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Recyclable heterogeneous gold(I)-catalyzed oxidative ring expansion of alkynyl quinols: A practical access to tropone and its analogues

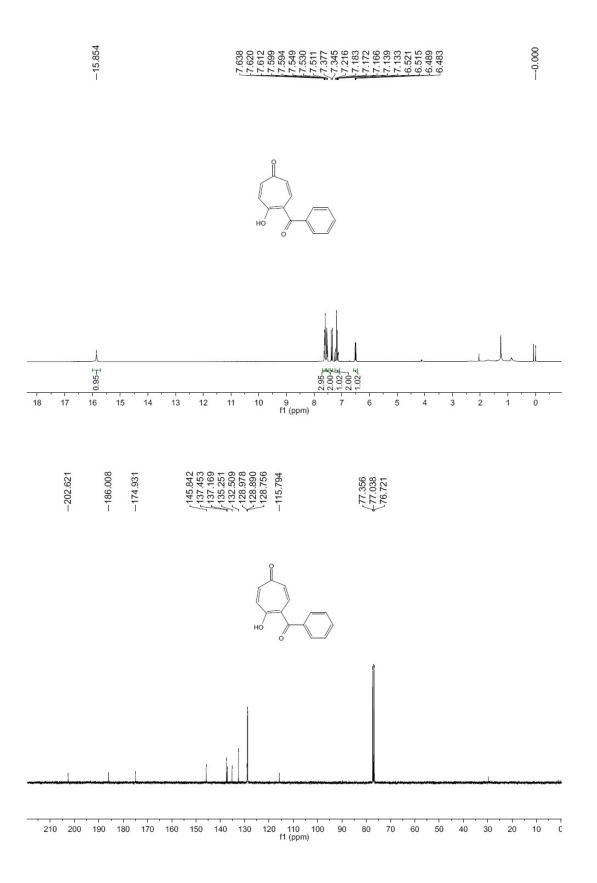
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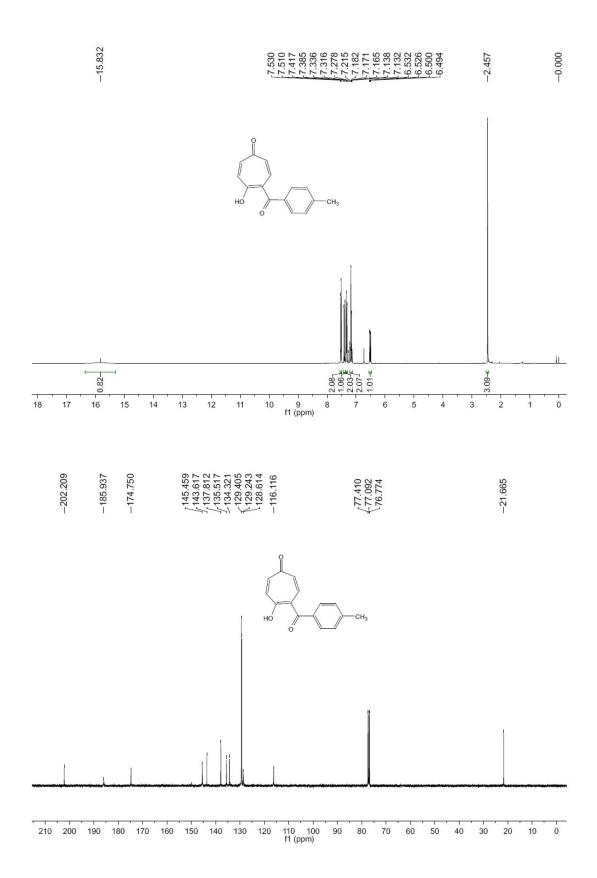
E-mail: mzcai@jxnu.edu.cn

 $^1H\ NMR$ and $^{13}C\ NMR$ Spectra of compounds 3a-3s and 5a-5g

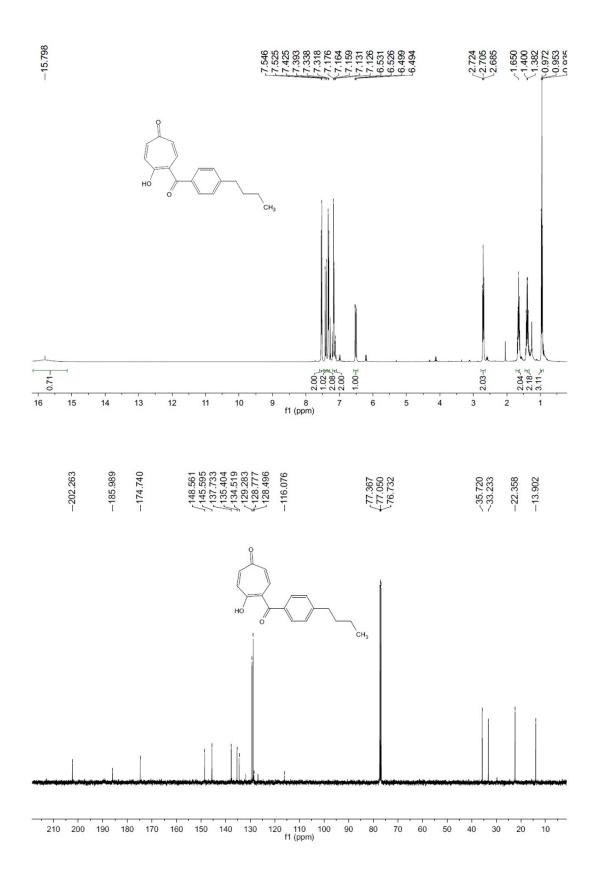
S2-S27



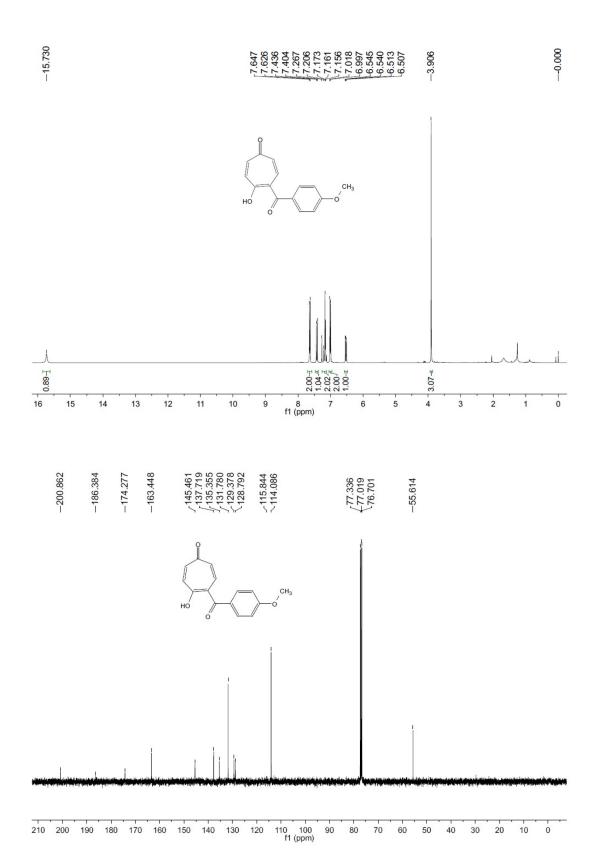
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 3a}$



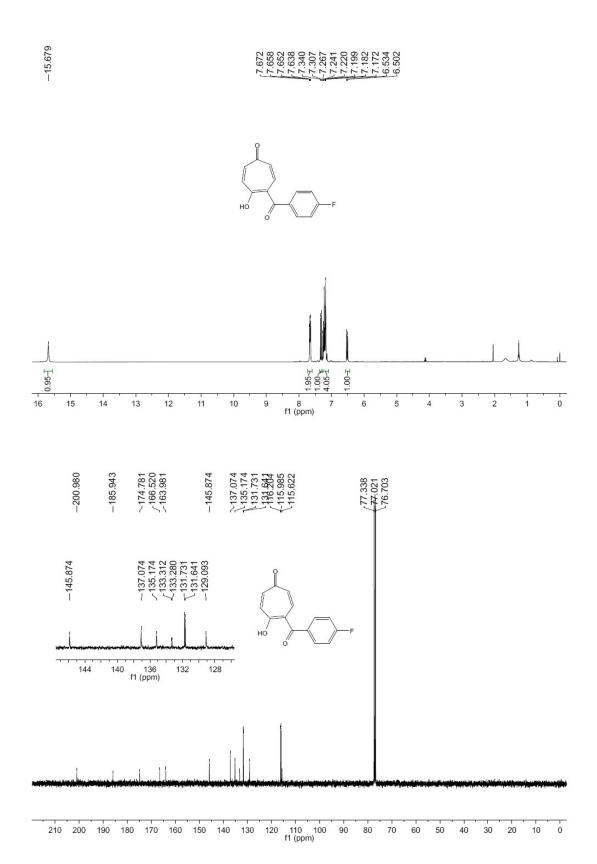
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 3b}$



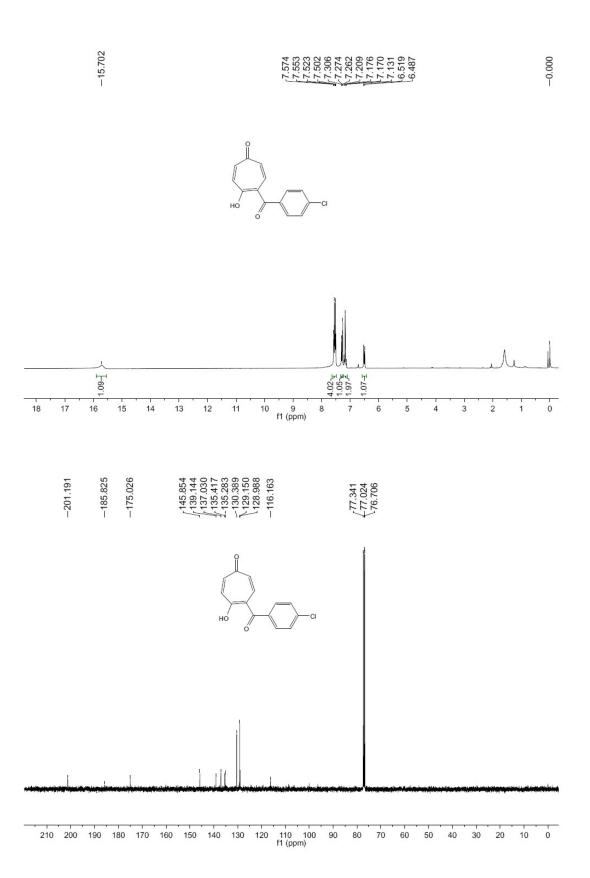
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3c



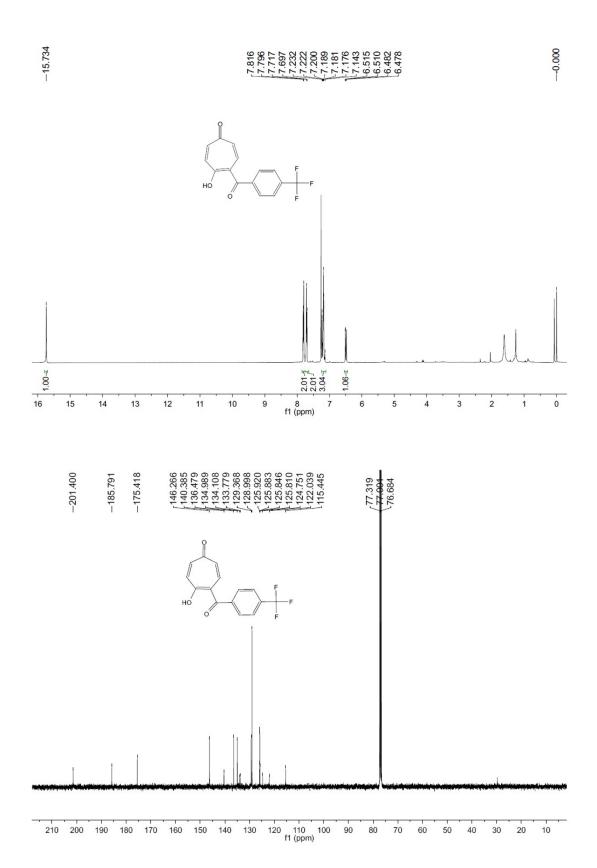
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 3d}$



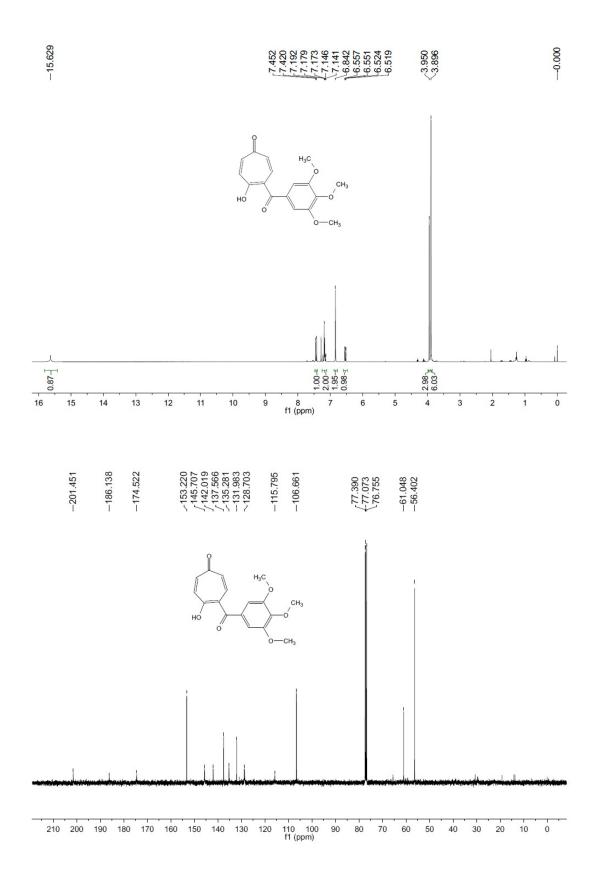
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3e



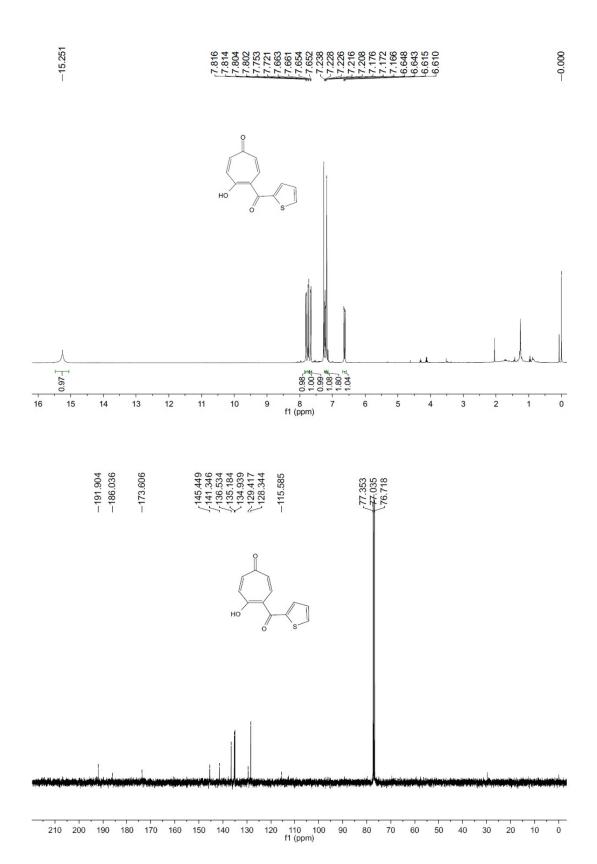
 $^1\mathrm{H}$ NMR and $^{13}\mathrm{C}$ NMR spectra of compound 3f



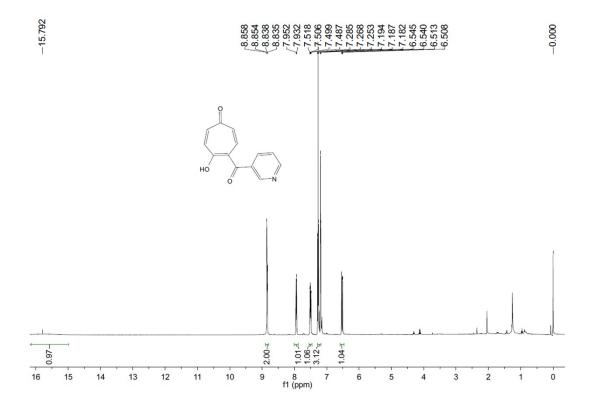
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3g

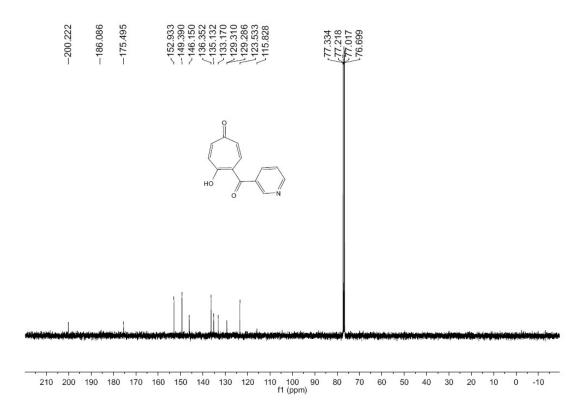


 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3h

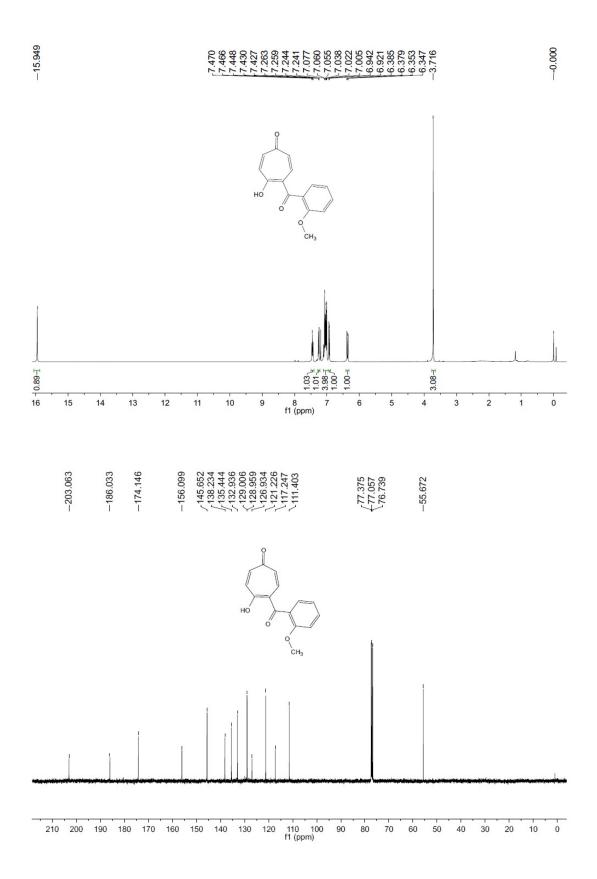


 $^1\mathrm{H}$ NMR and $^{13}\mathrm{C}$ NMR spectra of compound 3i

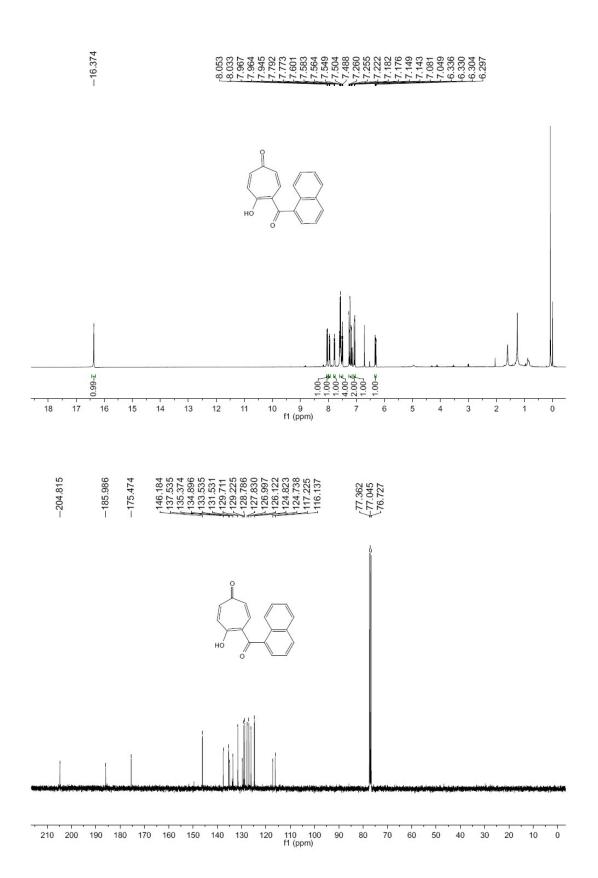




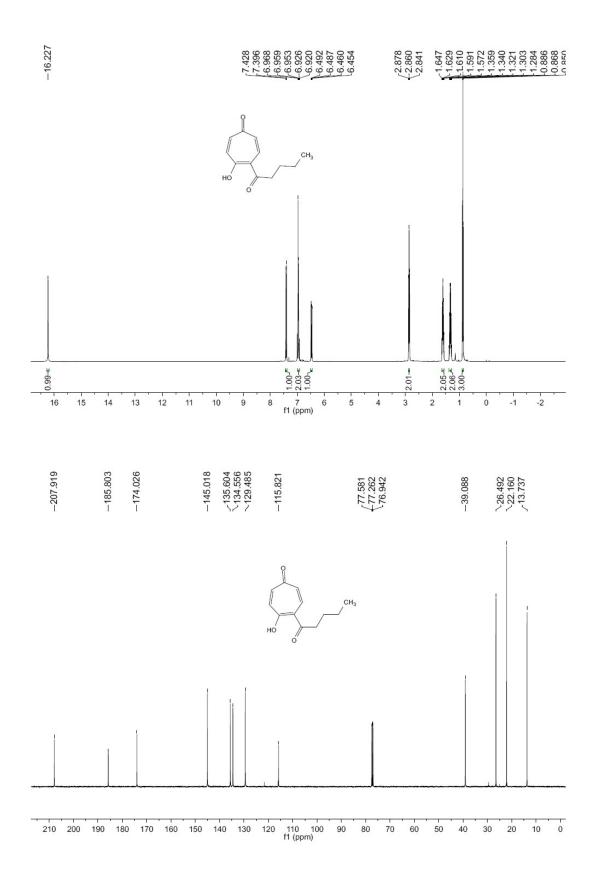
 $^1\mathrm{H}$ NMR and $^{13}\mathrm{C}$ NMR spectra of compound 3j



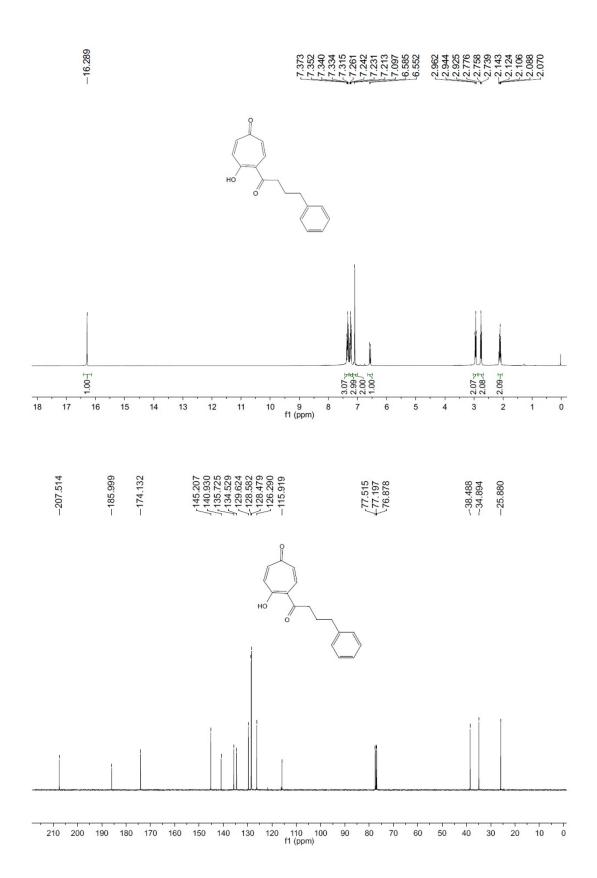
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3k



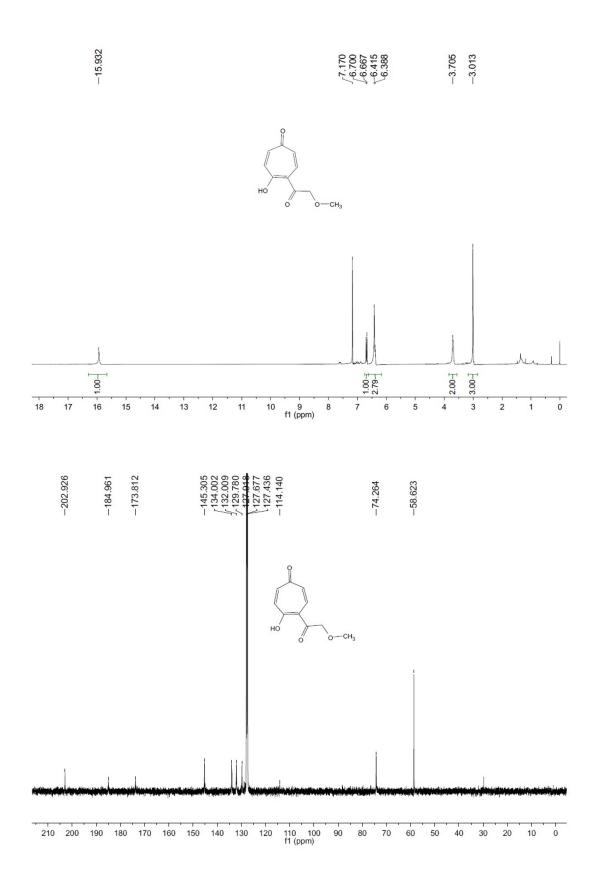
 $^1\mathrm{H}$ NMR and $^{13}\mathrm{C}$ NMR spectra of compound 3l



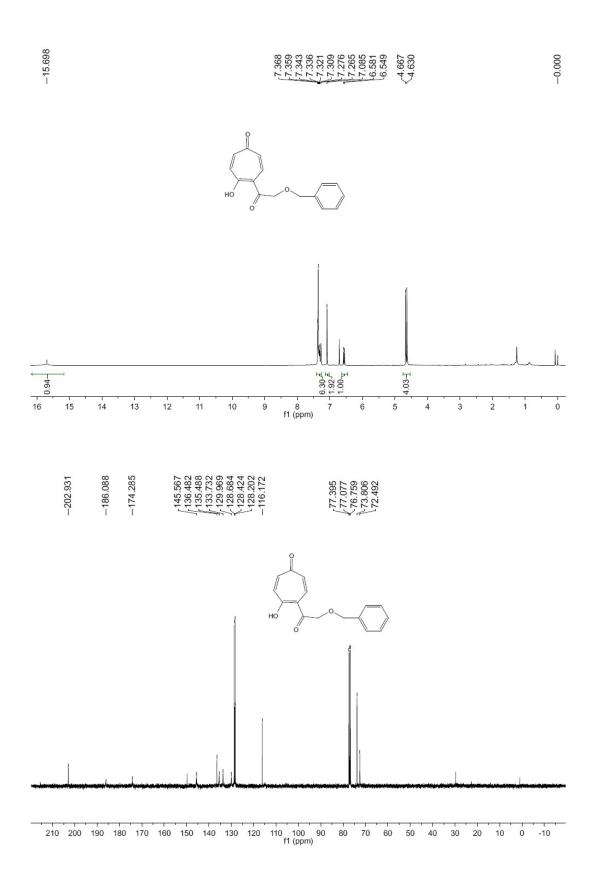
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3m



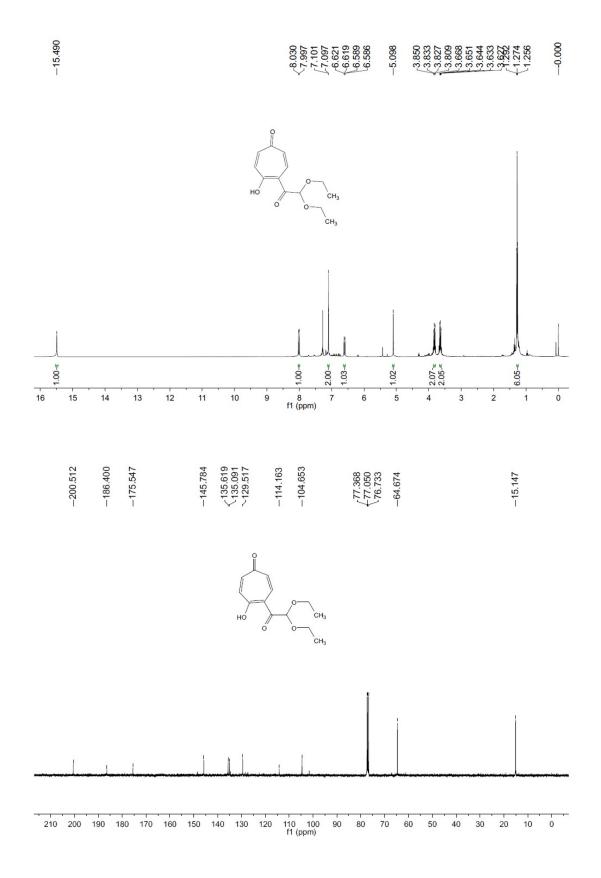
 $^1\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3n



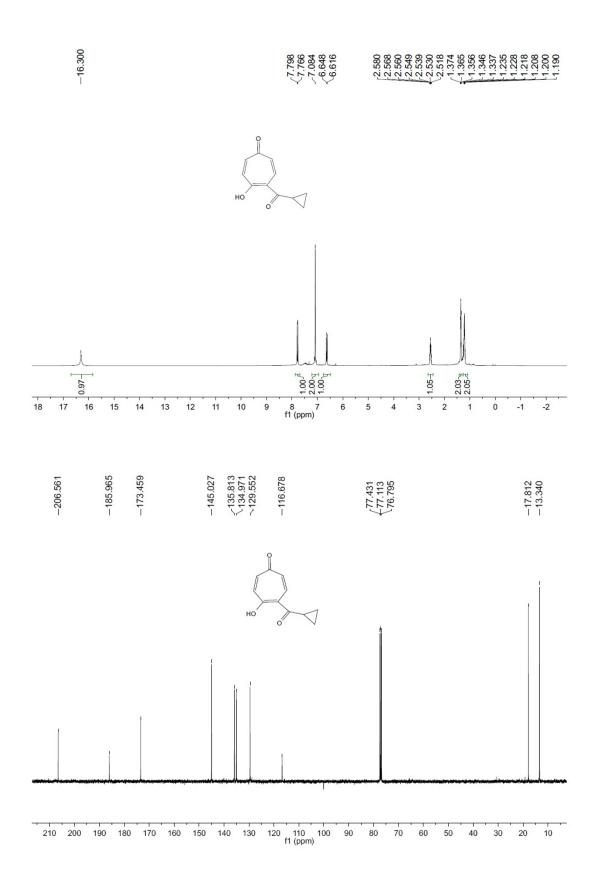
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3o



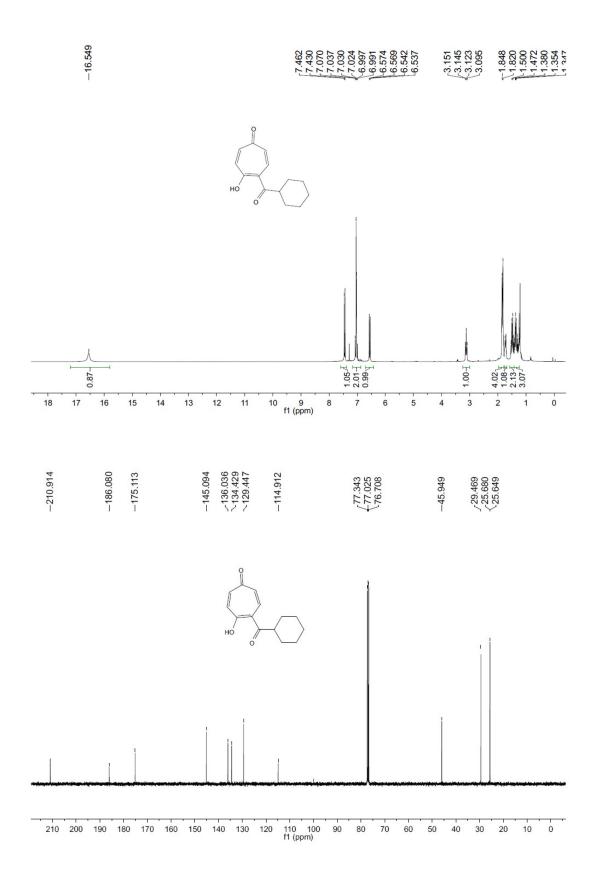
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3p



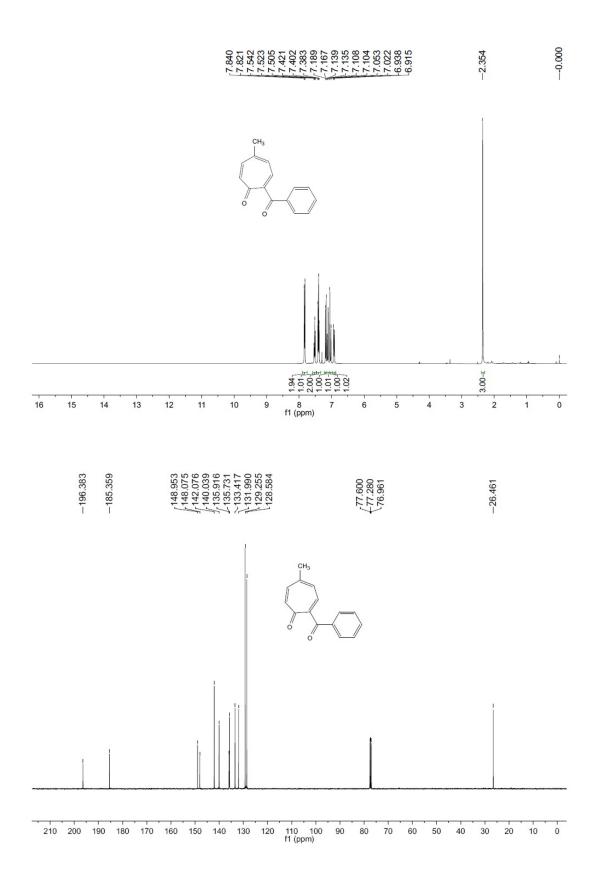
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3q



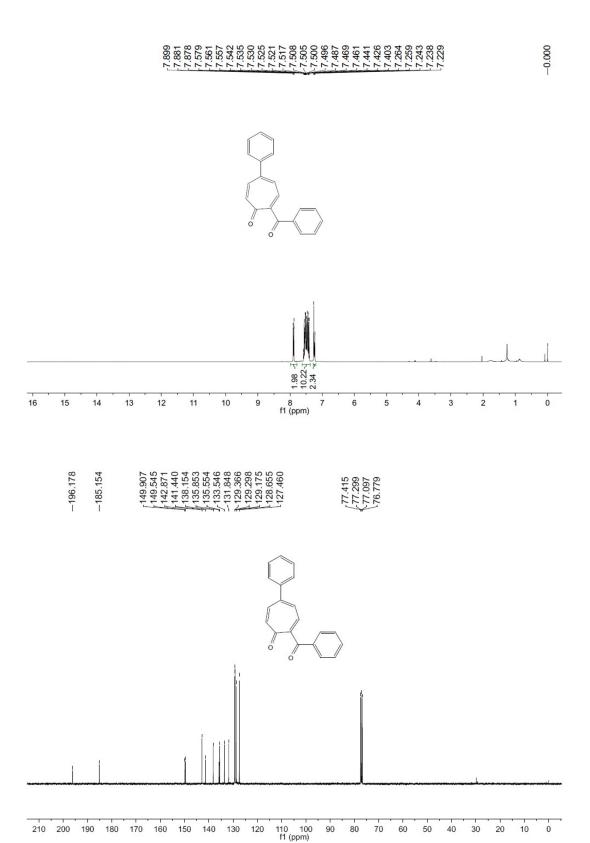
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3r



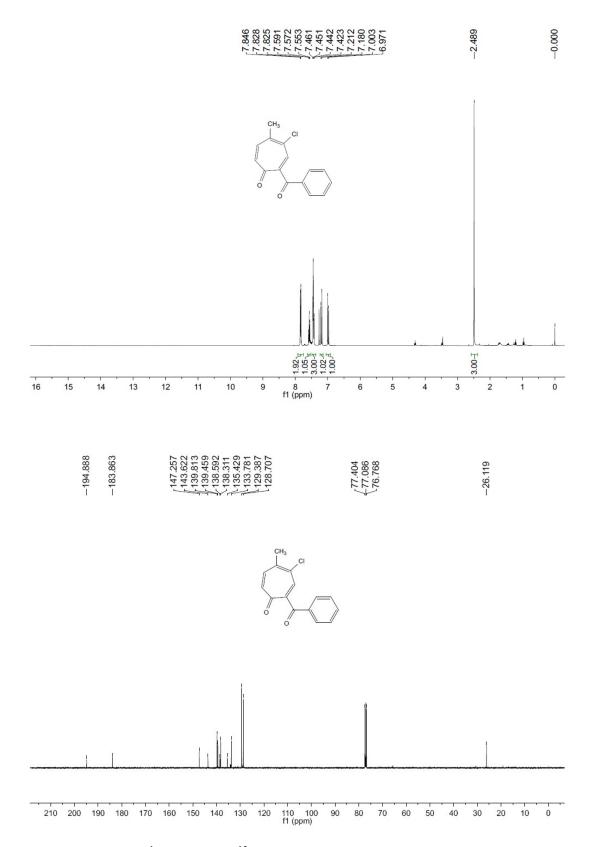
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 3s



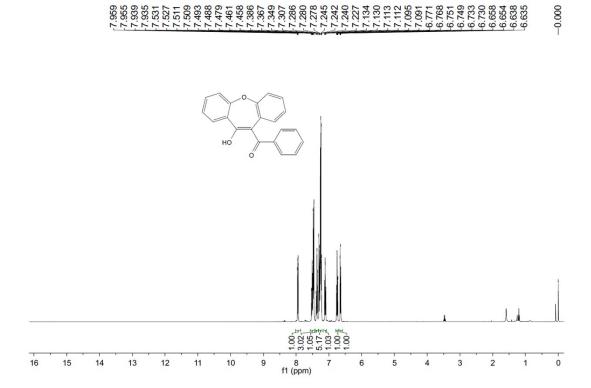
 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 5a}$

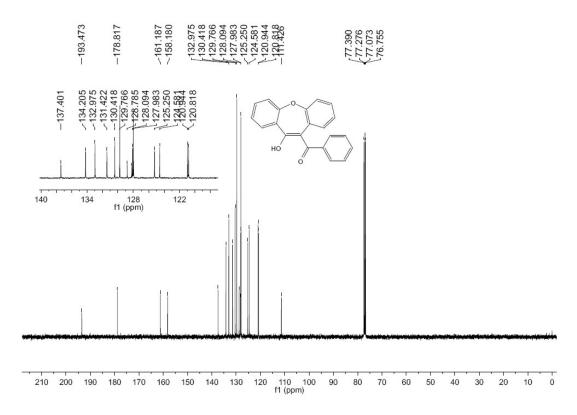


 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 5b}$

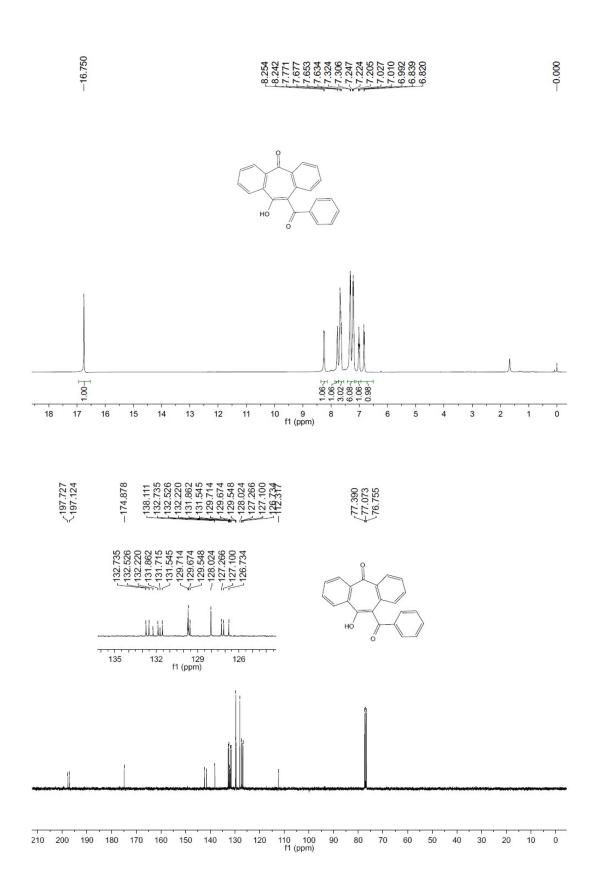


 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound 5c

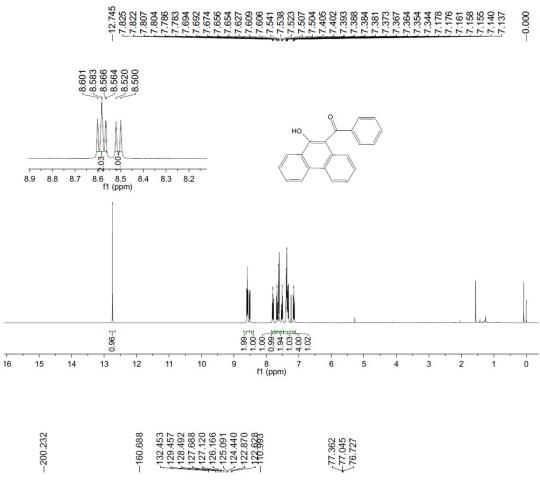


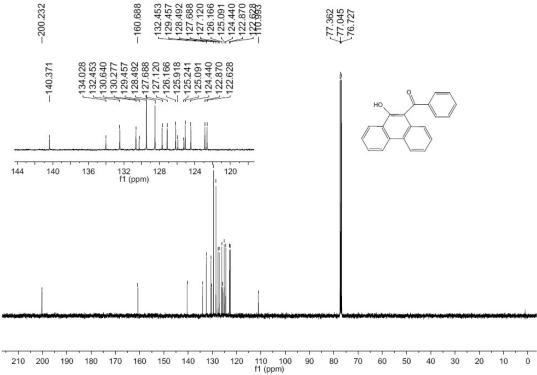


 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 5d}$

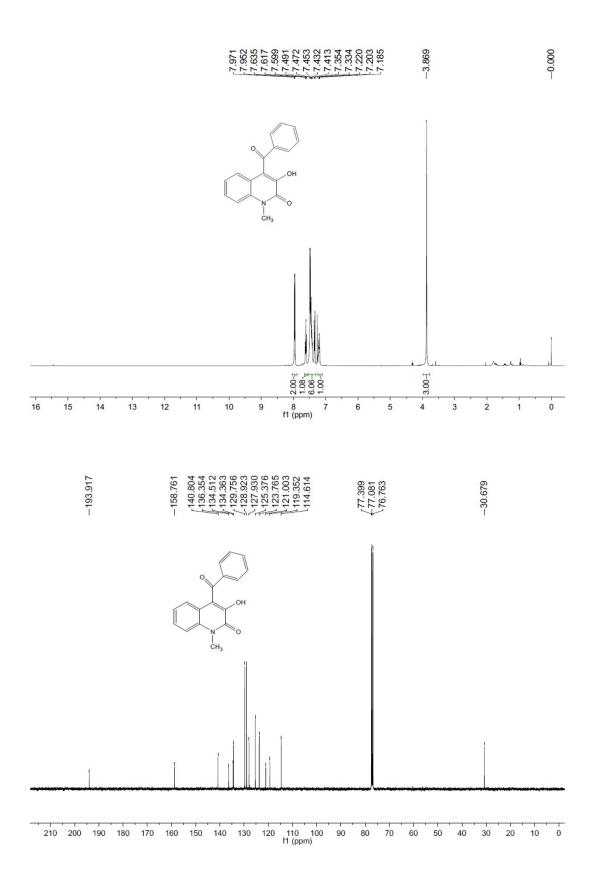


 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound $\bf 5e$





 $^{1}\mathrm{H}$ NMR and $^{13}\mathrm{C}$ NMR spectra of compound $\mathbf{5f}$



 $^{1}\mbox{H}$ NMR and $^{13}\mbox{C}$ NMR spectra of compound ${\bf 5g}$