

# **3-(1,2,3-Triazol-4-yl)- $\beta$ -Carbolines and 3-(1*H*-Tetrazol-5-yl)- $\beta$ -Carbolines: Synthesis and Evaluation as Anticancer Agents**

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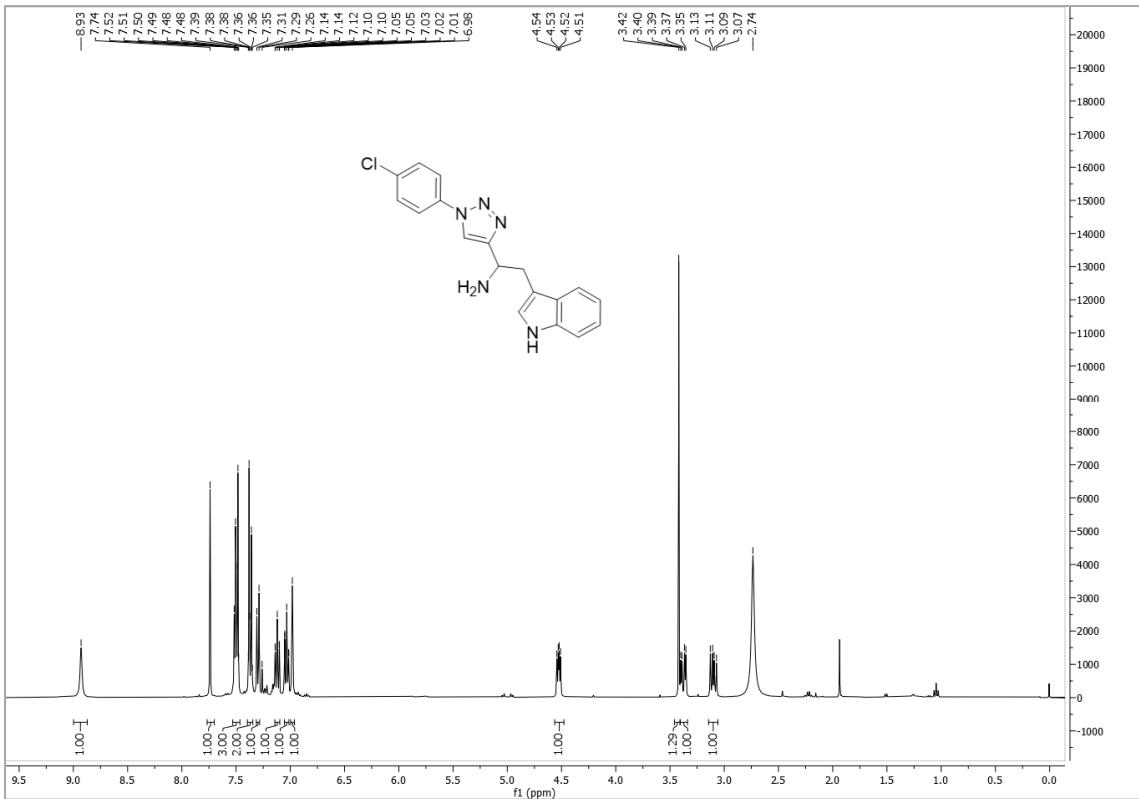
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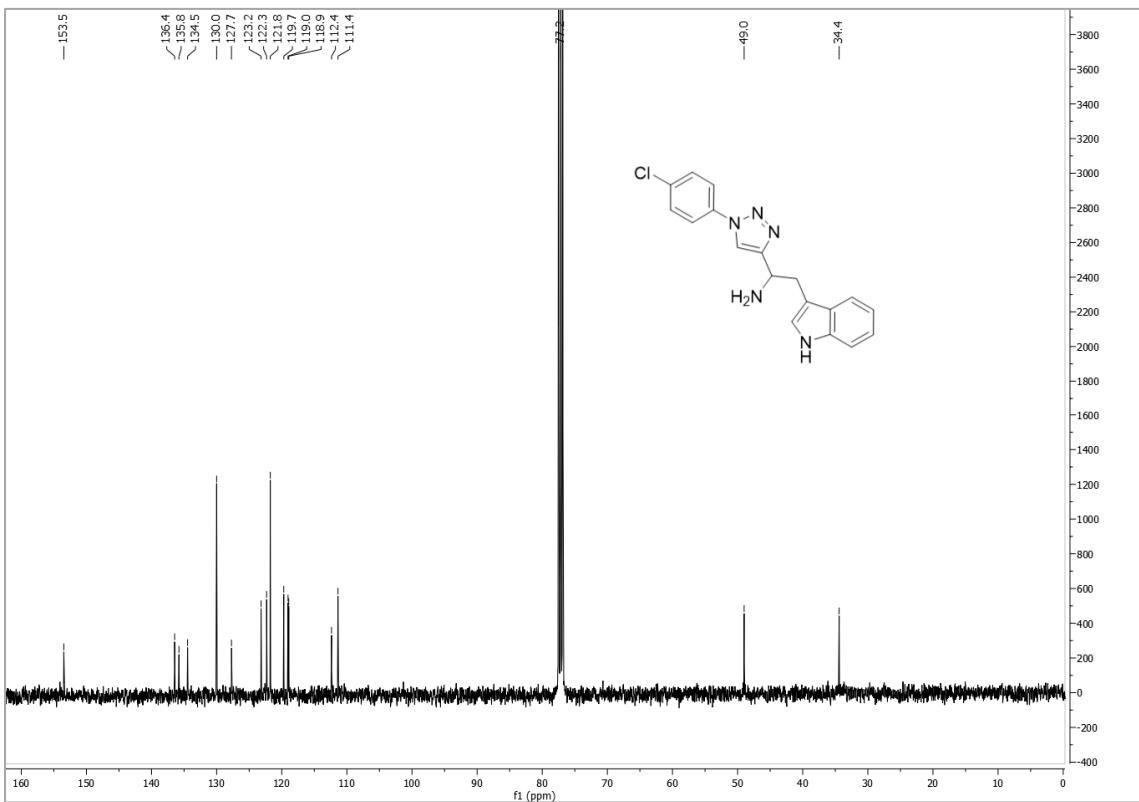
## **Supporting Information**

### **Table of Contents**

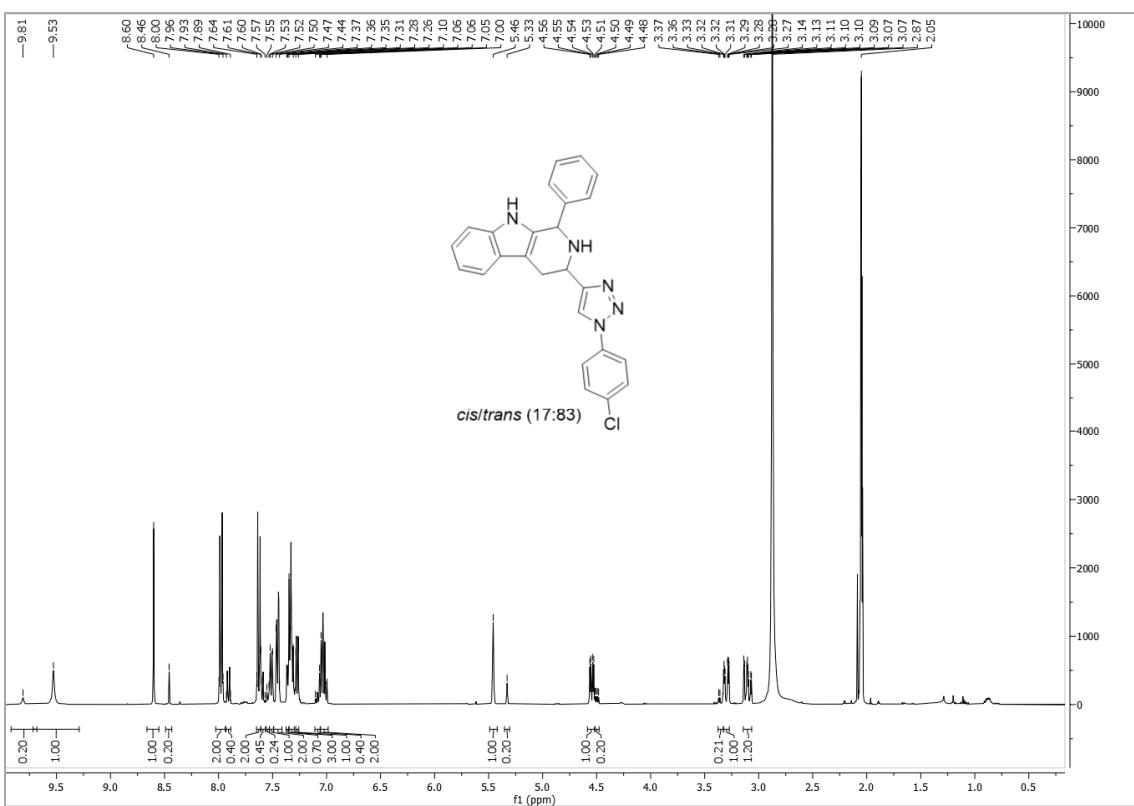
<sup>1</sup> H and <sup>13</sup> C NMR spectra of all new compounds.....	2
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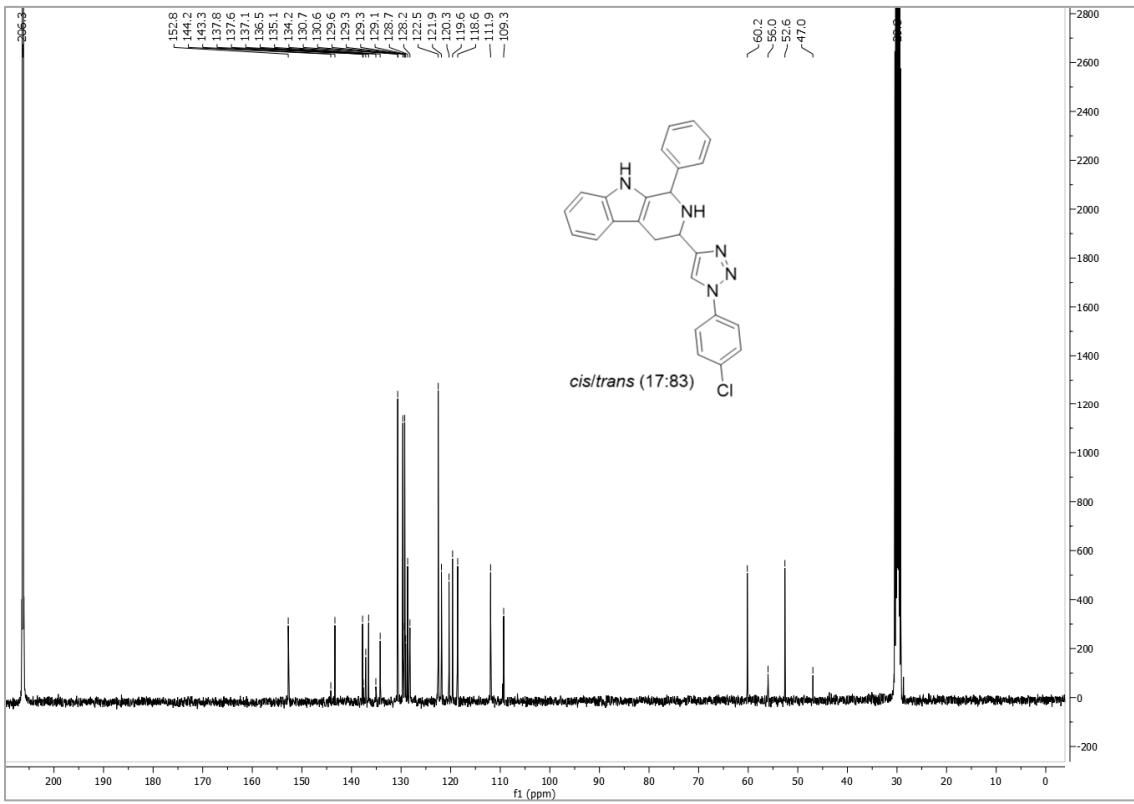
**Figure S1.**  $^1\text{H}$  NMR spectrum of amine **11** (400 MHz,  $\text{CDCl}_3$ ).



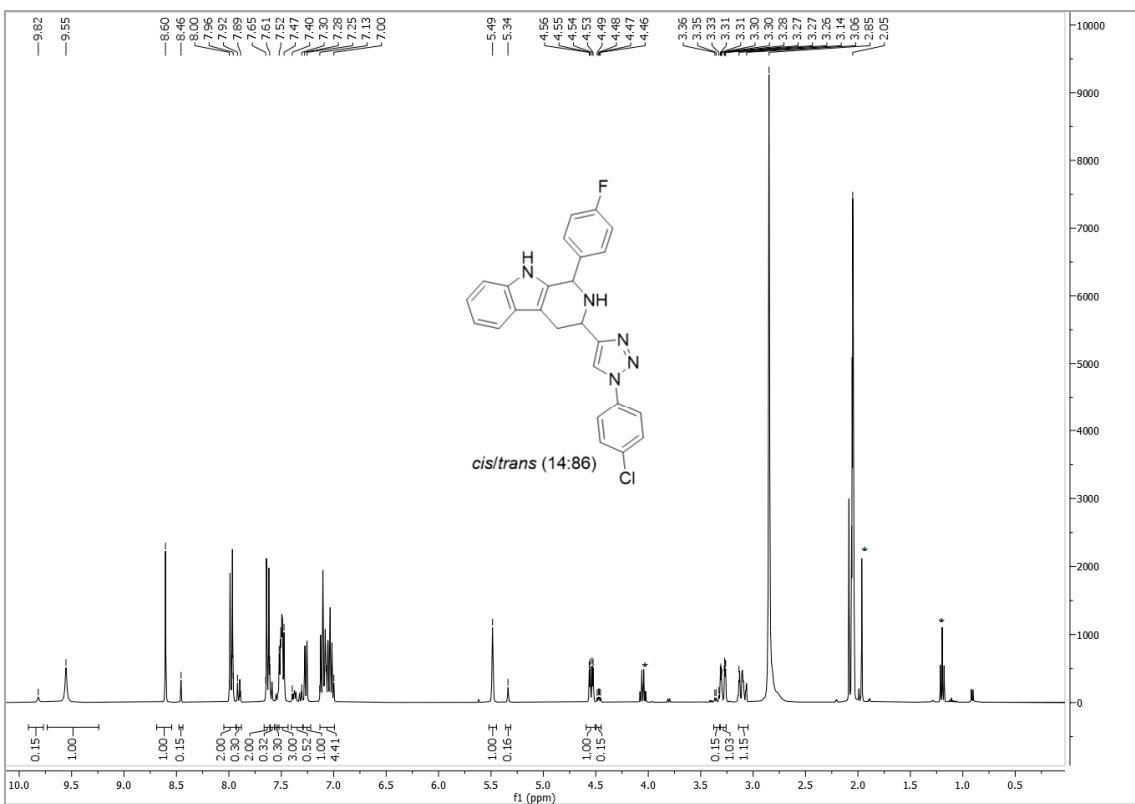
**Figure S2.**  $^{13}\text{C}$  NMR spectrum of amine **11** (100 MHz,  $\text{CDCl}_3$ ).



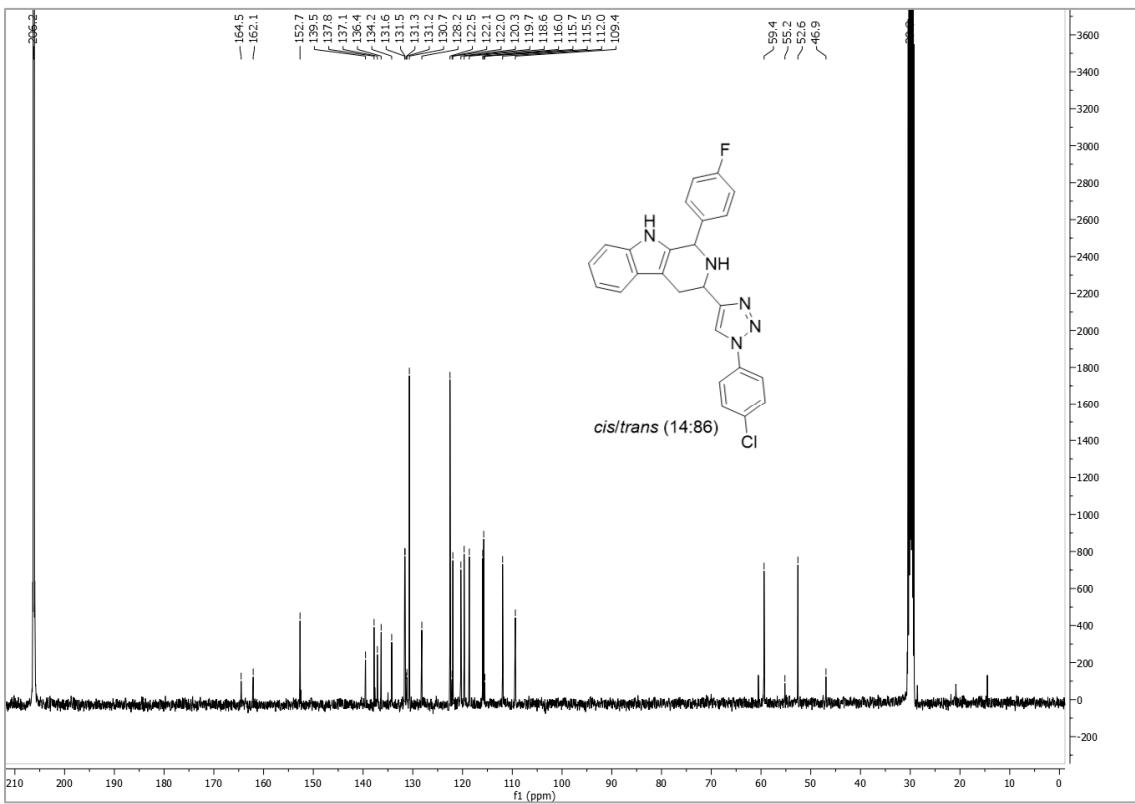
**Figure S3.** <sup>1</sup>H NMR spectrum of compounds 12a (400 MHz, Acetone-*d*<sub>6</sub>).



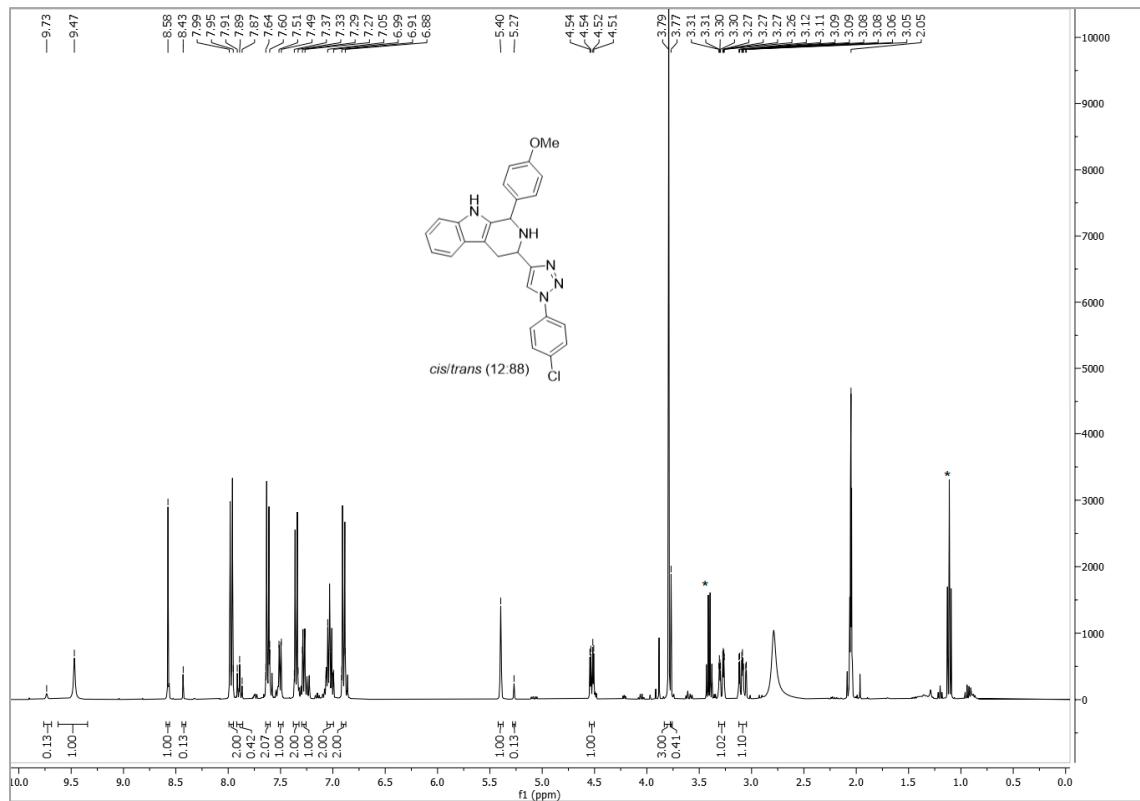
**Figure S4.** <sup>13</sup>C NMR spectrum of compounds 12a (100 MHz, Acetone-*d*<sub>6</sub>).



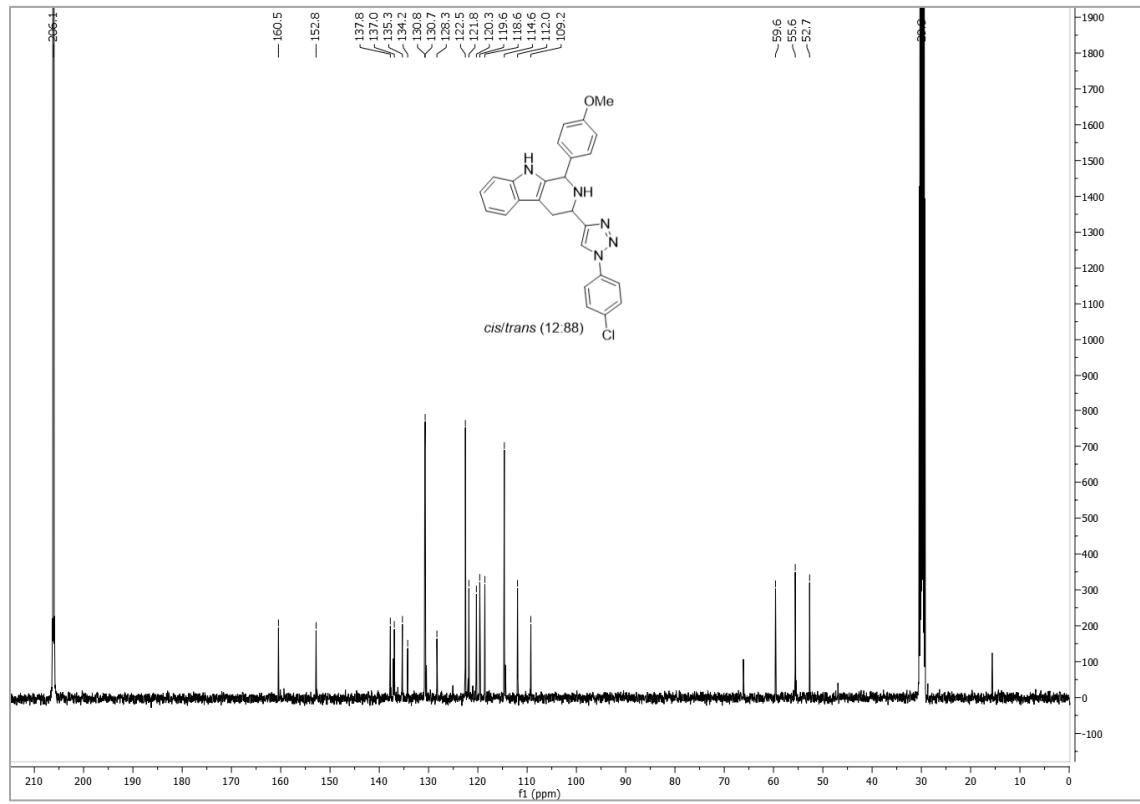
**Figure S5.** <sup>1</sup>H NMR spectrum of compounds 12b (400 MHz, Acetone- $d_6$ ). \*Solvent (EtOAc).



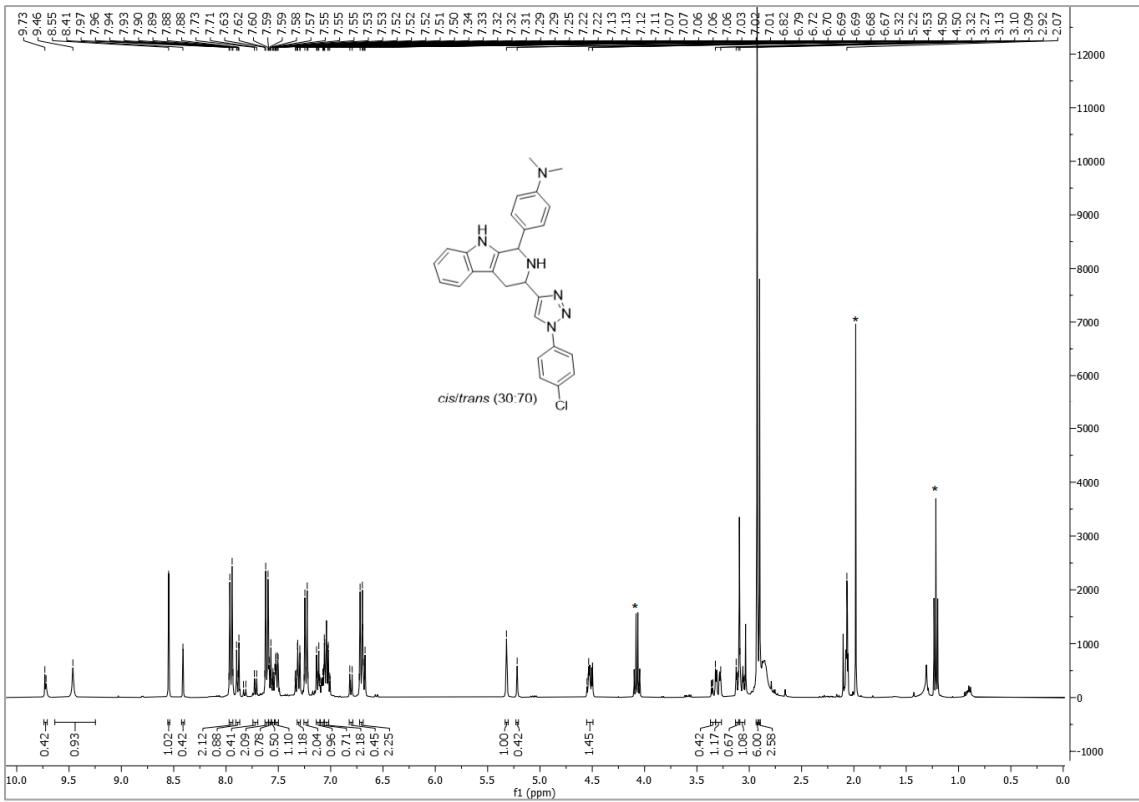
**Figure S6.** <sup>13</sup>C NMR spectrum of compounds 12b (100 MHz, Acetone- $d_6$ ).



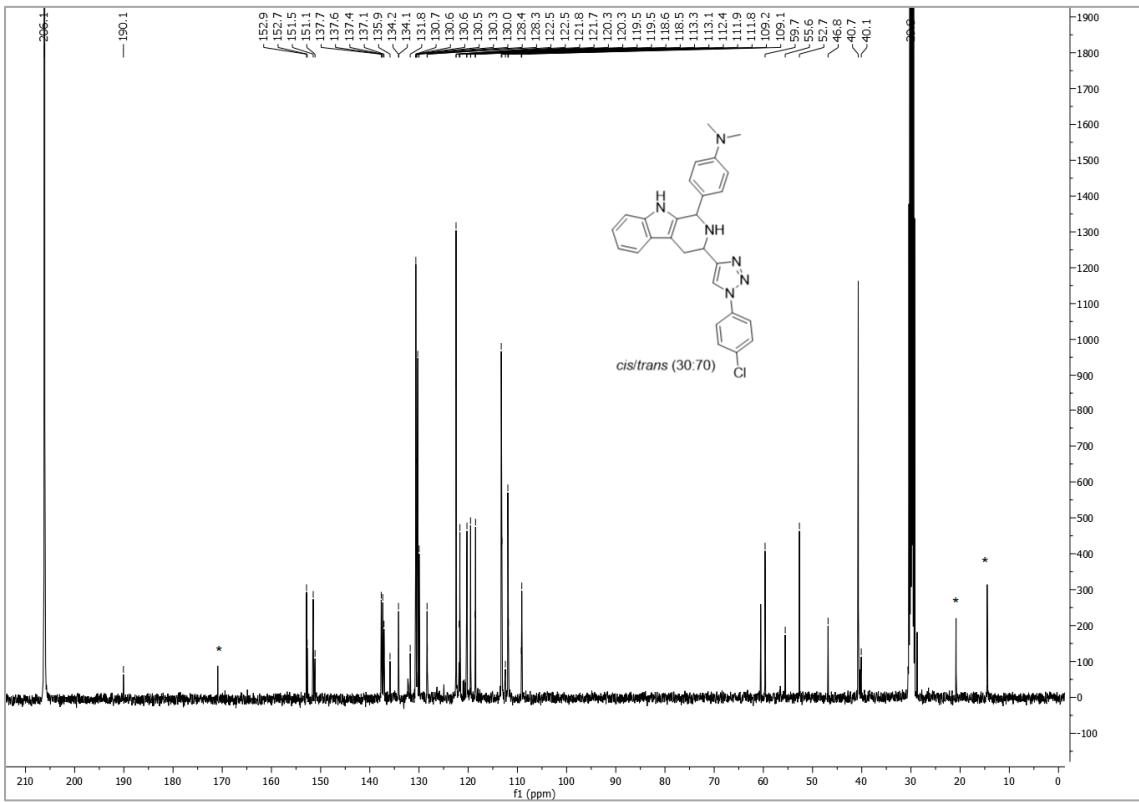
**Figure S7.**  $^1\text{H}$  NMR spectrum of compounds **12c** (400 MHz, Acetone- $d_6$ ). \*Solvent ( $\text{Et}_2\text{O}$ ).



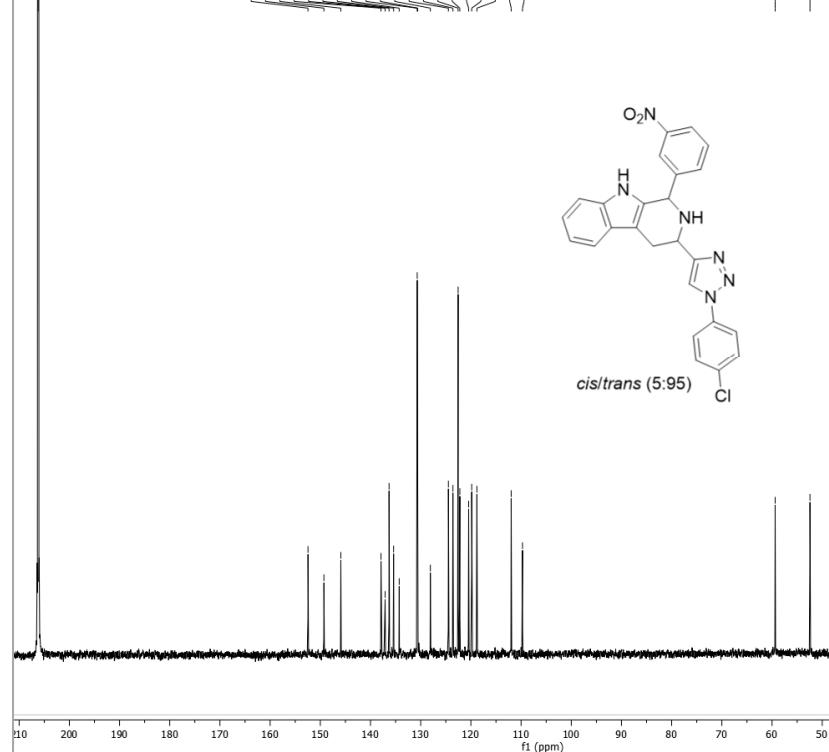
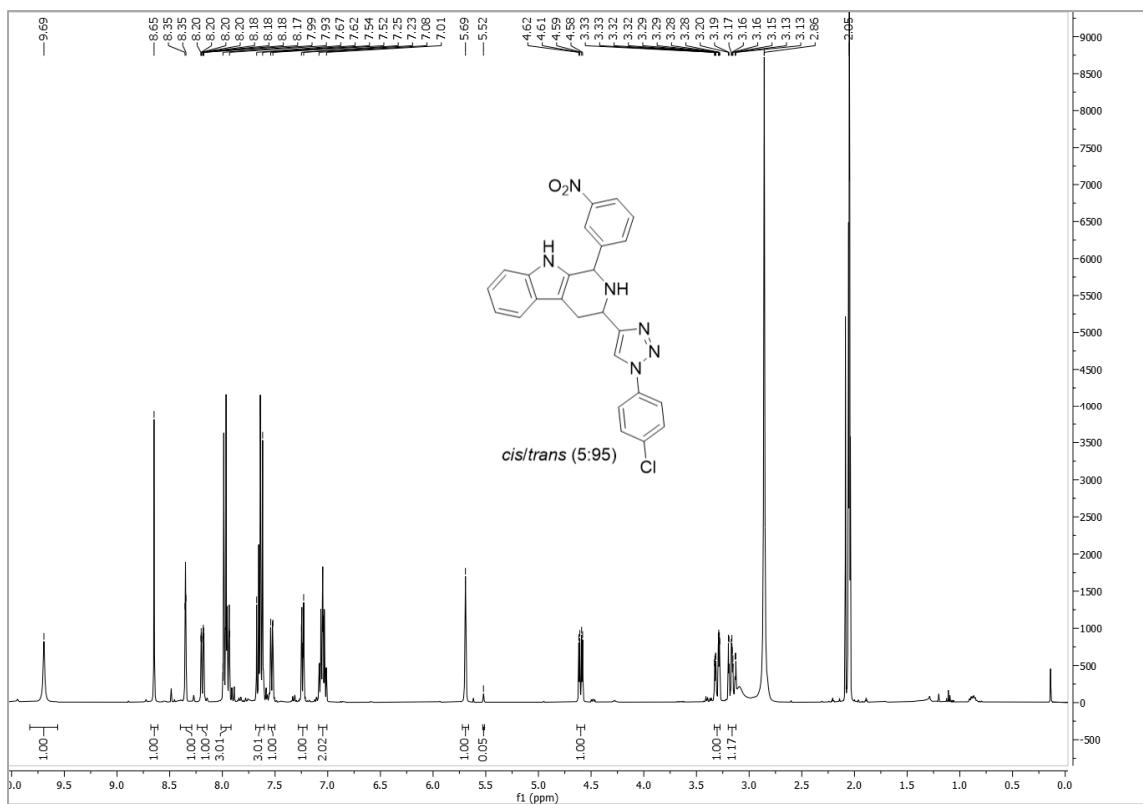
**Figure S8.**  $^{13}\text{C}$  NMR spectrum of compounds **12c** (100 MHz, Acetone- $d_6$ ).

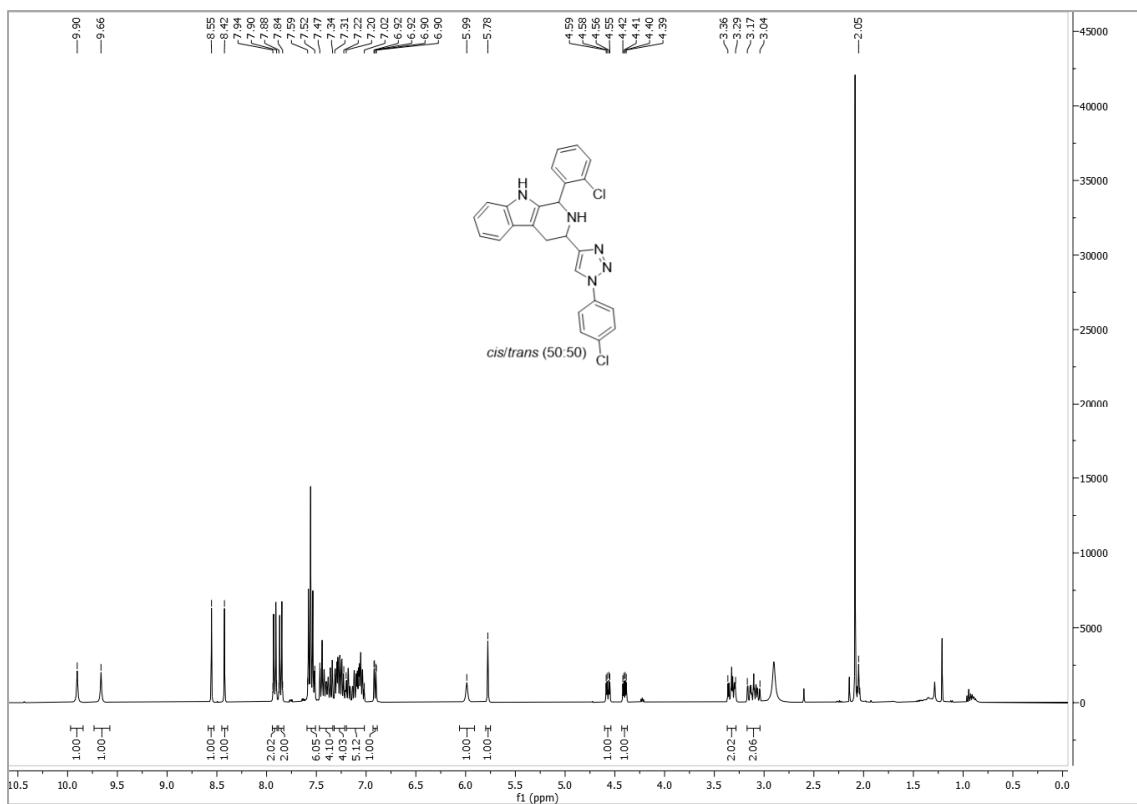


**Figure S9.**  $^1\text{H}$  NMR spectrum of compounds **12d** (400 MHz, Acetone- $d_6$ ). \*Solvent (EtOAc).

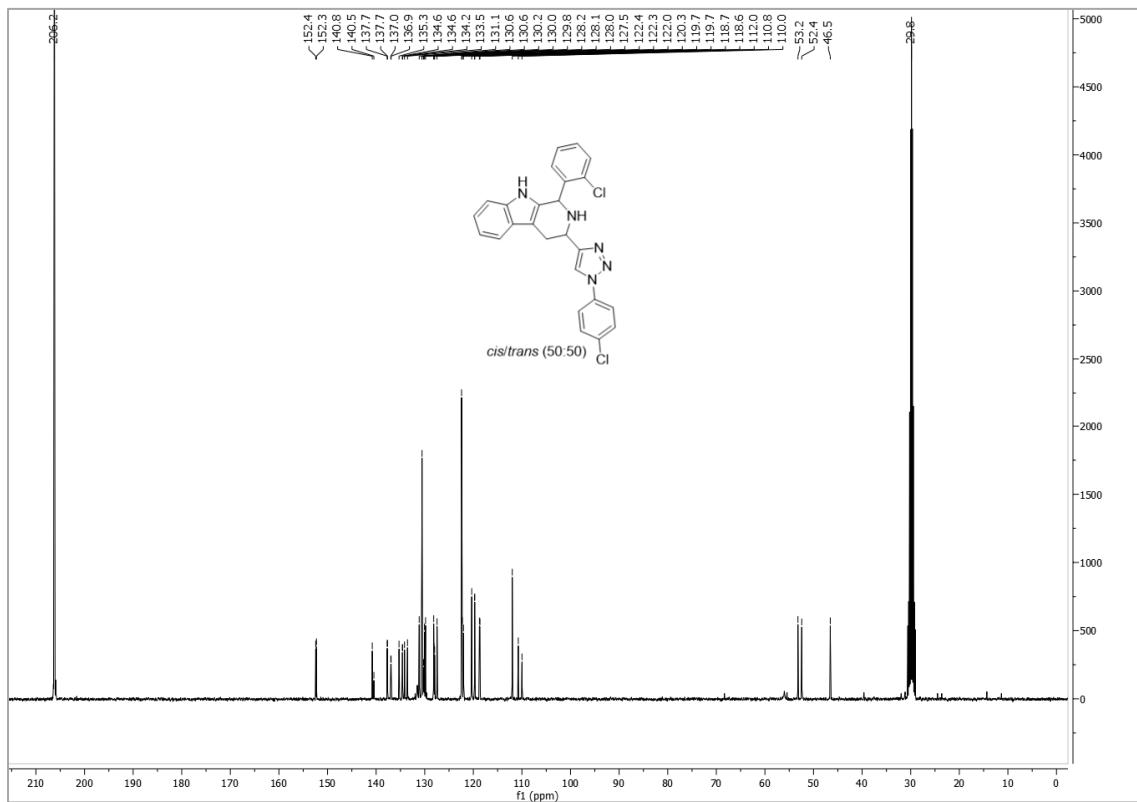


**Figure S10.**  $^{13}\text{C}$  NMR spectrum of compounds **12d** (100 MHz, Acetone- $d_6$ ). \*Solvent (EtOAc).

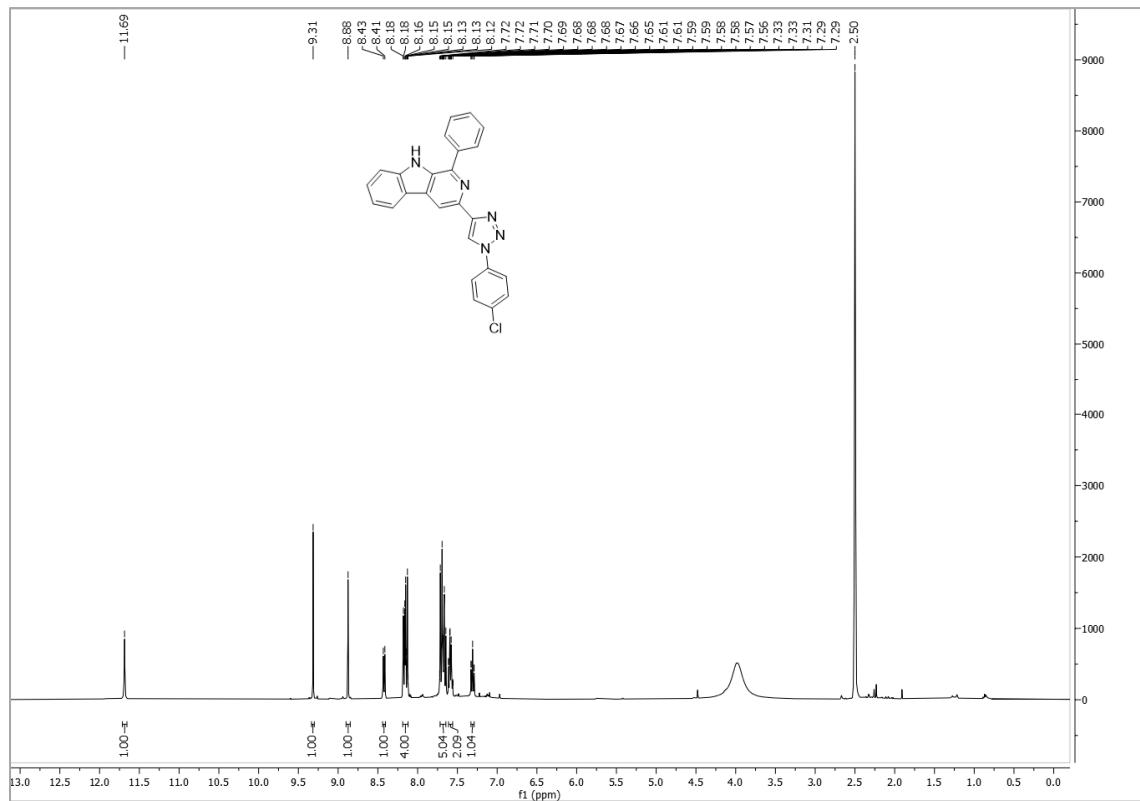




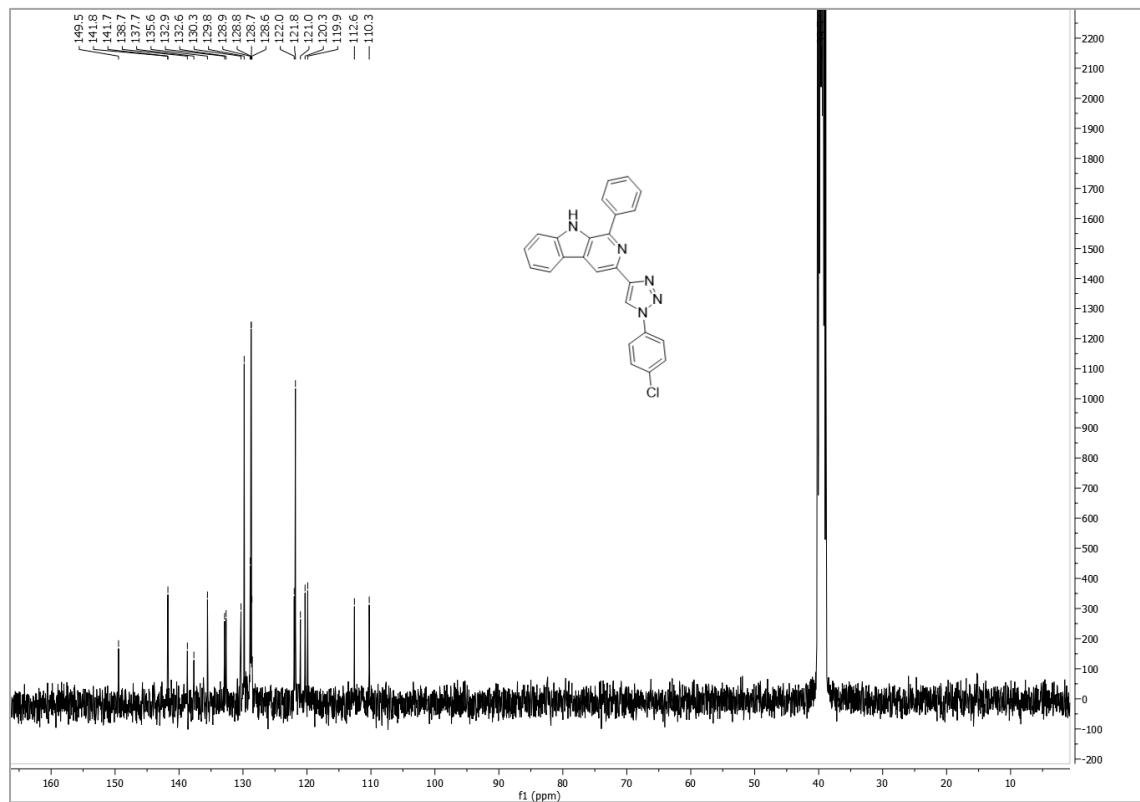
**Figure S13.** <sup>1</sup>H NMR spectrum of compounds 12f (400 MHz, Acetone-*d*<sub>6</sub>).



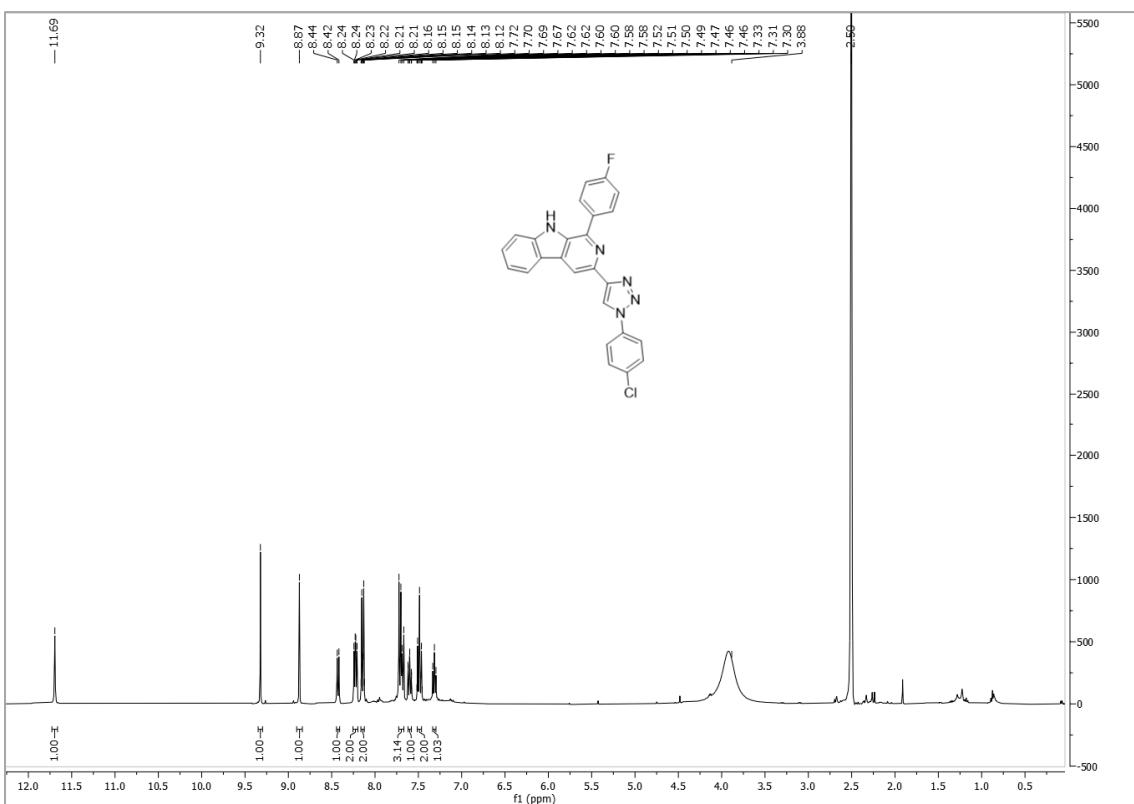
**Figure S14.** <sup>13</sup>C NMR spectrum of compounds 12f (100 MHz, Acetone-*d*<sub>6</sub>).



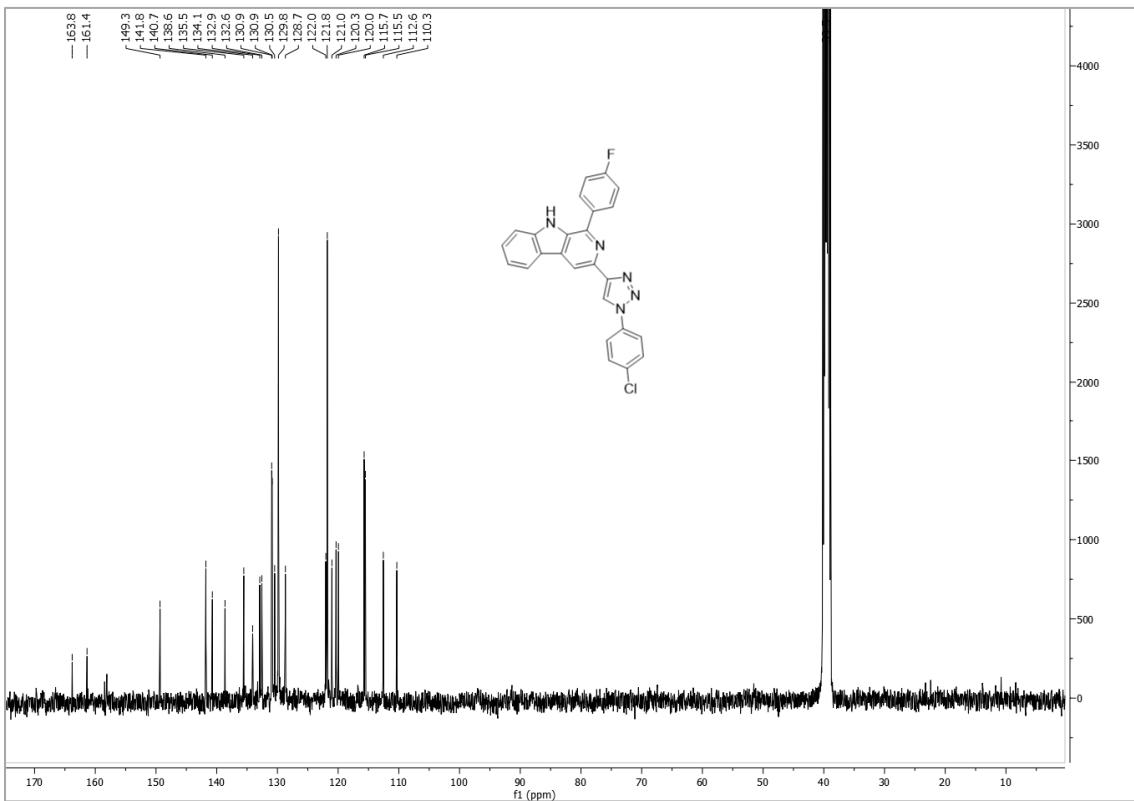
**Figure S15.**  $^1\text{H}$  NMR spectrum of compounds **13a** (400 MHz,  $\text{DMSO}-d_6$ ).



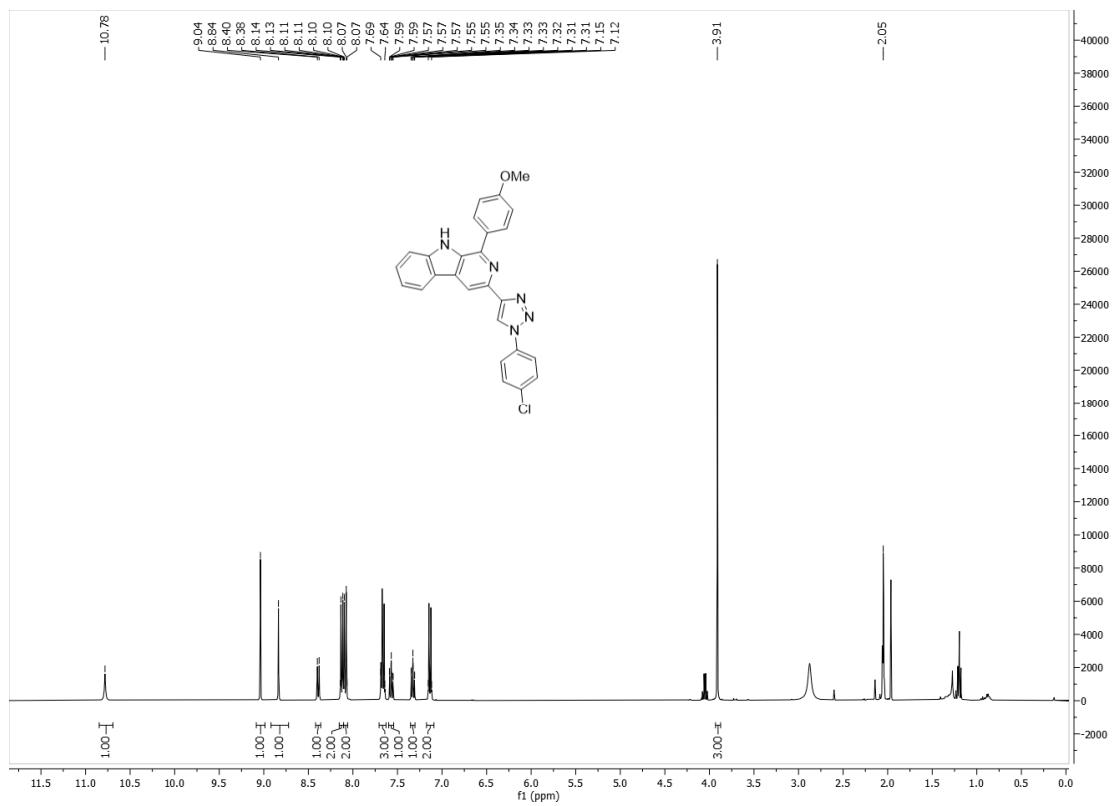
**Figure S16.**  $^{13}\text{C}$  NMR spectrum of compounds **13a** (100 MHz,  $\text{DMSO}-d_6$ ).



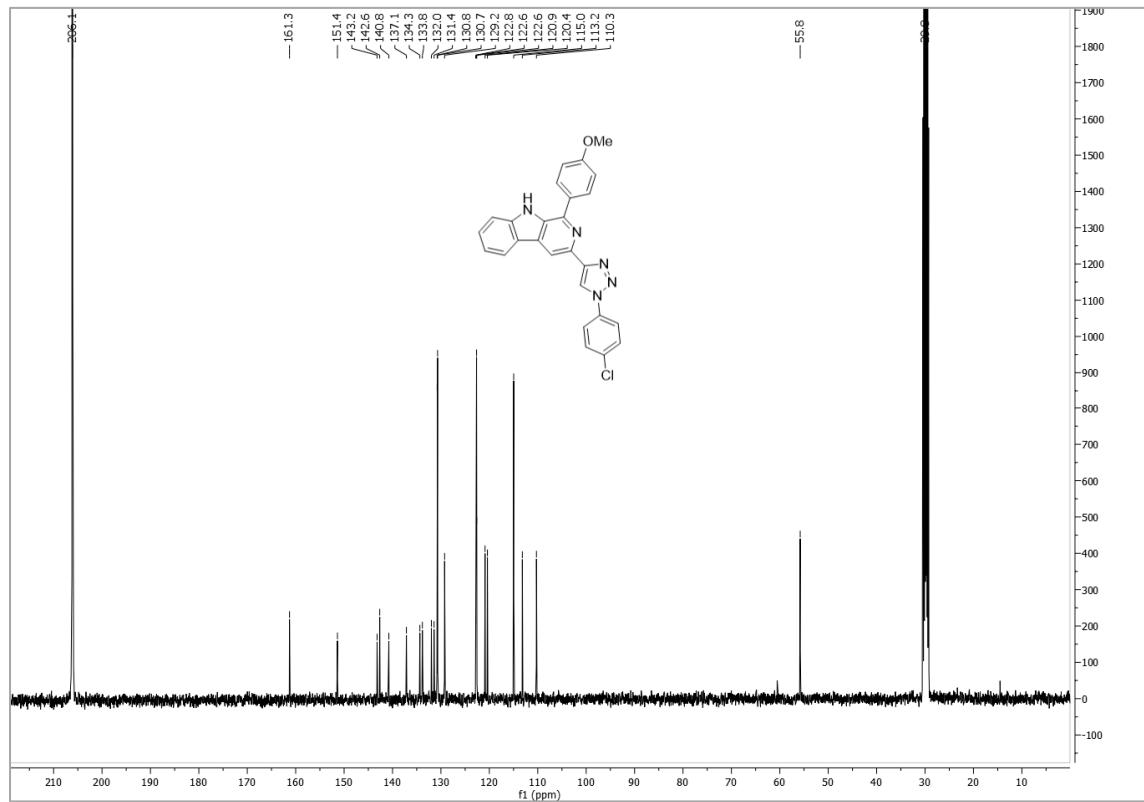
**Figure S17.** <sup>1</sup>H NMR spectrum of compounds **13b** (400 MHz, DMSO-*d*<sub>6</sub>).



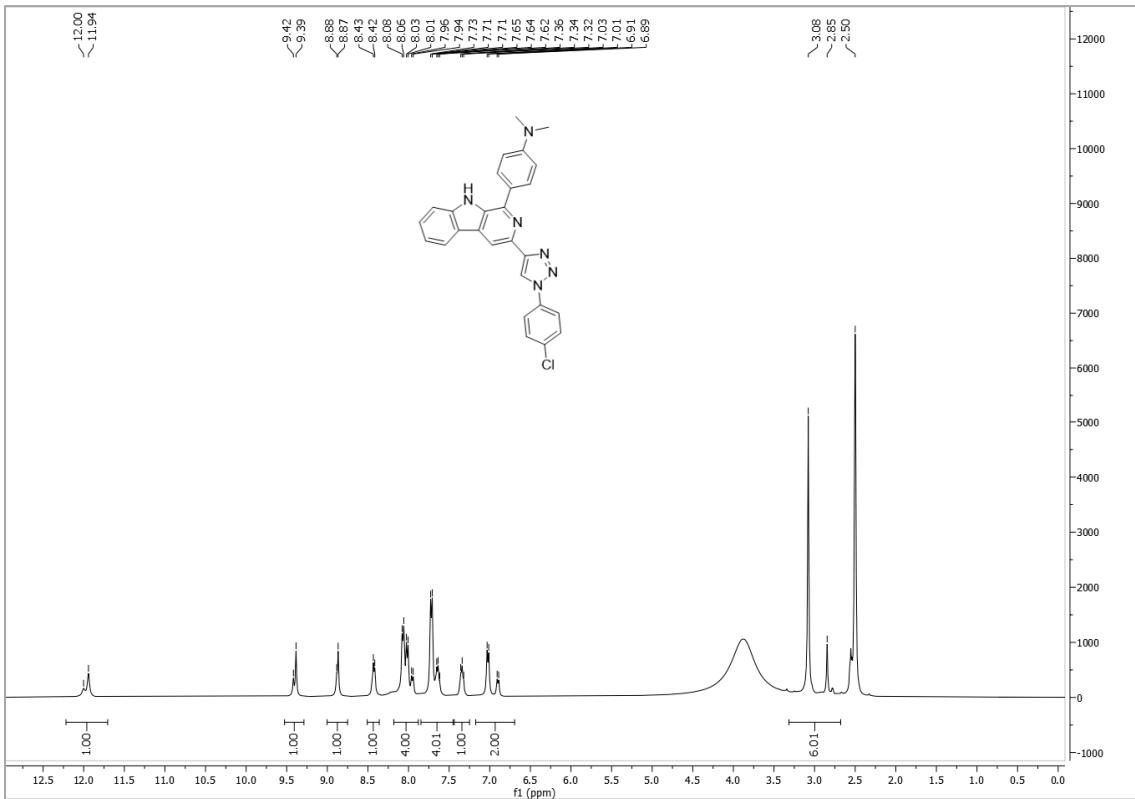
**Figure S18.** <sup>13</sup>C NMR spectrum of compounds **13b** (100 MHz, DMSO-*d*<sub>6</sub>).



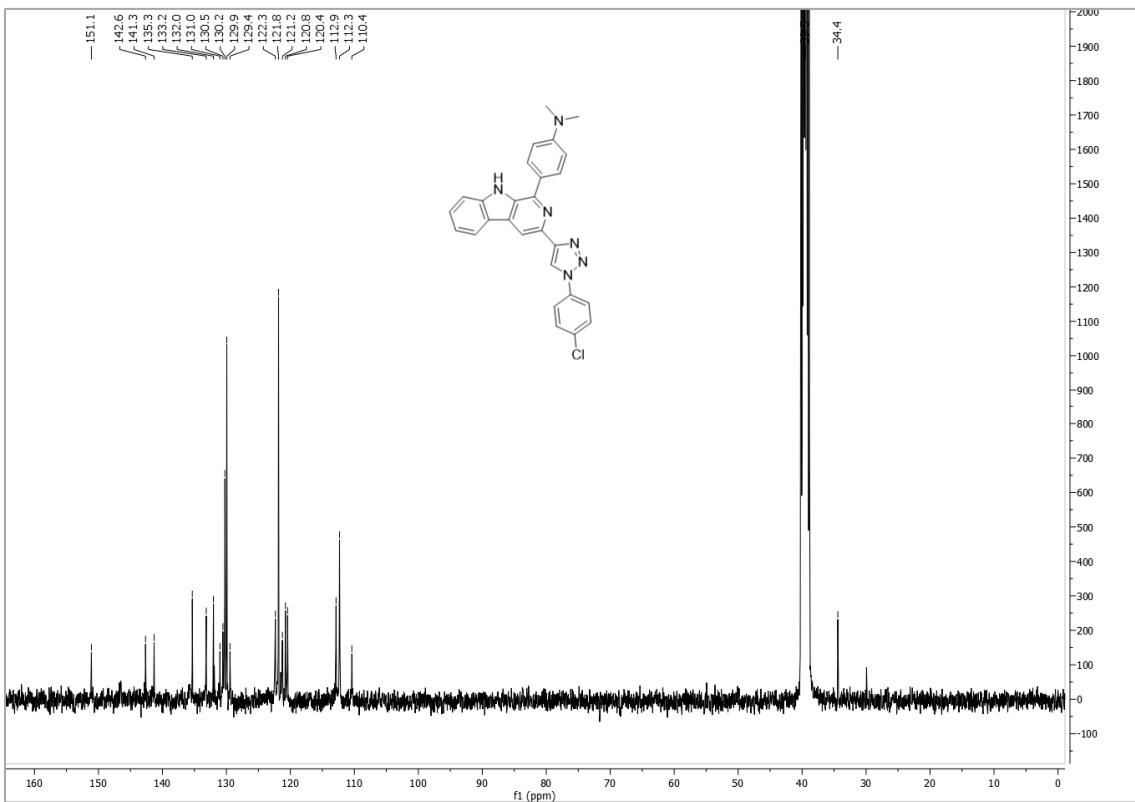
**Figure S19.** <sup>1</sup>H NMR spectrum of compounds **13c** (400 MHz, Acetone- $d_6$ ).



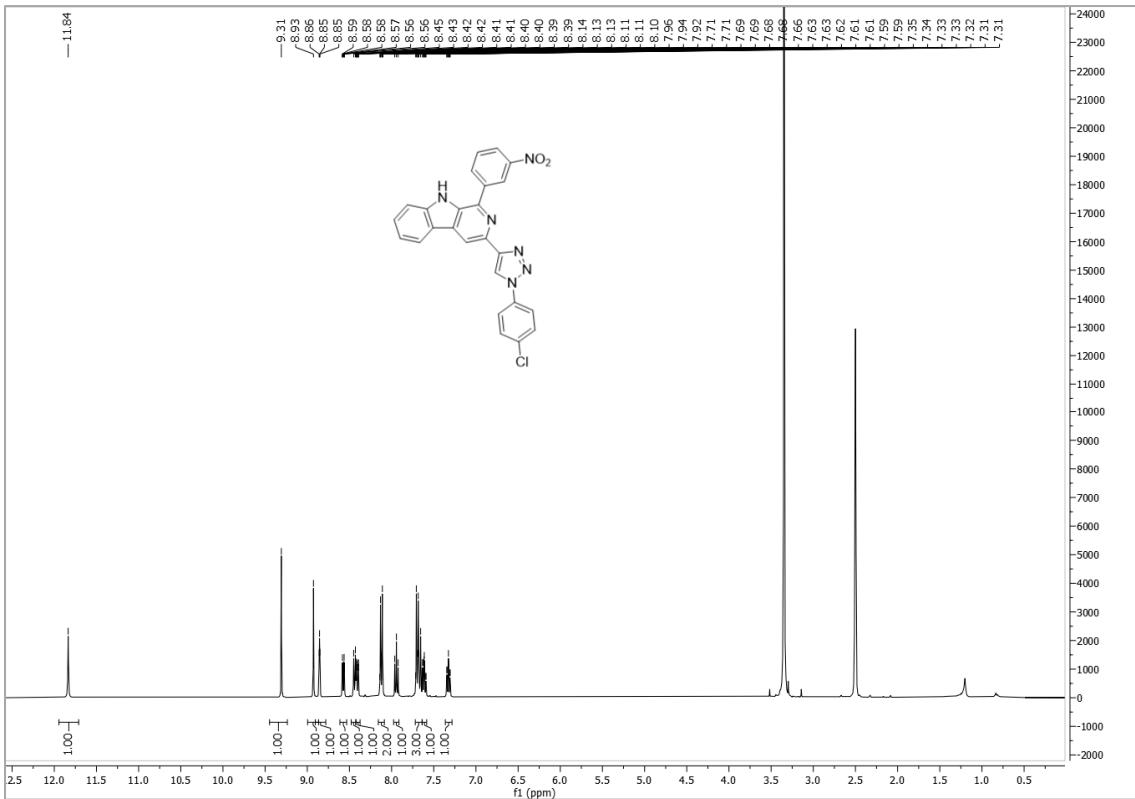
**Figure S20.** <sup>13</sup>C NMR spectrum of compounds **13c** (100 MHz, Acetone- $d_6$ ).



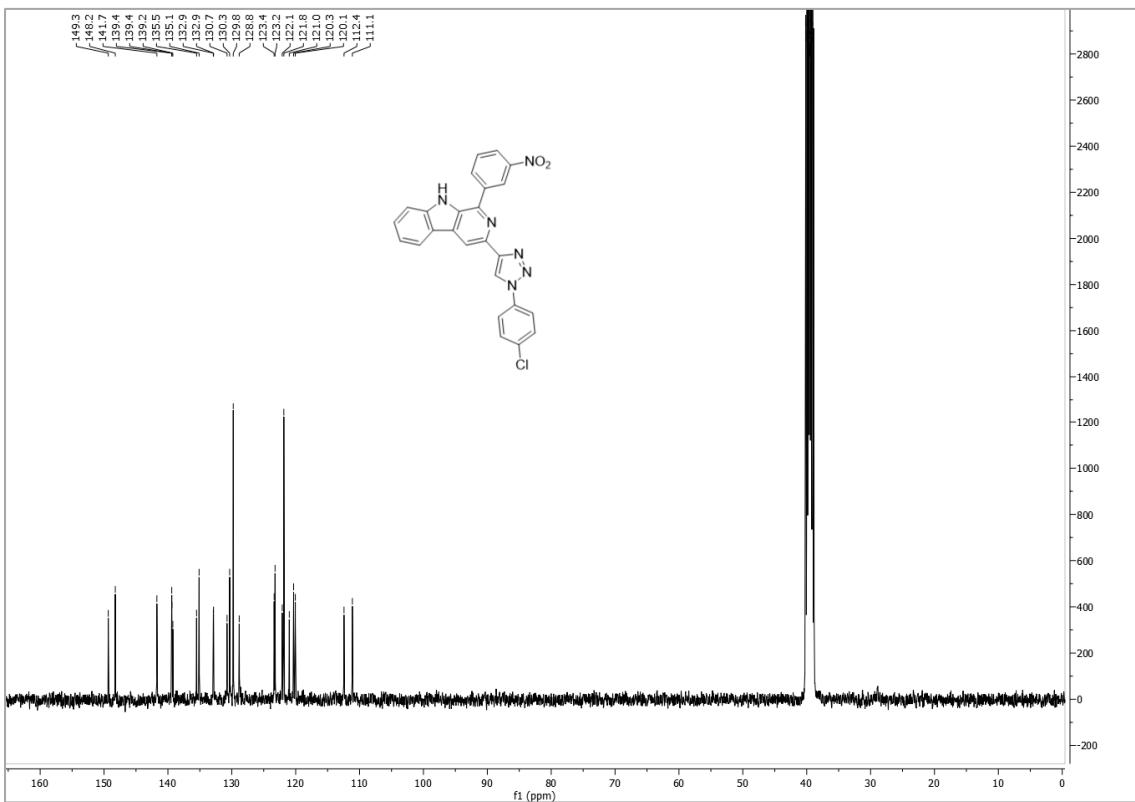
**Figure S21.**  $^1\text{H}$  NMR spectrum of compounds **13d** (400 MHz,  $\text{DMSO}-d_6$ ).



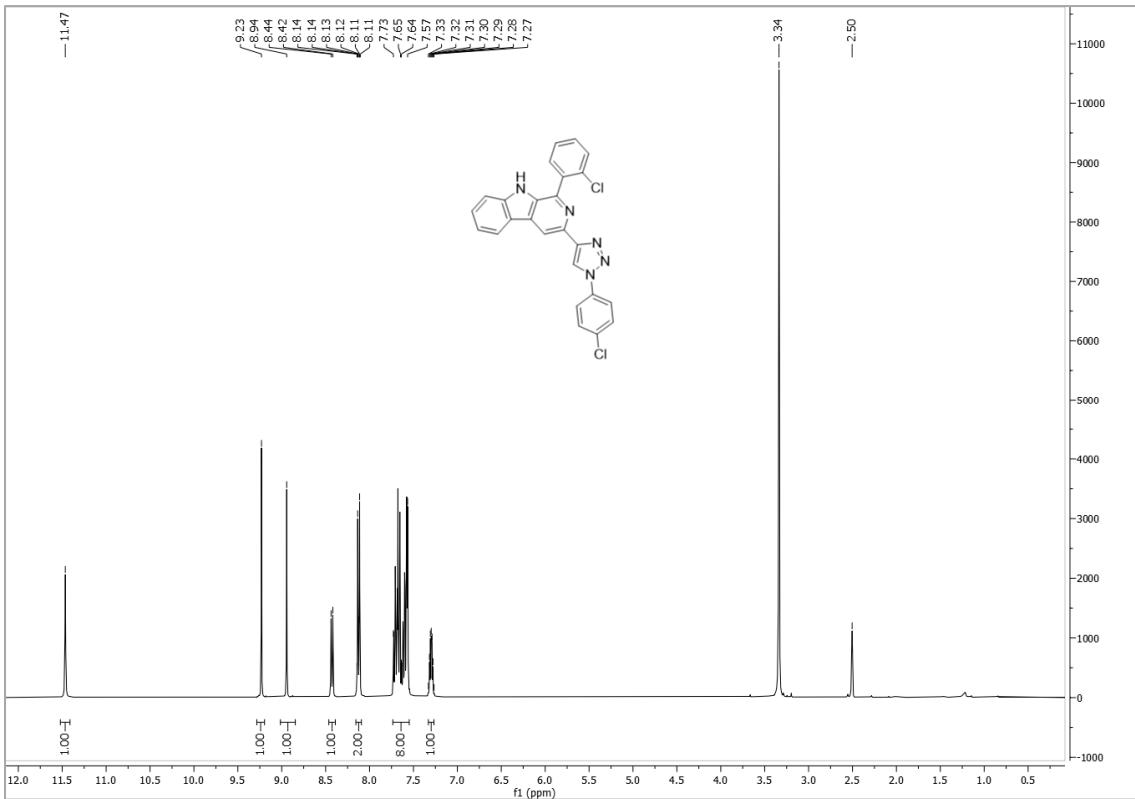
**Figure S22.**  $^1\text{H}$  NMR spectrum of compounds **13d** (400 MHz,  $\text{DMSO}-d_6$ ).



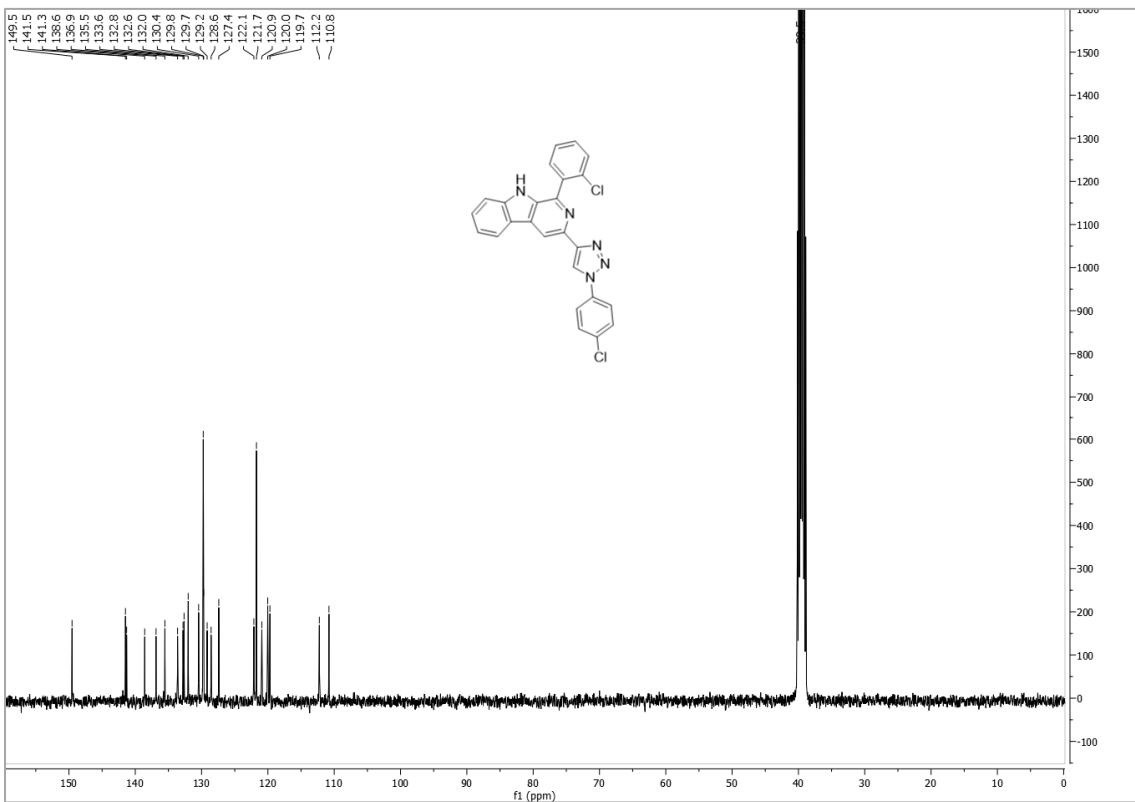
**Figure S23.**  $^1\text{H}$  NMR spectrum of compounds **13e** (400 MHz,  $\text{DMSO}-d_6$ ).



**Figure S24.**  $^{13}\text{C}$  NMR spectrum of compounds **13e** (100 MHz,  $\text{DMSO}-d_6$ ).



**Figure S25.**  $^1\text{H}$  NMR spectrum of compounds **13f** (400 MHz,  $\text{DMSO}-d_6$ ).



**Figure S26.**  $^{13}\text{C}$  NMR spectrum of compounds **13f** (100 MHz,  $\text{DMSO}-d_6$ ).