## **Supporting Information for:**

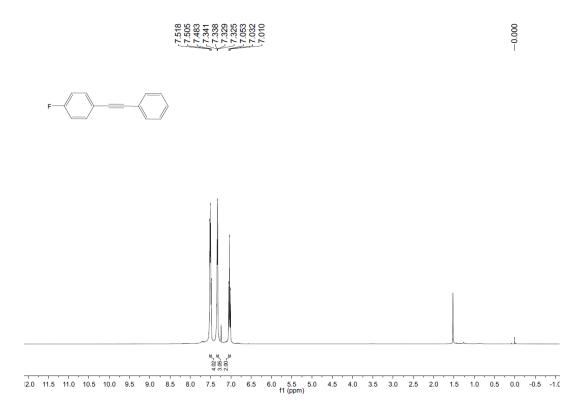
## Photosensitizer-free, visible light-mediated recyclable goldcatalyzed cross-coupling of aryldiazonium salts and alkynyltrimethylsilanes

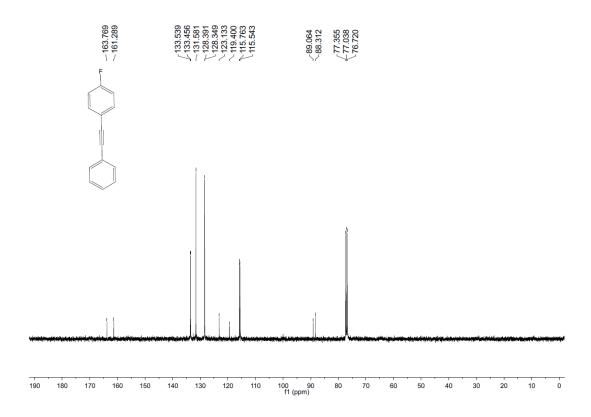
Jiajia Li, Junmin Chen,\* Hefeng Zhu, Mingzhong Cai\*

School of Chemistry and Chemical Engineering, Jiangxi Normal University, Nanchang, Jiangxi 330022, China

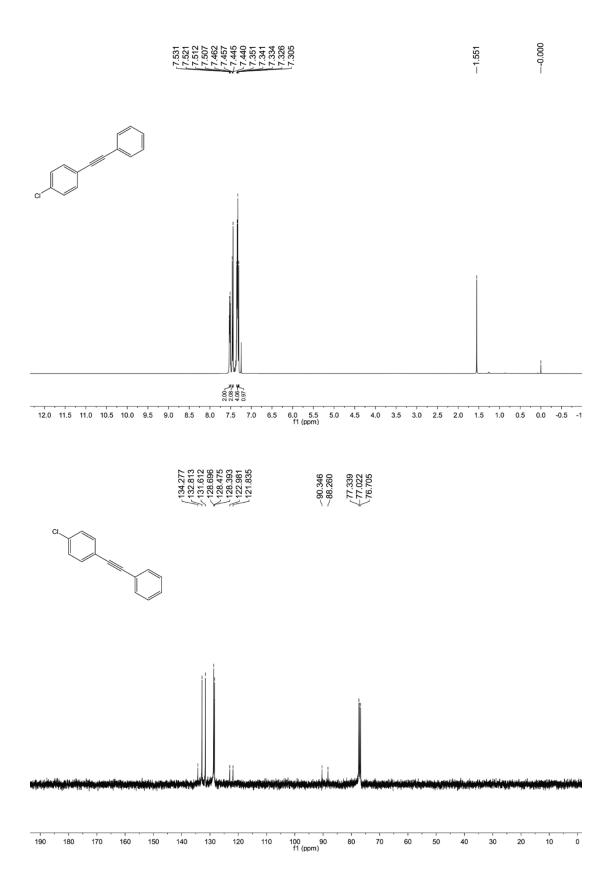
E-mail: mzcai@jxnu.edu.cn; junminchen@jxnu.edu.cn

Copies of NMR Spectra of Compounds 3a-3q'

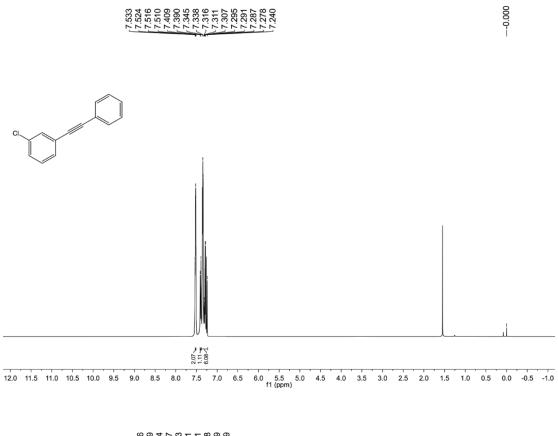


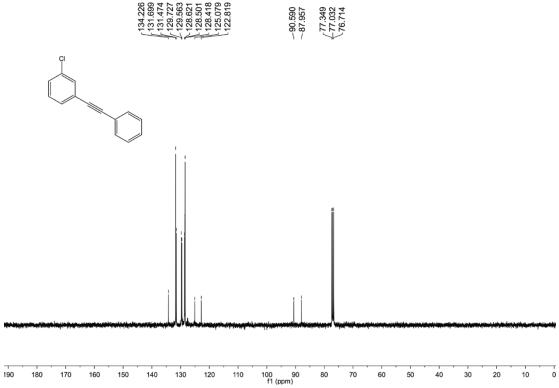


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\boldsymbol{3a}$  (in CDCl3)

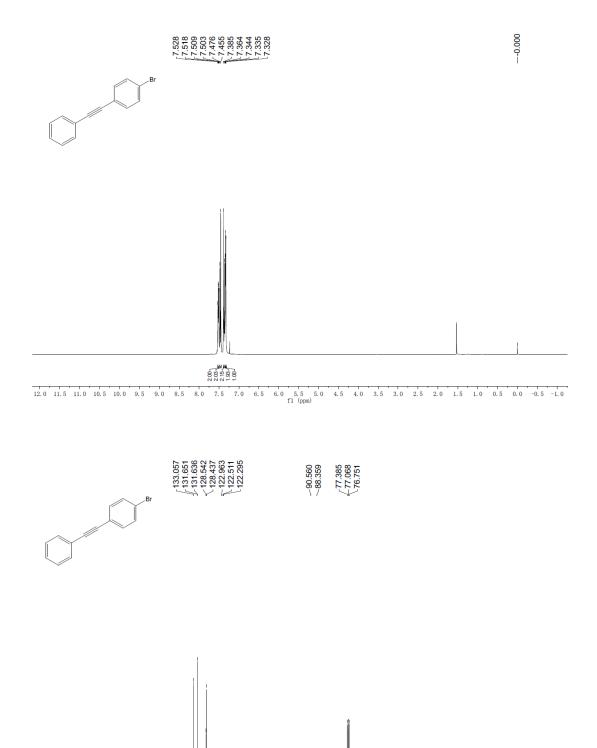


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{\bf 3b}$  (in CDCl3)



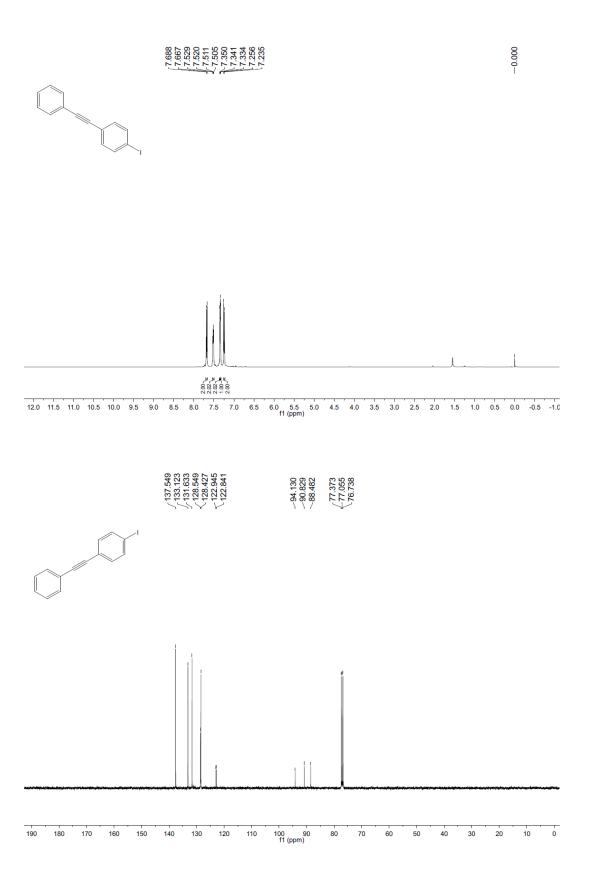


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3c (in CDCl3)

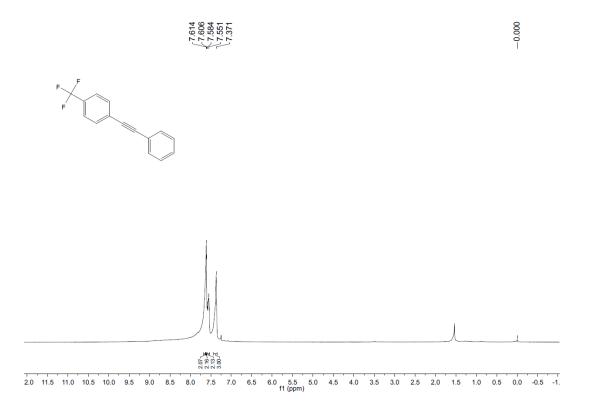


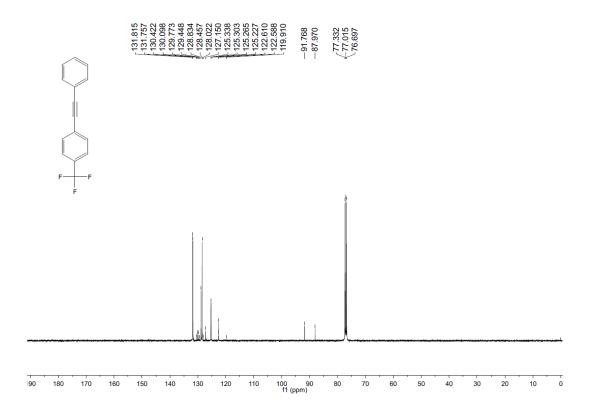
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3d}$  (in CDCl3)

130 120

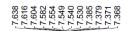


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3e (in CDCl3)

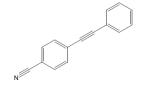


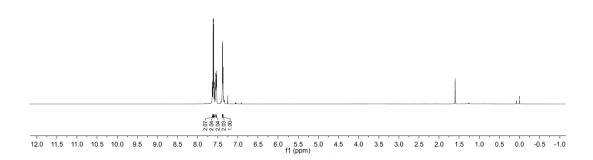


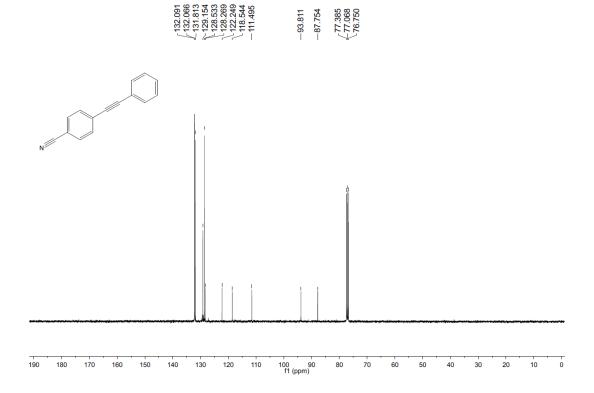
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3f (in CDCl3)



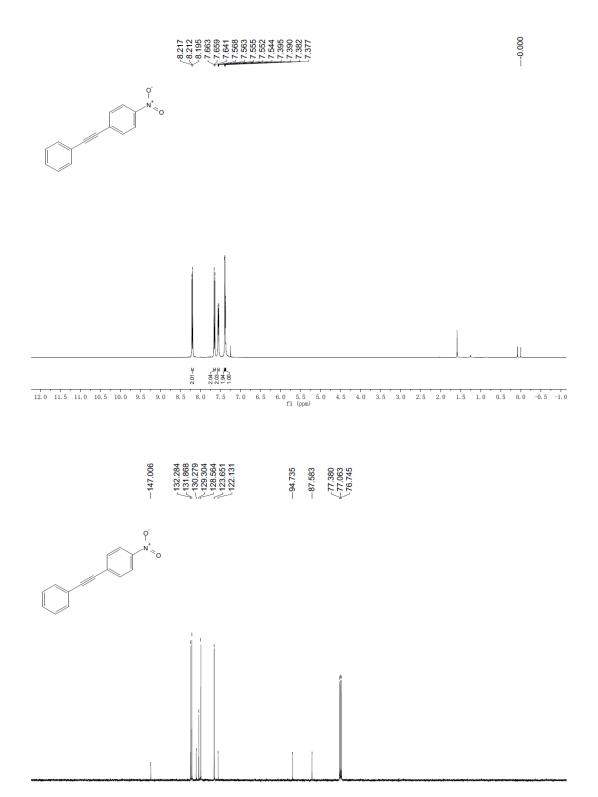
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 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3g}$  (in CDCl3)

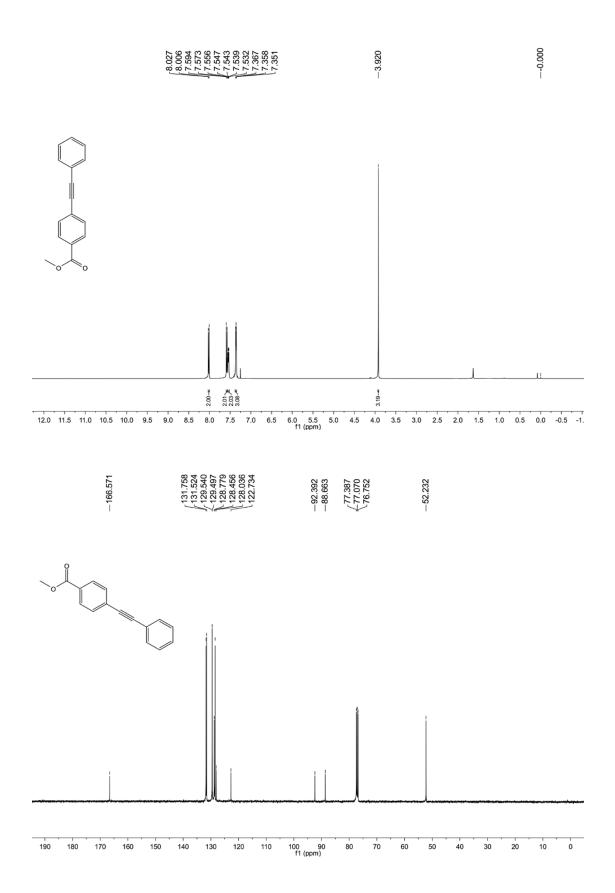


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3h (in CDCl3)

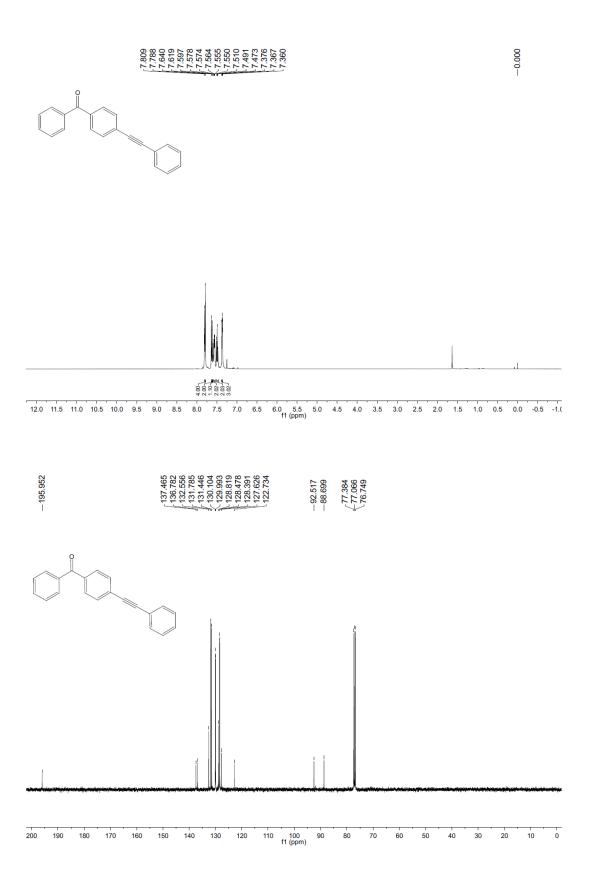
170

140 130

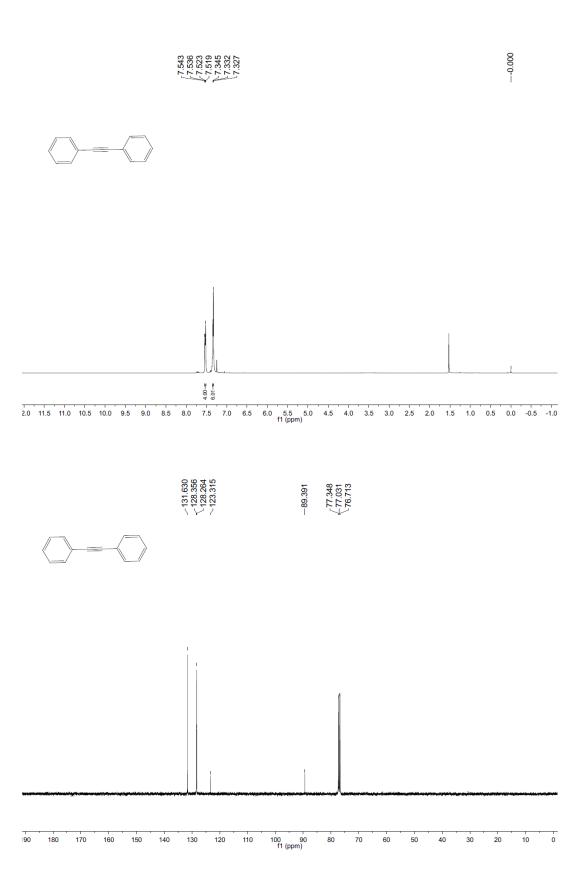
120 110



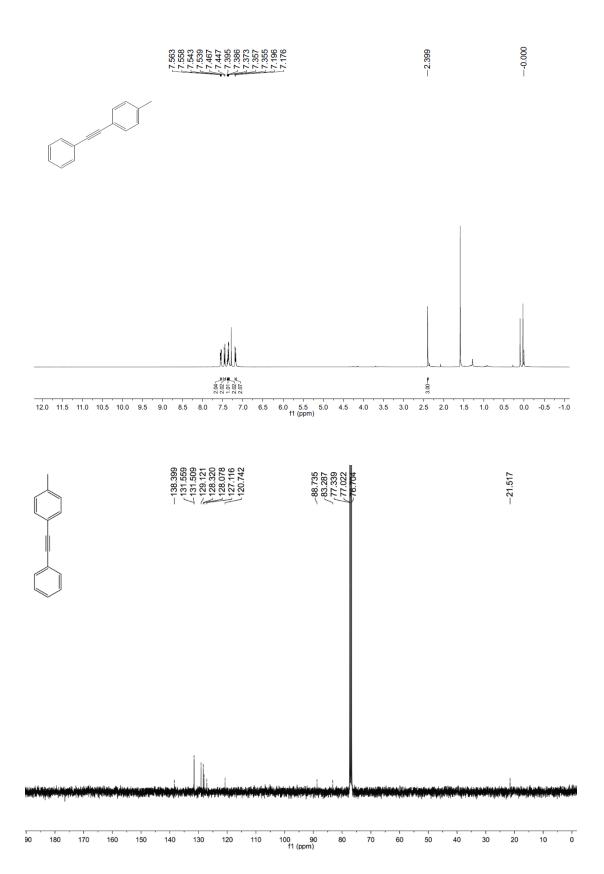
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3i (in CDCl3)



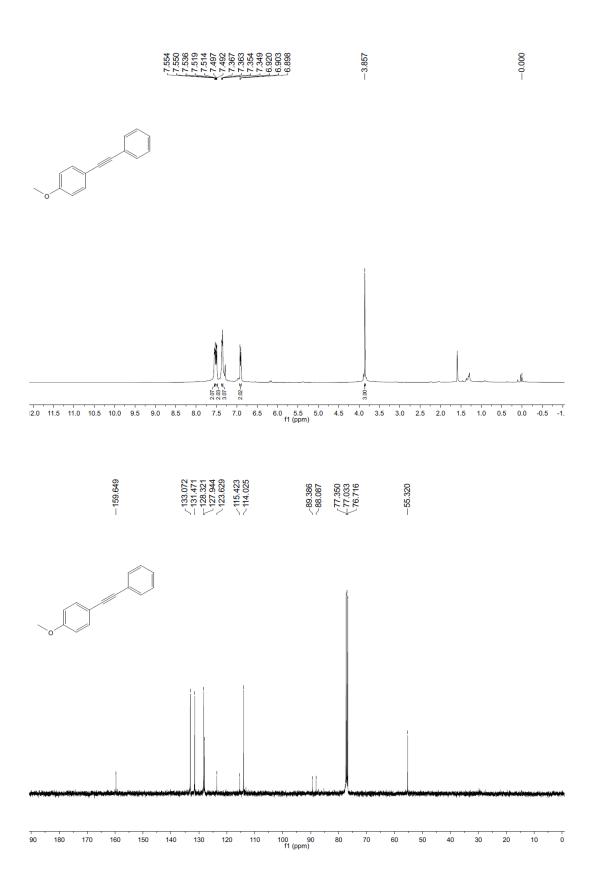
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3j (in CDCl3)



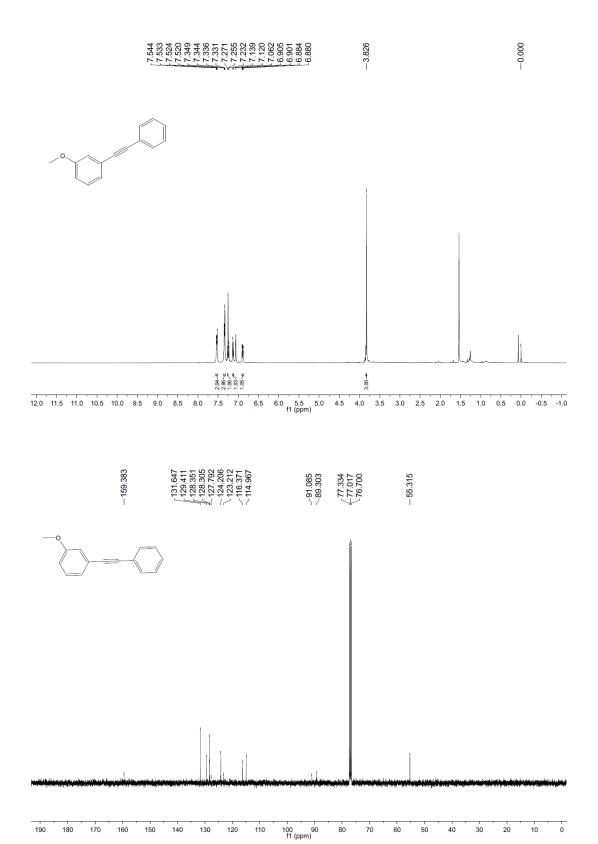
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3k (in CDCl3)



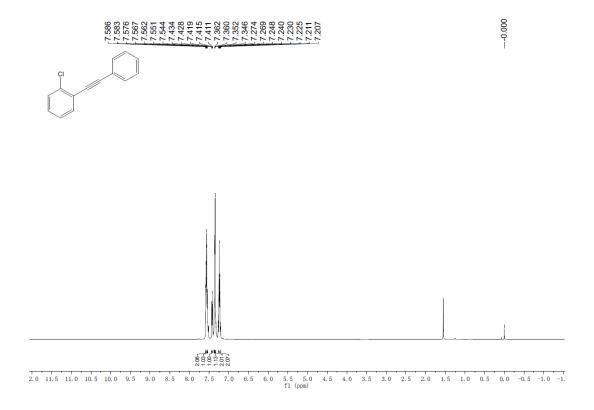
 $^1\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 31 (in CDCl3)

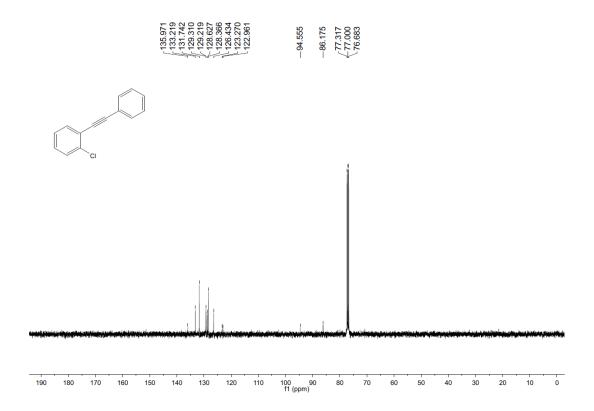


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3m (in CDCl3)

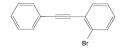


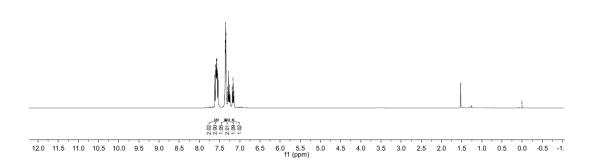
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\boldsymbol{3n}$  (in CDCl3)

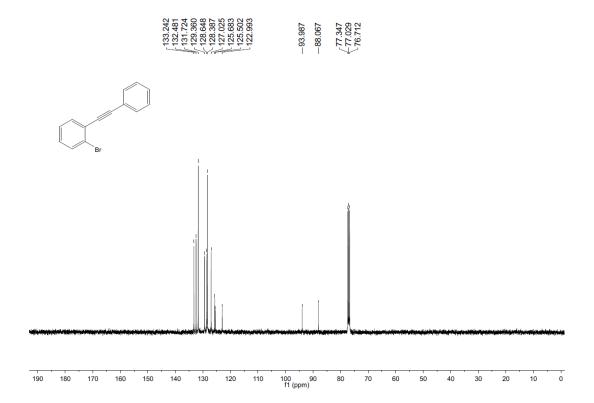




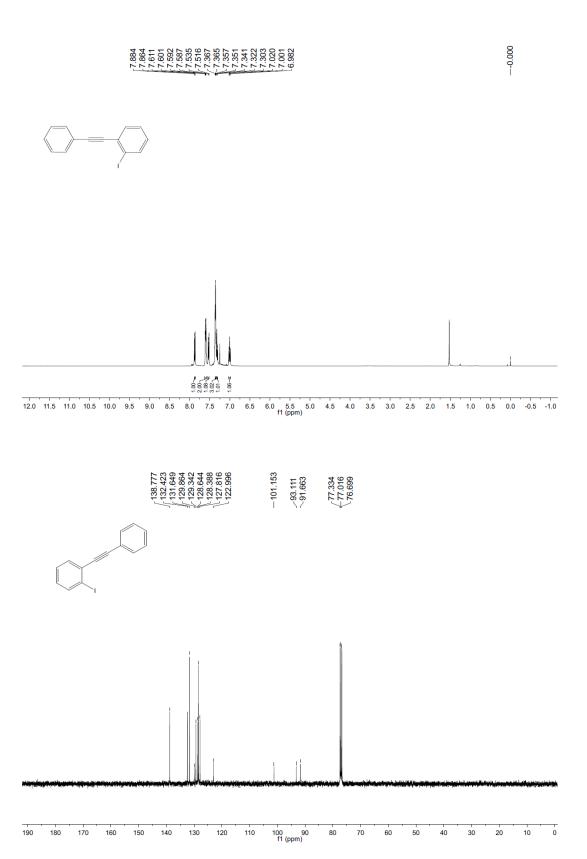
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{\bf 3o}$  (in CDCl3)



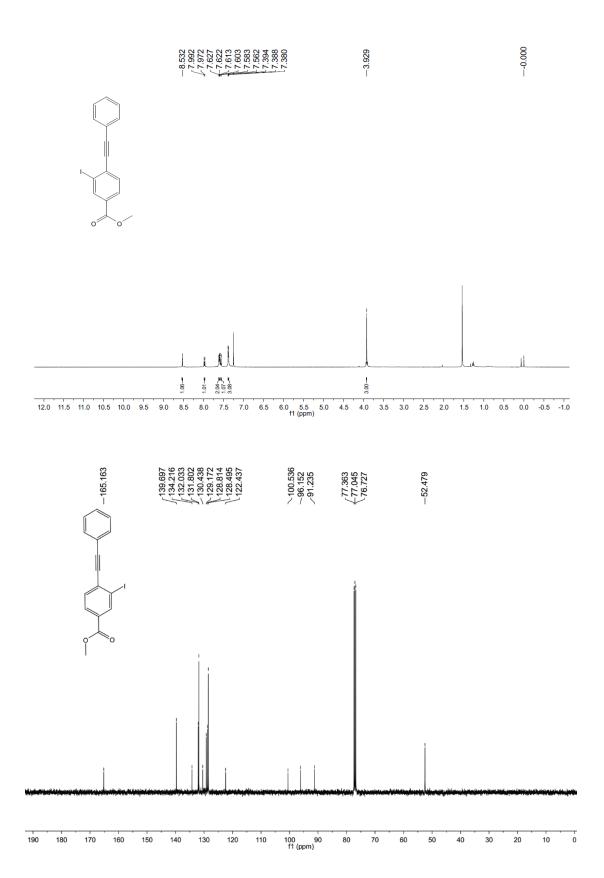




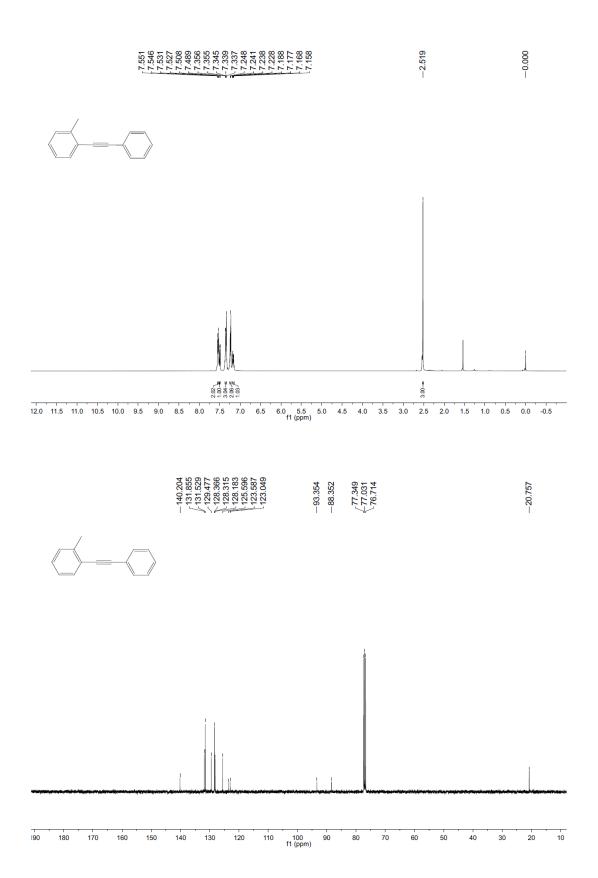
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compounds **3p** (in CDCl<sub>3</sub>)



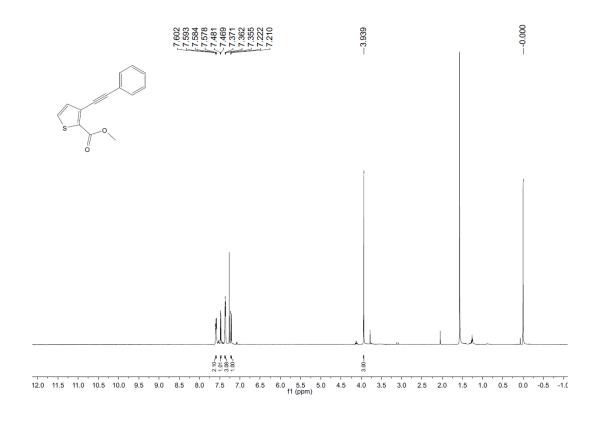
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3q}$  (in CDCl3)

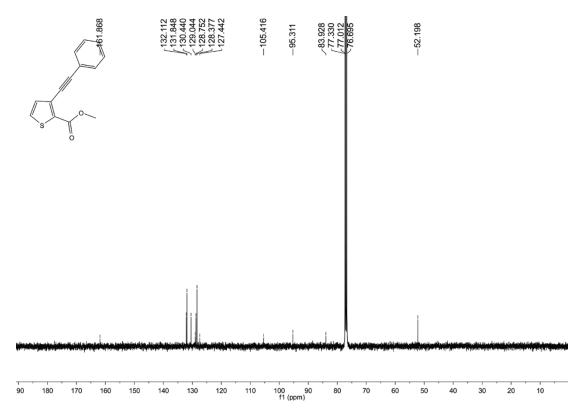


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3r (in CDCl3)

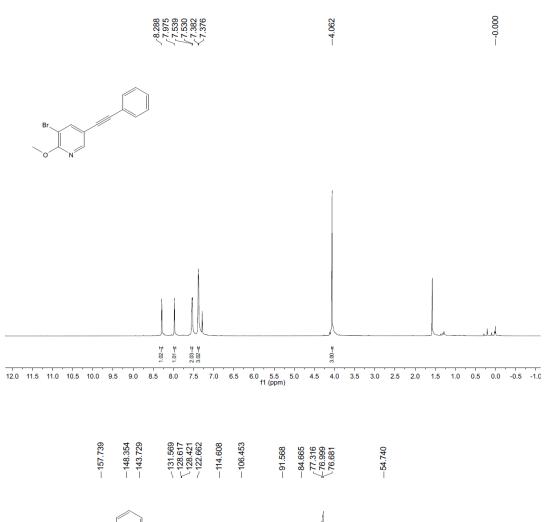


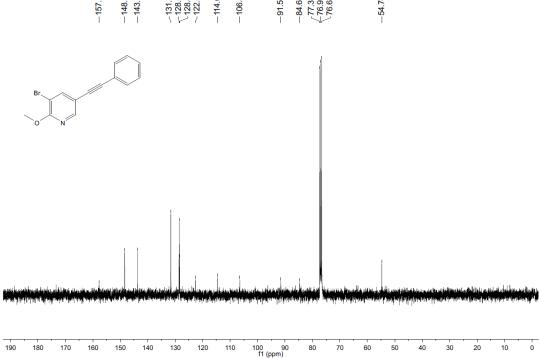
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3s}$  (in CDCl3)



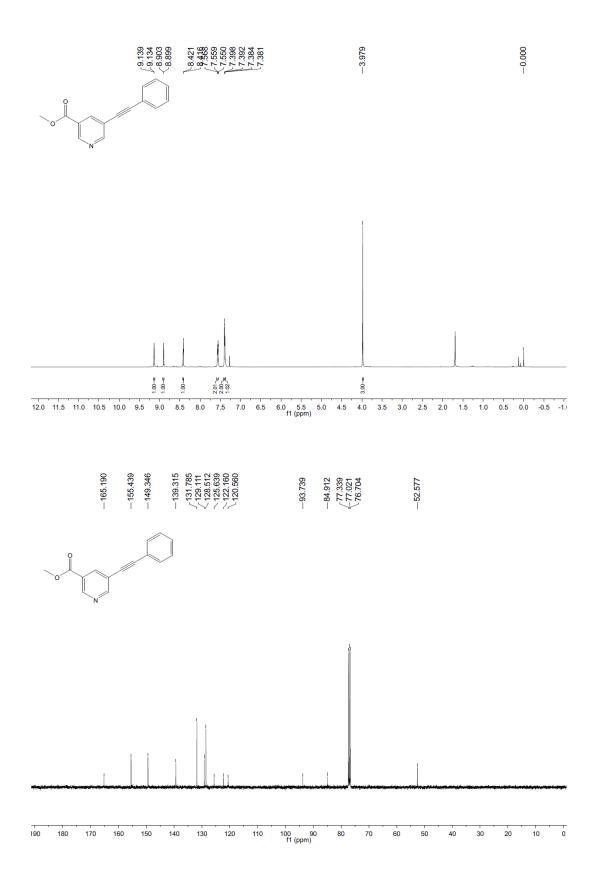


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3t (in CDCl3)





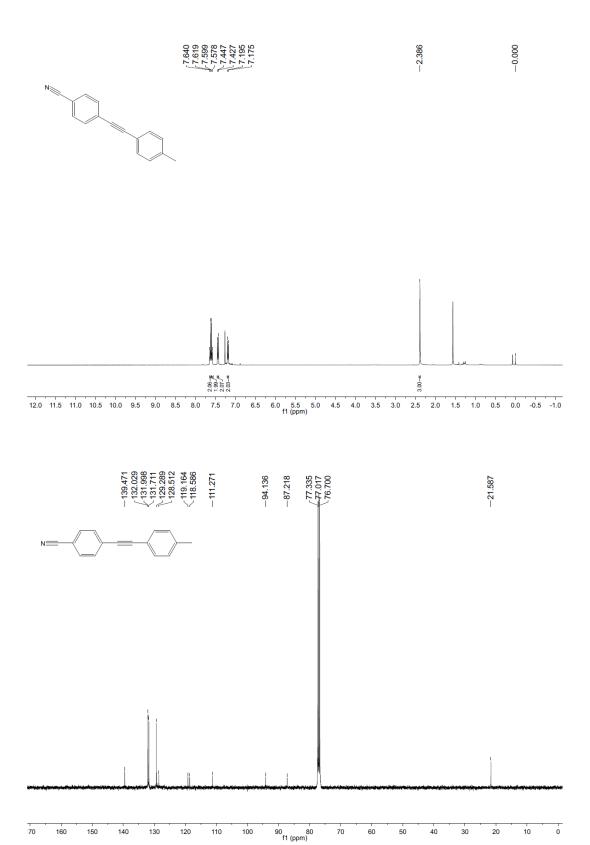
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\boldsymbol{3u}$  (in CDCl3)



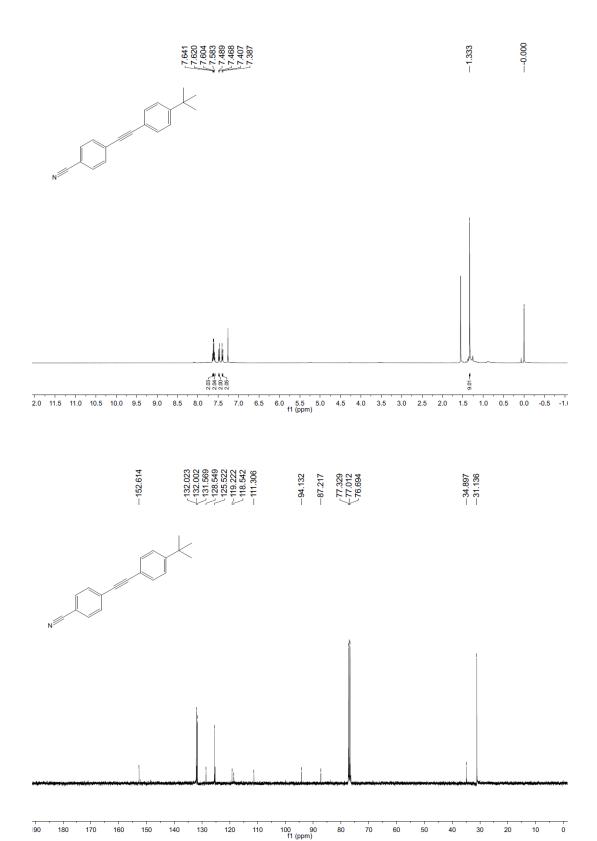
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3v (in CDCl3)



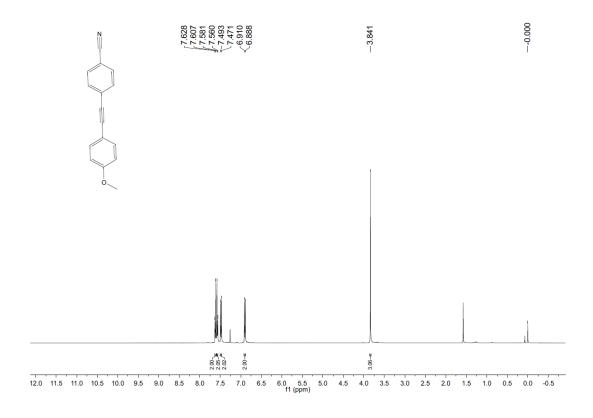
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3w (in CDCl3)

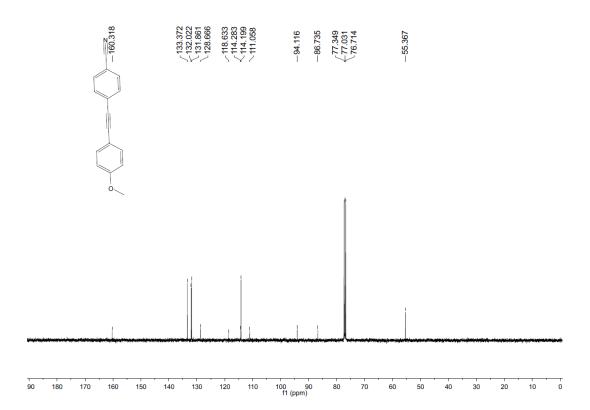


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3x (in CDCl3)

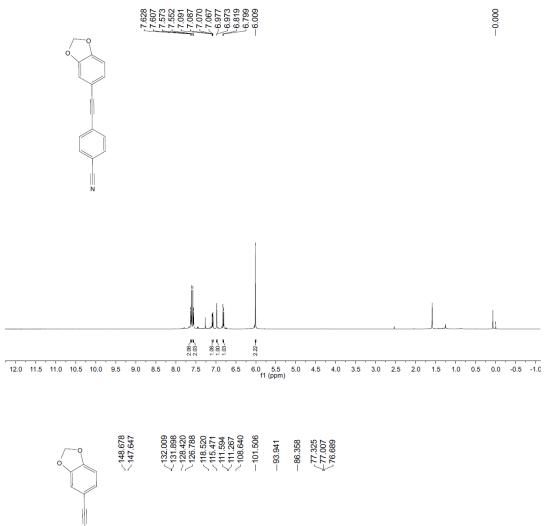


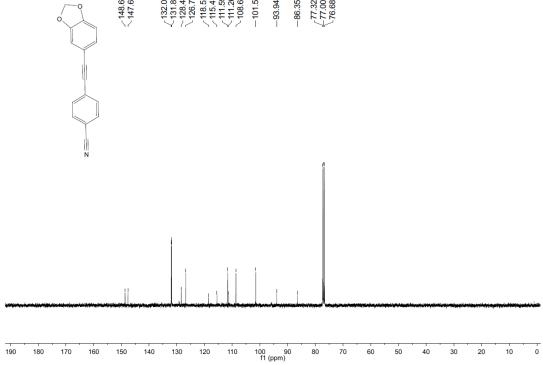
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3y (in CDCl3)



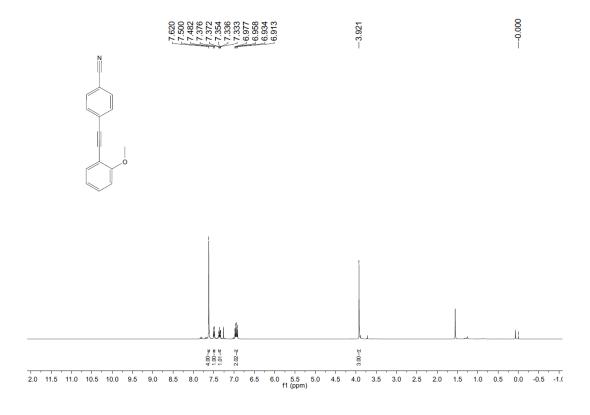


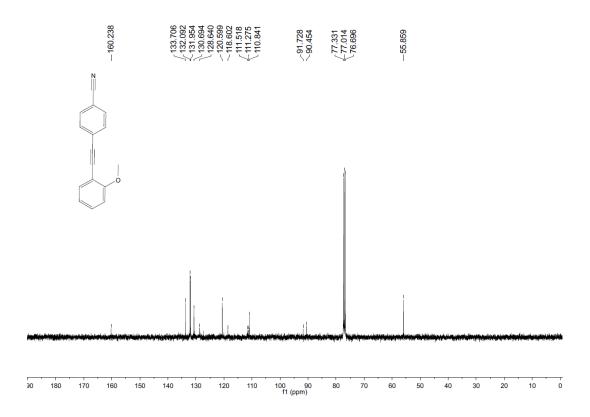
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3z}$  (in CDCl3)



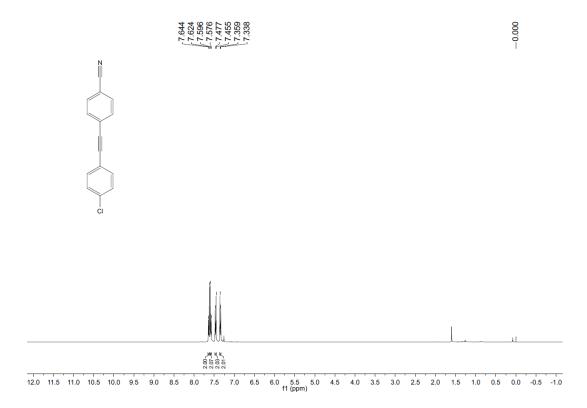


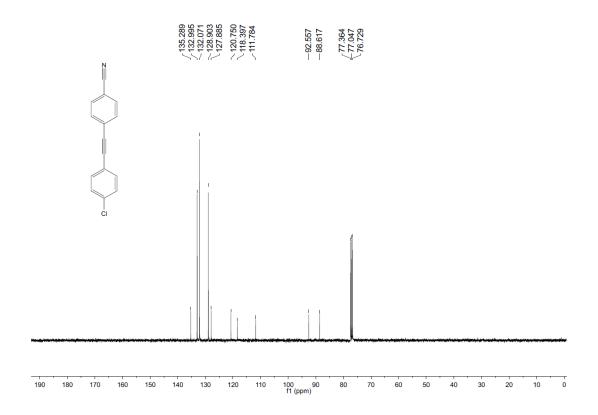
 $^1\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3a'}$  (in CDCl3)



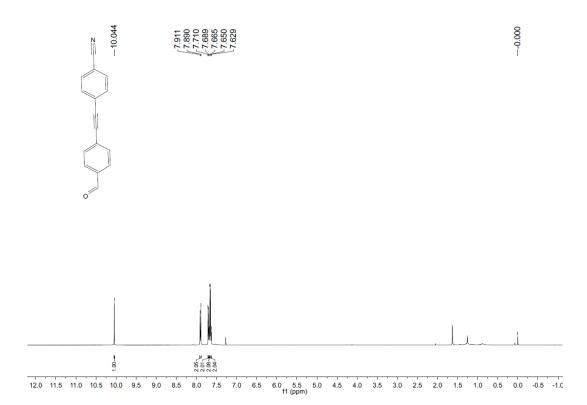


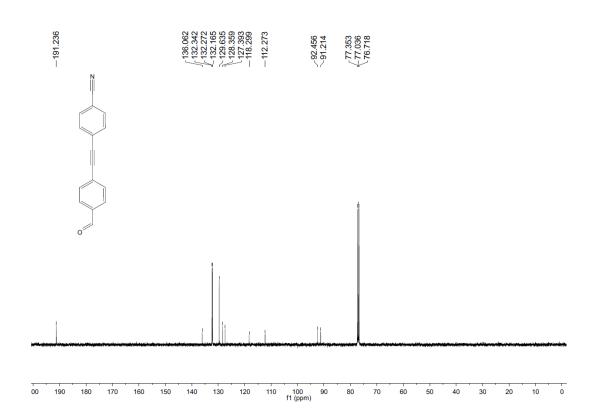
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3b'}$  (in CDCl3)



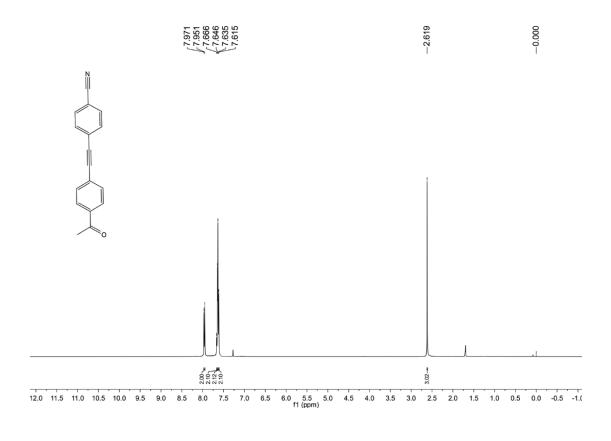


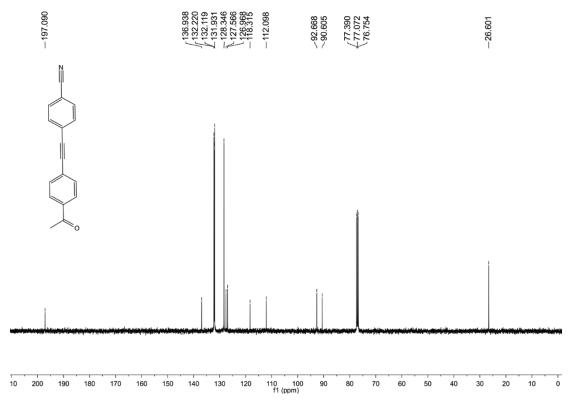
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3c' (in CDCl3)



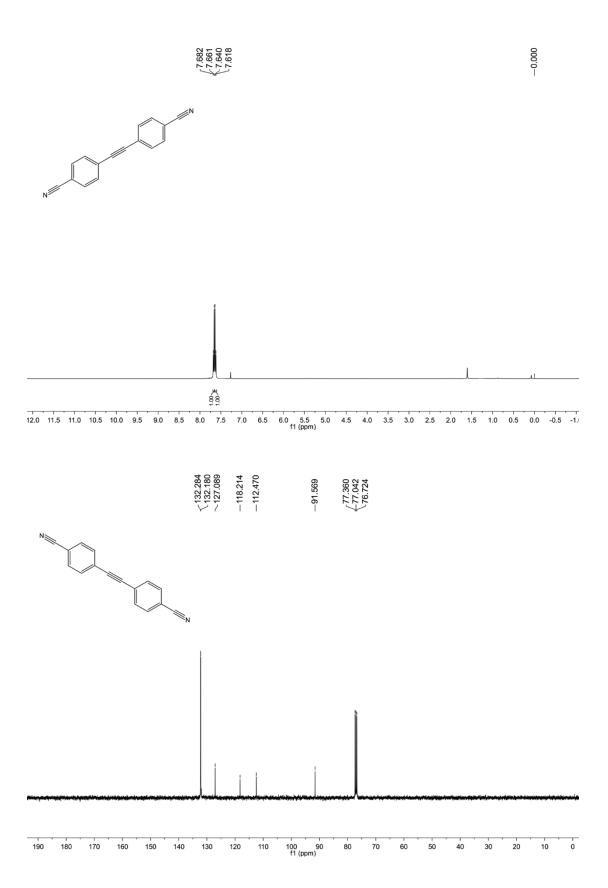


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3d' (in CDCl3)

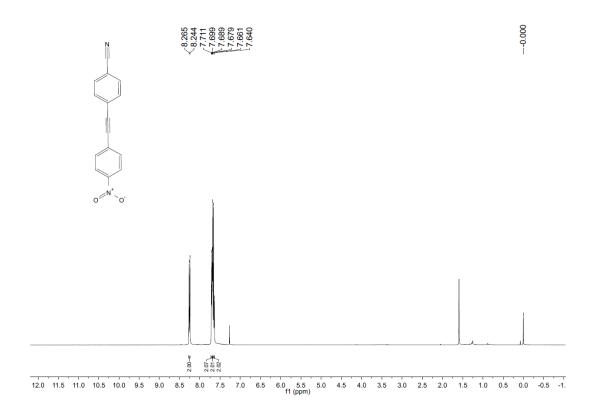


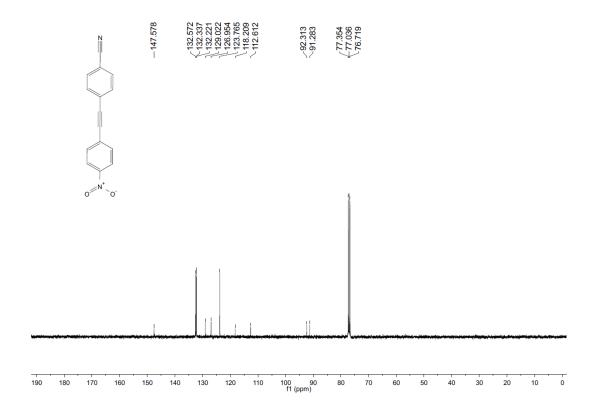


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3e'}$  (in CDCl3)

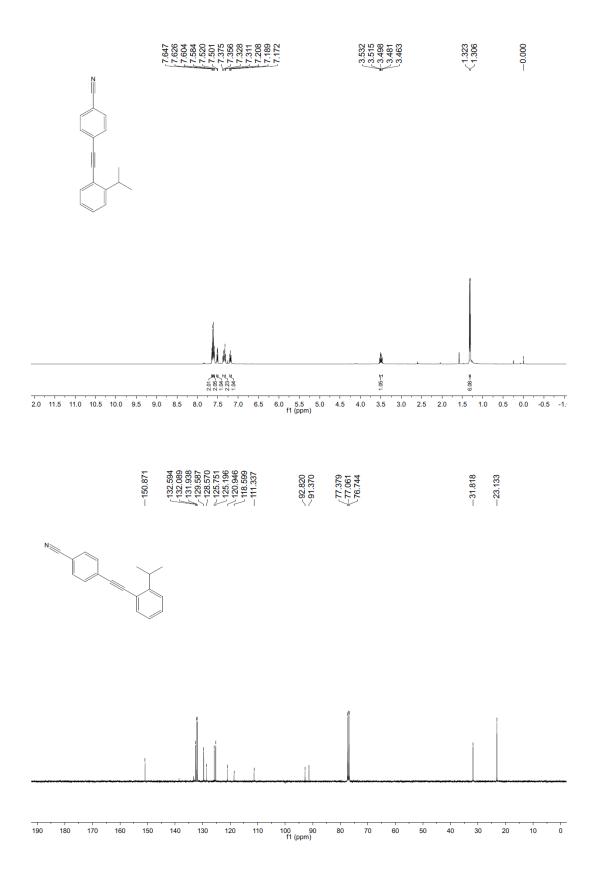


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3f' (in CDCl3)

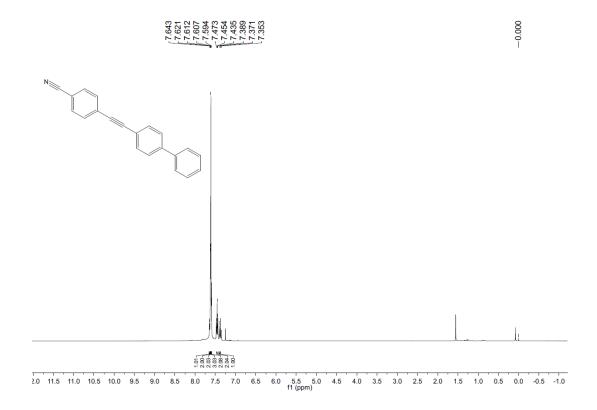


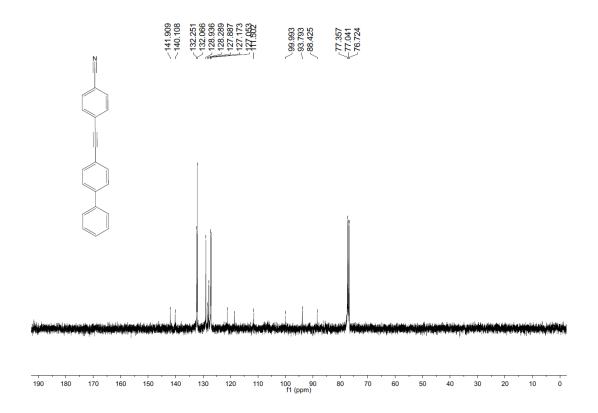


 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3g' (in CDCl3)

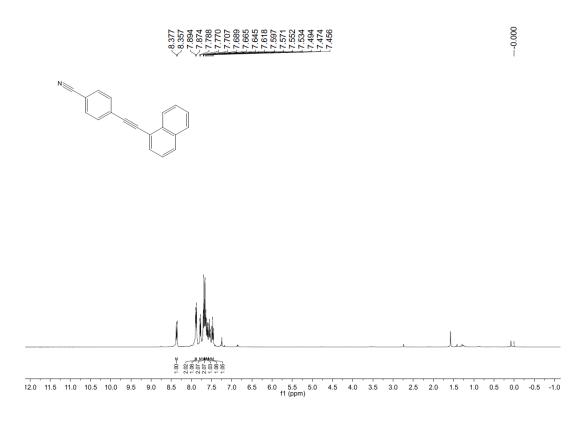


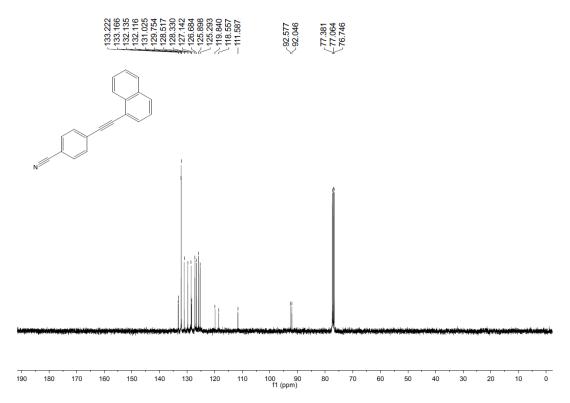
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $3\mbox{h}^{\mbox{\tiny 1}}$  (in CDCl3)



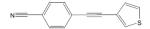


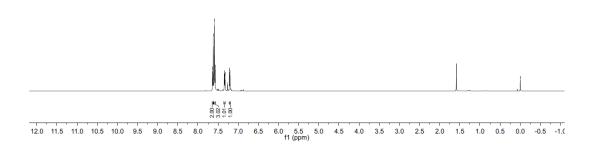
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3i' (in CDCl3)



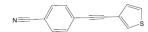


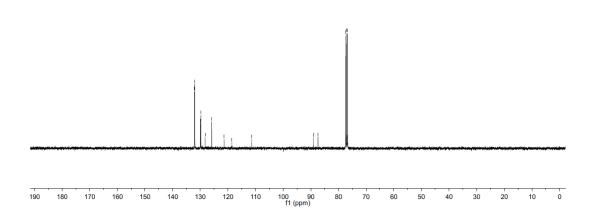
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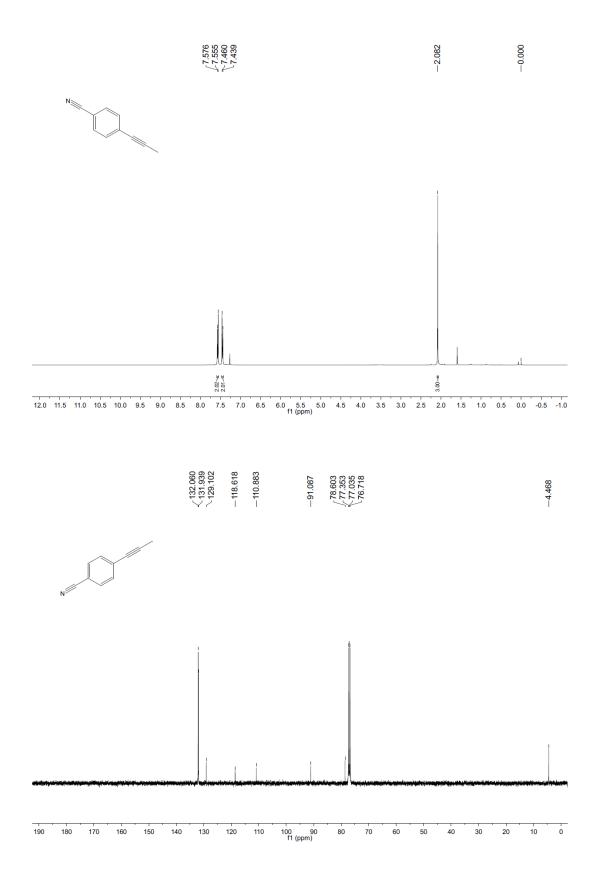




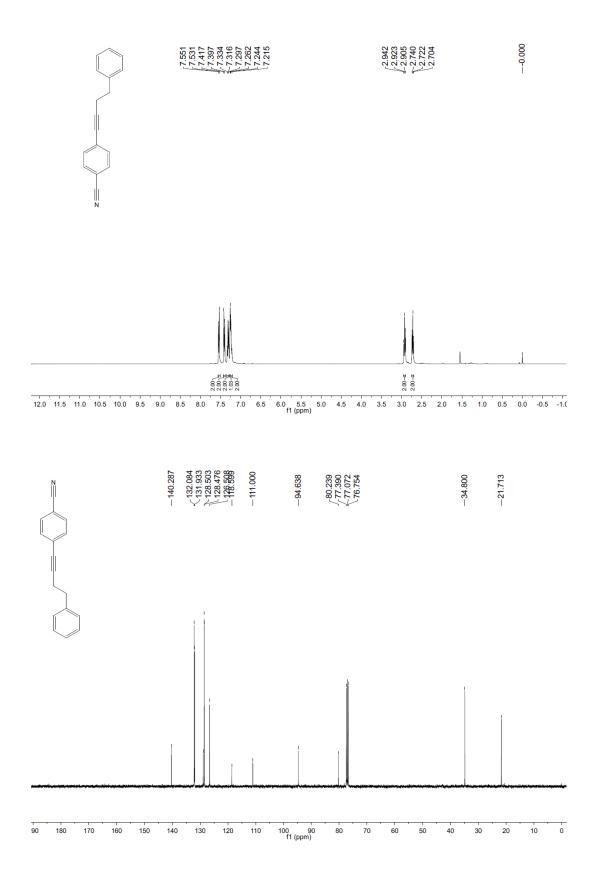




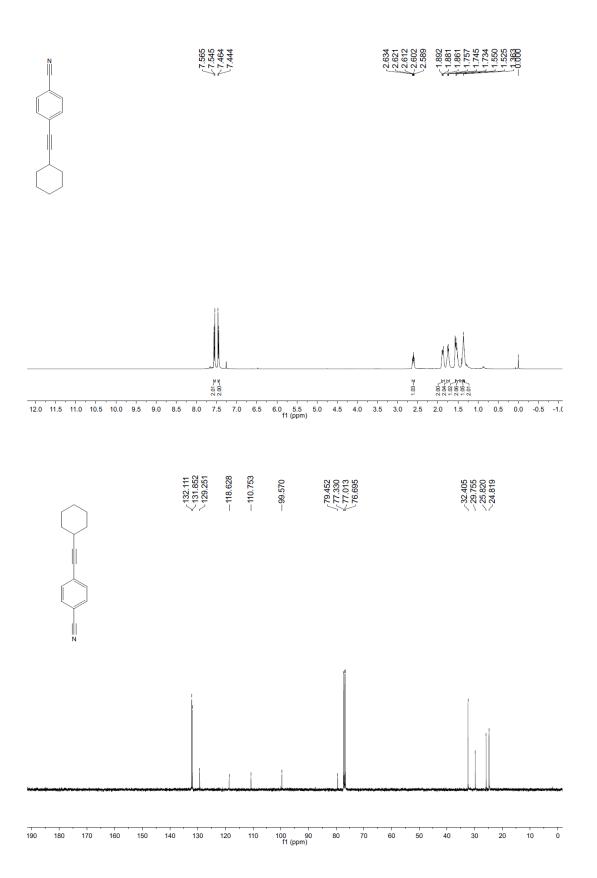
 $^1H$  NMR and  $^{13}C$  NMR spectra of compounds  $3k^{\prime}$  (in CDCl3)



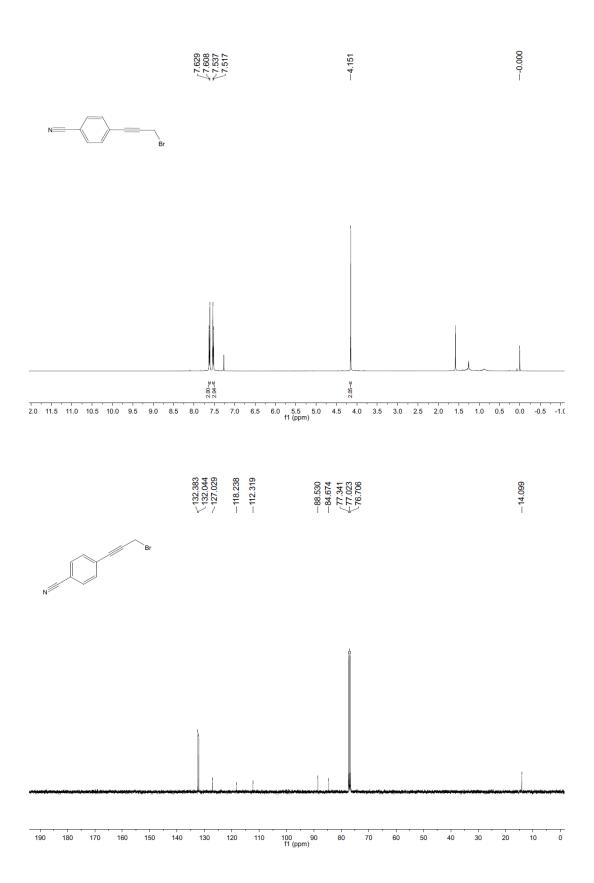
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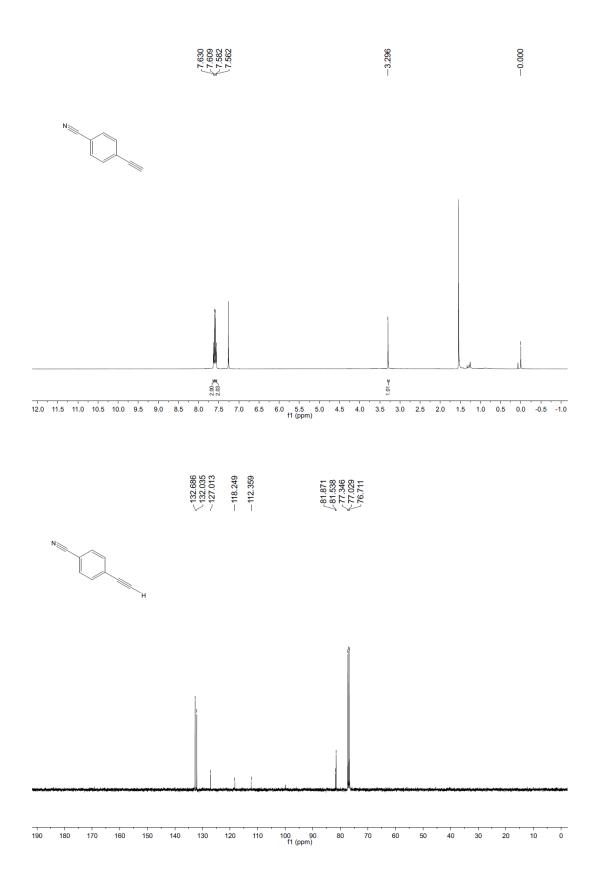
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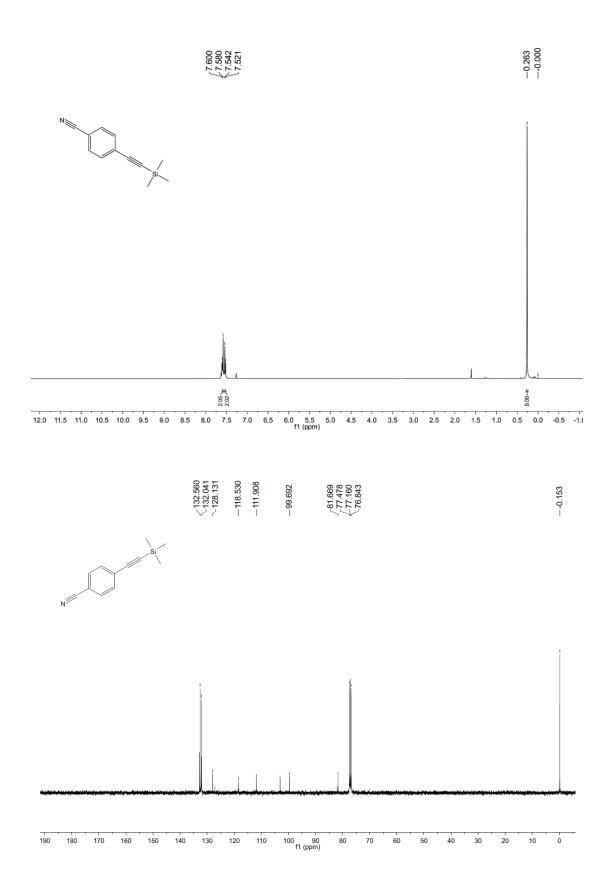
 $^1\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds 3n' (in CDCl3)



 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{30'}$  (in CDCl3)



 $^1\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $\mbox{3p'}$  (in CDCl3)



 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compounds  $3q^{*}$  (in CDCl3)