

## Supporting Information

### Total synthesis of pulmonarin B and design of bromated-phenylacetic acid/tacrine hybrids: marine pharmacophore inspired discovery of new ChE and A $\beta$ aggregation inhibitors

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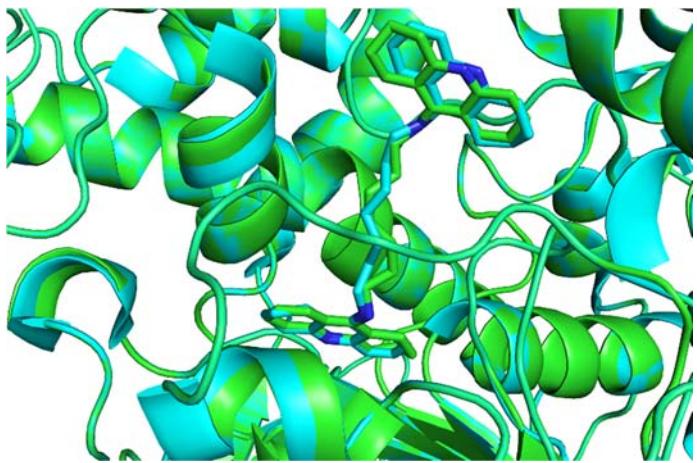
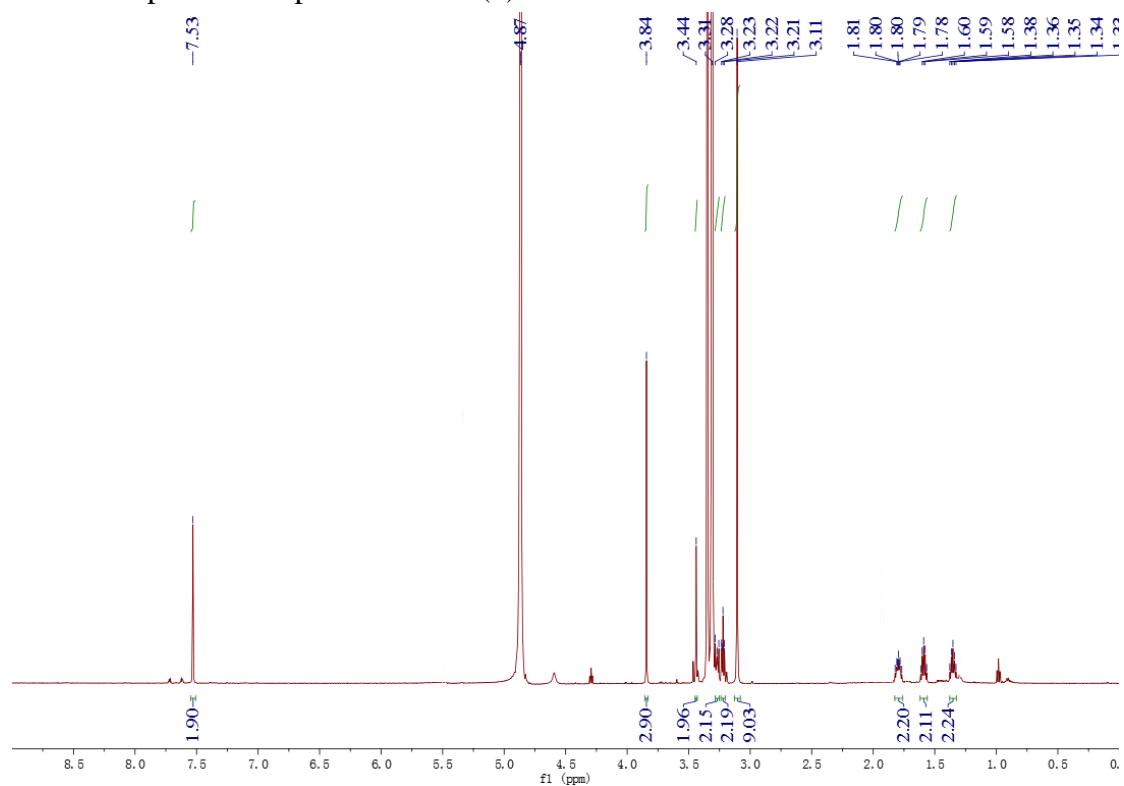
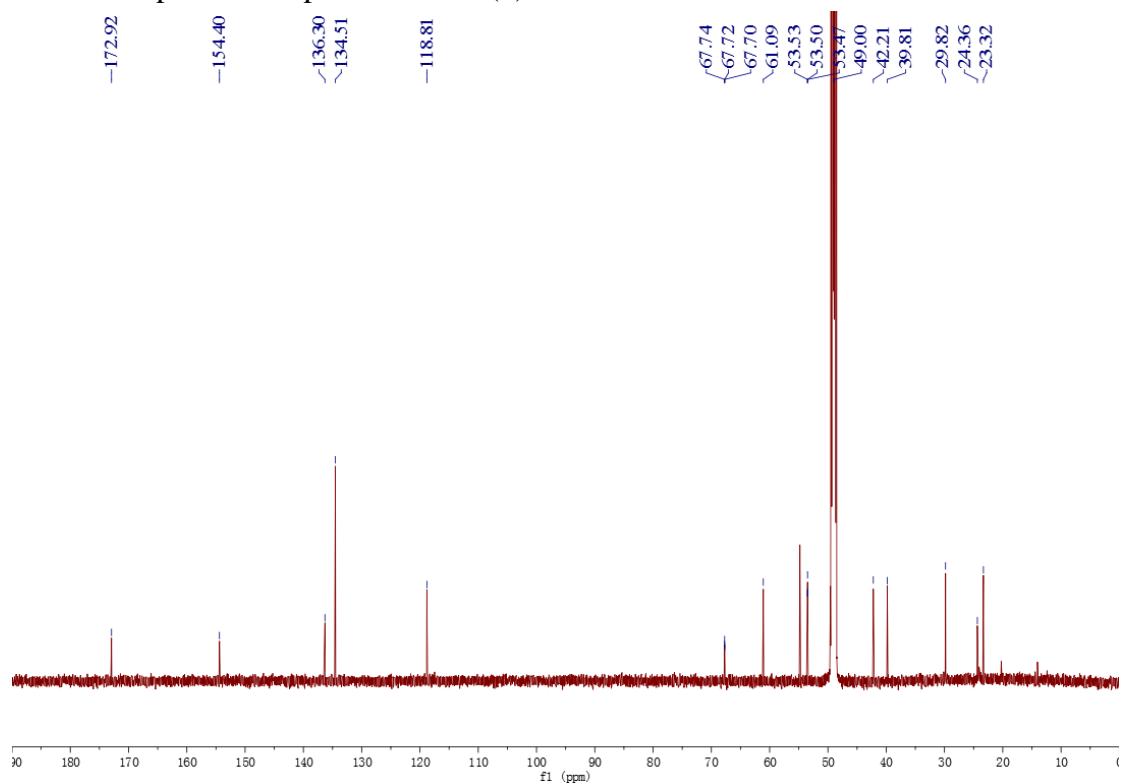


Figure S1. Comparison of the redocked alkylene-linked bis-tacrine to 5EI5 with its original crystal structures. The re-docked ligand was shown in sticks with green color, while the original crystal structure was shown in sticks with cyan color.

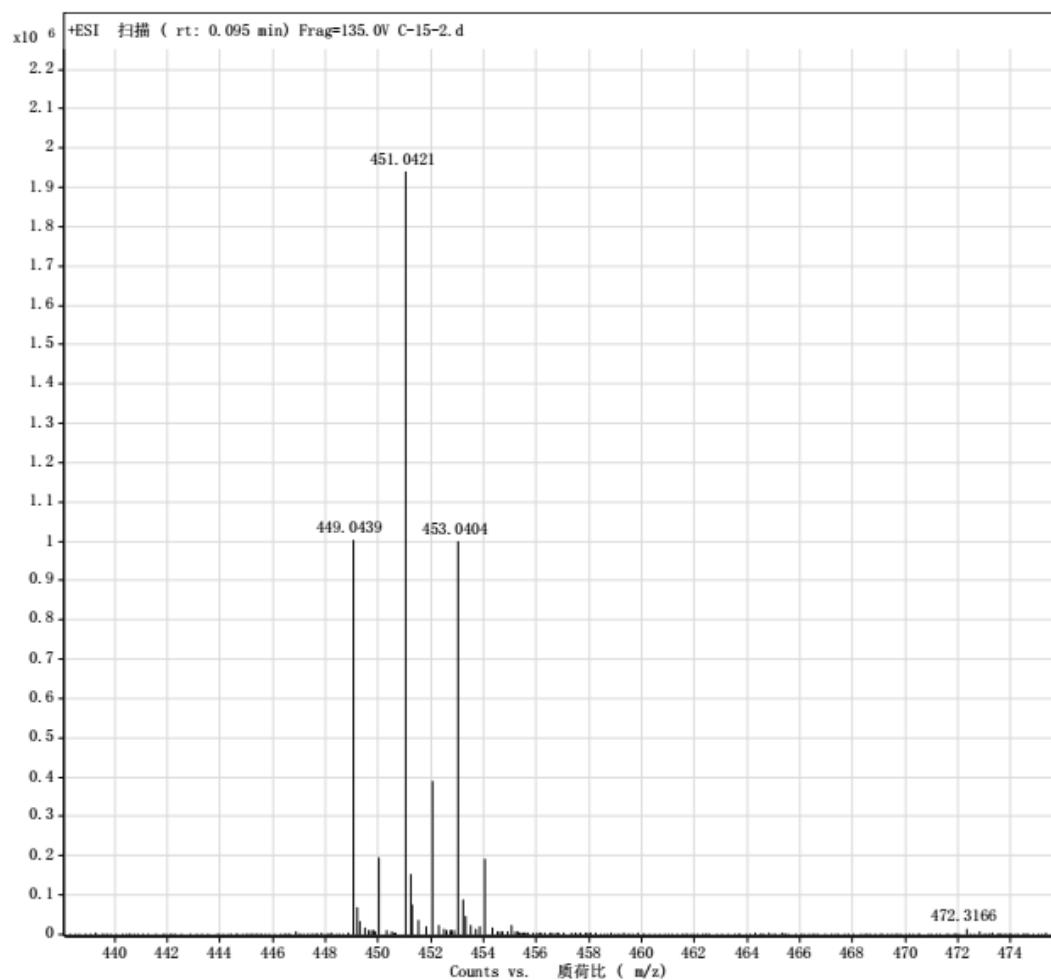
<sup>1</sup>H NMR spectrum of pulmonarin B (**1**)



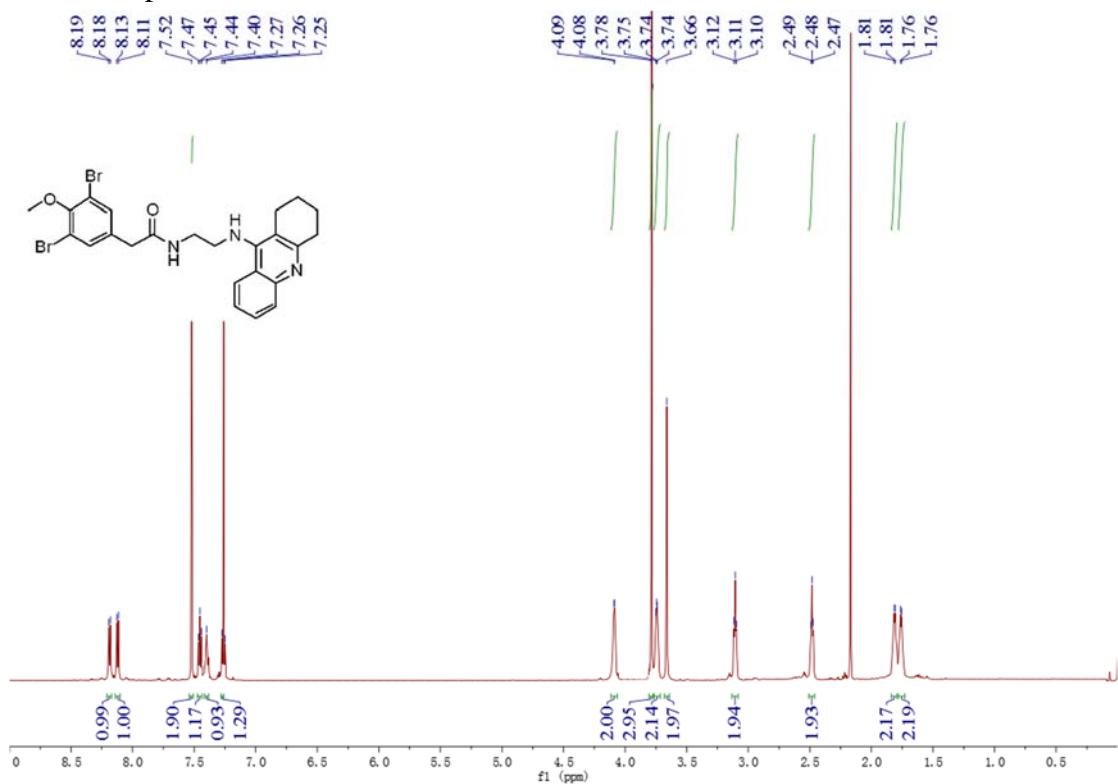
<sup>13</sup>C NMR spectrum of pulmonarin B (**1**)



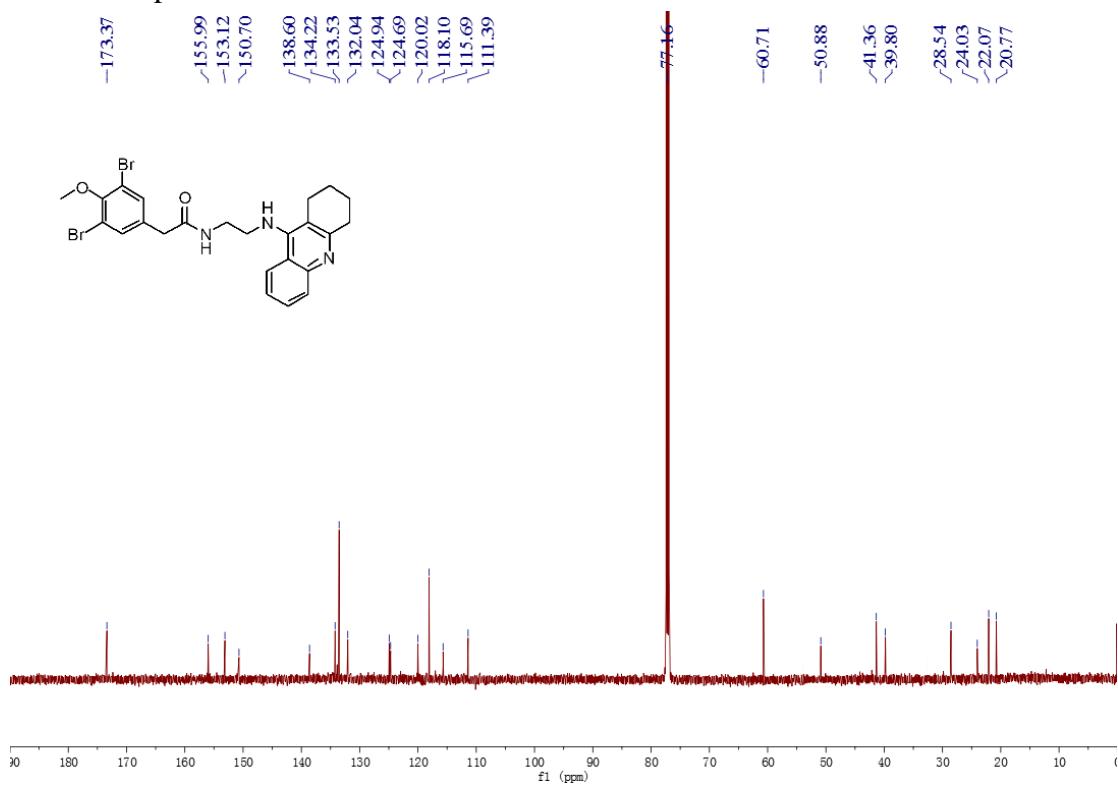
HR-MS (ESI) spectrum of pulmonarin B (**1**)



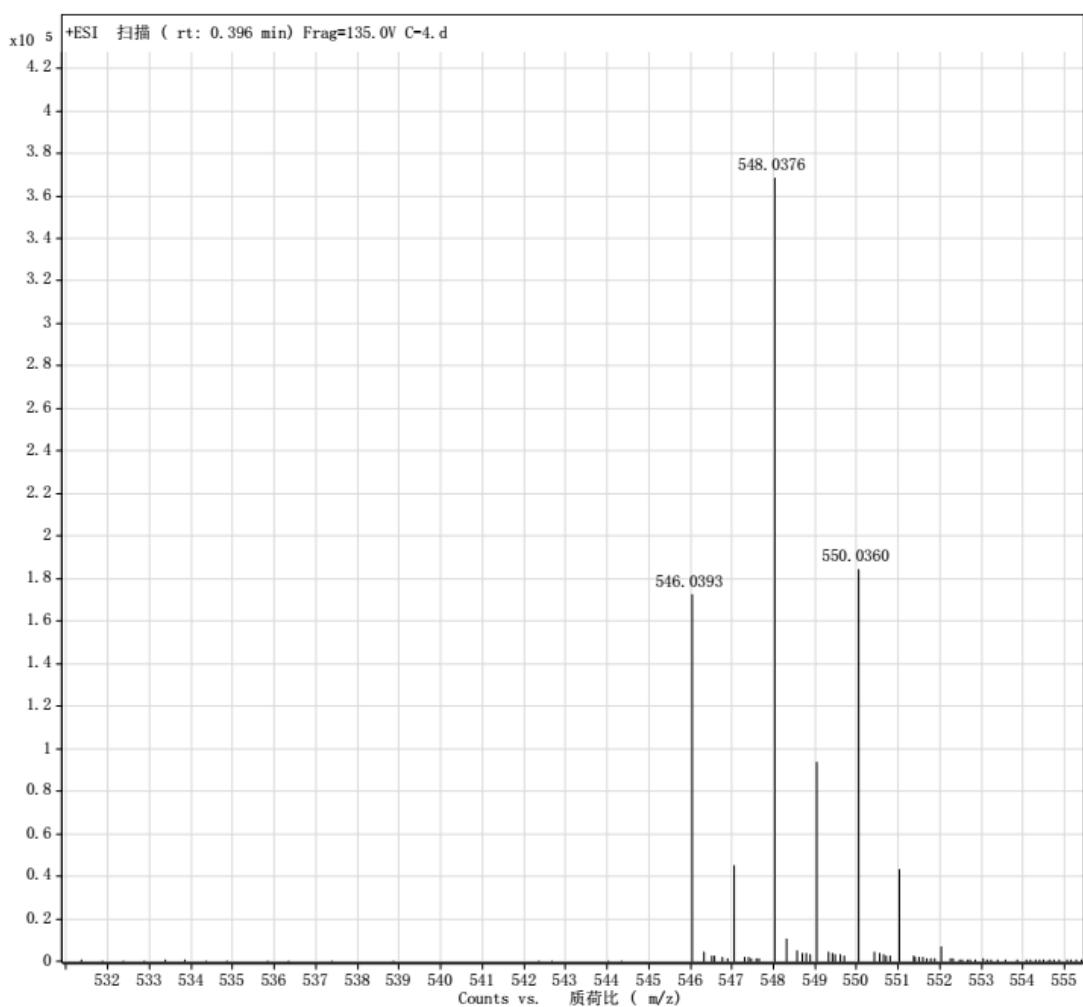
<sup>1</sup>H NMR spectrum of **5a**



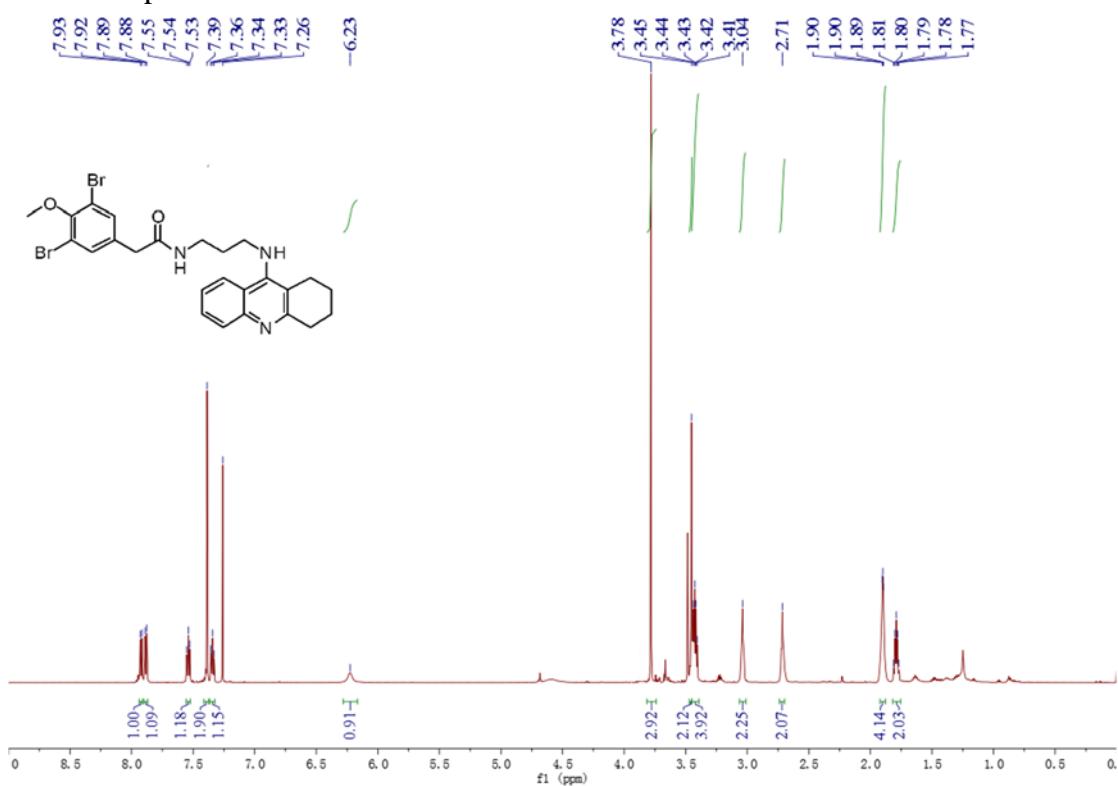
<sup>13</sup>C NMR spectrum of **5a**



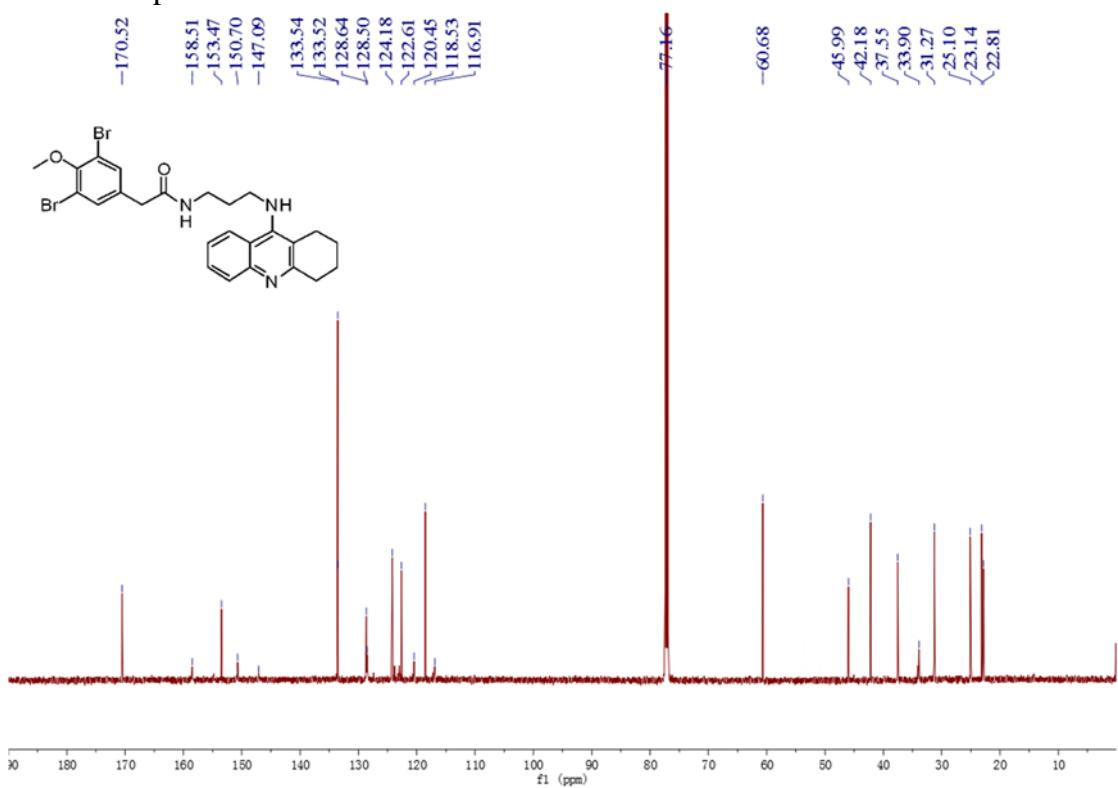
HR-MS (ESI) spectrum of **5a**



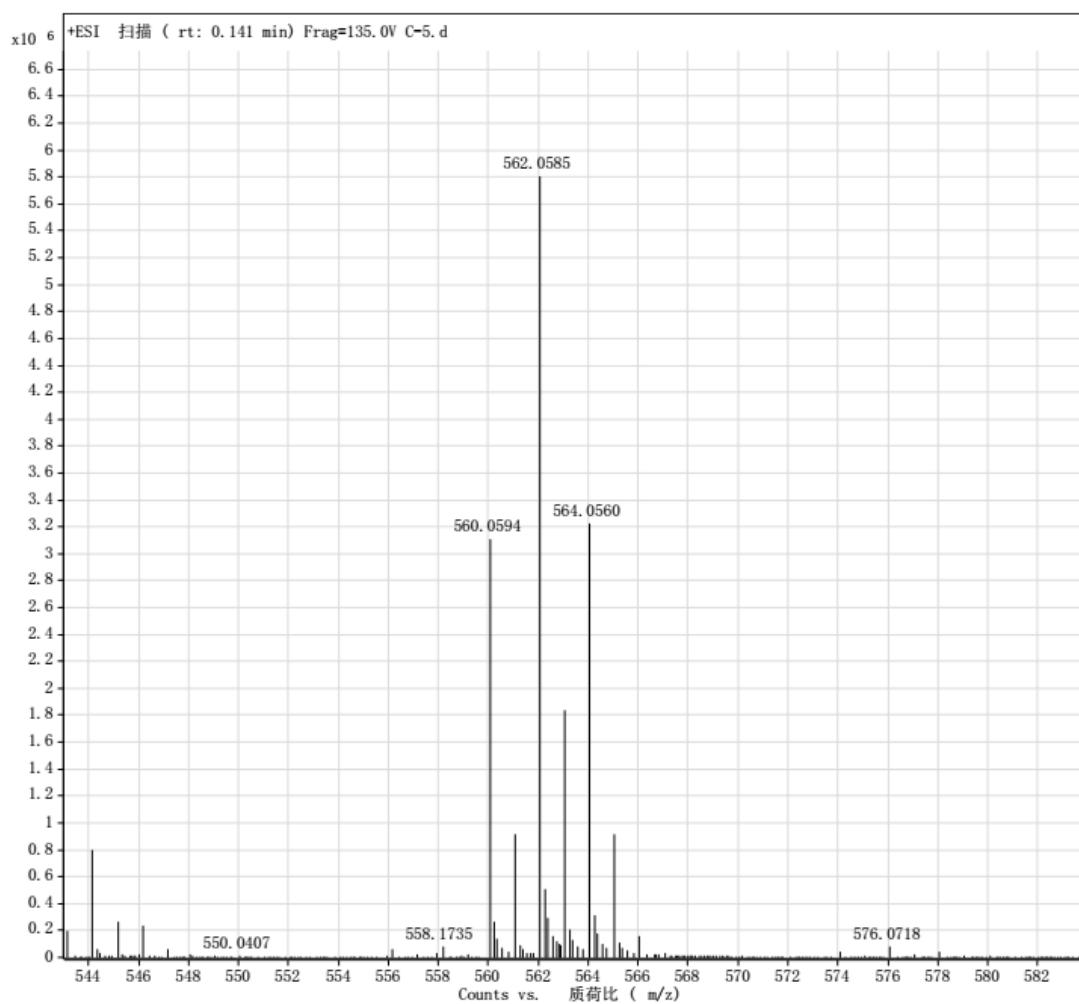
<sup>1</sup>H NMR spectrum of **5b**



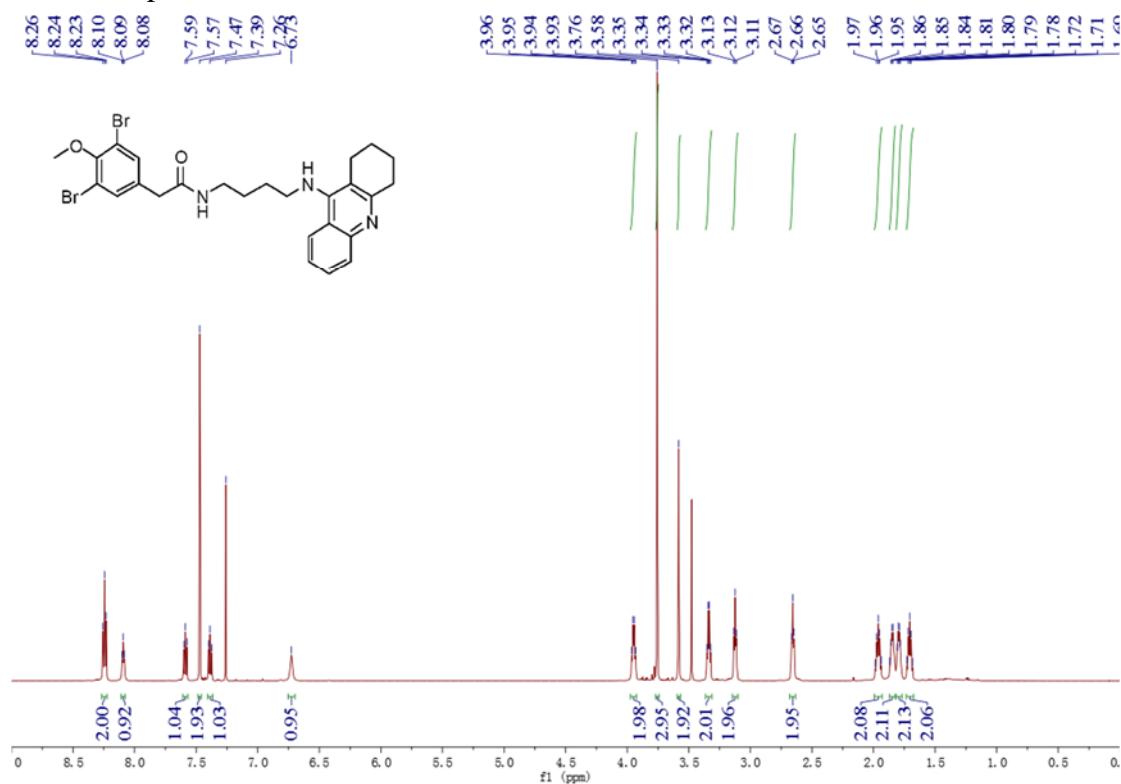
<sup>13</sup>C NMR spectrum of **5b**



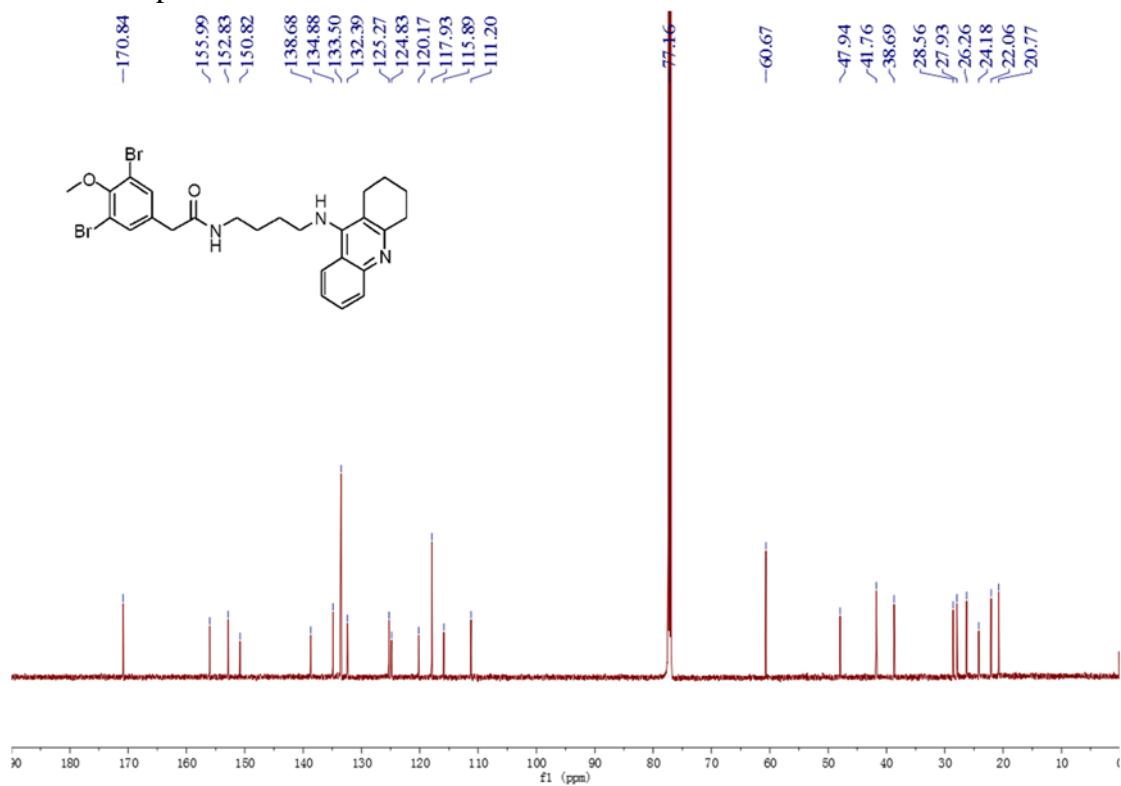
### HR-MS (ESI) spectrum of **5b**



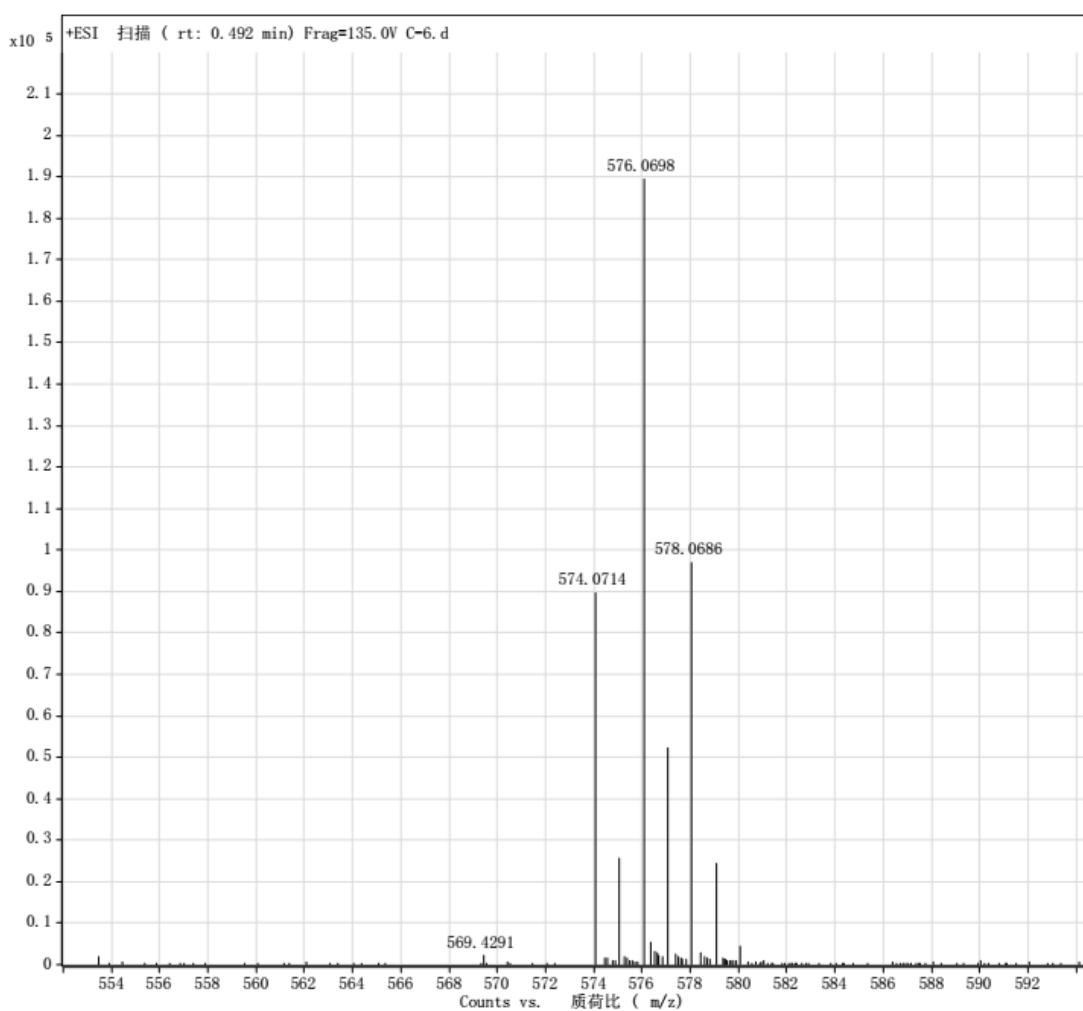
<sup>1</sup>H NMR spectrum of **5c**



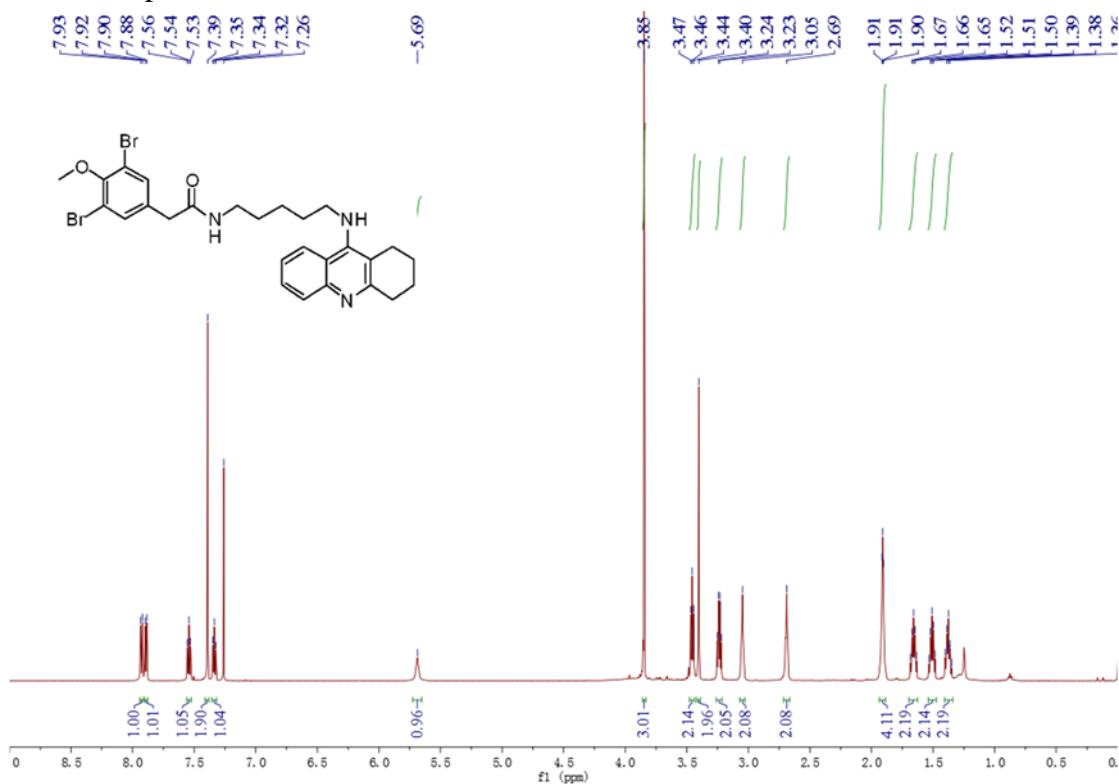
<sup>13</sup>C NMR spectrum of **5c**



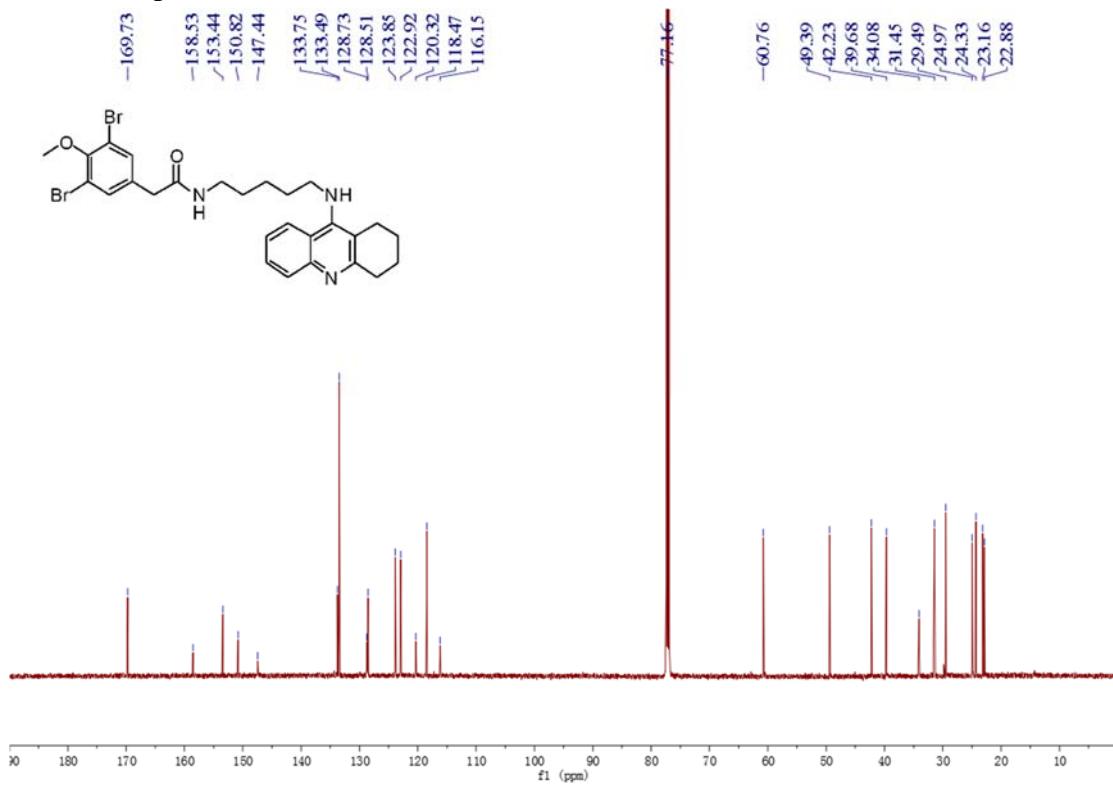
### HR-MS (ESI) spectrum of **5c**



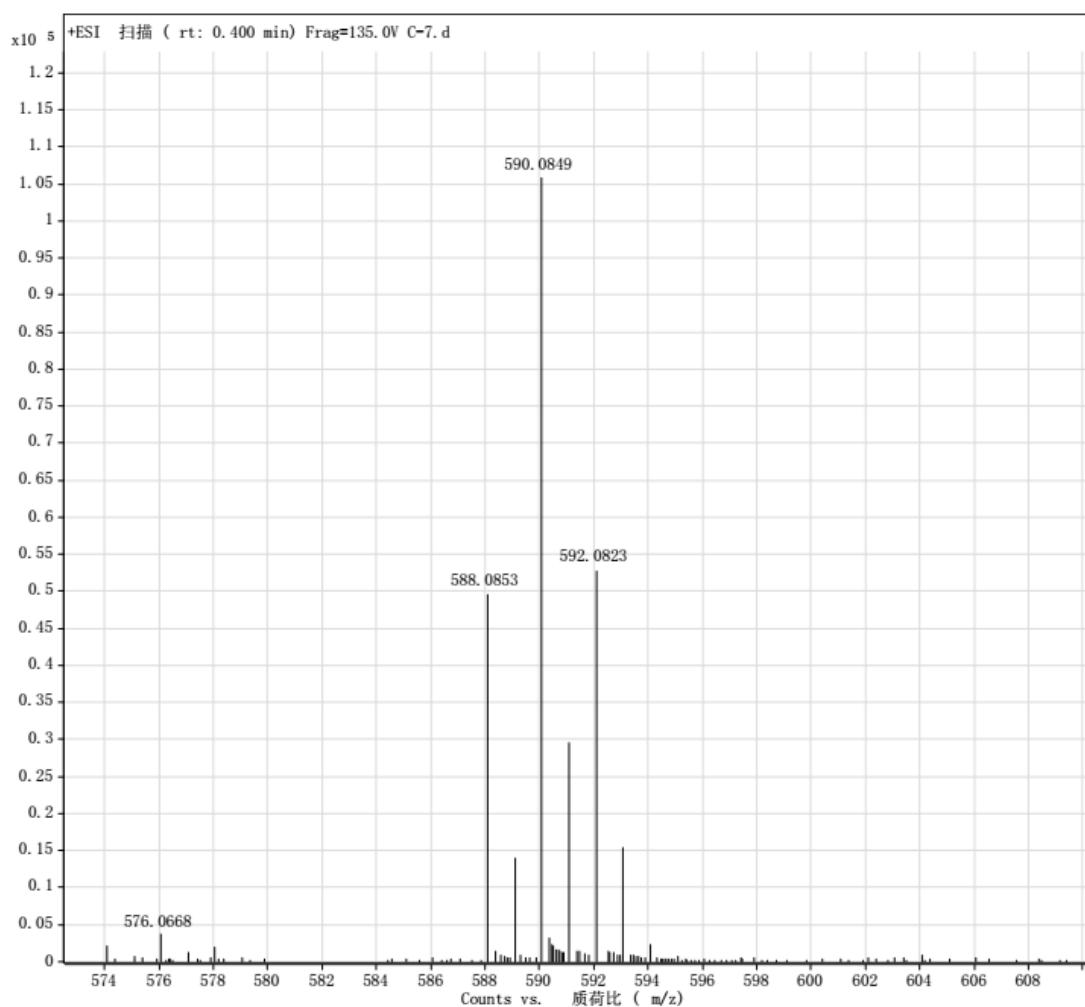
### <sup>1</sup>H NMR spectrum of 5d



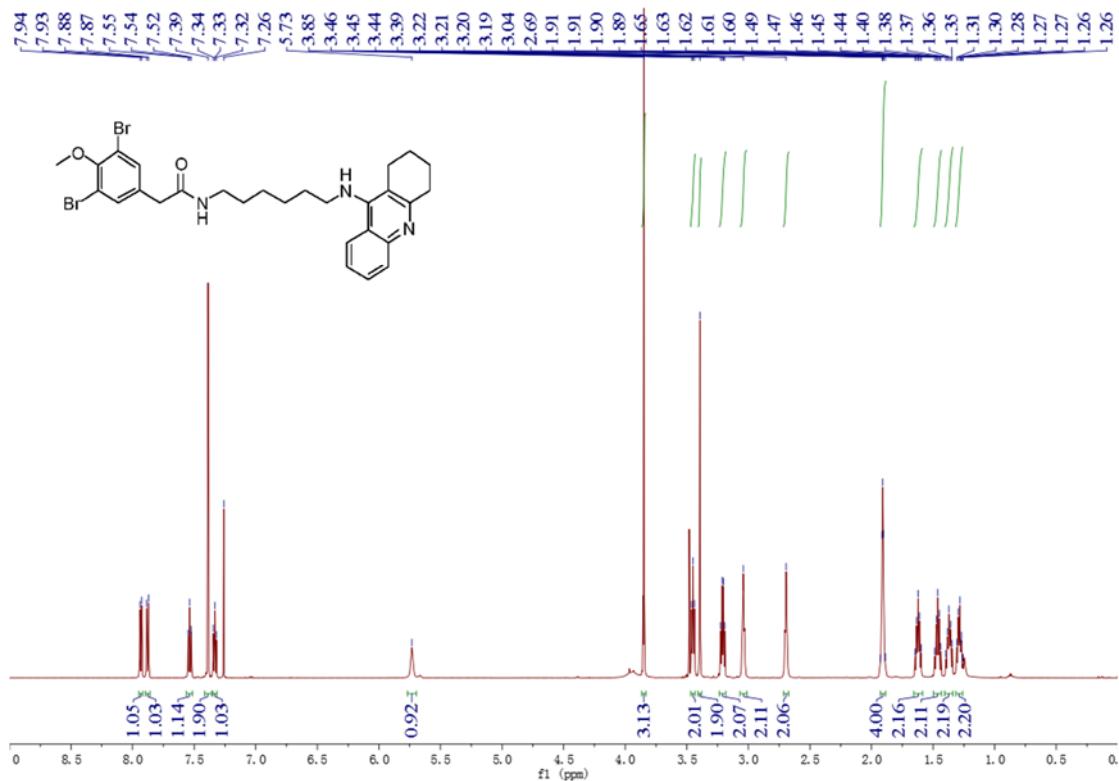
### <sup>13</sup>C NMR spectrum of **5d**



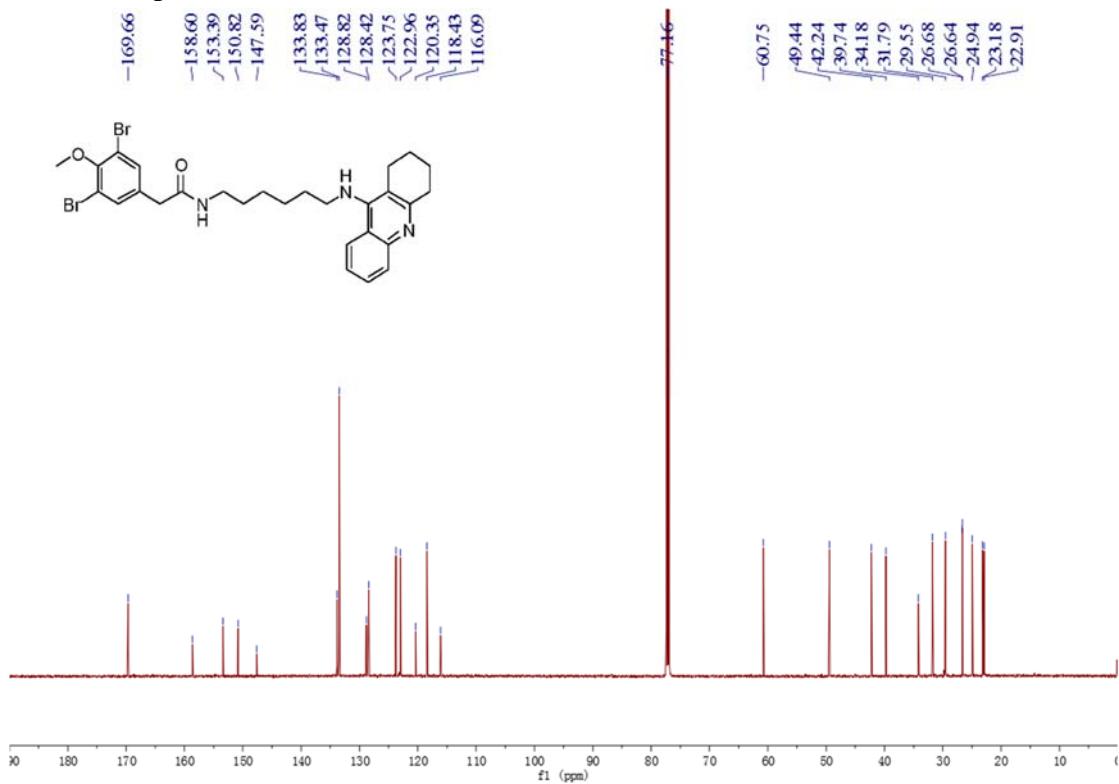
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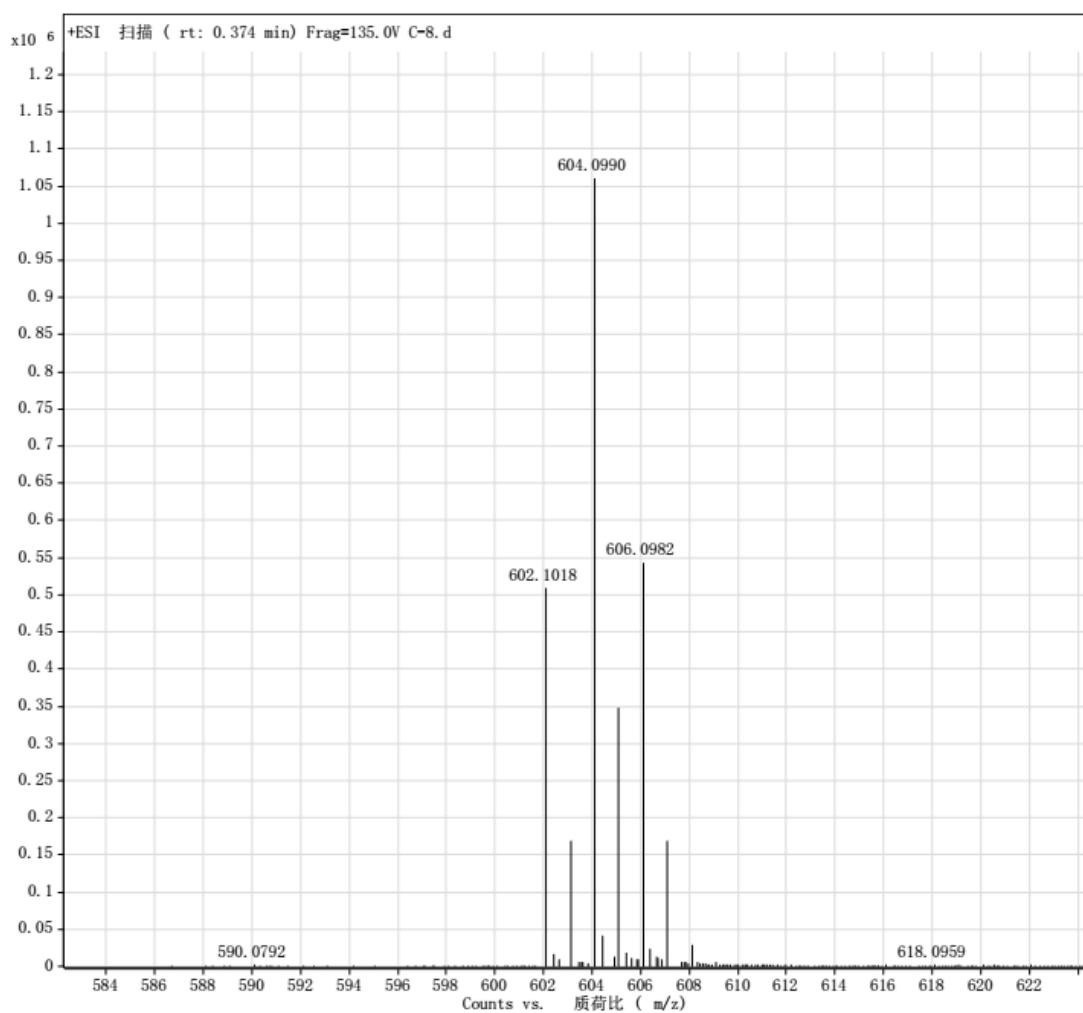
### <sup>1</sup>H NMR spectrum of 5e



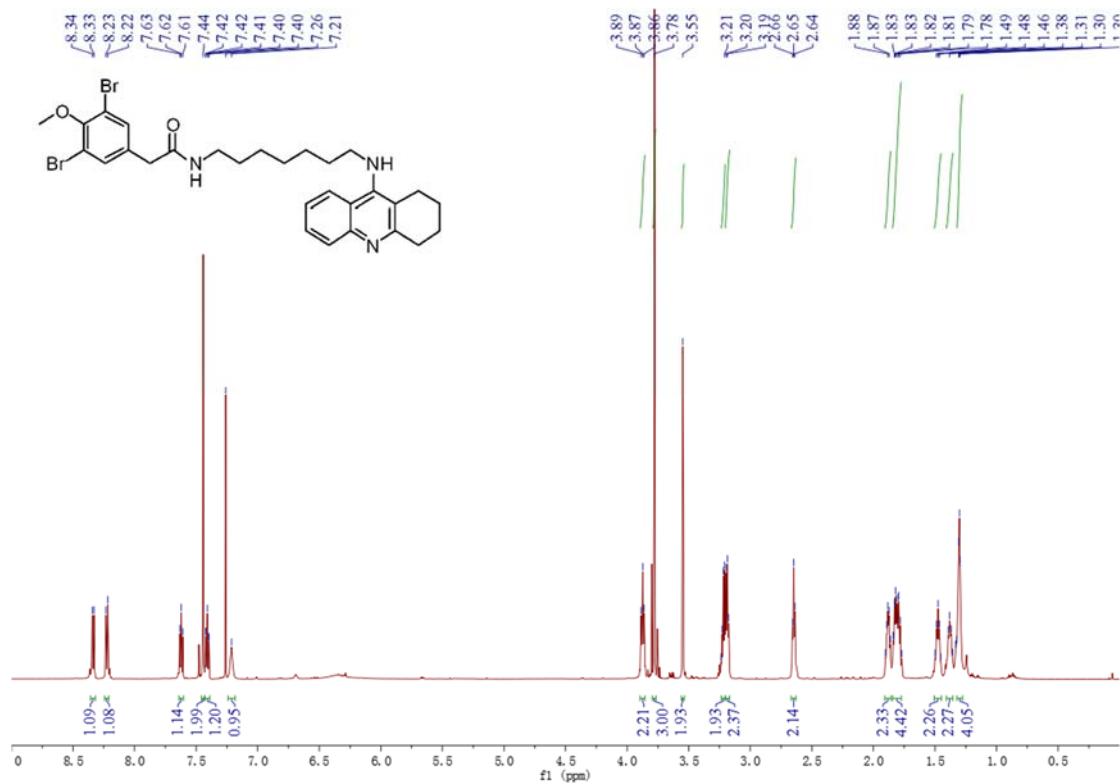
### <sup>13</sup>C NMR spectrum of 5e



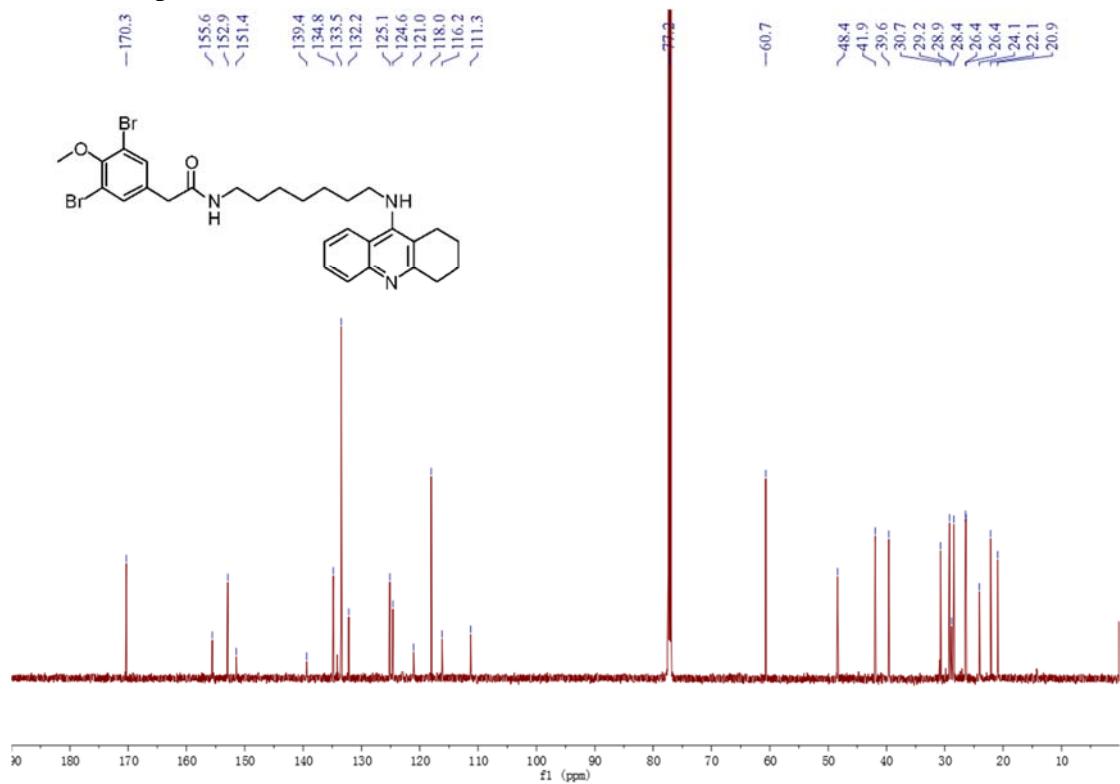
### HR-MS (ESI) spectrum of **5e**



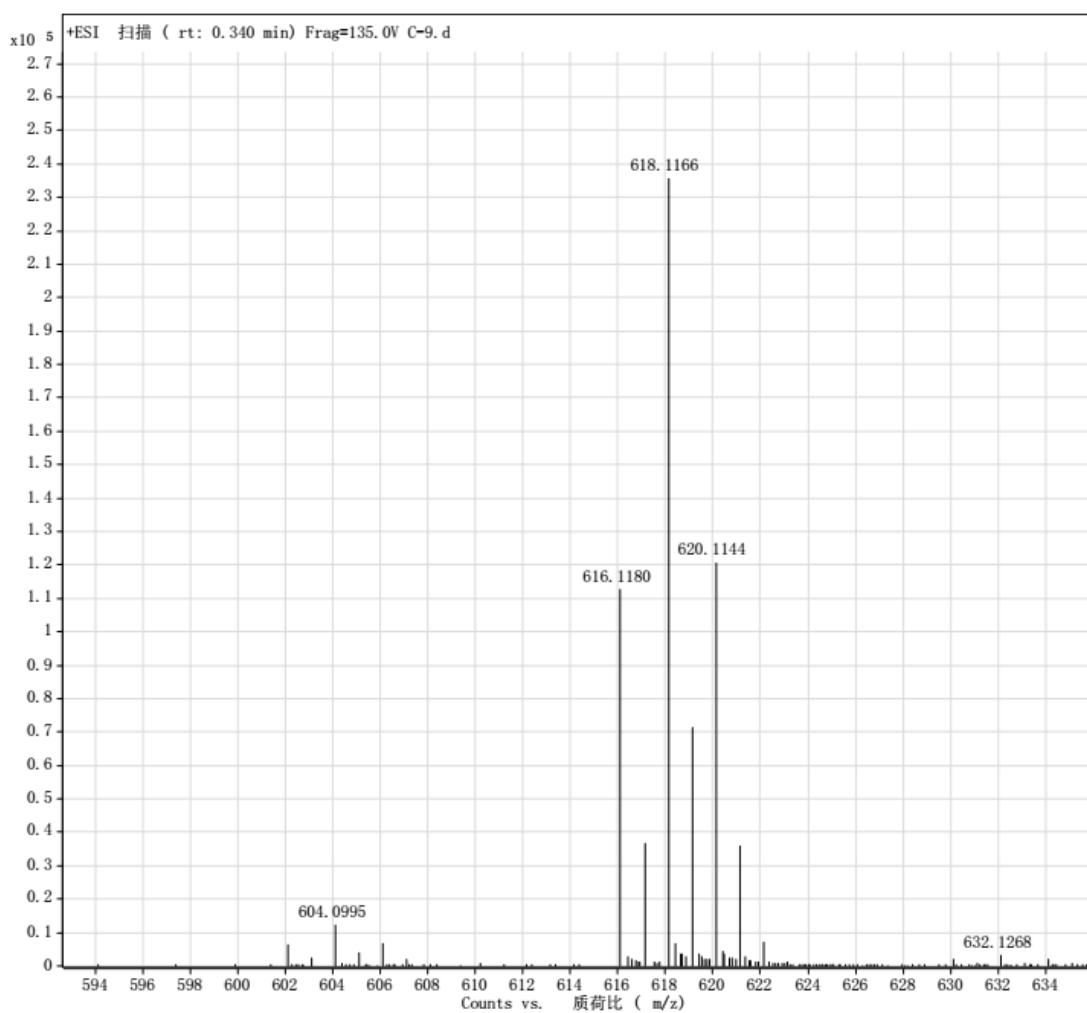
<sup>1</sup>H NMR spectrum of **5f**



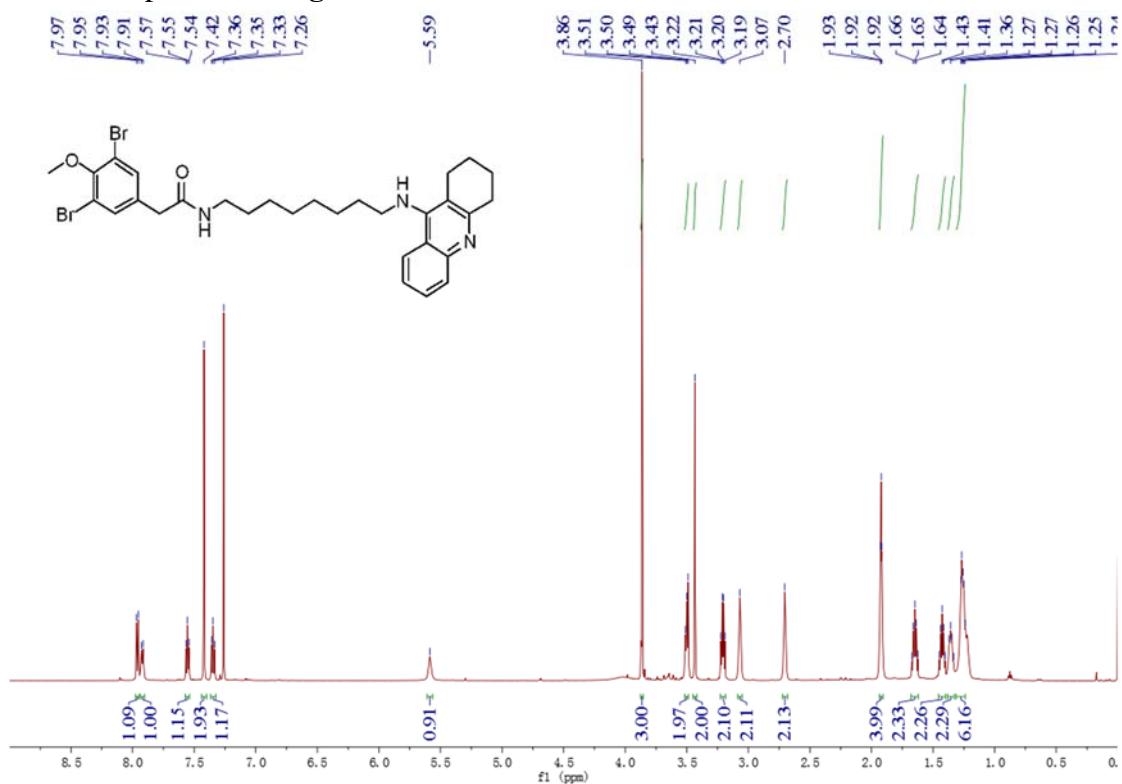
<sup>13</sup>C NMR spectrum of **5f**



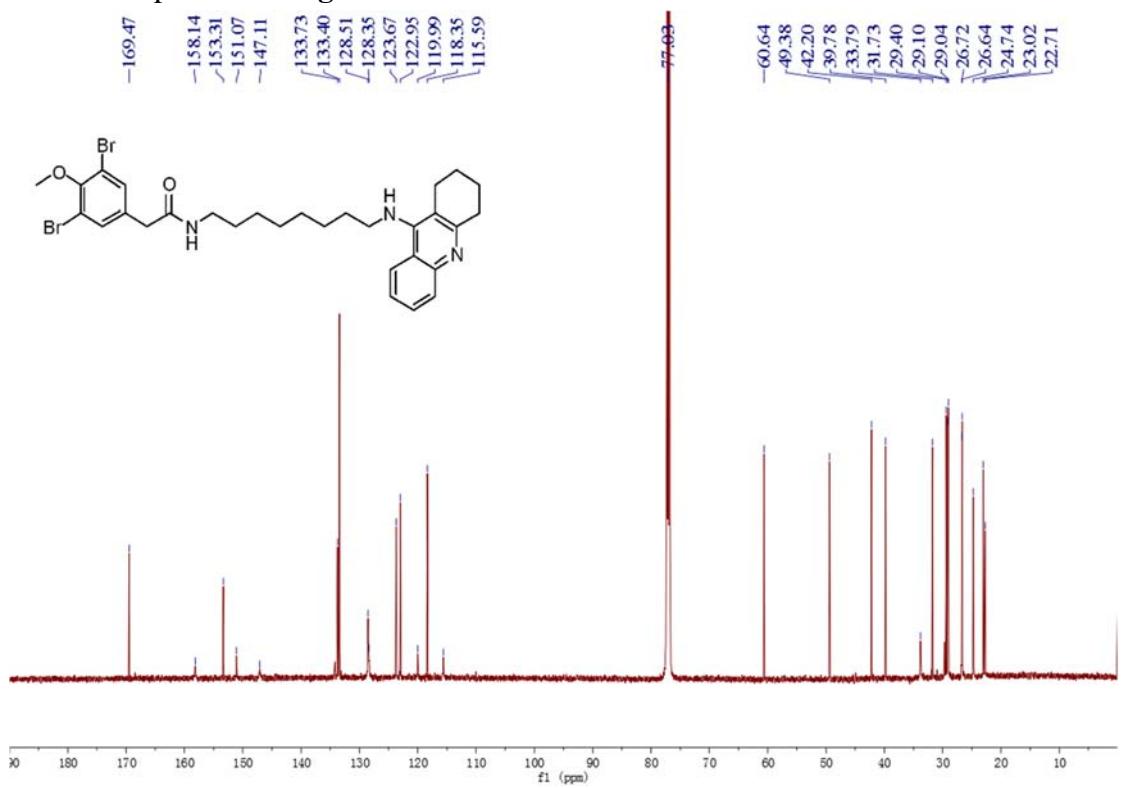
### HR-MS (ESI) spectrum of **5f**



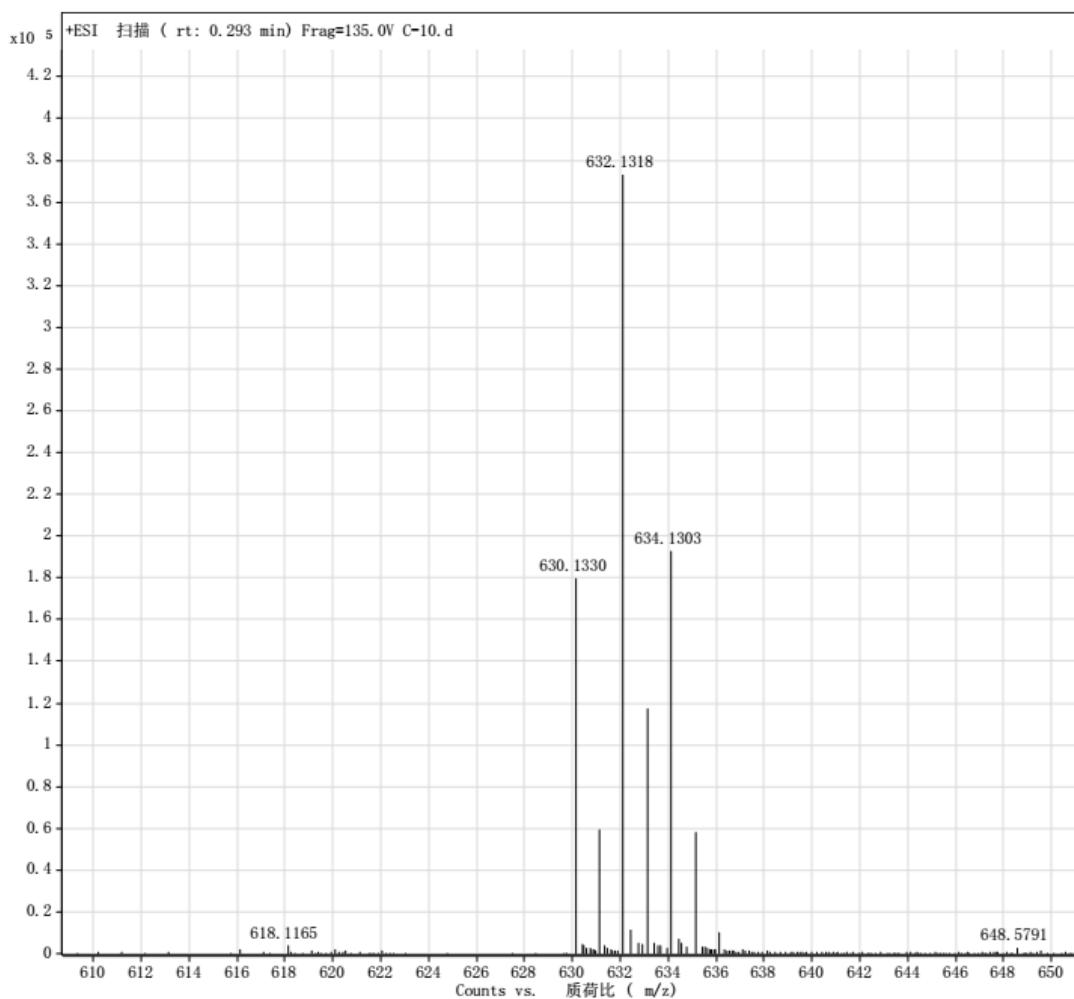
<sup>1</sup>H NMR spectrum of **5g**



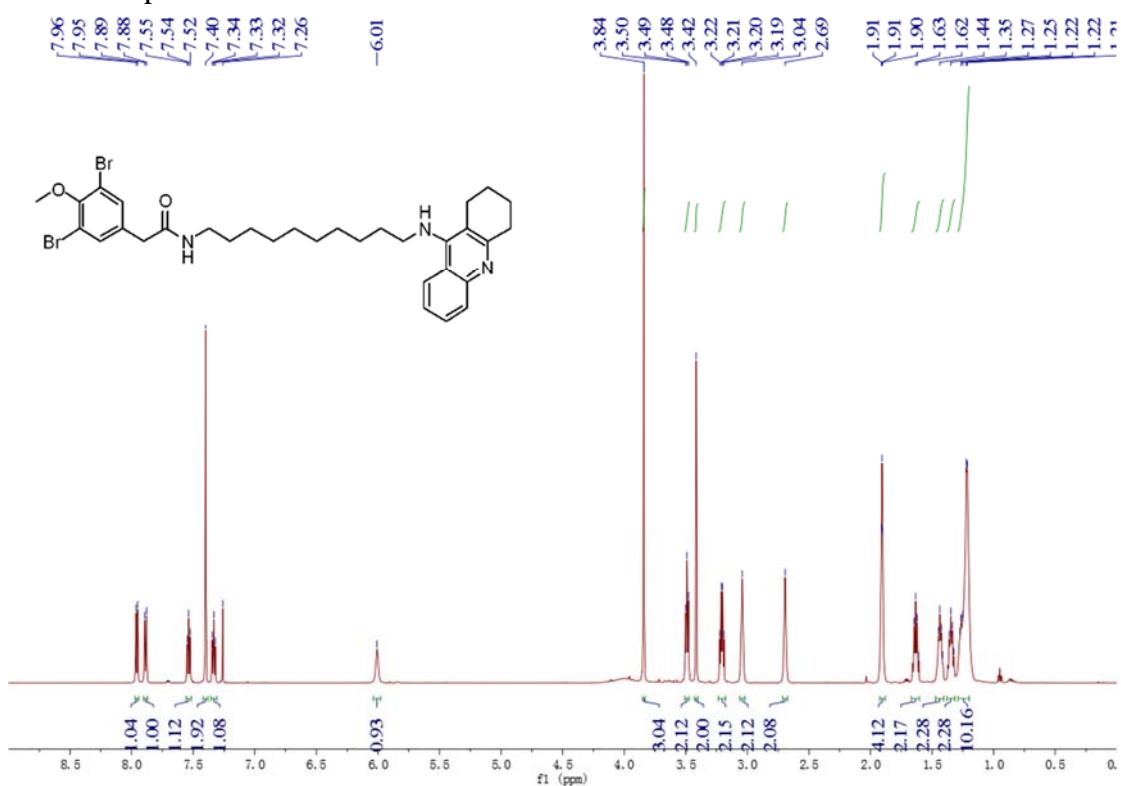
<sup>13</sup>C NMR spectrum of **5g**



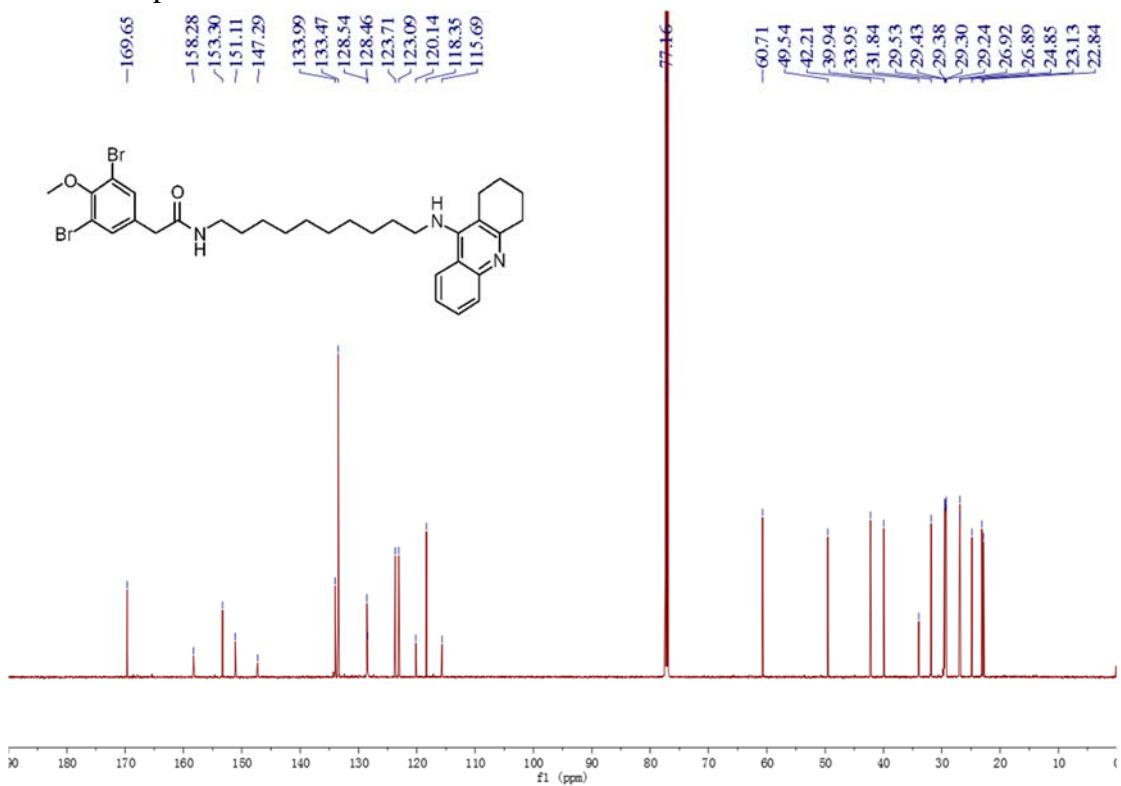
### HR-MS (ESI) spectrum of **5g**



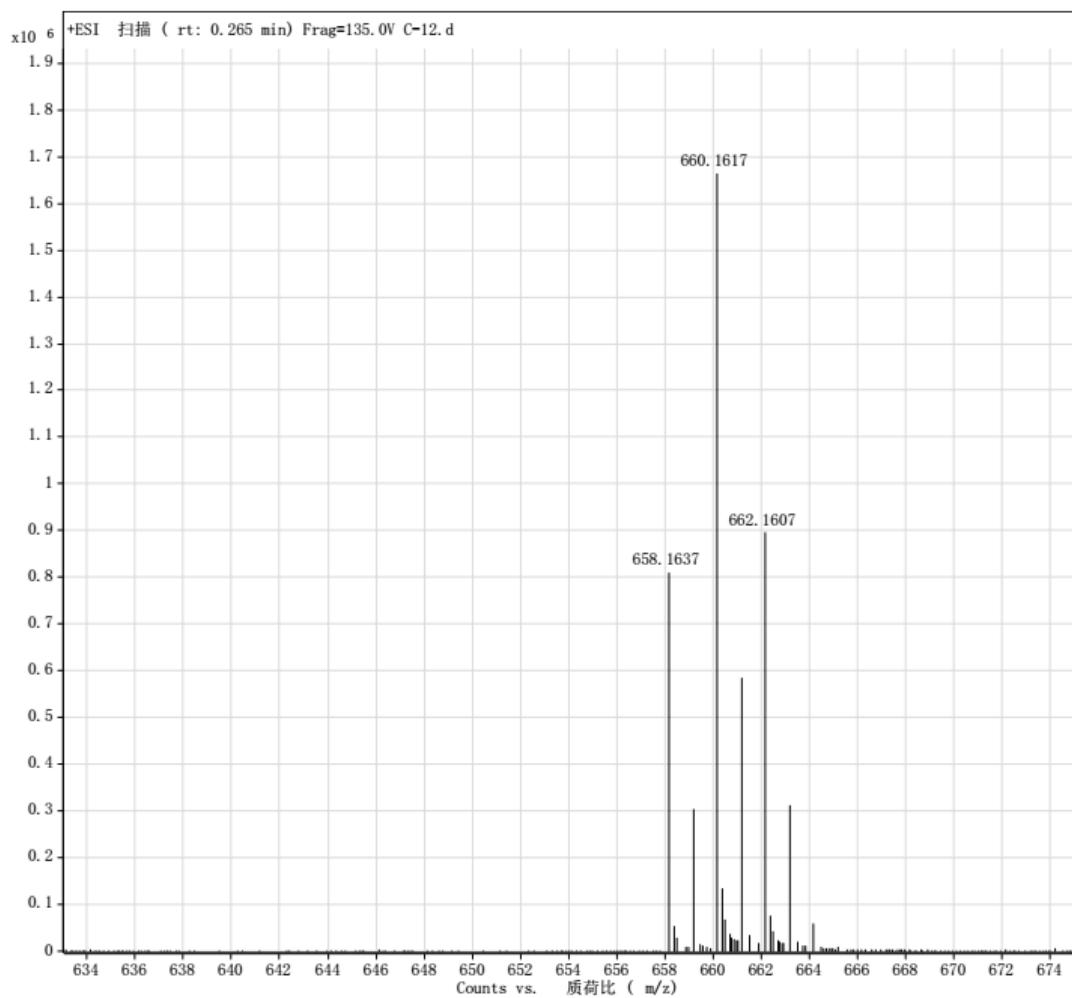
<sup>1</sup>H NMR spectrum of **5h**



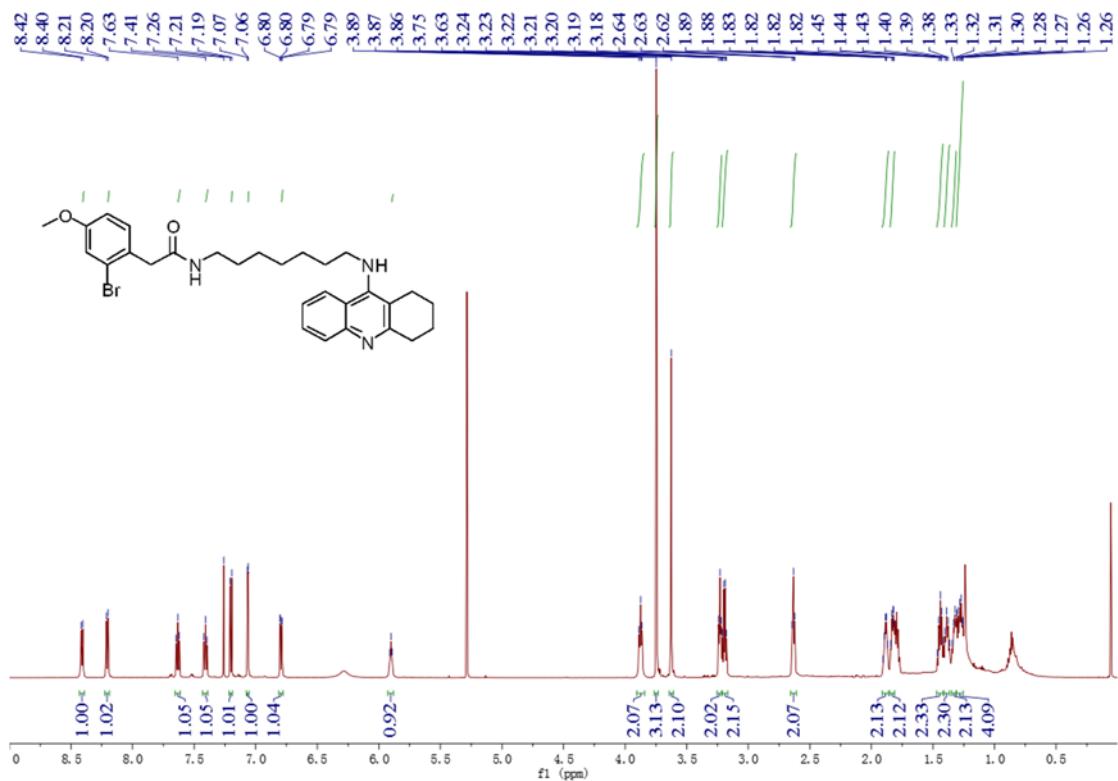
<sup>13</sup>C NMR spectrum of **5h**



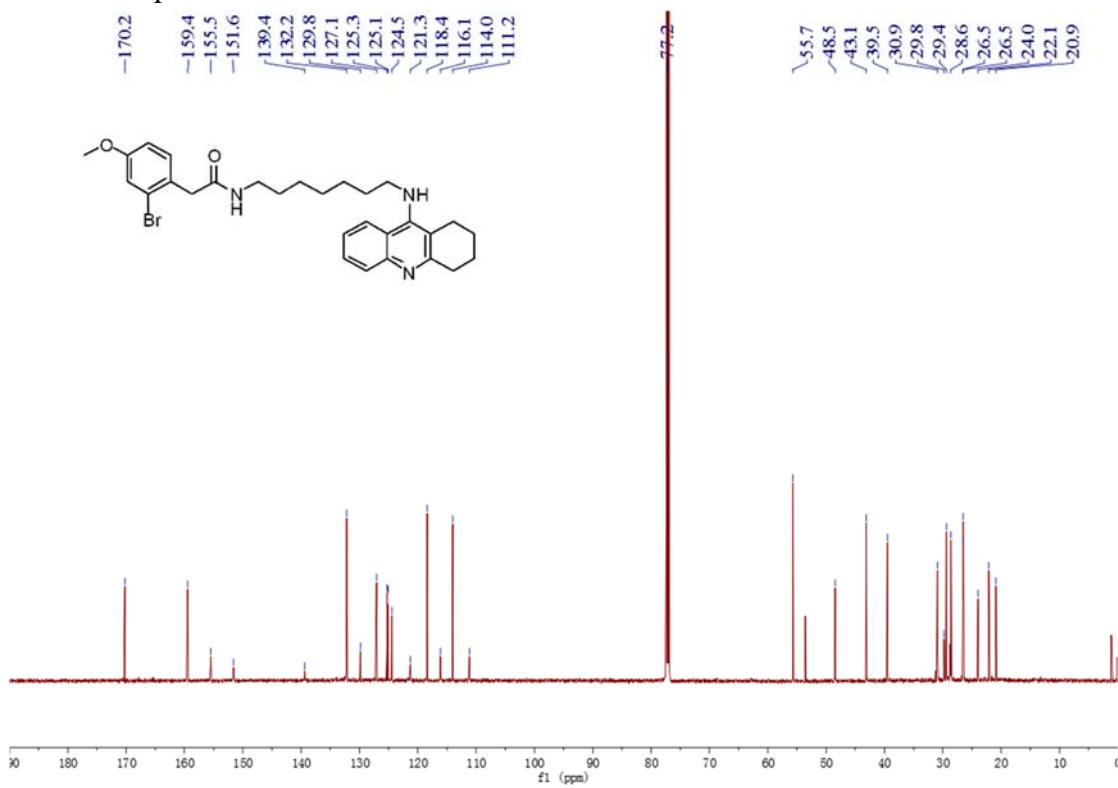
HR-MS (ESI) spectrum of **5h**



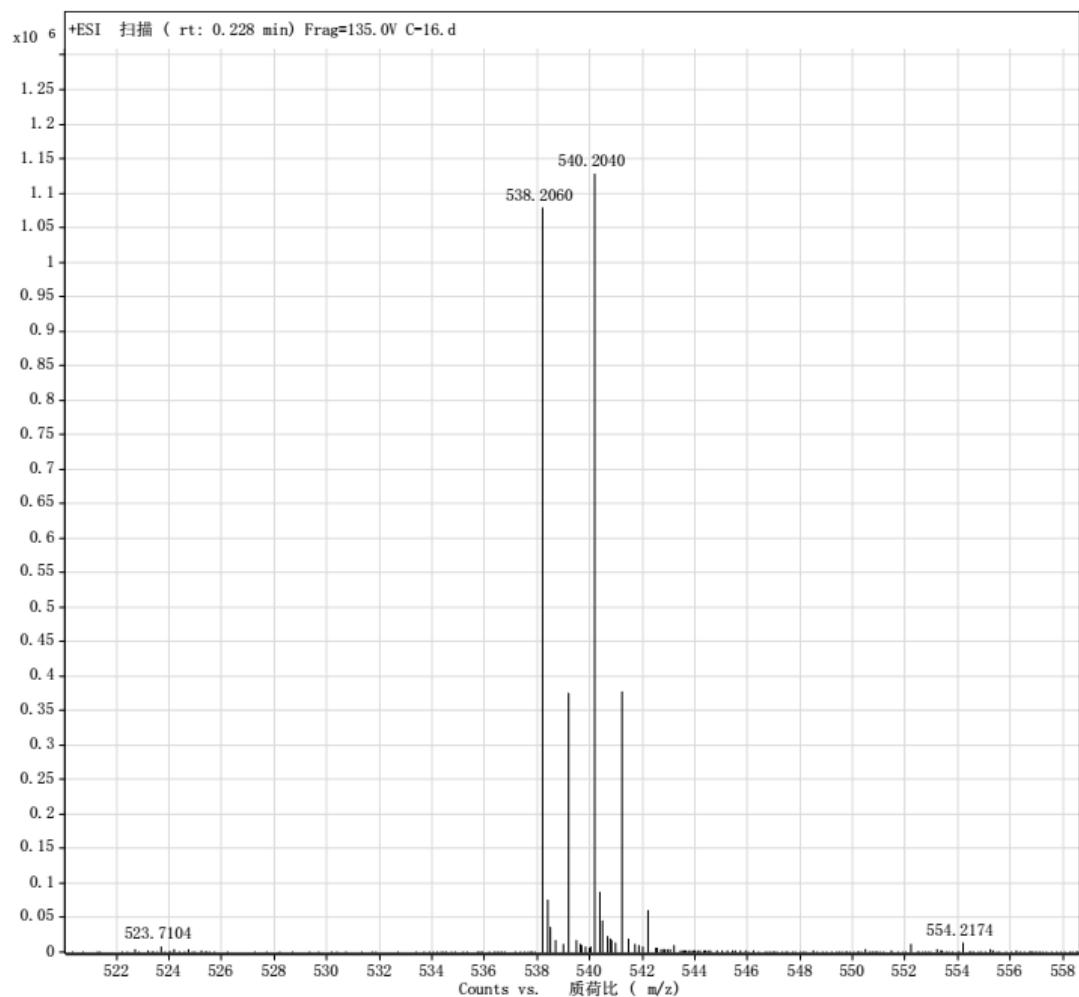
### <sup>1</sup>H NMR spectrum of 12a



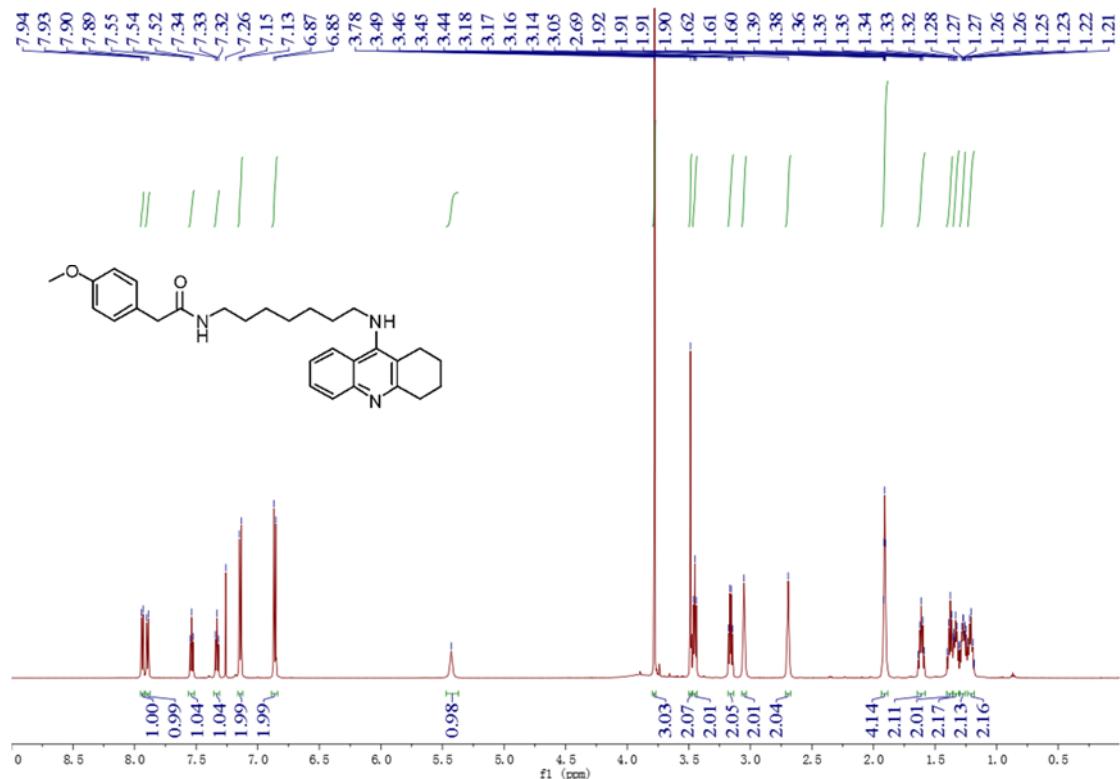
<sup>13</sup>C NMR spectrum of **12a**



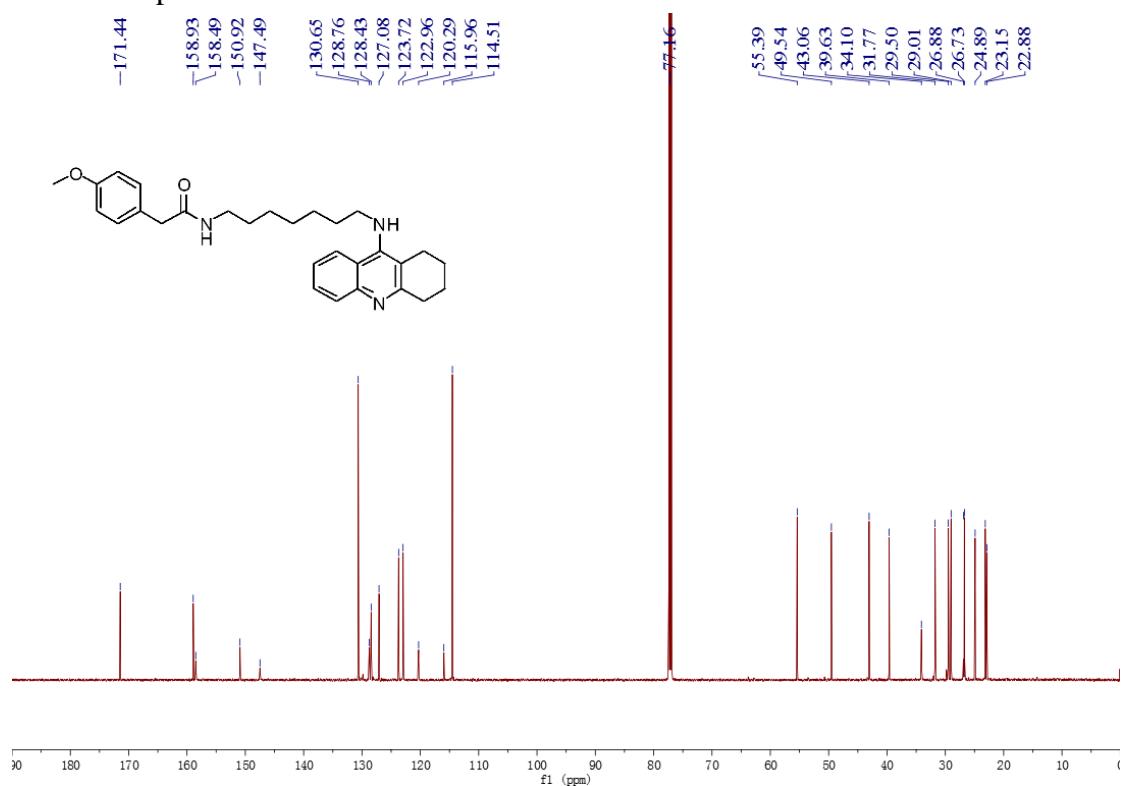
HR-MS (ESI) spectrum of **12a**



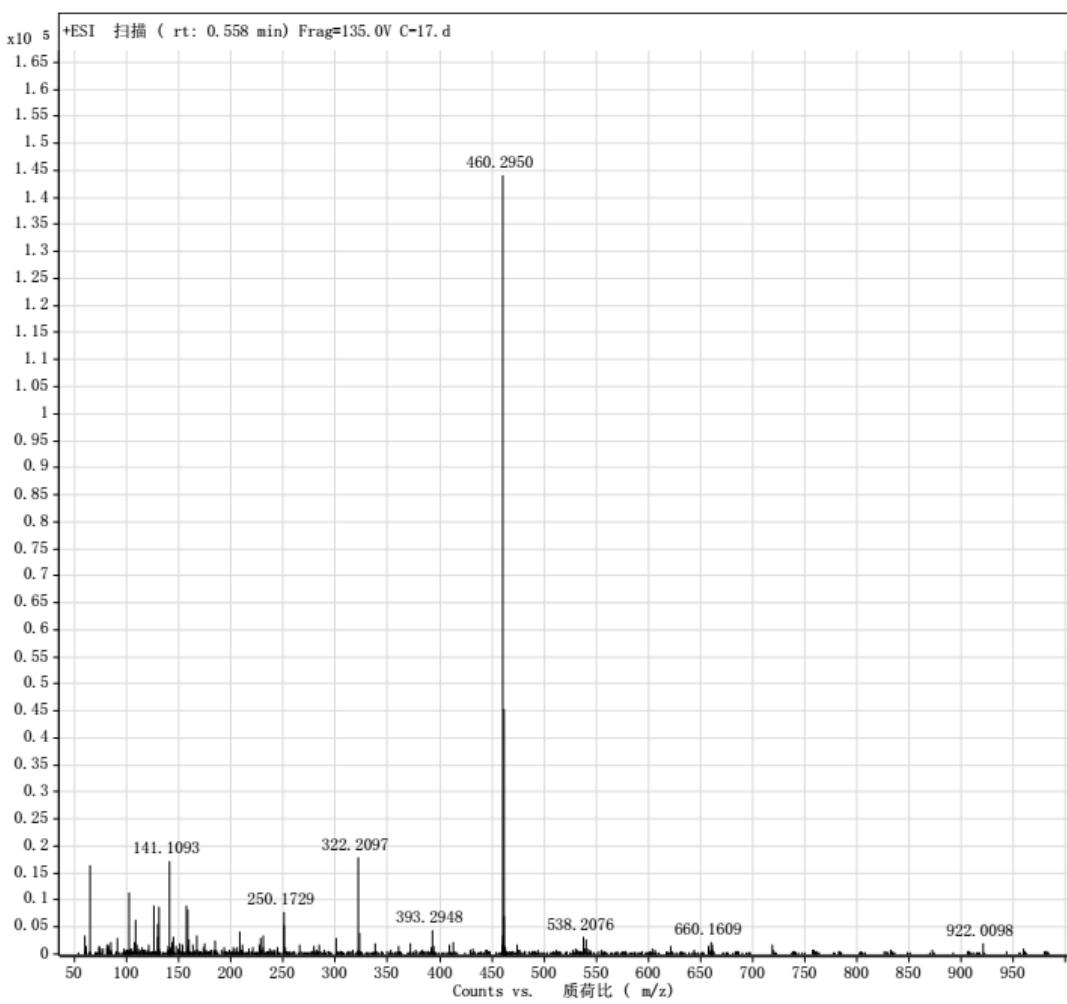
<sup>1</sup>H NMR spectrum of **12b**



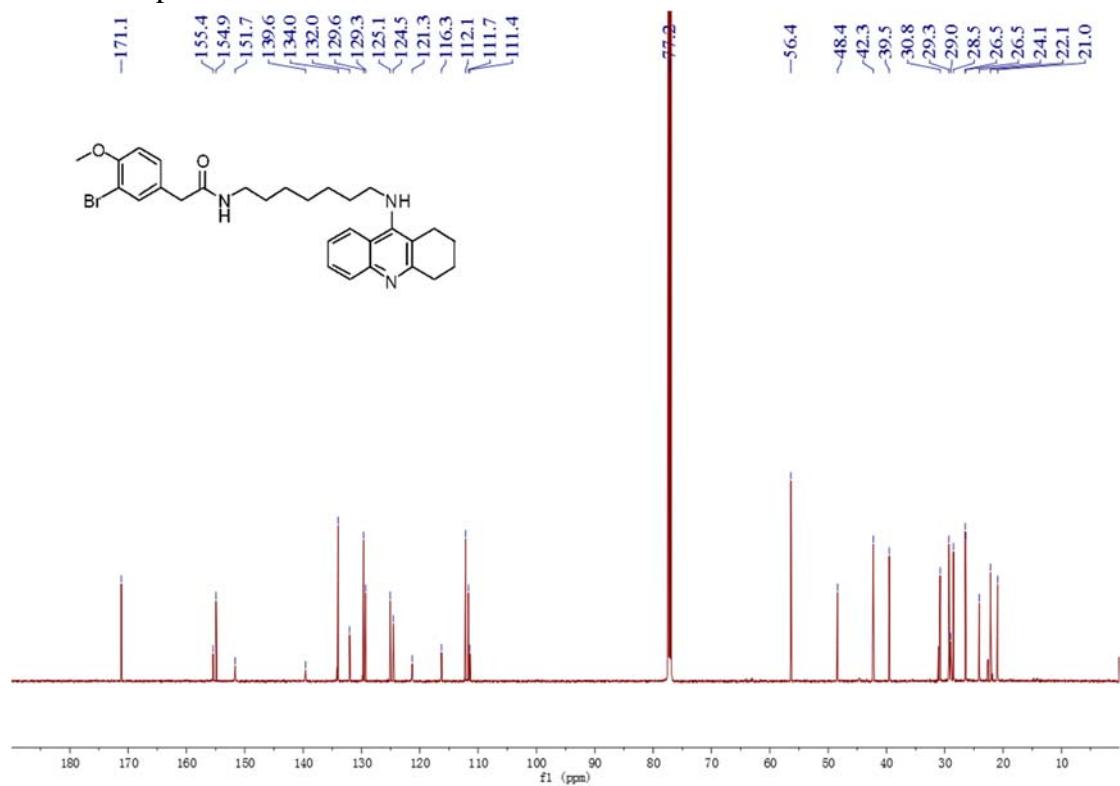
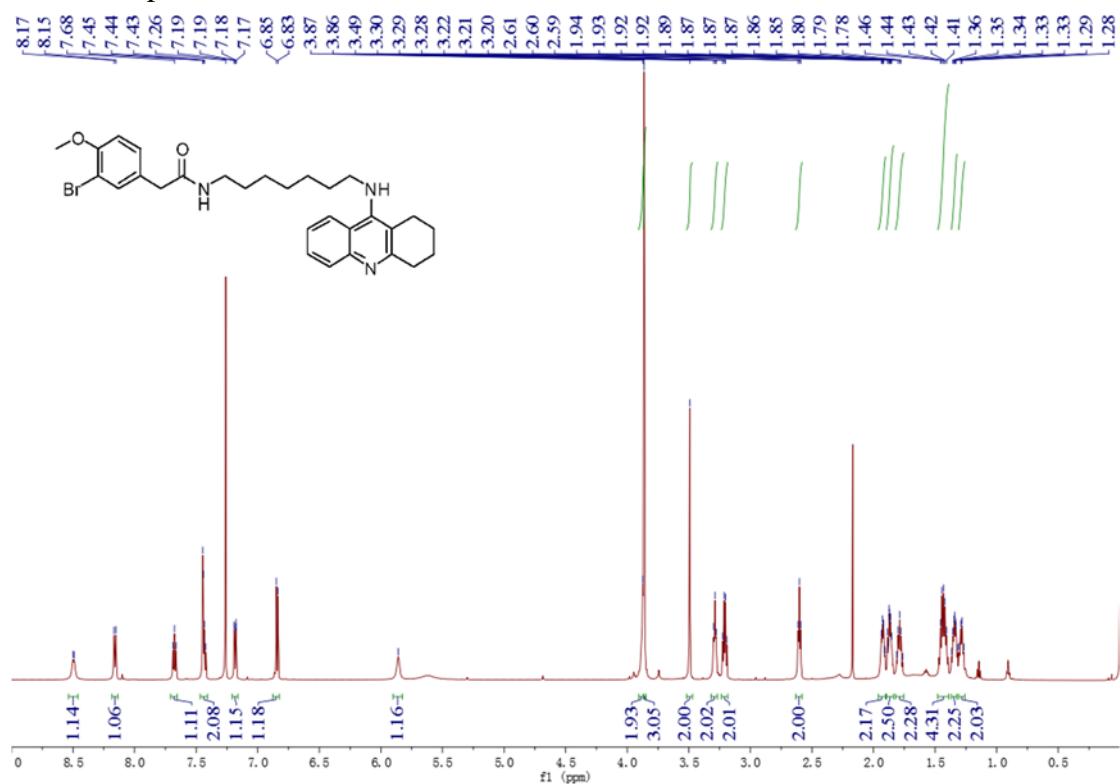
<sup>13</sup>C NMR spectrum of **12b**



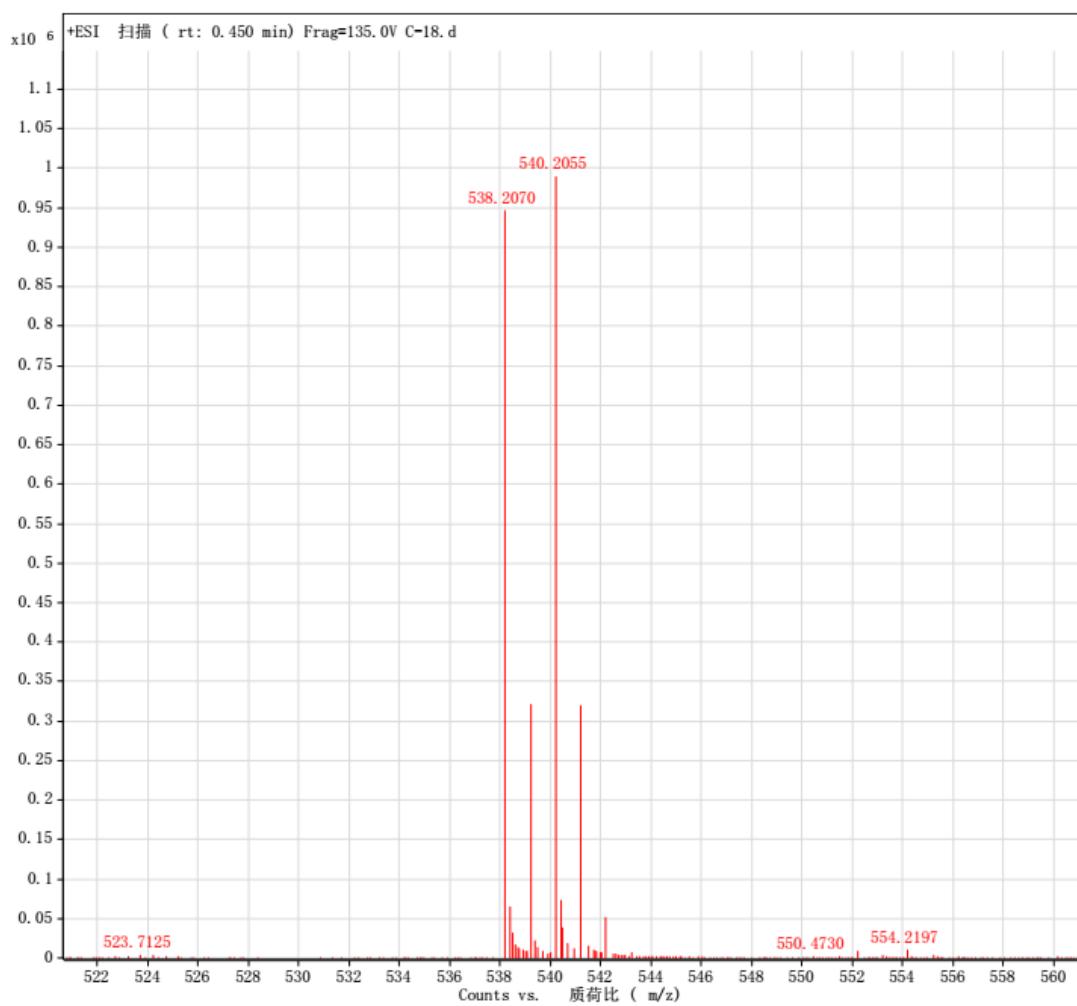
HR-MS (ESI) spectrum of **12b**



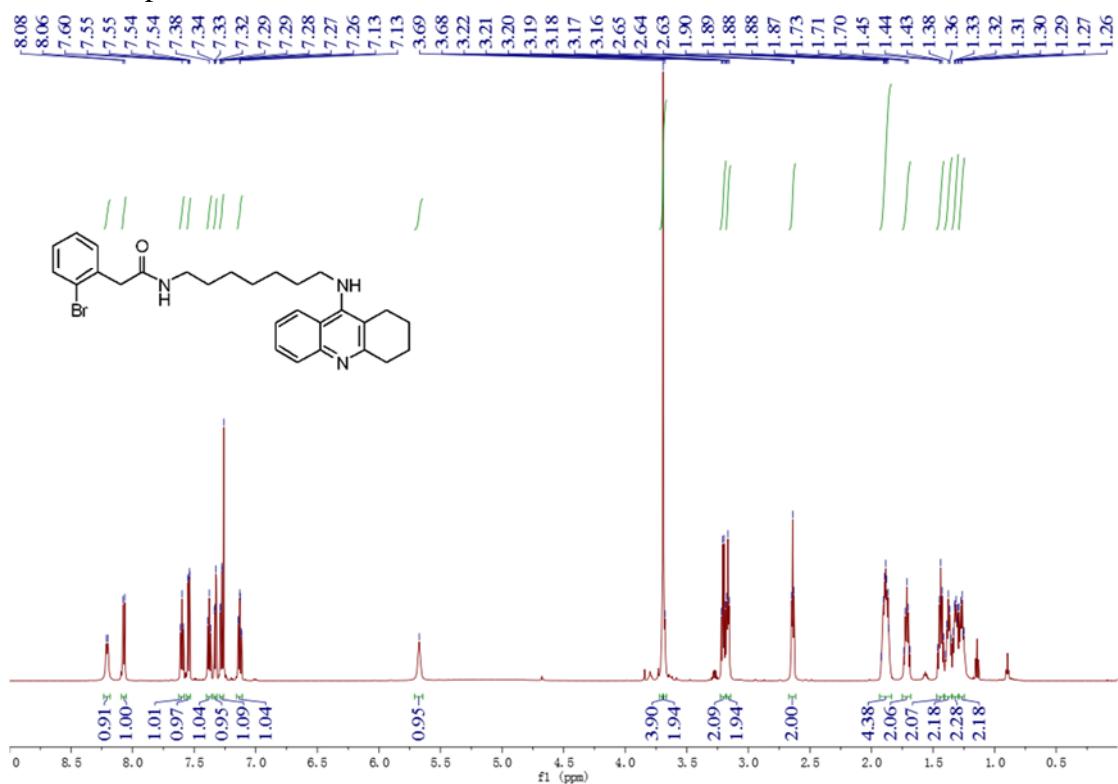
<sup>1</sup>H NMR spectrum of **12c**



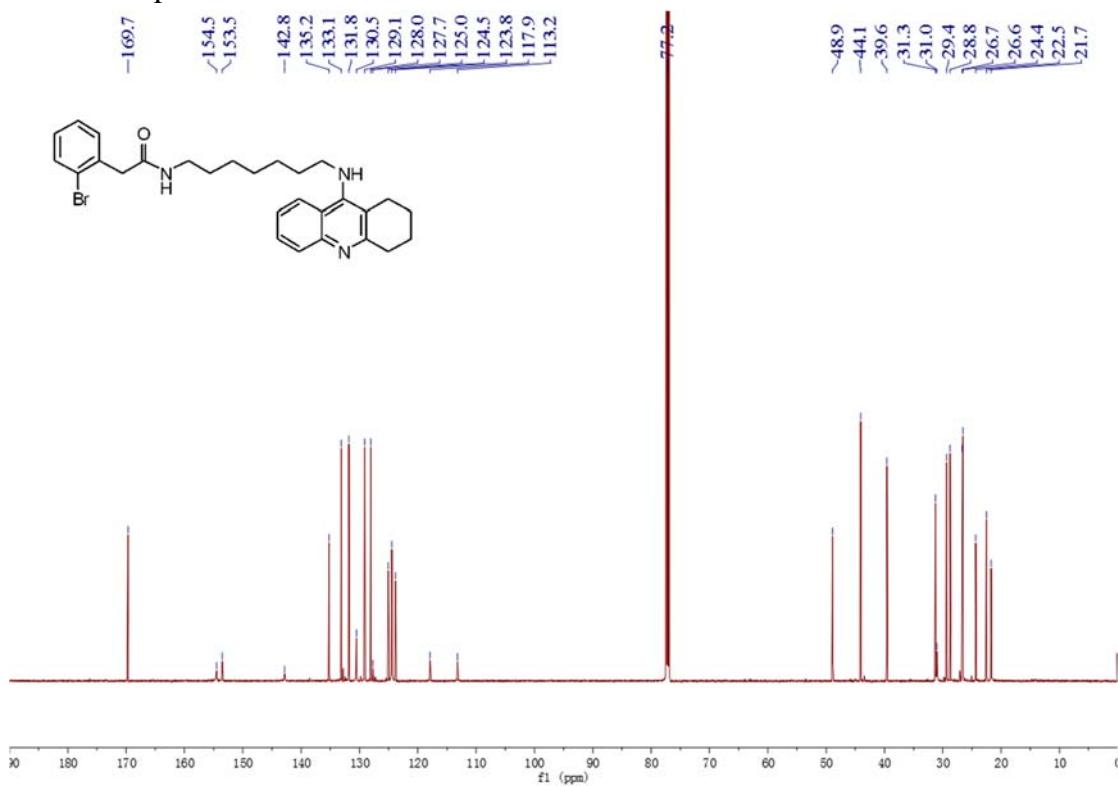
HR-MS (ESI) spectrum of **12c**



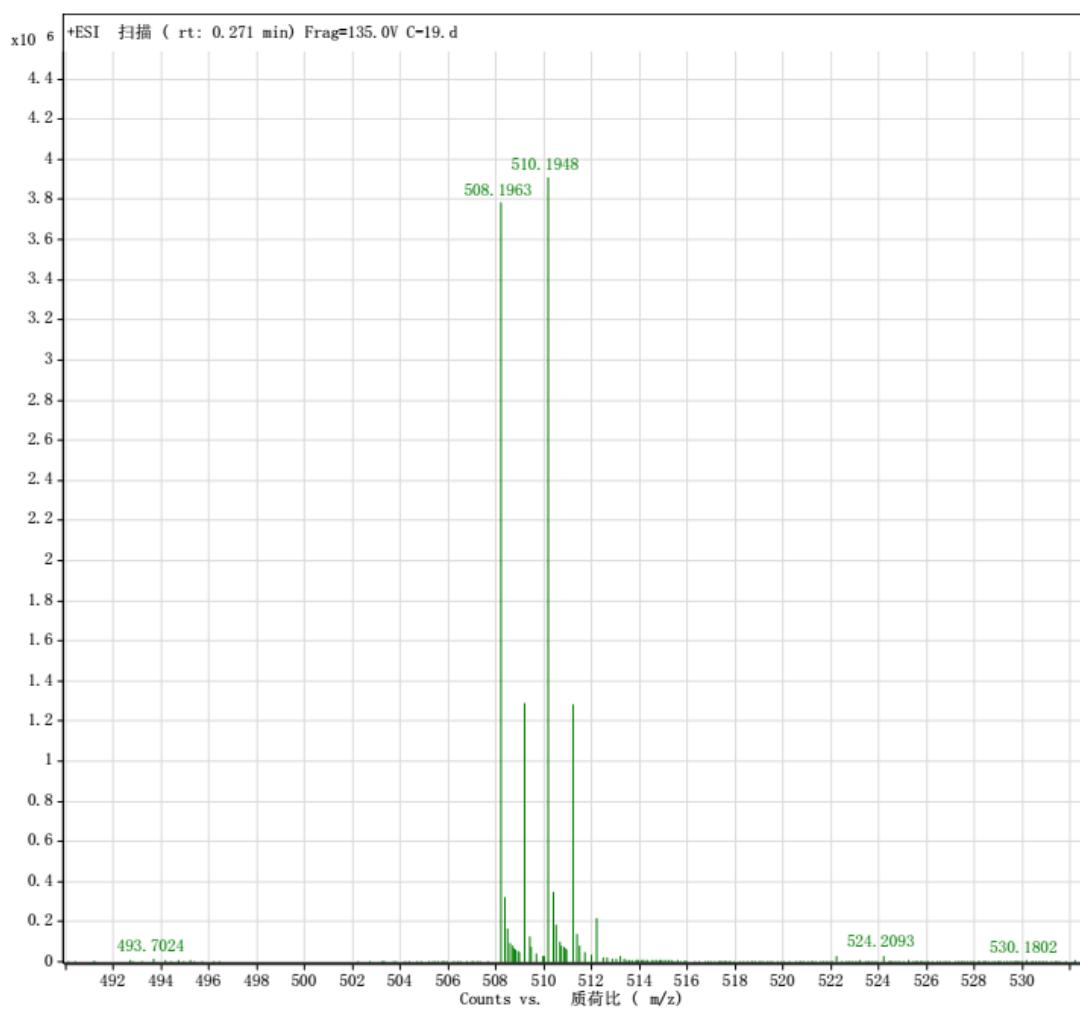
### <sup>1</sup>H NMR spectrum of 12d



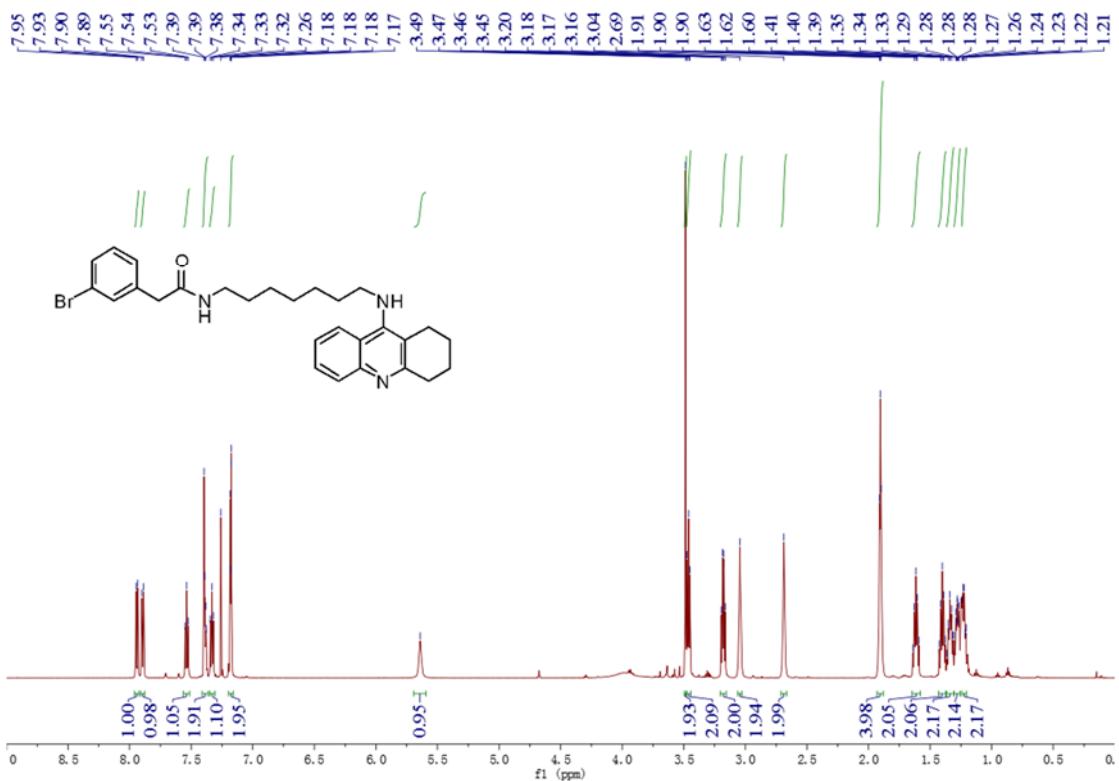
<sup>13</sup>C NMR spectrum of **12d**



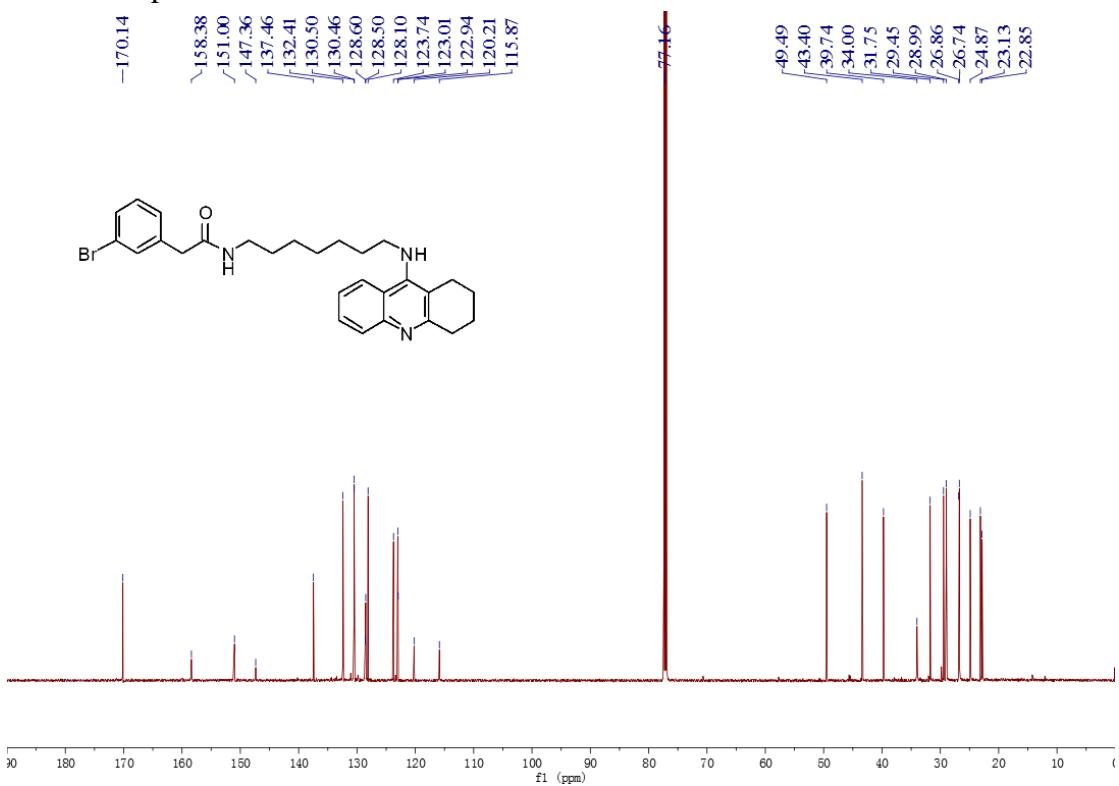
HR-MS (ESI) spectrum of **12d**



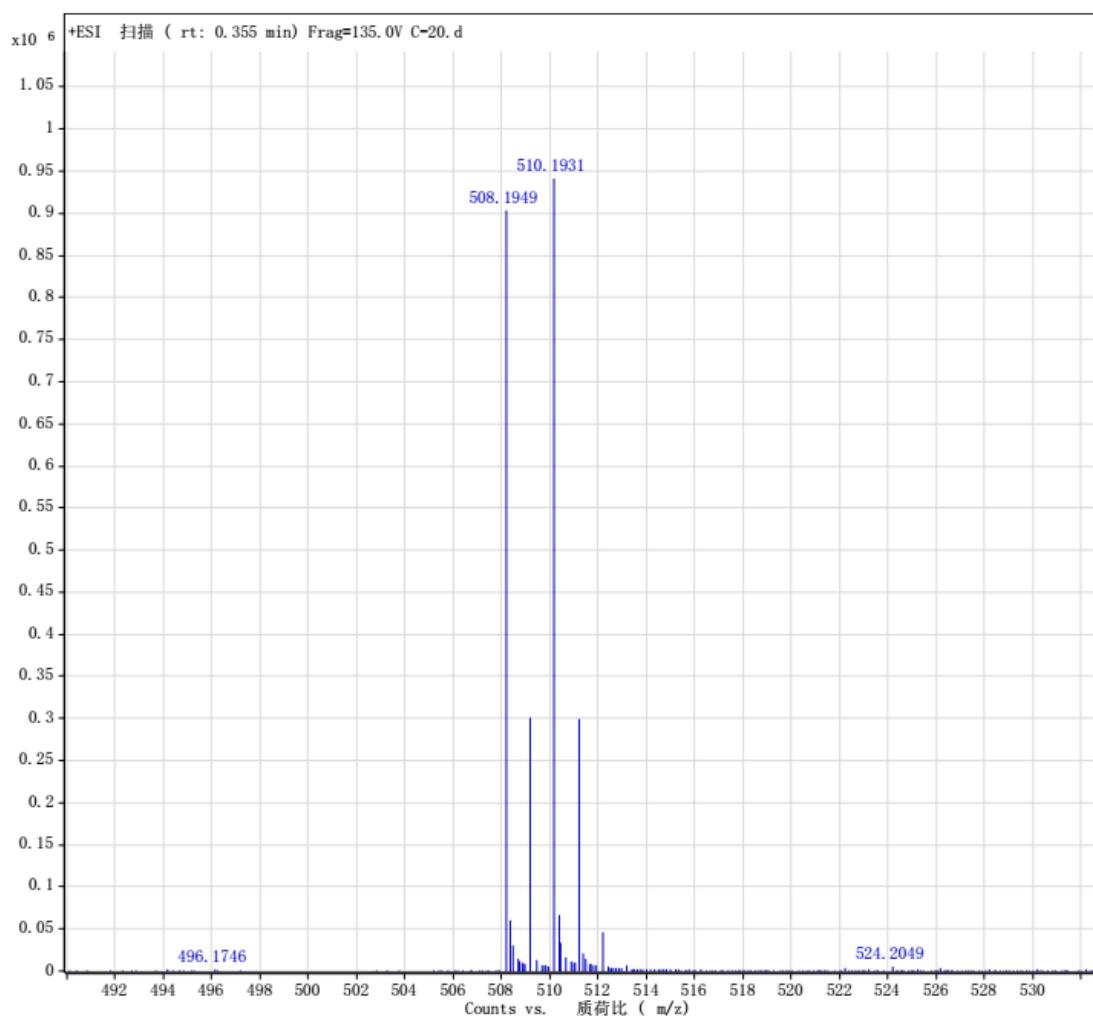
<sup>1</sup>H NMR spectrum of **12e**



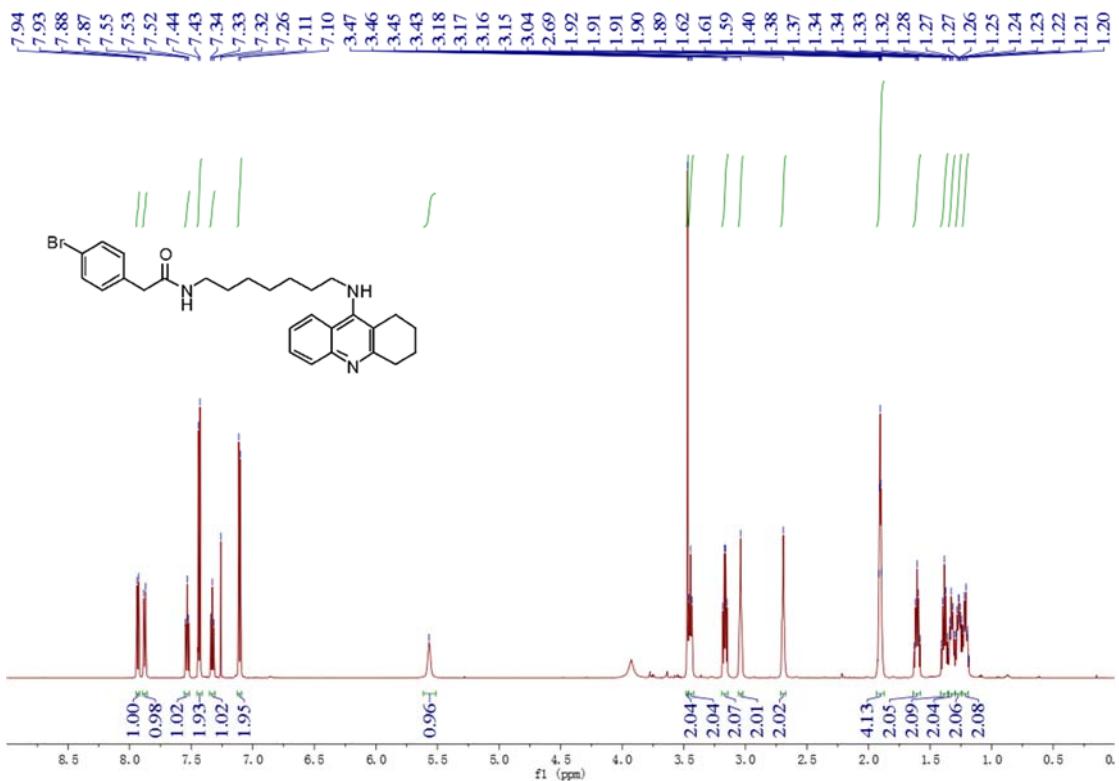
<sup>13</sup>C NMR spectrum of **12e**



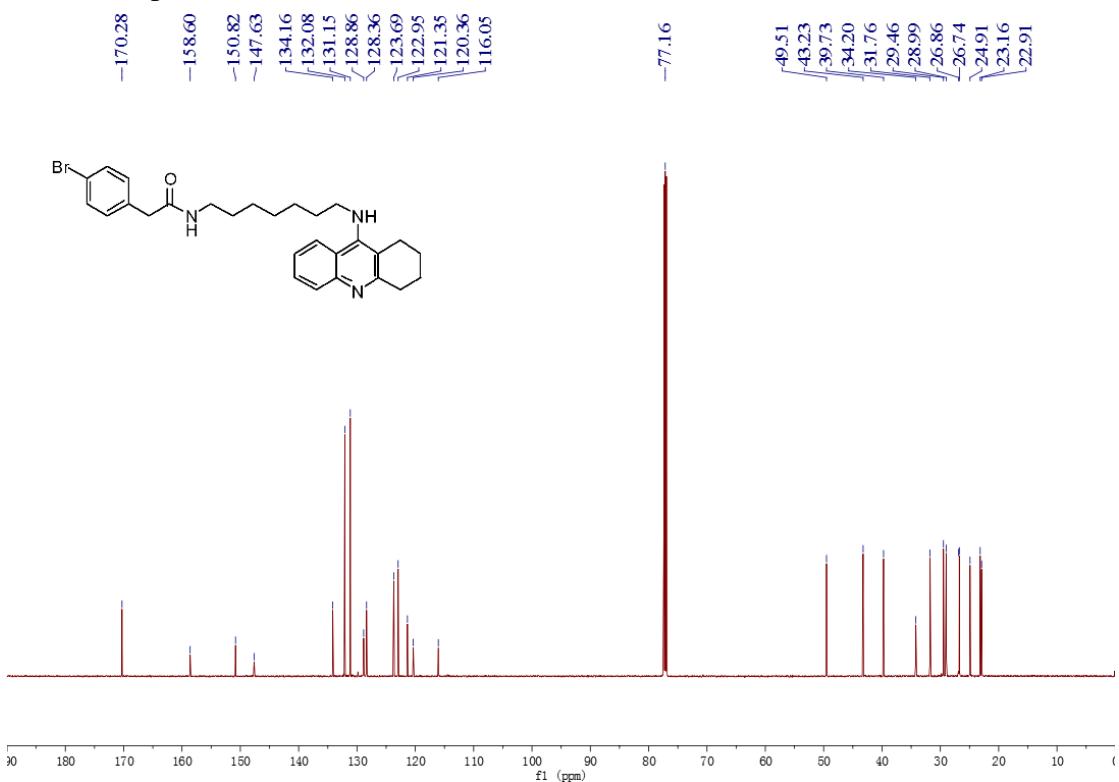
HR-MS (ESI) spectrum of **12e**



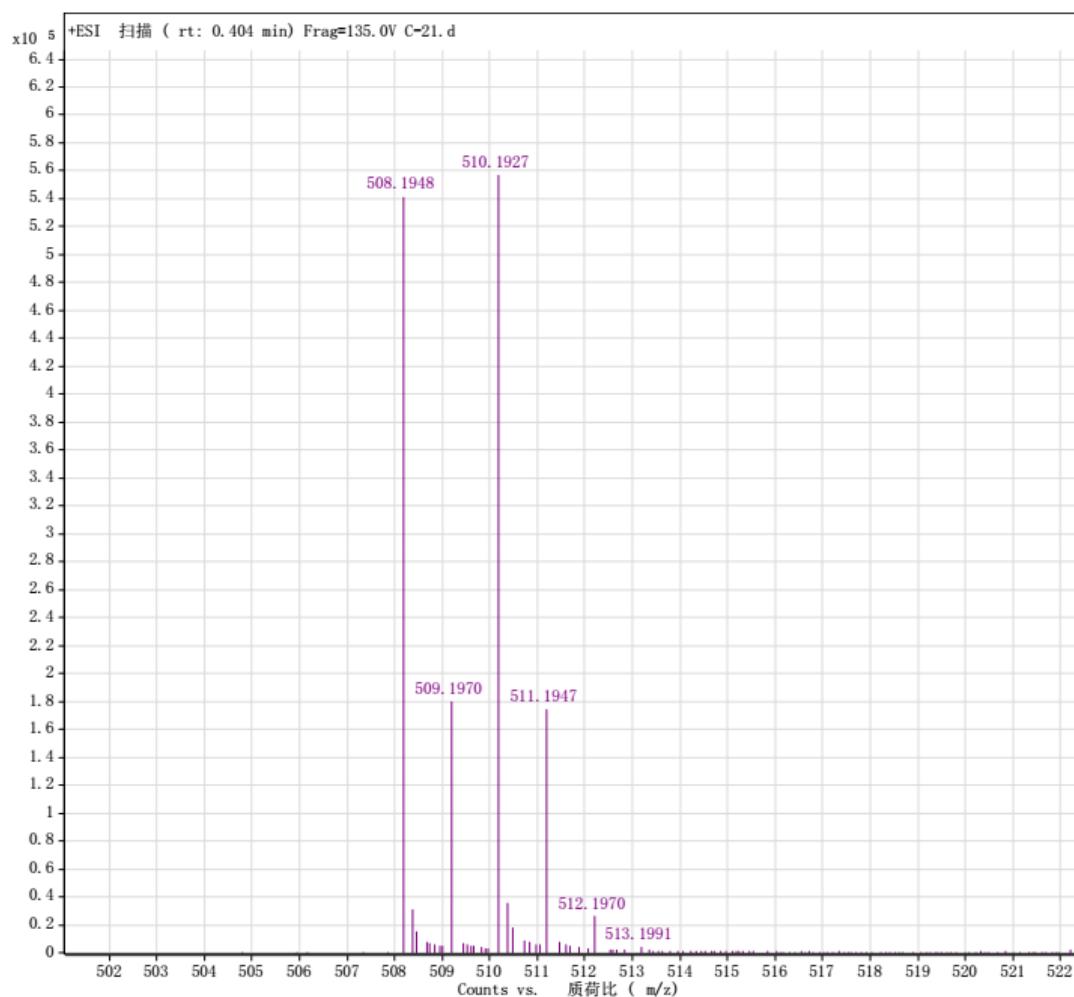
<sup>1</sup>H NMR spectrum of **12f**



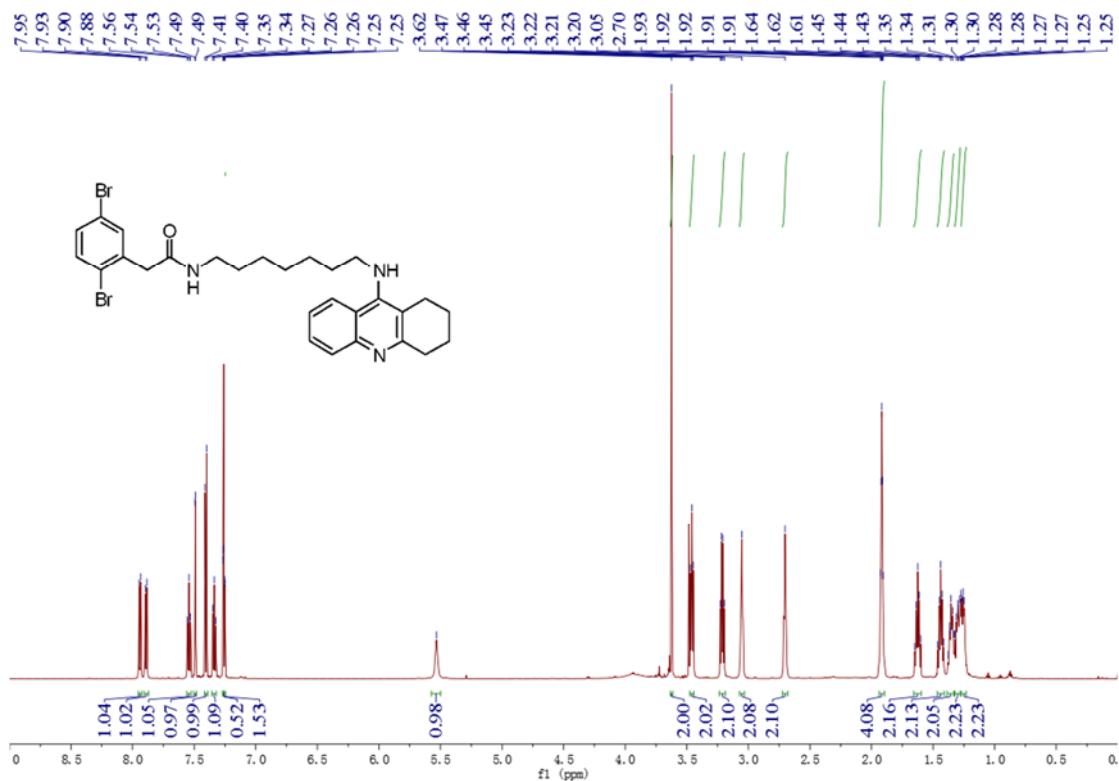
<sup>13</sup>C NMR spectrum of **12f**



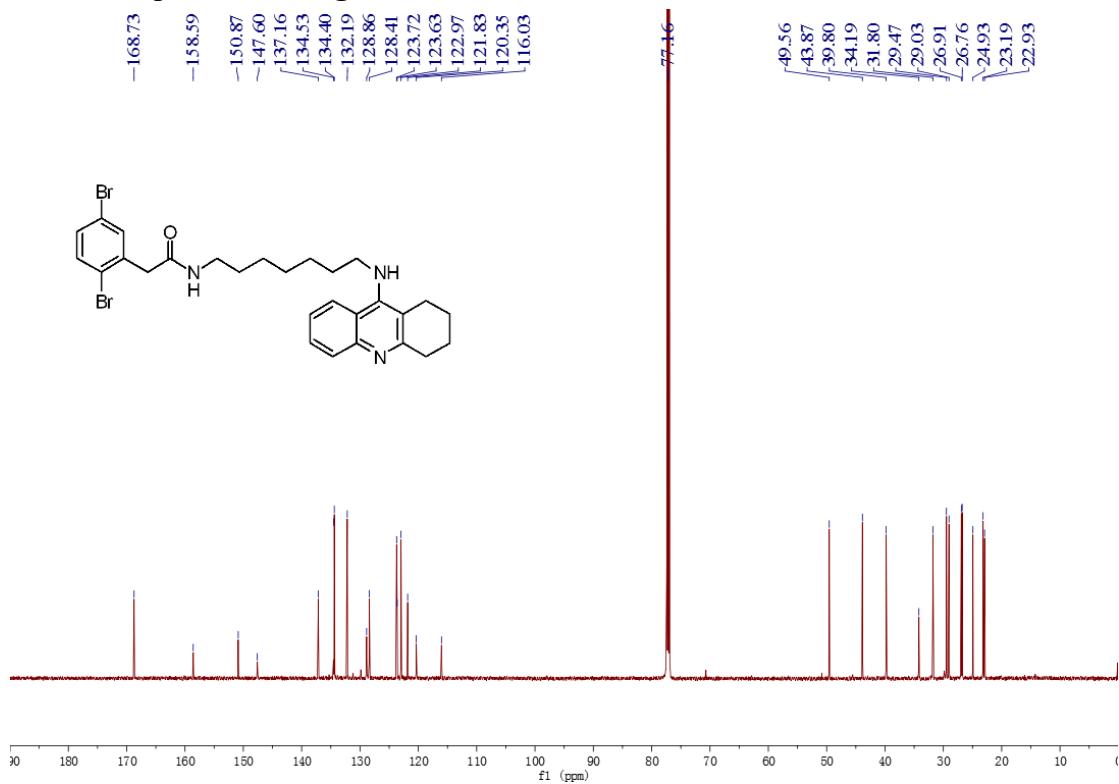
### HR-MS (ESI) spectrum of **12f**



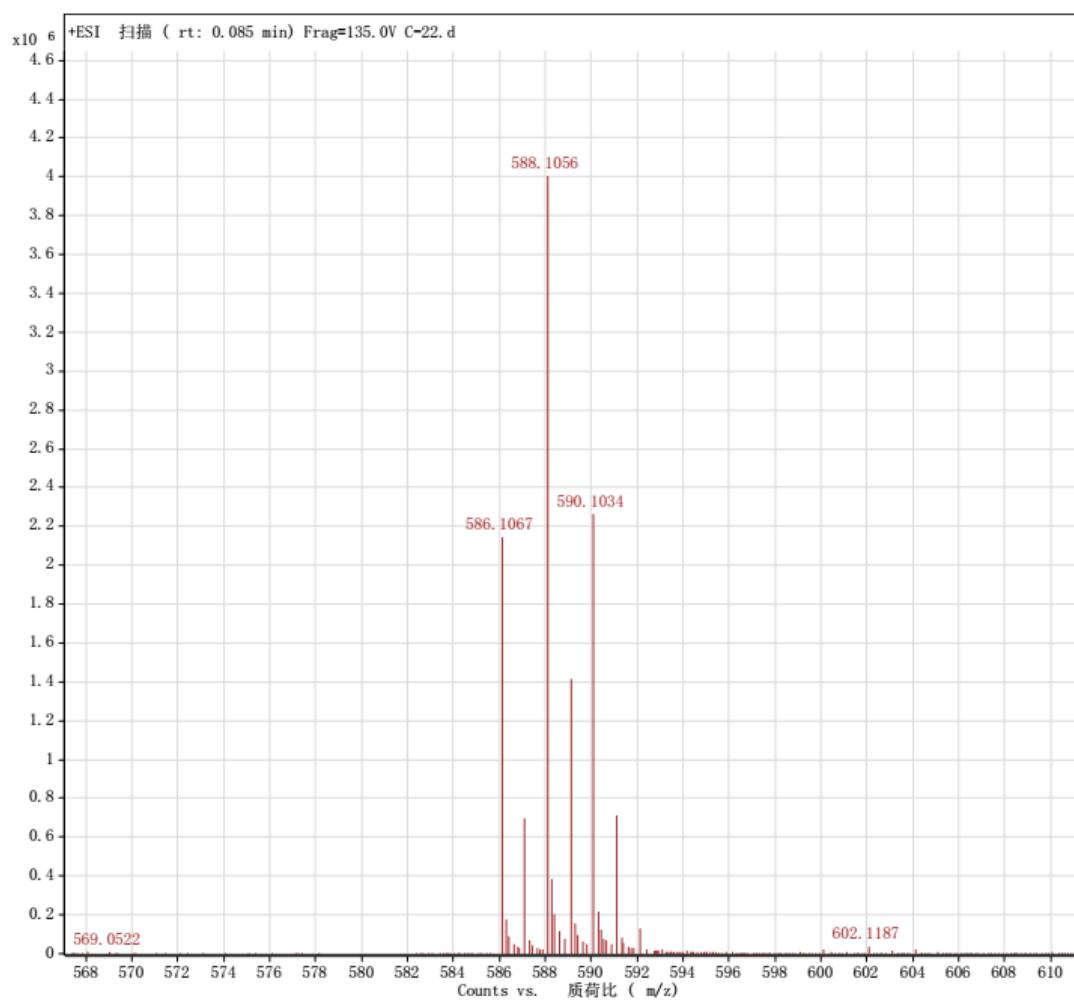
### <sup>1</sup>H NMR spectrum of 12g



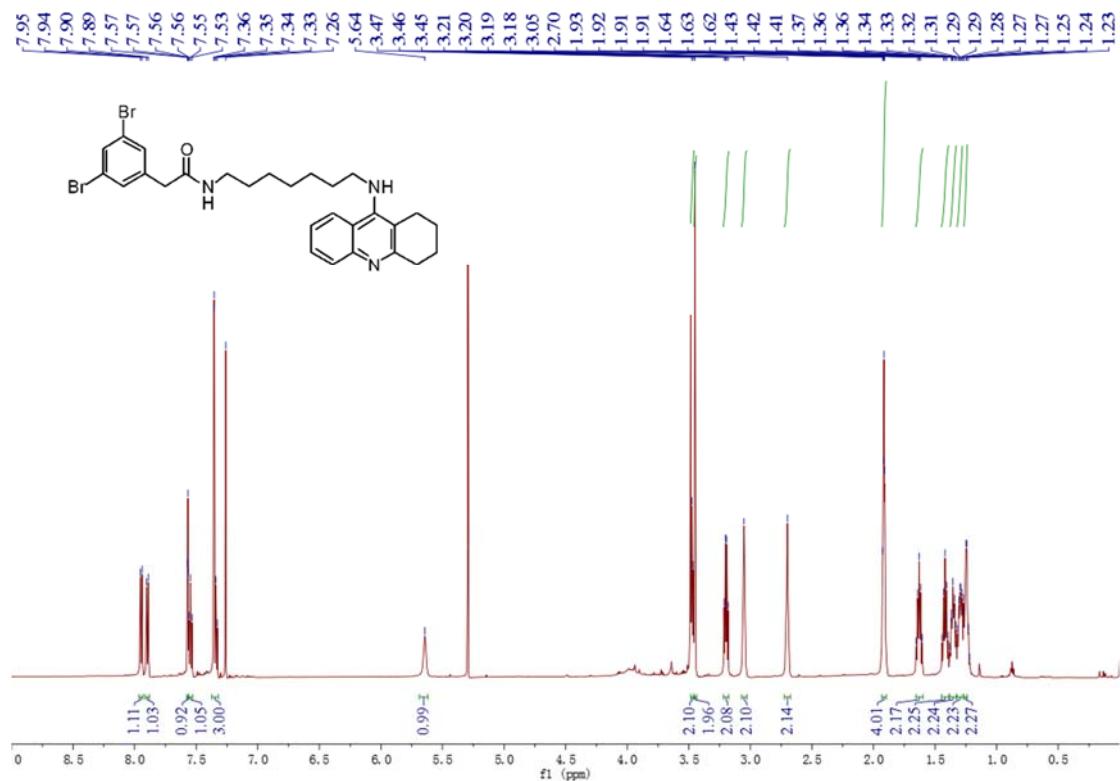
### <sup>13</sup>C NMR spectrum of 12g



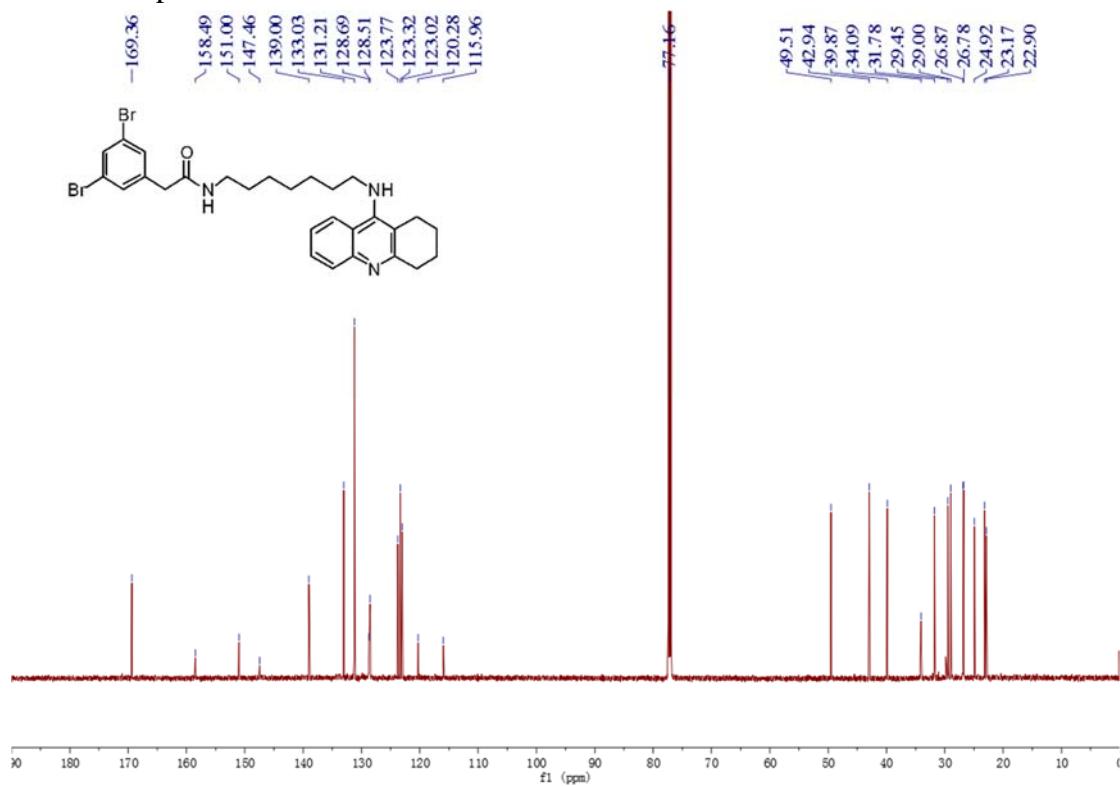
### HR-MS (ESI) spectrum of **12g**



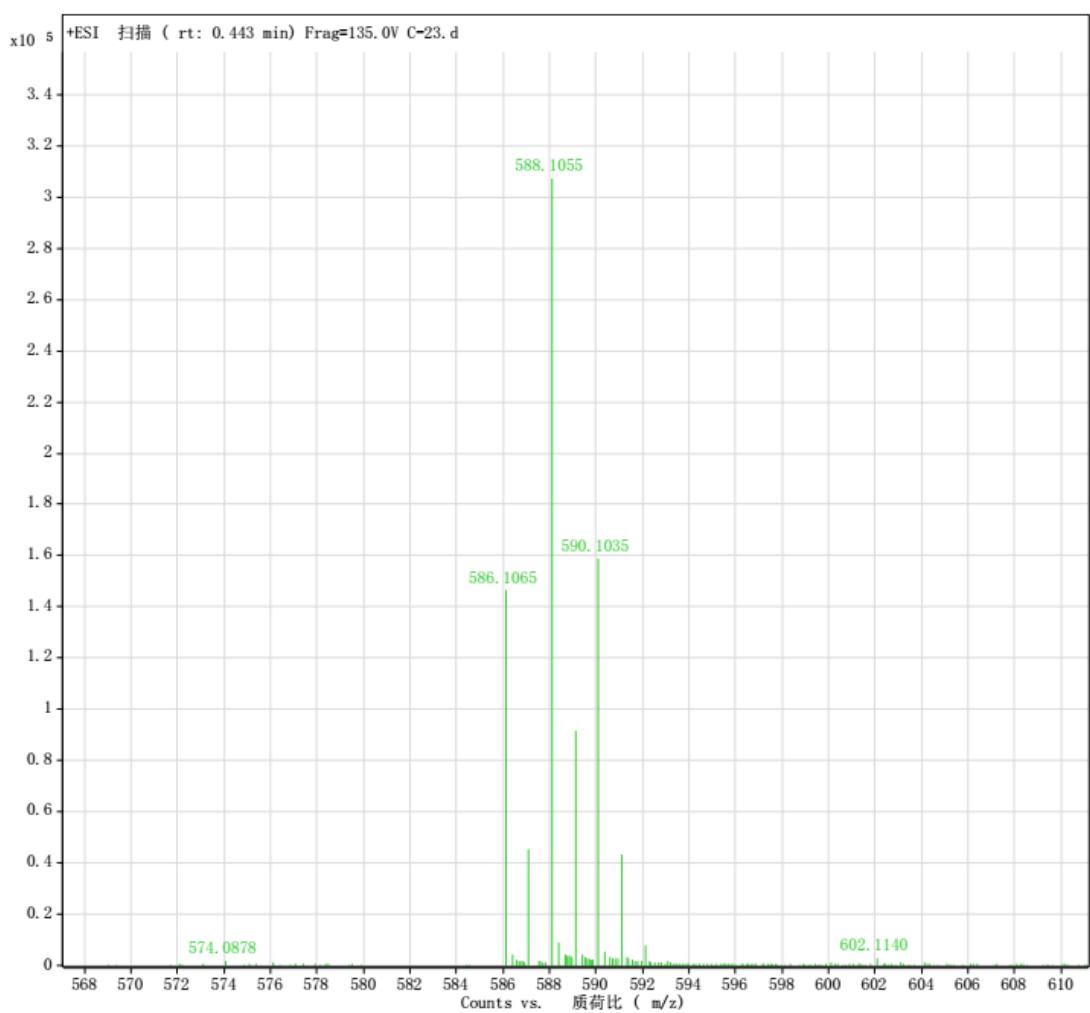
<sup>1</sup>H NMR spectrum of **12h**



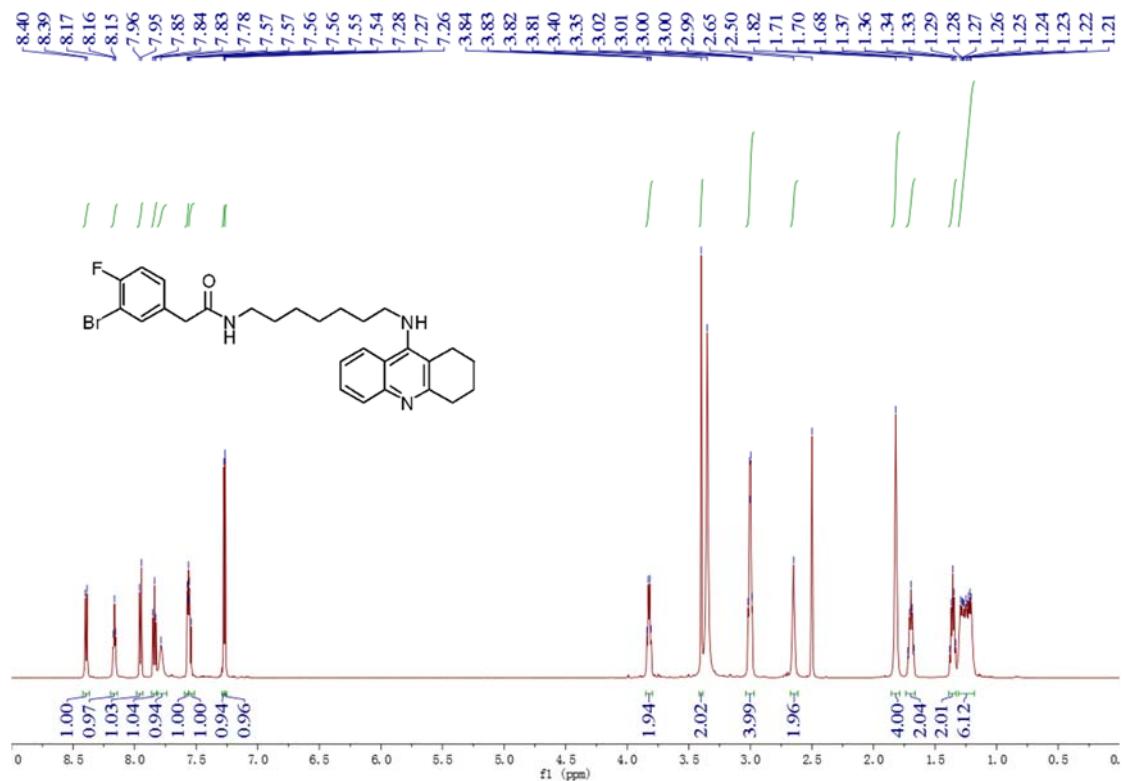
<sup>13</sup>C NMR spectrum of **12h**



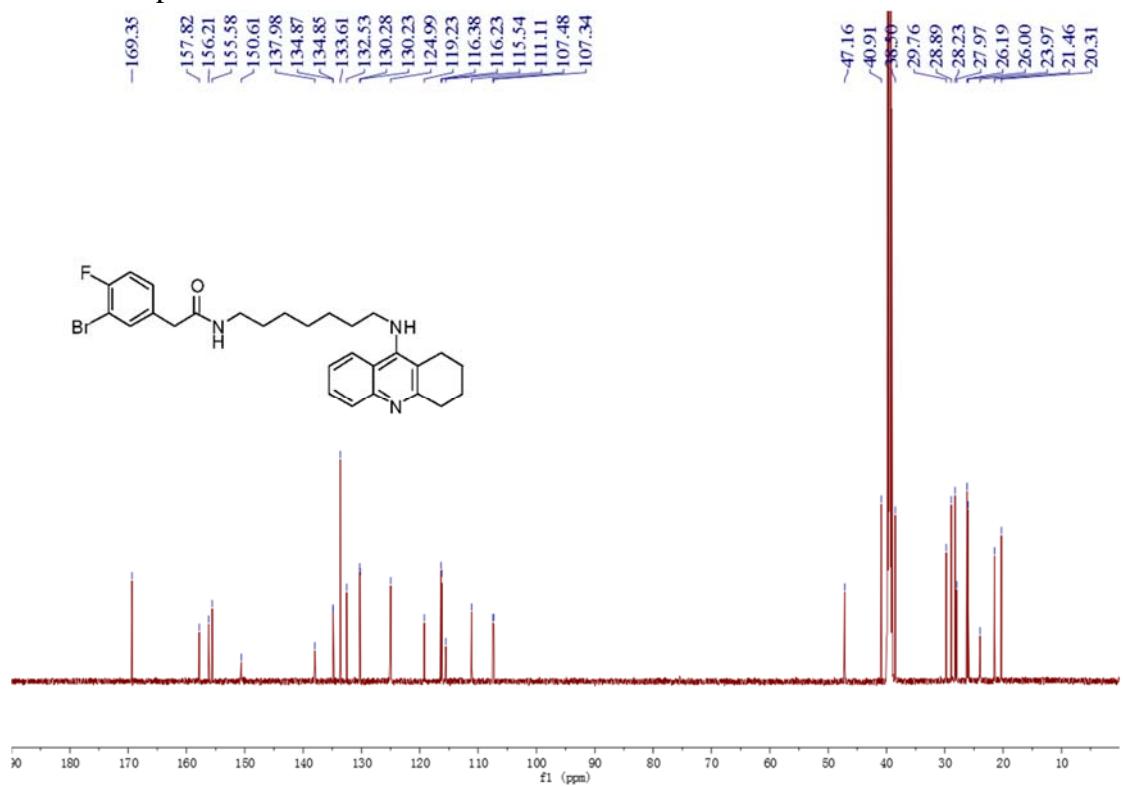
HR-MS (ESI) spectrum of **12h**



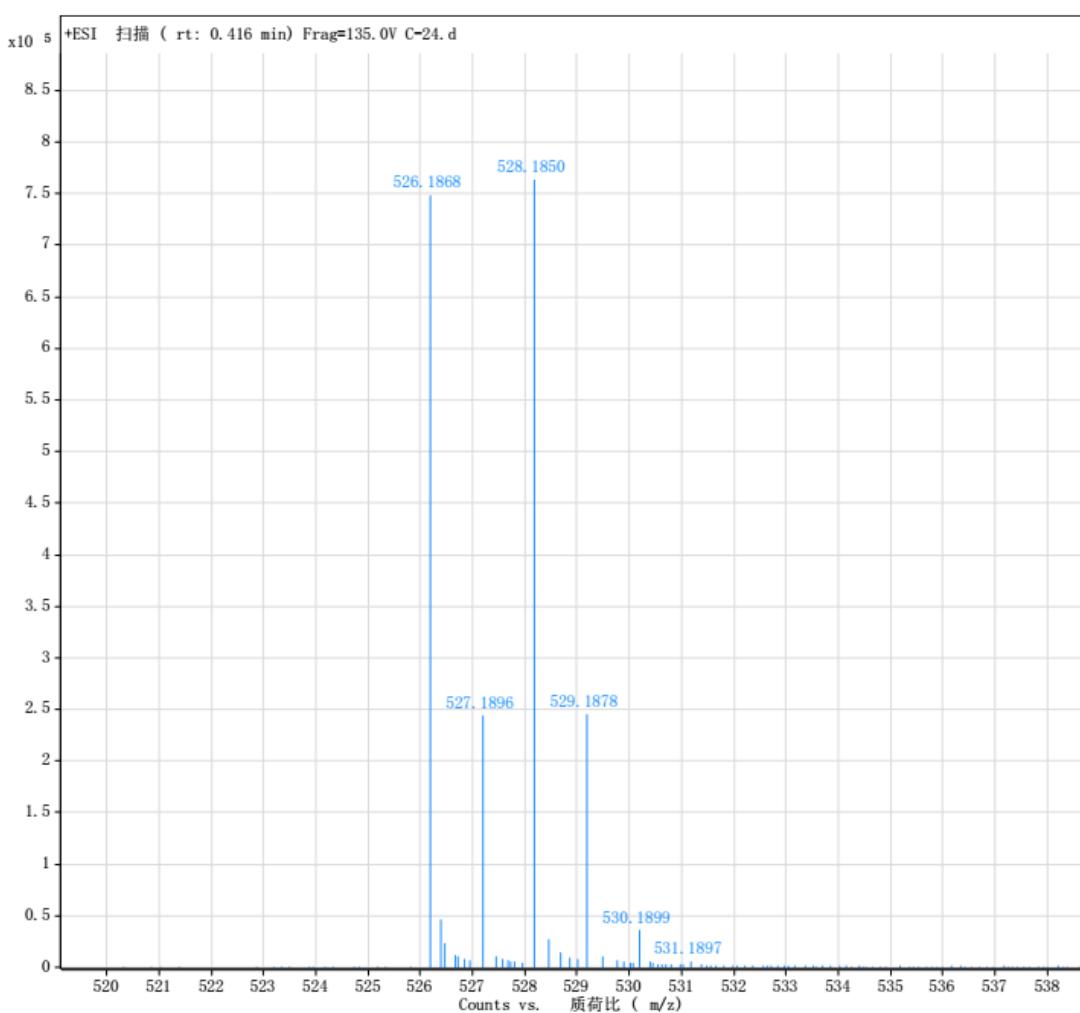
<sup>1</sup>H NMR spectrum of **12i**



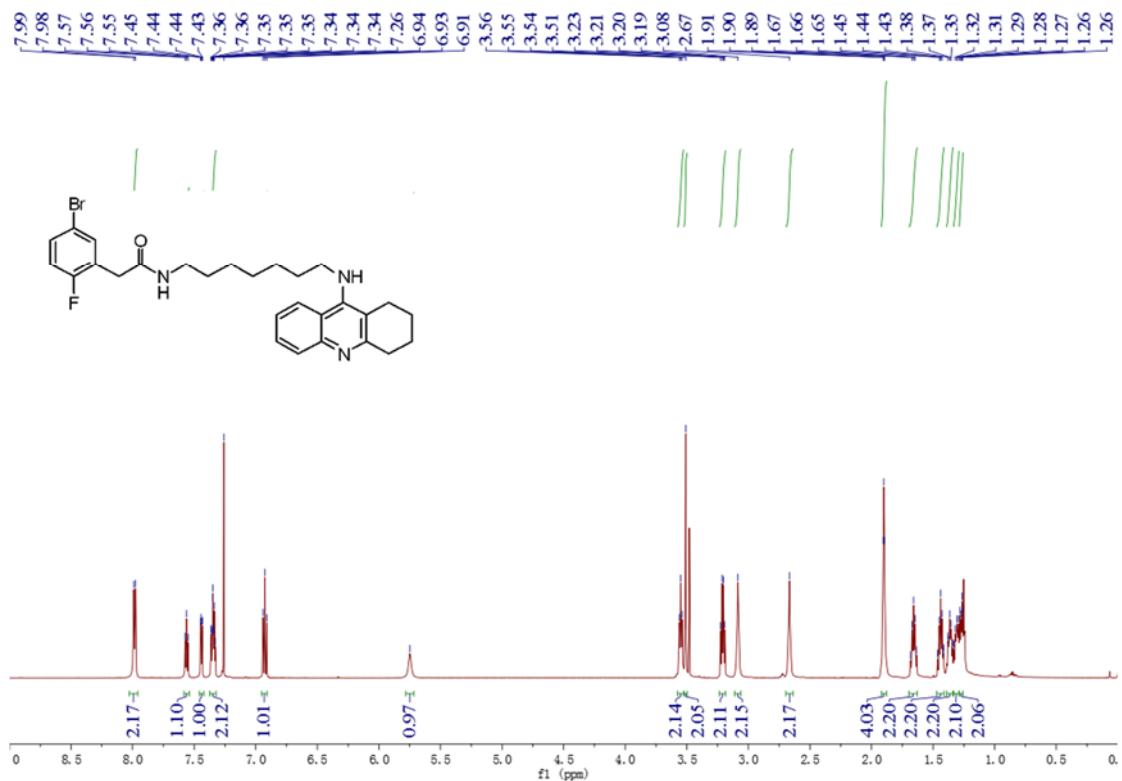
<sup>13</sup>C NMR spectrum of **12i**



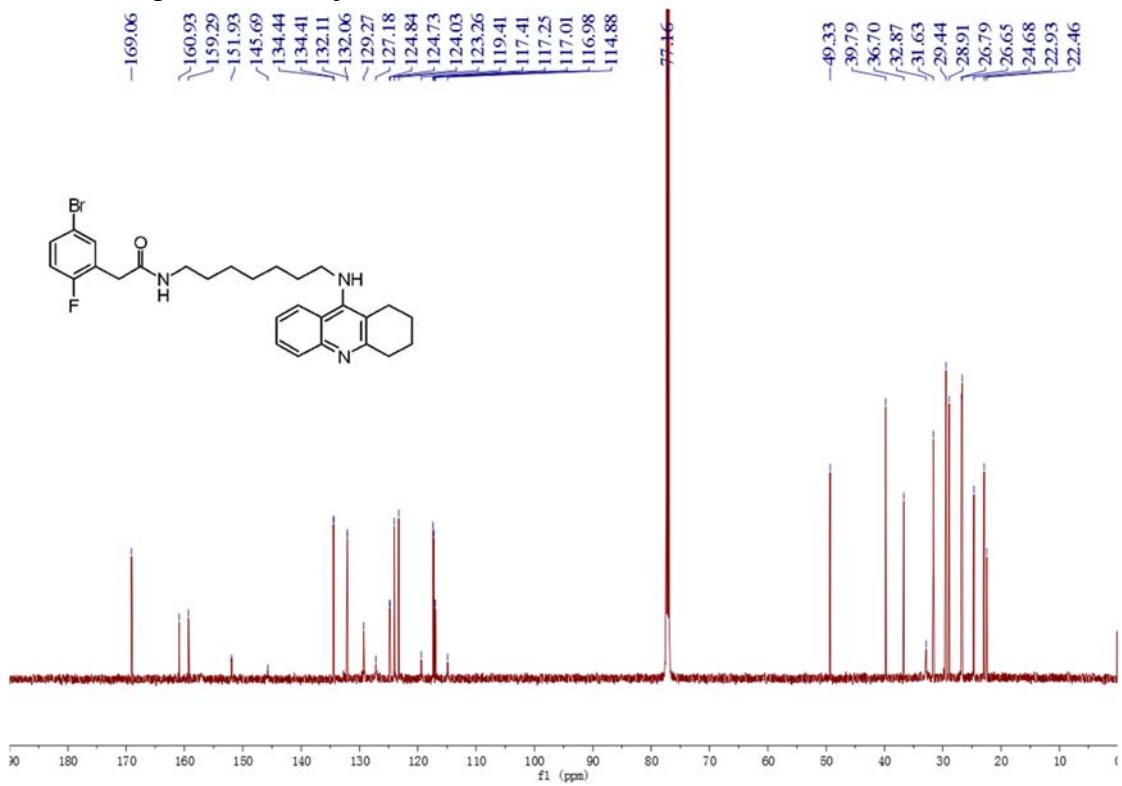
### HR-MS (ESI) spectrum of **12i**



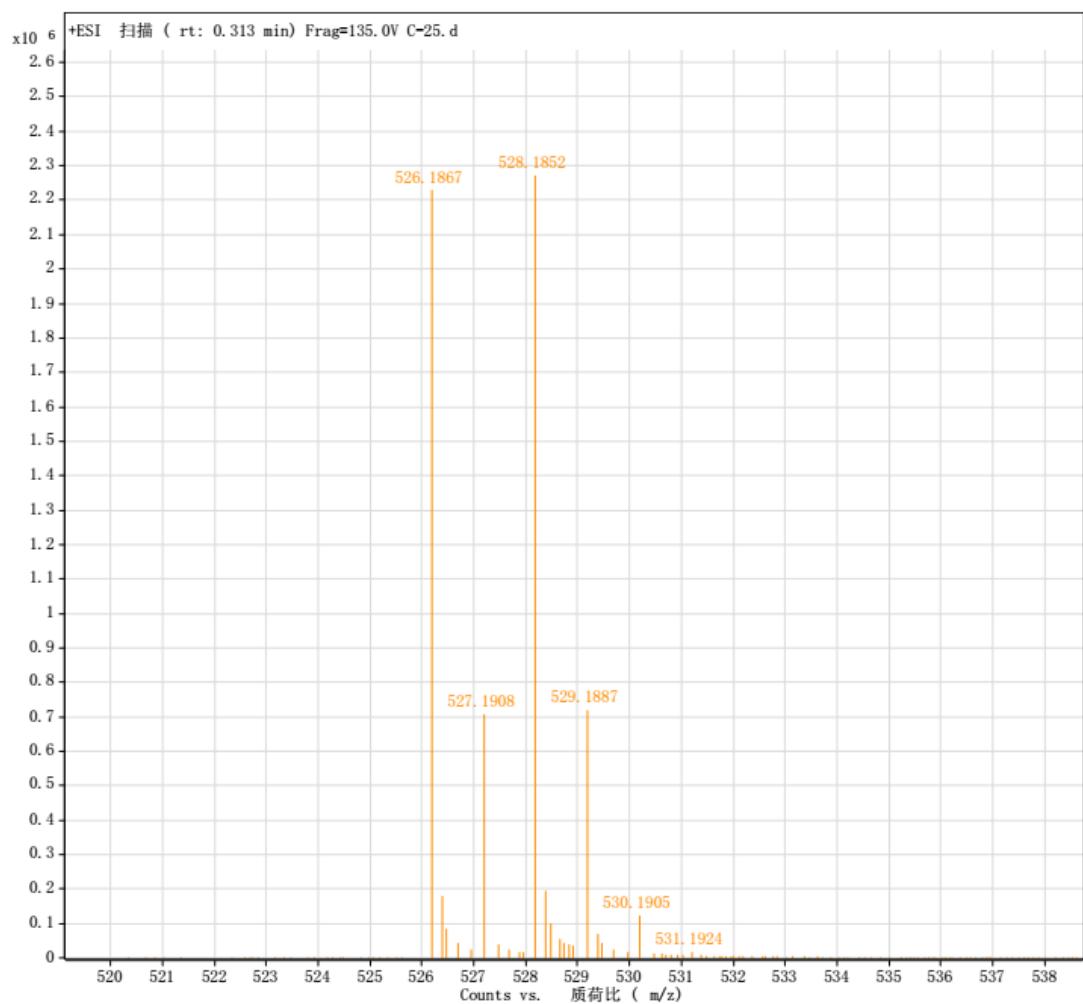
### <sup>1</sup>H NMR spectrum of 12j



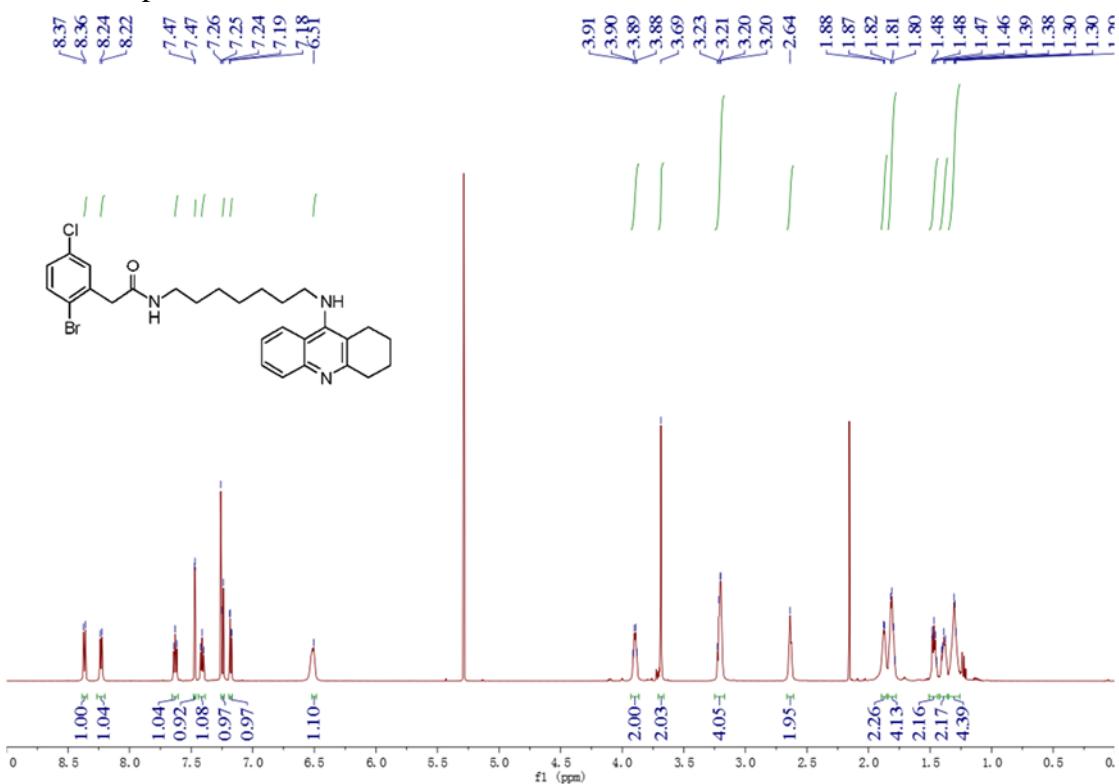
<sup>13</sup>C NMR spectrum of **12j**



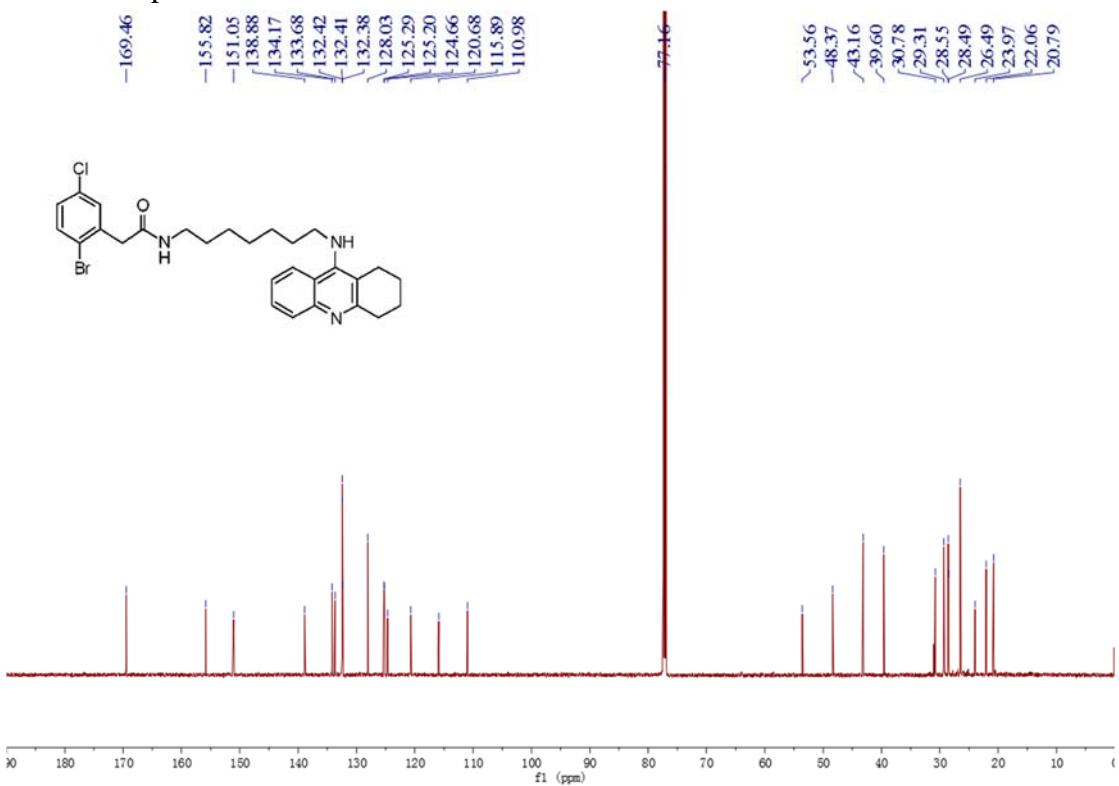
### HR-MS (ESI) spectrum of **12j**



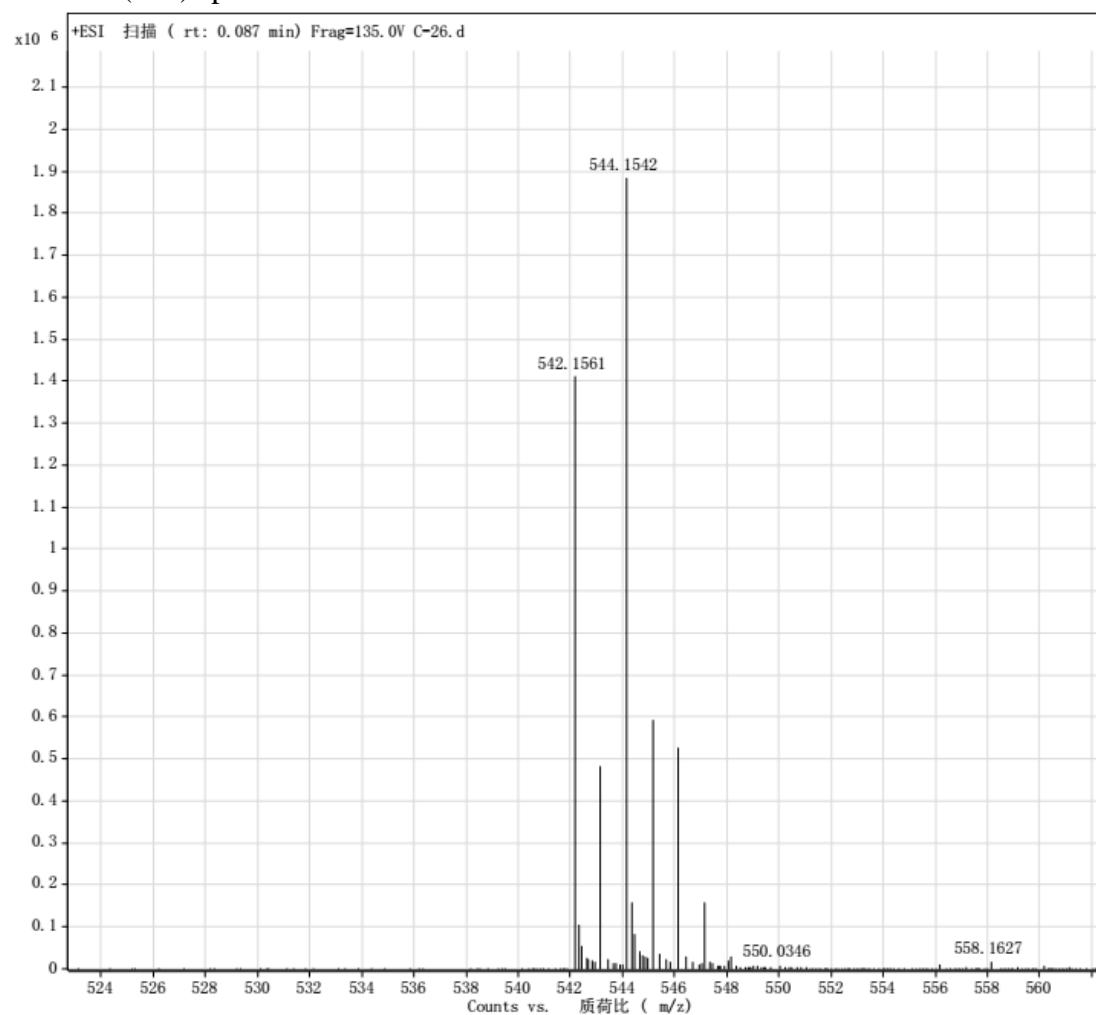
<sup>1</sup>H NMR spectrum of **12k**



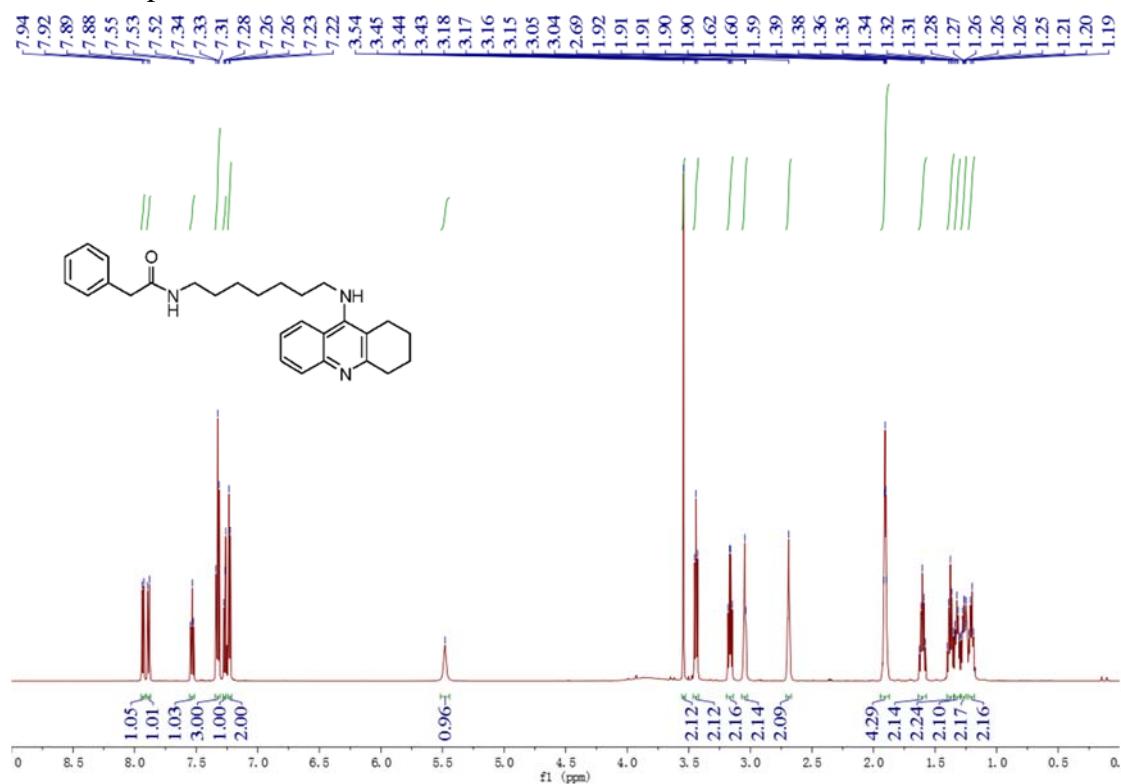
<sup>13</sup>C NMR spectrum of **12k**



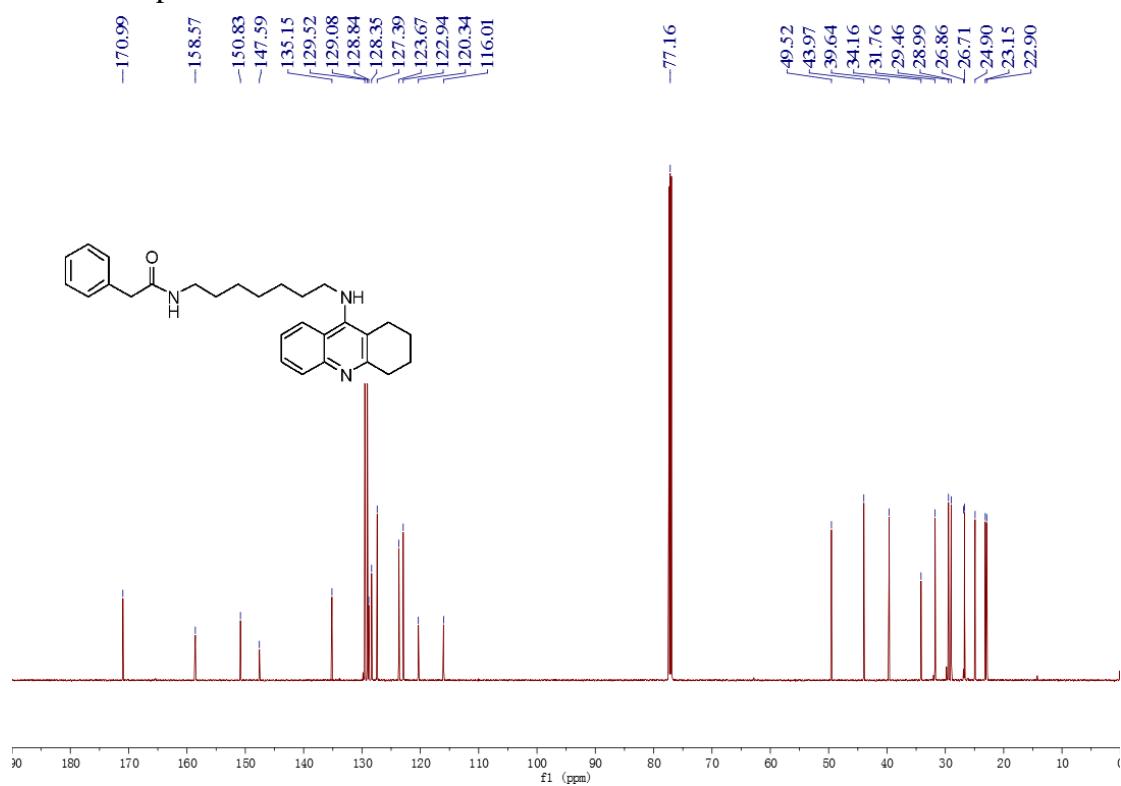
### HR-MS (ESI) spectrum of **12k**



<sup>1</sup>H NMR spectrum of **12l**



<sup>13</sup>C NMR spectrum of **12l**



HR-MS (ESI) spectrum of **12l**

