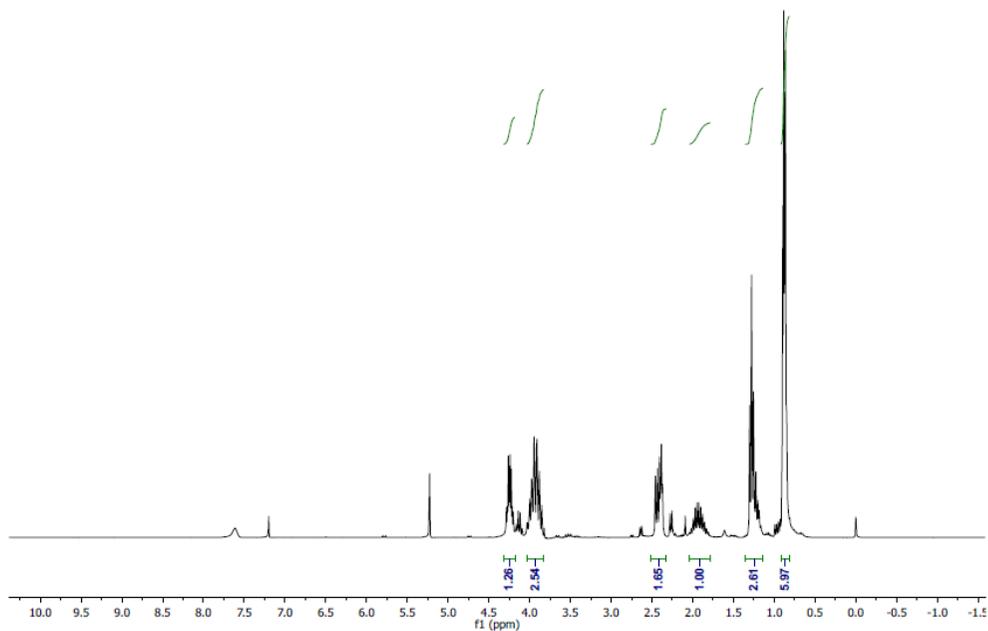
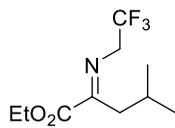
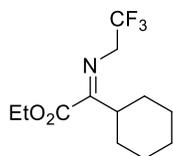
2-((2,2,2-trifluoroetil)imino)propanoato de metilo (1a)

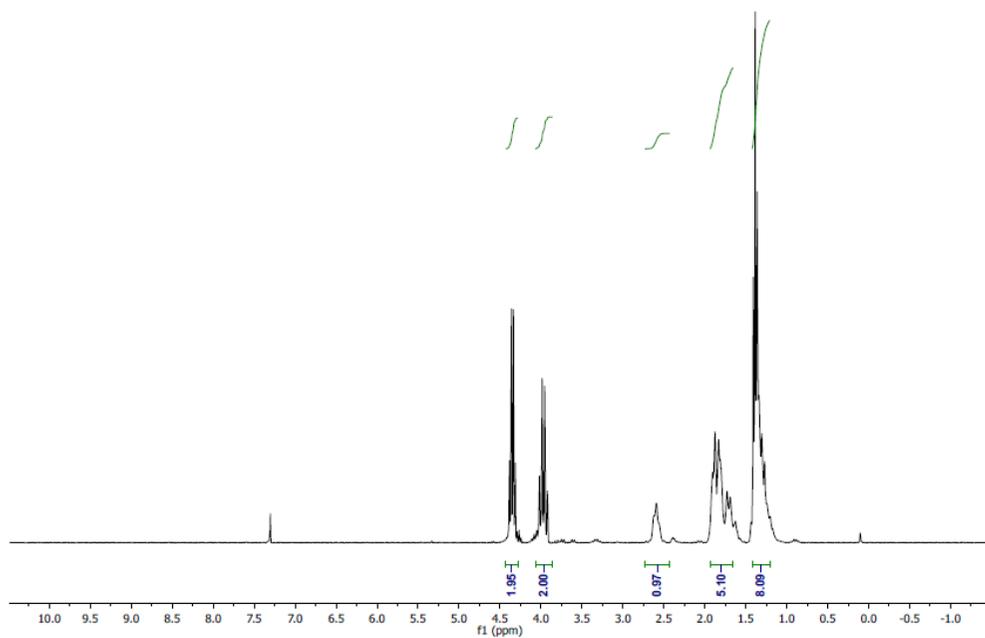




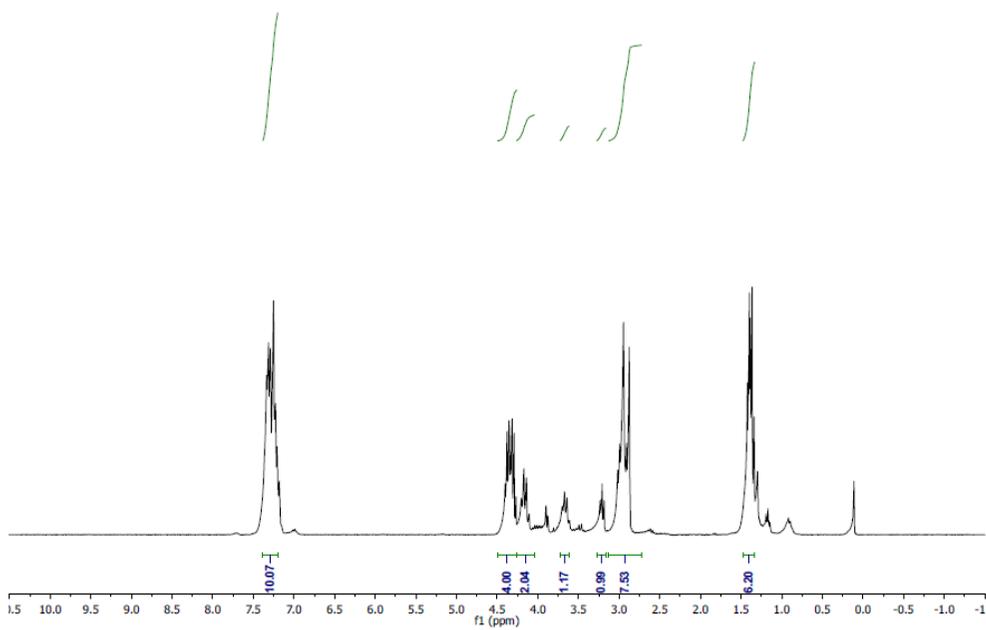
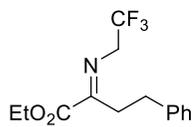
2-((2,2,2-trifluoroetil)imino)butanoato de metilo (1b)

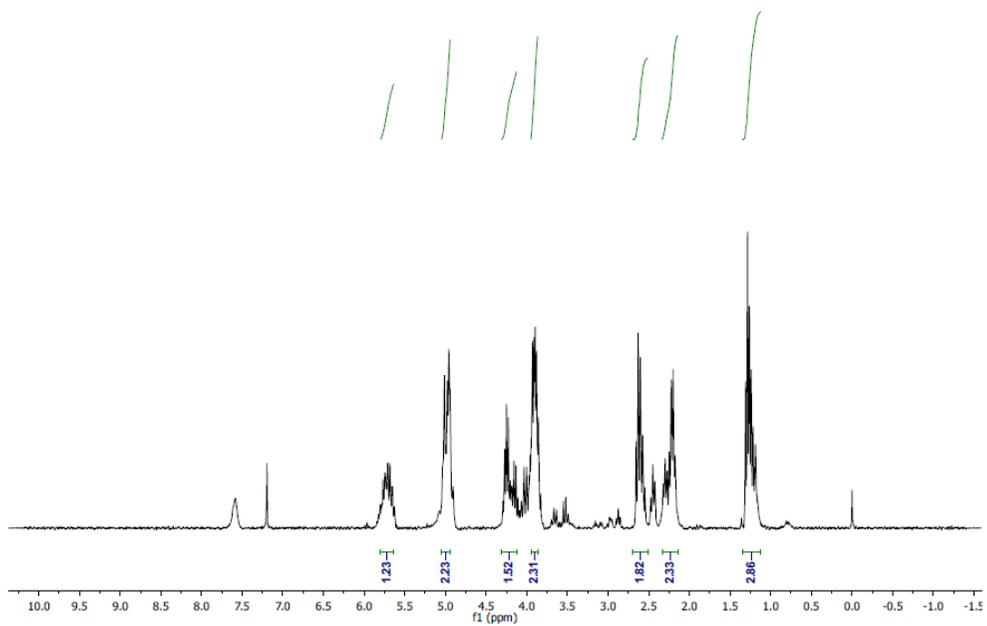
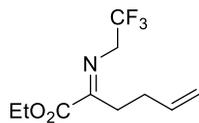
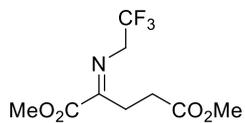


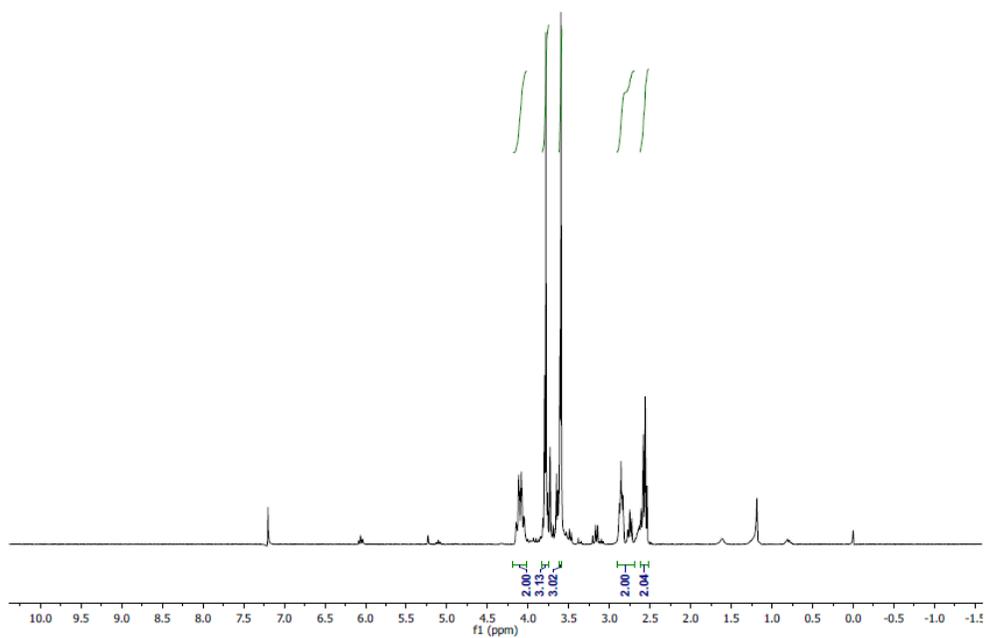
4-metil-2-((2,2,2-trifluoroetil)imino)pentanoato de etilo (1c)**2-ciclohexil-2-((2,2,2-trifluoroetil)imino)acetato de etilo (1d)**



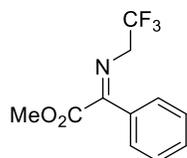
4-fenil-2-((2,2,2-trifluoroetil)imino)butanoato de etilo (1e)

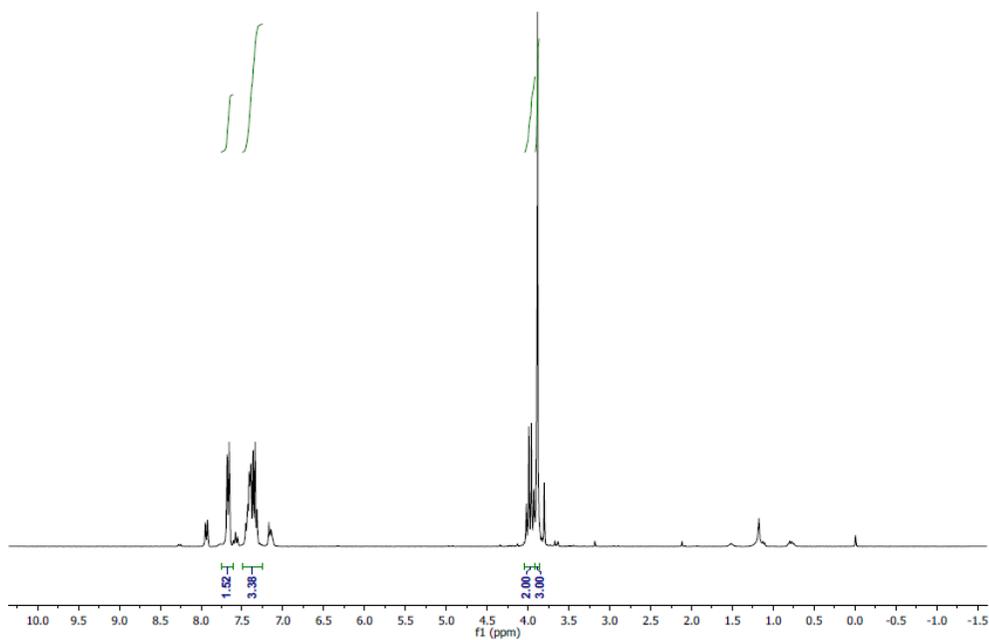


2-((2,2,2-trifluoroetil)imino)hex-5-enoato de etilo (1f)**2-((2,2,2-trifluoroetil)imino)pentanodioato de dimetilo (1g)**

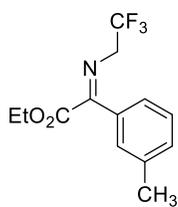


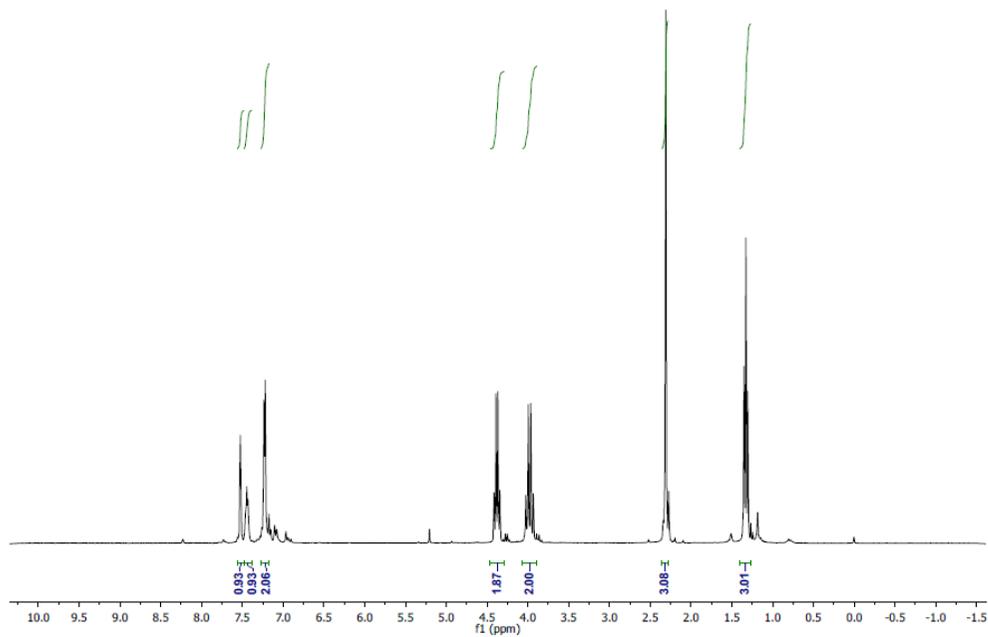
2-fenil-2-((2,2,2-trifluoroetil)imino)acetato de metilo (1h)



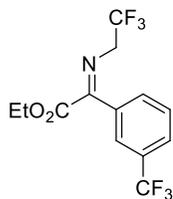


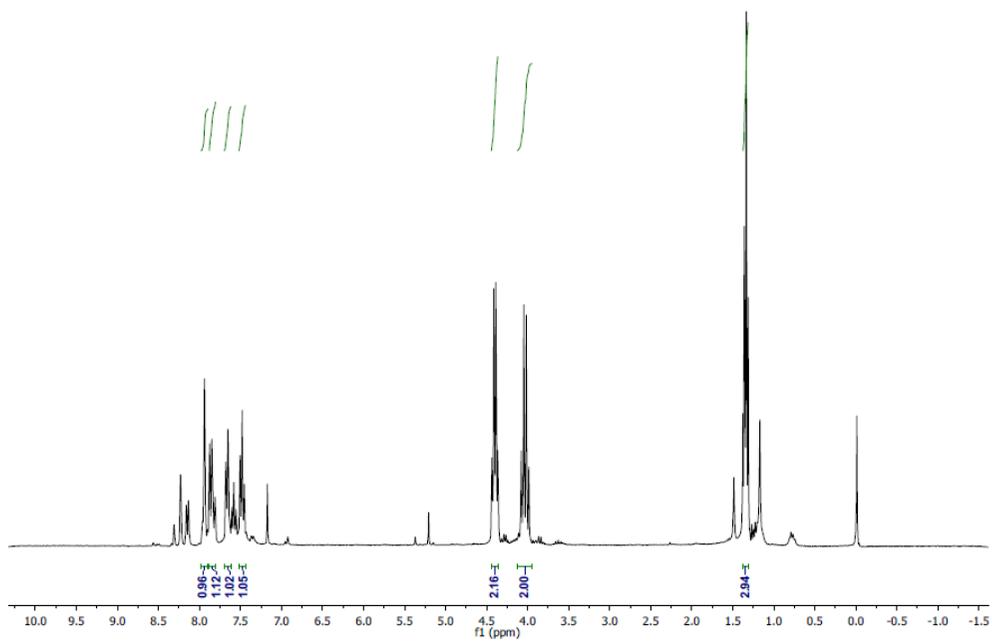
2-(*m*-tolilo)-2-((2,2,2-trifluoroetil)imino)acetato de etilo (1i)



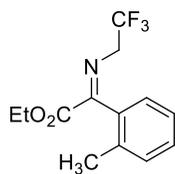


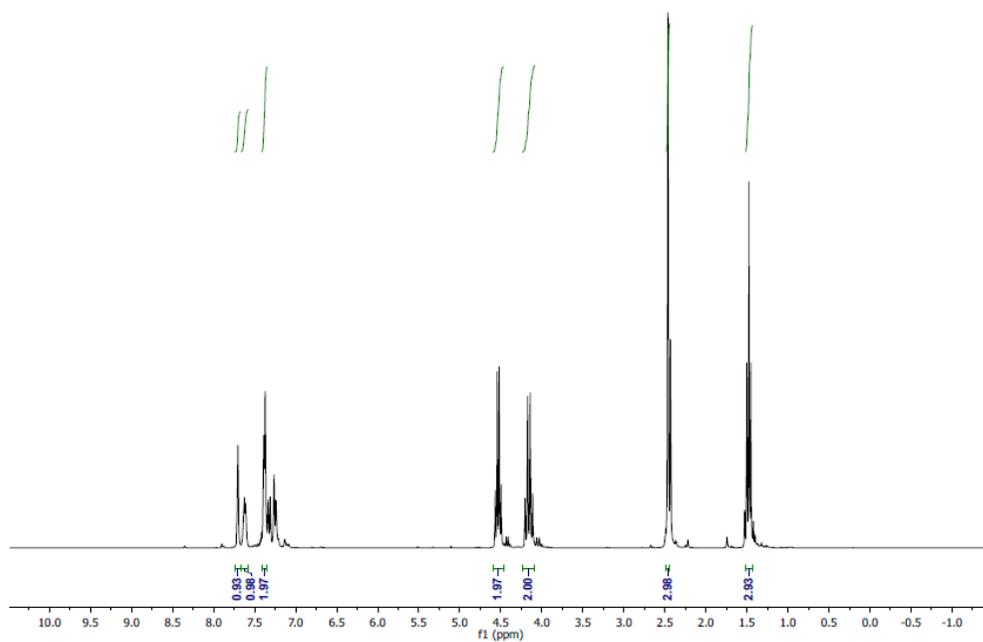
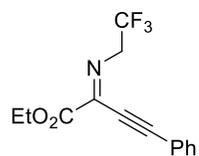
2-((2,2,2-trifluoroetil)imino)-2-(3-(trifluorometil)fenil)acetato de etilo (1j)

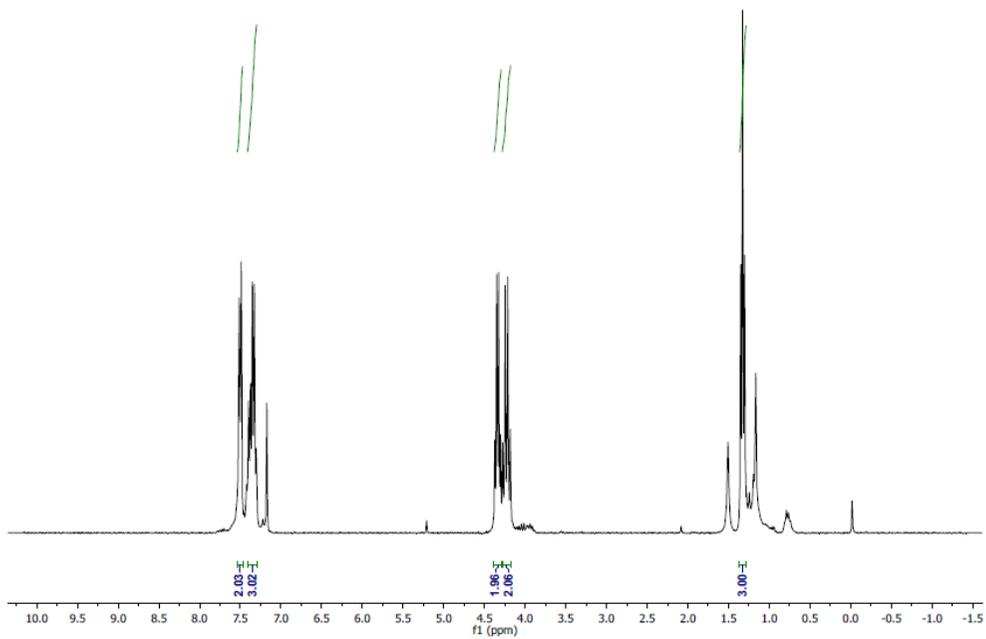




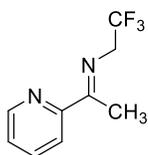
2-(*o*-tolil)-2-((2,2,2-trifluoroetil)imino)acetato de etilo (1k)

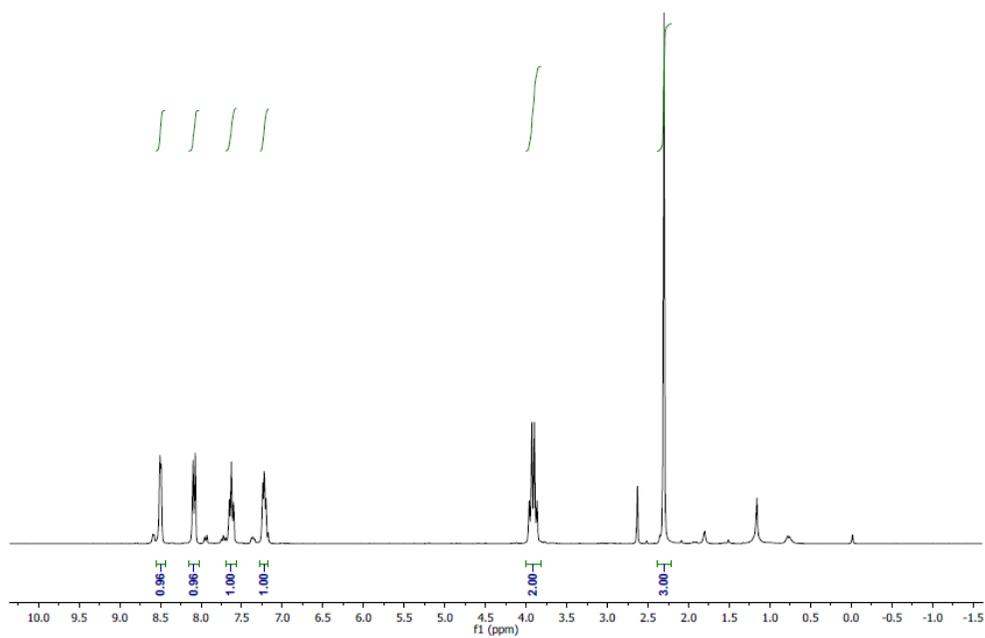
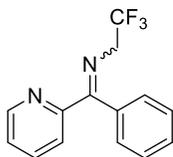


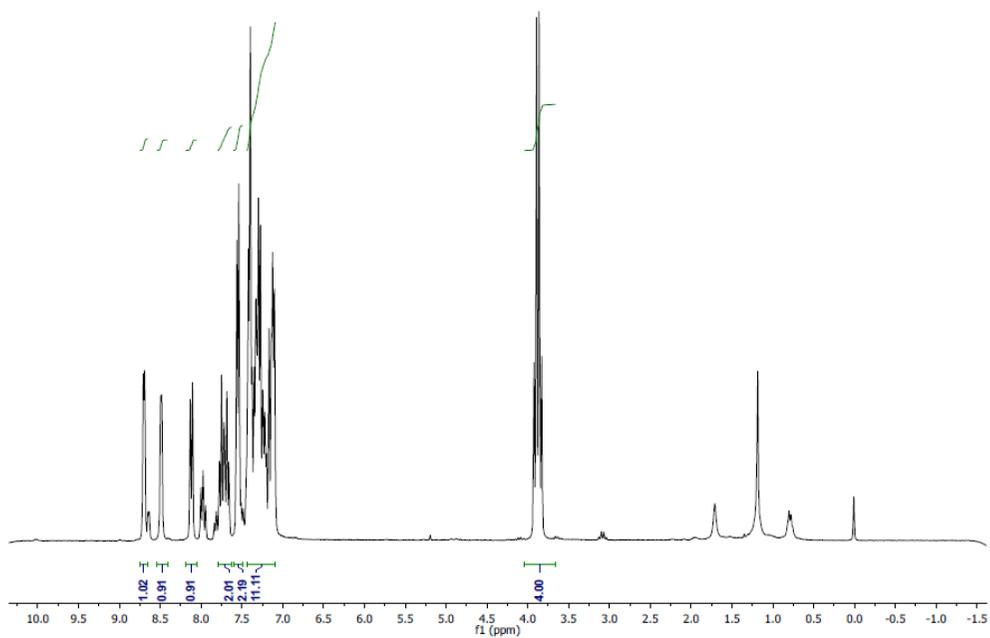
**4-fenil-2-((2,2,2-trifluoroetil)imino)but-3-inoato de etilo (1)**



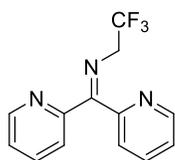
2,2,2-Trifluoro-*N*-(1-(piridin-2-il)etilidene)etanamina (1m)

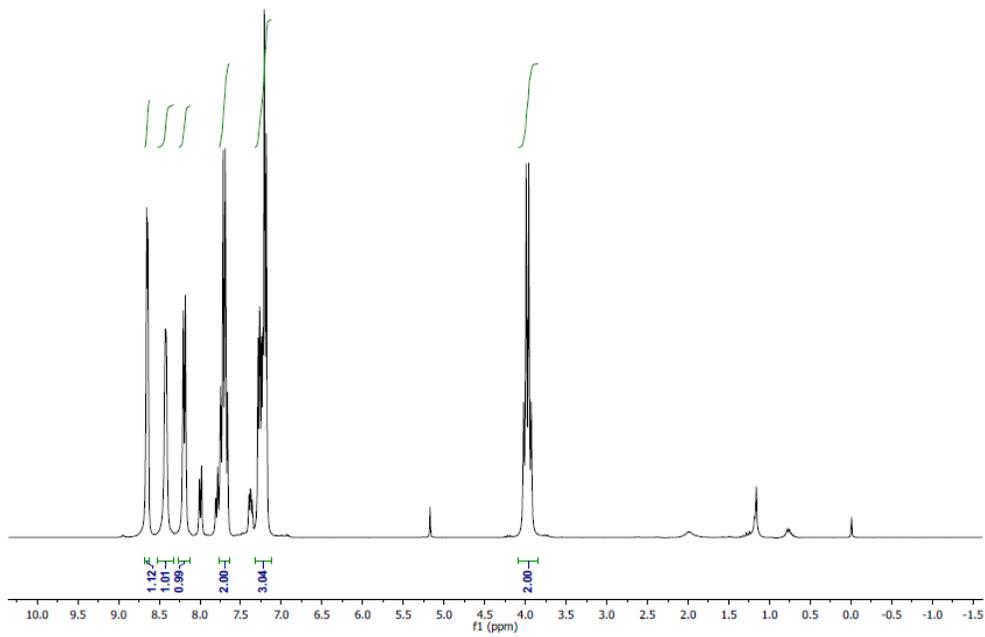


**2,2,2-Trifluoro-N-(fenil(piridin-2-il)metileno)etanamina (1n)**

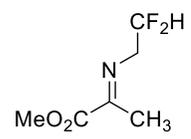


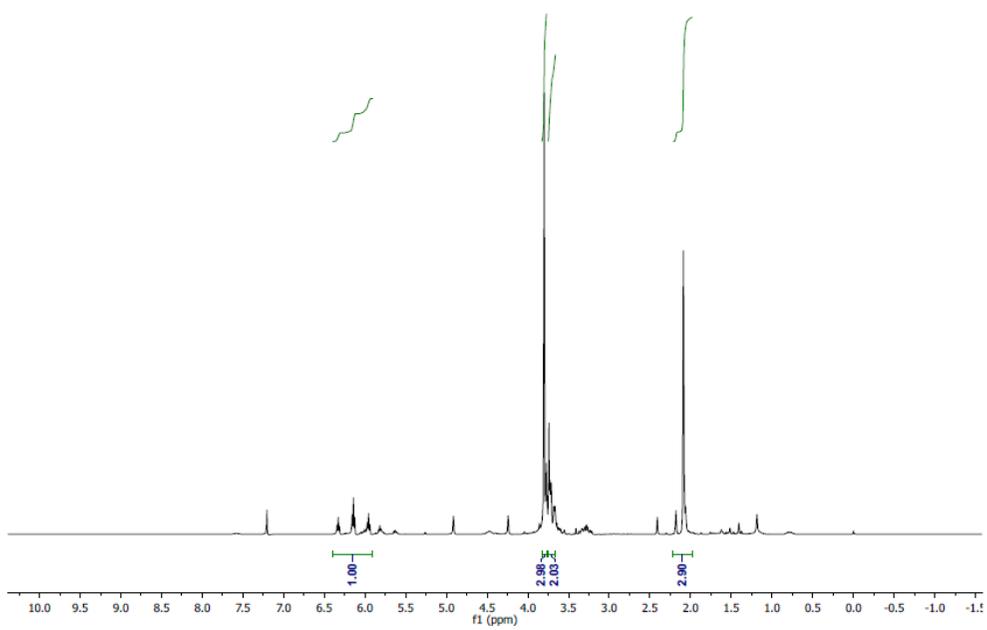
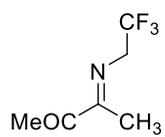
***N*-(Di(piridin-2-il)metileno)-2,2,2-trifluoroetamina (1ñ)**

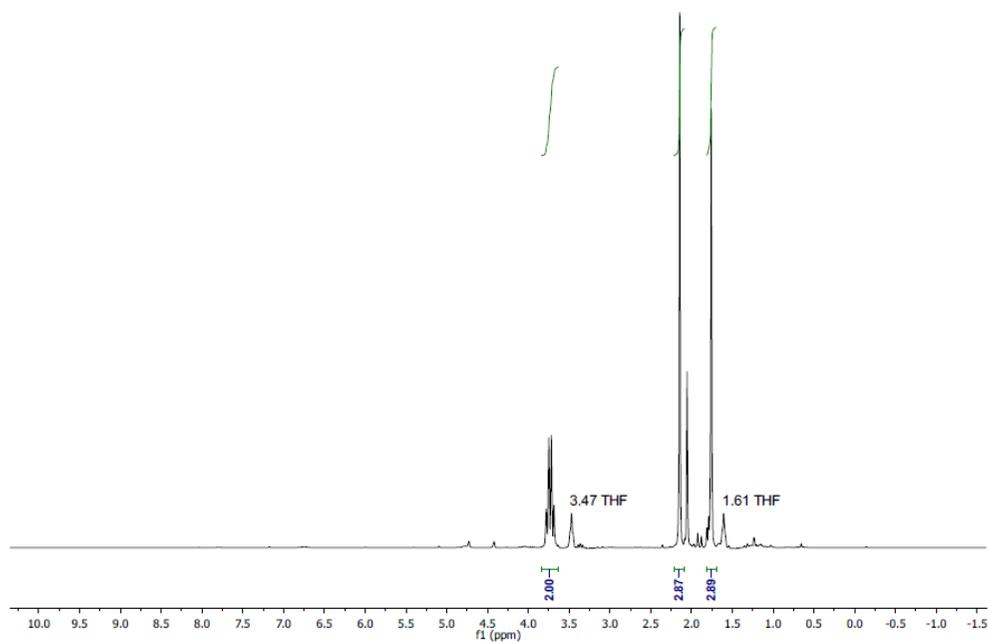
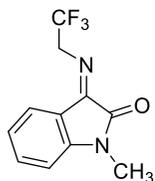


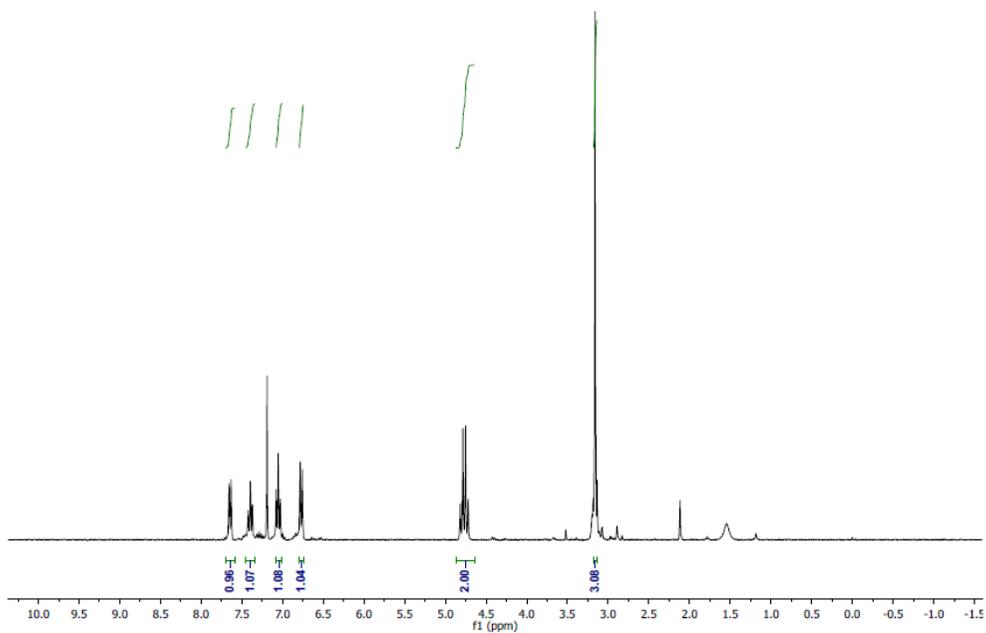


2-((2,2-difluoroetil)imino)propanoato de metilo (1o)



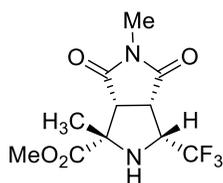
**3-((2,2,2-Trifluoroetil)imino)butan-2-ona (1p)**

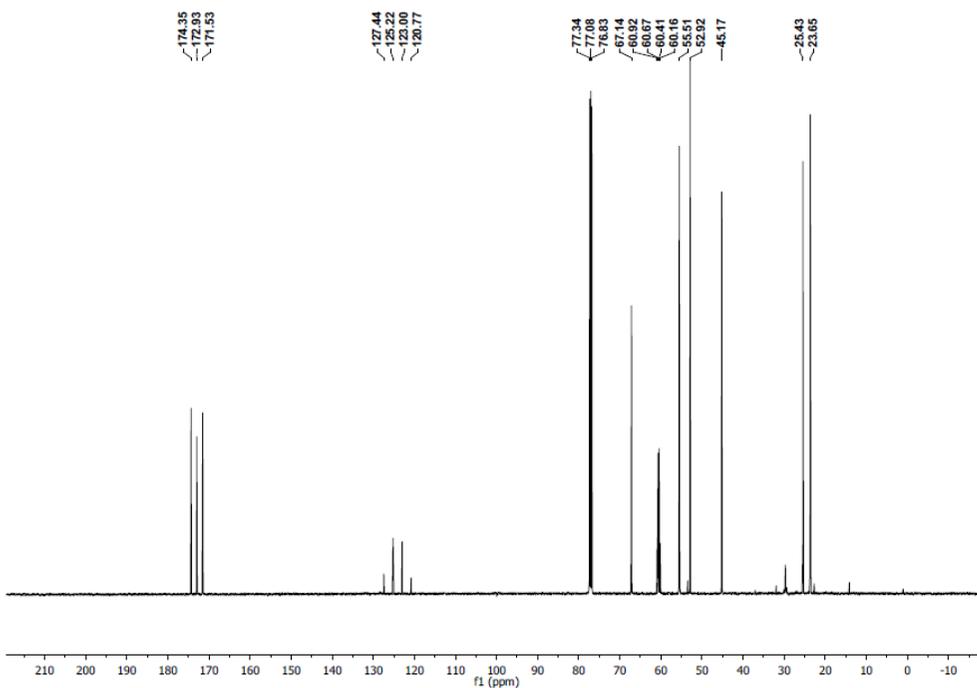
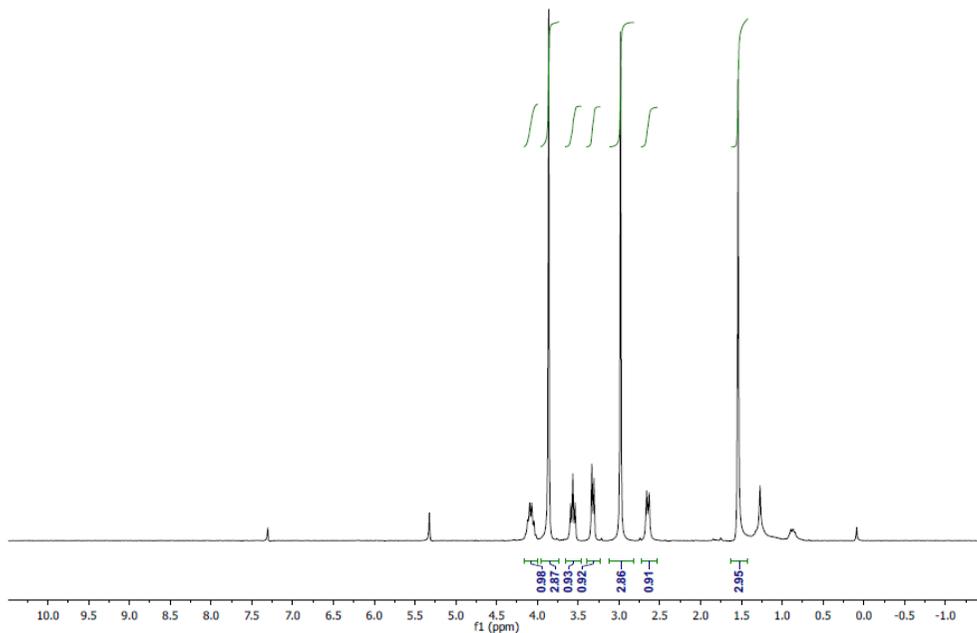
**1-Metil-3-((2,2,2-trifluoroetil)imino)indolin-2-ona (1q)**

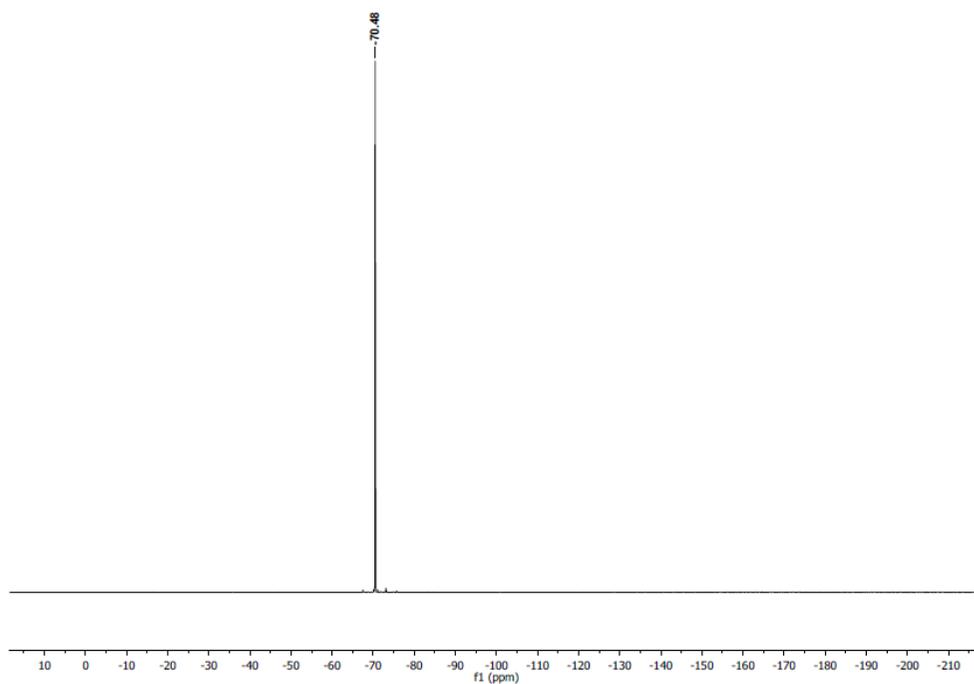


➤ **Ciclodición 1,3-dipolar entre α -trifluorometilimas y *N*-metilmaleimida**

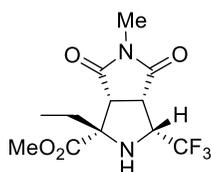
(1*S,3*R**,3*aS**,6*aR**)-1,5-Dimetil-4,6-dioxo-3-(trifluorometil)octahidropirrol[3,4-c]pirrol-1-carboxilato de metilo ((\pm)-*endo*-3a)**

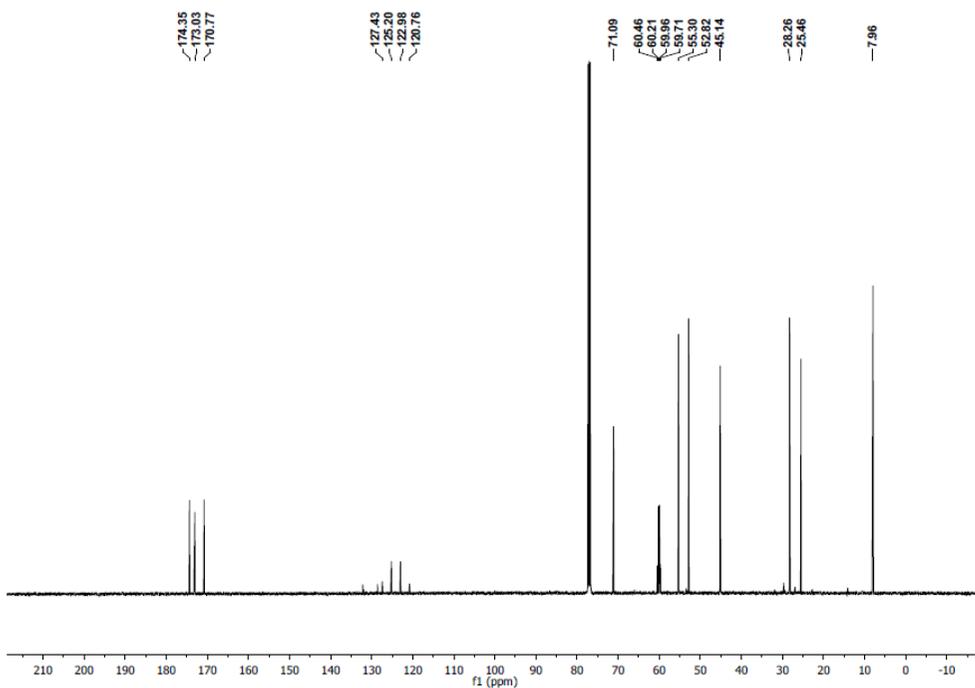
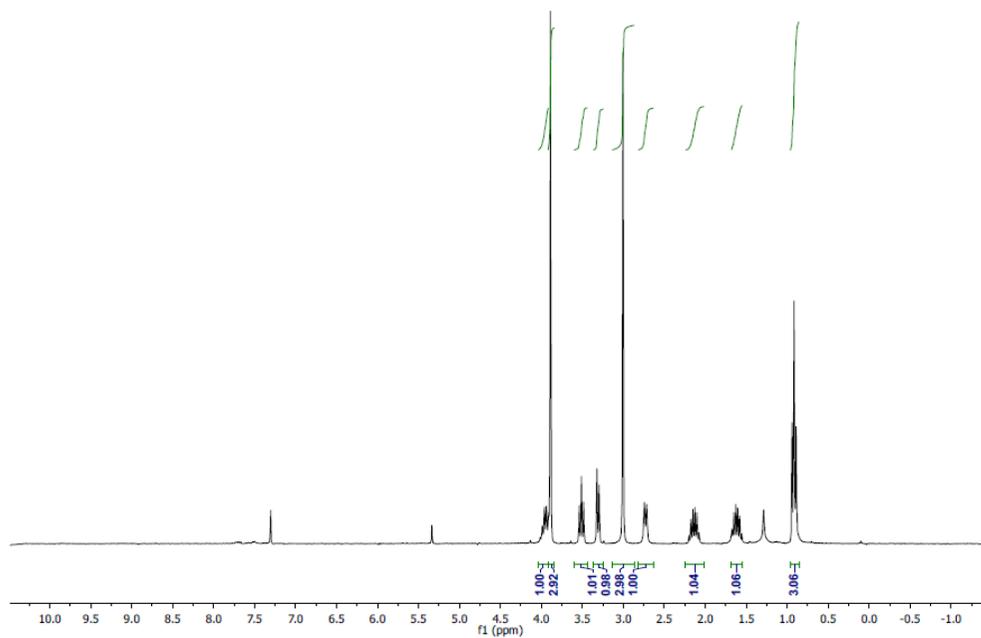


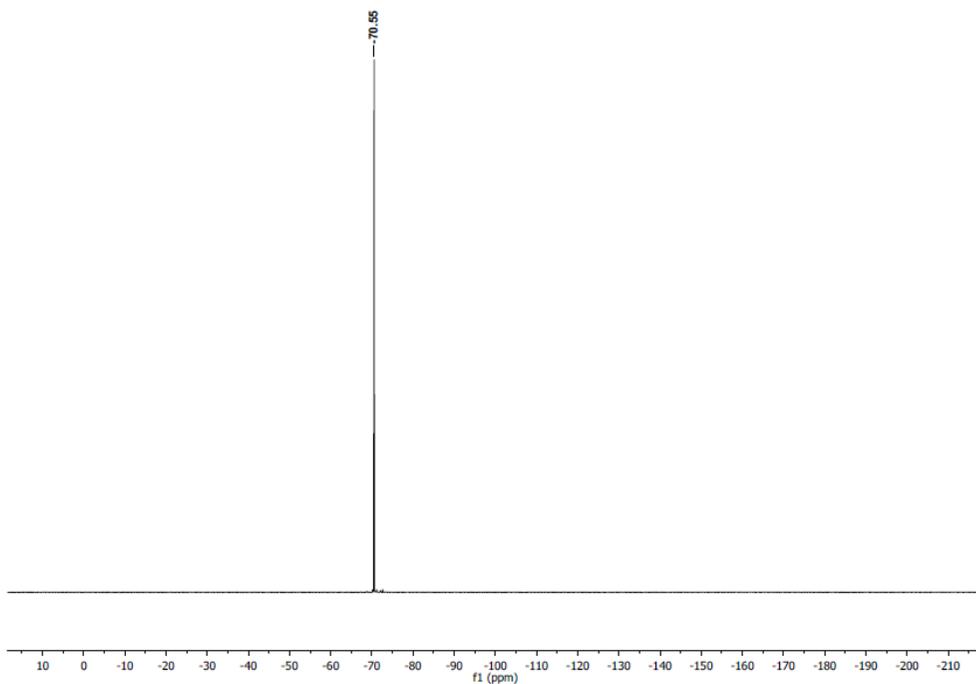




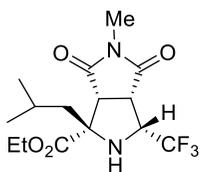
**(1S*,3R*,3aS*,6aR*)-1-Etil-5-metil-4,6-dioxo-3-(trifluorometil)
octahidropirrolo[3,4-c]pirrol-1-carboxilato de metilo ((±)-endo-3b)**

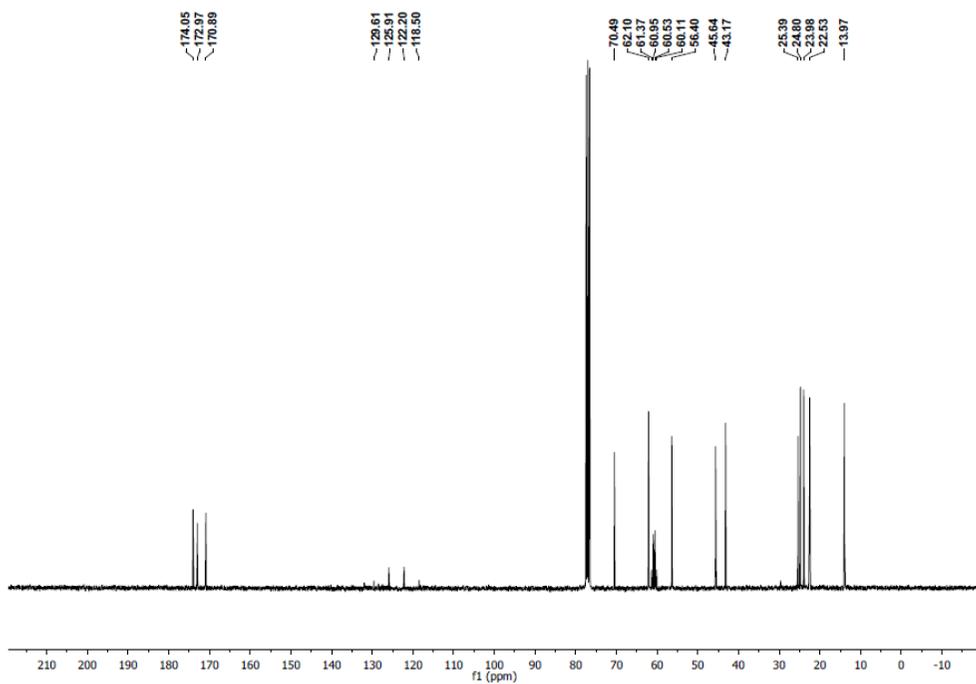
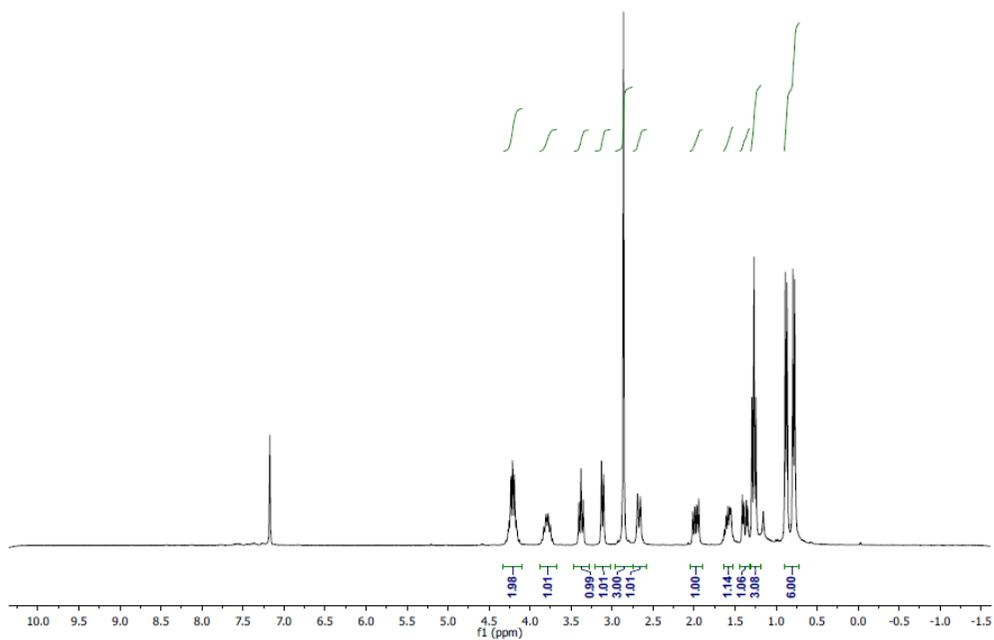


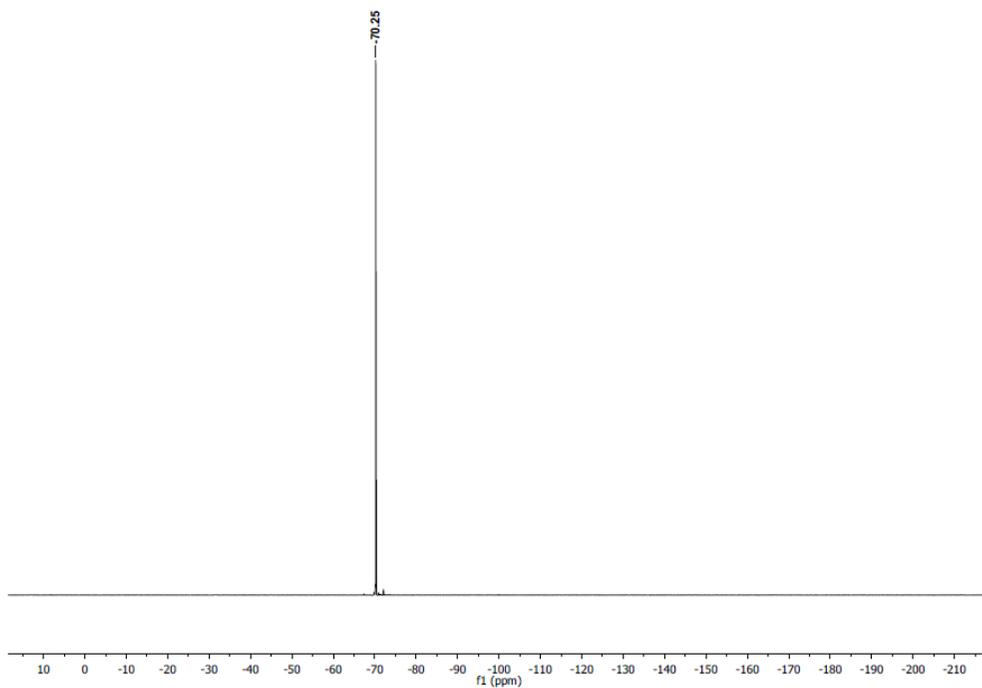




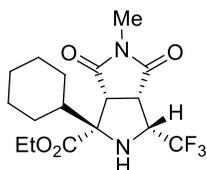
(1*S,3*R**,3*aS**,6*aR**)-1-Isobutil-5-metil-4,6-dioxo-3-(trifluorometil) octahidropirrololo[3,4-*c*]pirrol-1-carboxilato de etilo ((±)-*endo*-3c)**

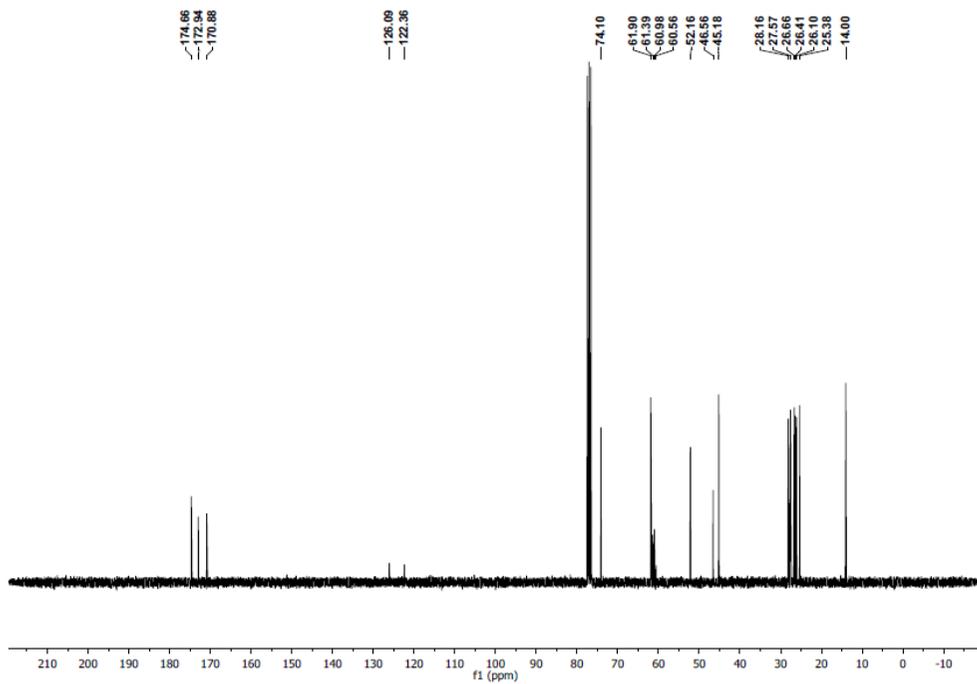
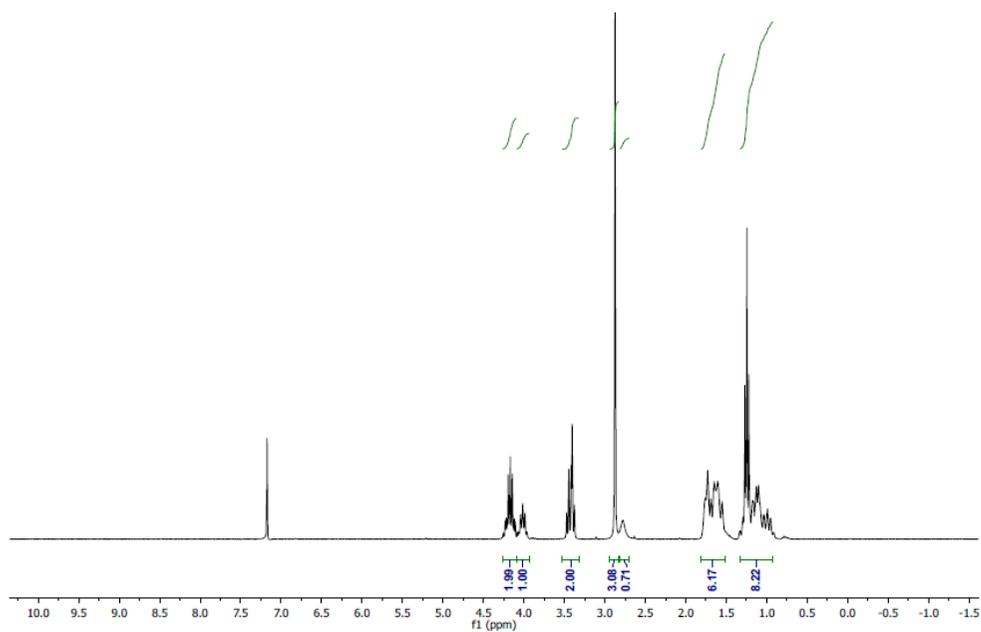


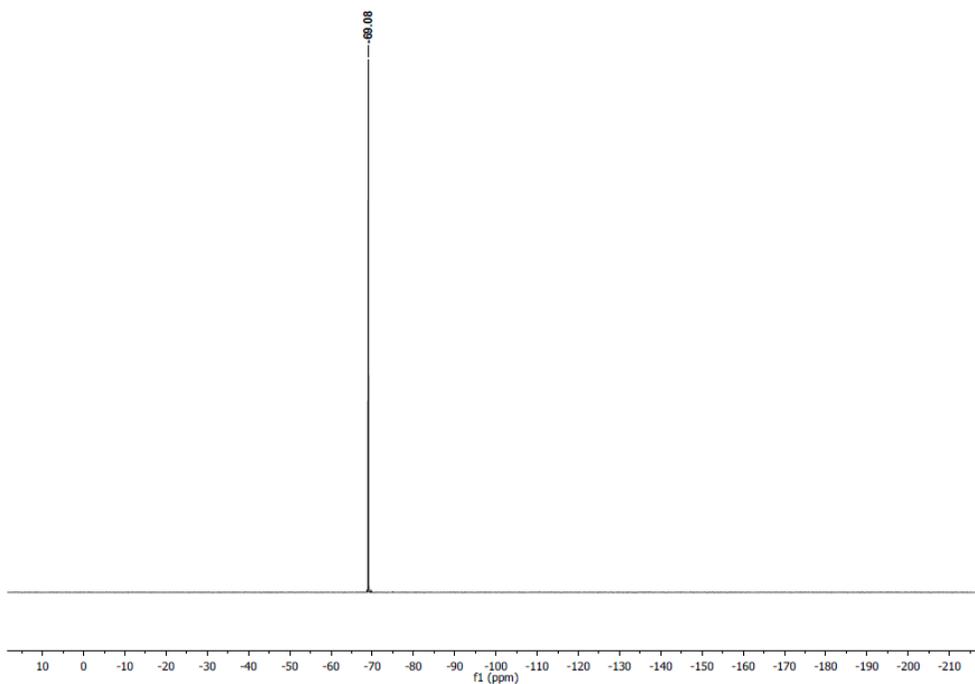




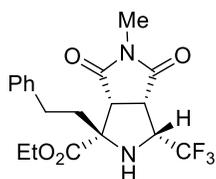
(1*S,3*R**,3*aS**,6*aR**)-Ethyl 1-cyclohexyl-5-methyl-4,6-dioxo-3-(trifluoromethyl) octahydropyrrolo[3,4-*c*]pyrrole-1-carboxylate ((±)-*endo*-3d)**

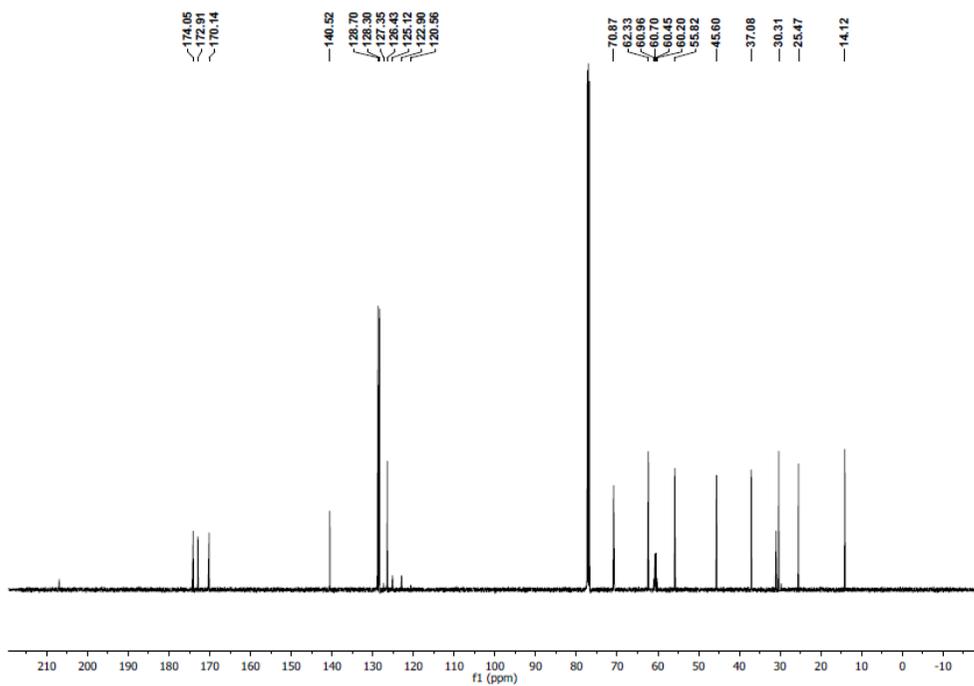
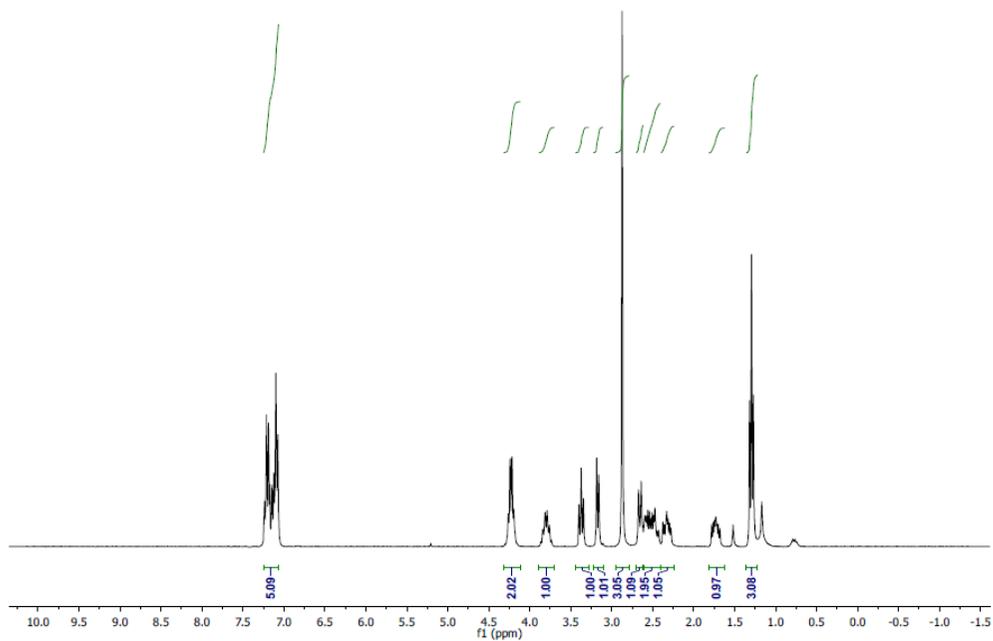


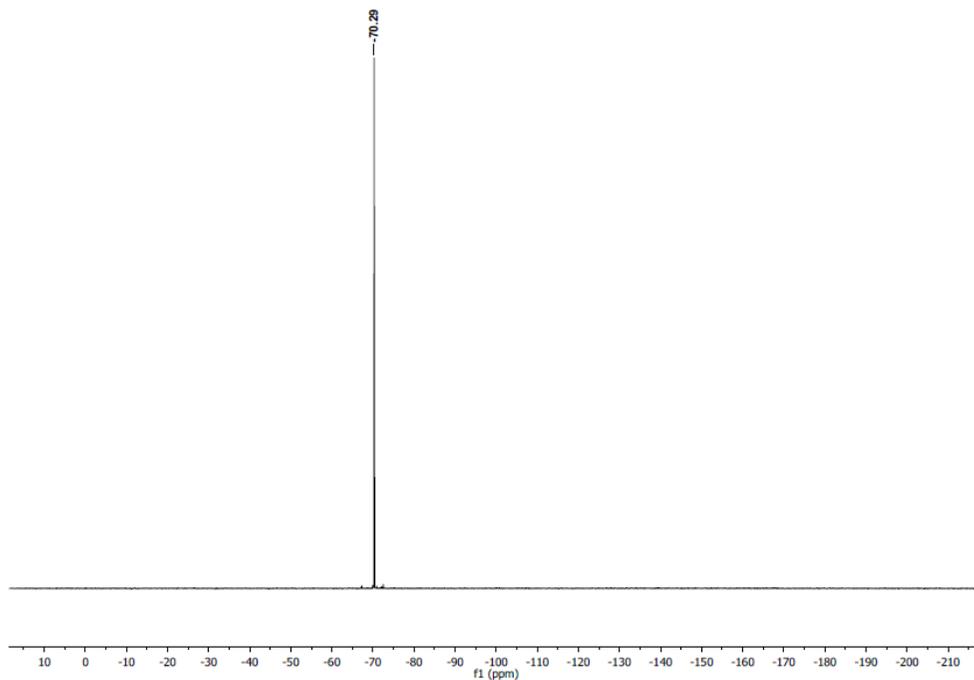




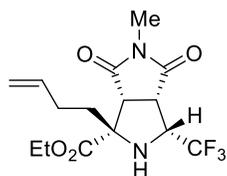
(1*S,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-1-fenil-3-(trifluorometil) octahidropirrol[3,4-c]pirrol-1-carboxilato de etilo ((±)-*endo*-3e)**

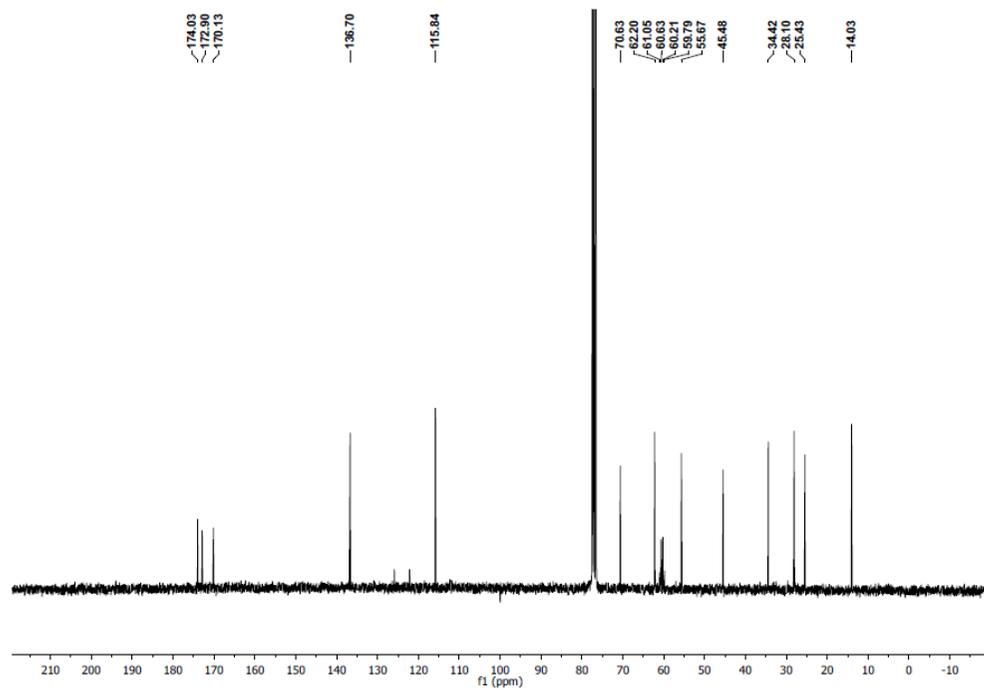
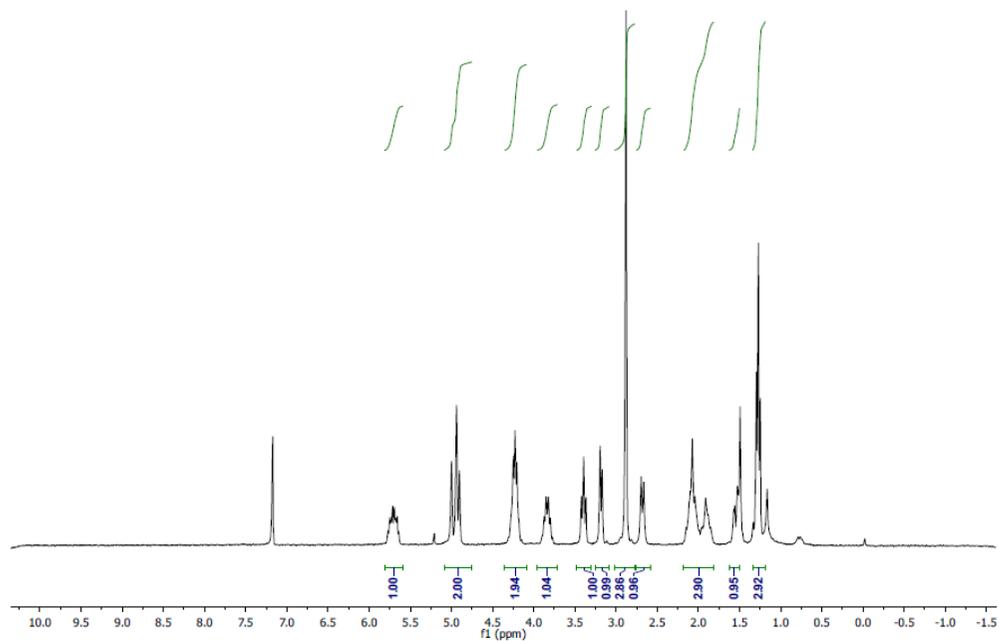


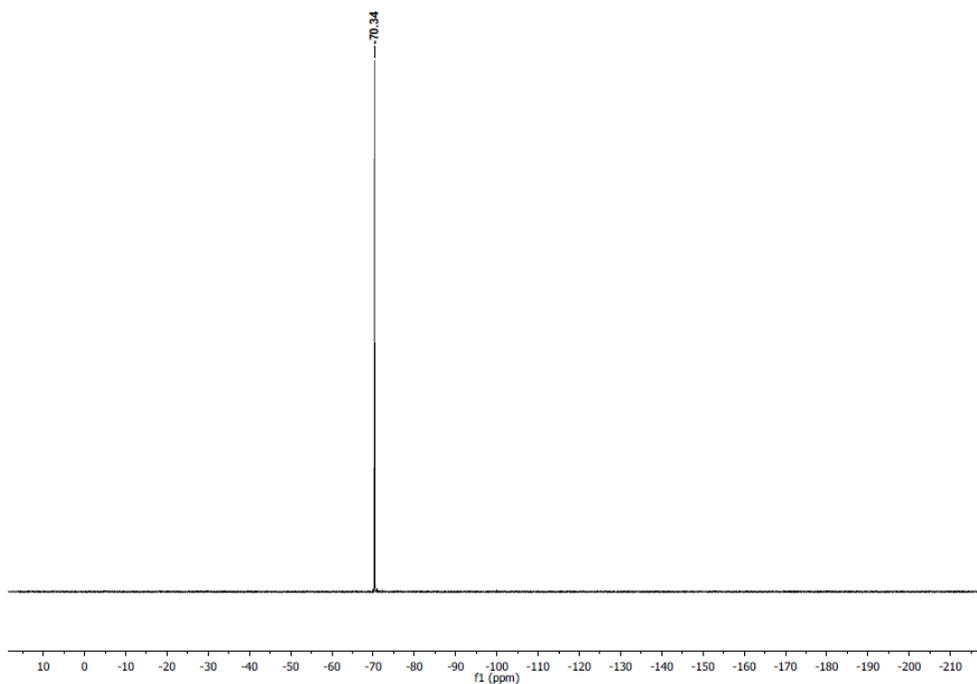




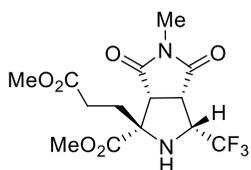
(1*S,3*R**,3*aS**,6*aR**)-1-(But-3-en-1-il)-5-metil-4,6-dioxo-3-(trifluorometil) octahidropirrollo[3,4-c]pirrol-1-carboxilato de etilo ((±)-*endo*-3f)**

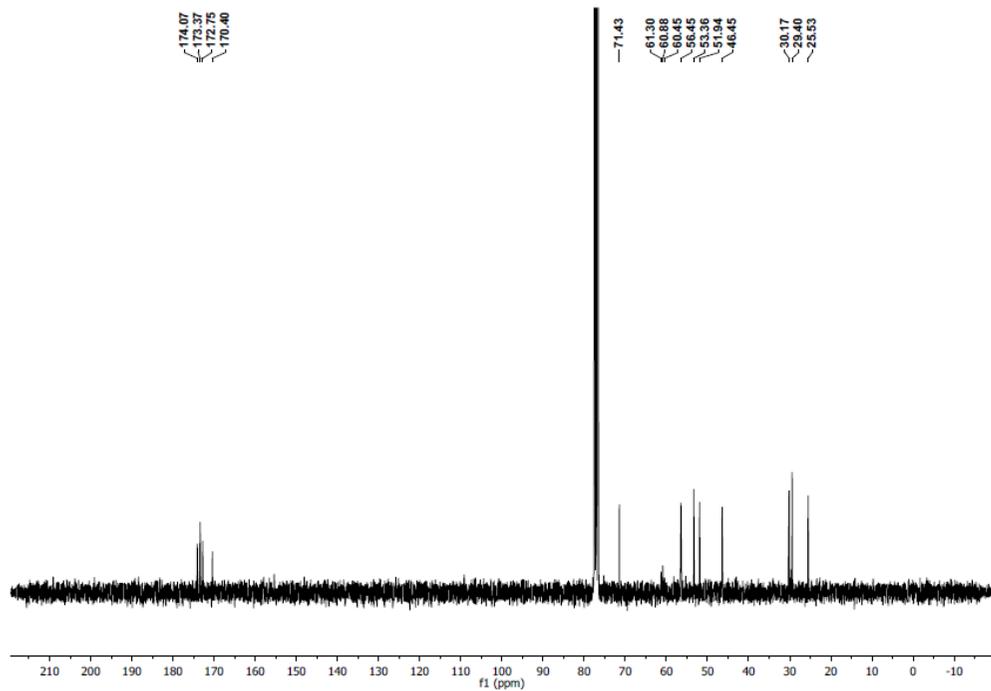
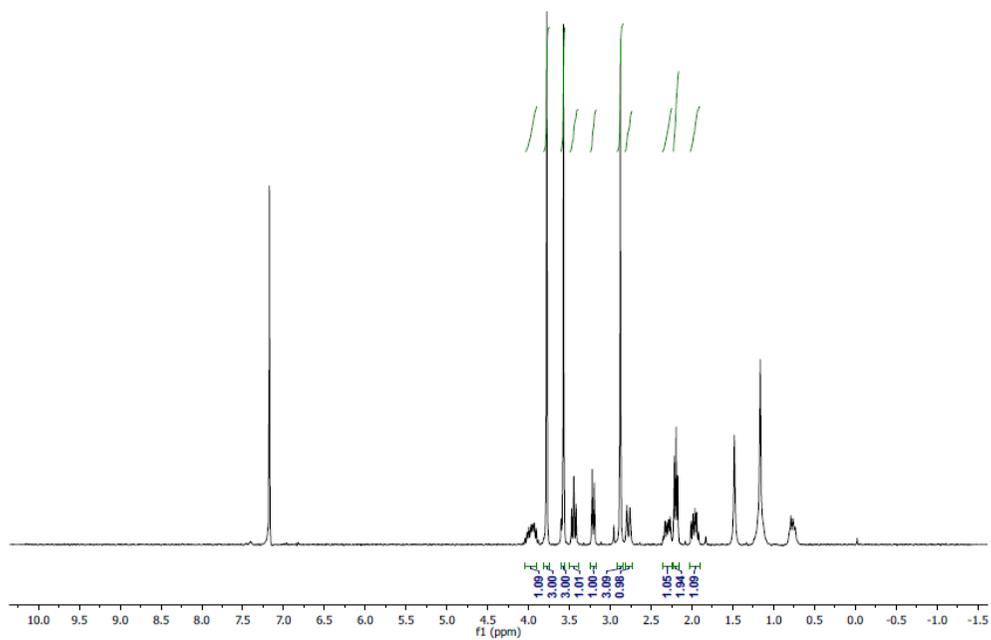


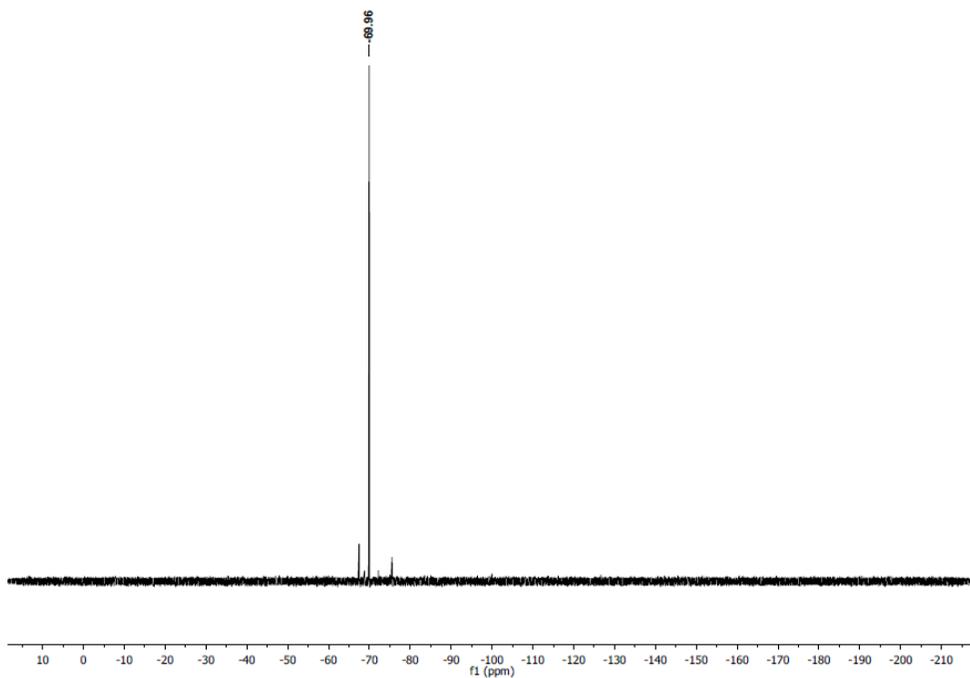




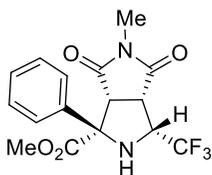
(1*S,3*R**,3*aS**,6*aR**)-1-(3-Metoxi-3-oxopropil)-5-metil-4,6-dioxo-3-(trifluorometil)octahidropirrol[3,4-c]pirrol-1-carboxilato de metilo ((±)-*endo*-3g)**

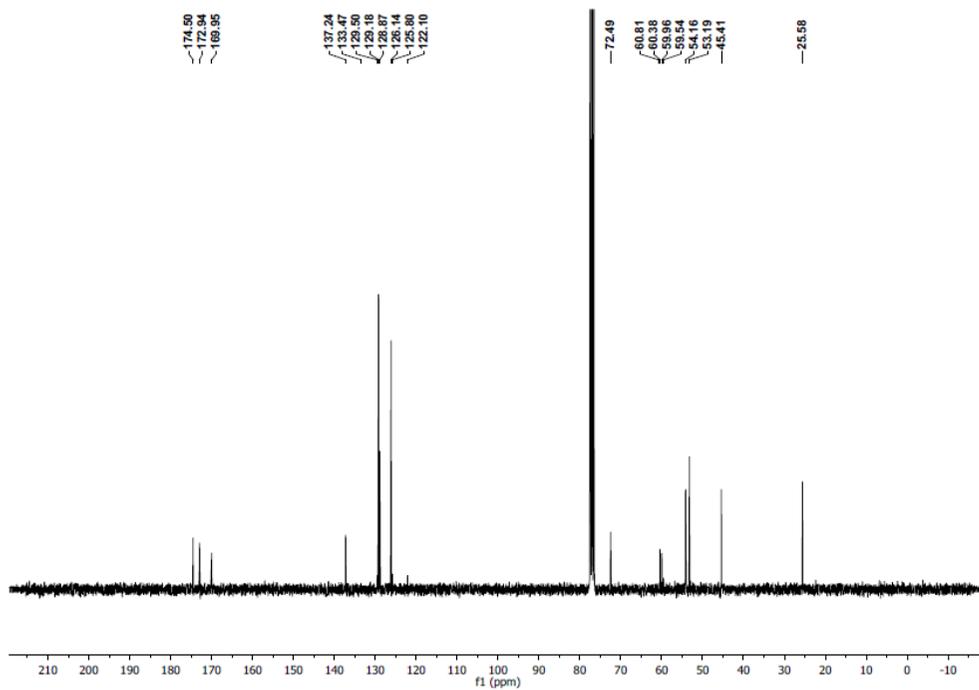
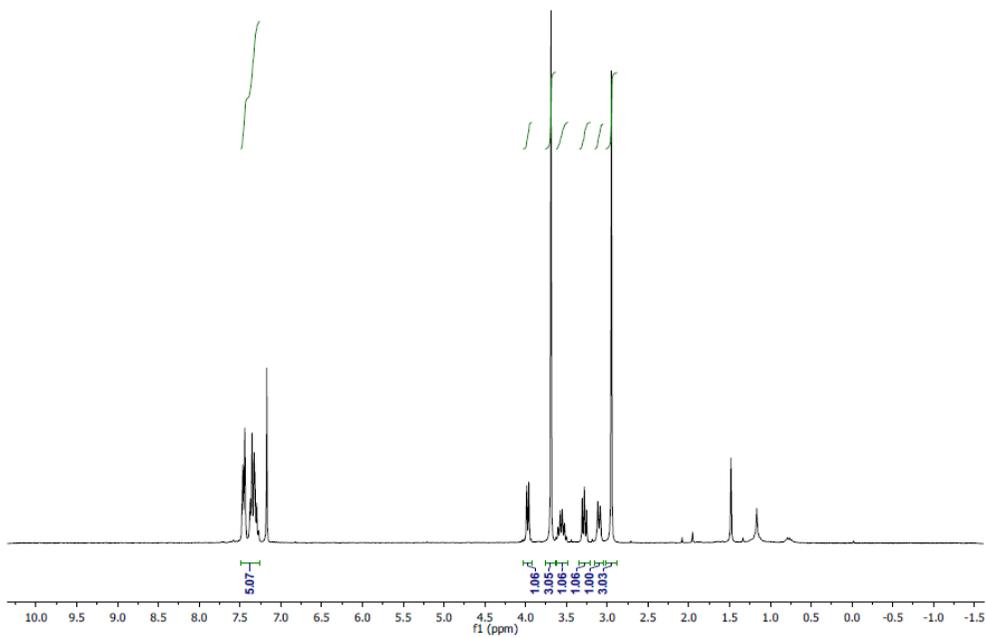


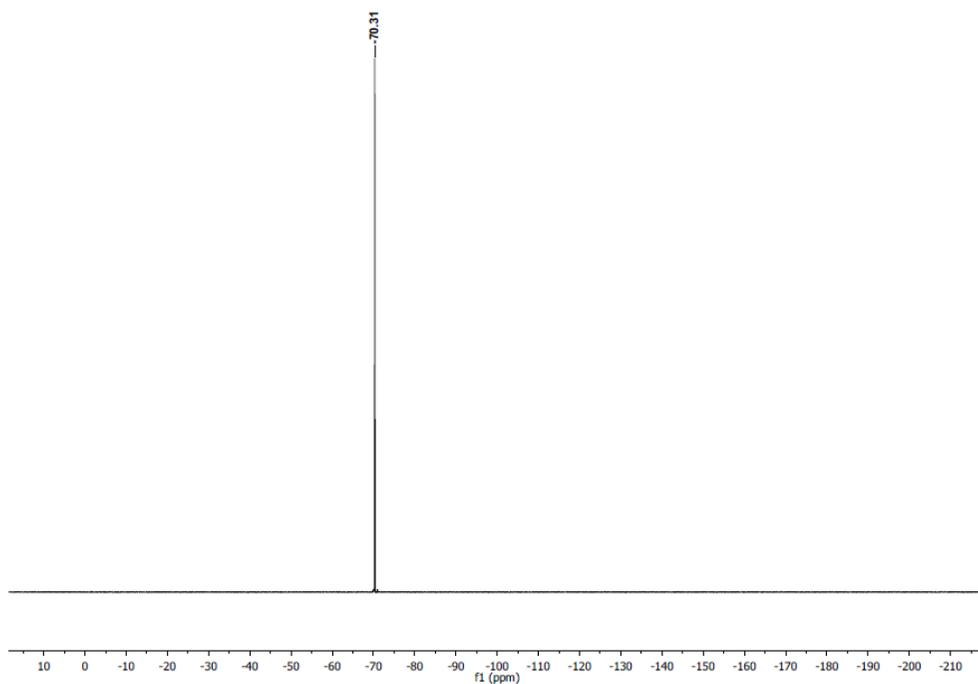




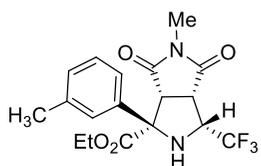
(1*S,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-1-fenil-3-(trifluorometil) octahidropirrolo[3,4-*c*]pirrol-1-carboxilato de metilo ((±)-*endo*-3*h*)**

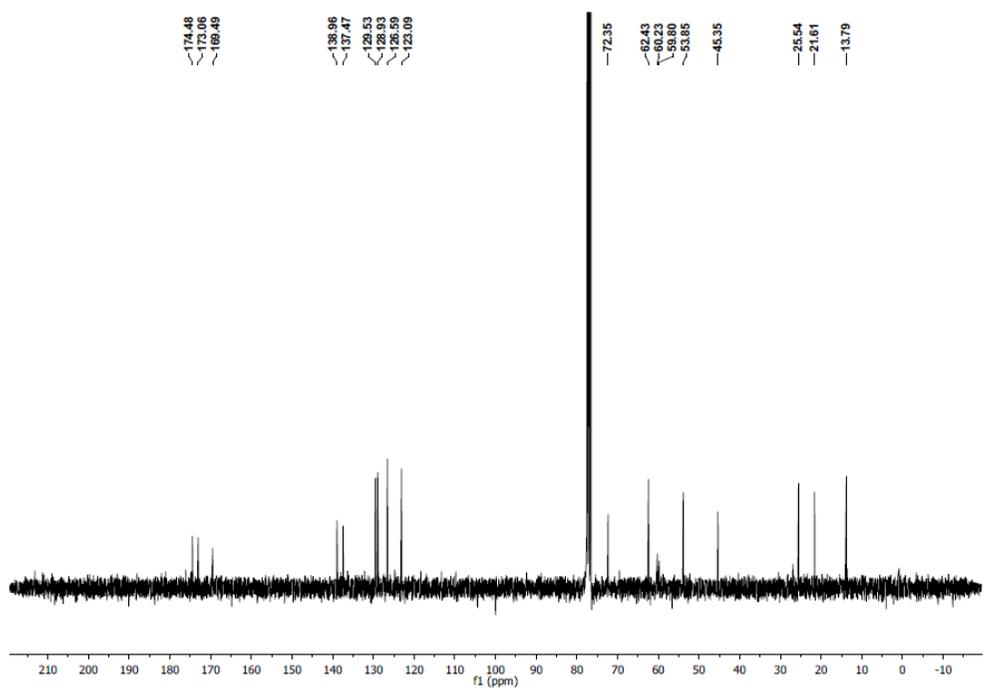
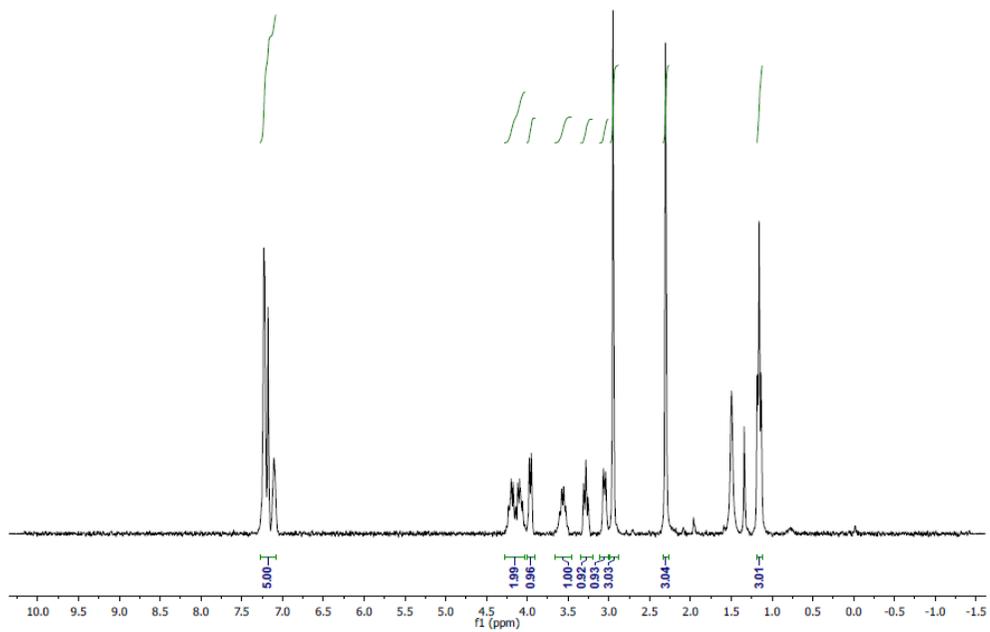


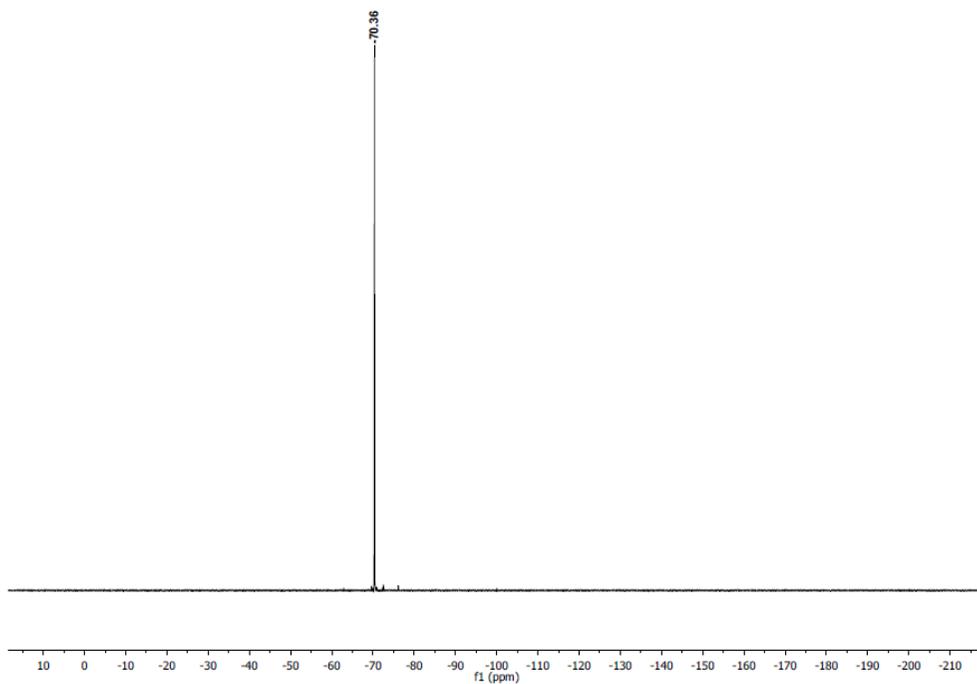




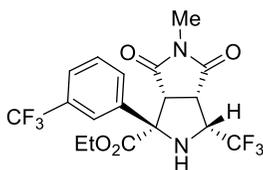
(1*R,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-1-(*m*-tolil)-3-(trifluorometil) octahidropirrolo[3,4-*c*]pirrol-1-carboxilato de etilo ((±)-*endo*-3i)**

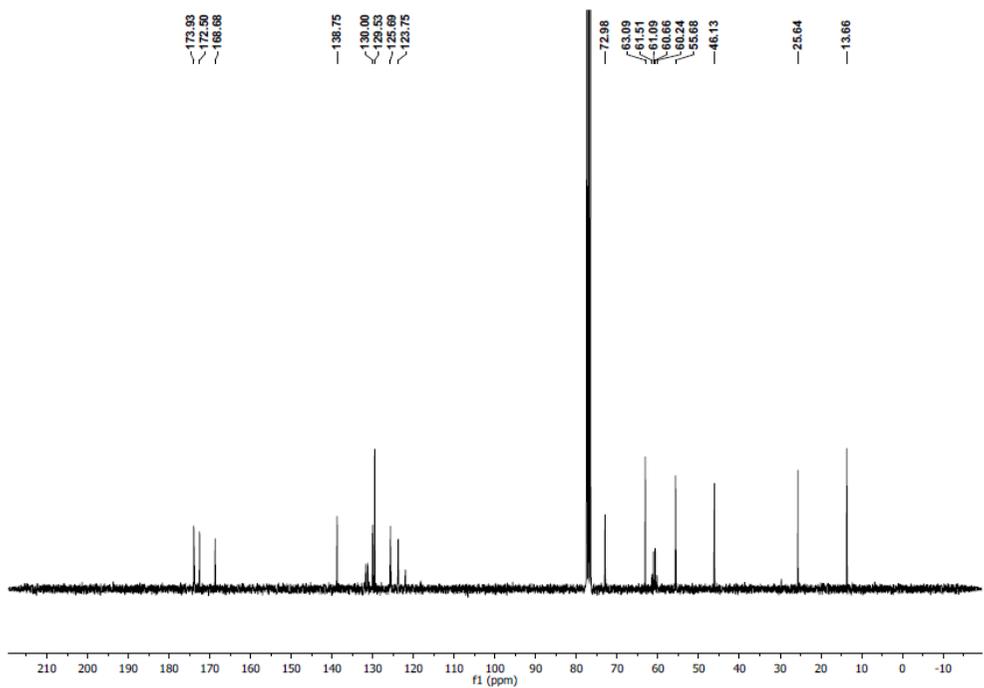
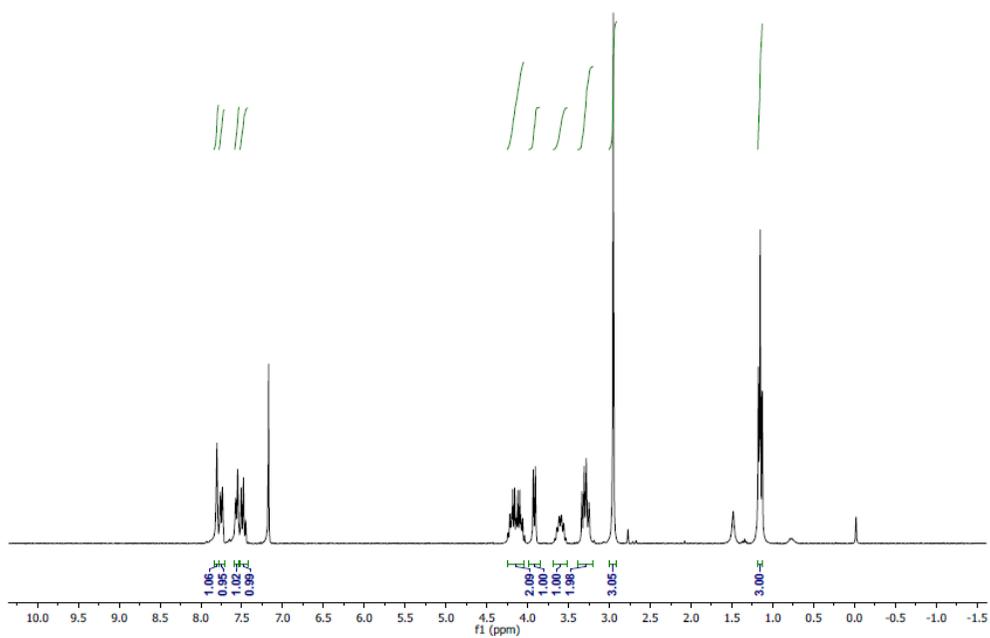


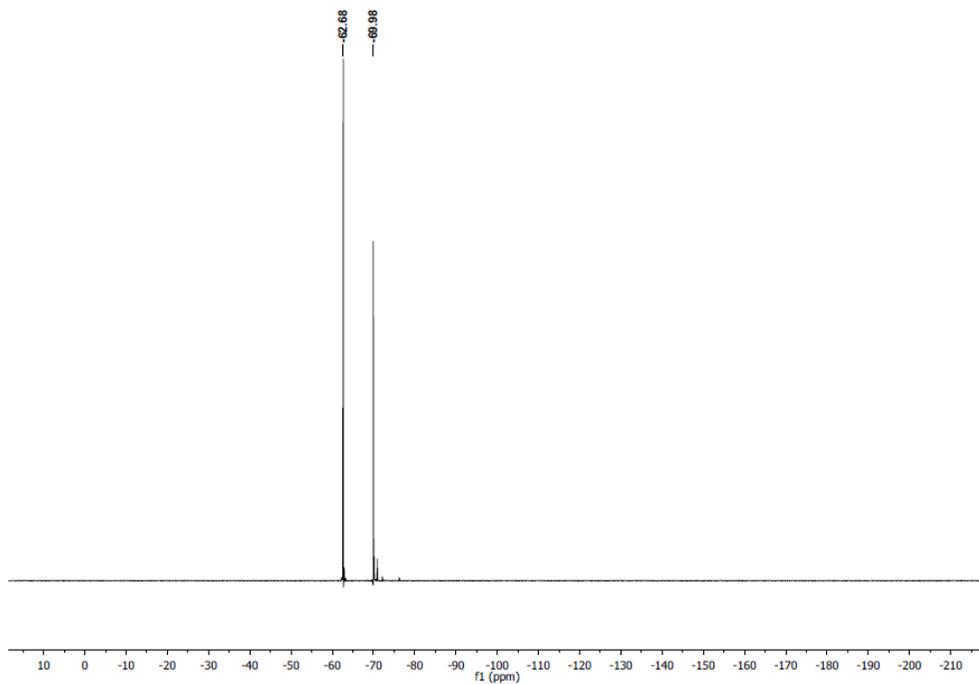




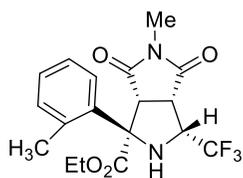
(1*R,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-3-(trifluorometil)-1-(3-(trifluorometil)fenil)octahidropirrolo[3,4-*c*]pirrol-1-carboxilato de etilo ((±)-*endo*-3j)**

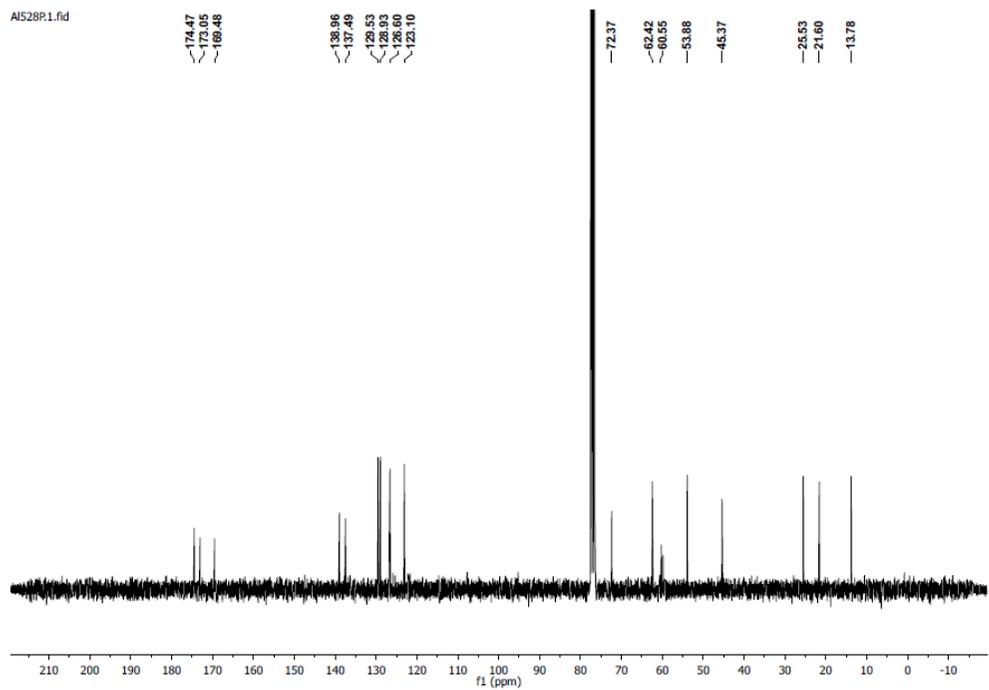
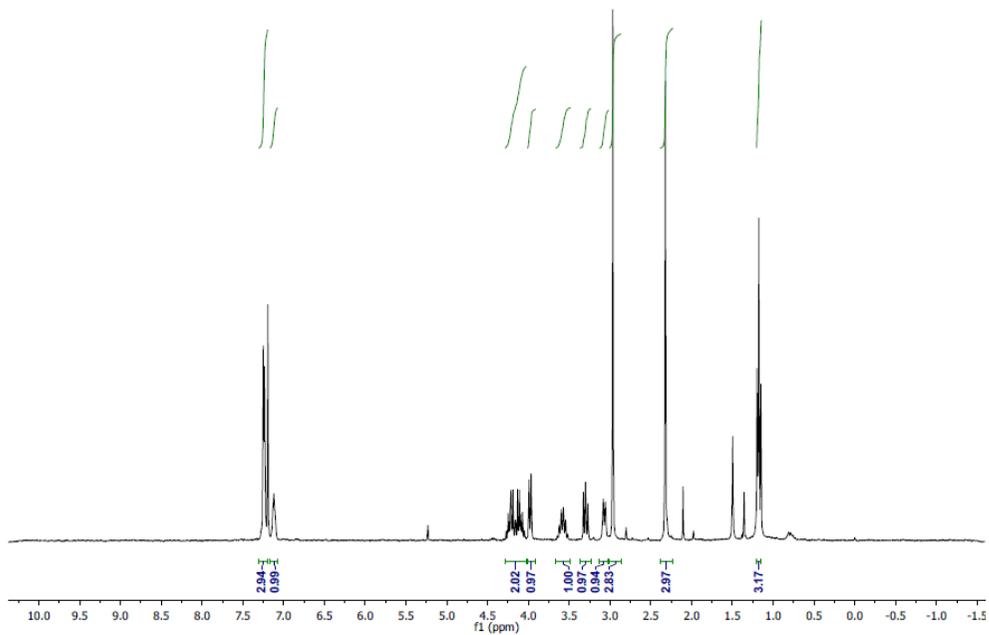


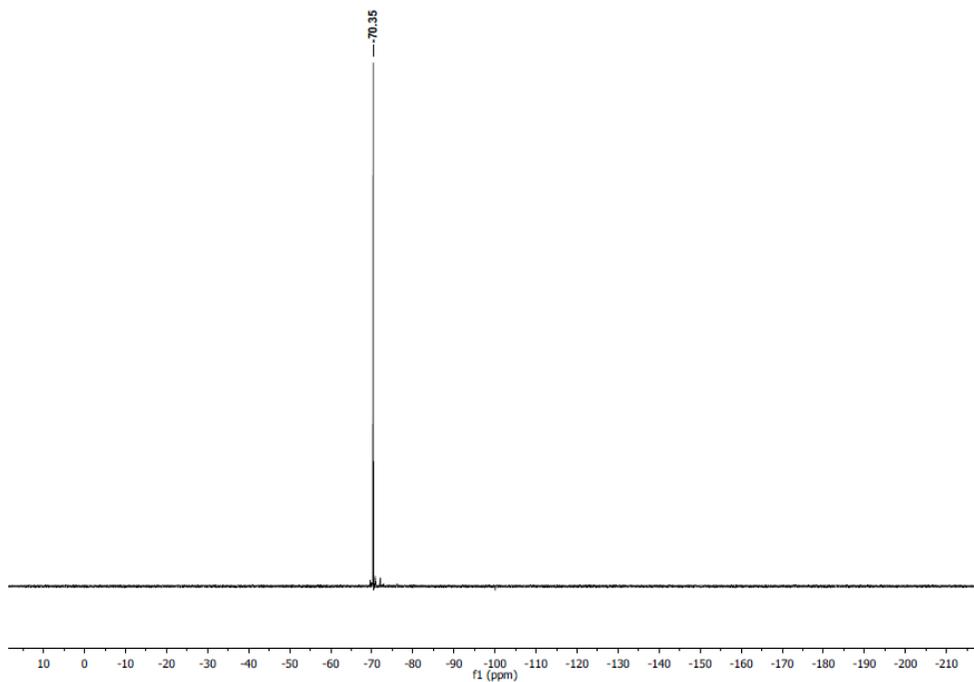




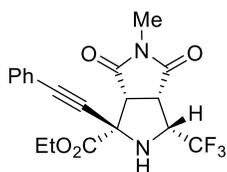
**(1R*,3R*,3aS*,6aR*)-5-Metil-4,6-dioxo-1-(*o*-tolil)-3-(trifluorometil)
octahidropirrol[3,4-c]pirrol-1-carboxilato de etilo ((\pm)-*endo*-3k)**

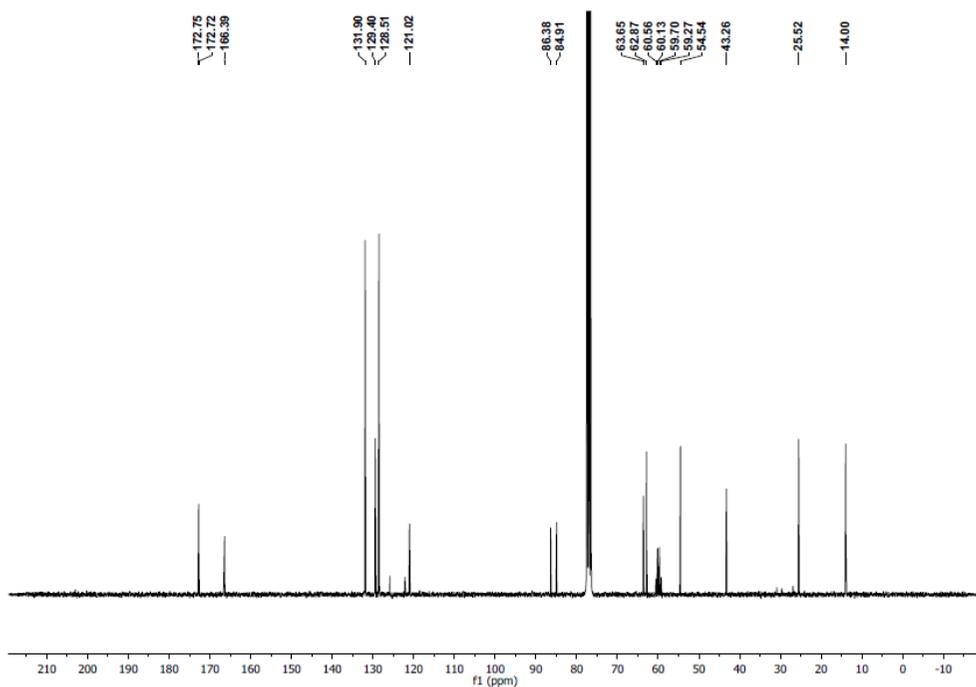
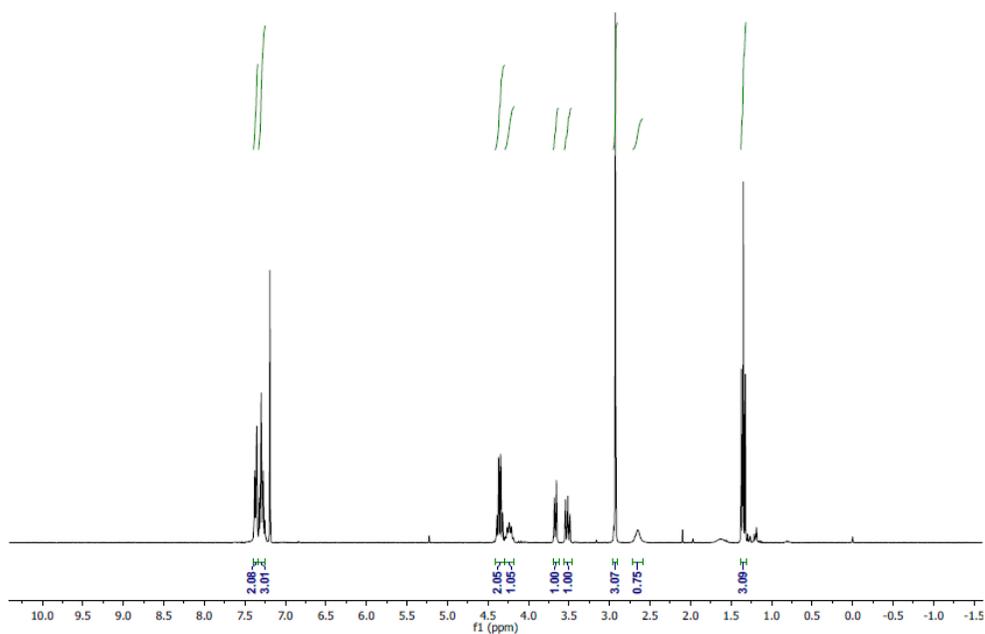


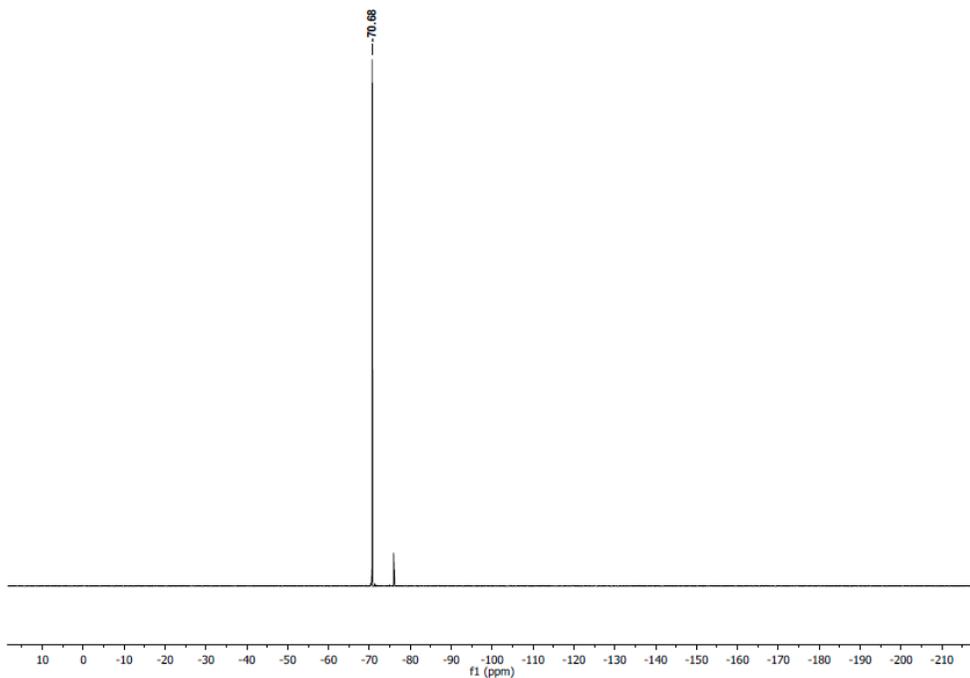




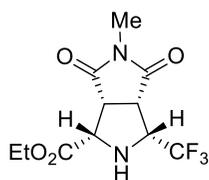
(1*R,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-1-(feniletinil)-3-(trifluorometil)octahidropirrollo[3,4-*c*]pirrol-1-carboxilato de etilo ((\pm)-*endo*-3I)**

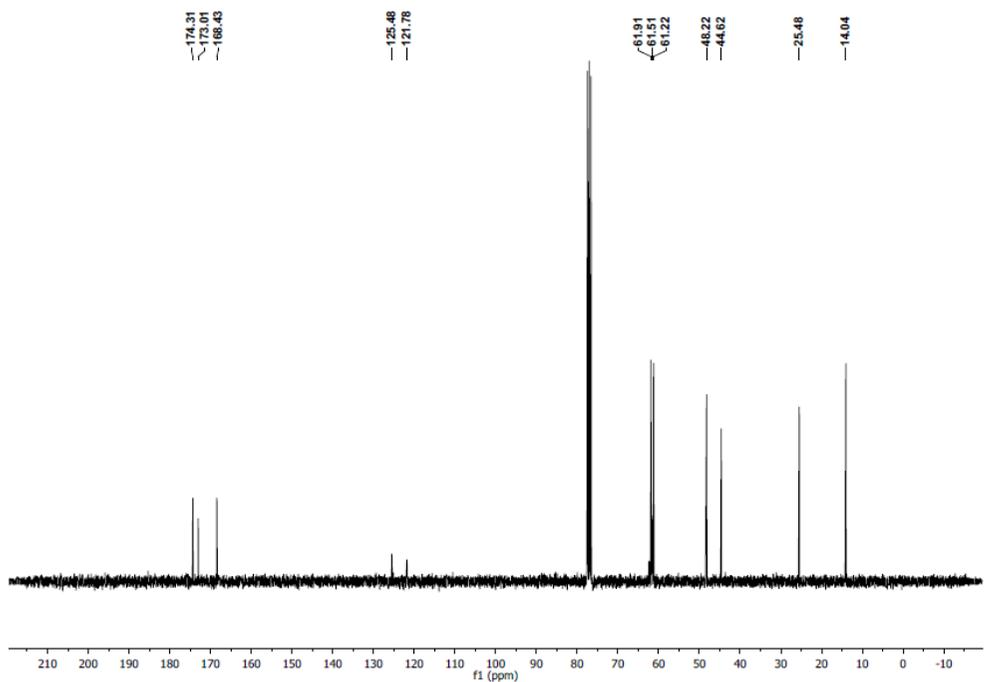
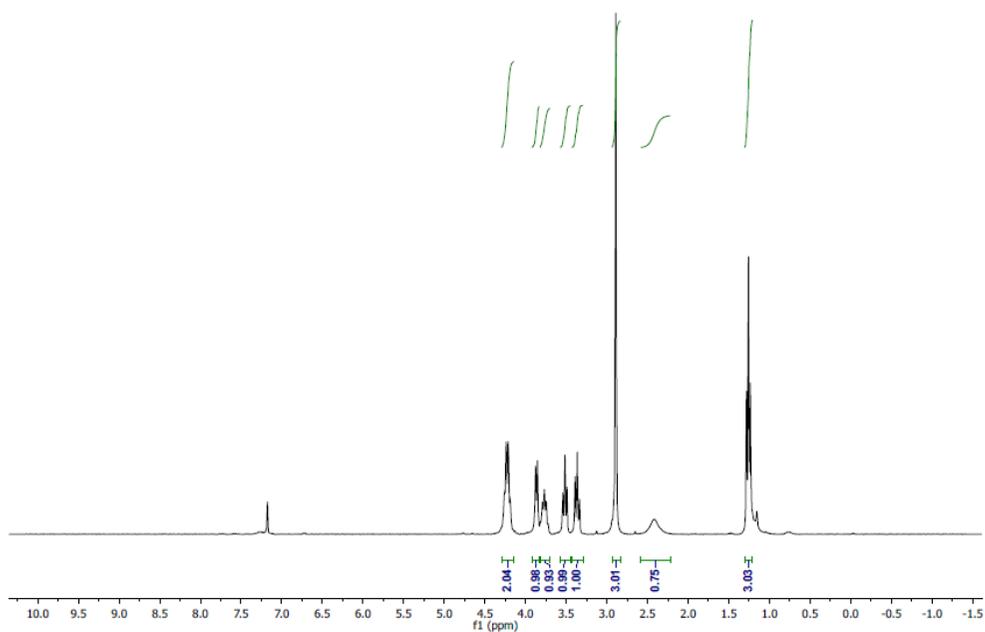


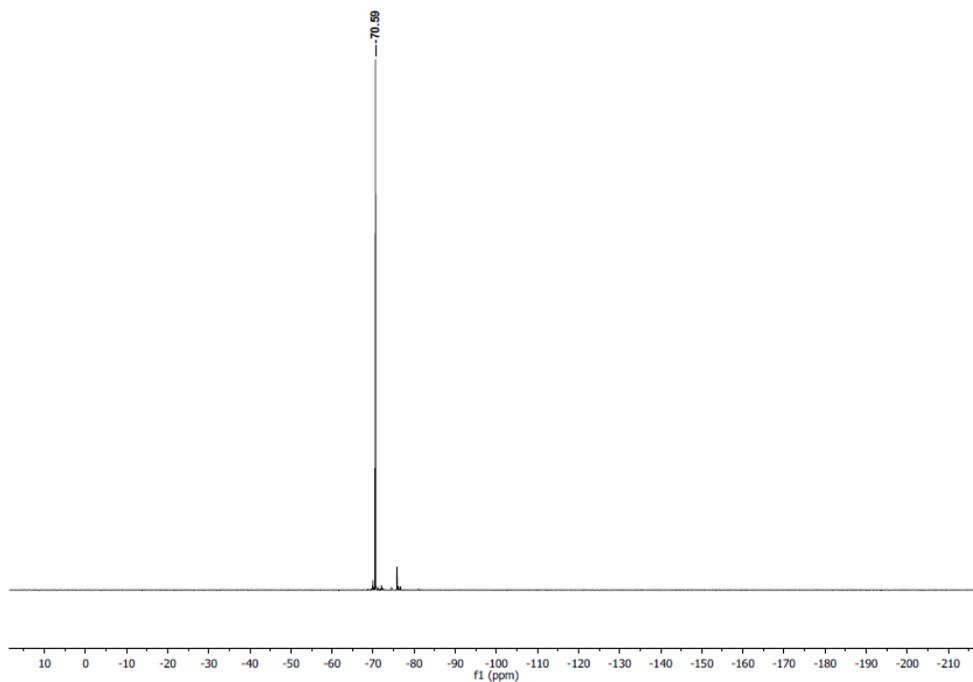




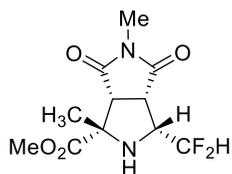
(1*S,3*R**,3*aS**,6*aR**)-5-Metil-4,6-dioxo-3-(trifluorometil) octahidropirroló[3,4-
c]pirrol-1-carboxilato de etilo ((±)-*endo*-3*r*)**

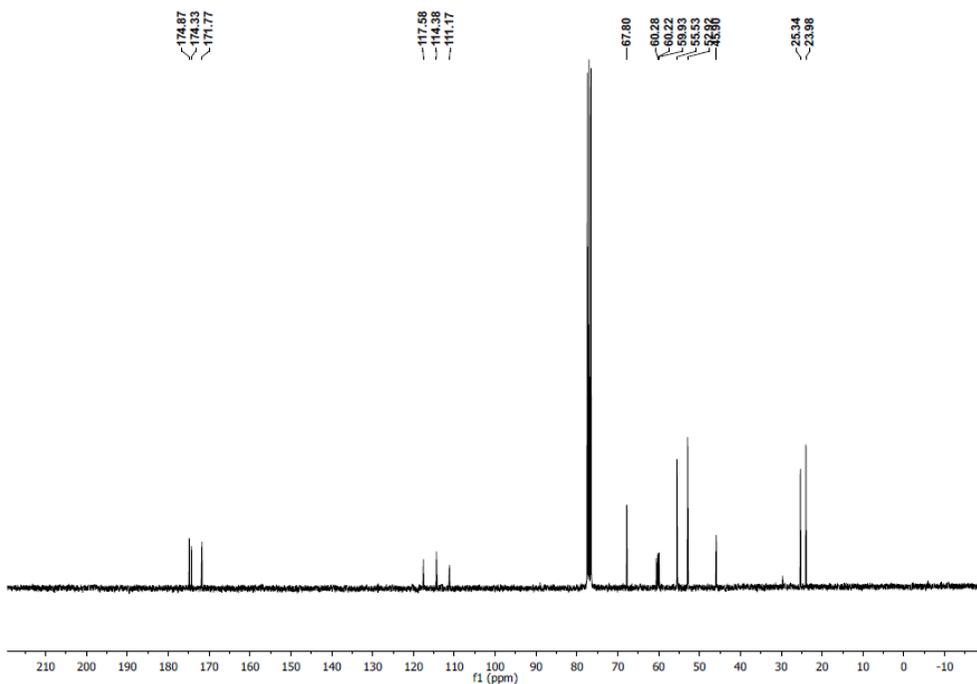
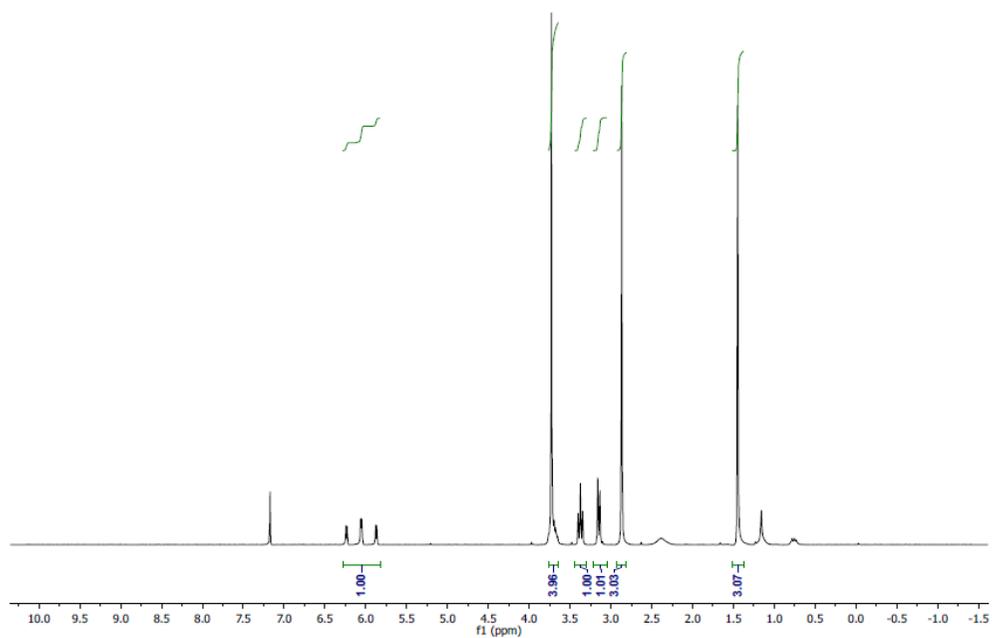


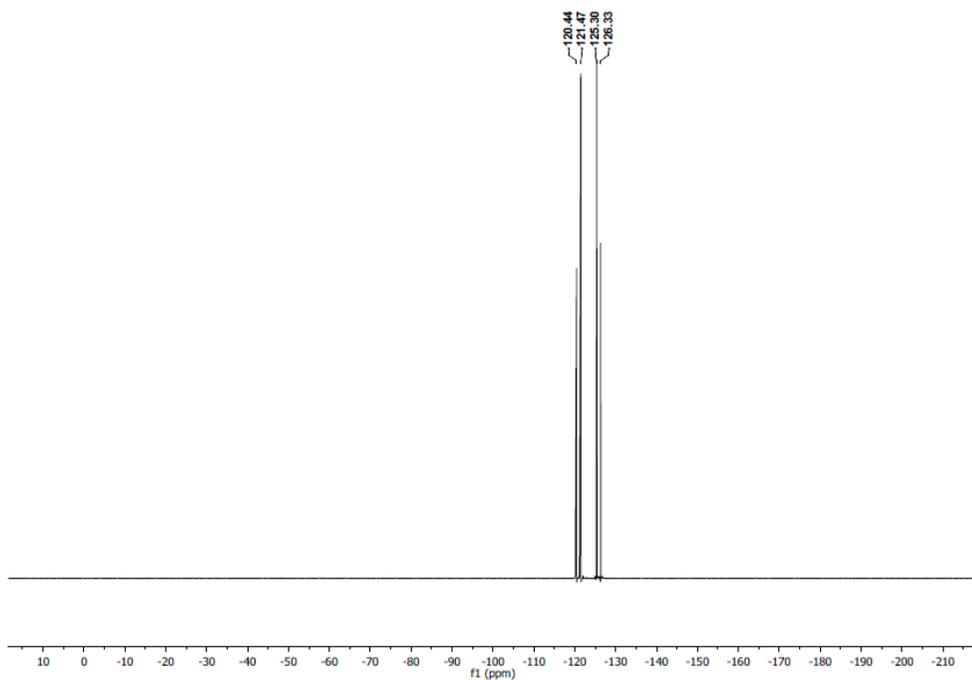




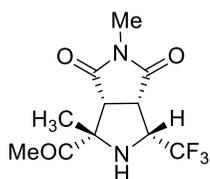
(1S*,3R*,3aS*,6aR*)-3-(Difluorometil)-1,5-dimetil-4,6-dioxooctahidropirrol[3,4-c]pirrol-1-carboxilato de metilo ((±)-endo-4o)

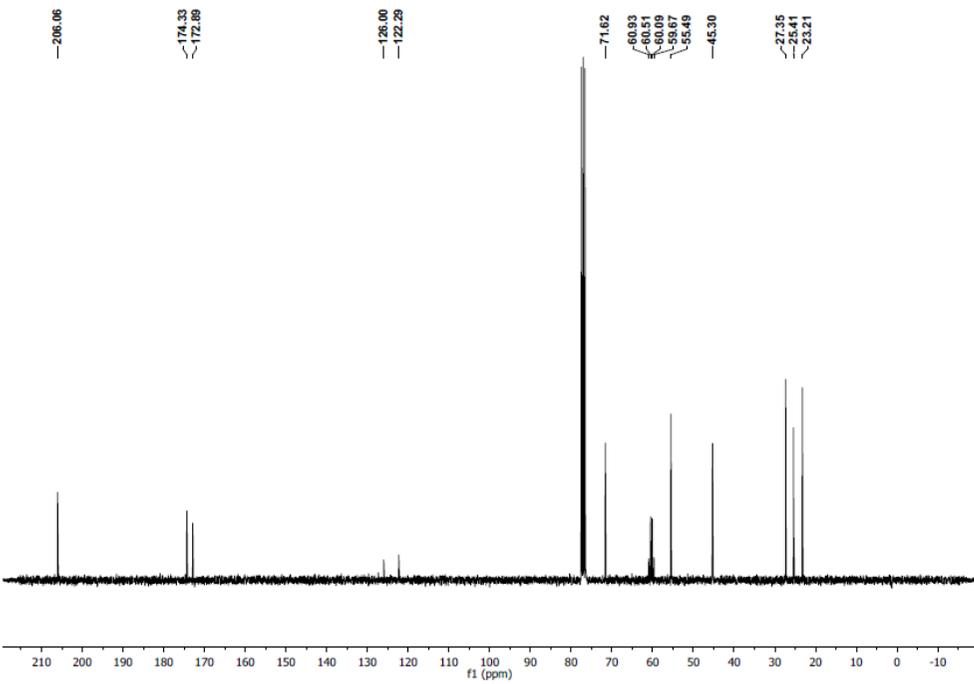
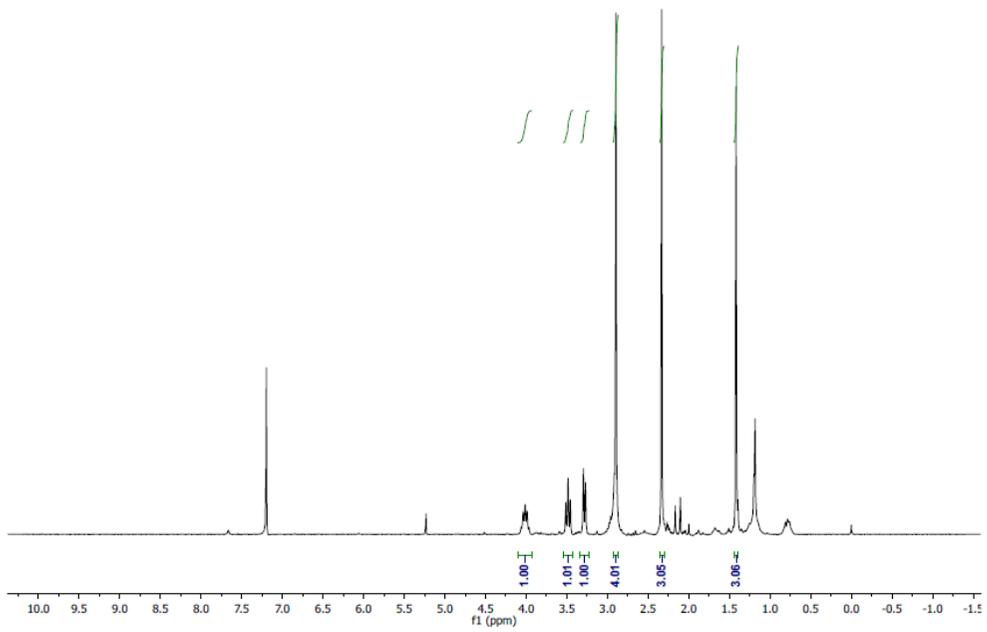


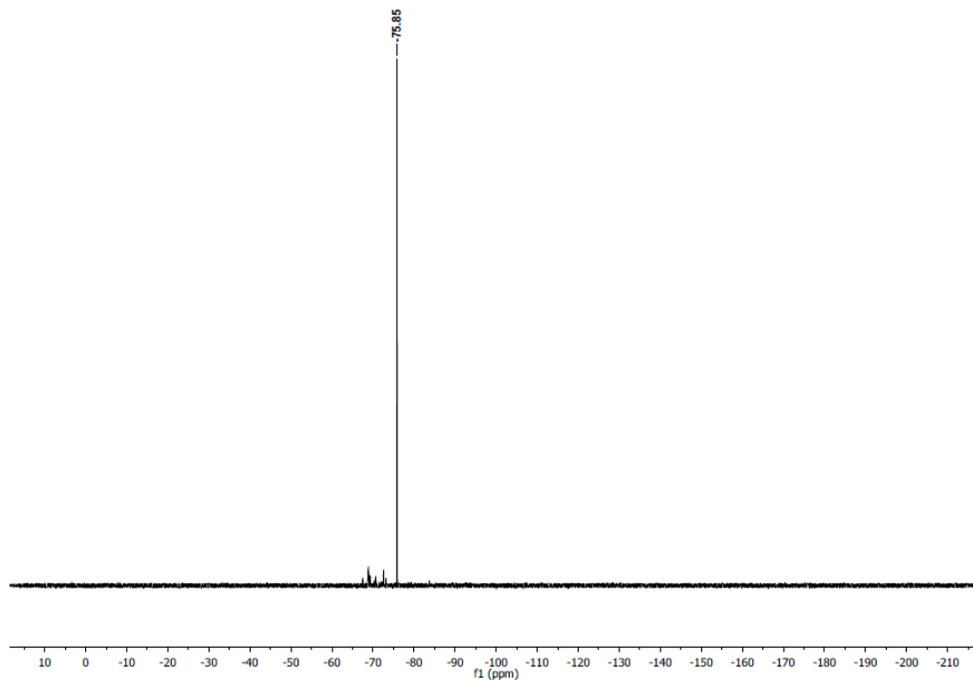




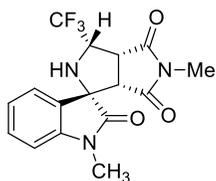
(3aR*,4S*,6R*,6aS*)-4-Acetyl-2,4-dimetil-6-(trifluorometil)tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-5p)

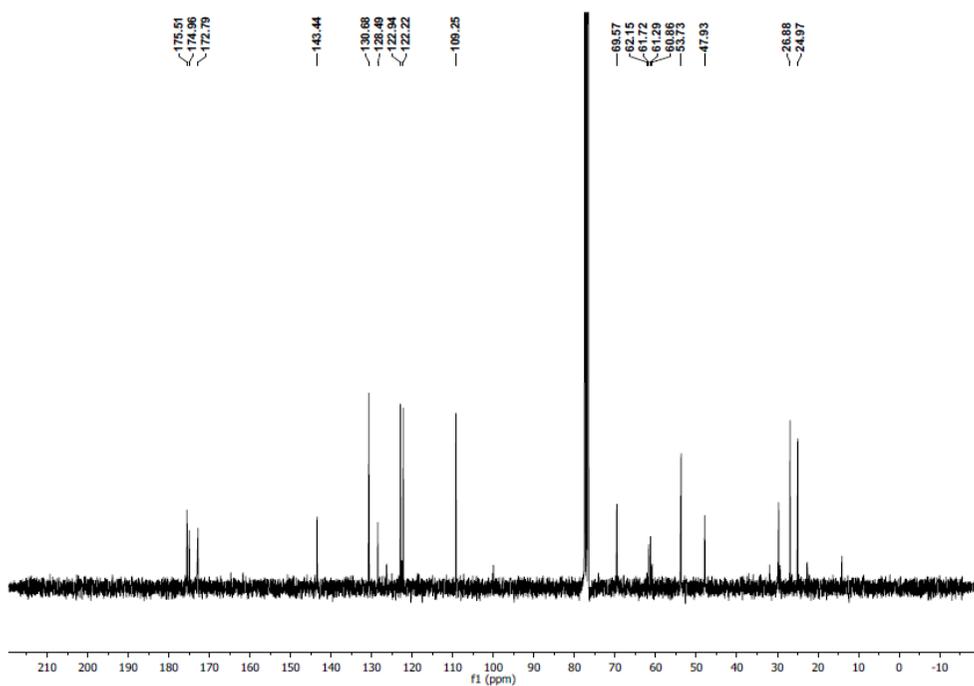
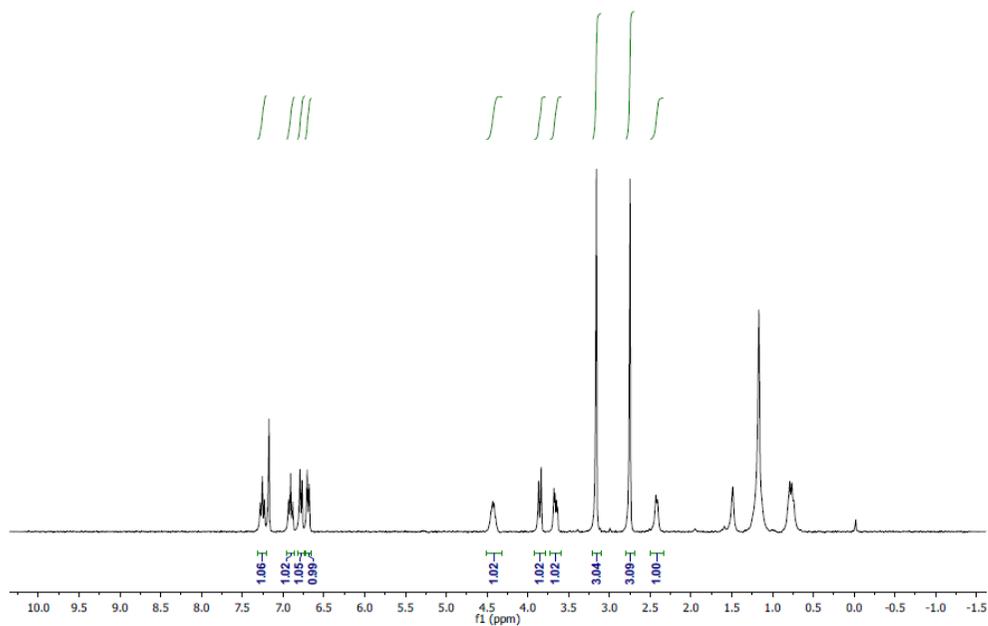


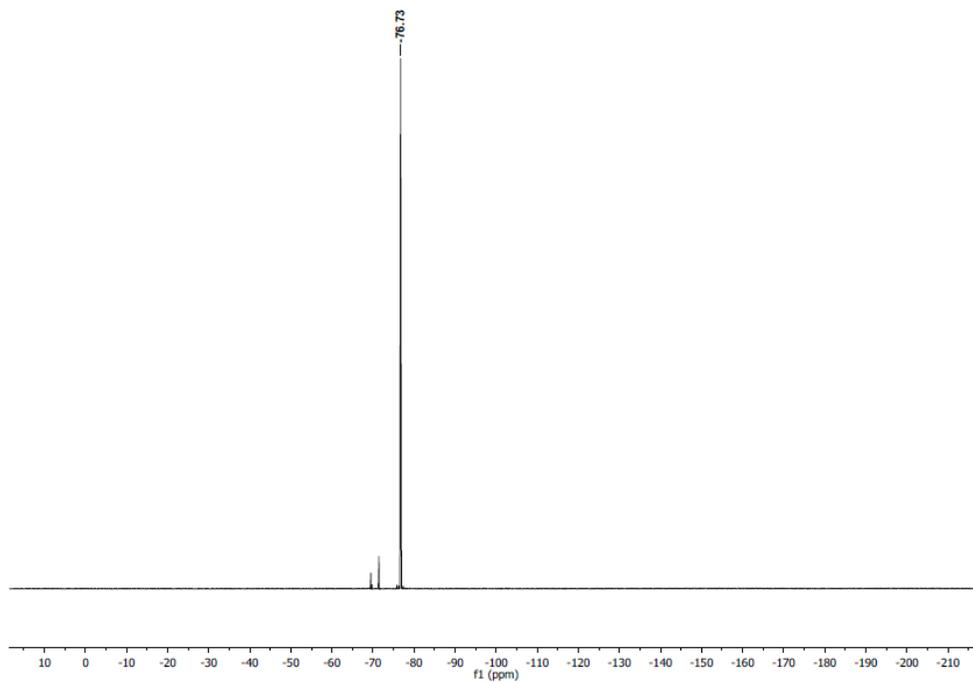




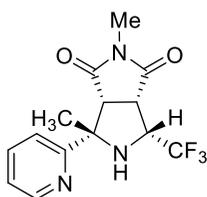
(1*S,3*S**,3*aR**,6*aS**)-1,5'-Dimetil-3'-(trifluorometil)-3',3*a*'-dihidro-2'H-espiro [indolina-3,1'-pirrolo[3,4-c]pirrol]-2,4',6'(5'H,6*a*'H)-triona ((\pm)-*endo*-6q)**

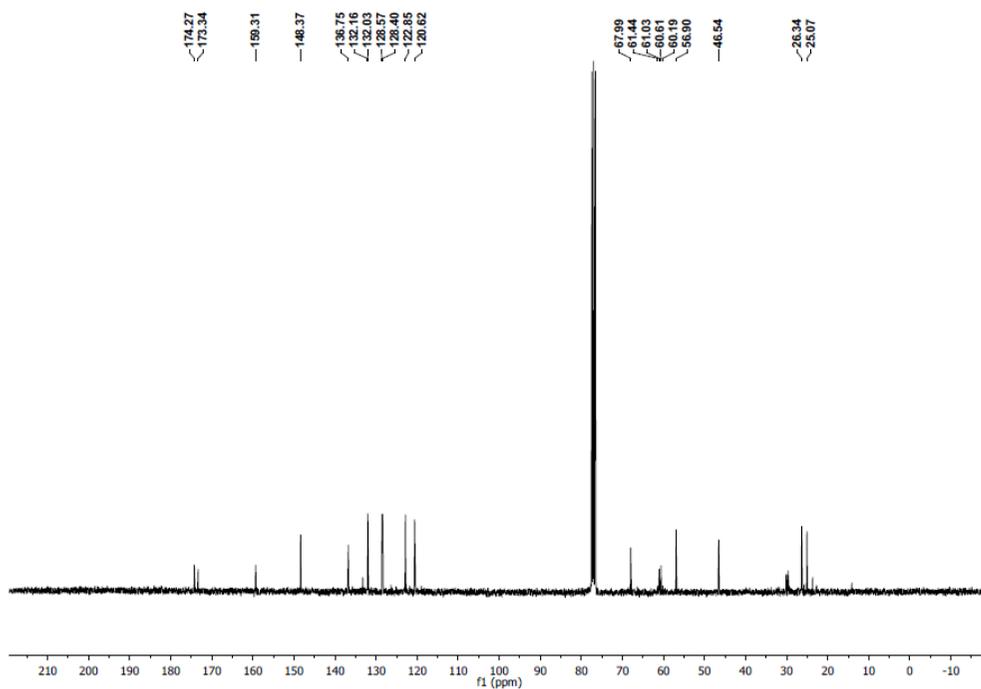
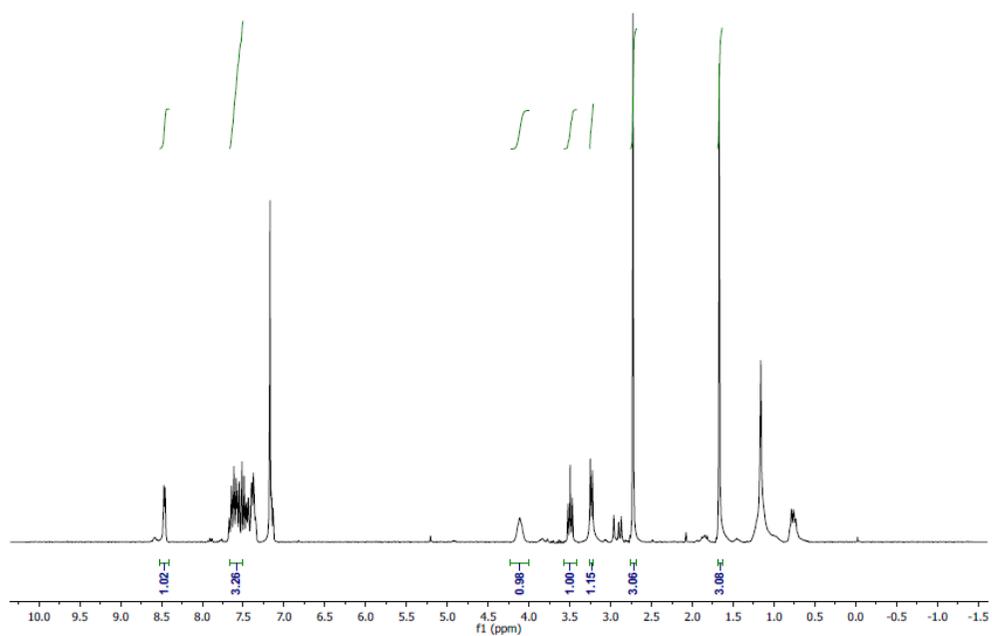


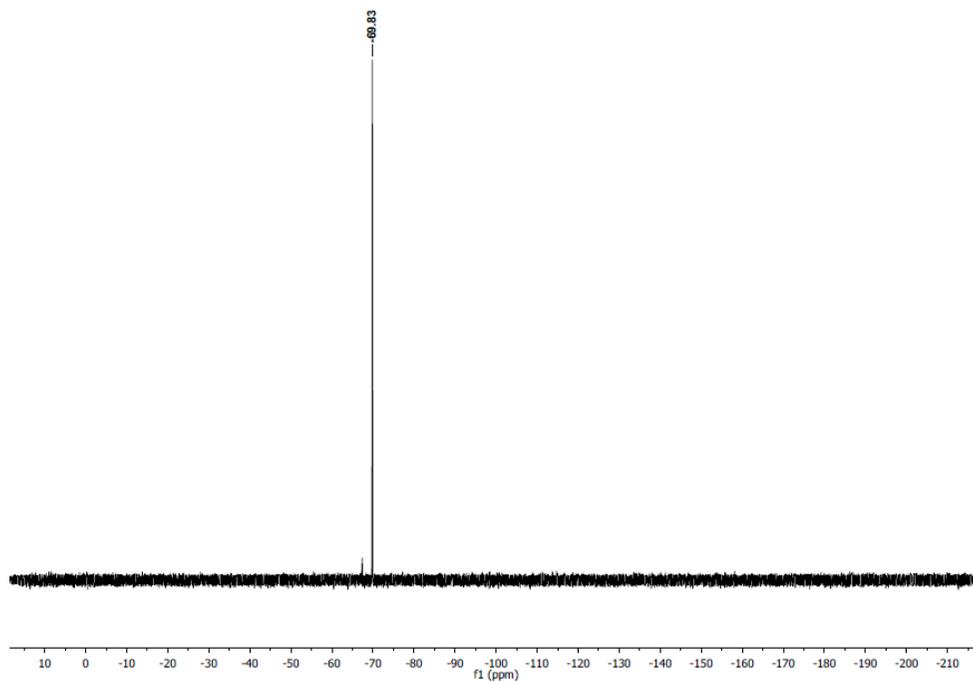




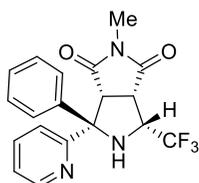
(3aR*,4S*,6R*,6aS*)-2,4-Dimetil-4-(piridin-2-il)-6-(trifluorometil)tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7m)

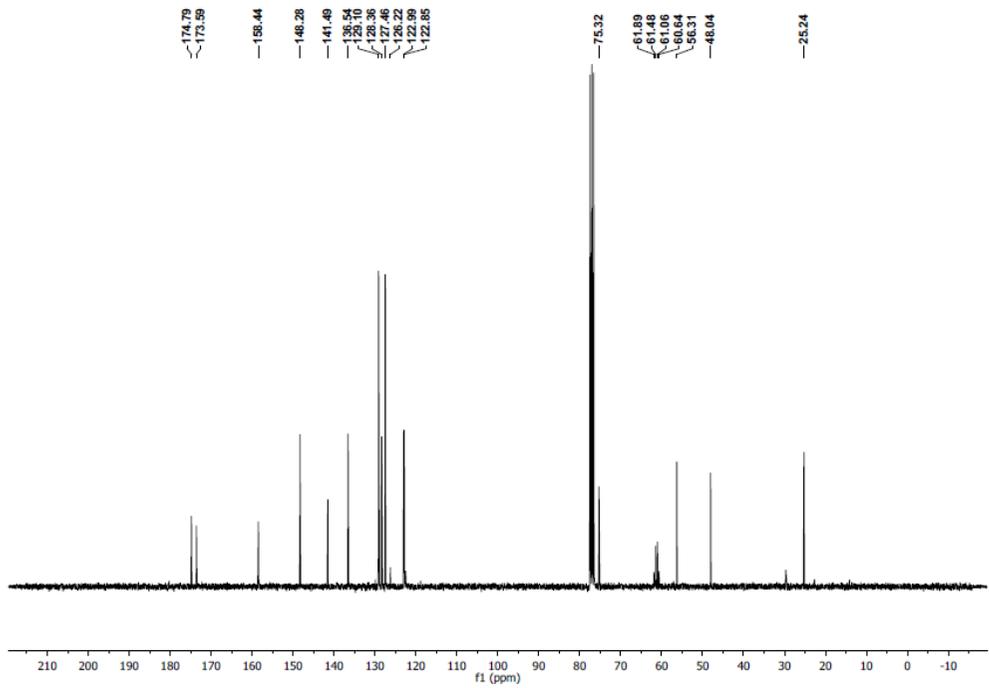
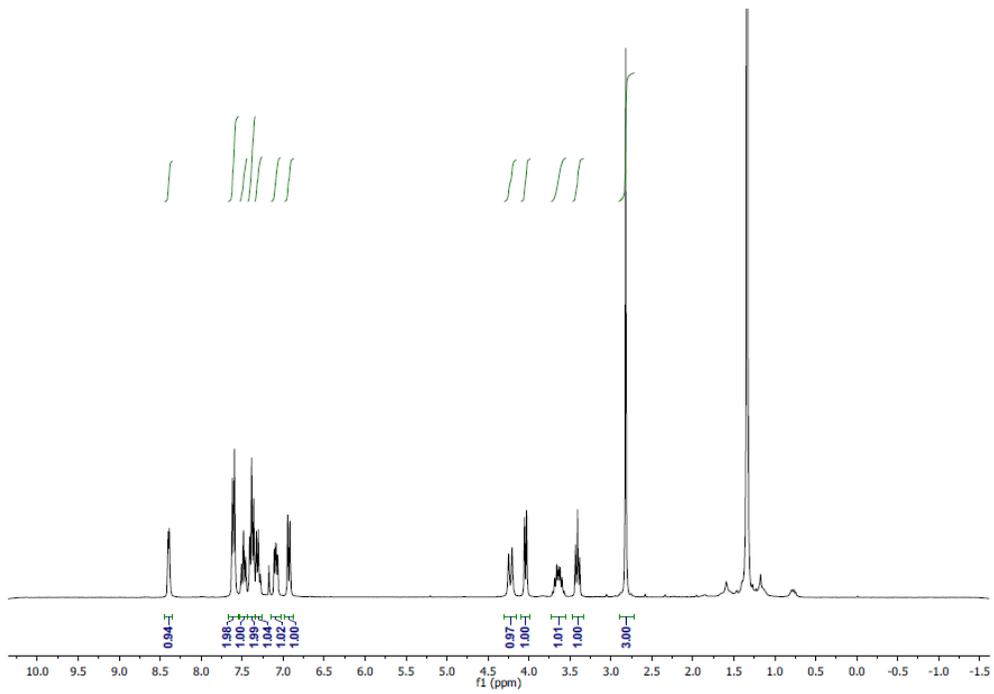


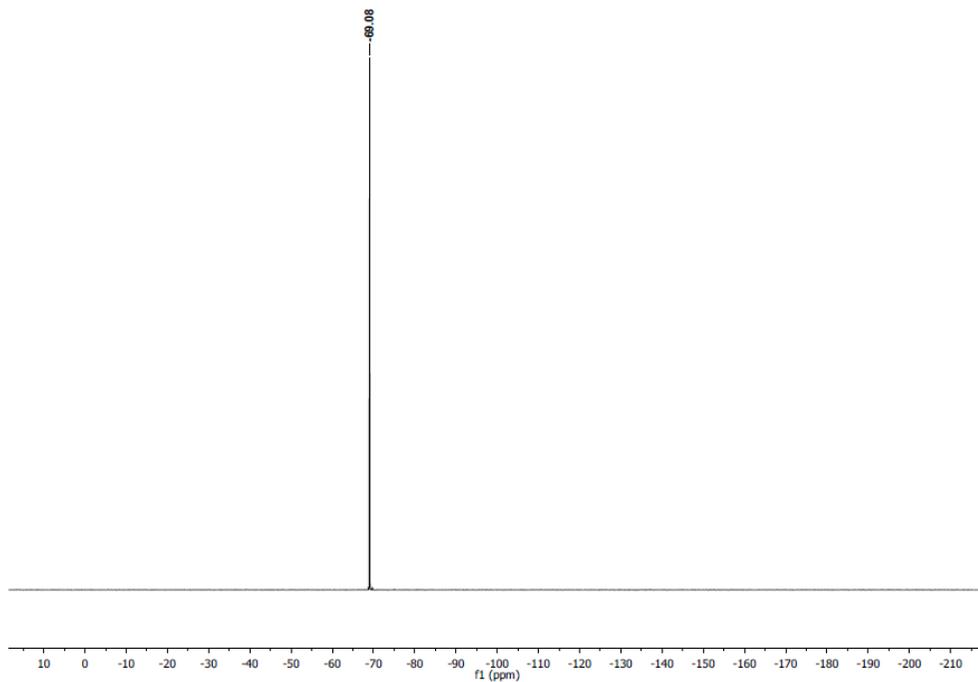




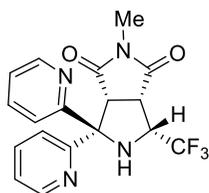
(3aR*, 4R*, 6R*, 6aS*)-2-Metil-4-fenil-4-(piridin-2-il)-6-(trifluorometil) tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7n)

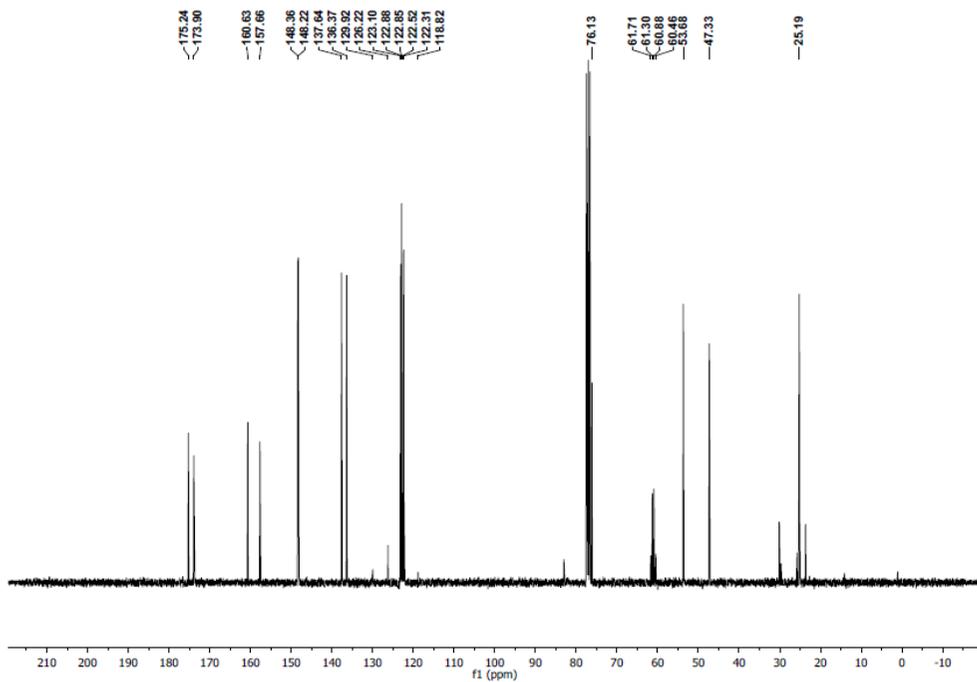
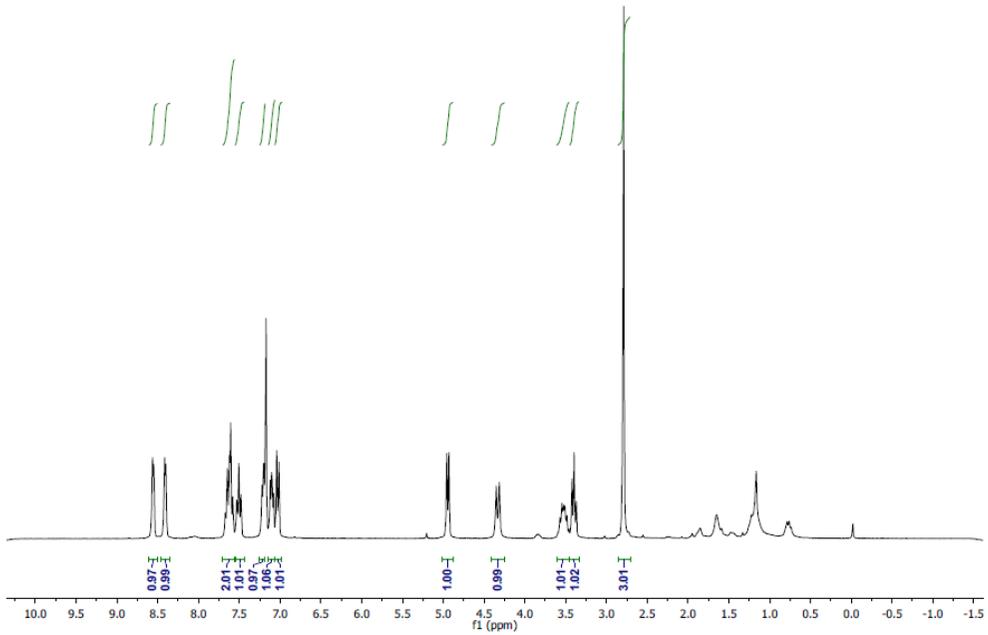


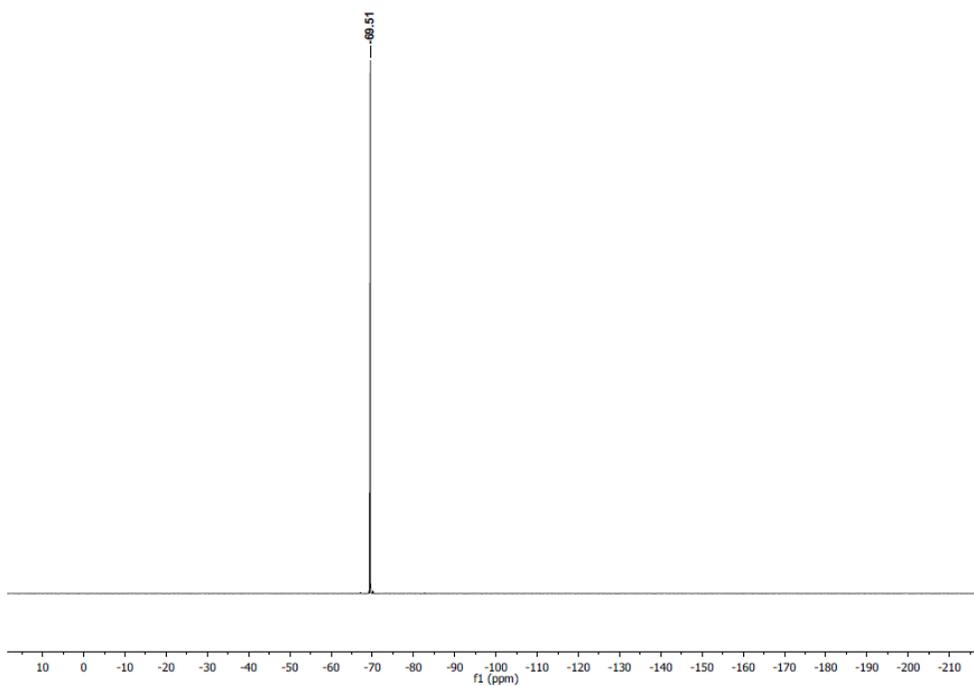




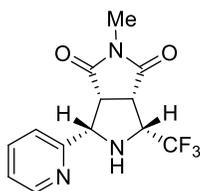
(3aR*, 6R*, 6aS*)-2-Metil-4,4-di(piridin-2-il)-6-(trifluorometil) tetrahidropirrol[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7ñ)

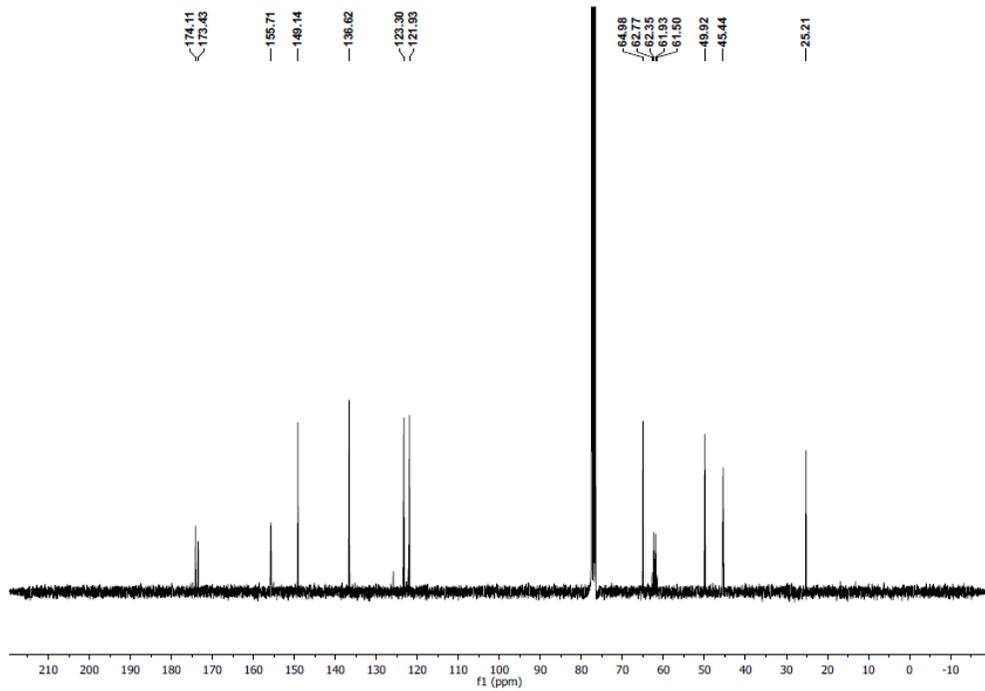
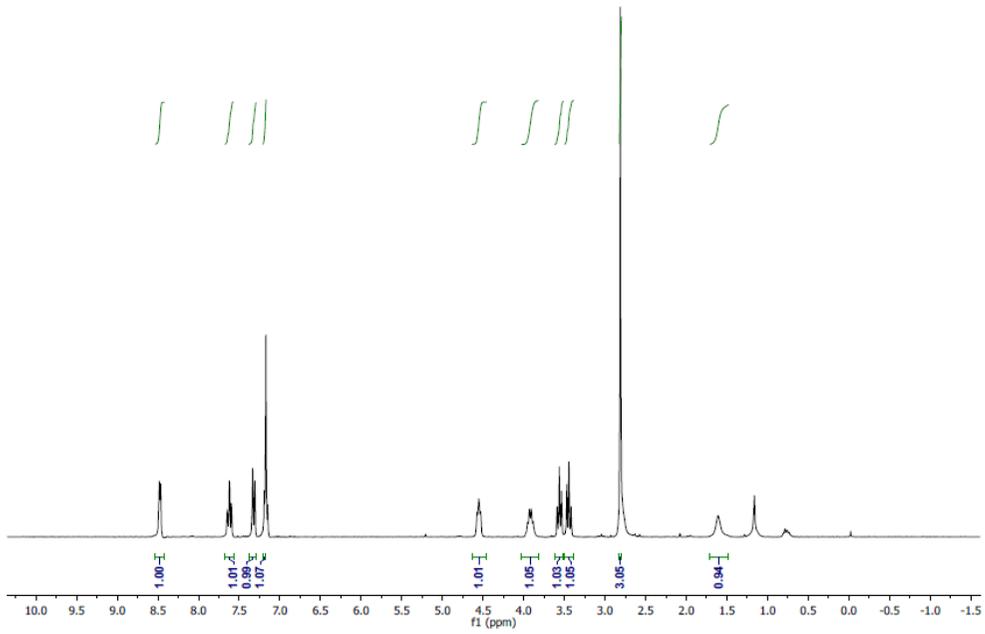


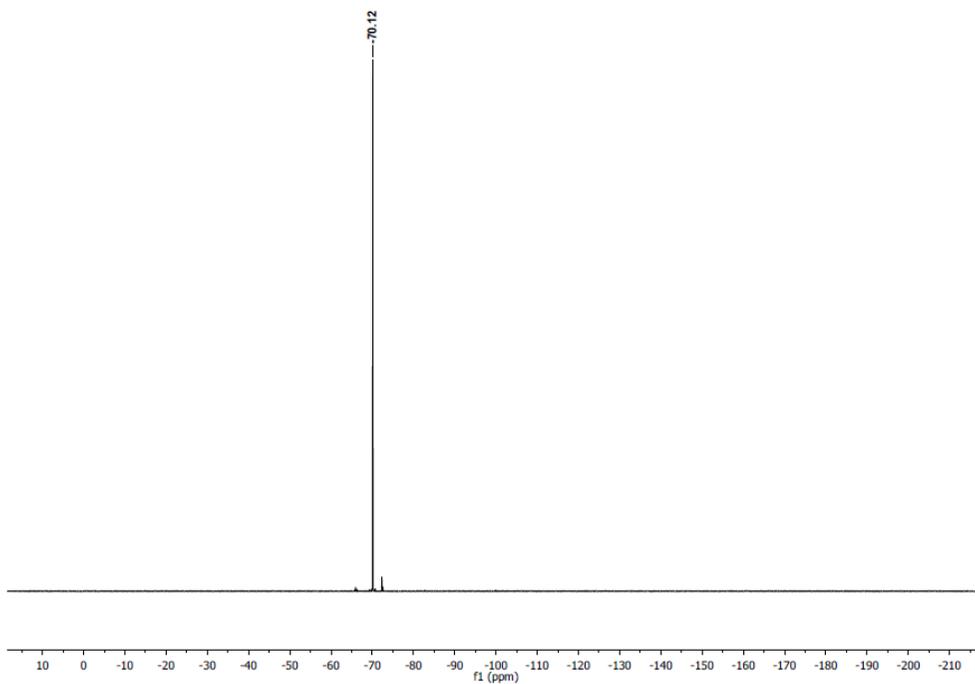




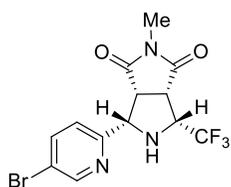
(3aR*,4S*,6R*,6aS*)-2-Metil-4-(piridin-2-il)-6-(trifluorometil)tetrahidropirrollo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7s)

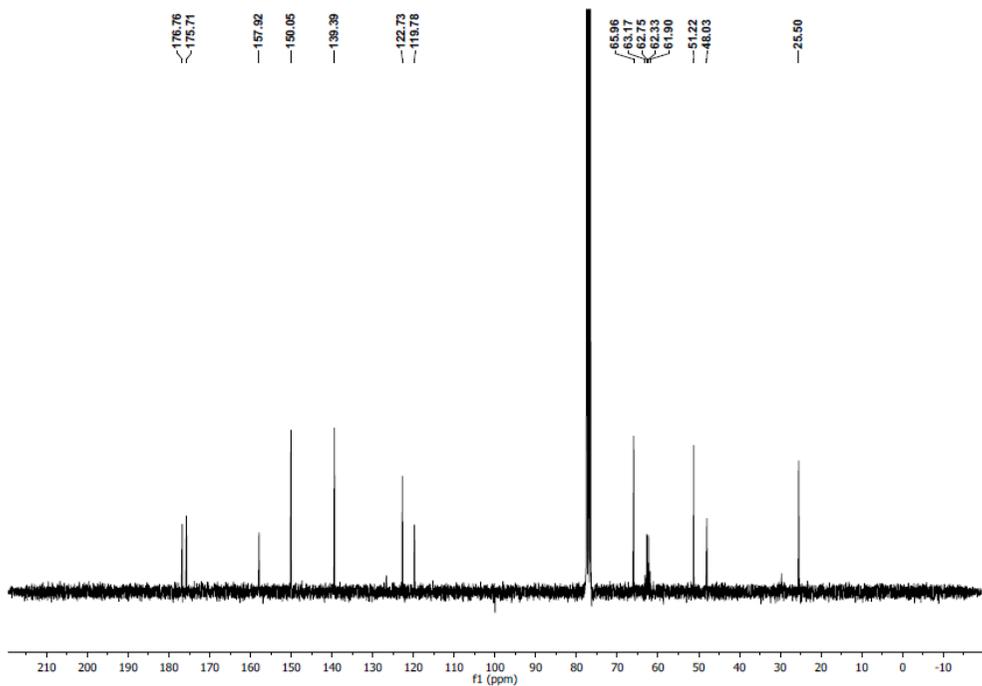
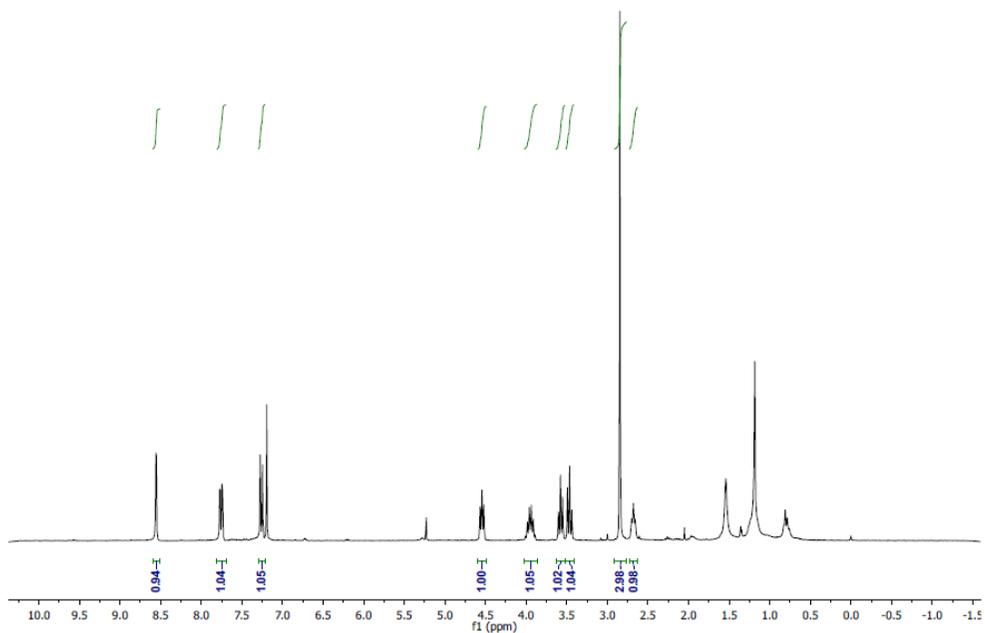


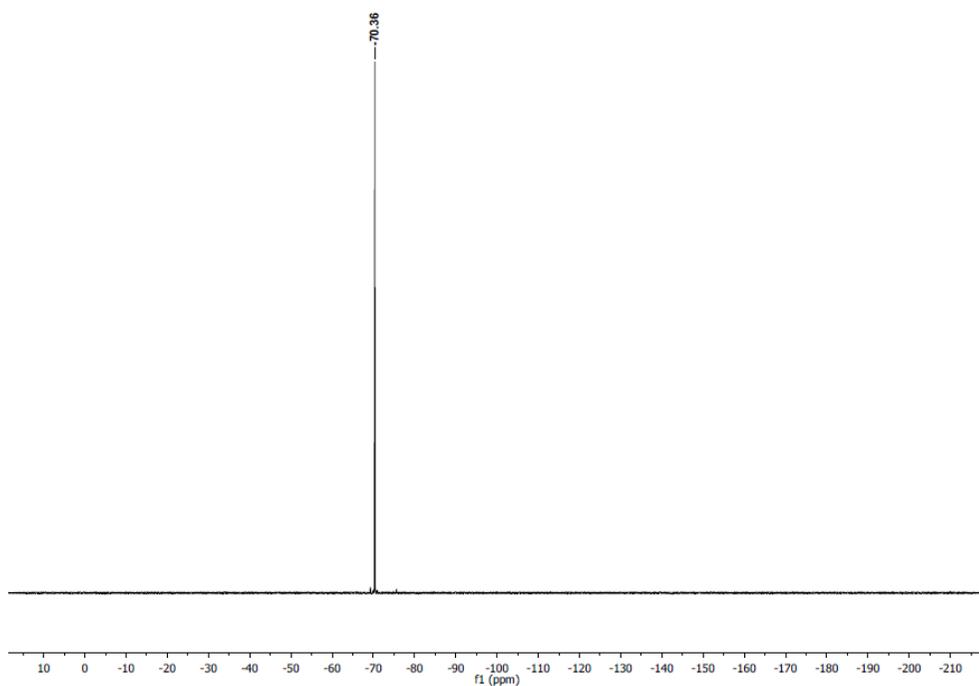




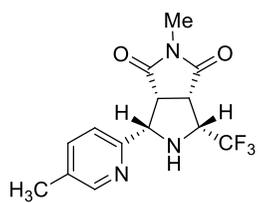
(3aR*, 4S*, 6R*, 6aS*)-4-(5-Bromopiridin-2-il)-2-metil-6-(trifluorometil) tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7t)

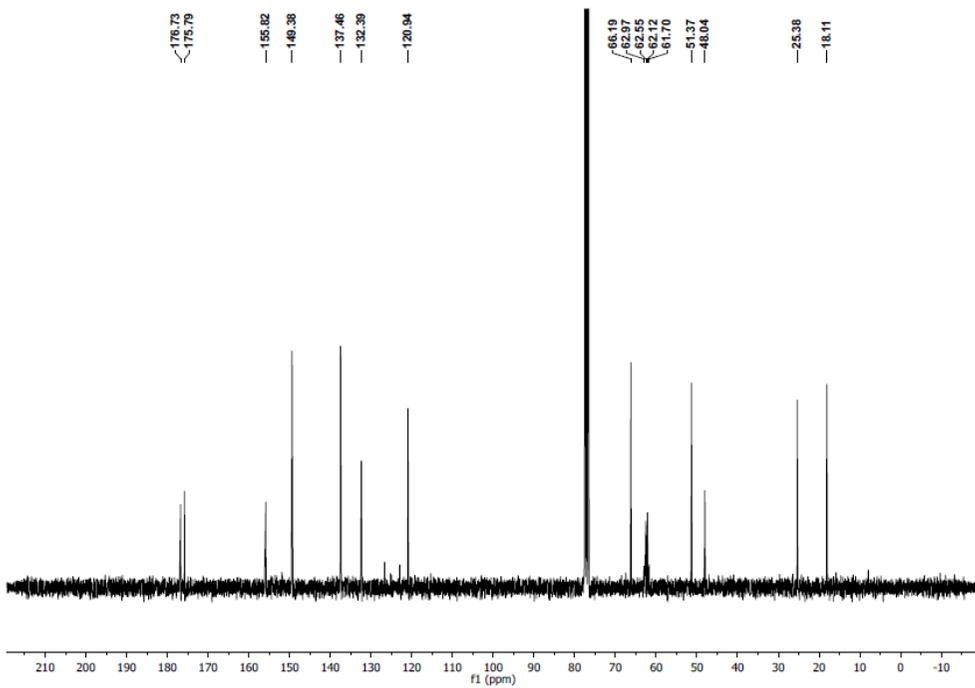
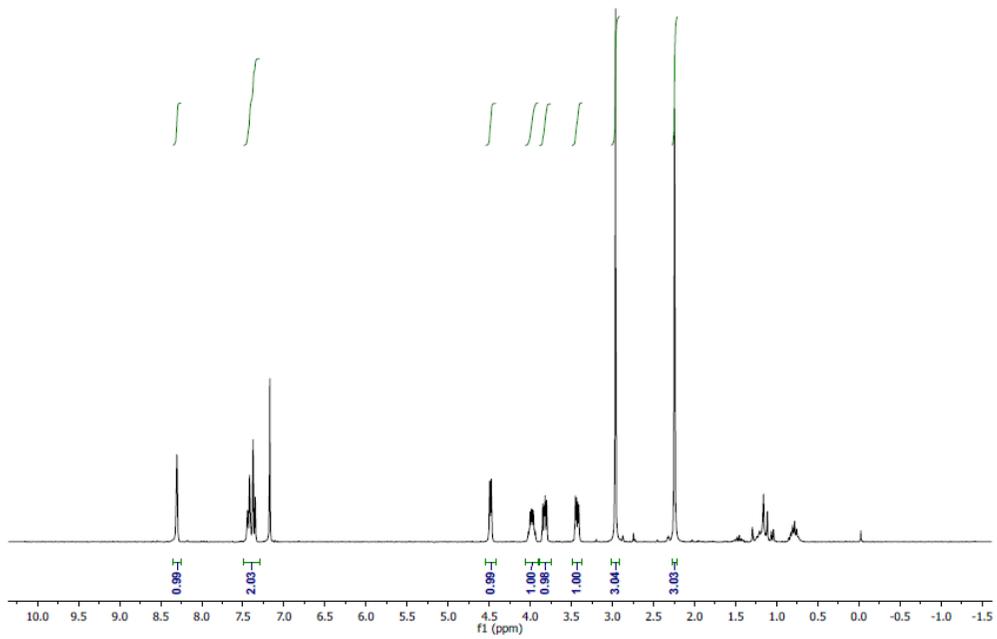


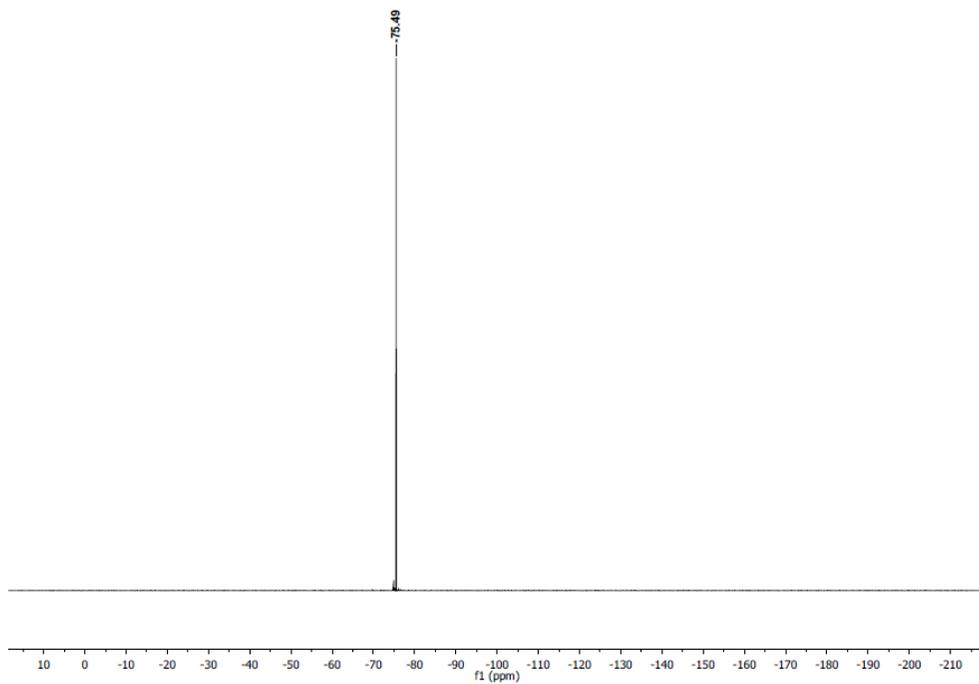




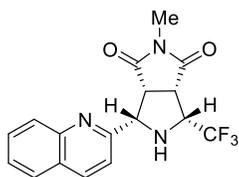
(3aR*,4S*,6R*,6aS*)-2-Metil-4-(5-metilpiridin-2-il)-6-(trifluorometil) tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7u)

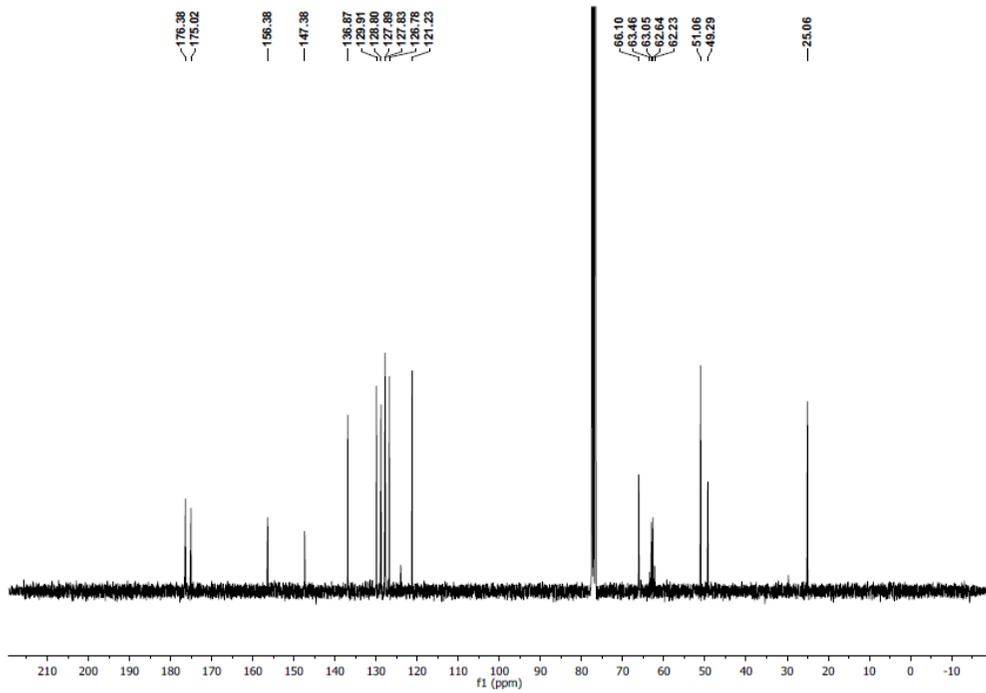
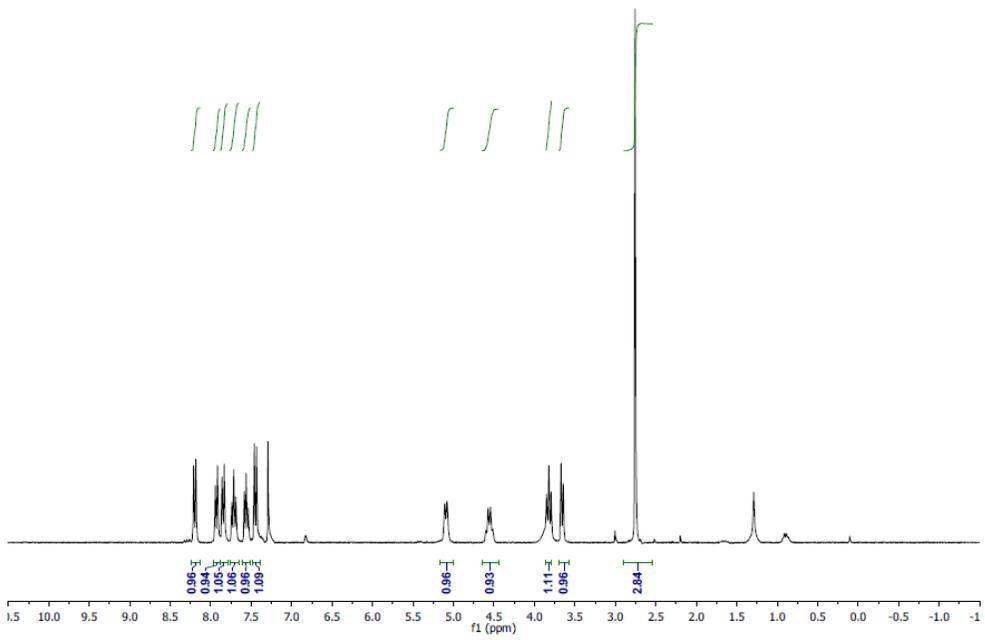


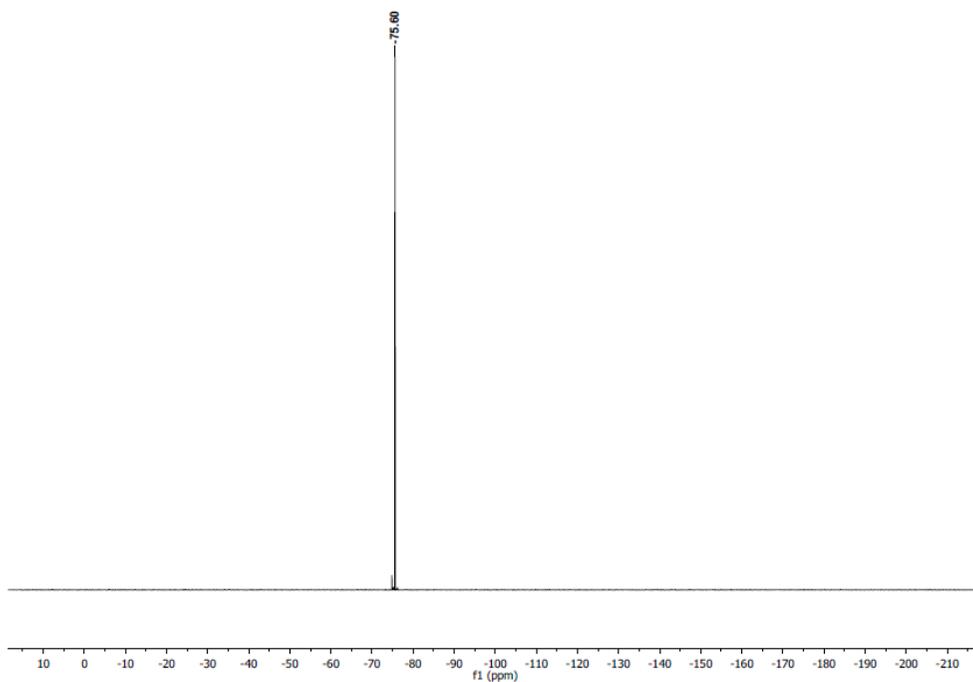




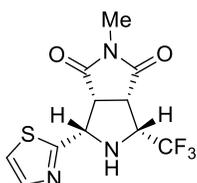
(3aR*,4S*,6R*,6aS*)- 2-Metil-4-(quinolin-2-il)-6-(trifluorometil) tetrahidropirrololo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7v)

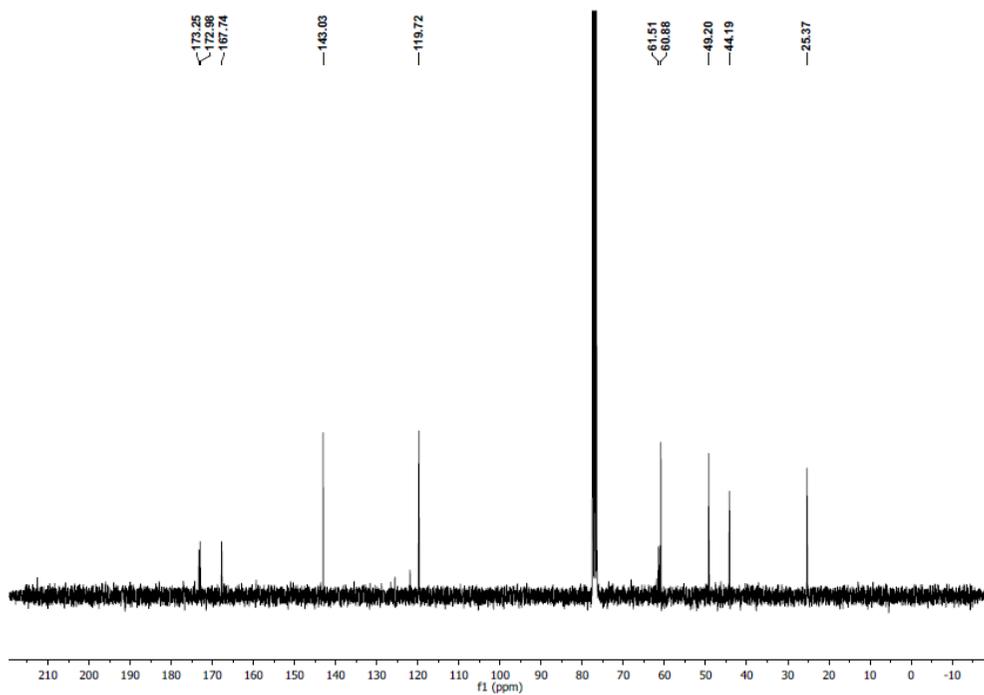
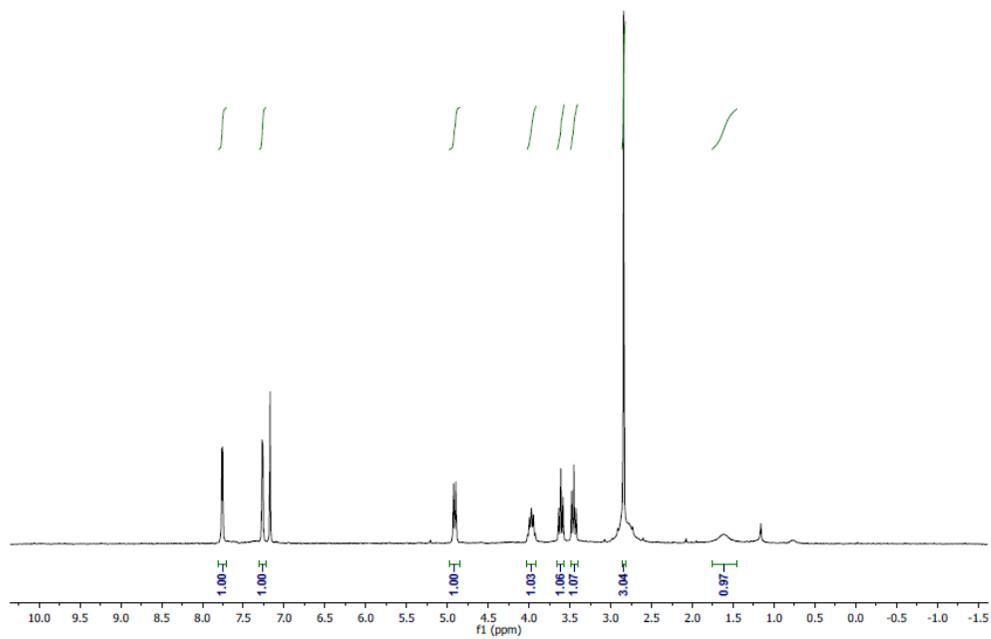


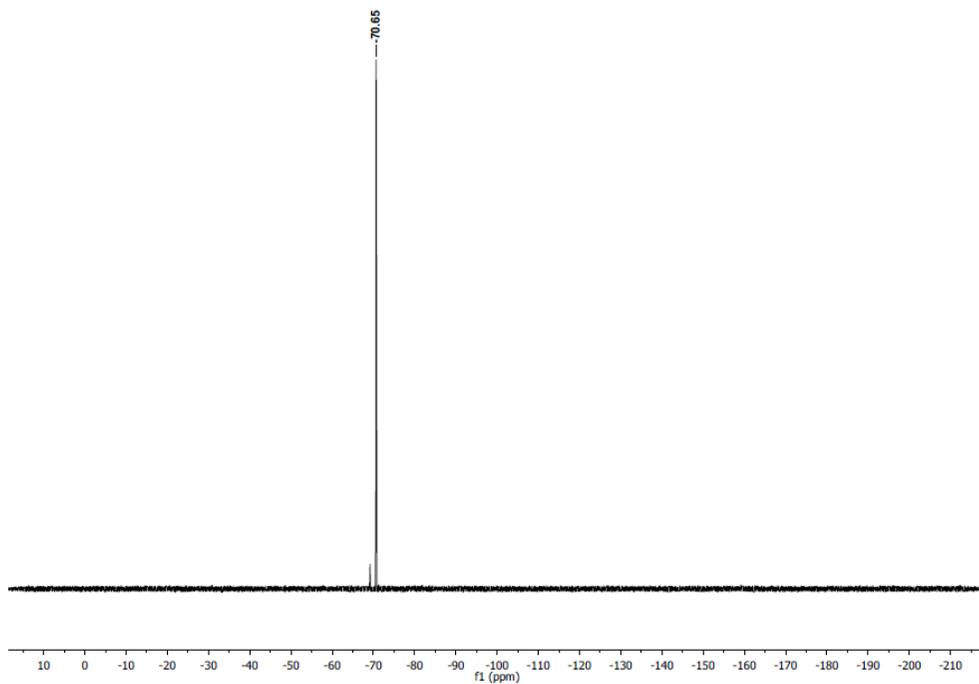




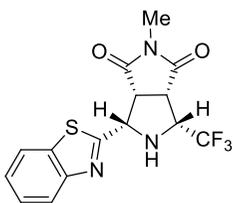
(3aR*,4S*,6R*,6aS*)-2-Metil-4-(tiazol-2-il)-6-(trifluorometil) tetrahidropirrololo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7w)

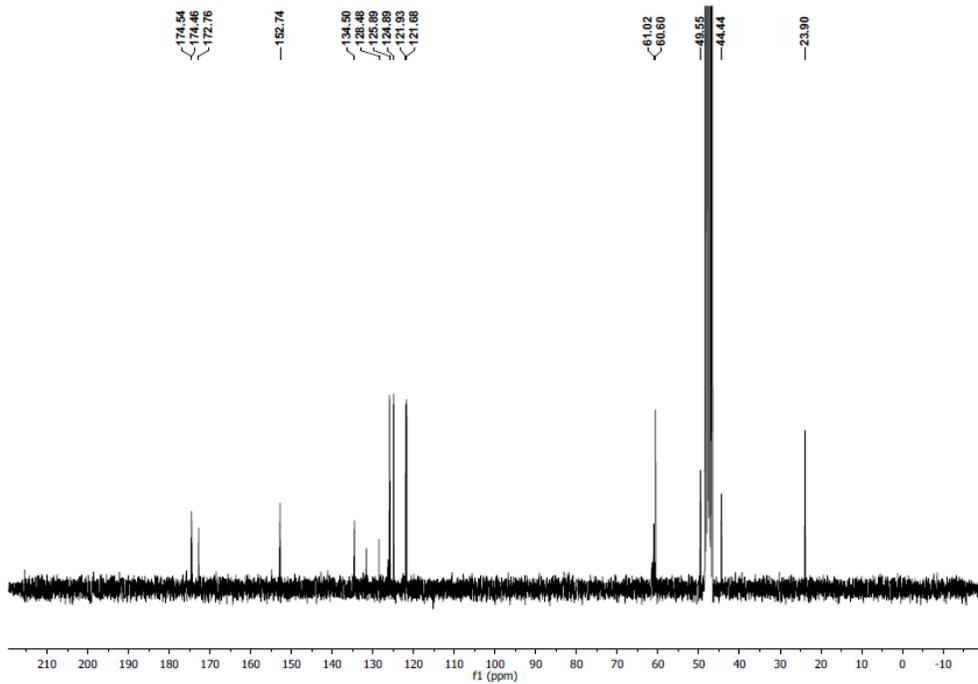
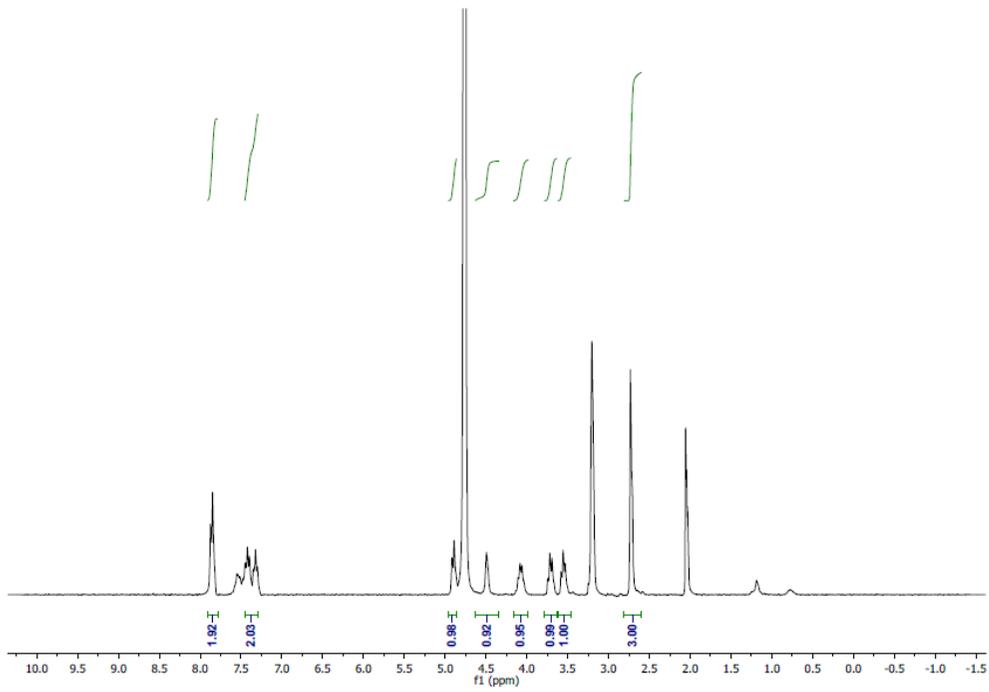


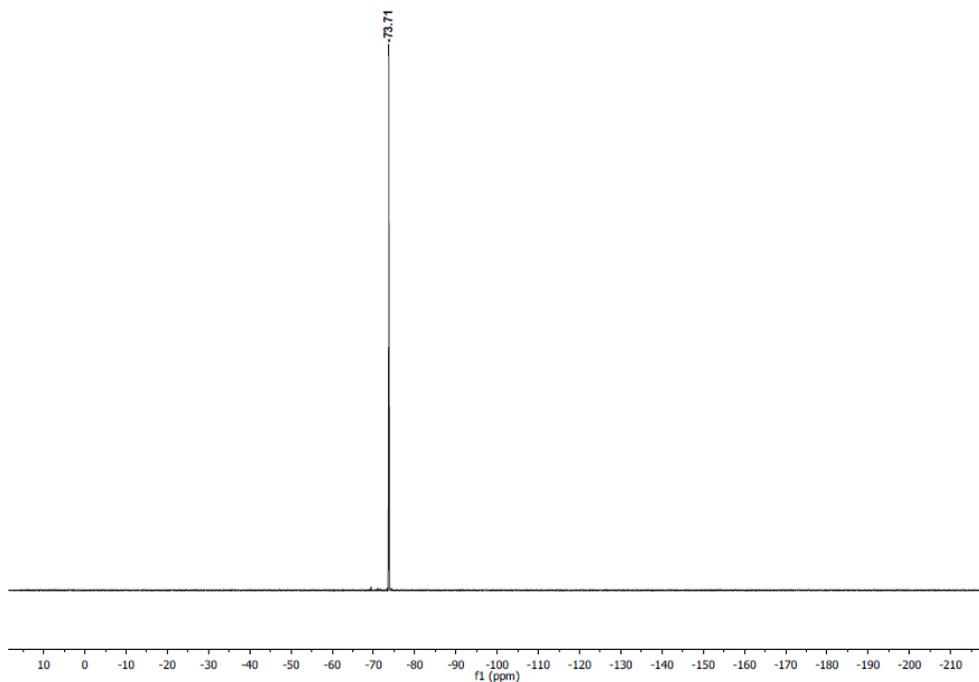




(3aR*, 4S*, 6R*, 6aS*)-4-(Benzo[d]tiazol-2-il)-2-metil-6-(trifluorometil) tetrahidropirrolo[3,4-c]pirrol-1,3(2H,3aH)-diona ((±)-endo-7x)

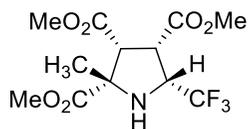


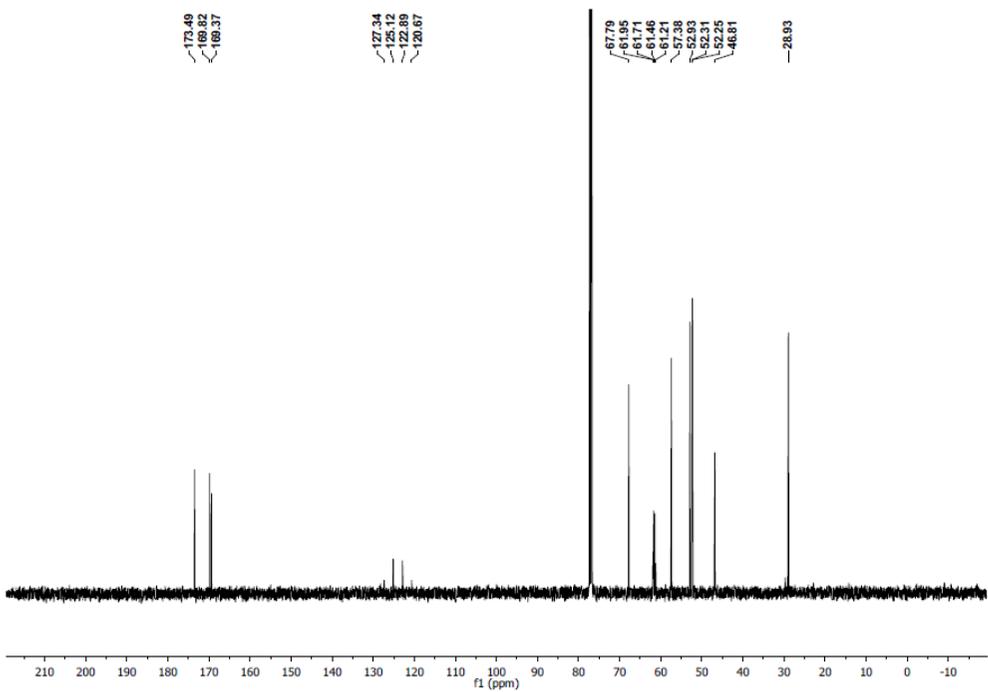
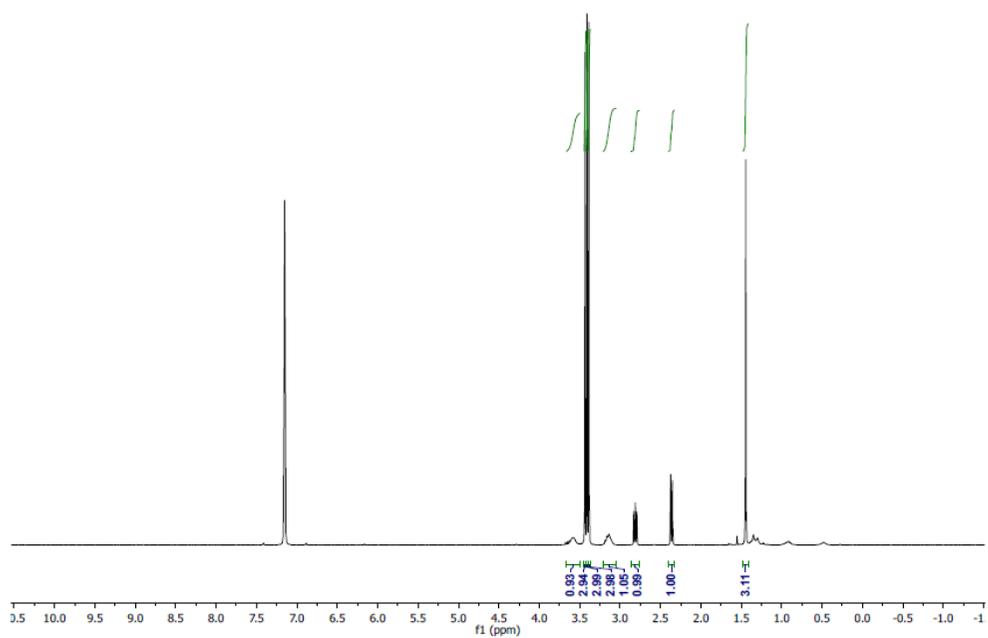


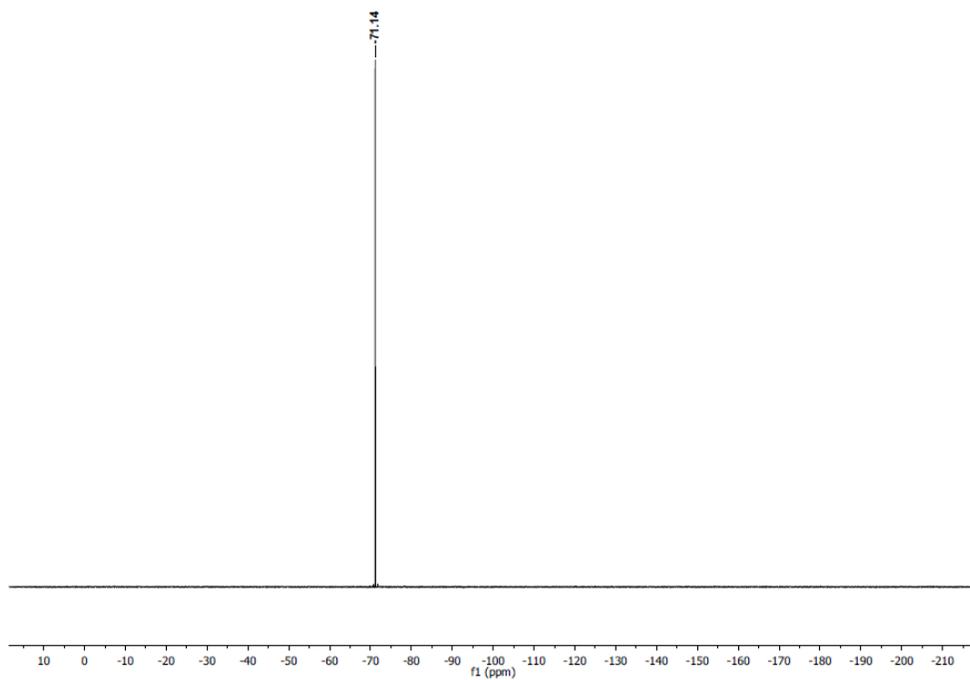


➤ **Cicloaddición 1,3-dipolar entre α -trifluorometilimas y otros dipolarófilos**

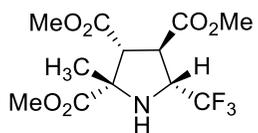
($2S^*$, $3R^*$, $4S^*$, $5R^*$)-2-Metil-5-(trifluorometil)pirrolidina-2,3,4-tricarboxilato de trimetilo ((\pm)-*endo*-15)

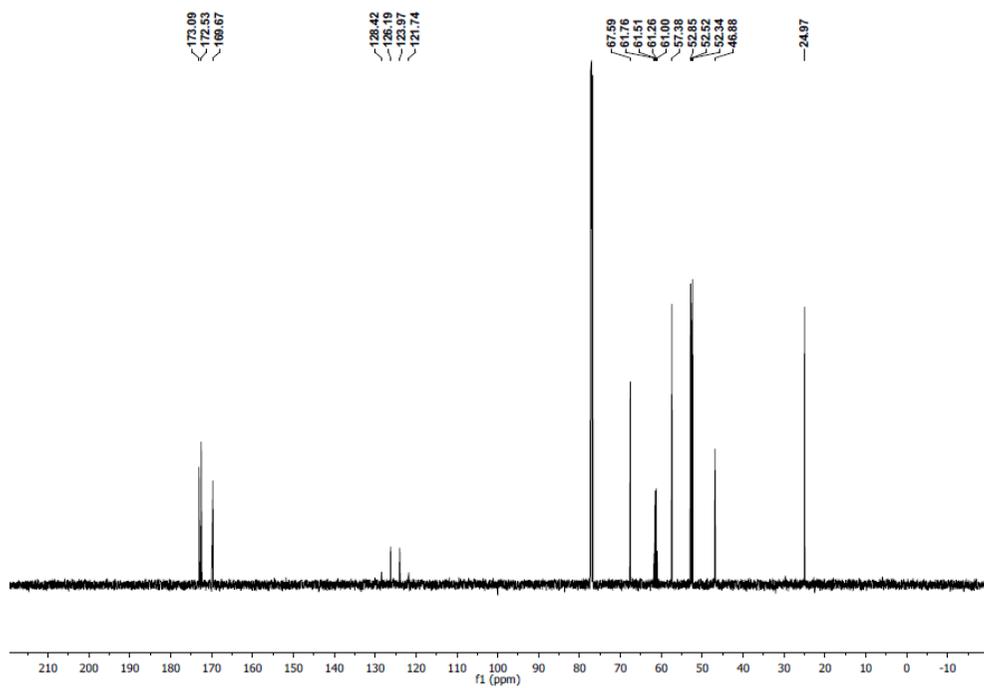
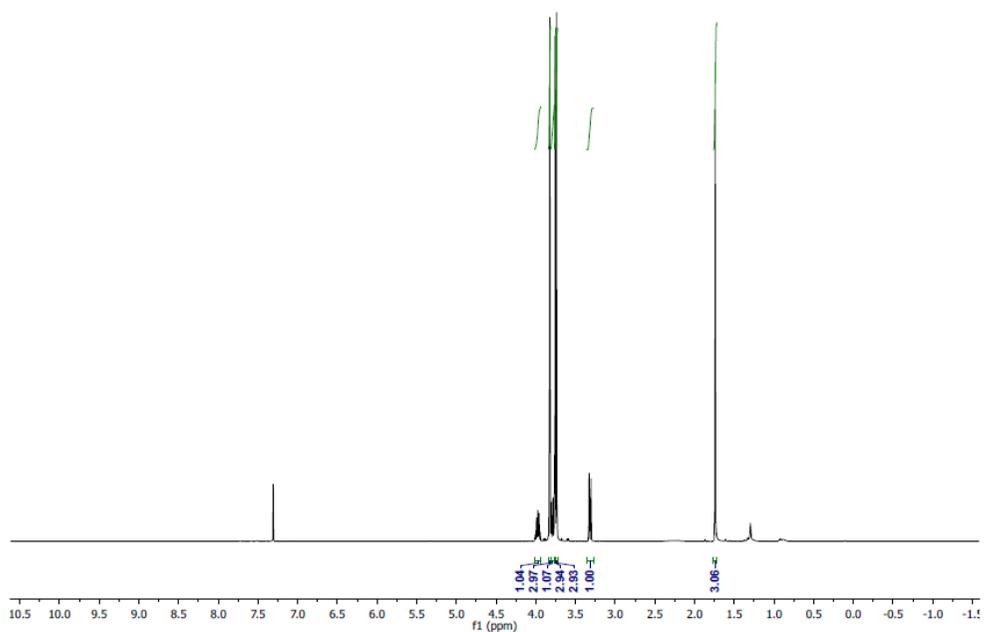


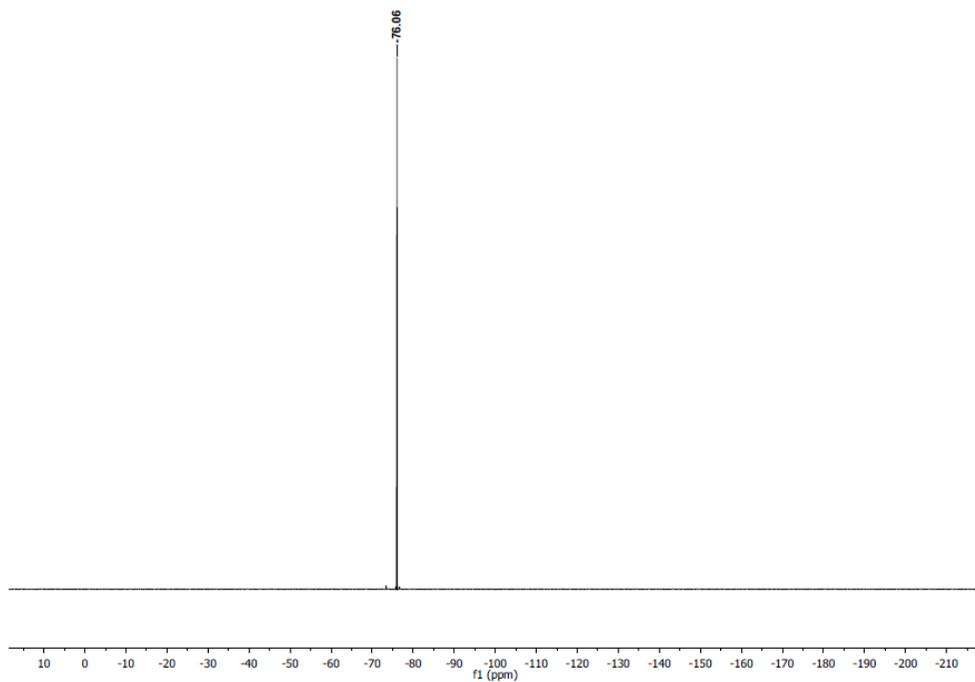




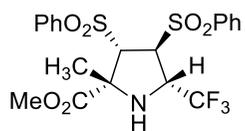
(2*S,3*R**,4*R**,5*R**)-2-Metil-5-(trifluorometil)pirrolidina-2,3,4-tricarboxilato de trimetilo ((±)-*endo*-16)**

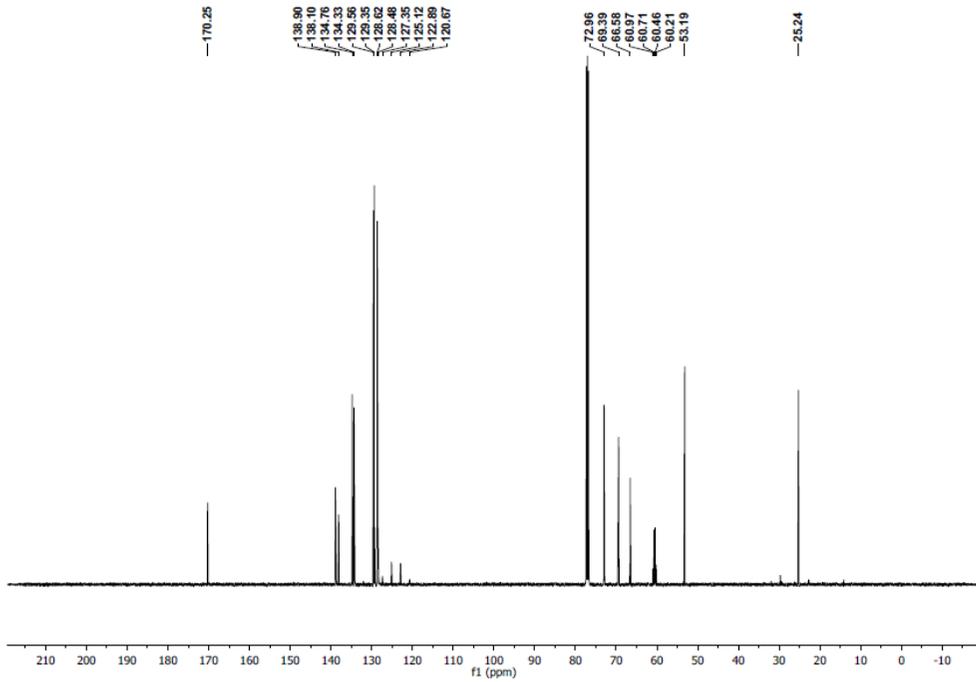
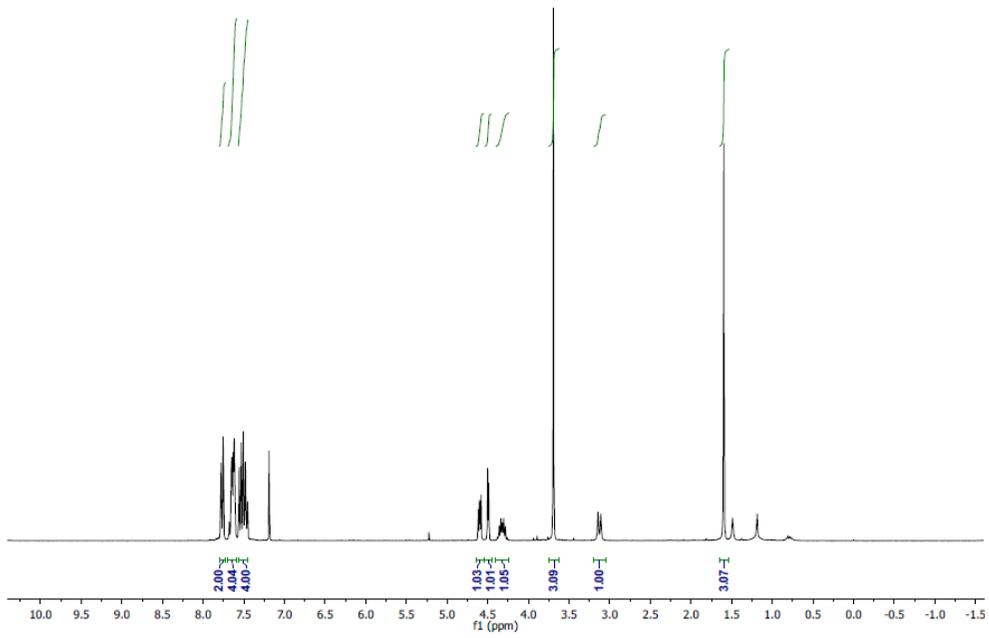


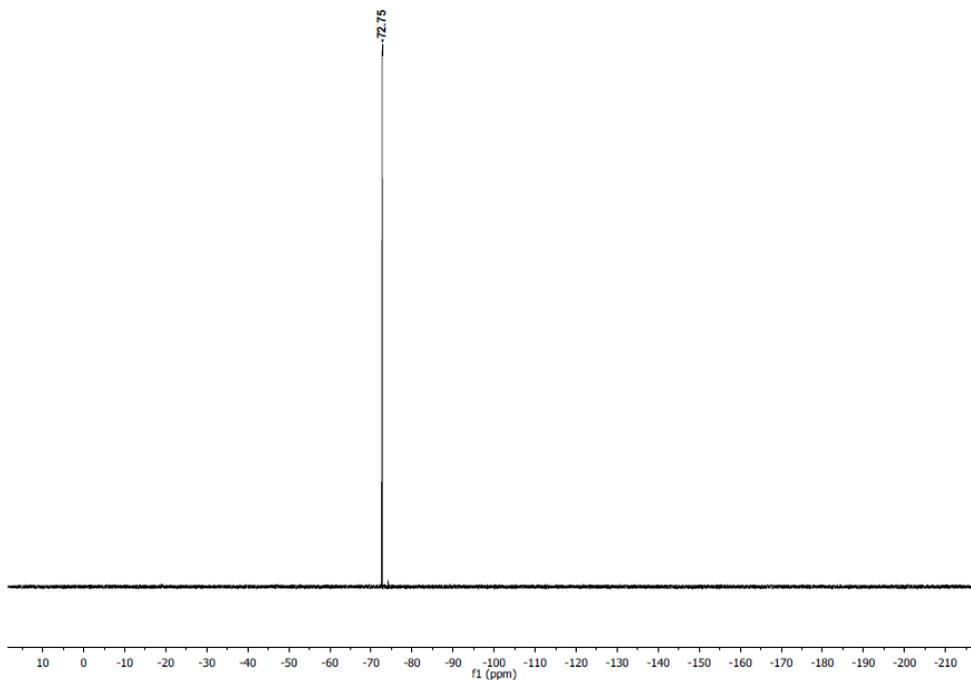




(2*R,3*S**,4*S**,5*S**)-2-Metil-3,4-bis(fenilsulfonil)-5-(trifluorometil) pirrolidina-2-carboxilato de metilo ((±)-*endo*-17)**

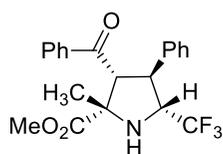


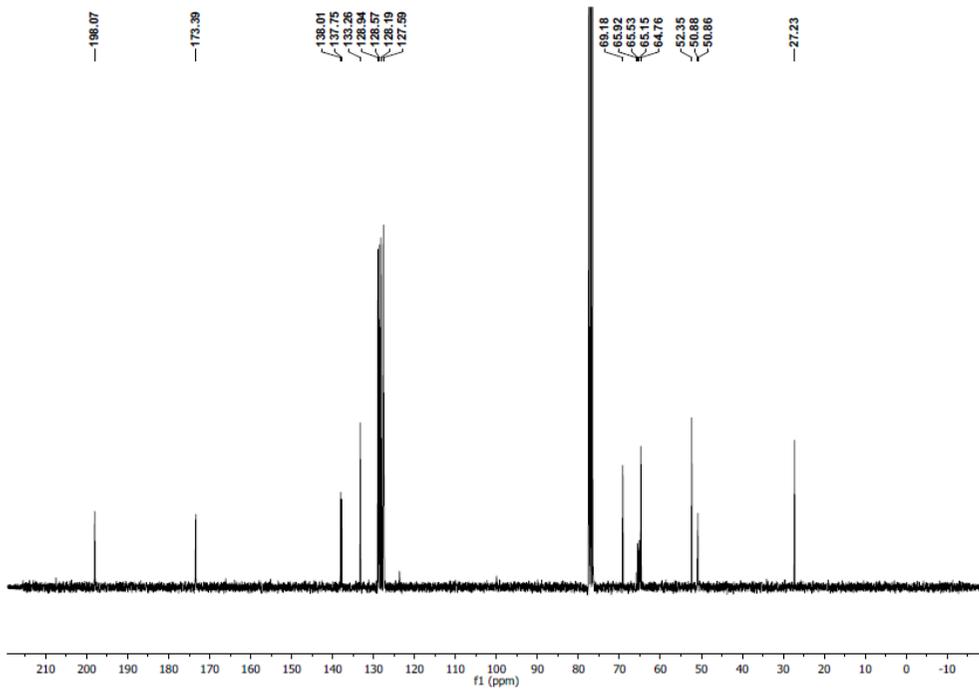
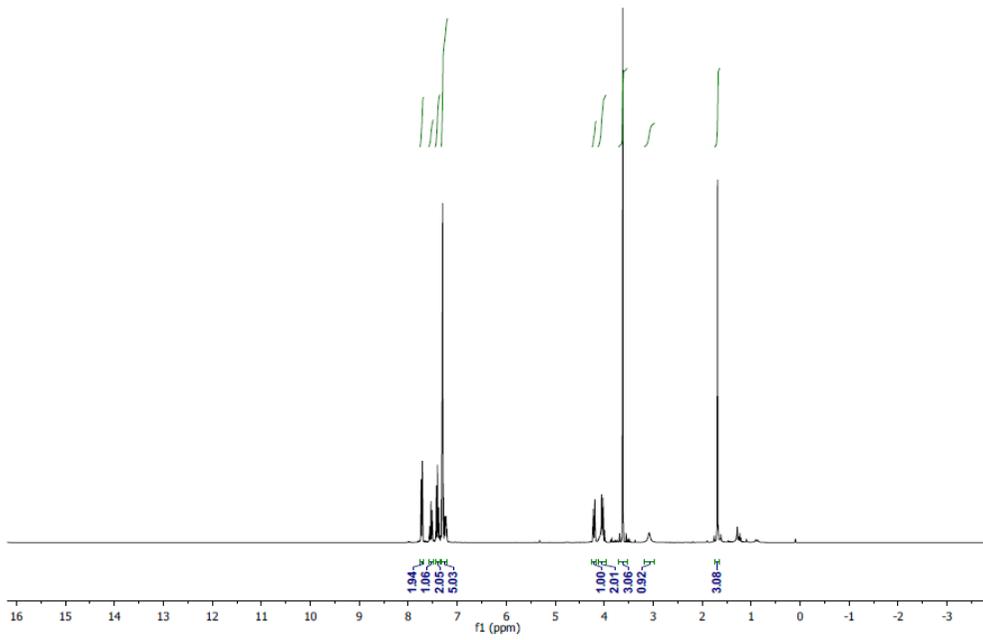


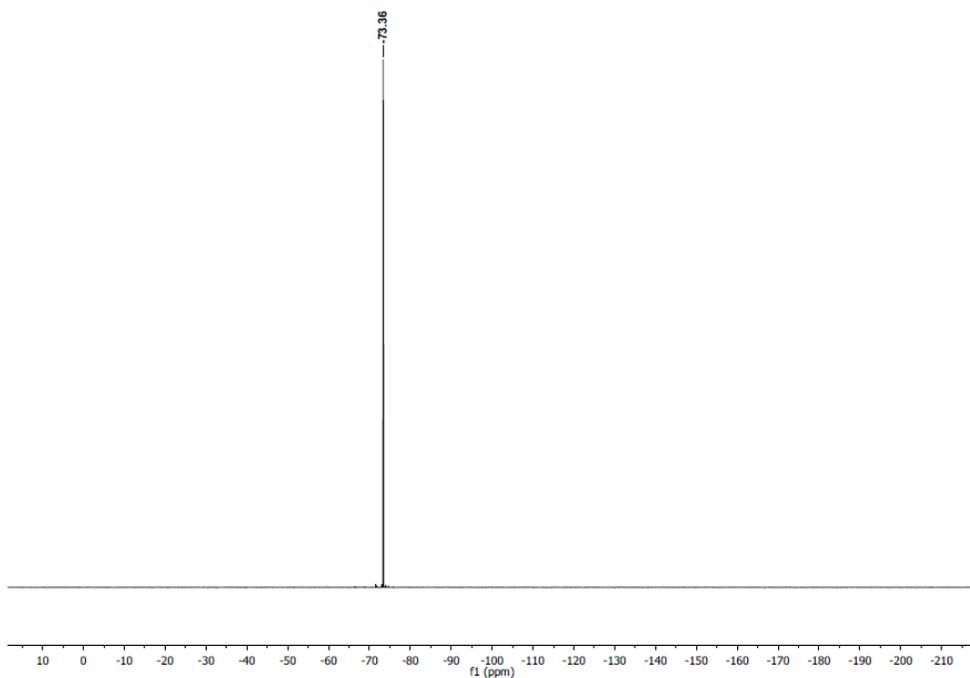


**(2S*,3R*,4S*,5R*)-3-Benzoil-2-metil-4-fenil-5-(trifluorometil)
carboxilato de metilo ((±)-endo-18)**

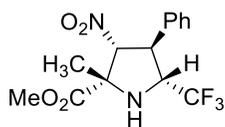
pirrolidina-2-

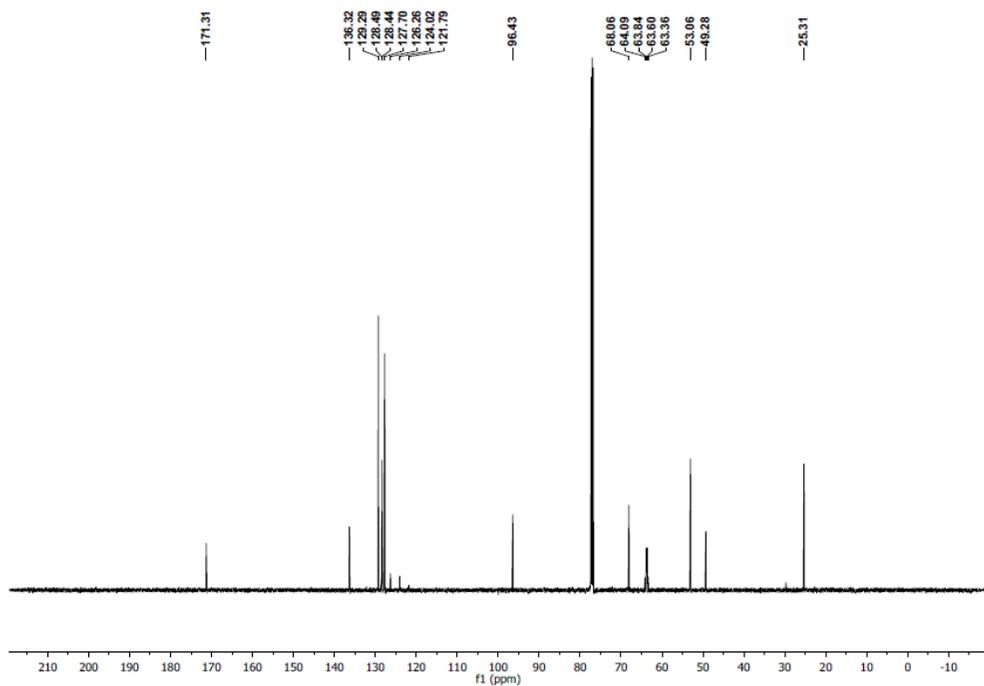
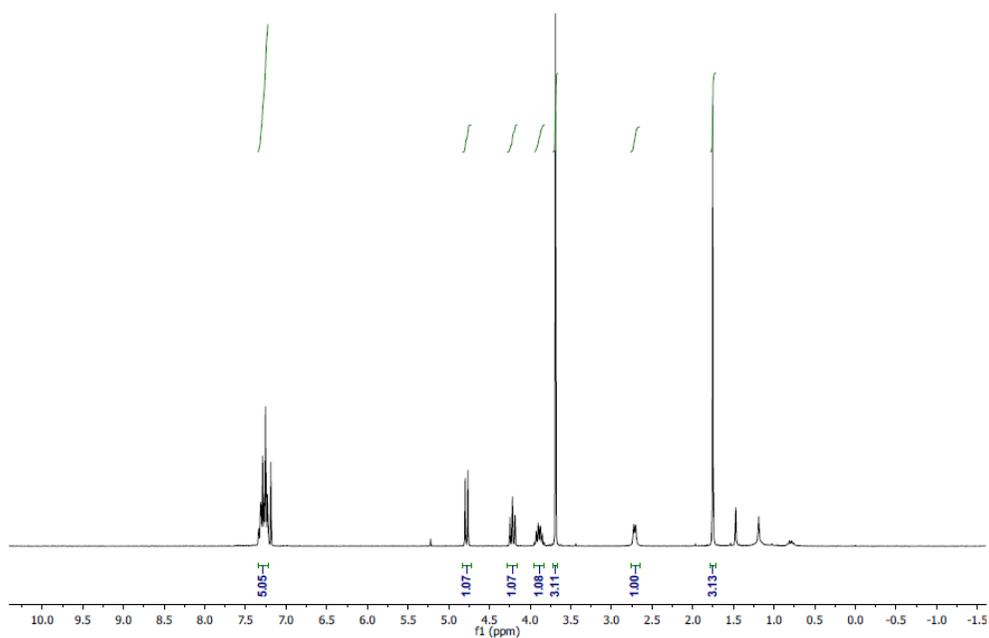


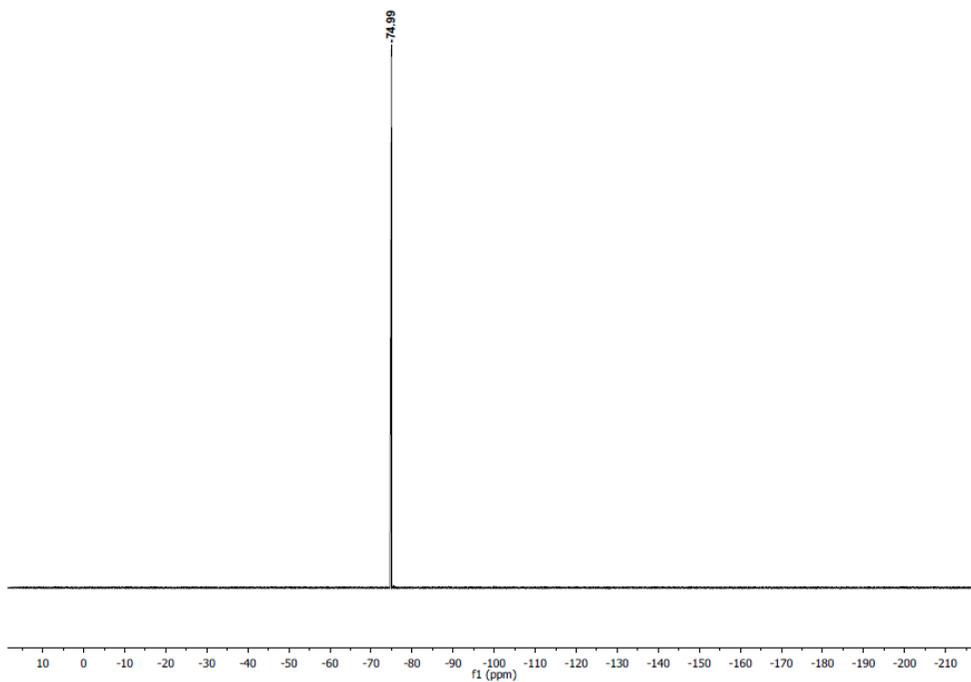




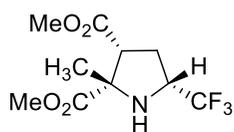
(2S*,3R*,4S*,5R*)-2-Metil-3-nitro-4-fenil-5-(trifluorometil)pirrolidina-2-carboxilato de metilo ((±)-endo-19)

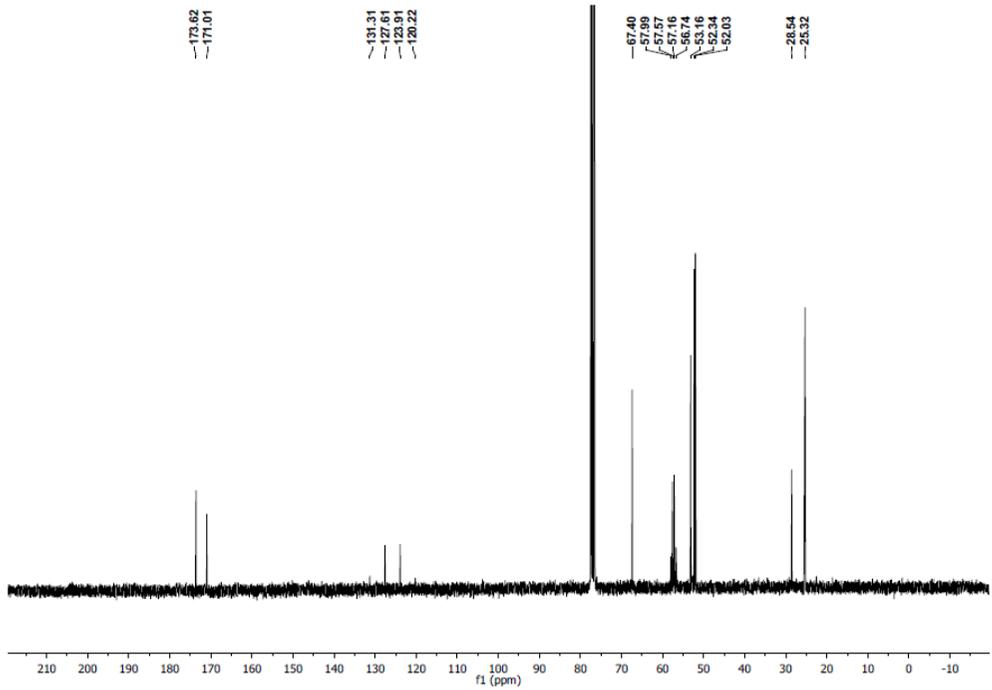
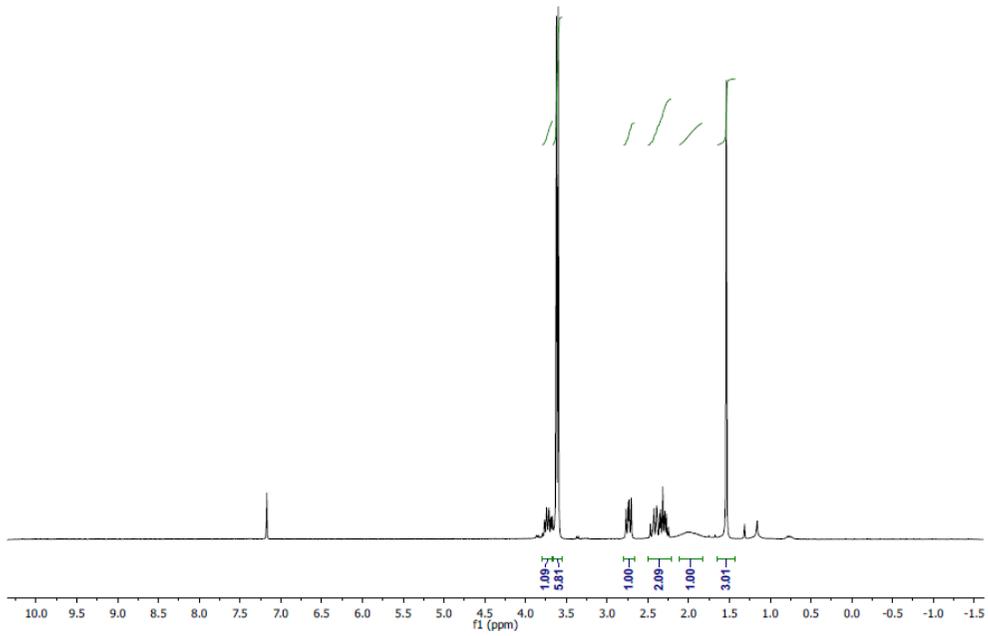


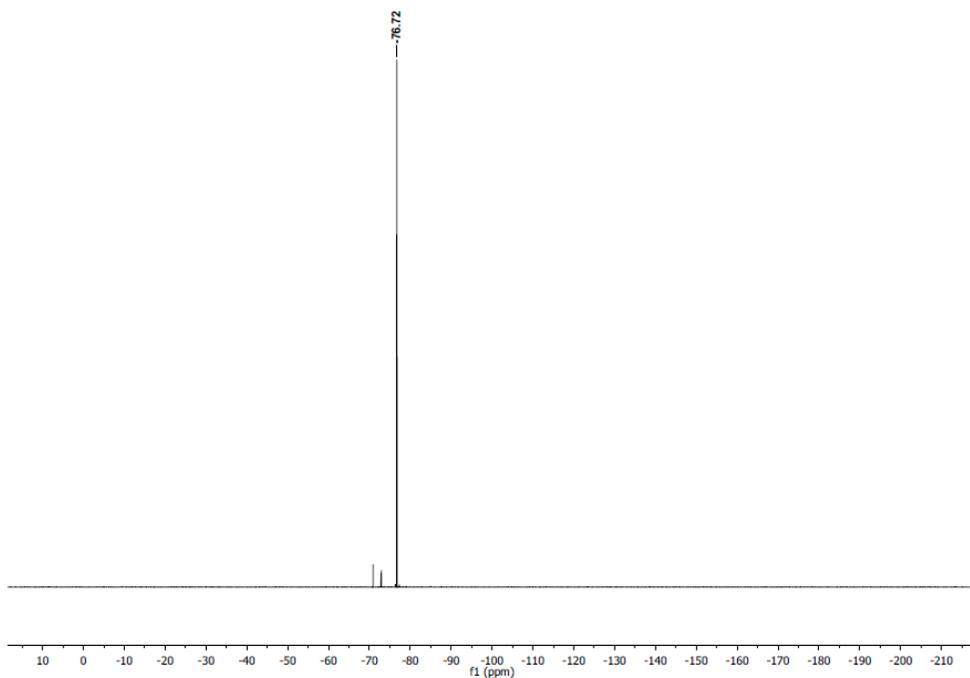




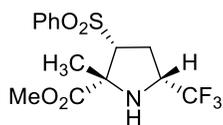
(2*S,3*R**,5*R**)-2-Metil-5-(trifluorometil)pirrolidina-2,3-dicarboxilato de dimetilo ((±)-*endo*-20)**

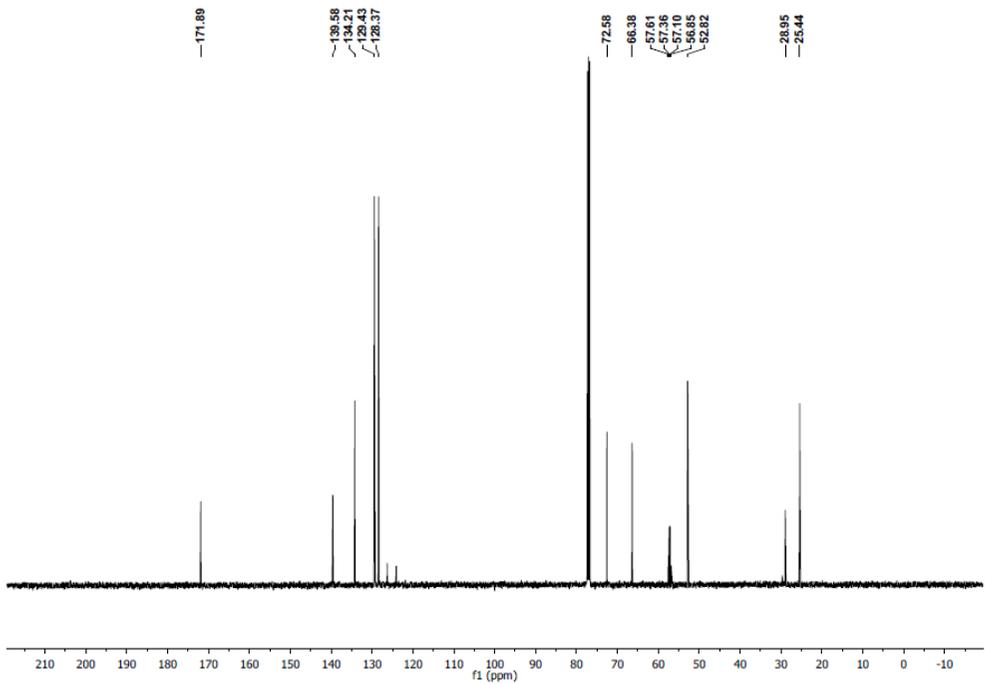
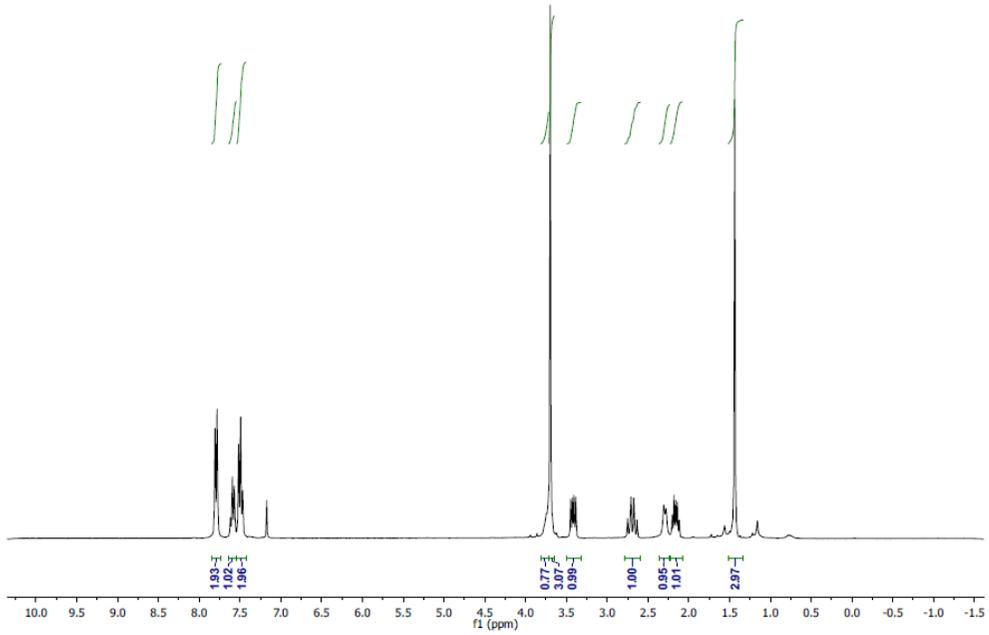


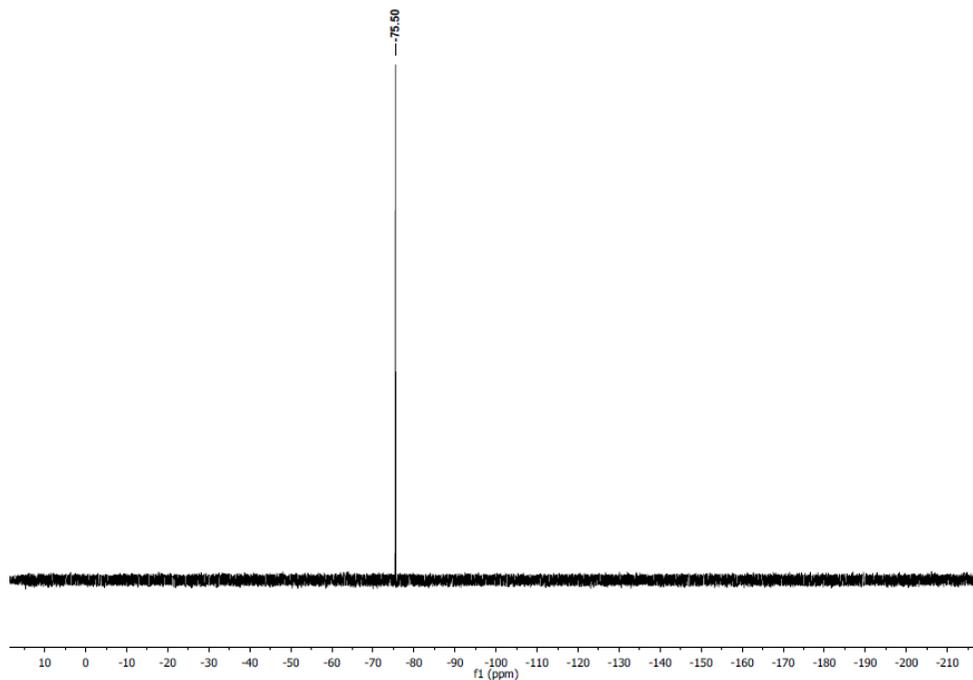




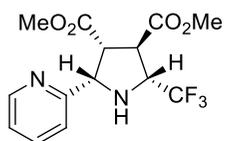
(2R*,3R*,5R*)-2-Metil-3-(fenilsulfonil)-5-(trifluorometil)pirrolidina 2-carboxilato de metilo ((±)-endo-21)

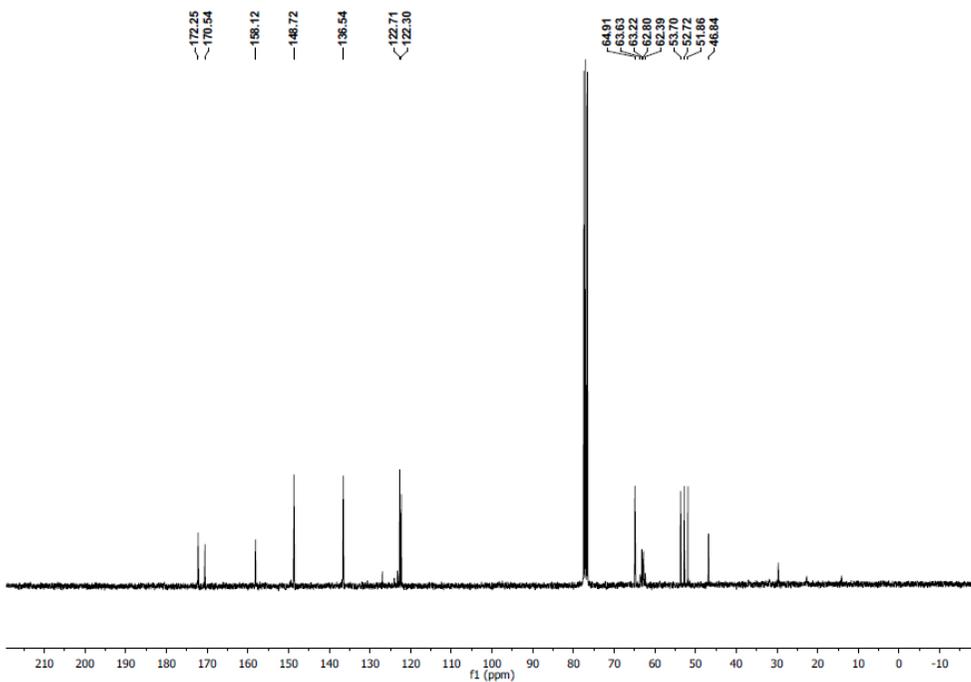
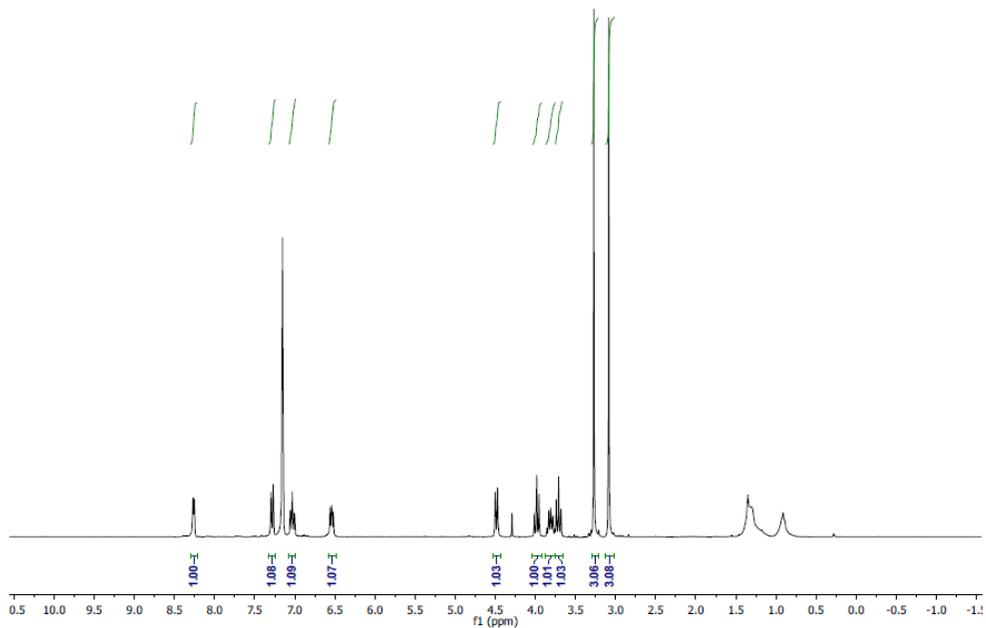


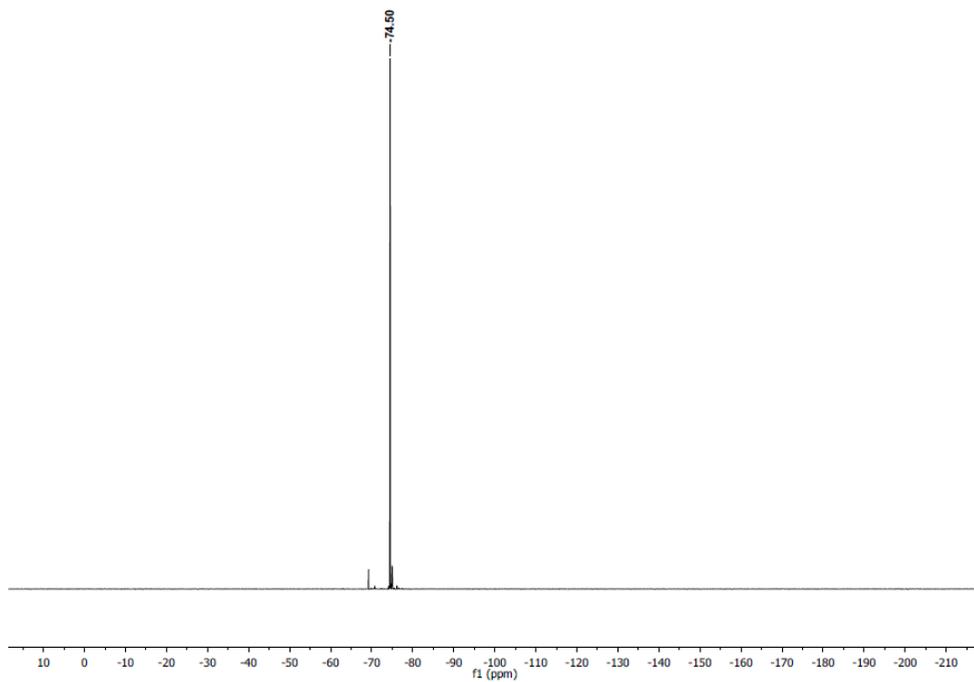




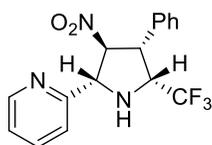
(2*S,3*R**,4*R**,5*R**)-2-(Piridin-2-il)-5-(trifluorometil)pirrolidina-3,4-dicarboxilato de dimetilo ((±)-*endo*-22)**

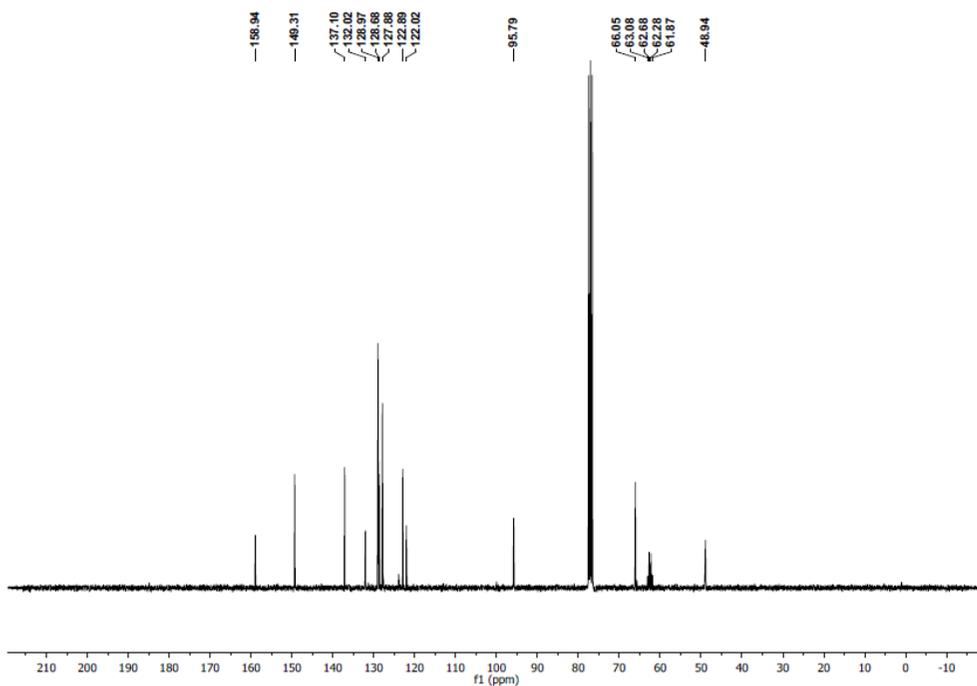
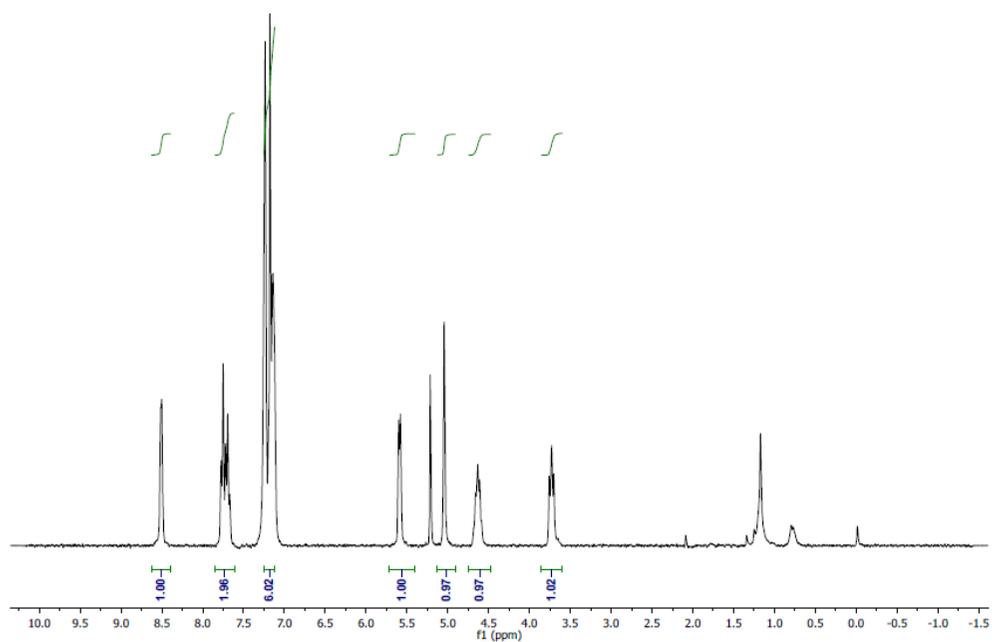


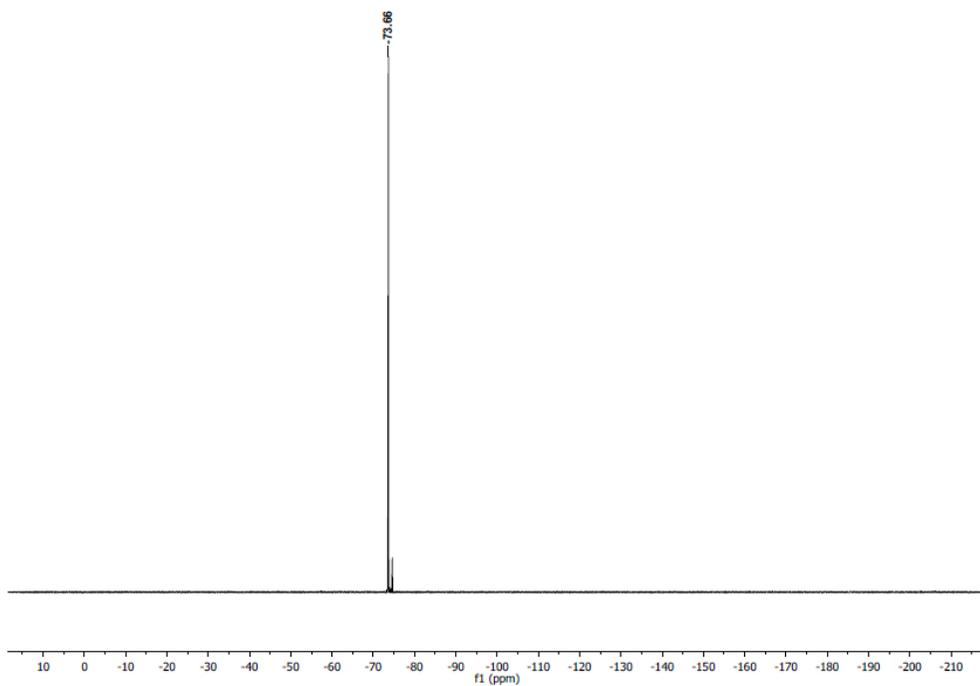




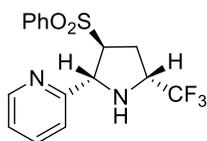
(2S*,3S*,4R*,5R*)-3-Nitro-4-fenil-2-(piridin-2-il)-5-(trifluorometil)pirrolidina ((±)-*exo*-23)

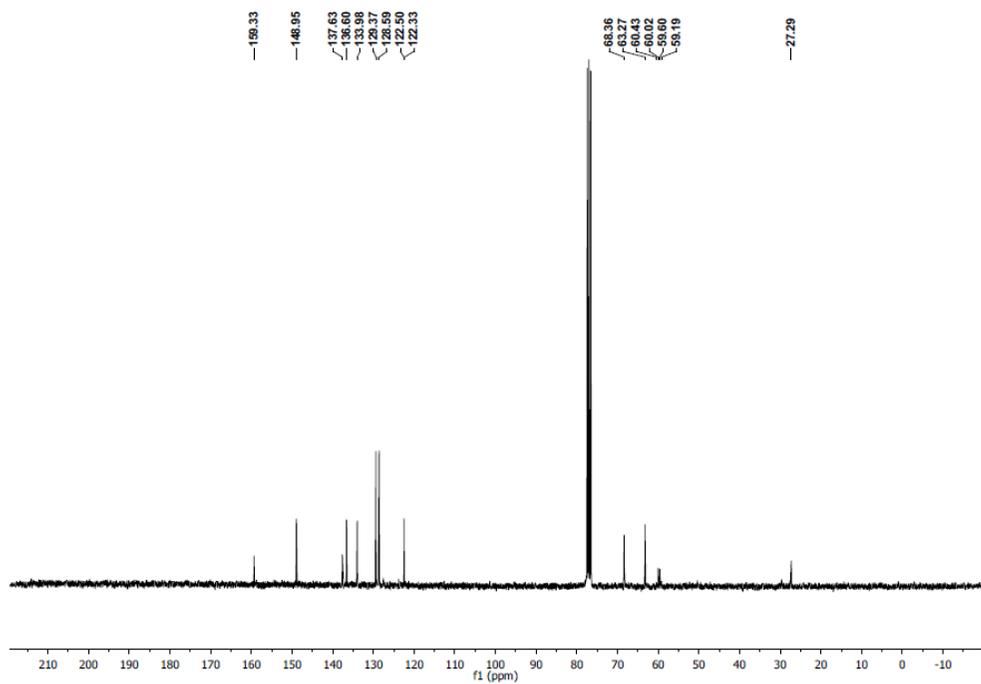
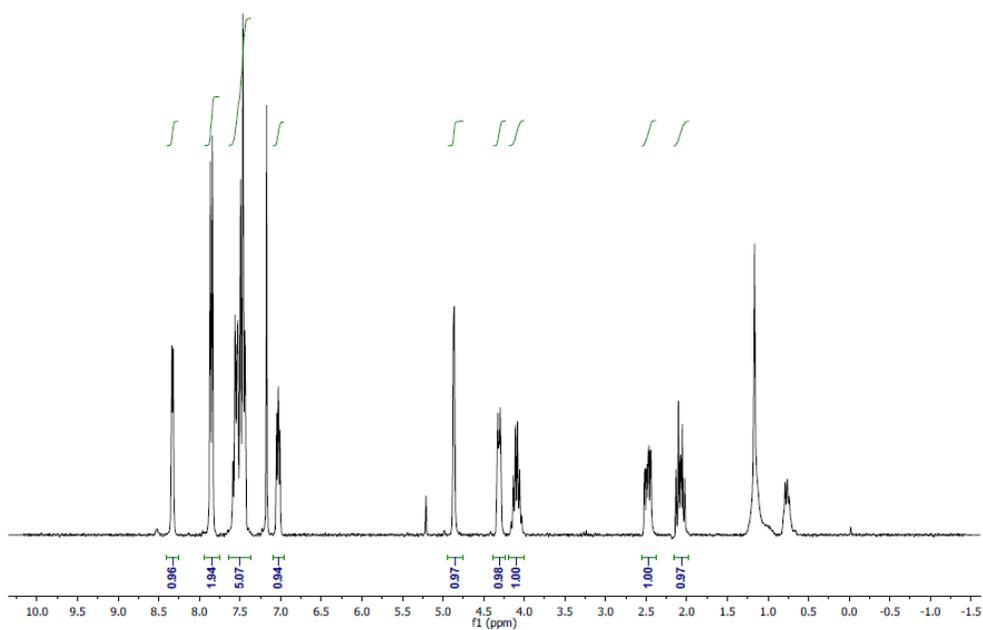


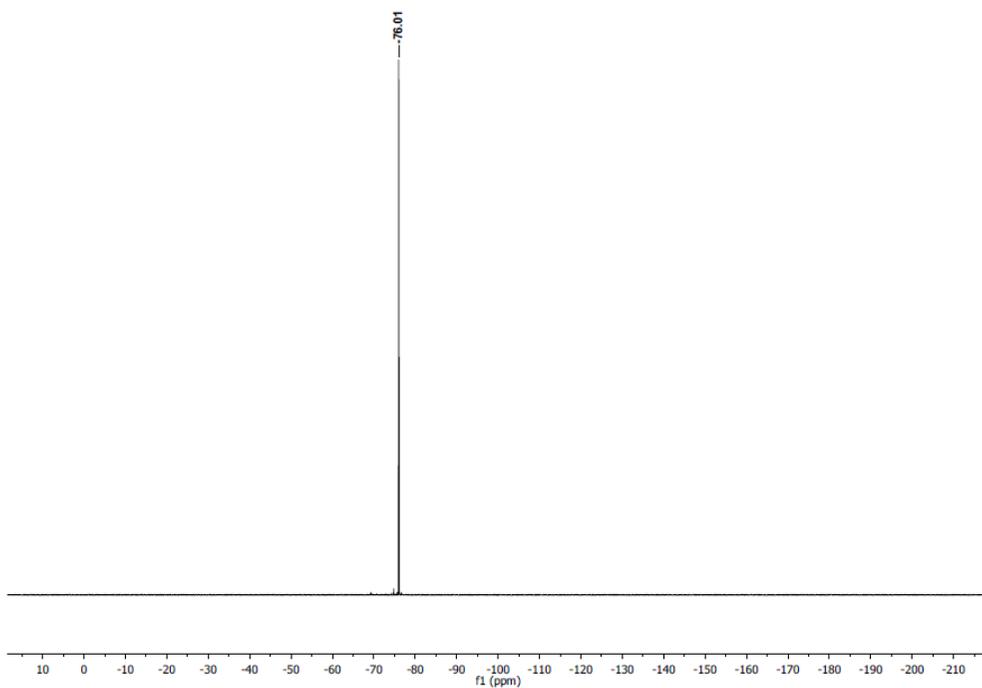




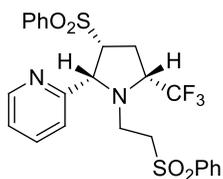
(2R*,3S*,5R*)-3-Fenilsulfonyl-2-(piridin-2-il)-5-(trifluorometil)pirrolidina ((±)-*exo*-24)

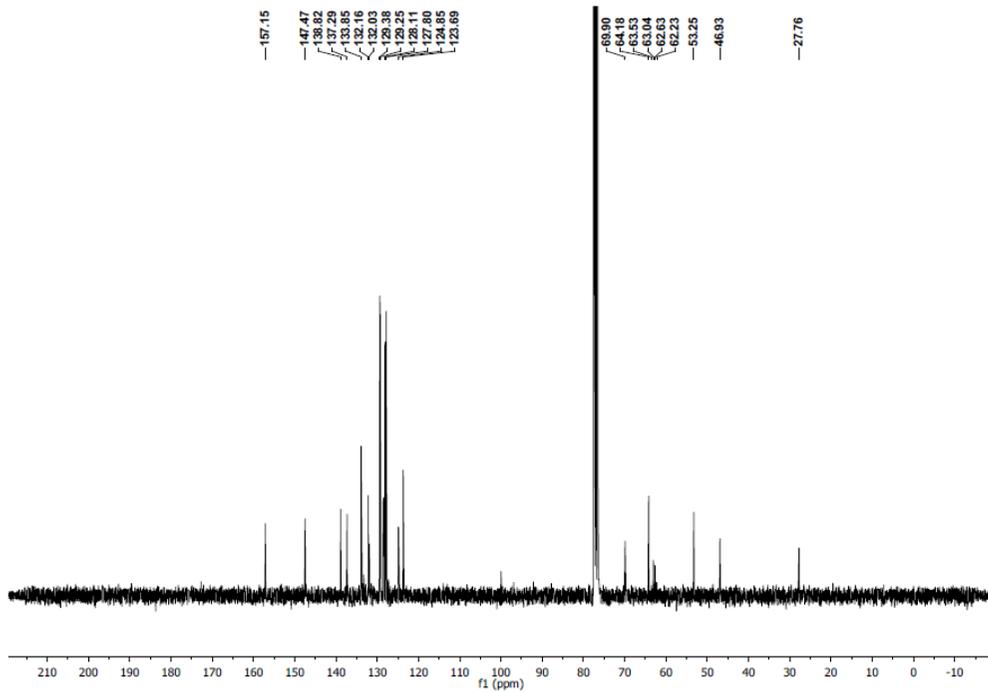
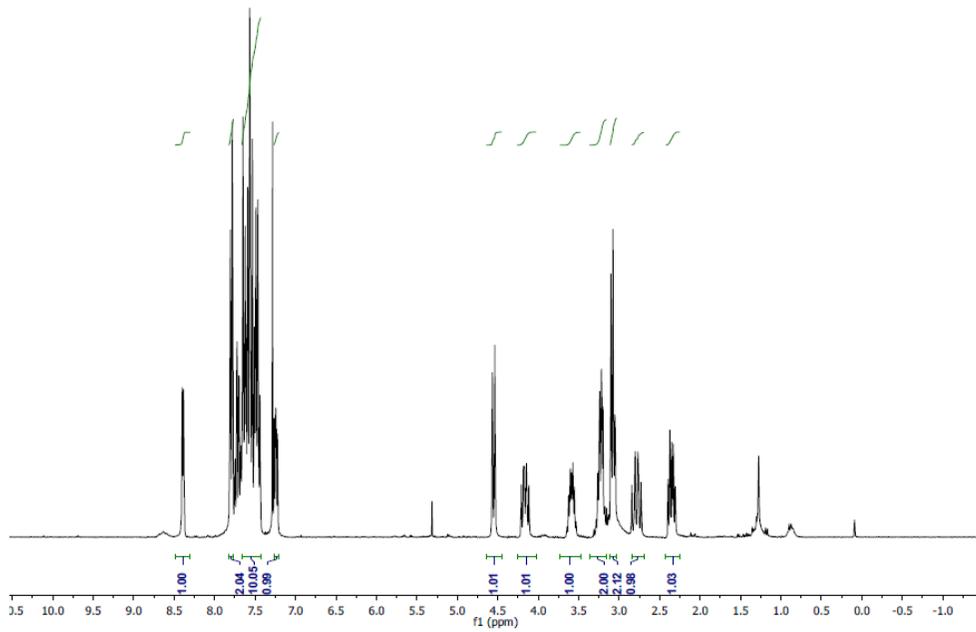


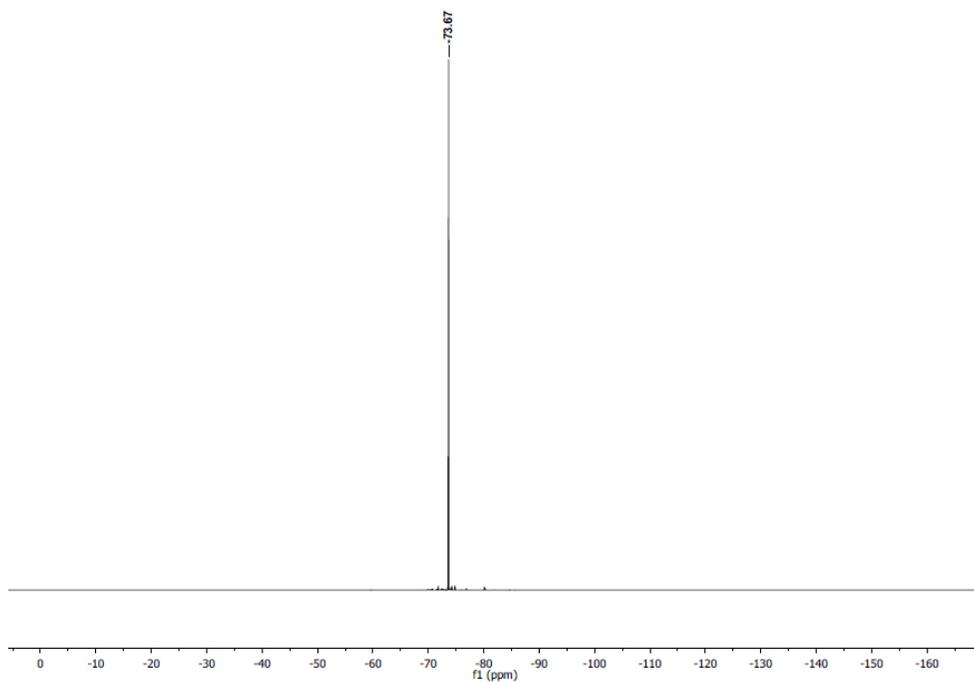




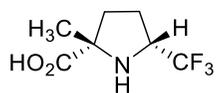
(2*R,3*R**,5*R**)-3-Fenilsulfonil-1-(2-fenilsulfoniletil)-2-(piridin-2-il)-5-(trifluorometil)pirrolidina ((±)-endo-25)**

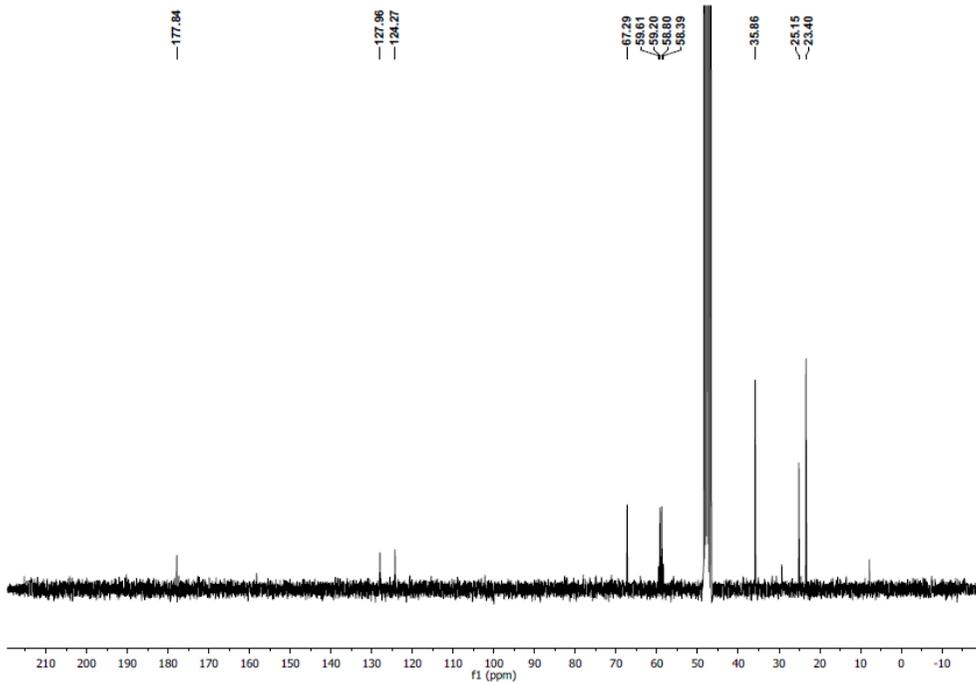
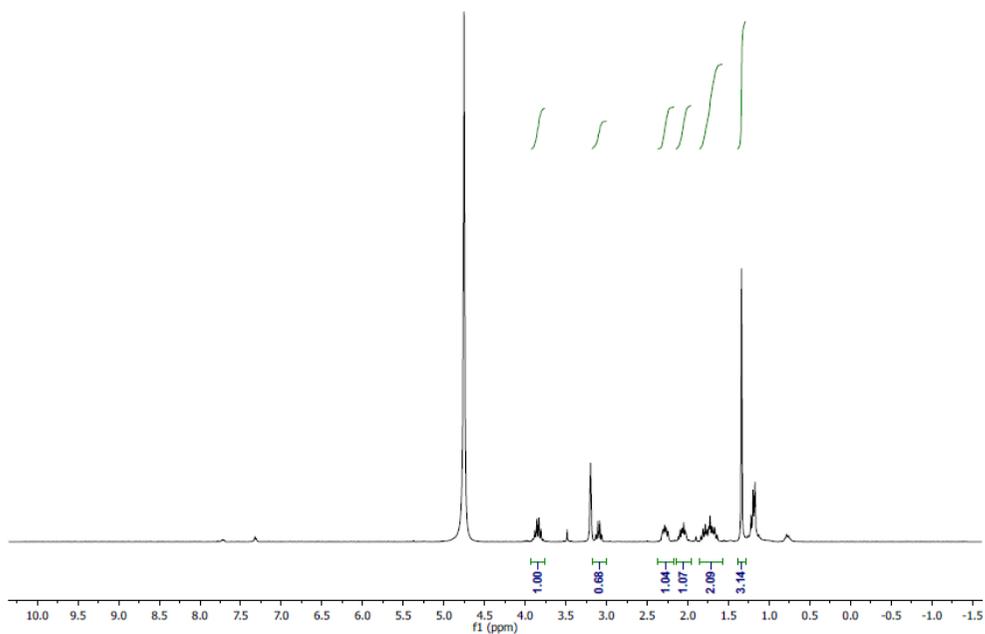


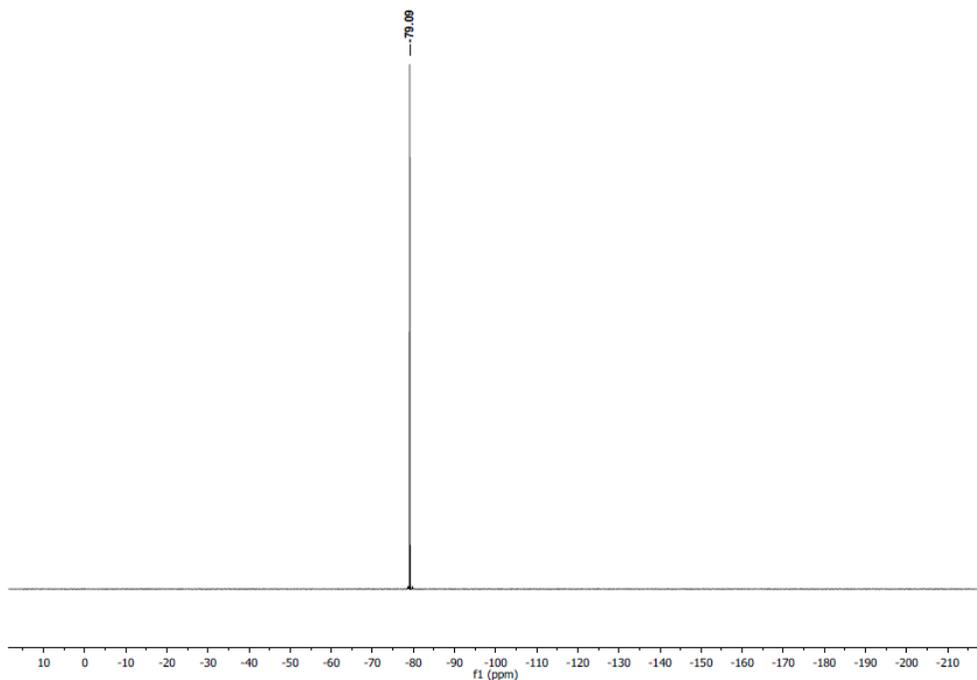




(2*S,5*R**)-Ácido 2-metil-5-(trifluorometil)pirrolidina-2-carboxílico ((±)-26)**



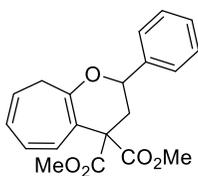


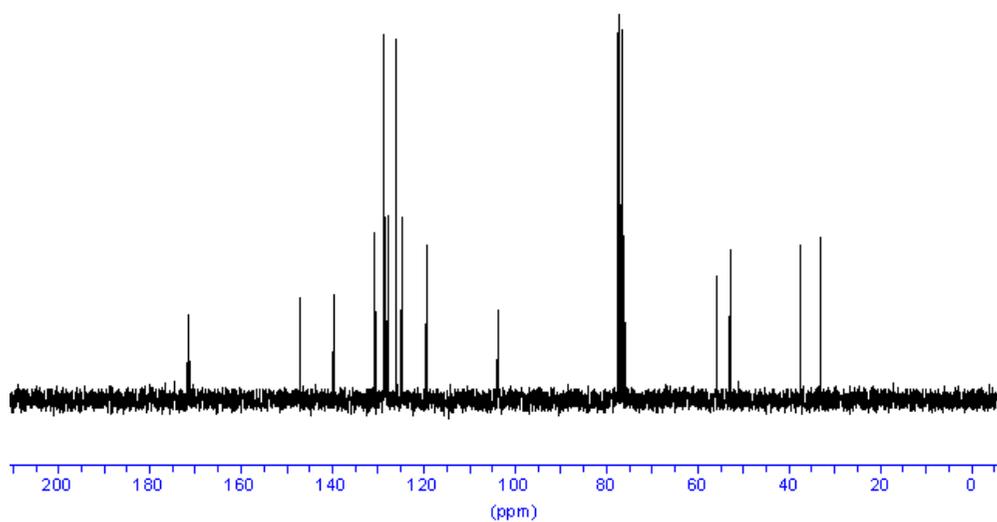
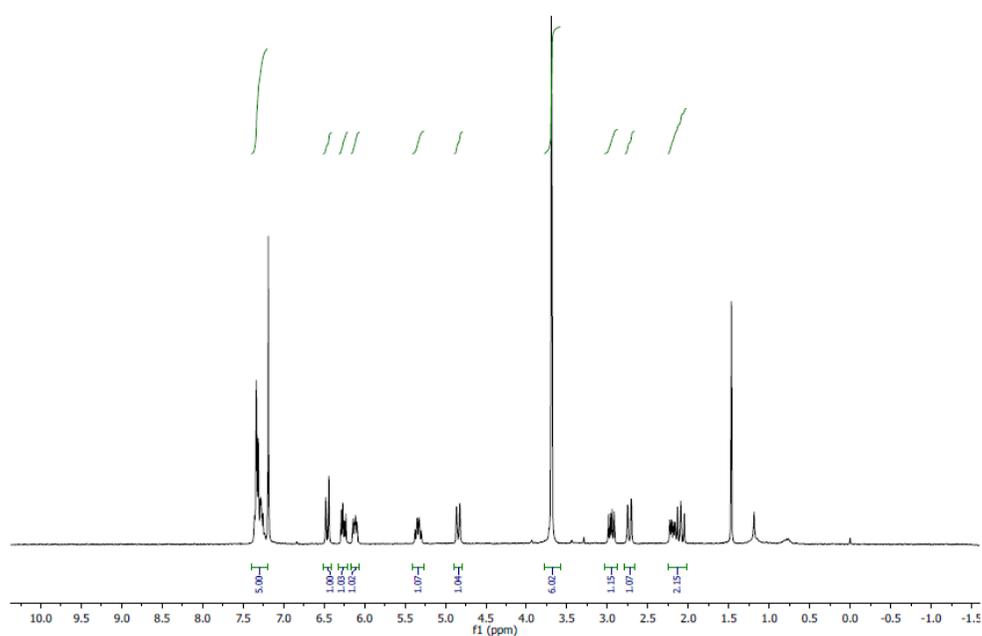


ANEXO IV.II CICLOADICIÓN [8+3] ENTRE TROPONAS Y CICLOPROPANOS ACTIVADOS CATALIZADA POR NÍQUEL

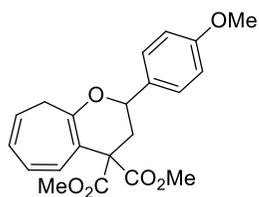
➤ Cicloadición [8+3] entre troponas y 1,1-ciclopropanodiesteres

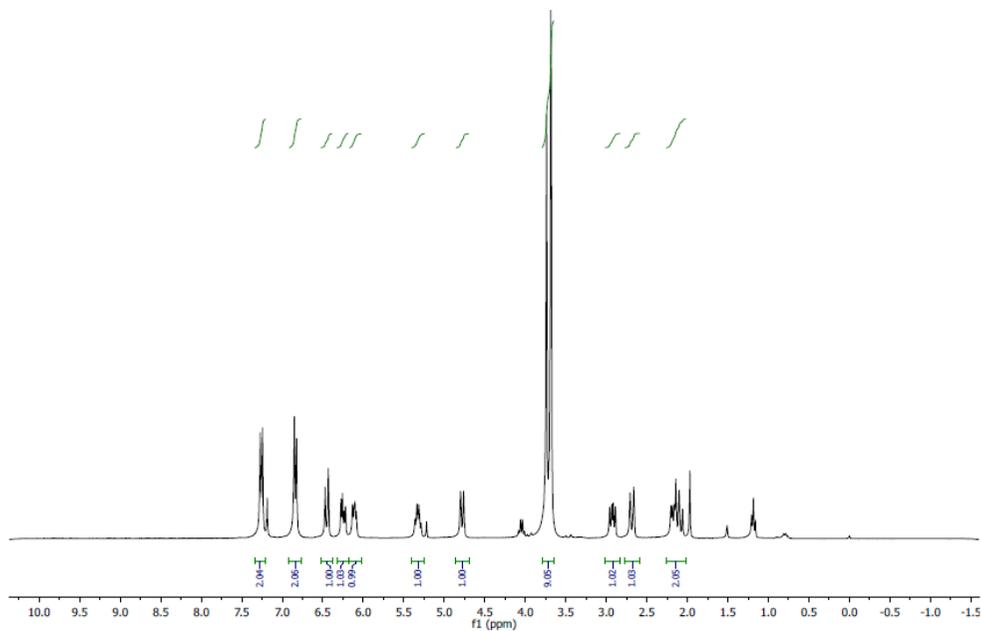
2-Fenil-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35a)





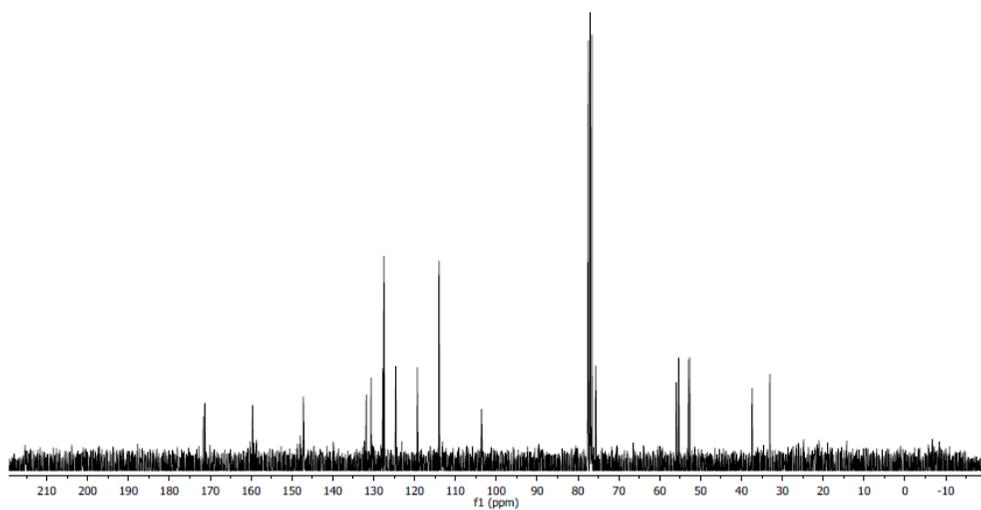
2-(4-Metoxifenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35b)



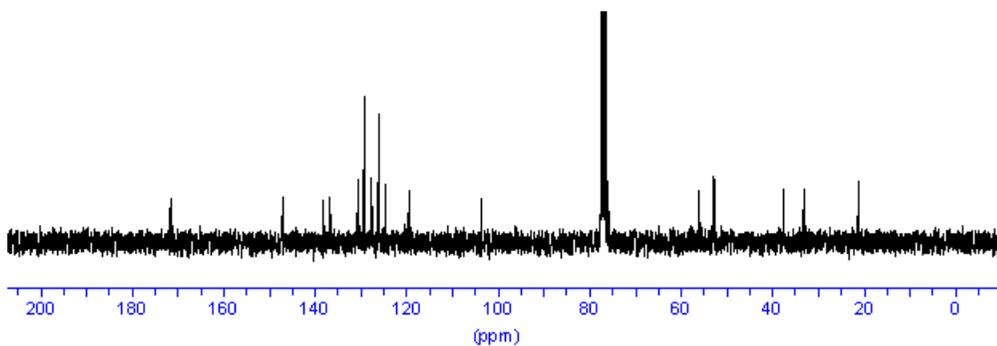
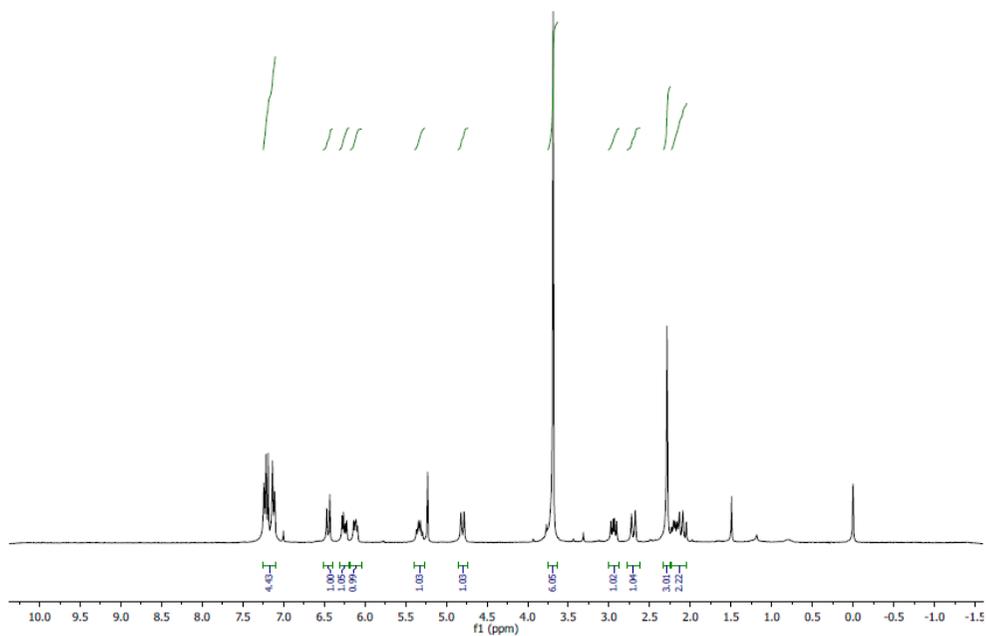
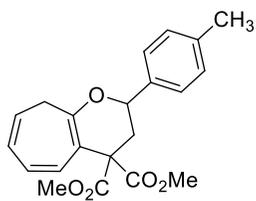


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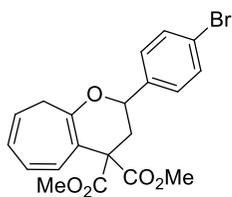
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171.32
159.64
147.22
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127.66
127.36
127.09
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114.01
103.62
75.68
55.97
55.35
52.94
50.68
37.39
33.06

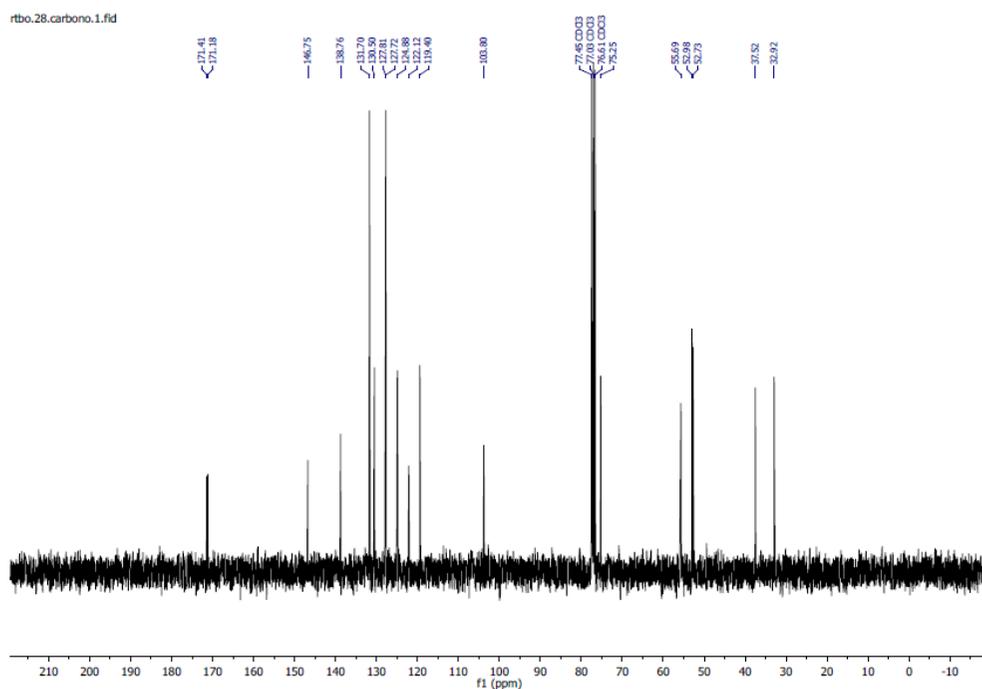
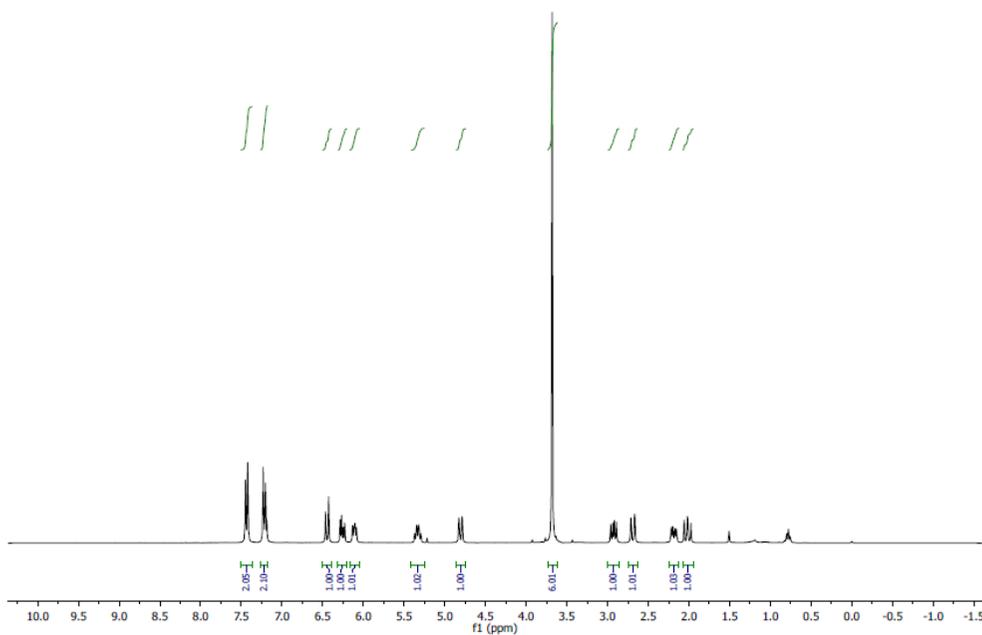


2-*p*-tolil-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35c).

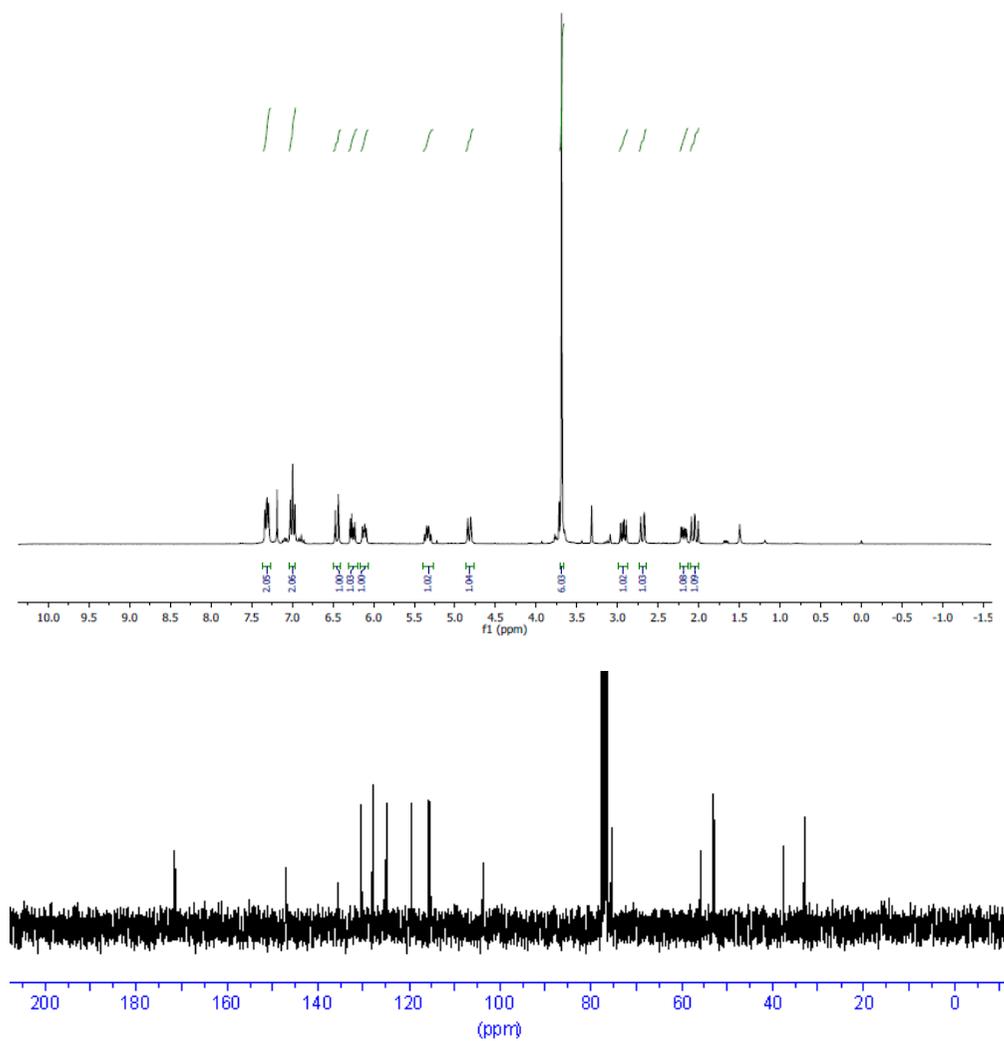
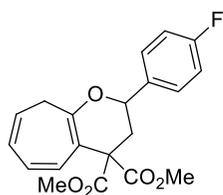


2-(4-Bromofenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35d)

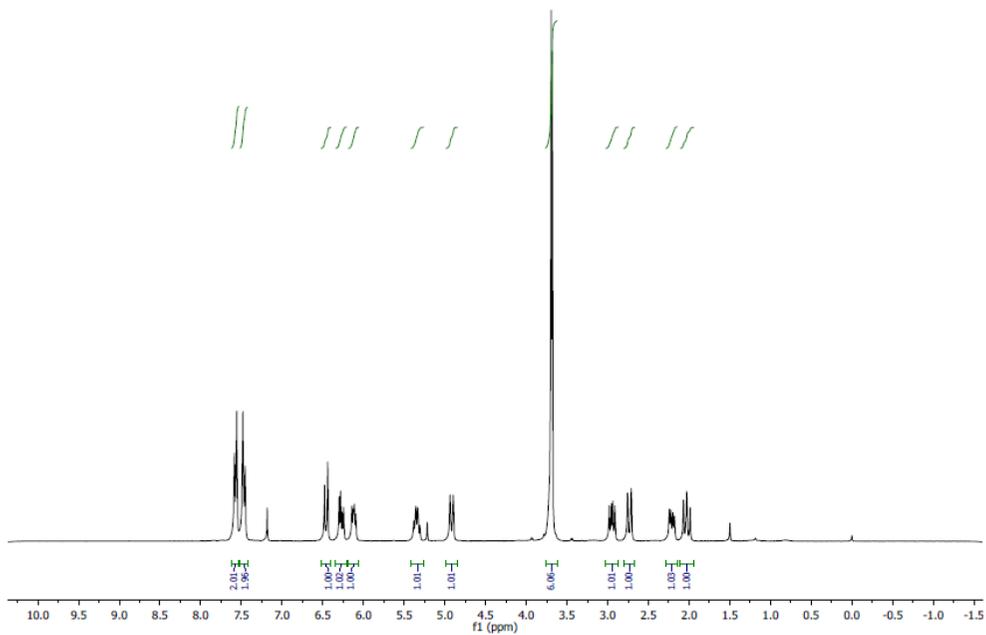
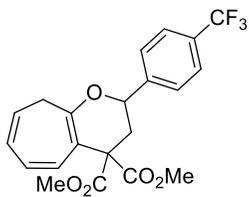




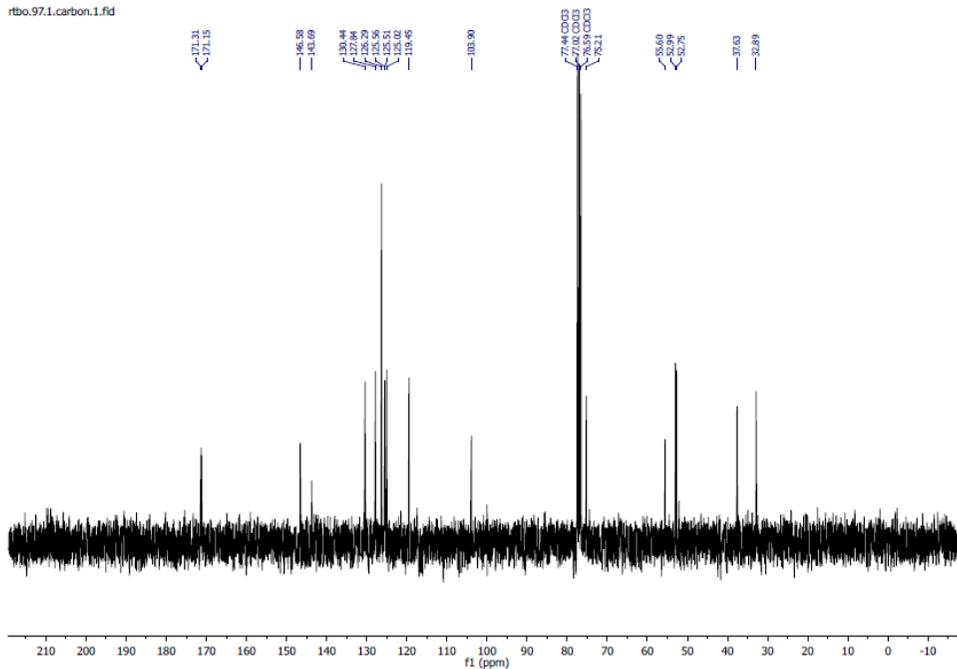
2-(4-Fluorofenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35e)

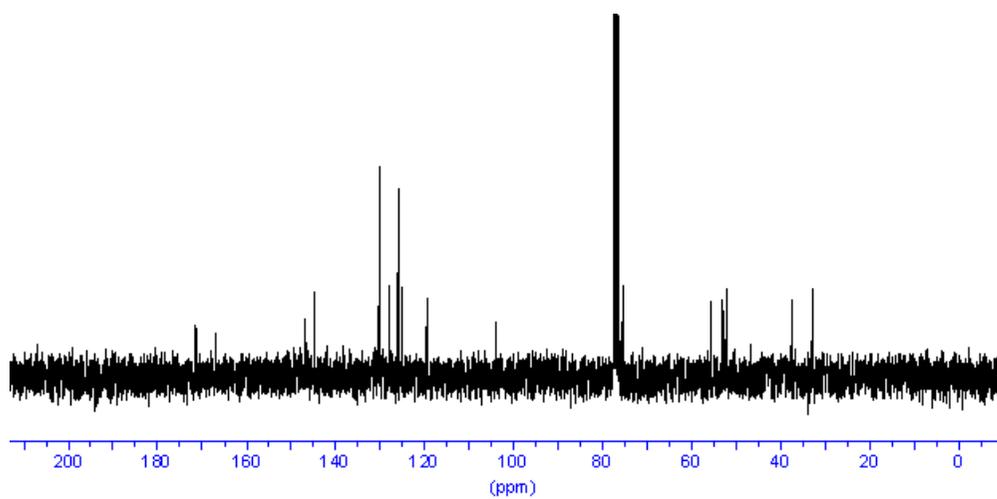
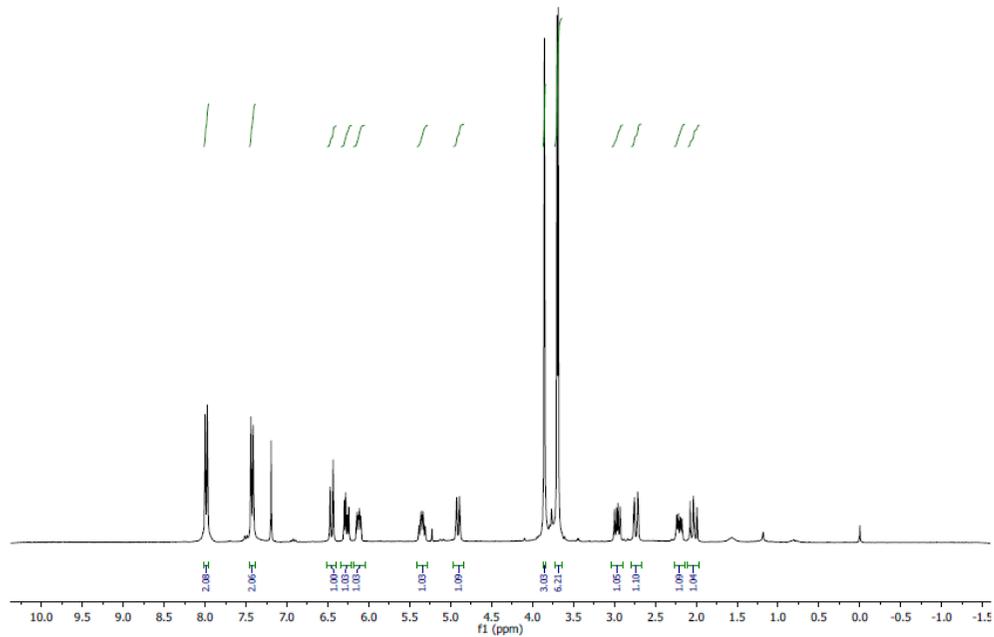
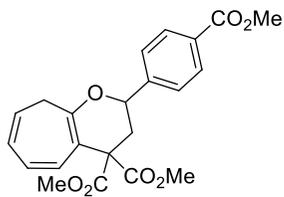


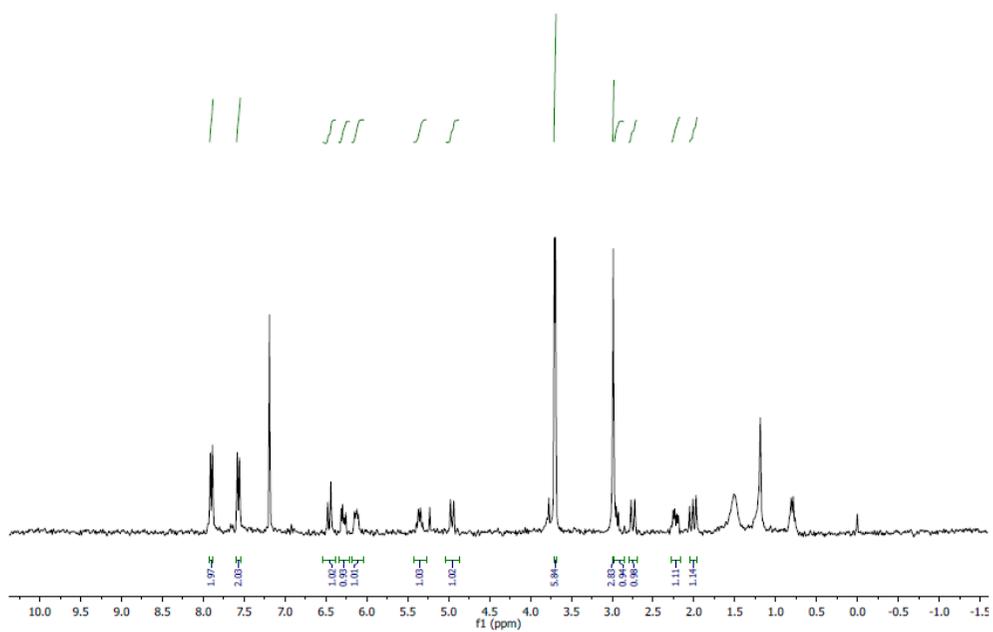
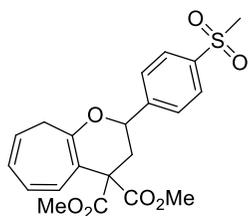
2-(4-(Trifluorometil)fenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35f)

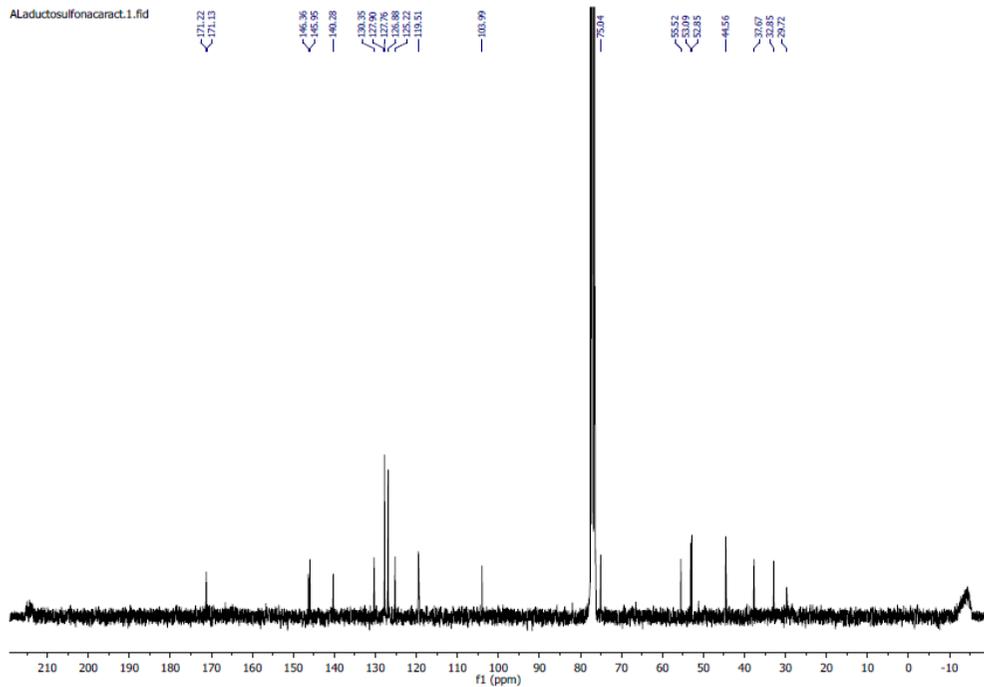


rtbo.97.1.carbon.1.fid

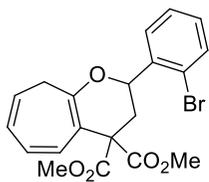


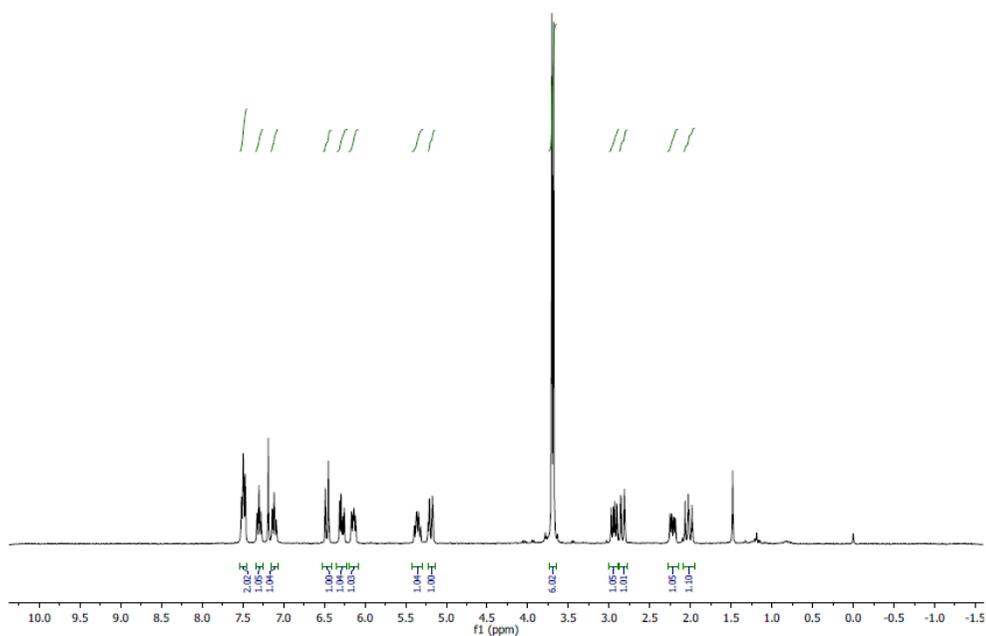
2-(4-(Metoxicarbonil)fenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35g)

2-(4-(Metilsulfonil)fenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35h)

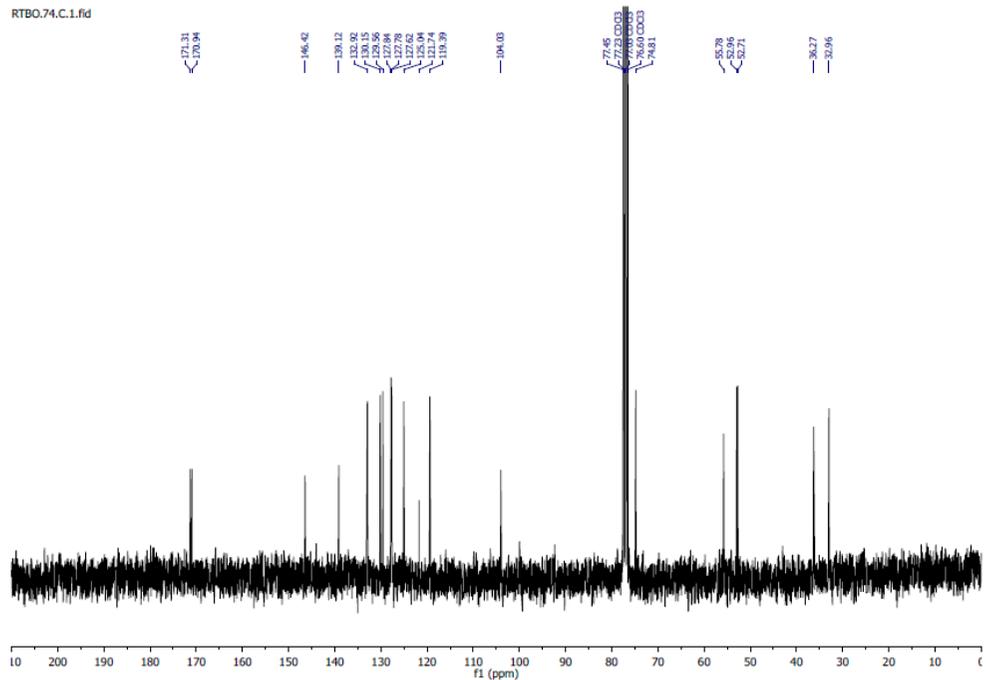


2-(2-Bromofenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35i)

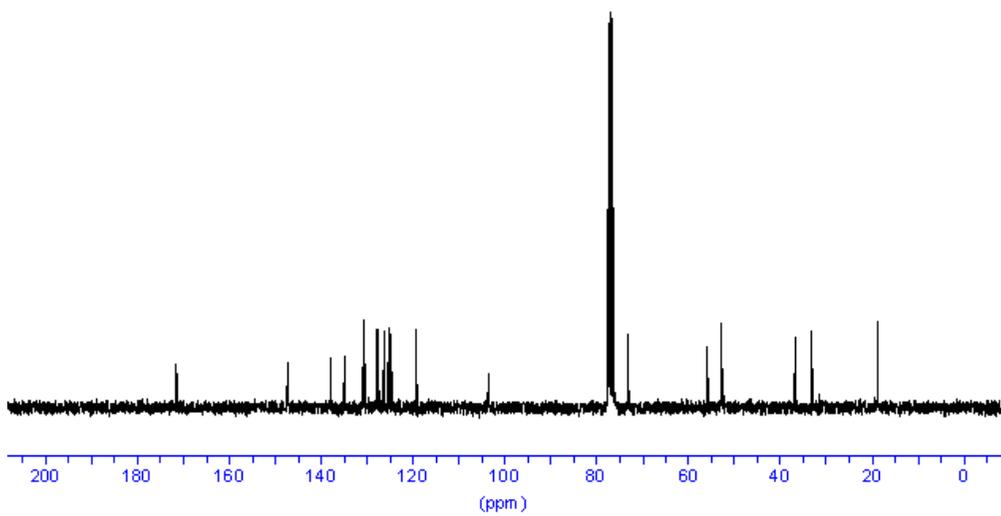
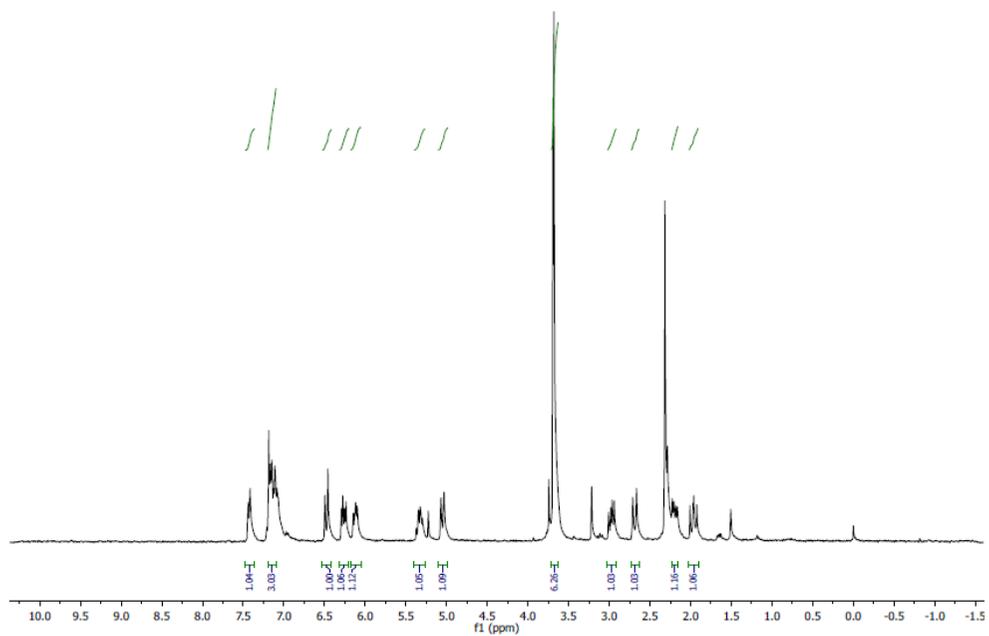
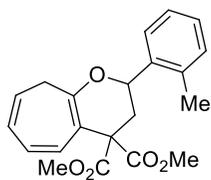


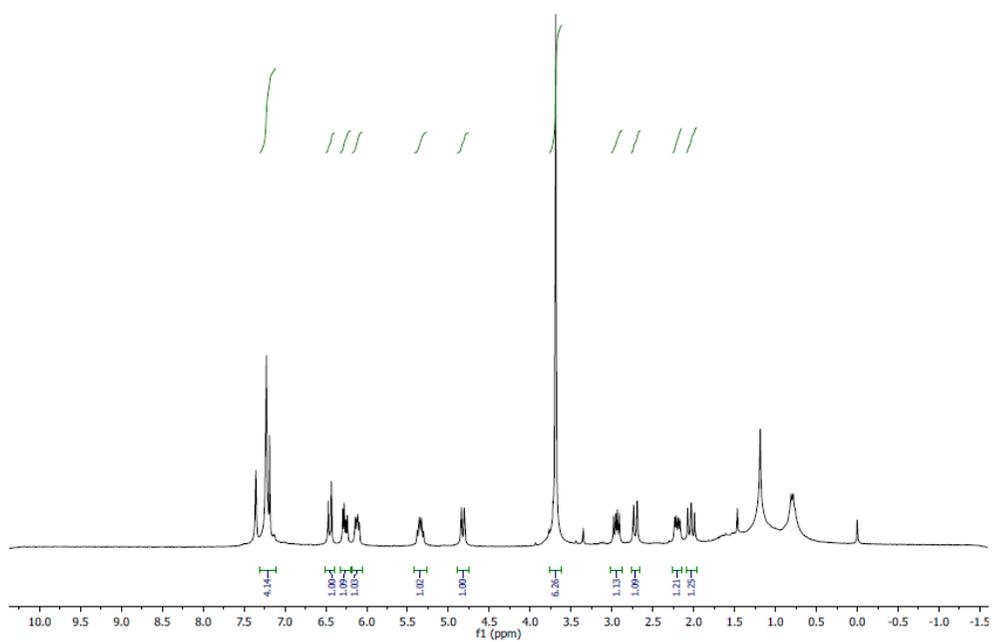
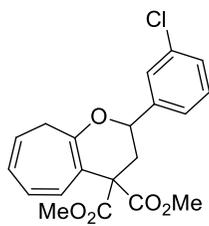


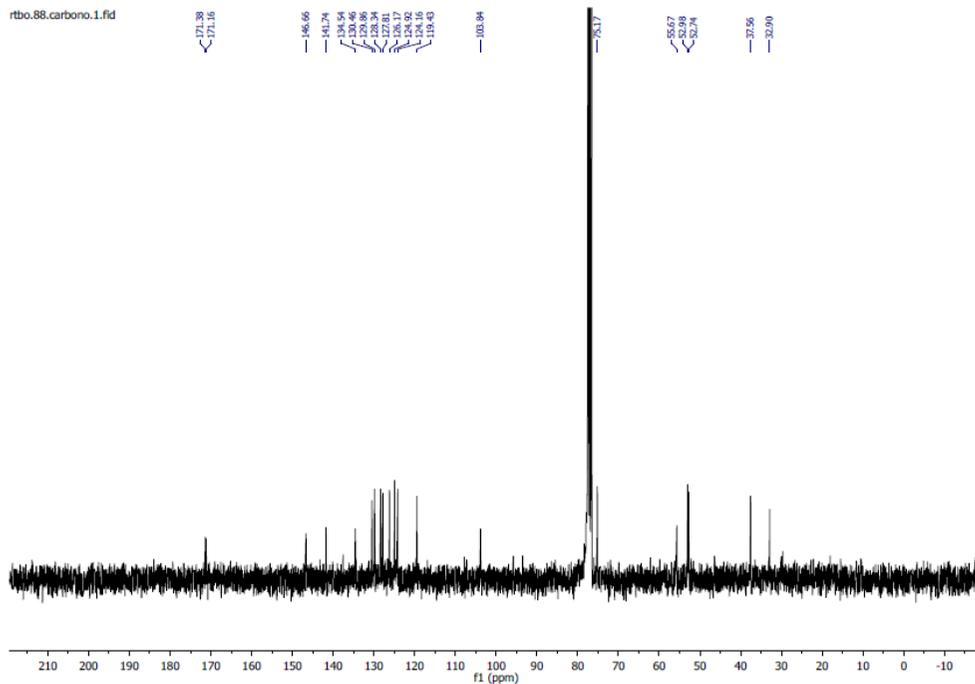
RTBO.74.C.1.fid



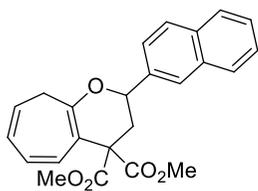
2-o-tolilo-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35j)

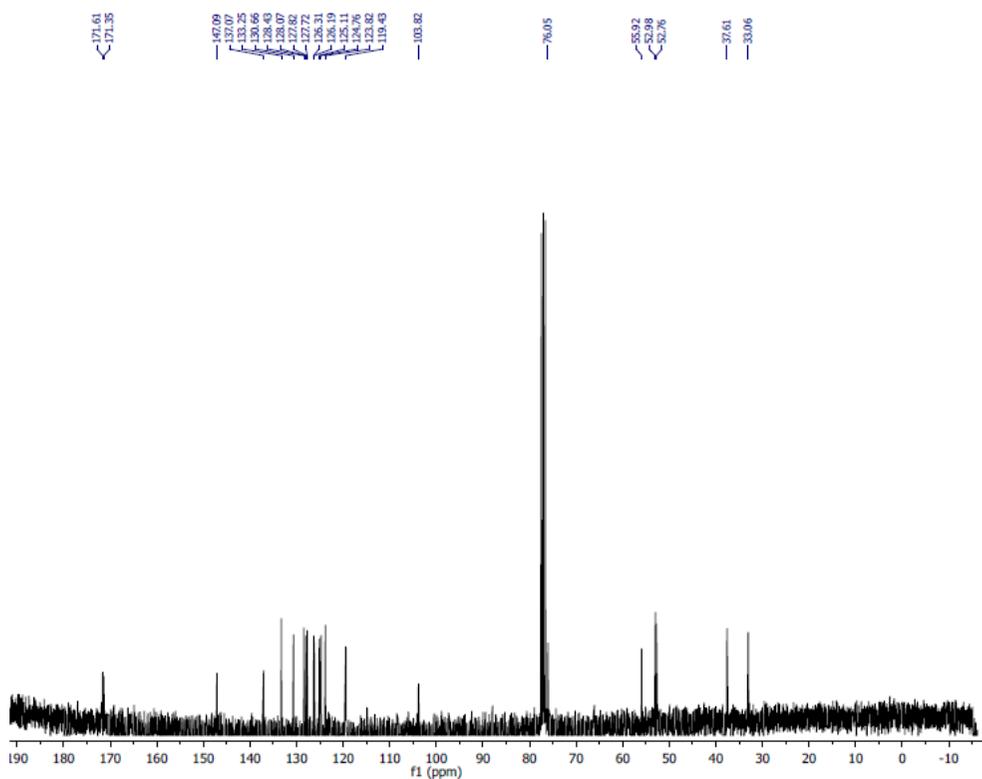
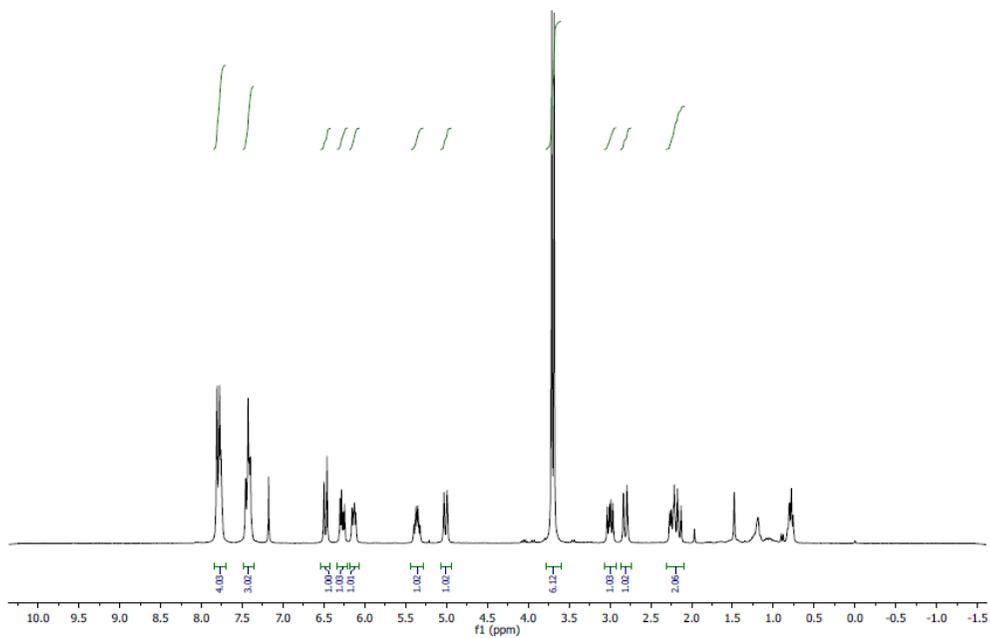


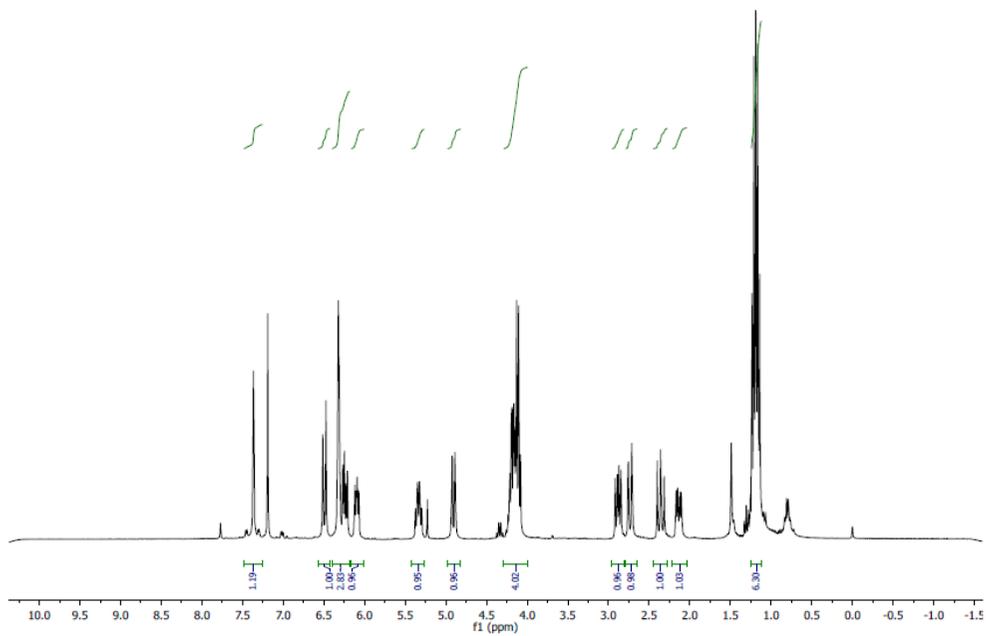
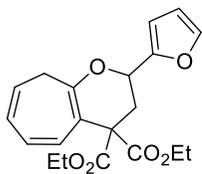
2-(3-Clorofenil)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35k)

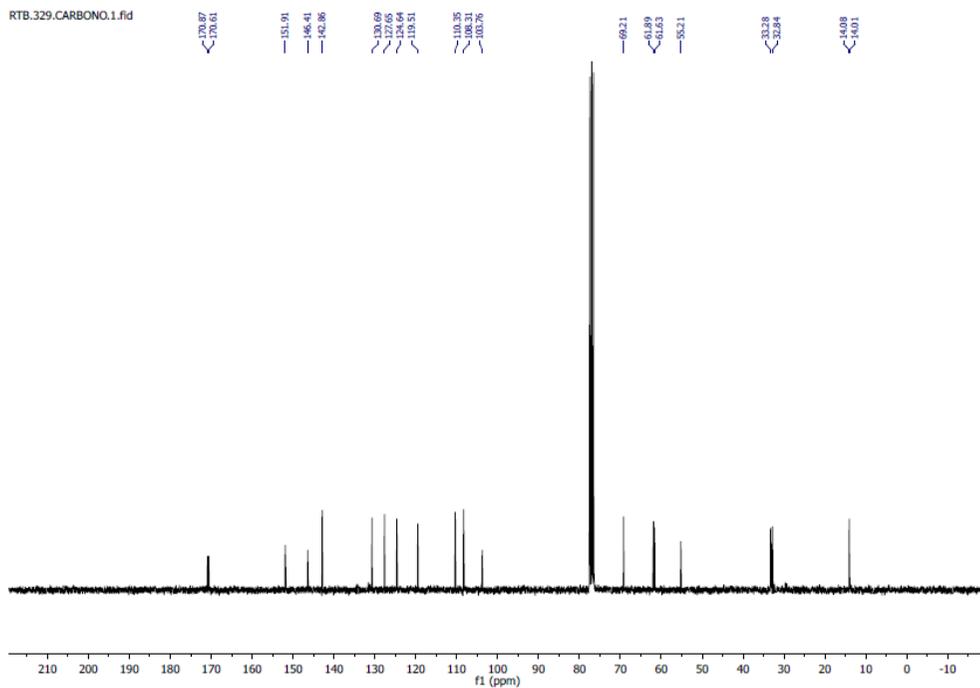


2-(Naftalen-2-ilo)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35I)

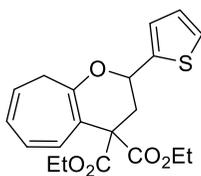


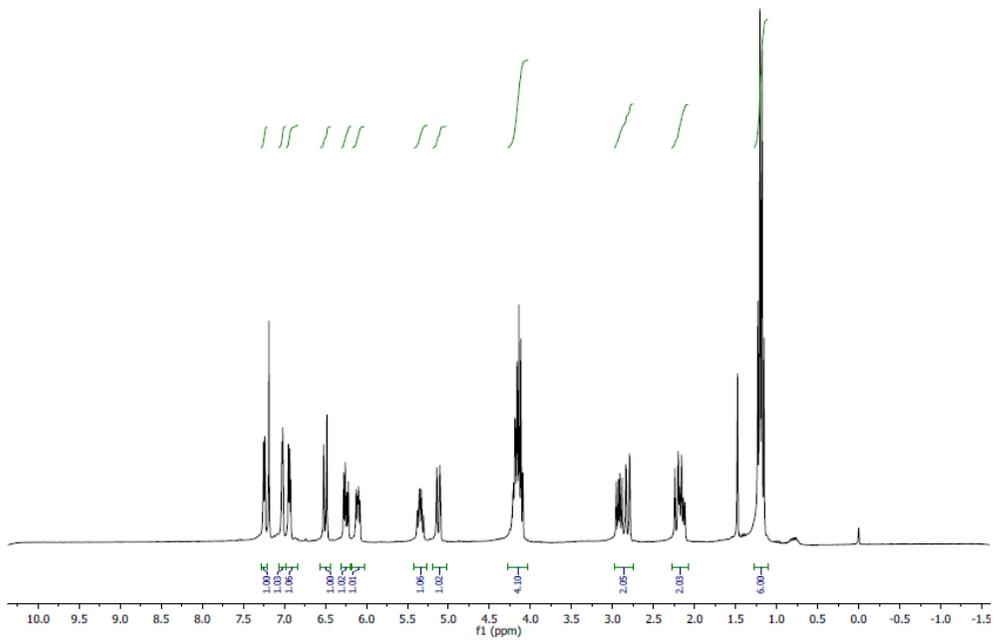


2-(Furan-2-il)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dietilo ((±)-35s)

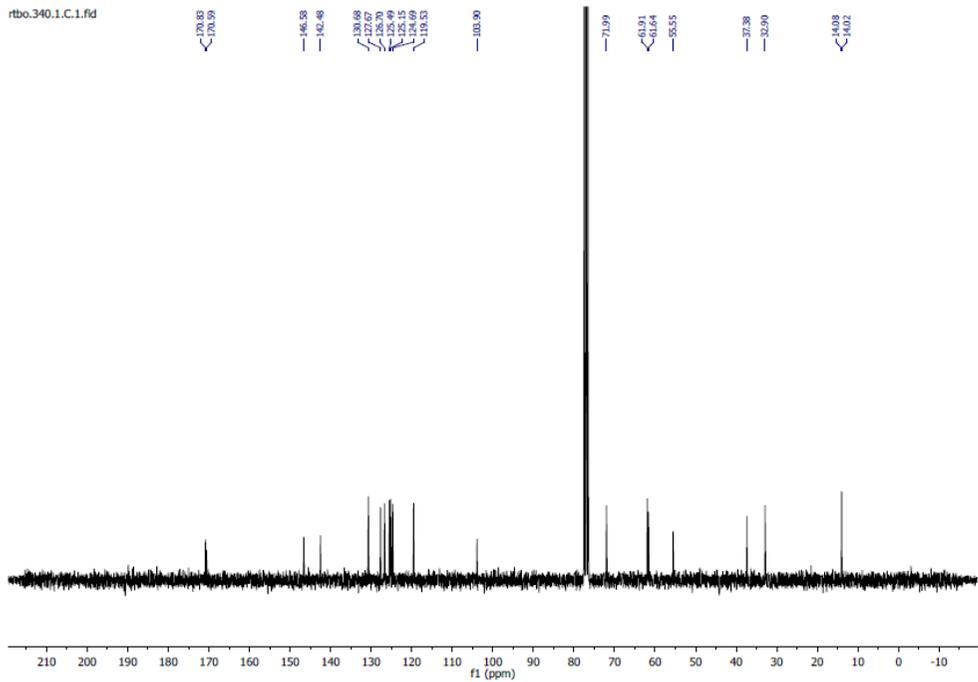


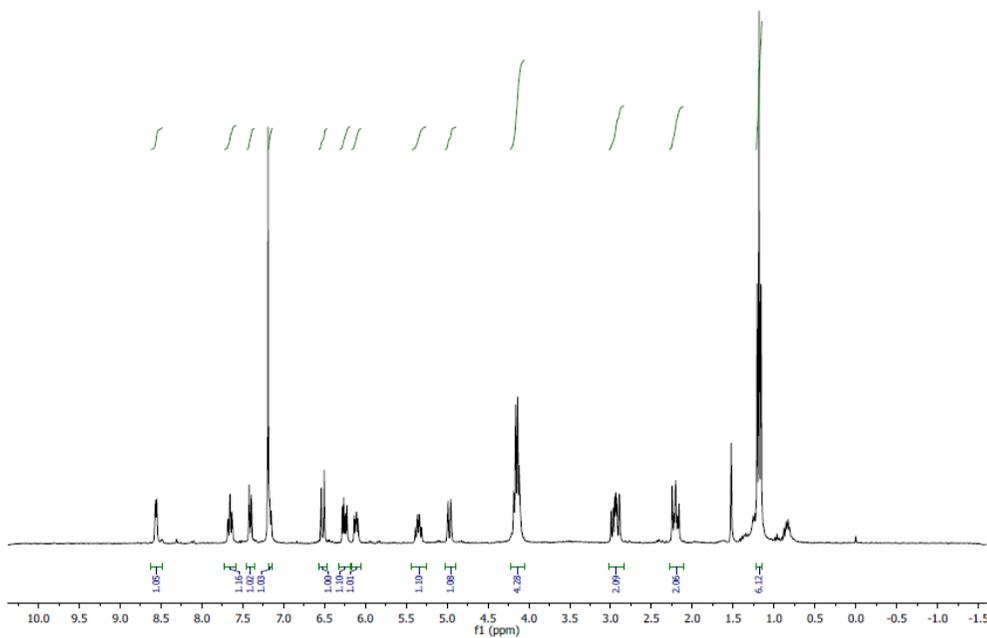
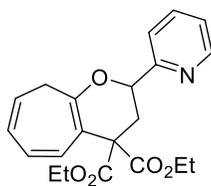
2-(Tiofen-2-il)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dietilo ((±)-35t)

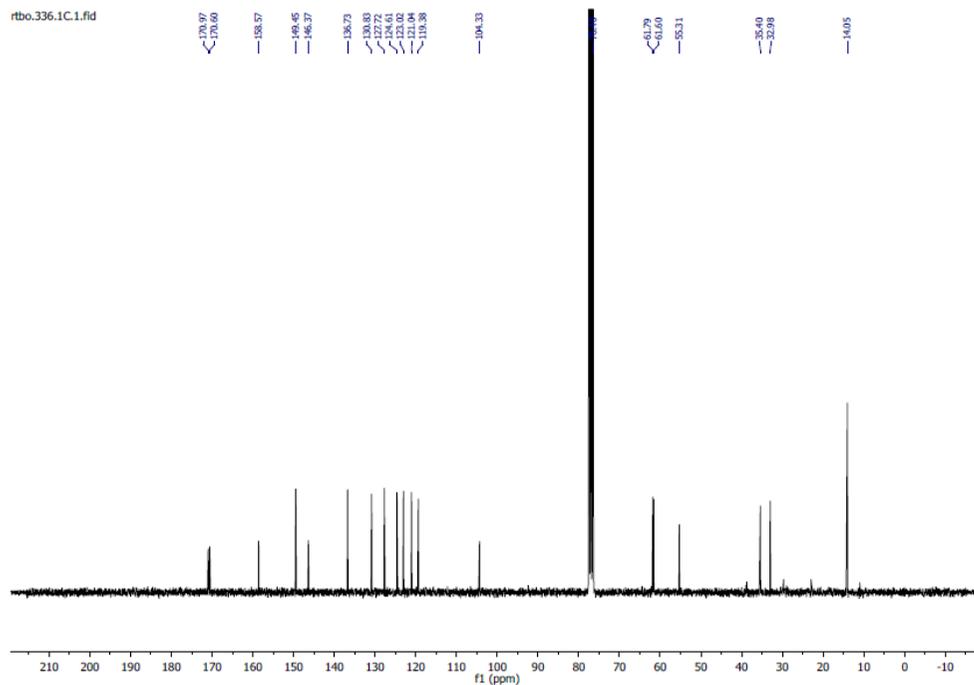




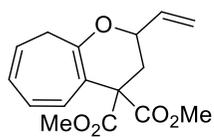
rtbo_340.1.C.1.fid



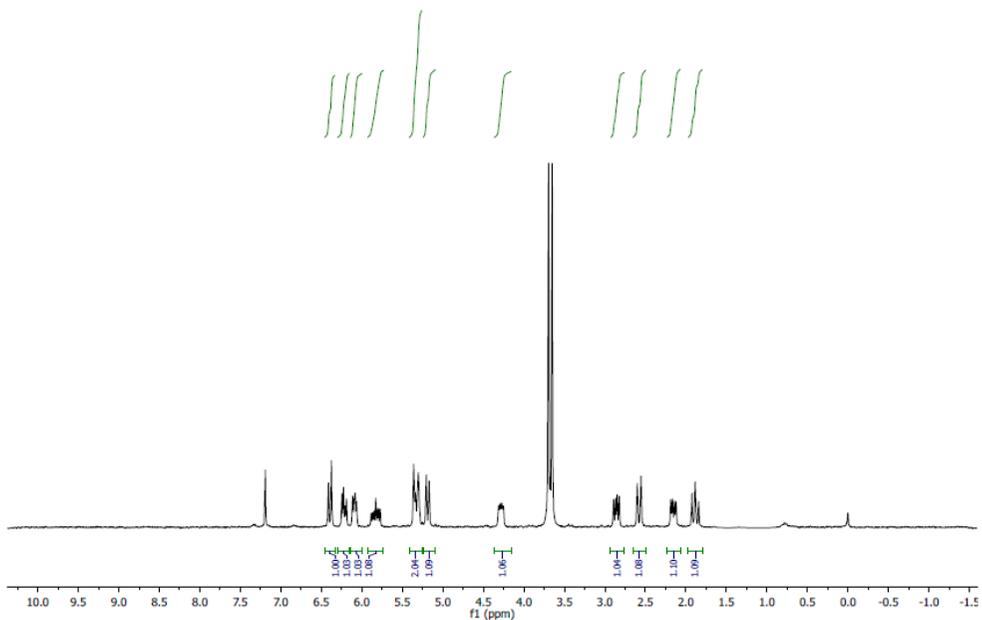
2-(Piridin-2-il)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dietilo ((±)-35u)



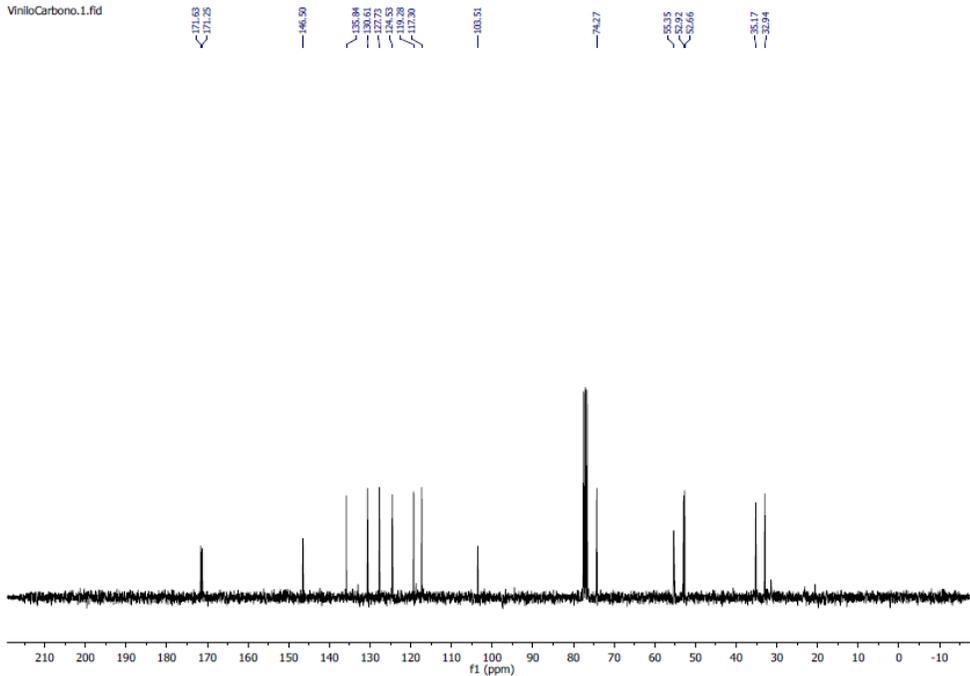
2-Vinilo-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35v)

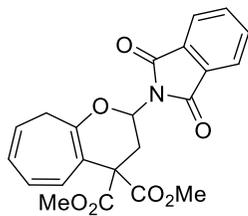


alb67T1.7.1.fid

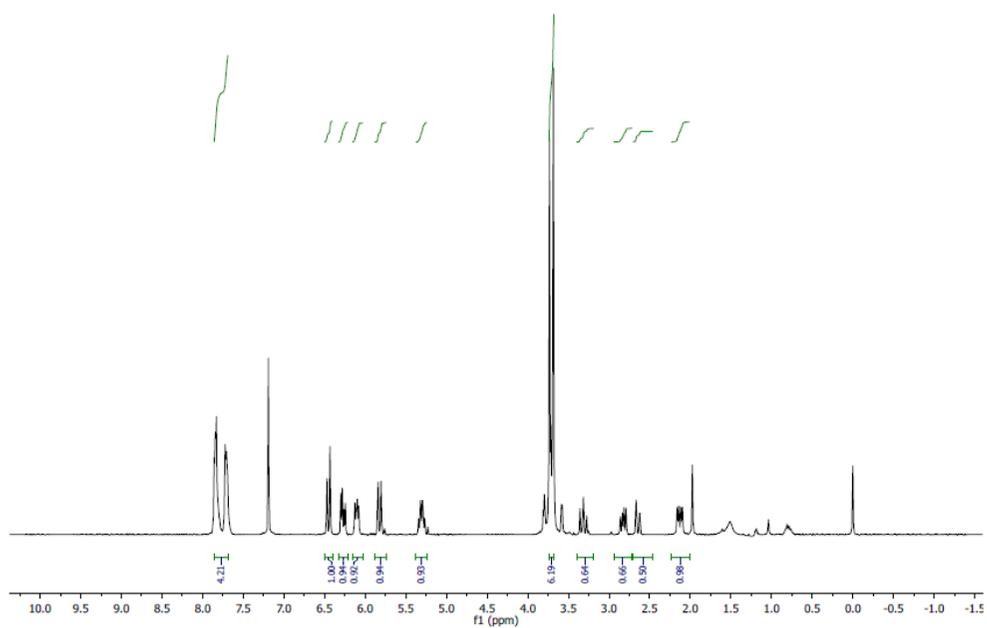


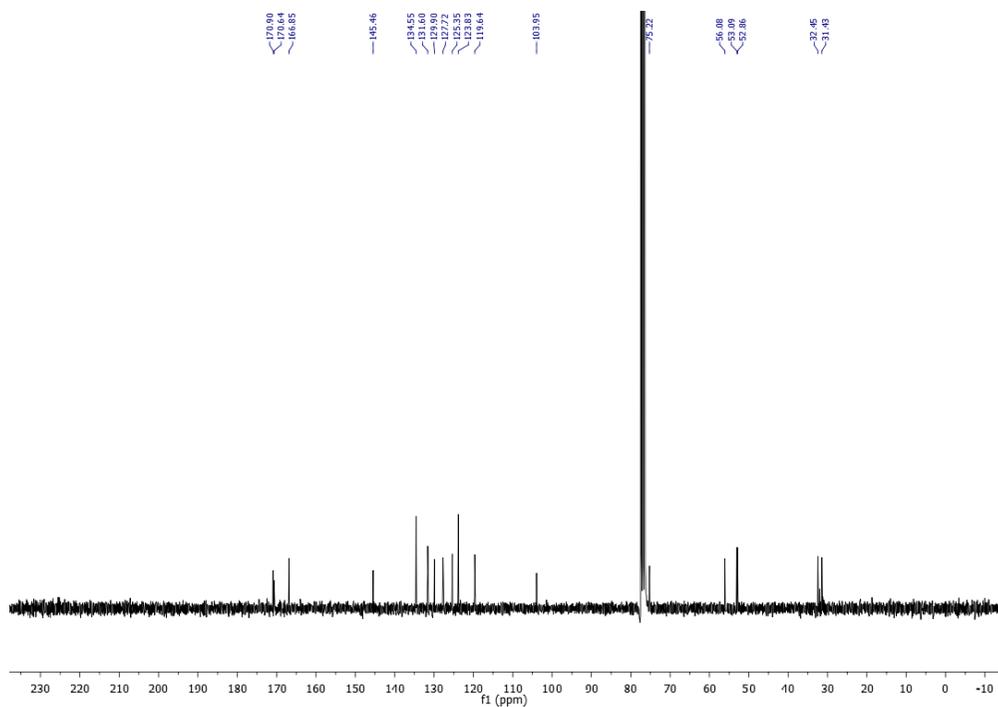
ViniloCarbono.1.fid



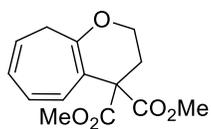
2-(1,3-Dioxisoindolin-2-ilo)-2,3-dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35w)

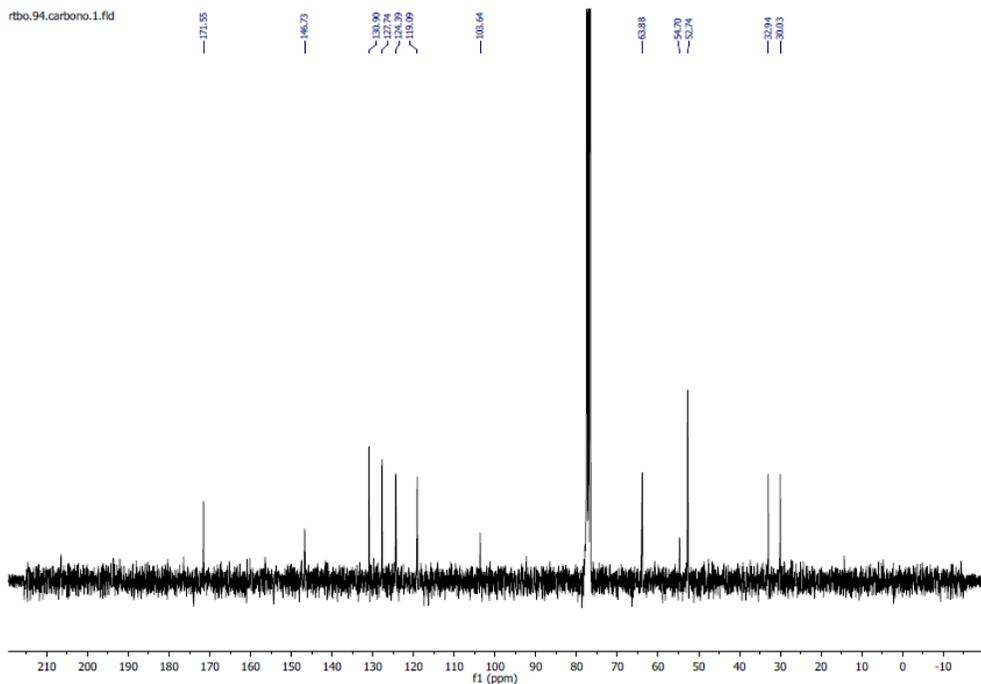
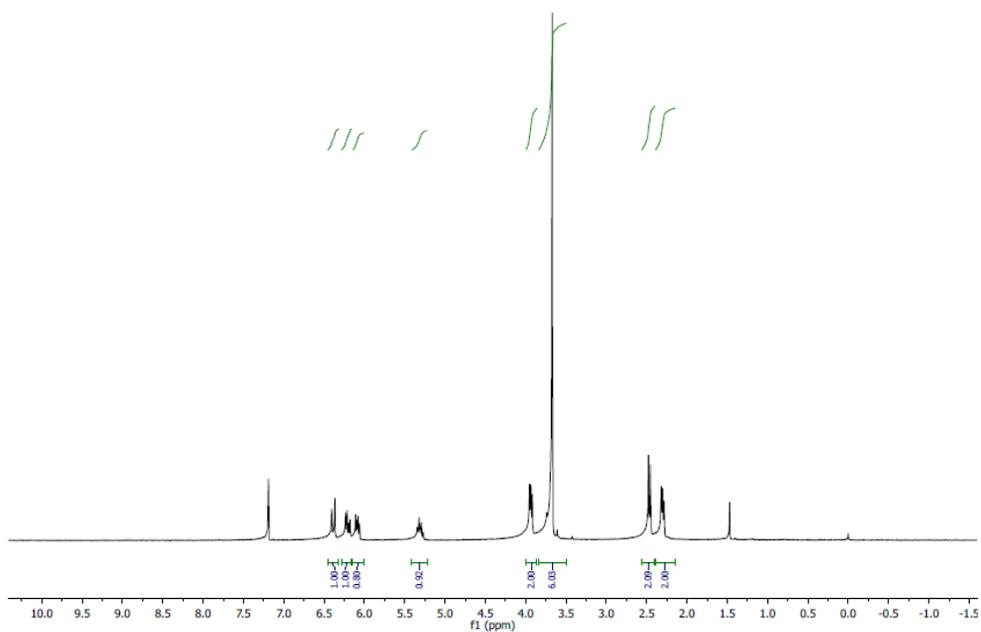
alb58t.26.40.1.fid





2,3-Dihidrociclohepta[b]pirano-4,4-(9H)-dicarboxilato de dimetilo ((±)-35x)

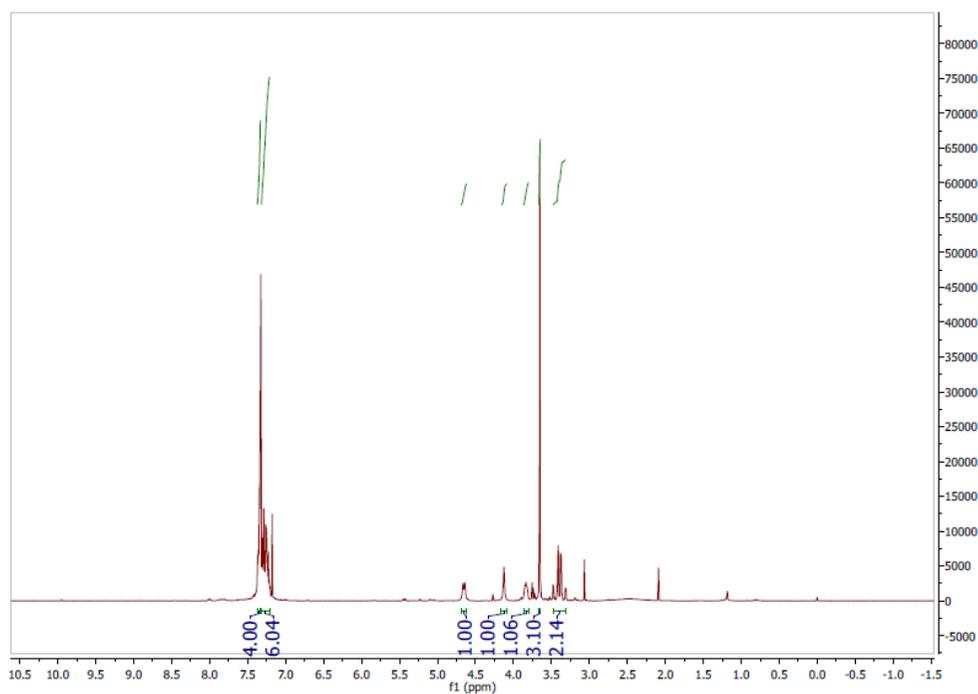
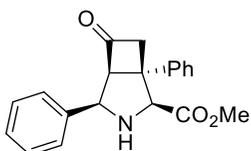


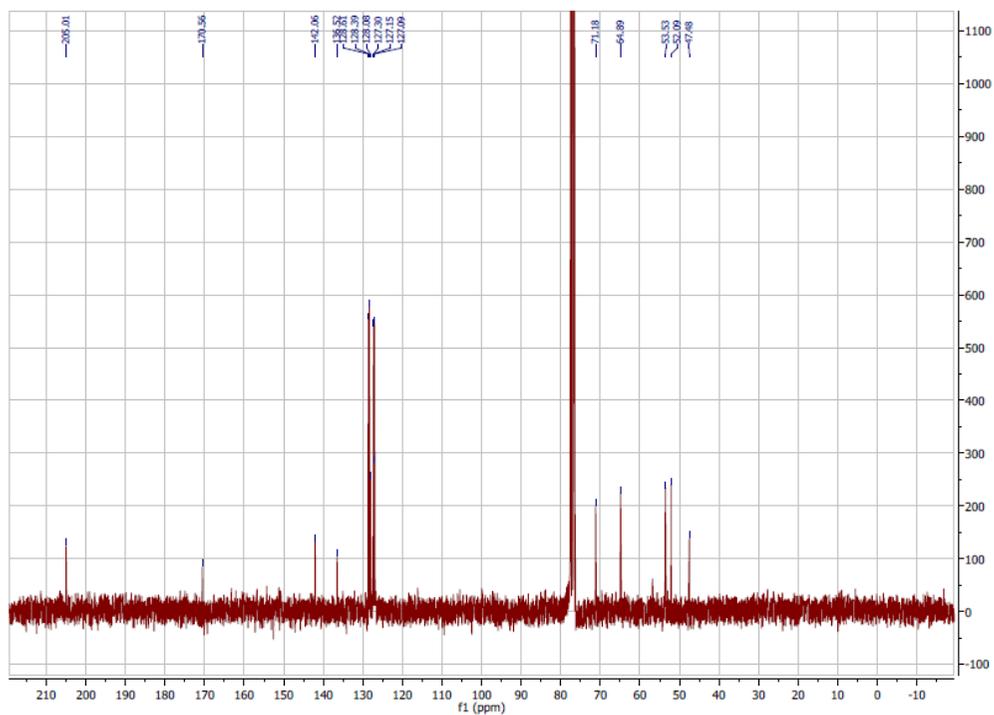


ANEXO IV.III CICLOADICIÓN 1,3-DIPOLAR CATALÍTICA ASIMÉTRICA ENTRE ILUROS DE AZOMETINO Y ENONAS α,β -INSATURADAS TENSIONADAS

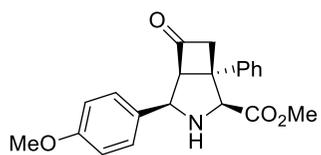
- Cicloadición 1,3-dipolar catalítica asimétrica entre iluros de azometino y 3-fenilciclobutenona

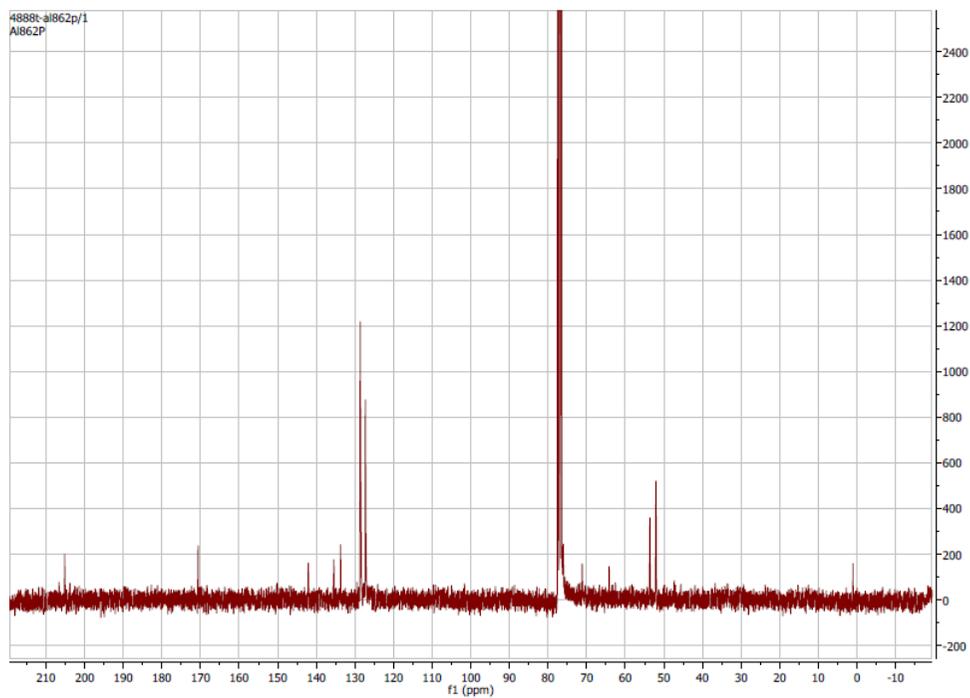
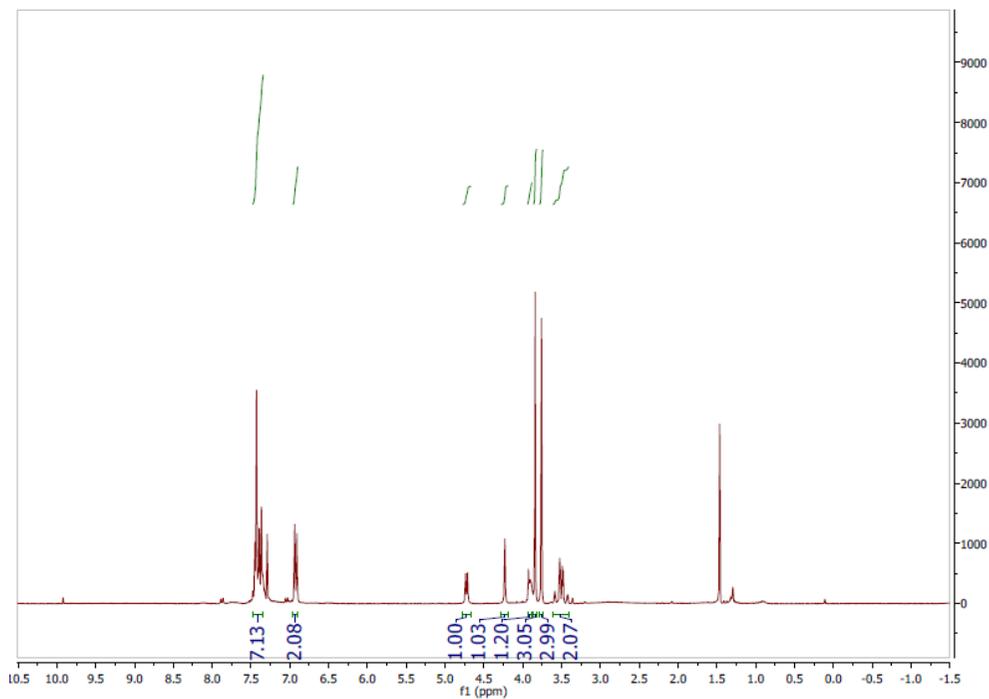
(1*S*, 3*R*, 3*aS*, 5*aR*)- 3, 5a-Difenil-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40a)

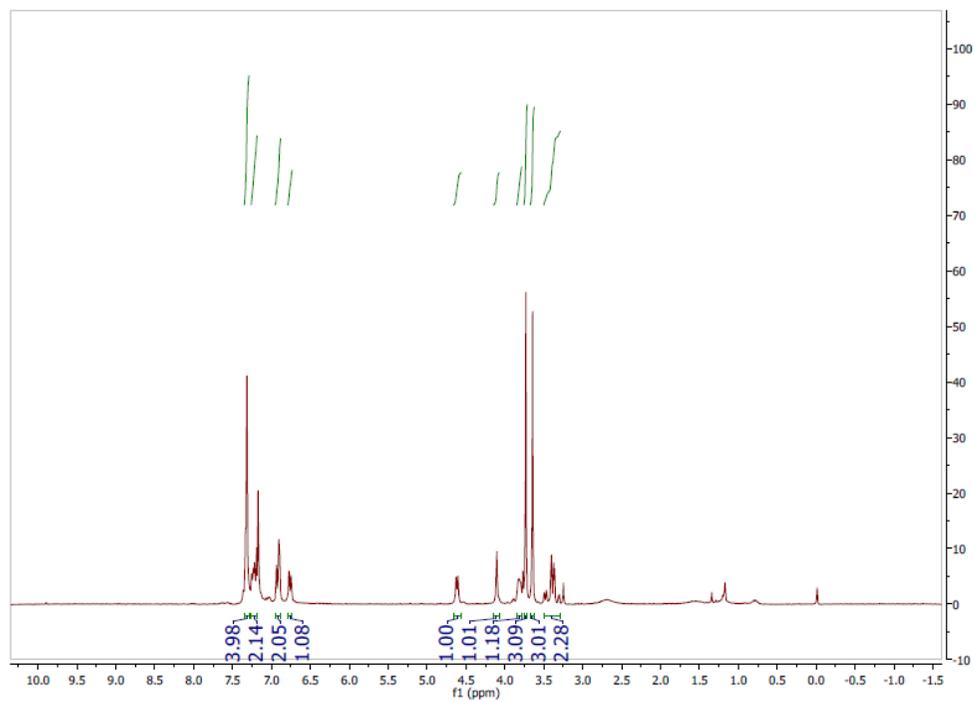
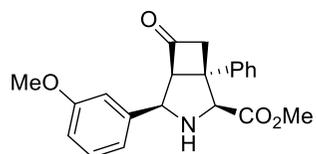


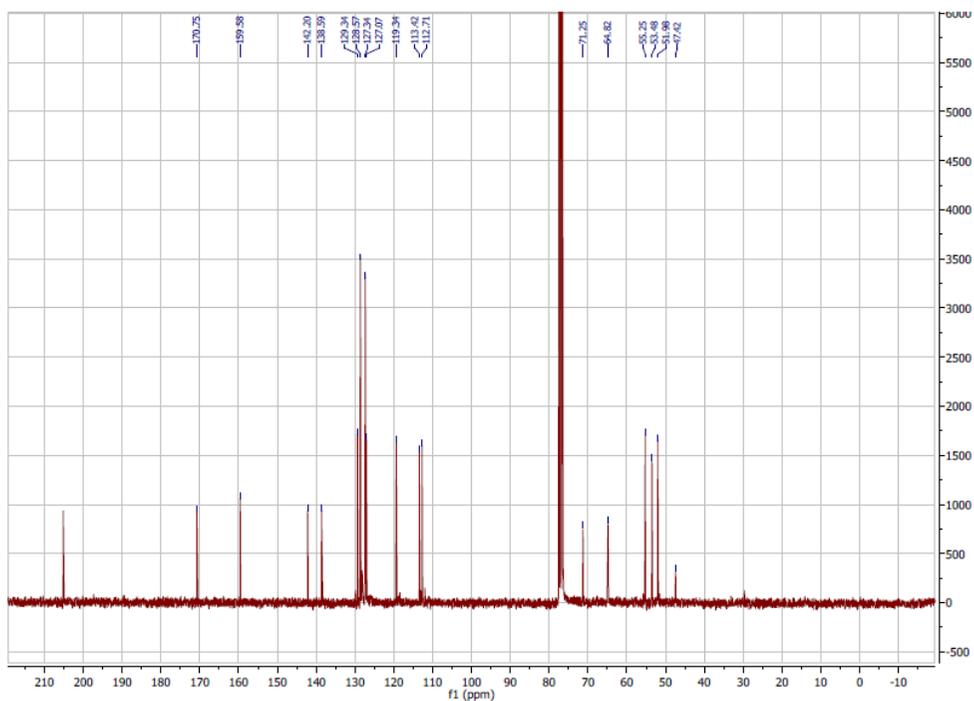


(1S, 3R, 3aS, 5aR)-5a-Fenil-3-(4-metoxifenil)-4-(oxo)heptahidrociclobuta[c]pirrolo-1-carboxilato de metilo (*endo*-40b)

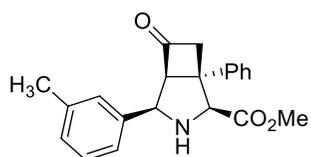


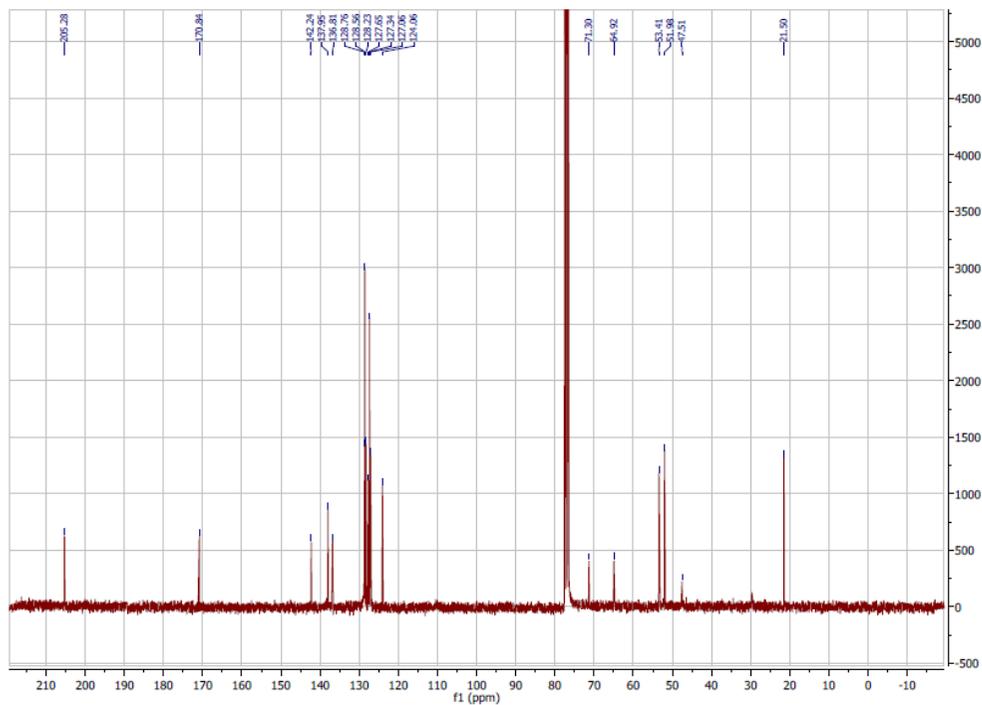
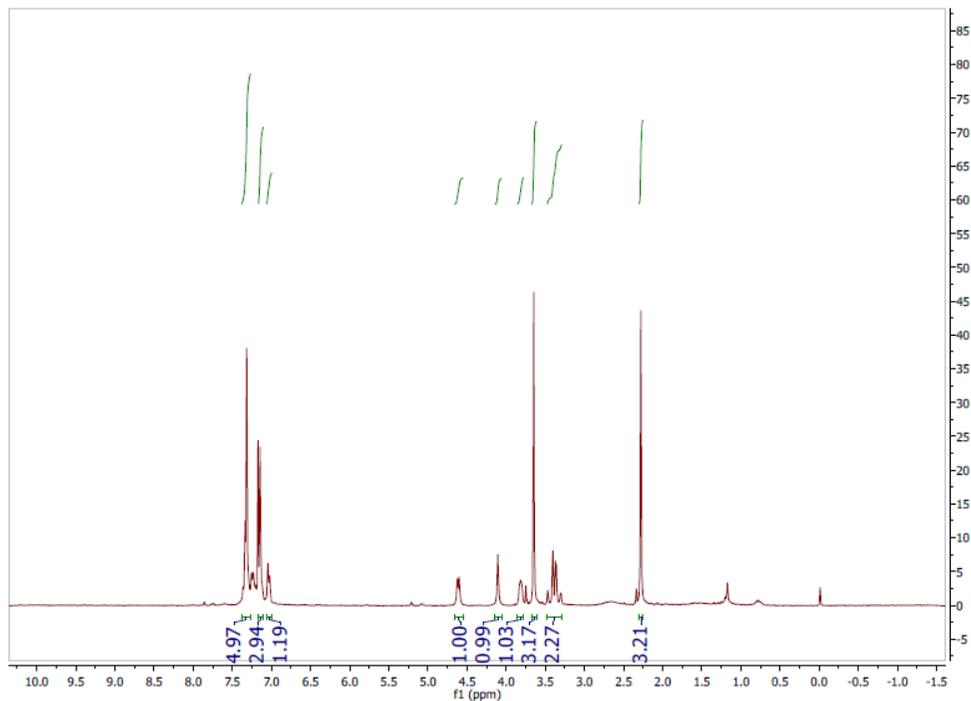


(1*S*, 3*R*, 3*aS*, 5*aR*)-5*a*-Fenil-3-(3-metoxifenil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40c)

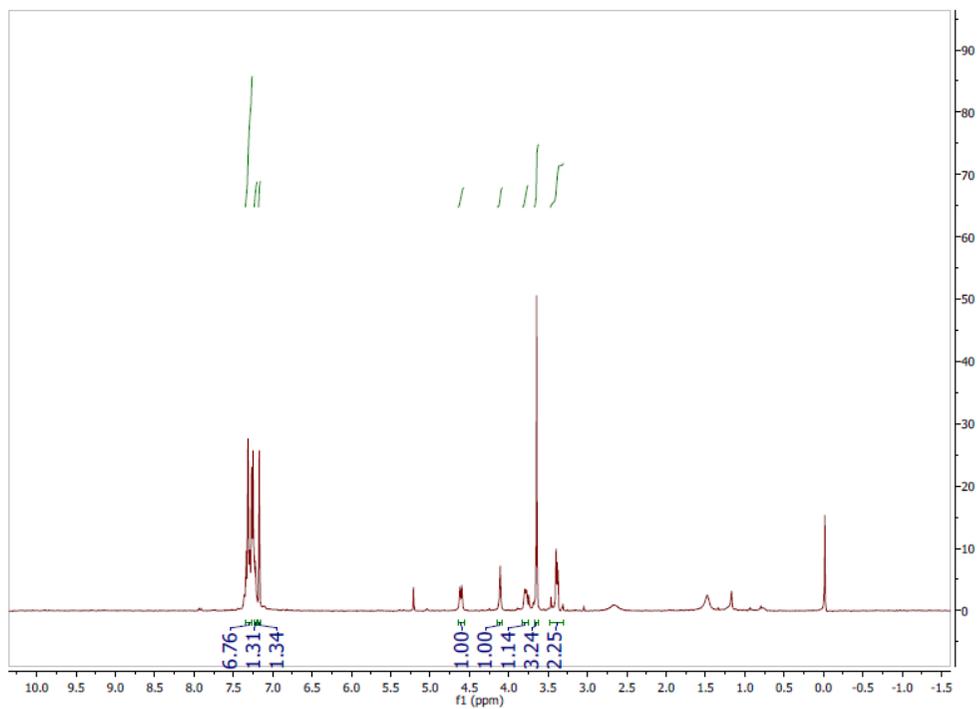
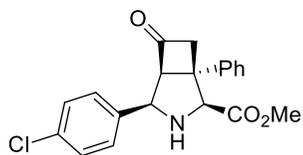


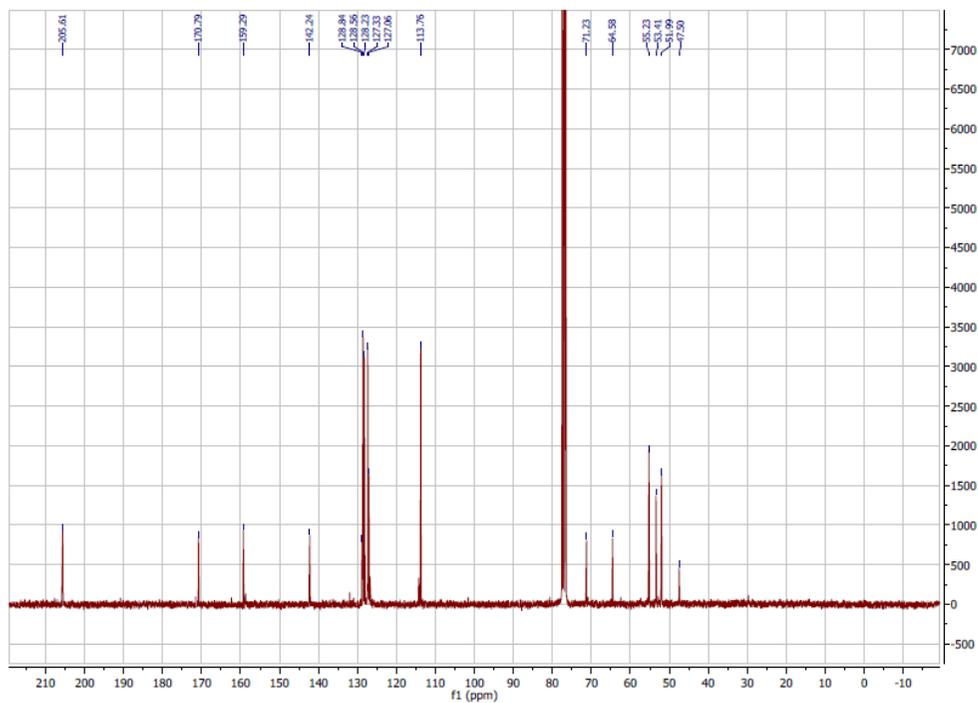
(1*S*, 3*R*, 3*aS*, 5*aR*)-5*a*-Fenil-3-(3-metilfenil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40d)



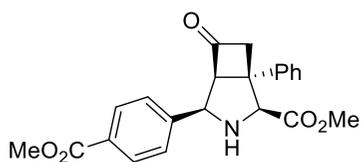


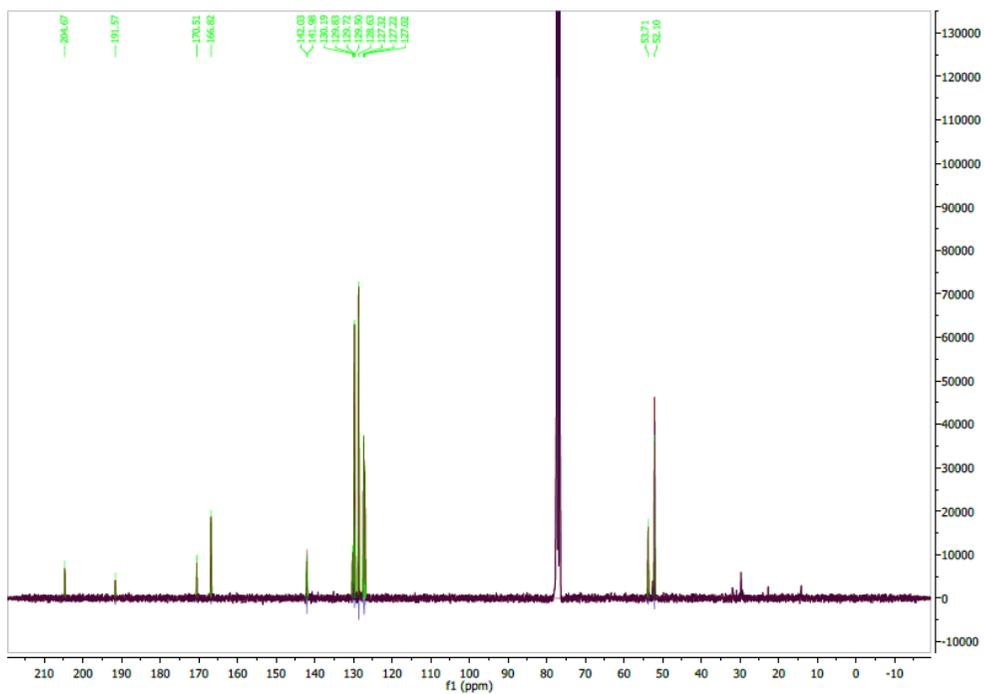
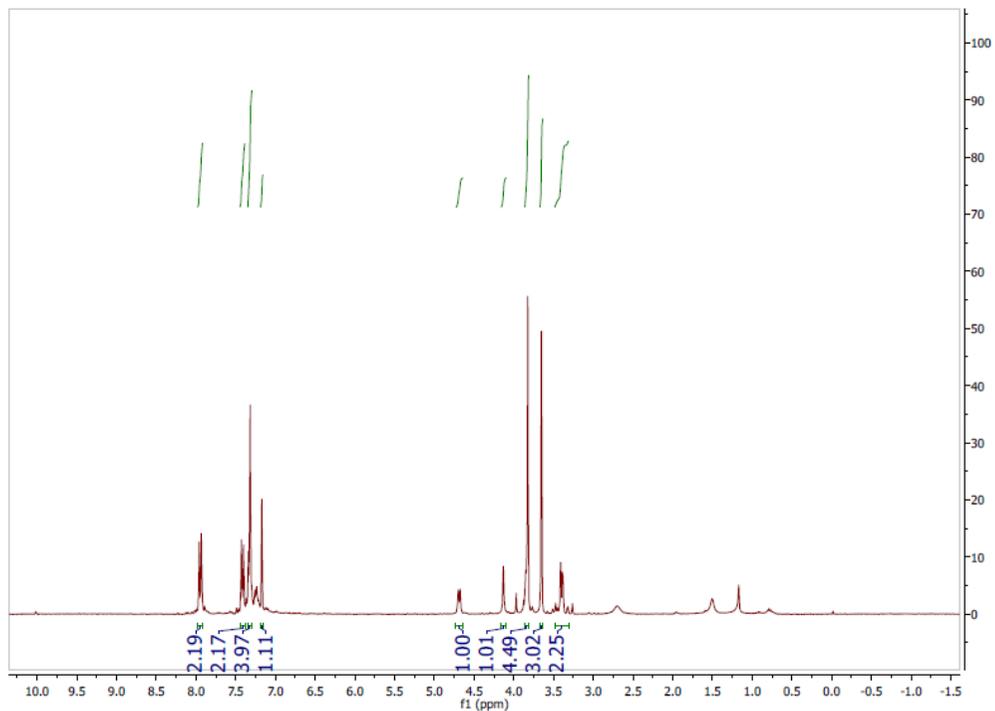
(1*S*, 3*R*, 3*aS*, 5*aR*)-5a-Fenil-3-(4-clorofenil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40e)

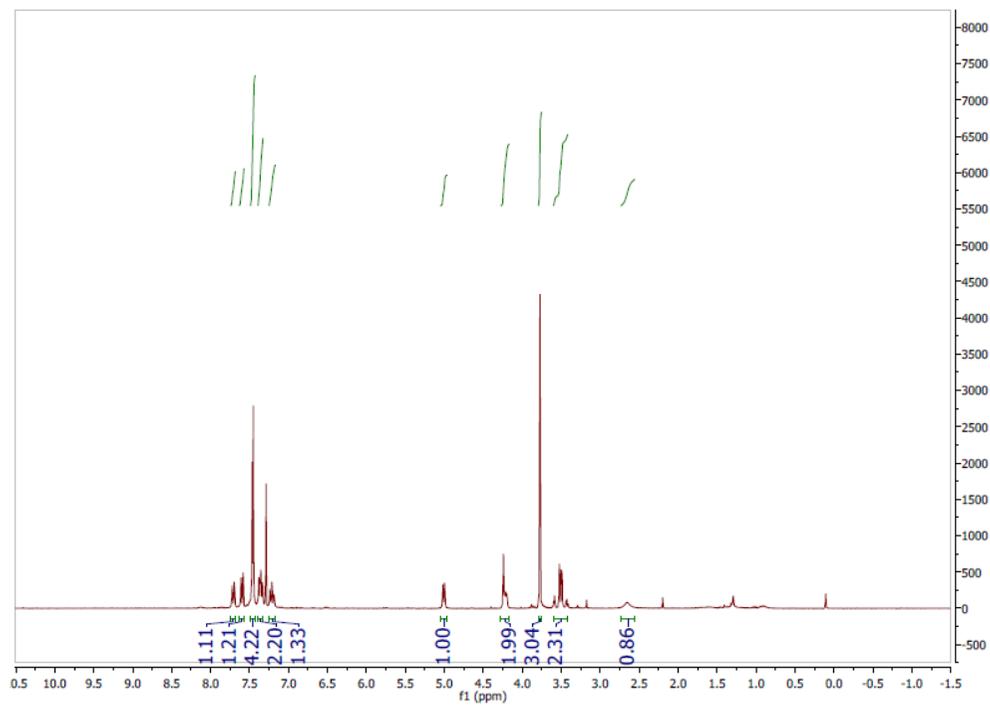
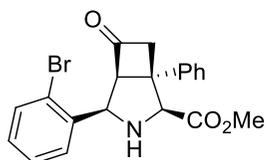


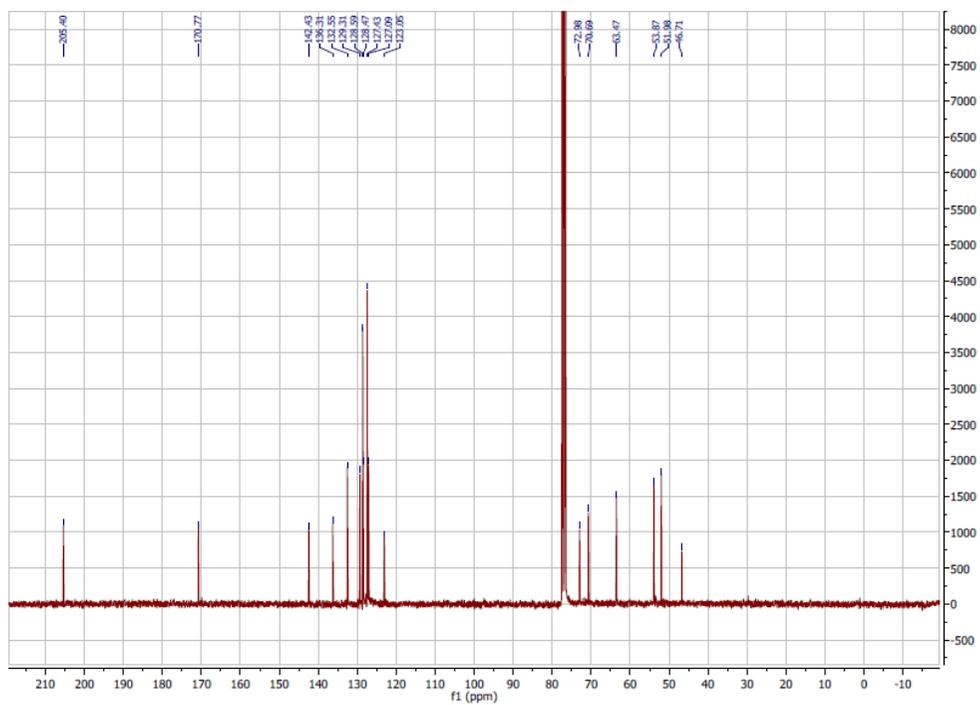


(1S, 3R, 3aS, 5aR)-5a-Fenil-3-[(4-metoxicarbonil)fenil]-4-(oxo)heptahidrociclobuta[c]pirrolo-1-carboxilato de metilo (endo-40f)

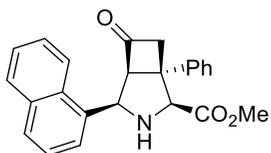


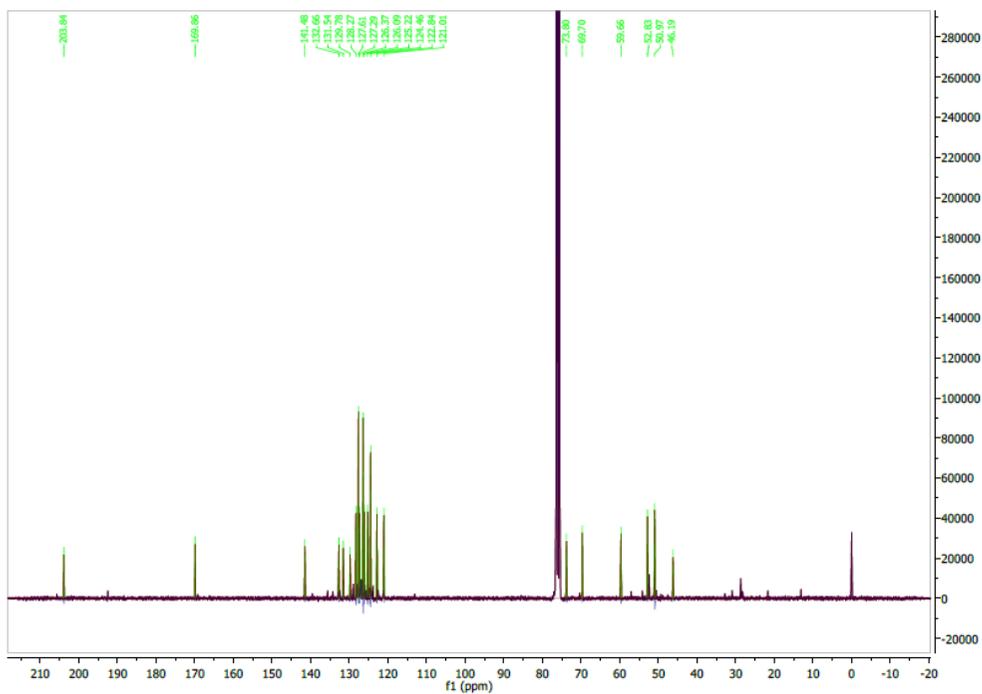
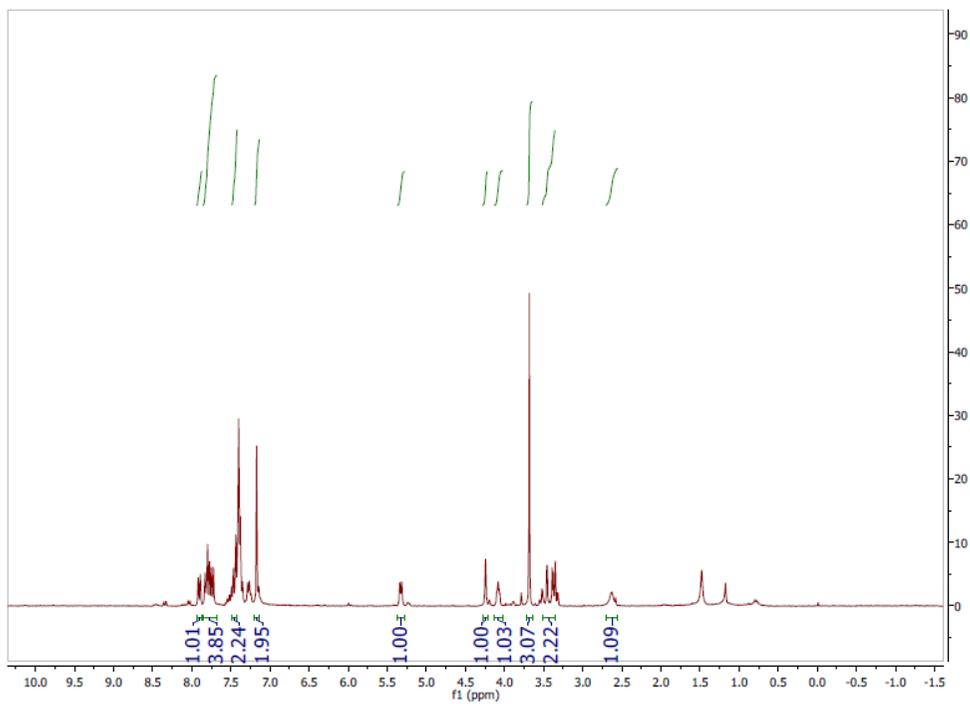


(1*S*, 3*R*, 3*aS*, 5*aR*)-5*a*-Fenil-3-(2-bromofenil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40g)

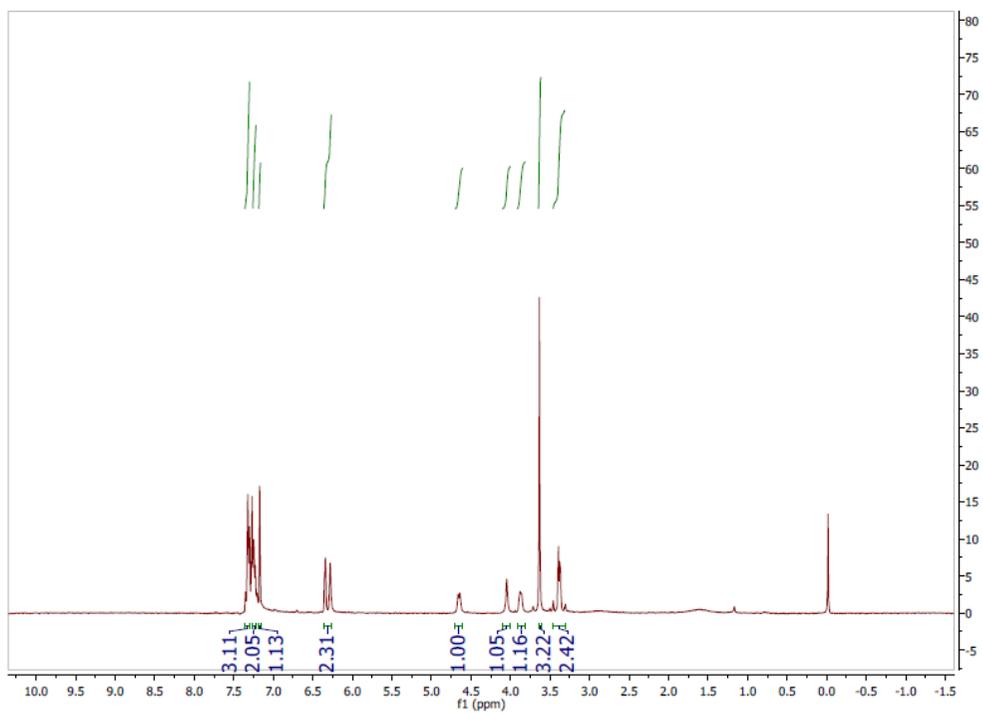
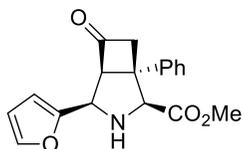


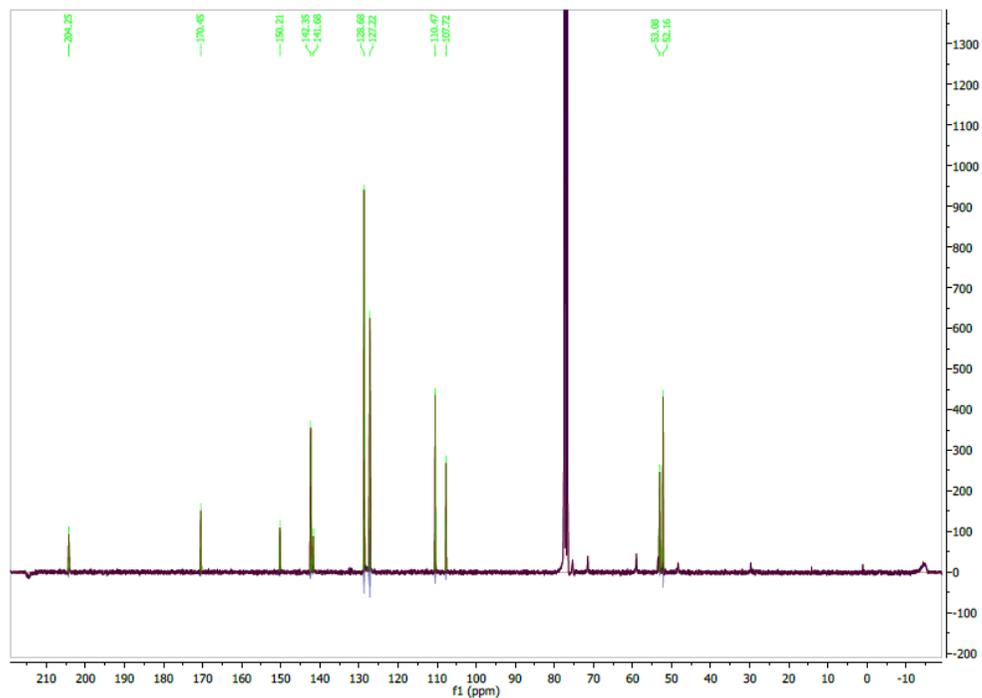
(1*S*, 3*S*, 3*aR*, 5*aR*)-5*a*-fenil-3-(1-naftil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40*h*)



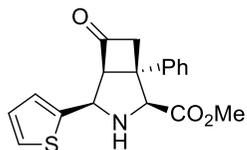


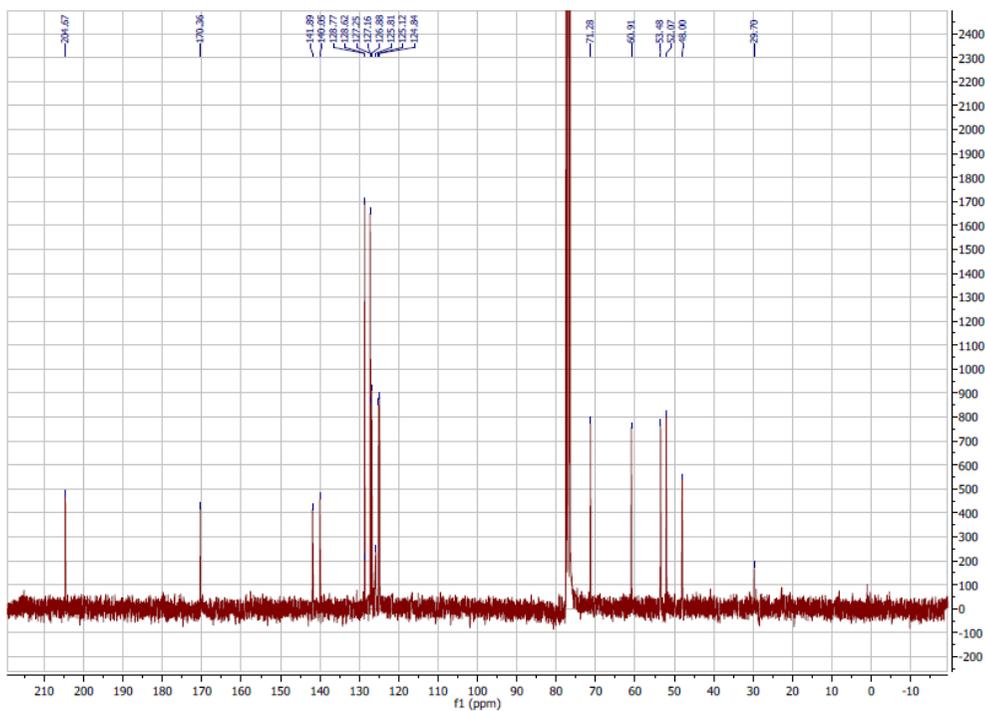
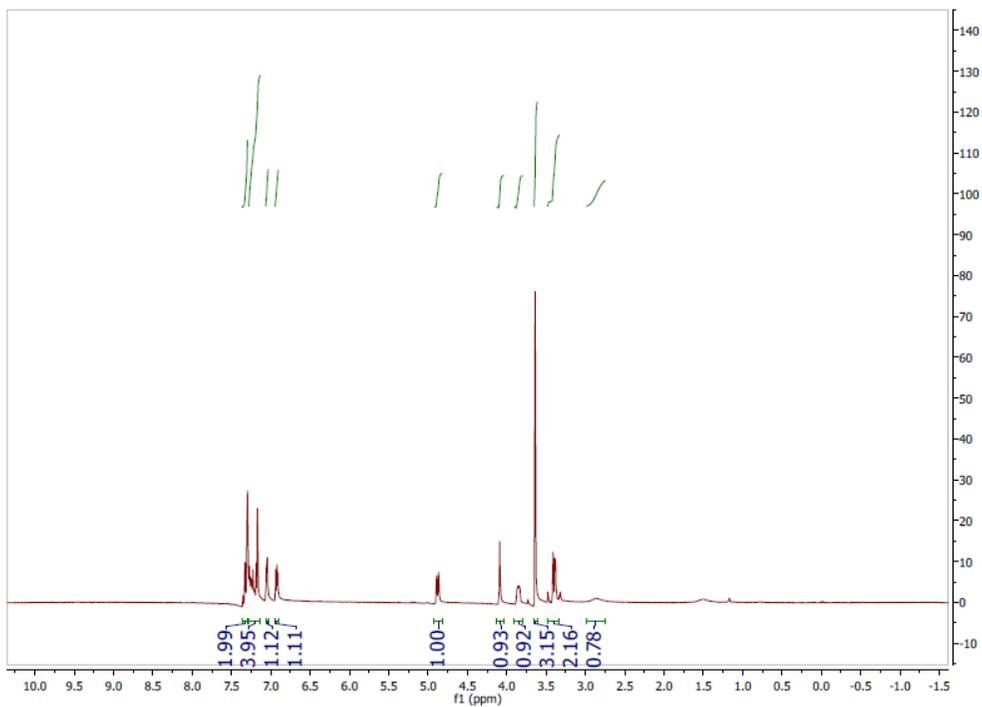
(1*S*, 3*R*, 3*aS*, 5*aR*)-5a-Fenil-3-(2-furil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40i)

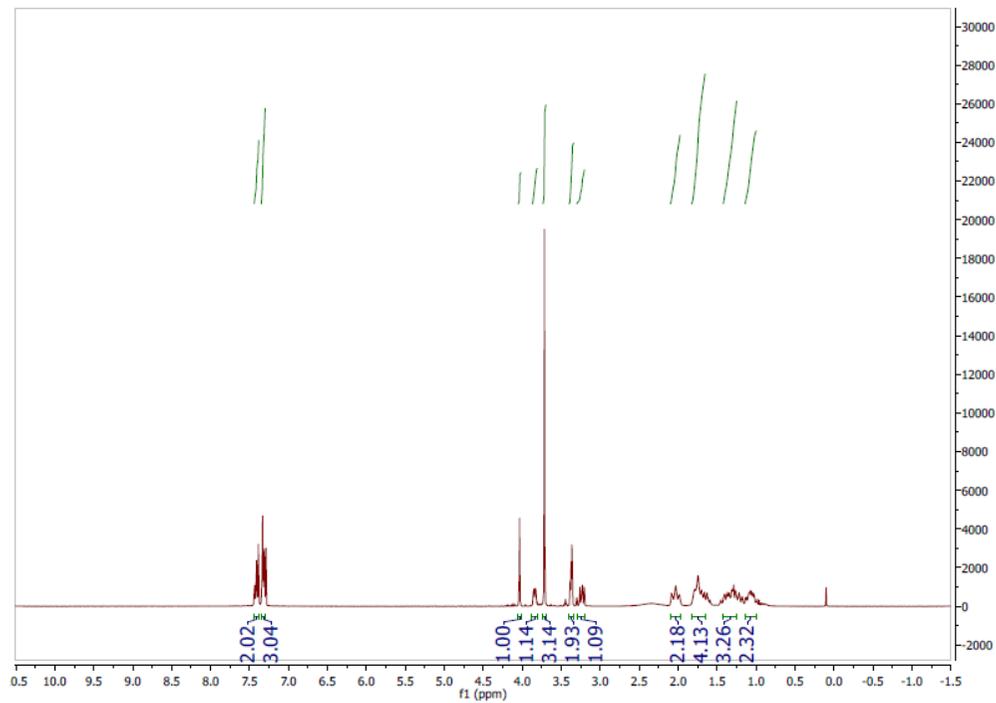
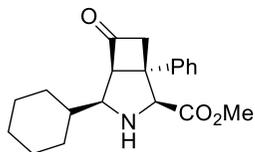


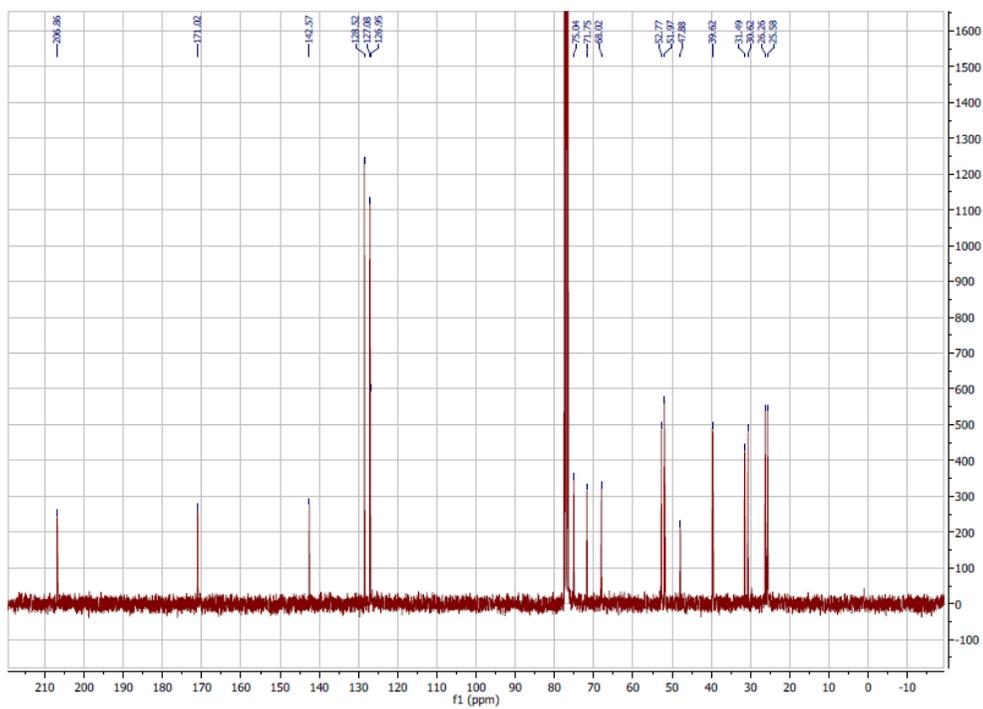


(1S, 3R, 3aS, 5aR)-5a-Fenil-3-(2-tienil)-4-(oxo)heptahidrociclobuta[c]pirrolo-1-carboxilato de metilo (*endo*-40j)

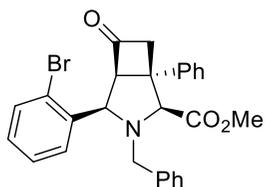


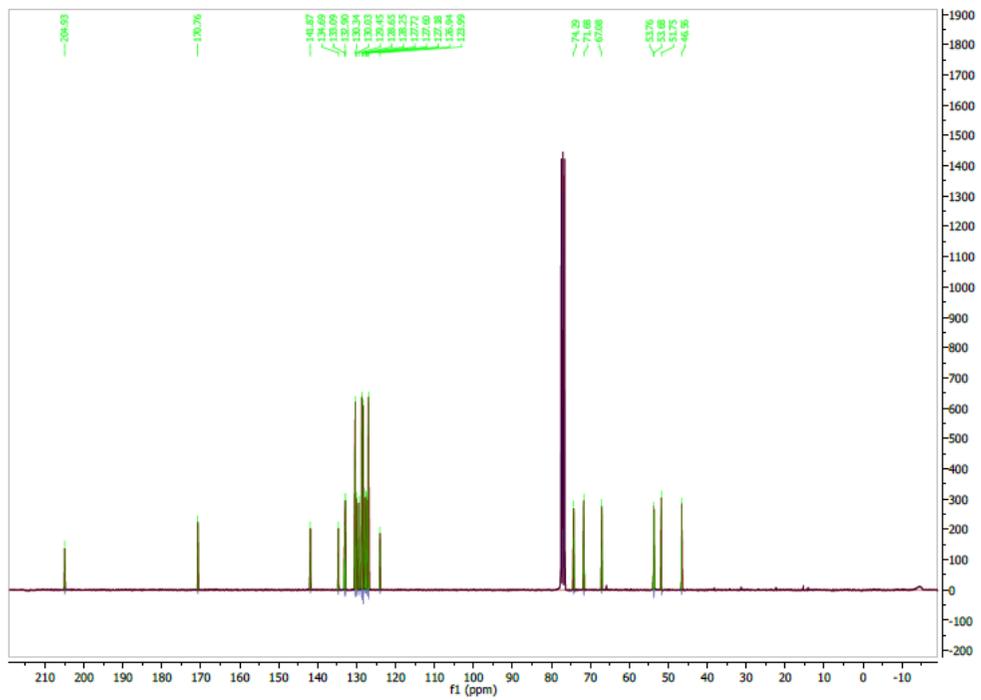
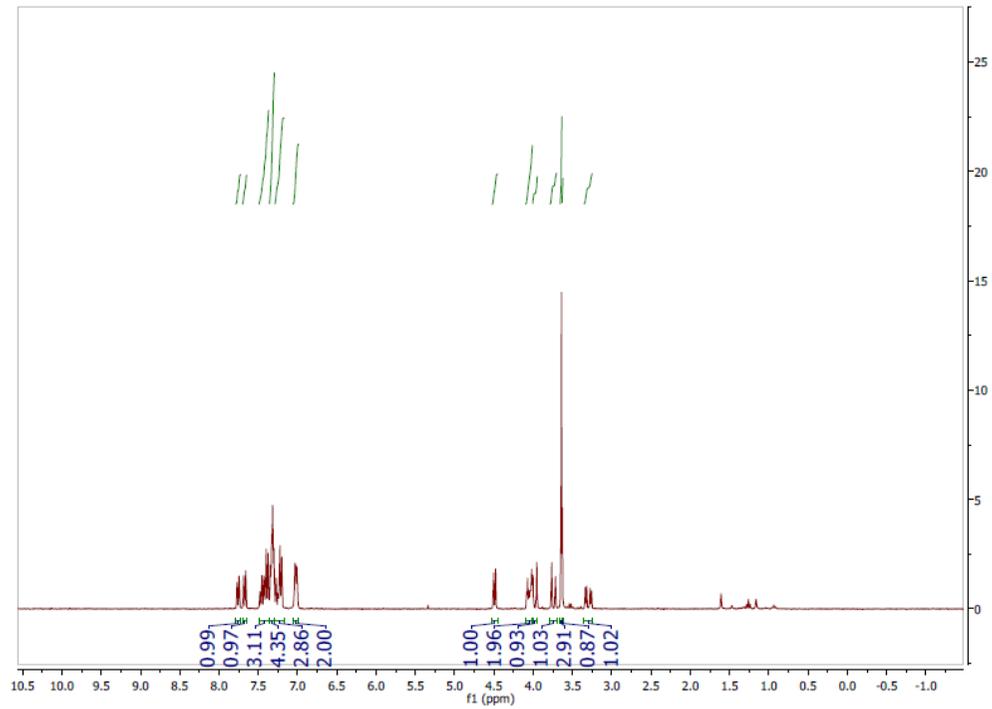


(1*S*, 3*S*, 3*aR*, 5*aR*)-3-Ciclohexil-5*a*-fenil-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (*endo*-40k)

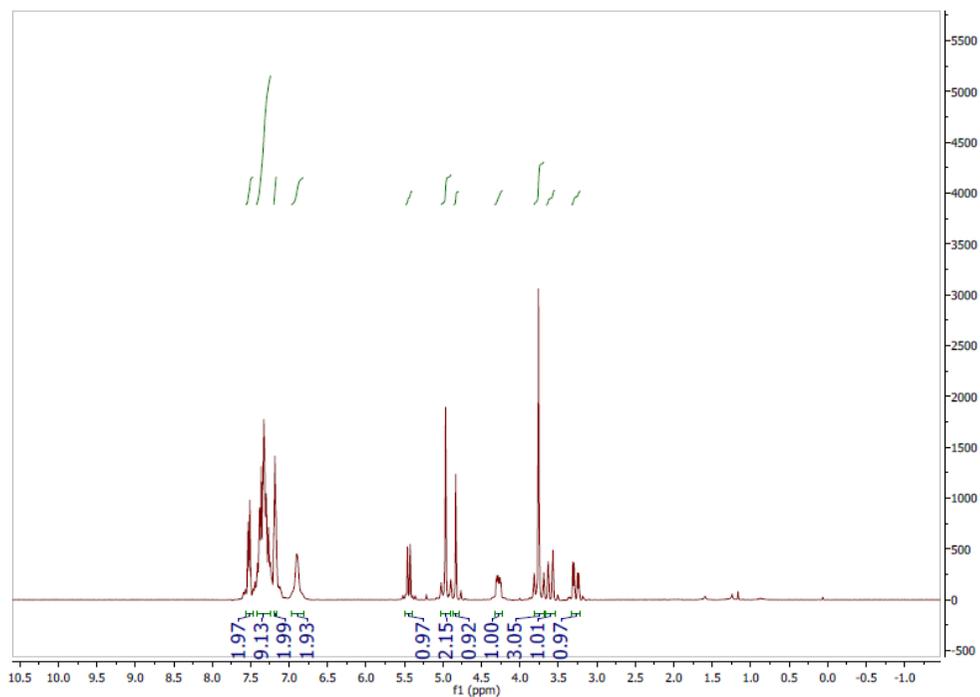
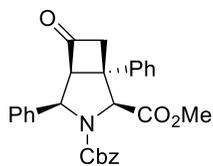


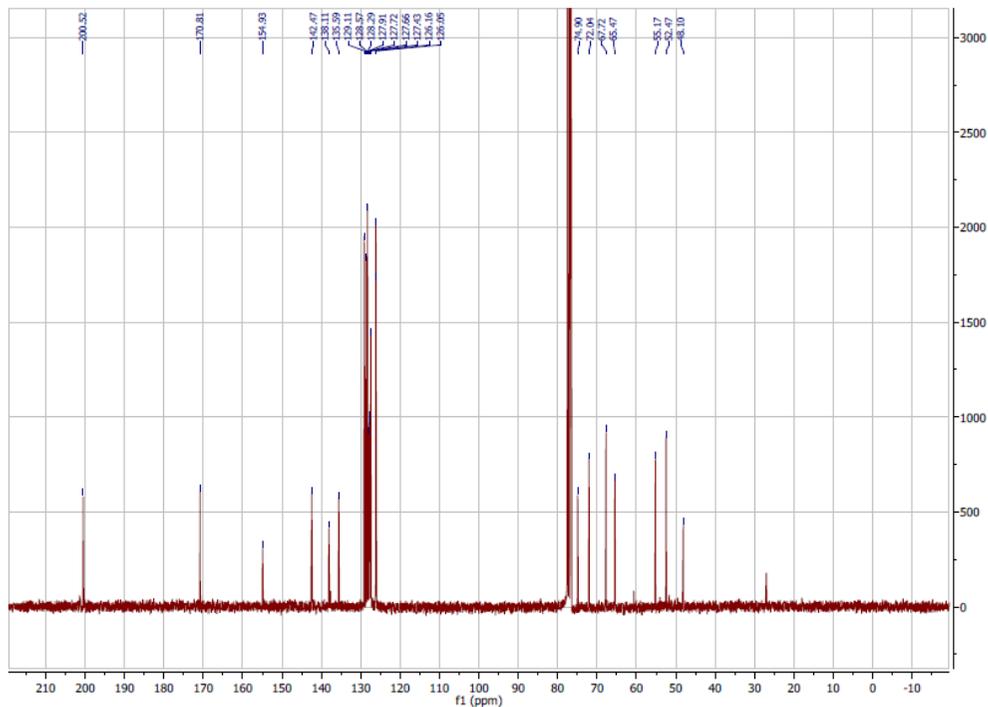
(1*S*,3*R*,3*aS*,5*aR*)-5a-Fenil-3-(2-bromofenil)-2-*N*-(bencil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo (41)



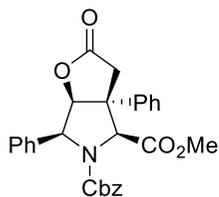


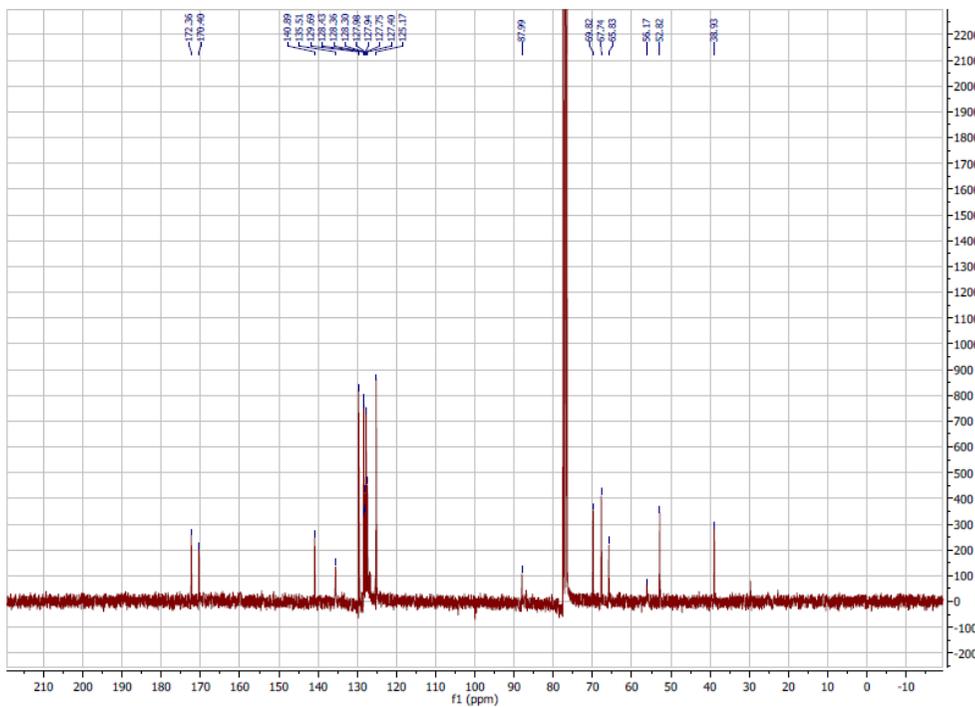
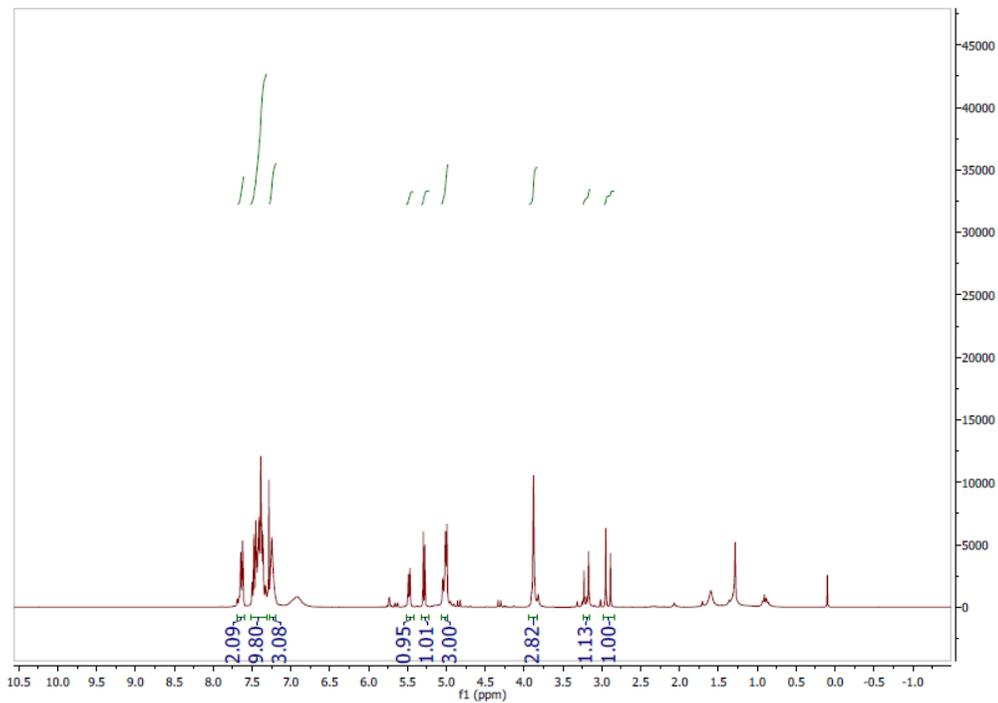
(1*S, 3*R** ,3*aS**, 5*aR**)- 3, 5*a*-Difenil-2-*N*-(benciloxycarbonil)-4-(oxo)heptahidrociclobuta[*c*]pirrolo-1-carboxilato de metilo ((±)-42)**



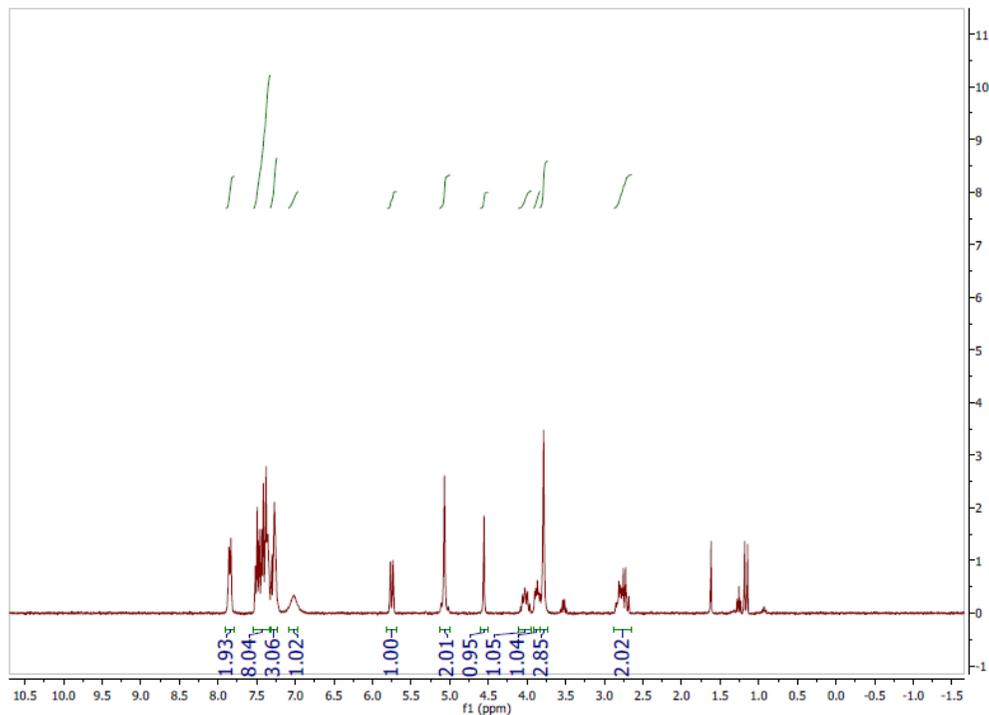
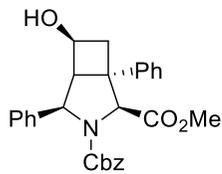


(3aR*, 4S*, 6S*, 6aS*)-5-bencil- 4-metil-2-oxo-3a, 6-difeniltetrahidro-2H-furo[2,3-c]pirrolo-4,5(3H)-dicarboxilato ((±)-43)

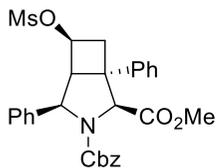


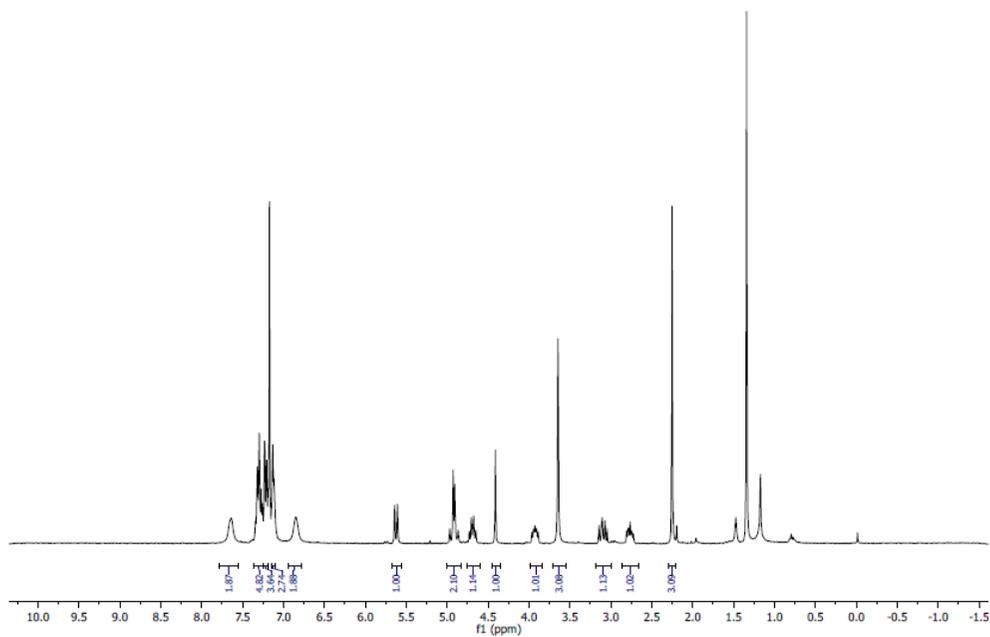


(1R*, 2S*, 4R*, 5S*, 6S*)-3-bencil-2-metil-6-hidroxi-1,4-difenil-3-azabicyclo[3.2.0]heptano-2, 3-dicarboxilato ((±)-47)

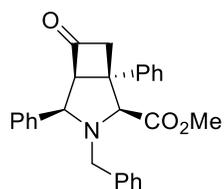


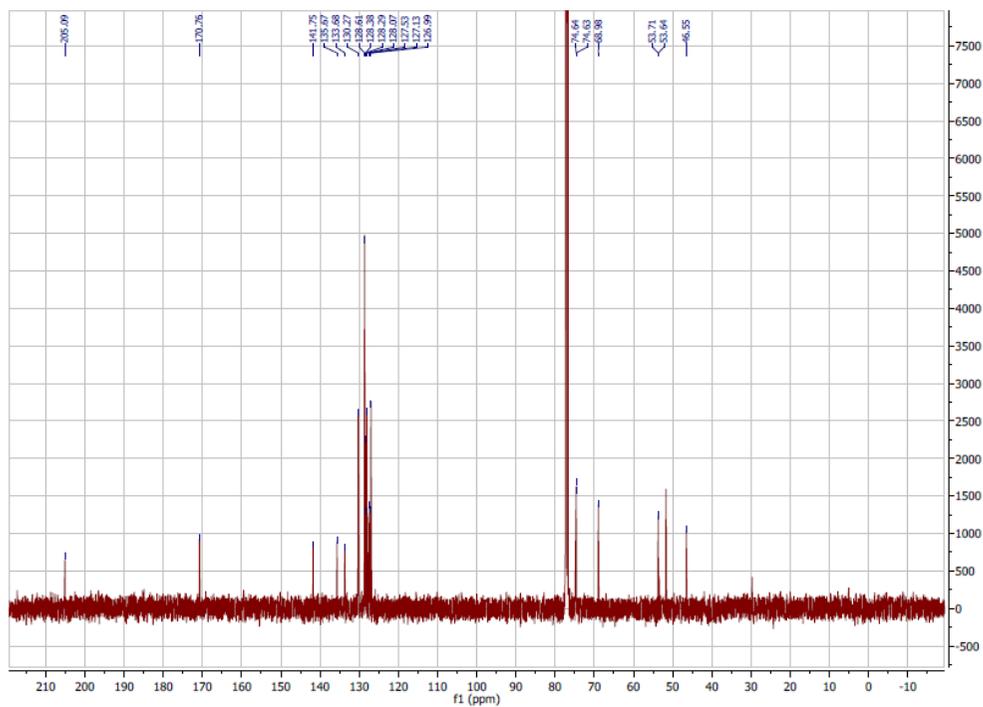
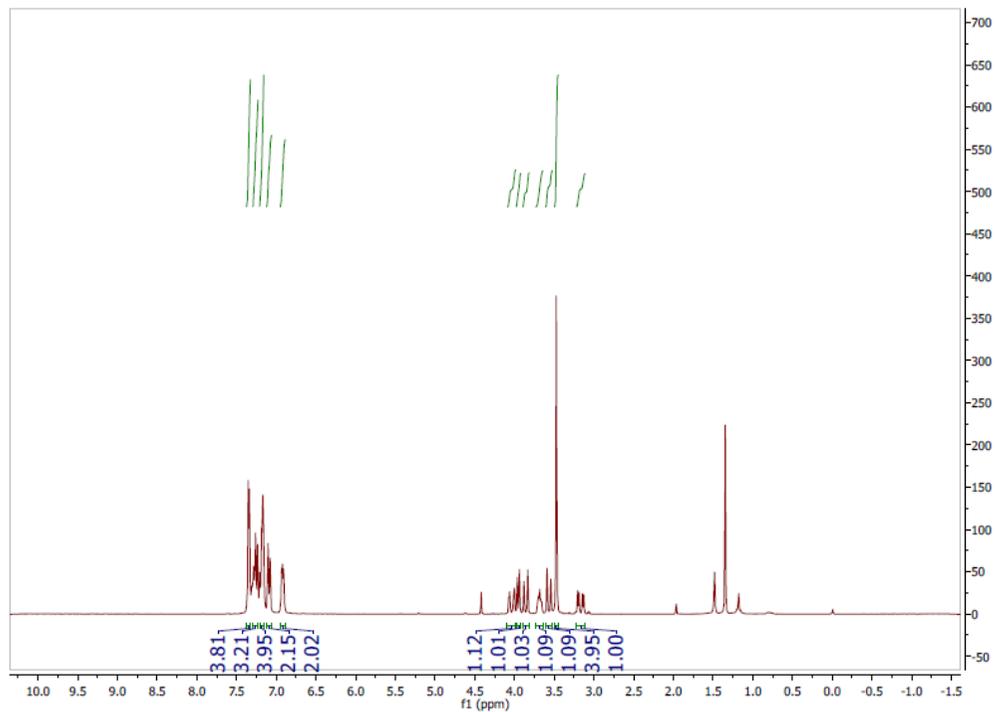
(1R*, 2S*, 4R*, 5S*, 6S*)-3-bencil-2-metil-6-((metilsulfonil)oxo)-1,4-difenil-3-azabicyclo[3.2.0]heptano-2, 3-dicarboxilato ((±)-48)



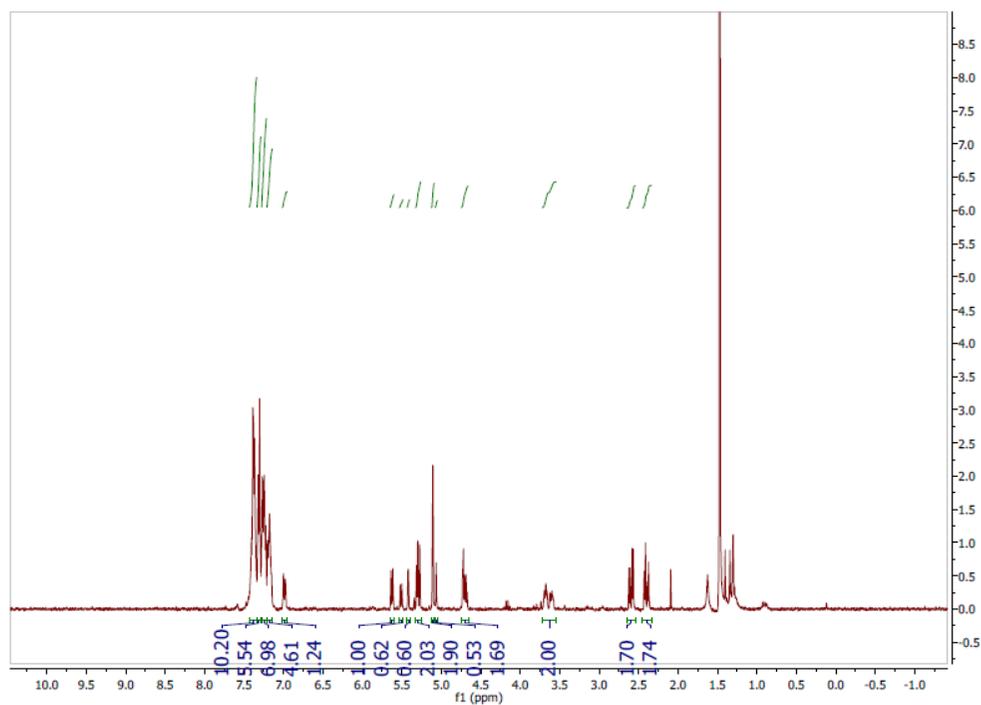
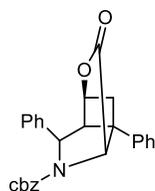


(1S*,3R*,3aS*,5aR*)-3,5a-Difenil-2-N-(bencil)-4-(oxo)heptahidrociclobuta[c]pirrolo-1-carboxilato de metilo ((±)-55)

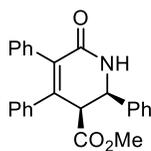


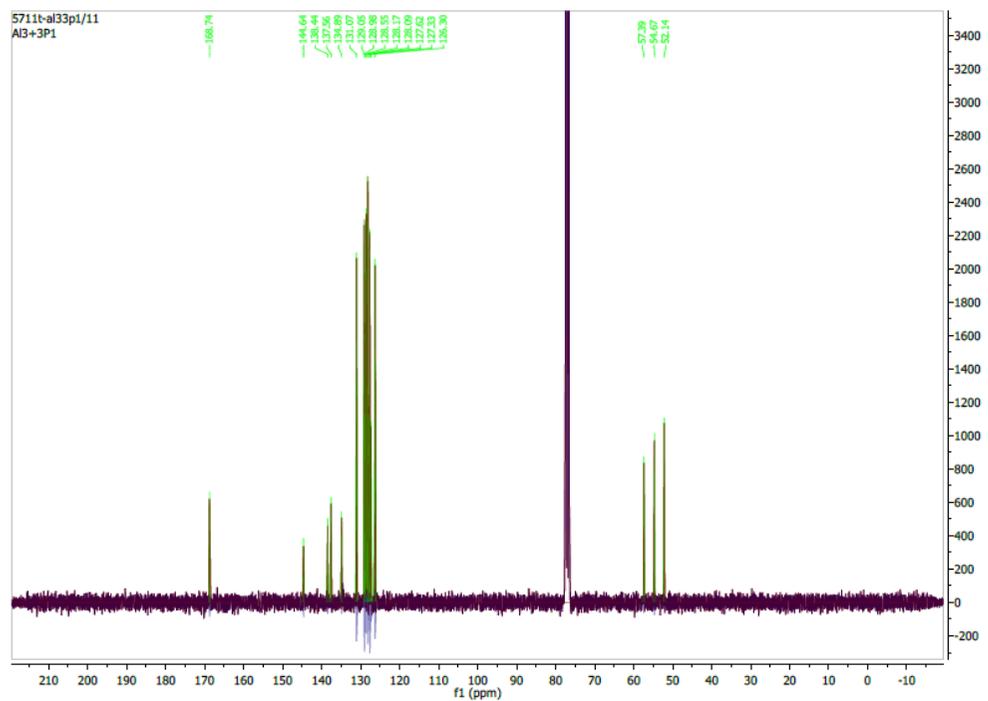
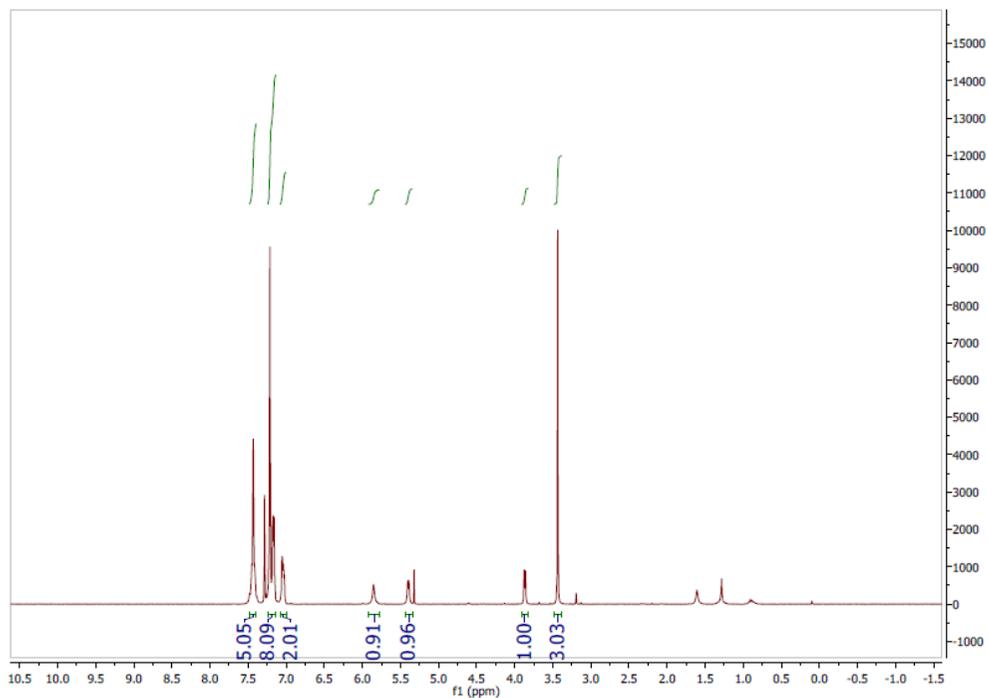


(1R*,3S*, 6S*, 9S*)-bencil-5-oxo-1,8-difenil-4-oxa-7-azatriciclo[4.3.0.0.3,9]nonano-7-carboxilato ((±)-56)

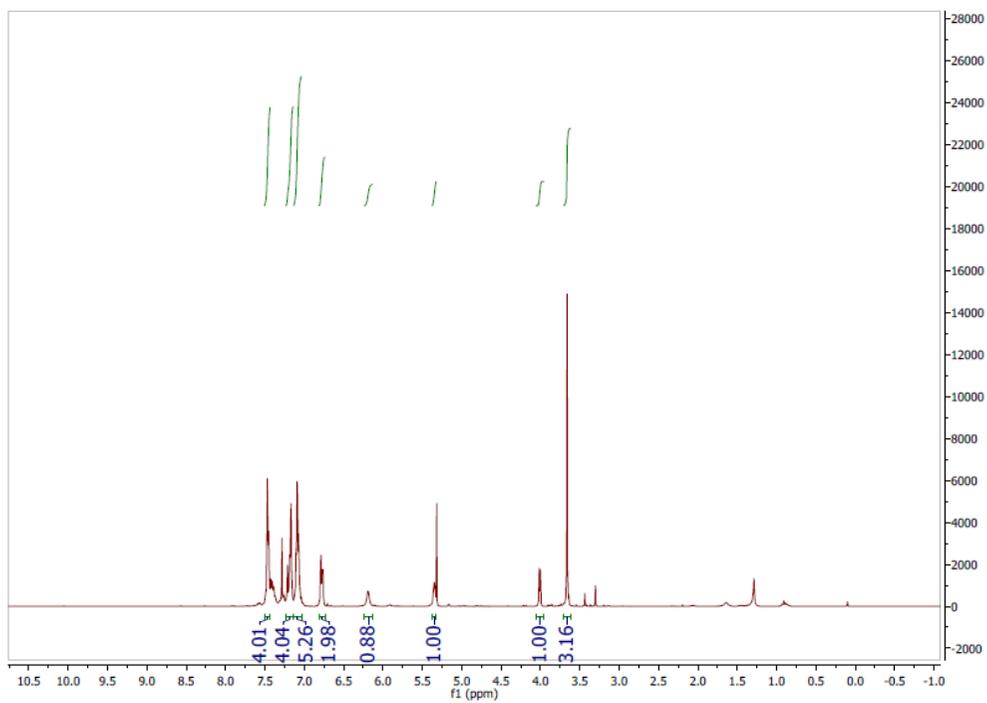
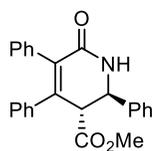


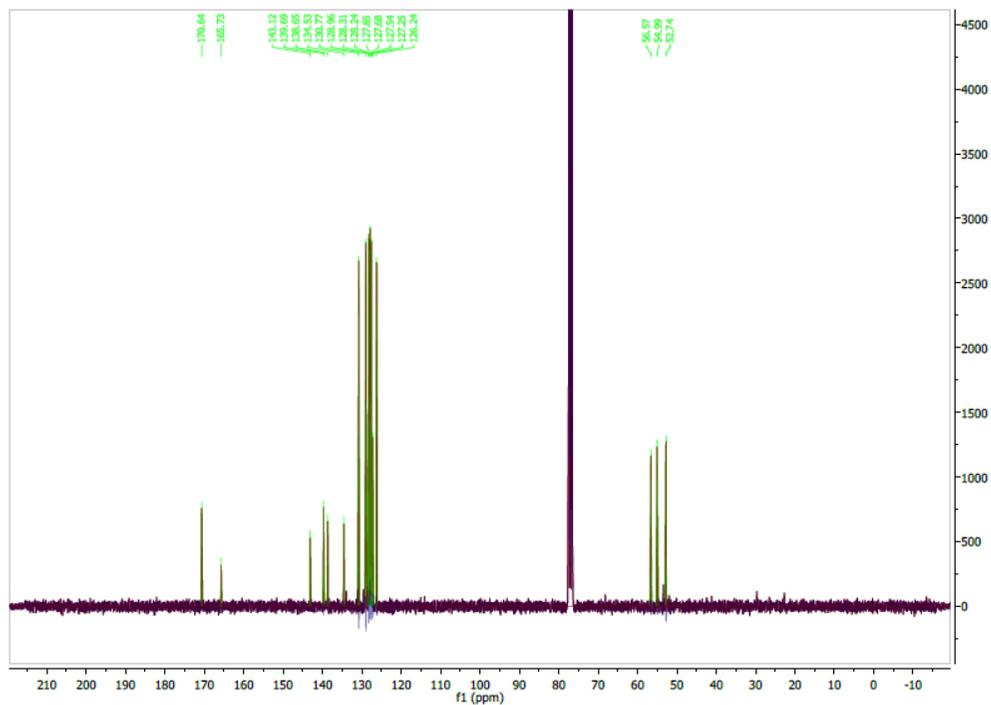
(2R*, 3S*)-6-oxo-2,4,5-trifenil-1,2,3,6-tetrahidropiridina-3-carboxilato de metilo ((±)-cis-58)



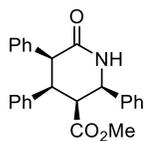


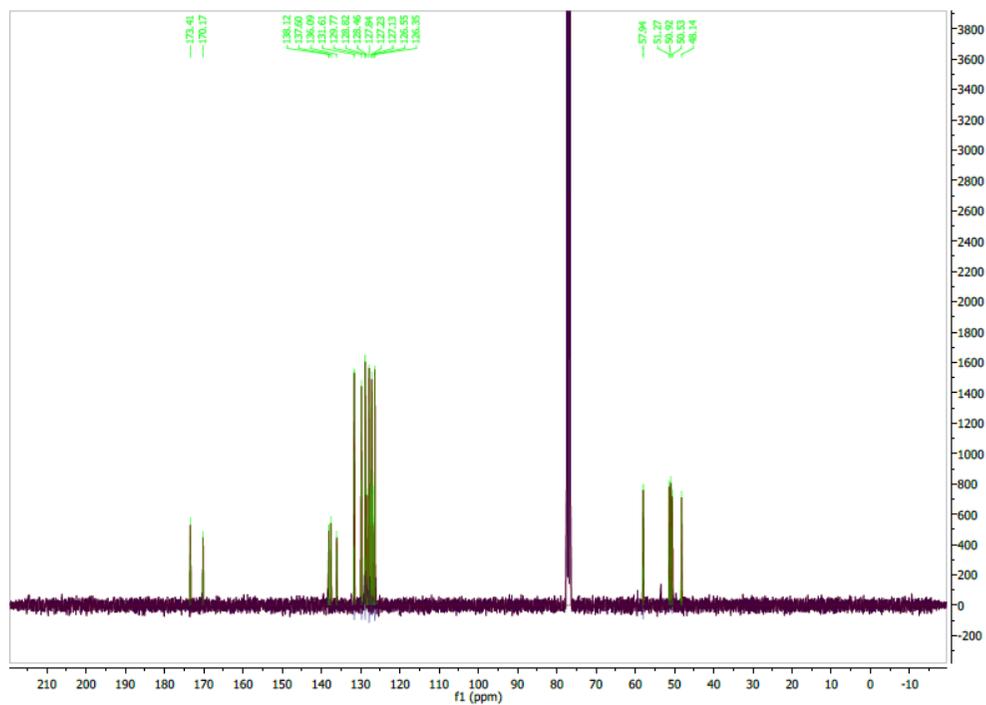
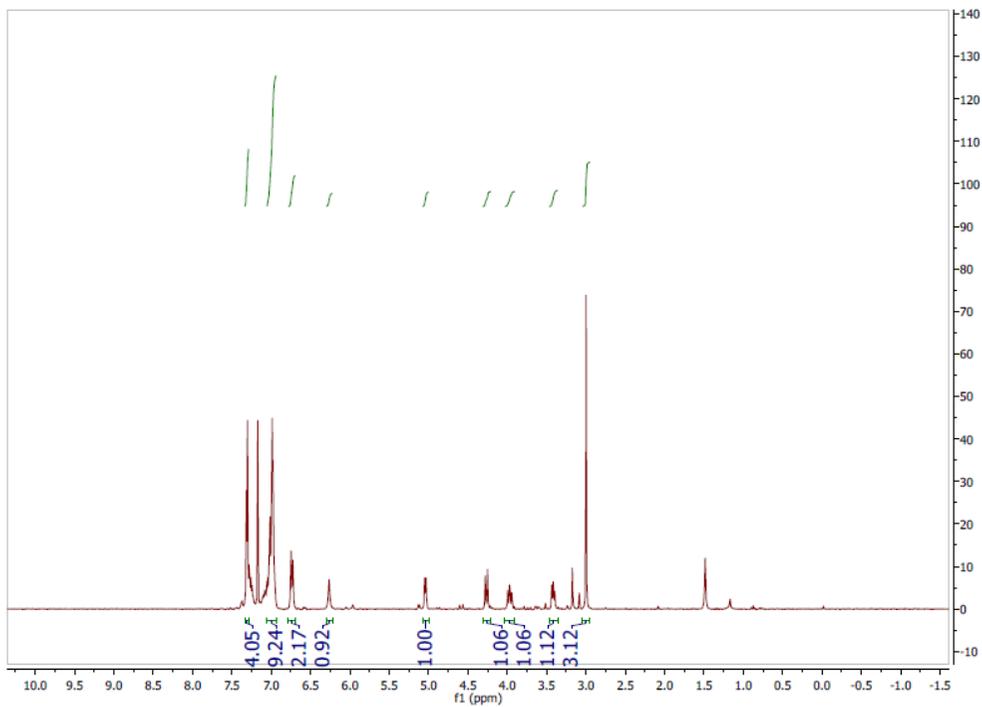
(2*R*, 3*R*)-6-oxo-2,4,5-trifenil-1,2,3,6-tetrahidropiridina-3-carboxilato de metilo ((±)-*trans*-58)





(2R*, 3S*, 4S*, 5S*)-6-oxo-2, 4, 5-trifenilpiperidina-3-carboxilato de metilo ((±)-59)





(2*R, 3*R**, 4*R**, 5*R**)-6-oxo-2, 4, 5-trifenilpiperidina-3-carboxilato de metilo ((±)-60)**