## **Supporting Information:**

## Highly efficient heterogeneous aerobic oxidative C–C coupling from $C_{sp^3}$ –H bonds by a magnetic nanoparticlesimmobilized bipy-gold(III) catalyst

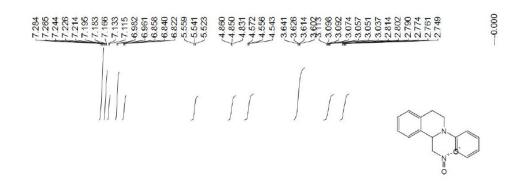
Weisen Yang, a,b Li Wei, Tao Yan and Mingzhong Caia\*

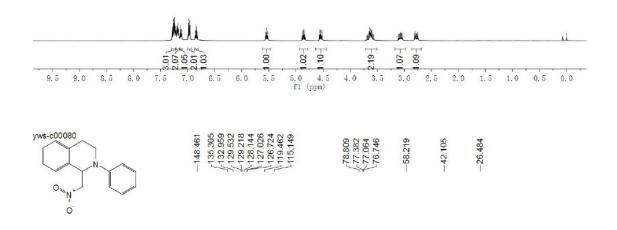
<sup>a</sup> Key Laboratory of Functional Small Organic Molecule, Ministry of Education and College of Chemistry & Chemical Engineering, Jiangxi Normal University, Nanchang 330022, P. R. China

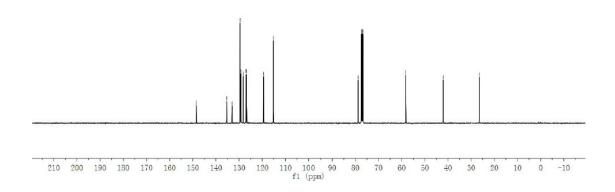
<sup>b</sup> College of Ecology and Resources Engineering, Wuyi University, Wuyishan City 354300, P. R. China

E-mail: mzcai@jxnu.edu.cn

Copies of <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compounds 3a-3b'



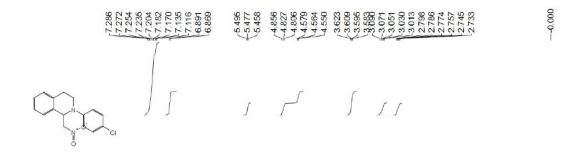


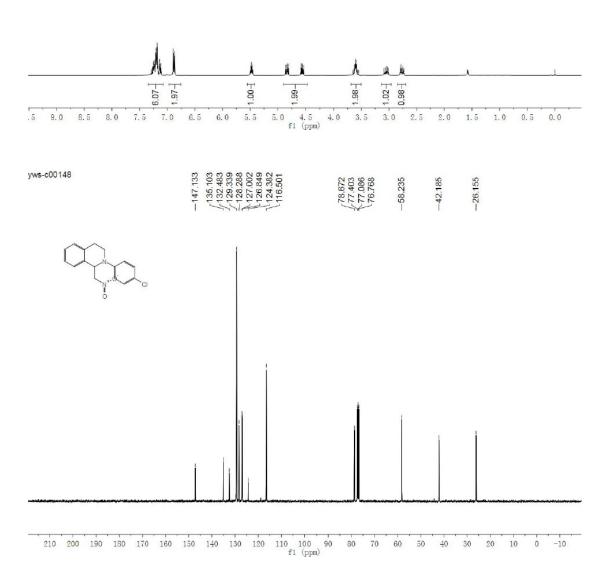


<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3a** 

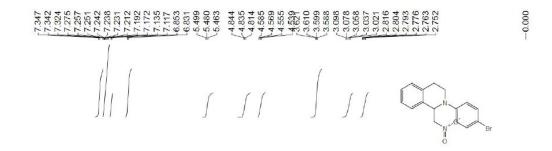


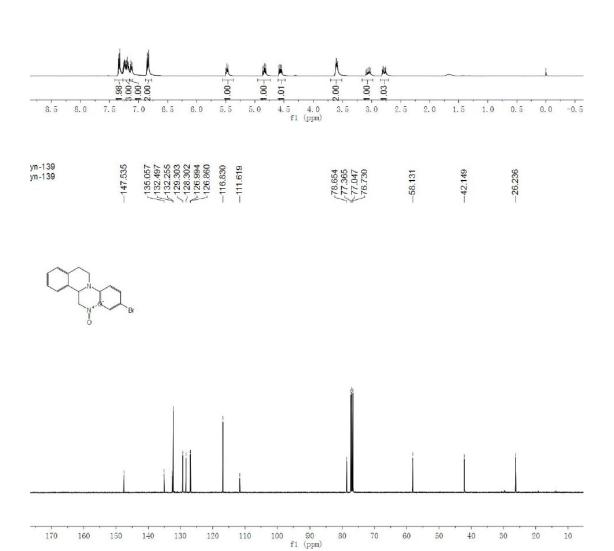
 $^1 H$  NMR and  $^{13} C$  NMR spectra of compound  ${\bf 3b}$ 



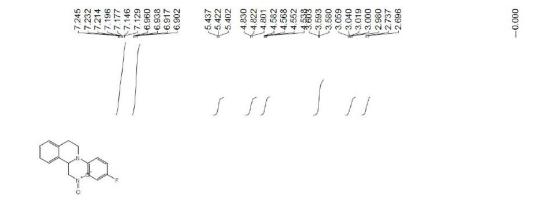


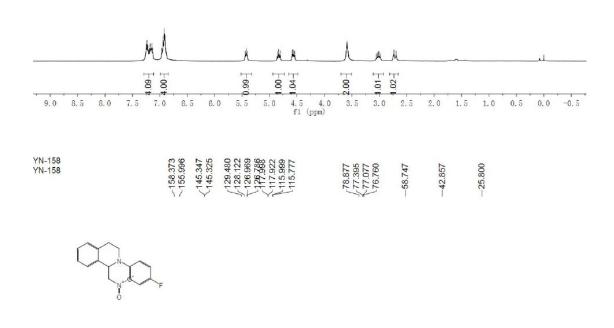
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3c** 

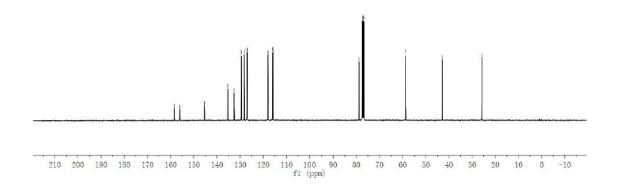




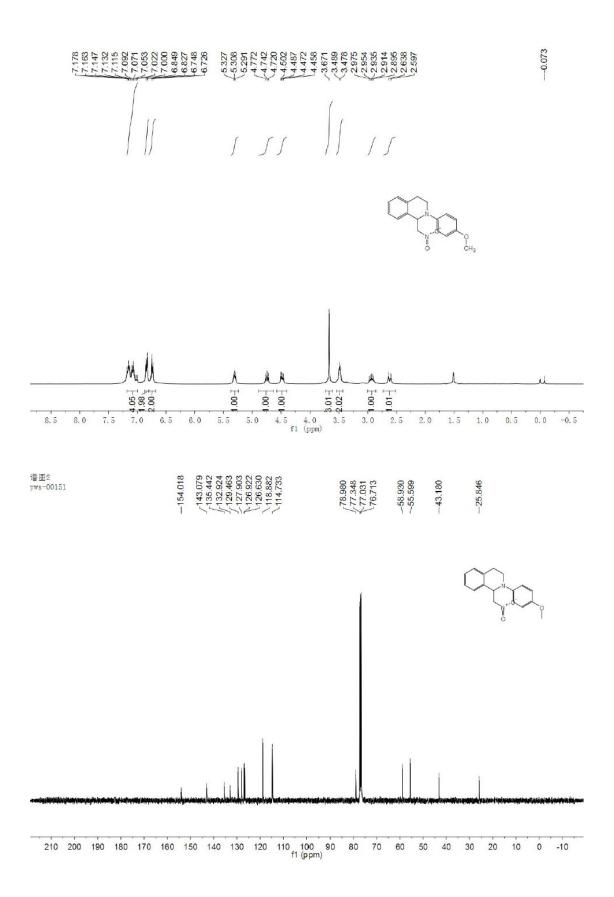
 $^1 H$  NMR and  $^{13} C$  NMR spectra of compound  ${\bf 3d}$ 



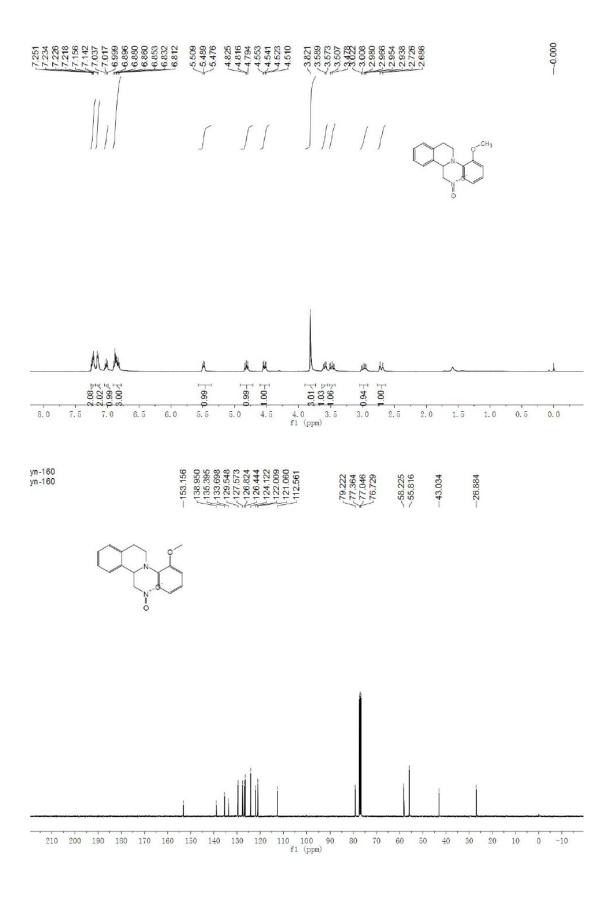




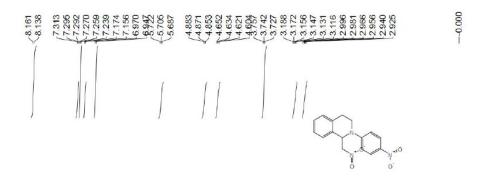
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3e

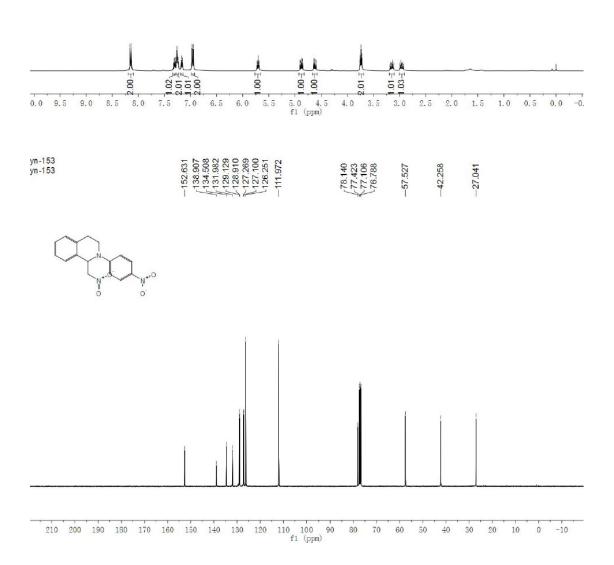


<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3f** 

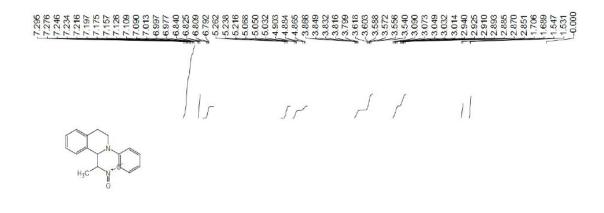


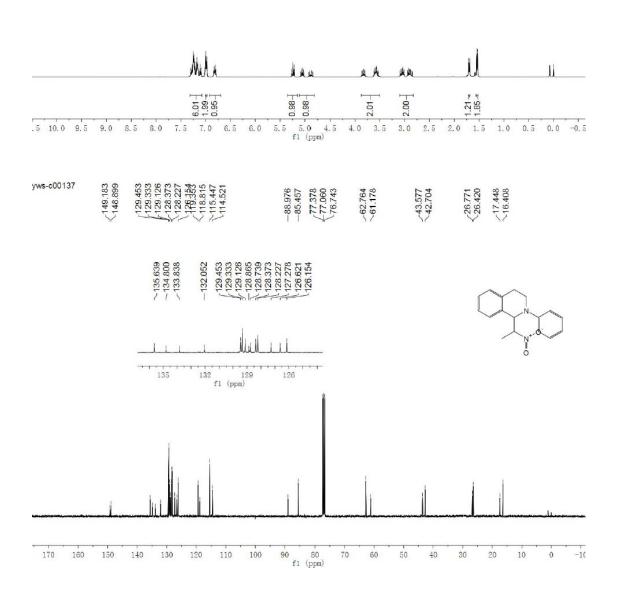
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3g** 



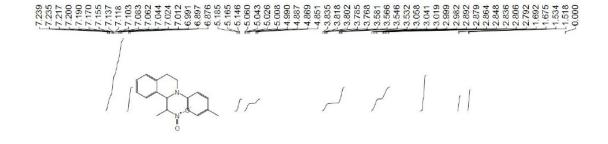


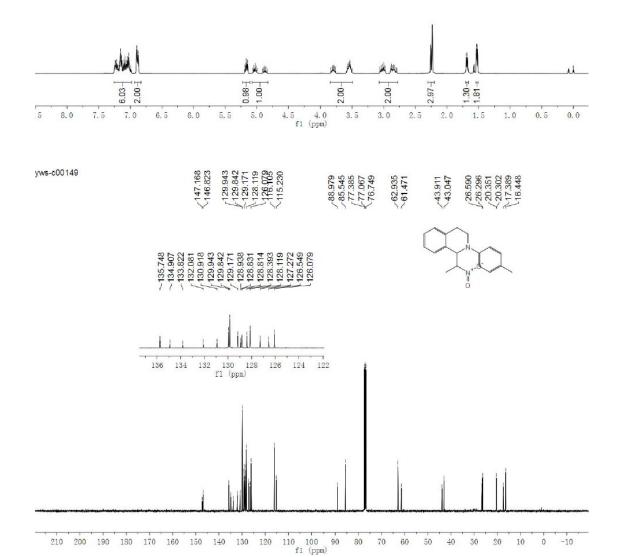
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3h** 



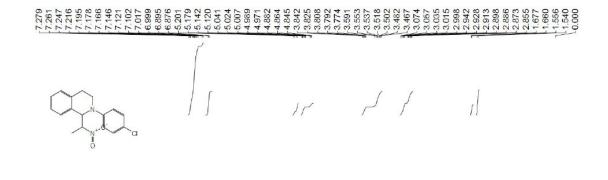


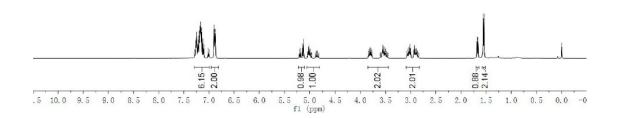
 $^1 H$  NMR and  $^{13} C$  NMR spectra of compound 3i

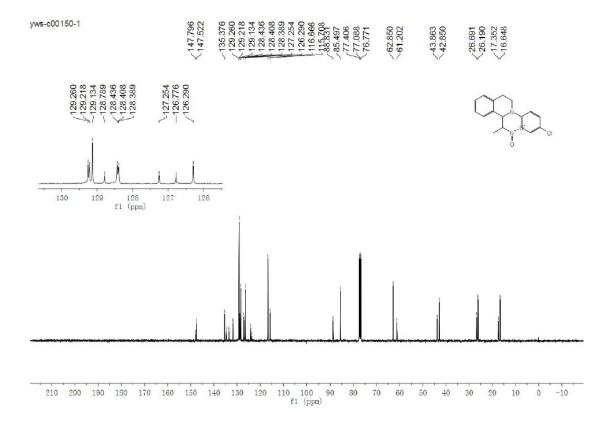




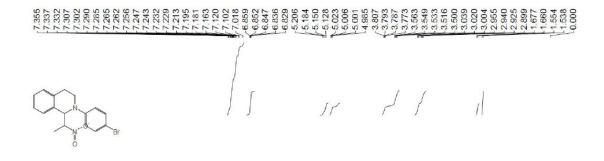
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3j** 

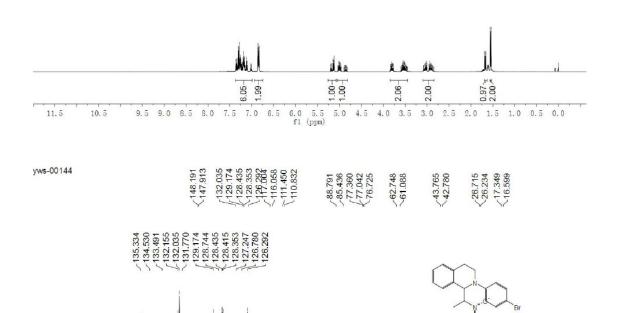


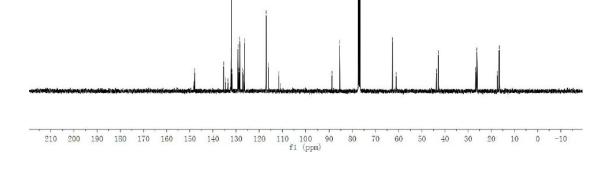




 $^1 H$  NMR and  $^{13} C$  NMR spectra of compound 3k





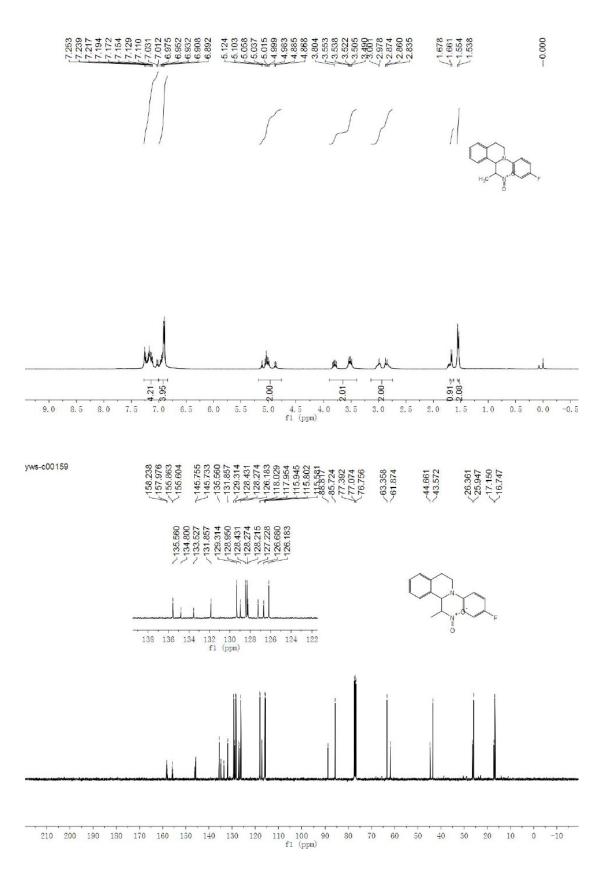


124 122

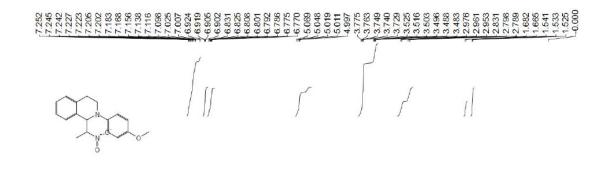
132 130 128 fl (ppm)

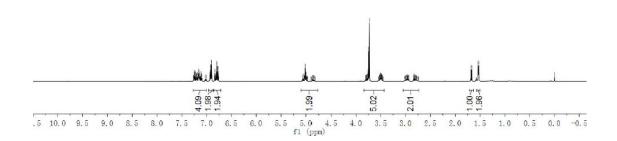
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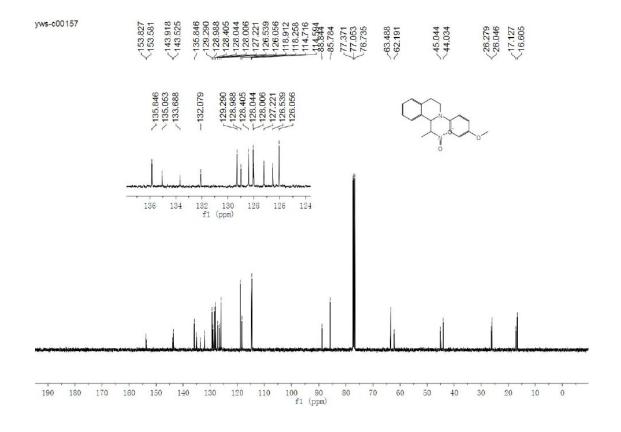
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **31** 



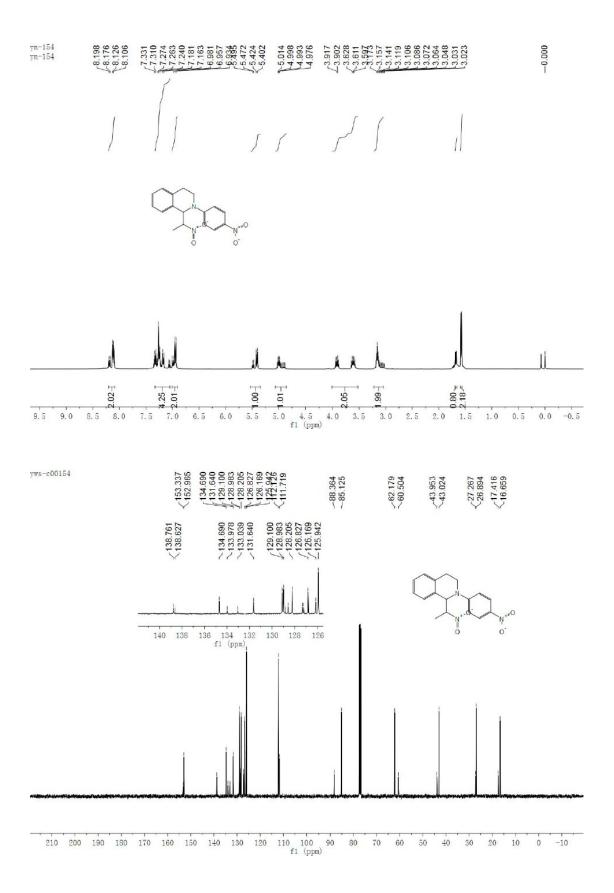
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3m** 



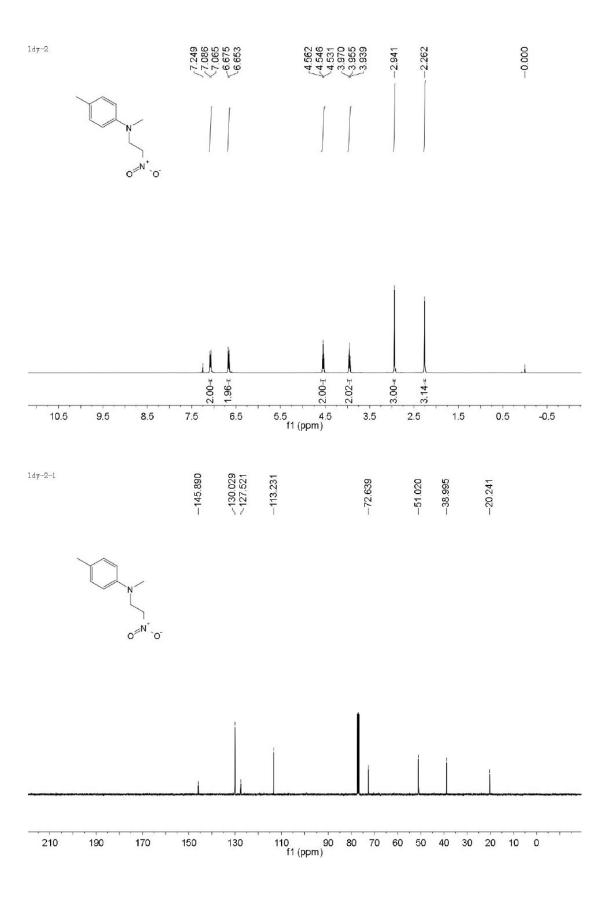




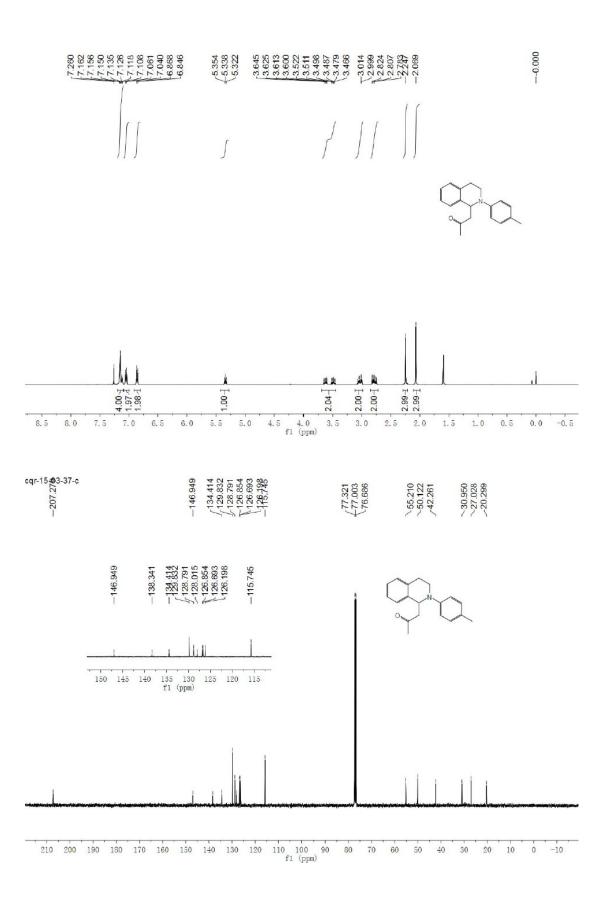
 $^{1}\mathrm{H}$  NMR and  $^{13}\mathrm{C}$  NMR spectra of compound 3n



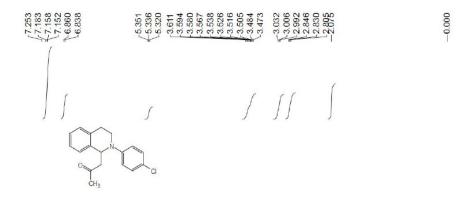
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **30** 

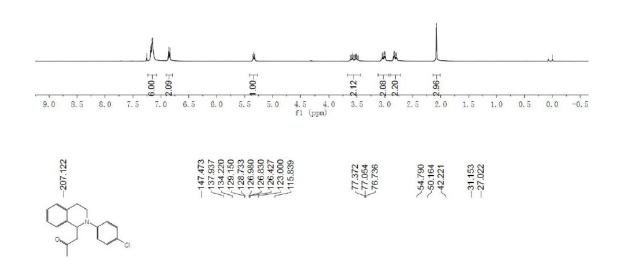


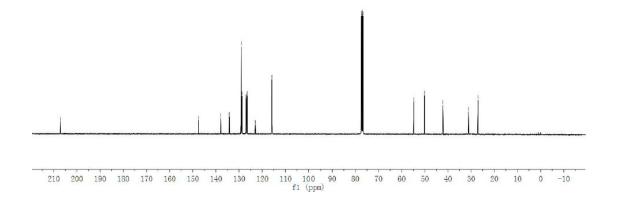
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3p



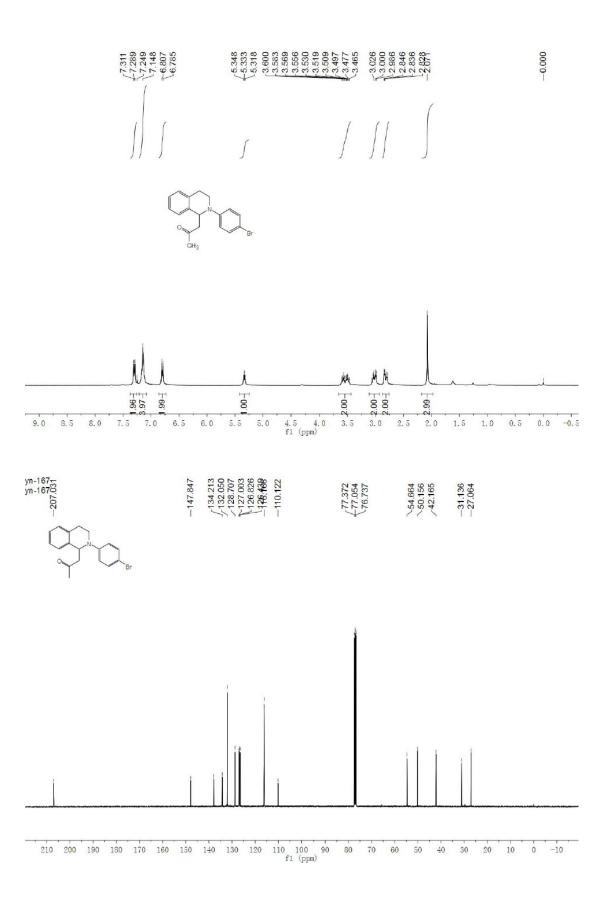
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3q** 



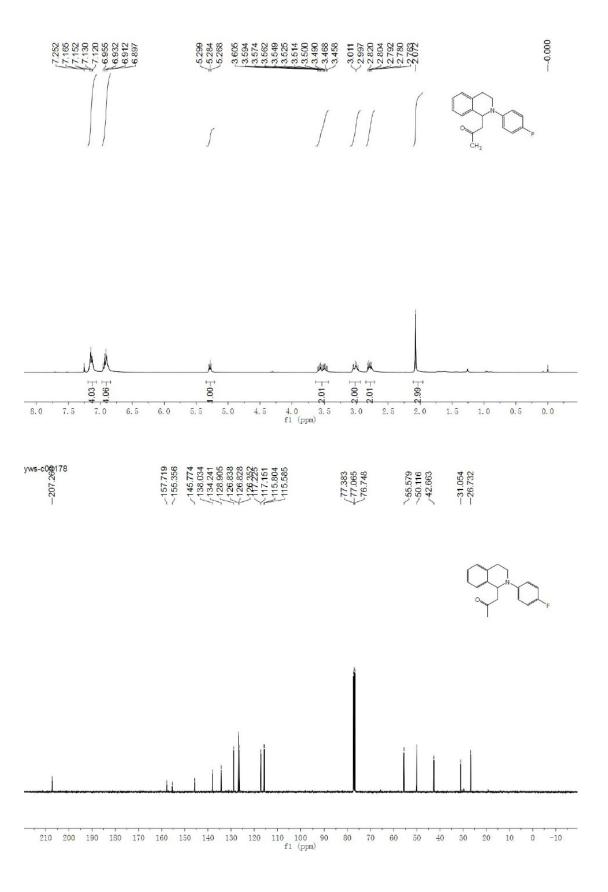




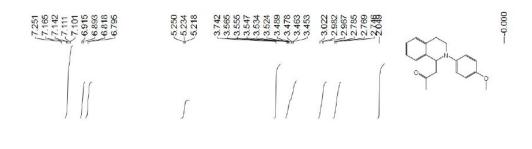
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3r

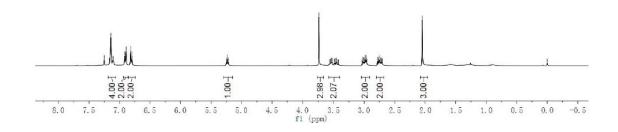


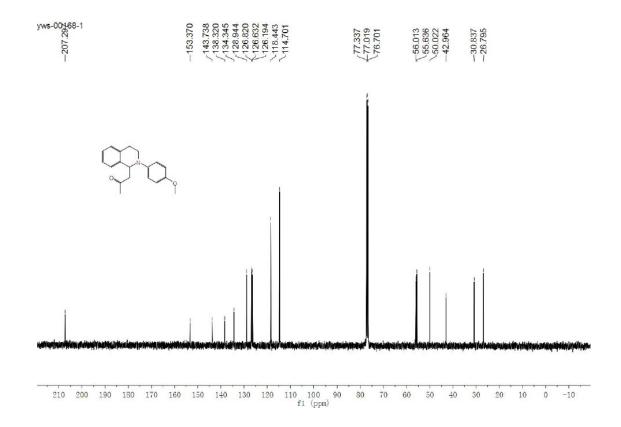
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3s



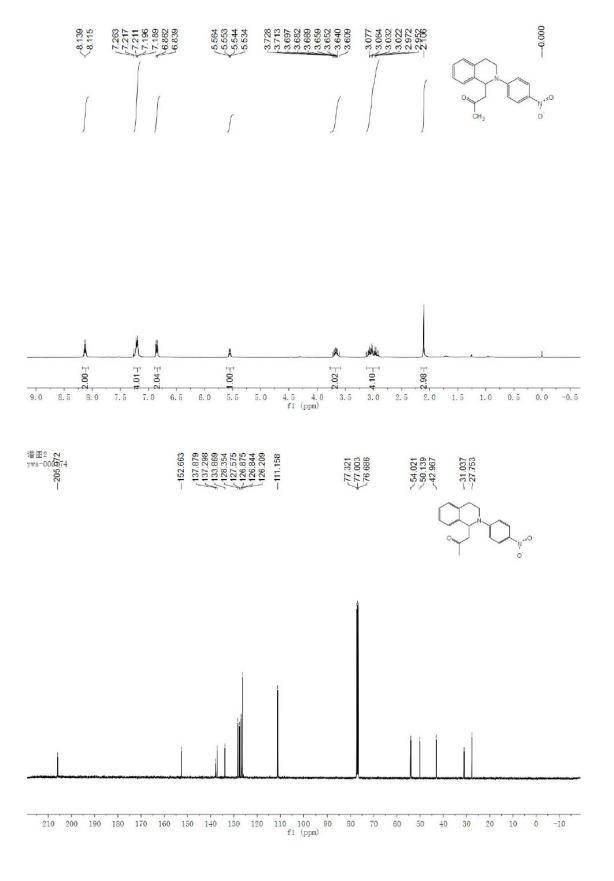
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3t** 



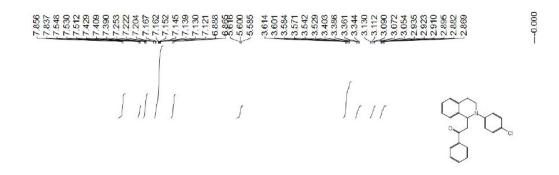


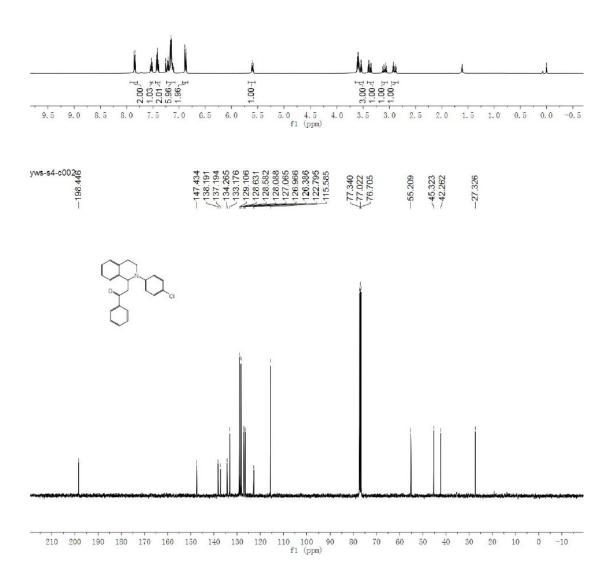


 $^1\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3u

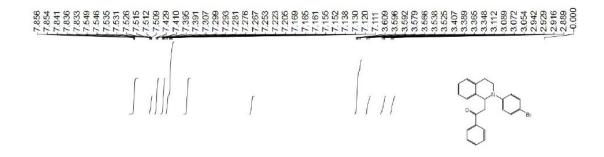


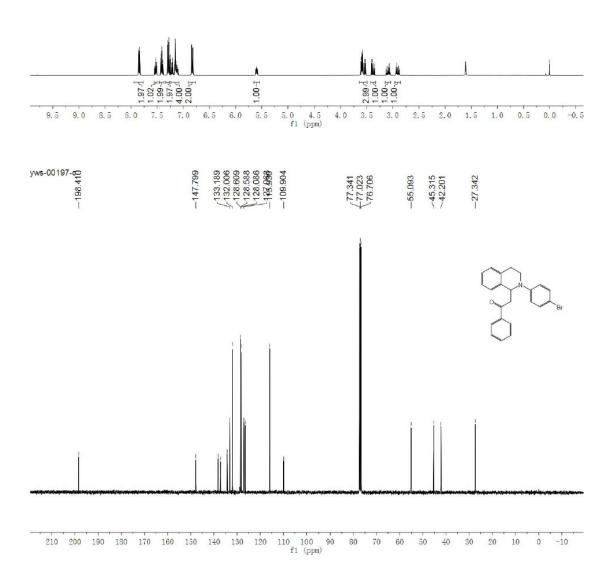
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3v



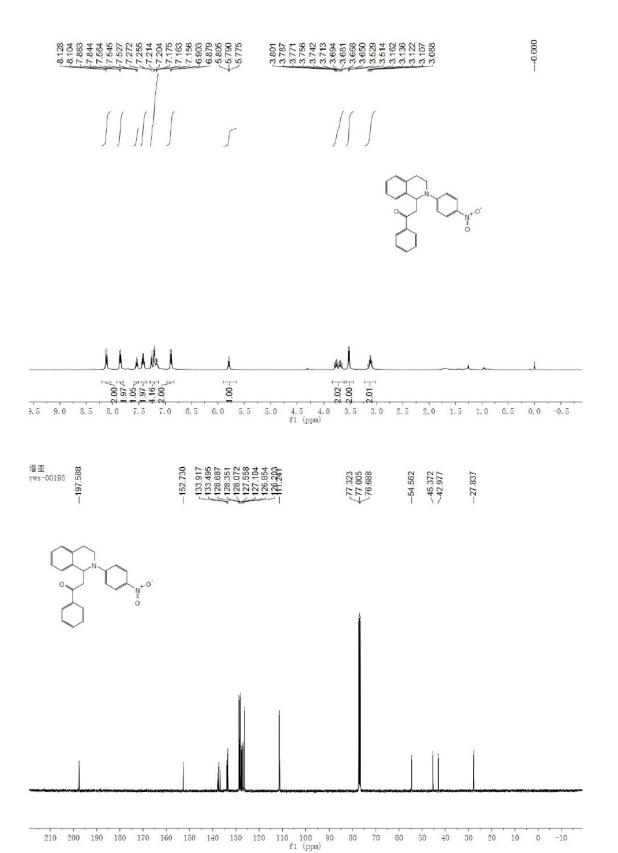


<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3w** 

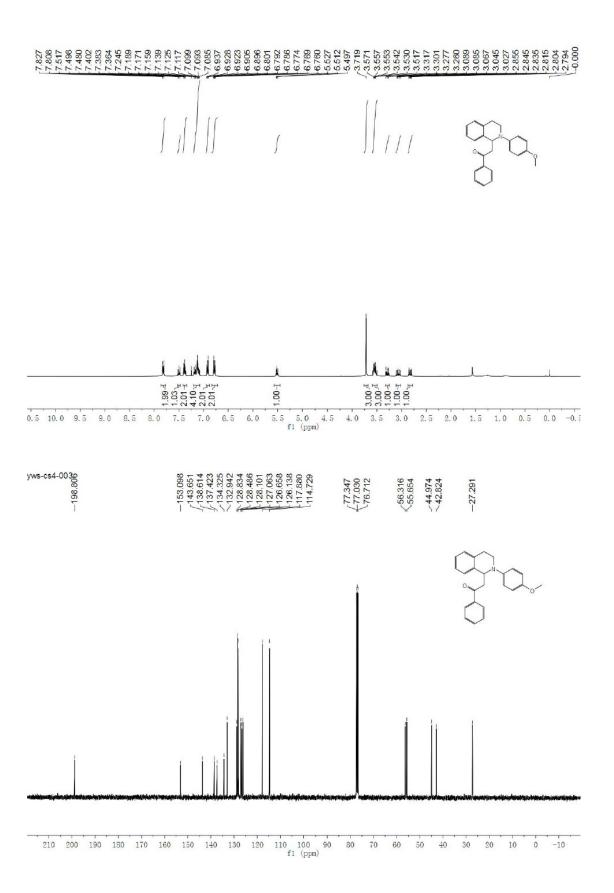




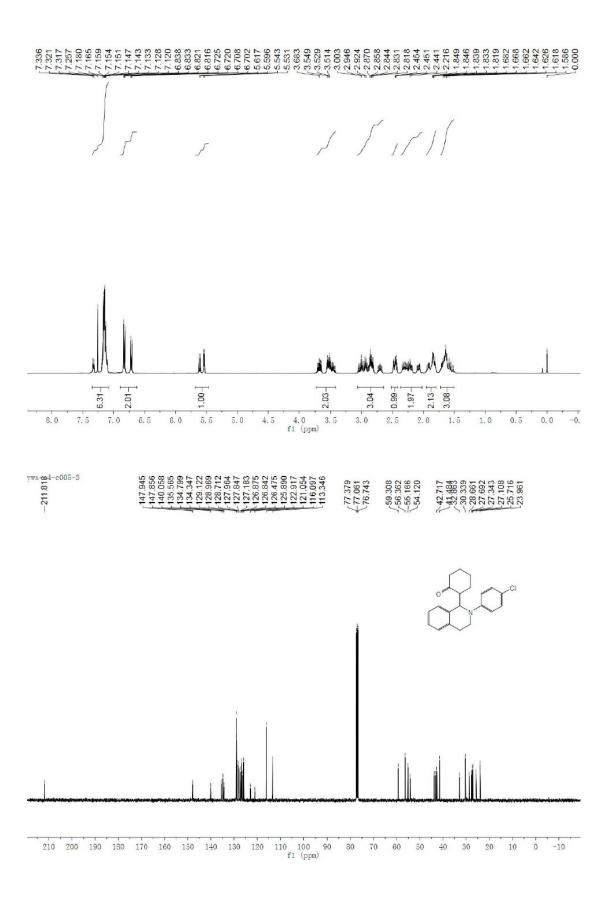
 $^{1}\mbox{H}$  NMR and  $^{13}\mbox{C}$  NMR spectra of compound 3x



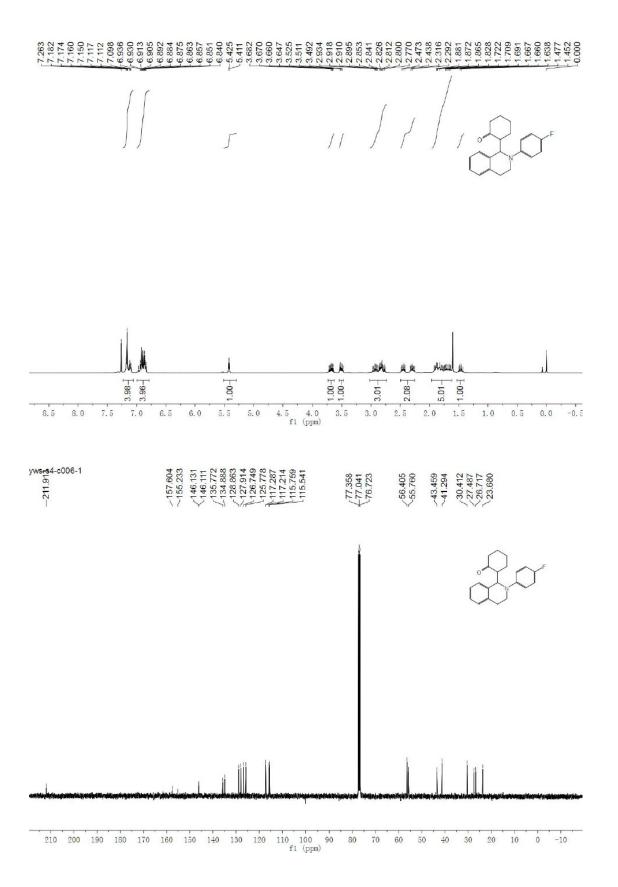
<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3y** 



<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3z** 



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



<sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound **3b'**