Synthesis and anti-proliferative activity evaluation of novel 1,4-naphthoquinones possessing pyrido[2,3-d]pyrimidine scaffolds

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Copy of IR, <sup>1</sup>H NMR, <sup>13</sup>C NMR and HRMS······2-39

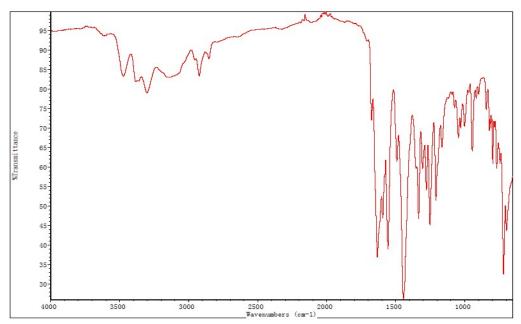


Figure 1 IR of 4a

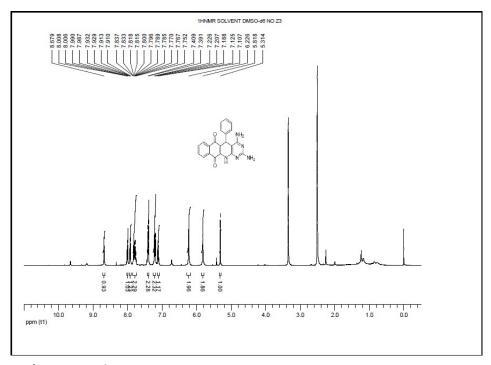


Figure 2 <sup>1</sup>H NMR of 4a



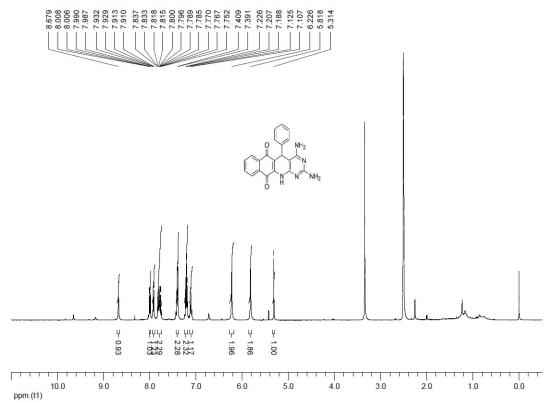


Figure 3 <sup>13</sup>C NMR of 4a

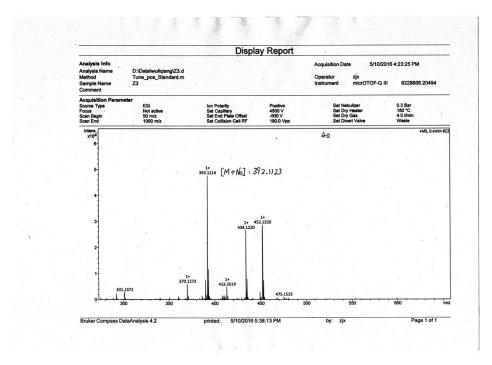


Figure 4 HRMS of 4a

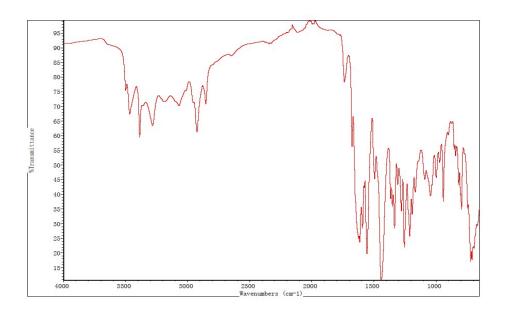


Figure 5 IR of **4b** 

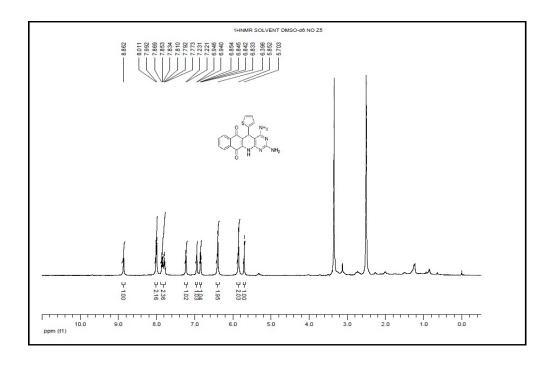


Figure 6 <sup>I</sup>H NMR of **4b** 

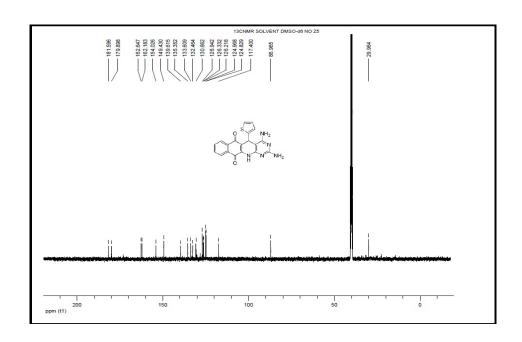


Figure 7 <sup>I3</sup>C NMR of **4b** 

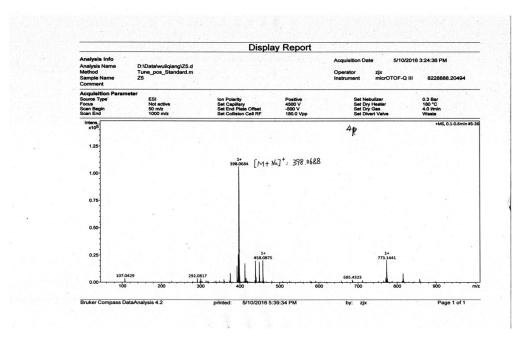


Figure 8 HRMS of 4b

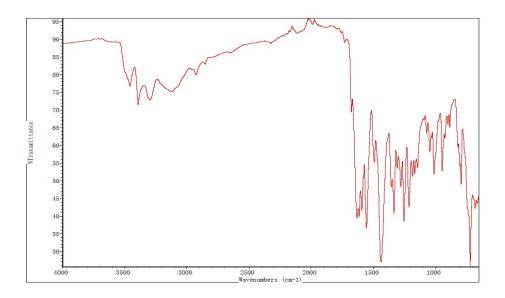


Figure 9 IR of 4c

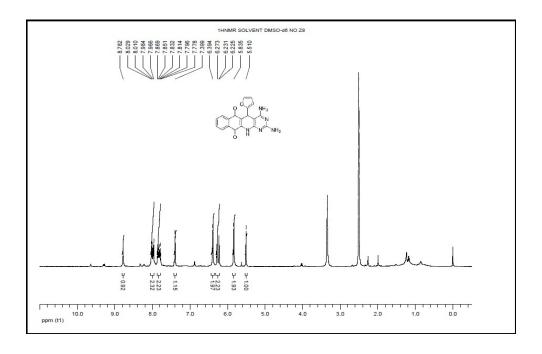


Figure 10  $^{1}H$  NMR of 4c

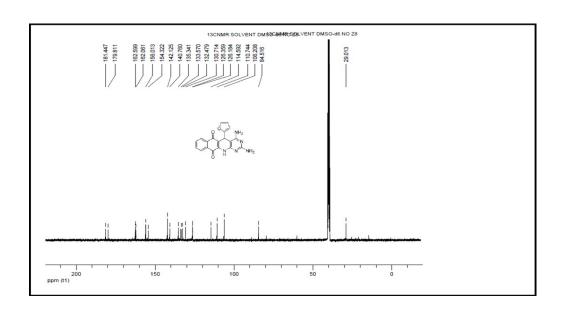


Figure 11  $^{13}C$  NMR of 4c

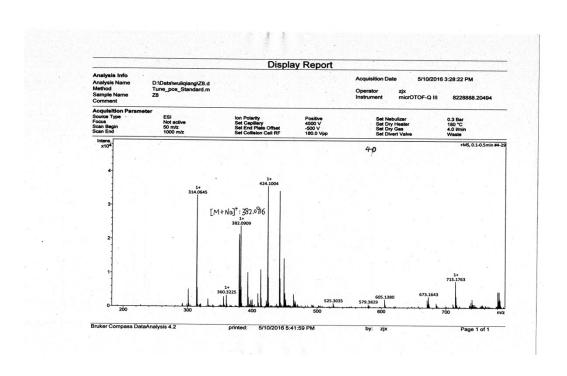


Figure 12 HRMS of 4c

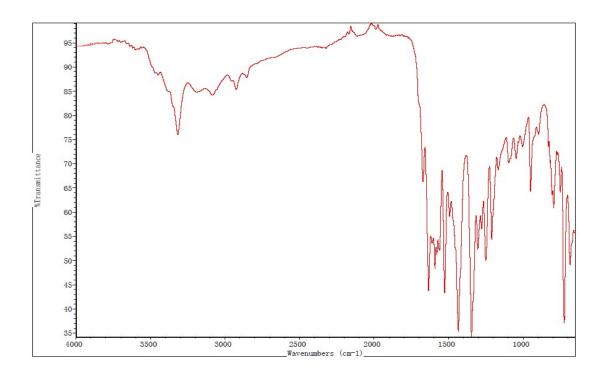


Figure 13 IR of 4d

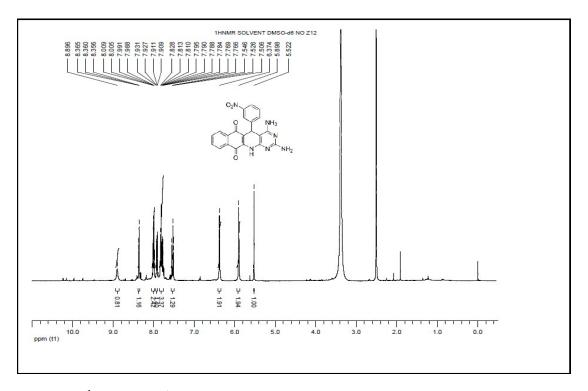


Figure 14  $^{1}\text{H}$  NMR of 4d

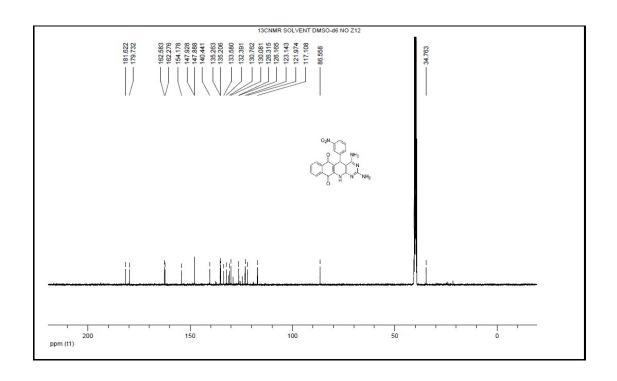


Figure 15  $^{13}\text{C}$  NMR of 4d

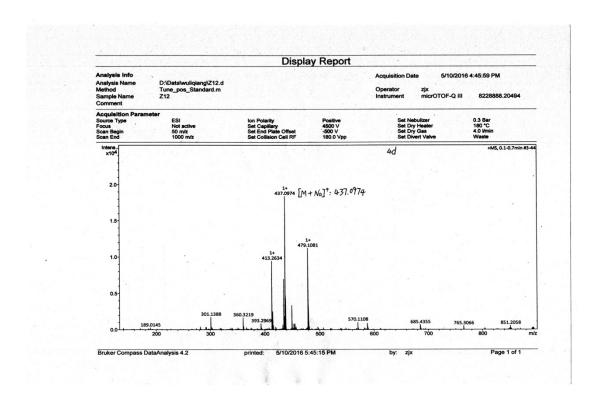


Figure 16 HRMS of 4d

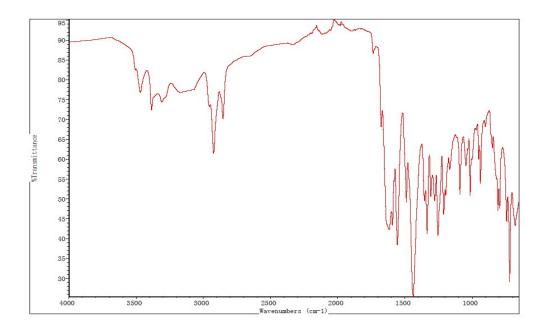


Figure 17 IR of 4e

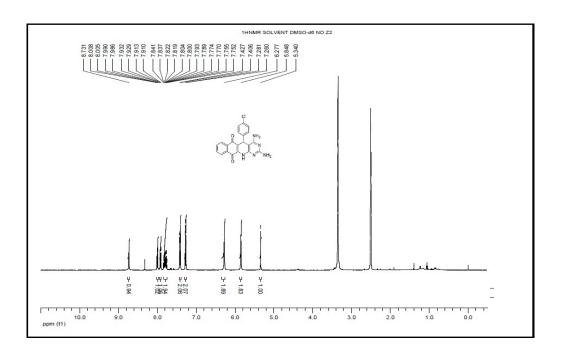


Figure 18  $^1\!H$  NMR of 4e

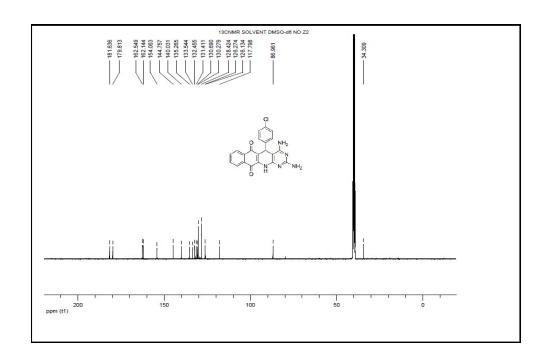


Figure 19  $^{13}$ C NMR of 4e

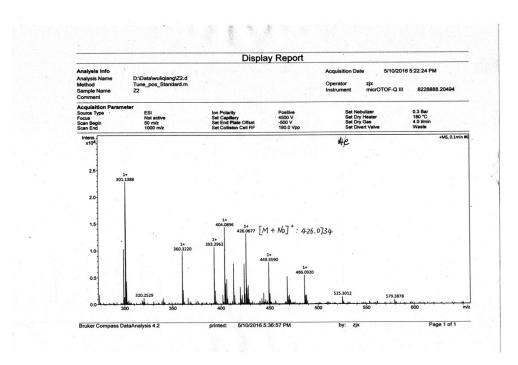


Figure 20 HRMS of 4e

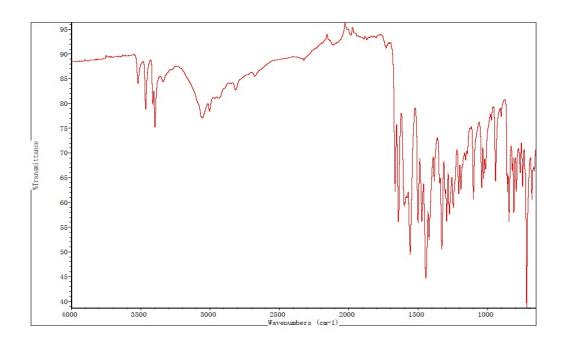


Figure 21 IR of 4f

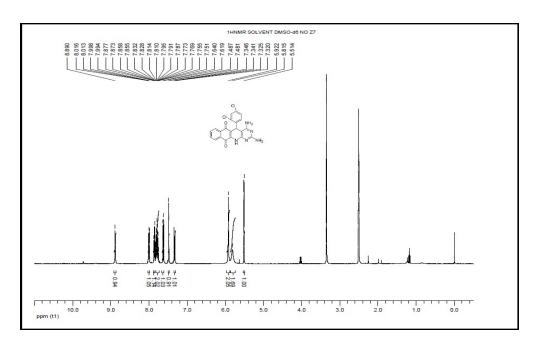


Figure 22  $^1\mathrm{H}$  NMR of 4f

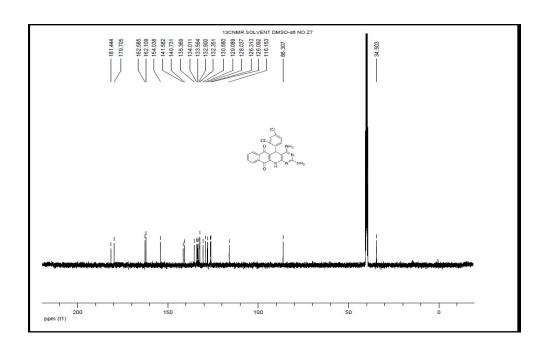


Figure 23  $^{13}\text{C}$  NMR of 4f

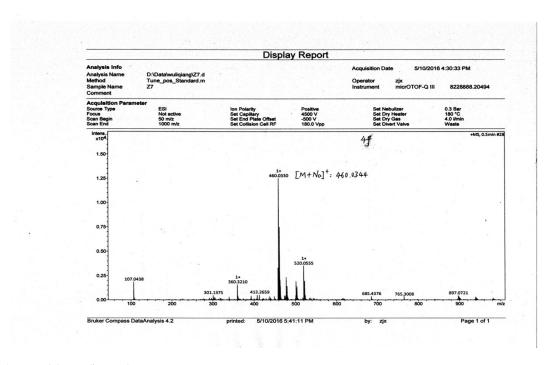


Figure 24 HRMS of 4f

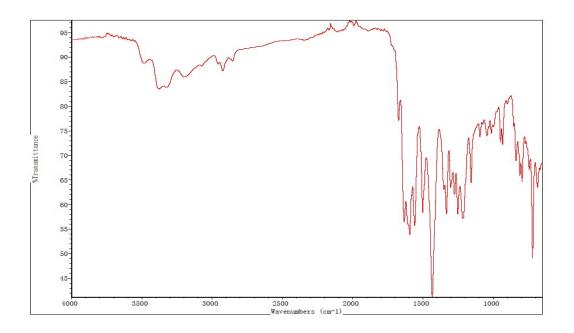


Figure 25 IR of 4g

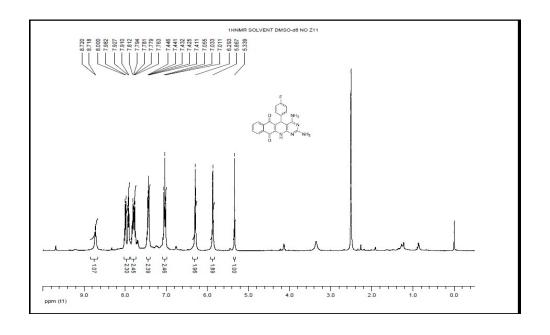


Figure 26  $^{1}\text{H}$  NMR of 4g

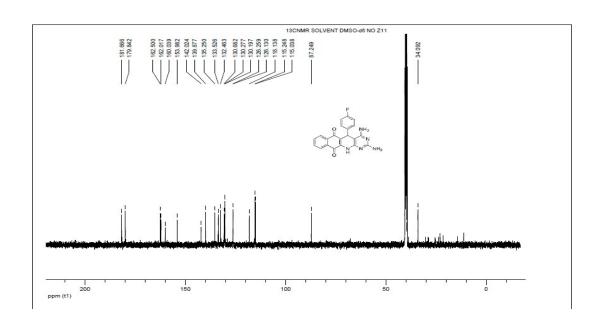


Figure 27  $^{13}\text{C}$  NMR of 4g

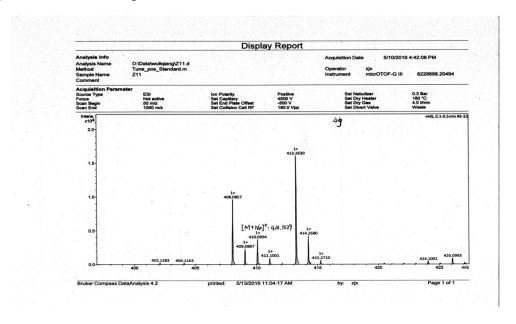


Figure 28 HRMS of 4g

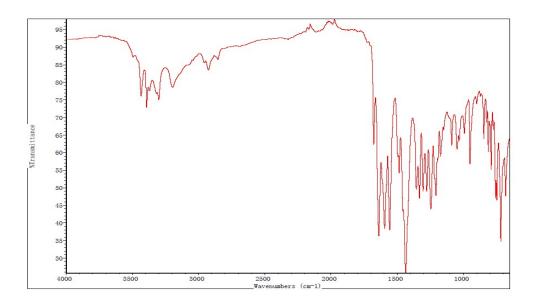


Figure 29 IR of 4h

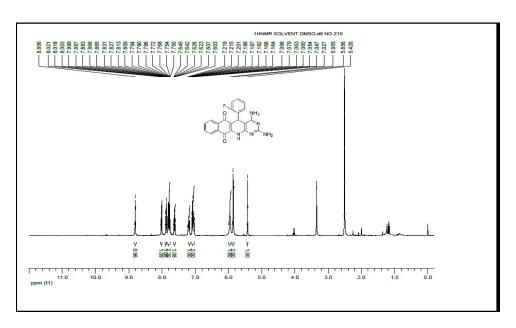


Figure 30  $^1\mathrm{H}$  NMR of 4h

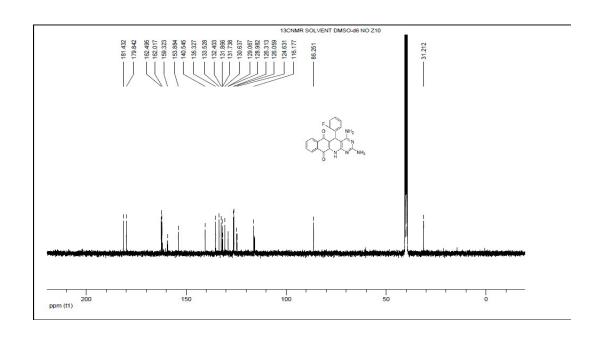


Figure 31  $^{13}\text{C}$  NMR of 4h

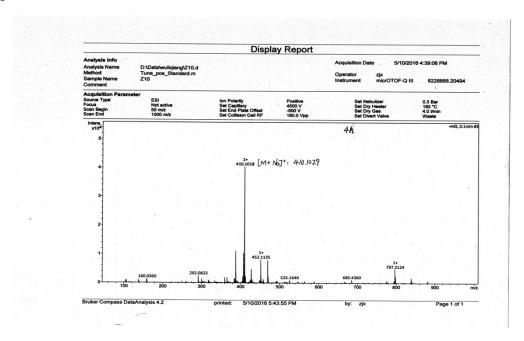


Figure 32 HRMS of 4h

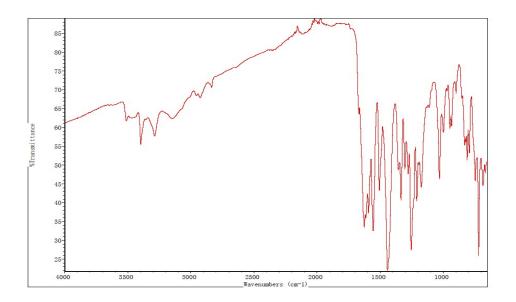


Figure 33 IR of 4i

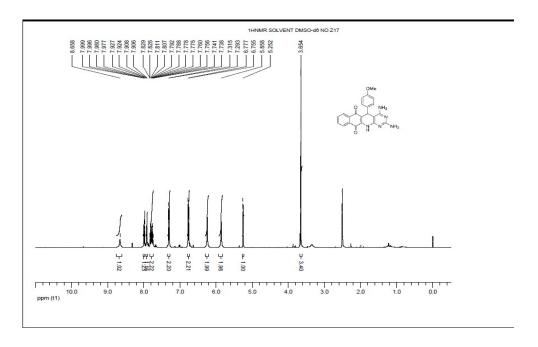


Figure 34 <sup>1</sup>H NMR of 4i

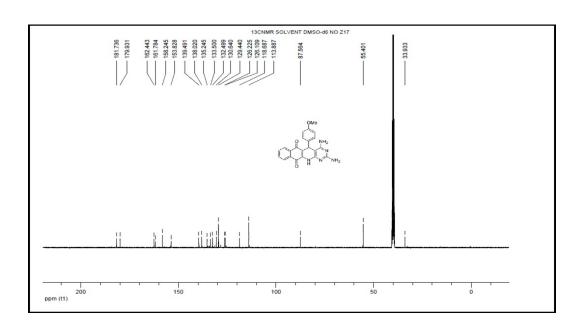


Figure 35  $^{13}\text{C}$  NMR of 4i

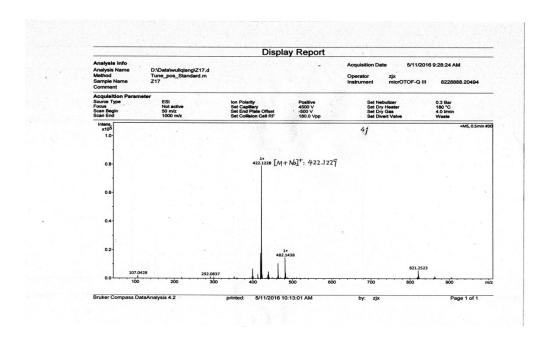


Figure 36 HRMS of 4i

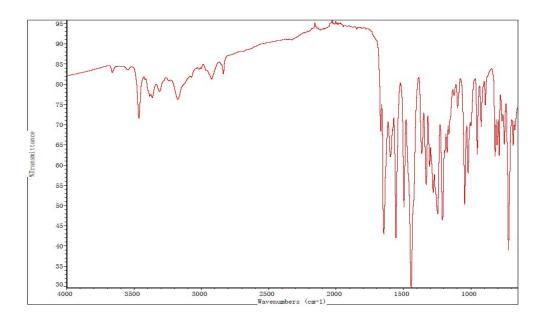


Figure 37 IR of 4j

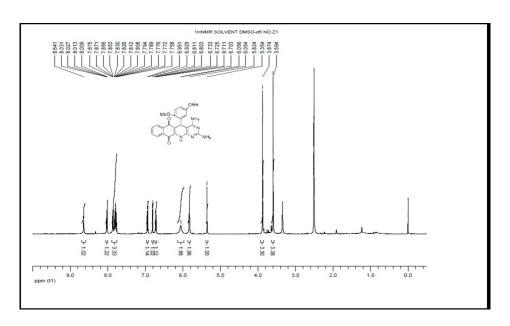


Figure 38  $^1\mathrm{H}$  NMR of 4j

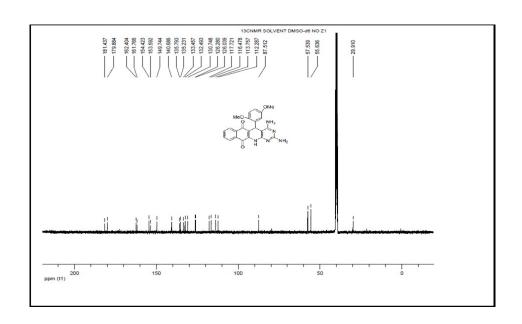


Figure 39  $^{13}$ C NMR of 4j

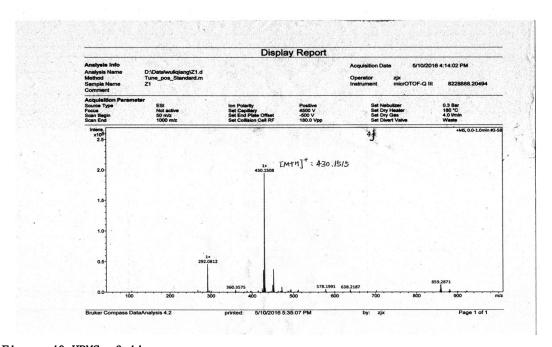


Figure 40 HRMS of 4j

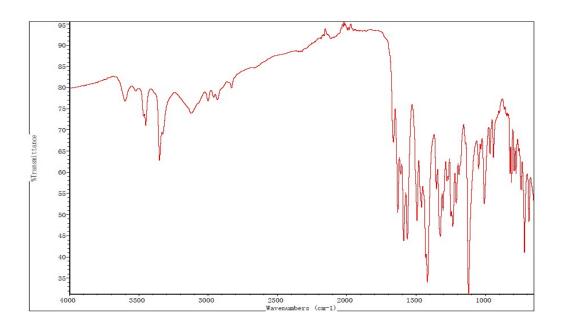


Figure 41 IR of 4k

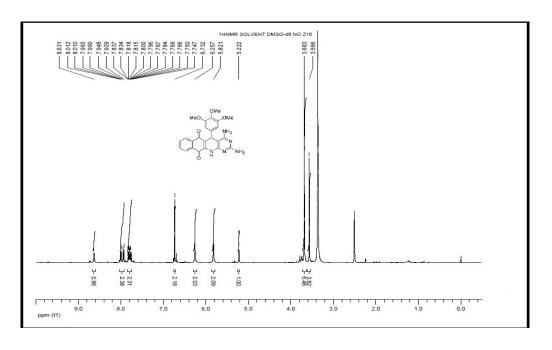


Figure 42  $^1\mathrm{H}$  NMR of 4k

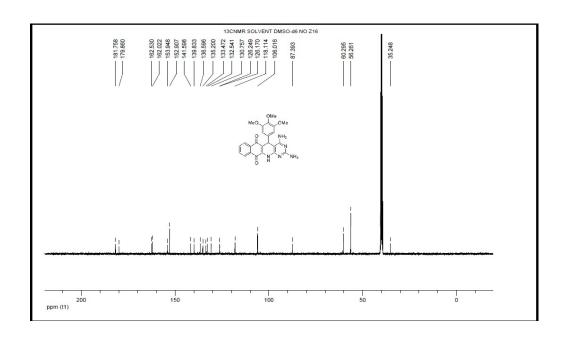


Figure 43  $^{13}\text{C}$  NMR of 4k

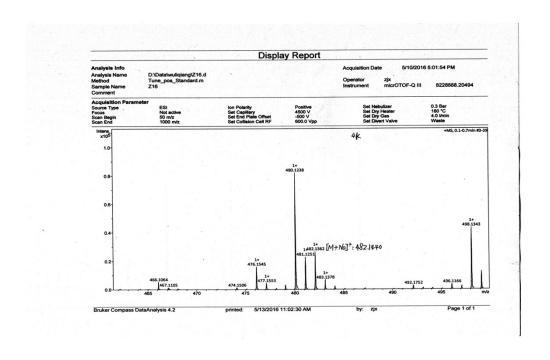


Figure 44 HRMS of 4k

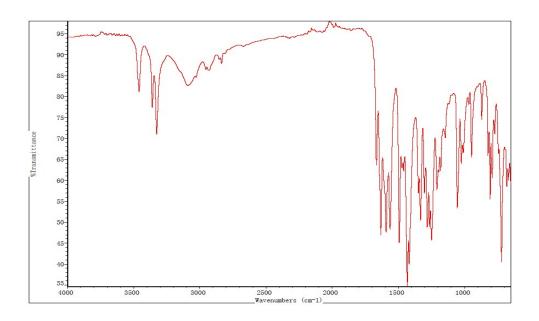


Figure 45 IR of 41

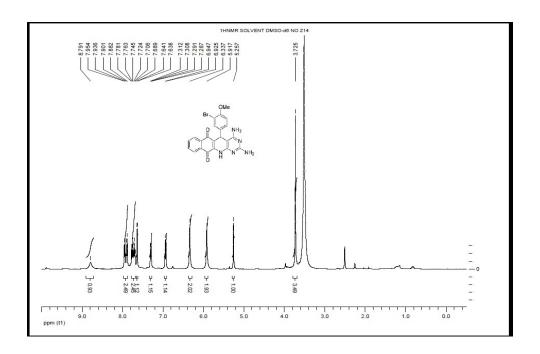


Figure 46  $^1\mathrm{H}$  NMR of 41

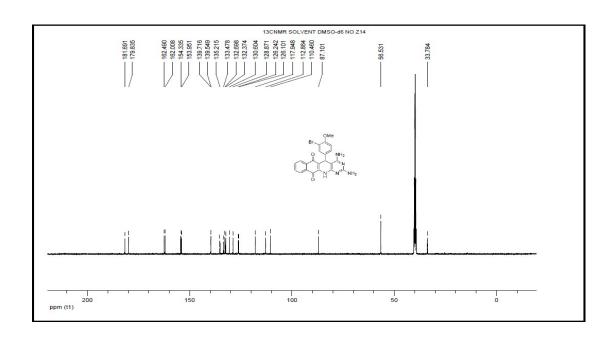


Figure 47  $^{13}\text{C}$  NMR of 41

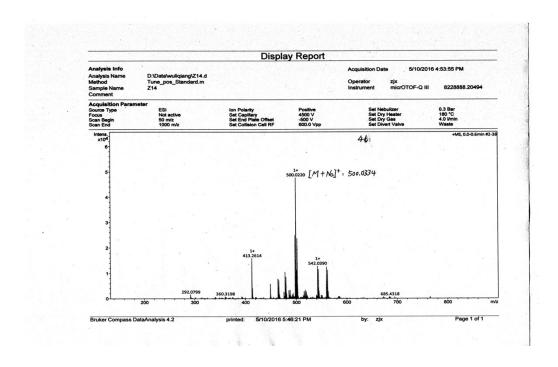


Figure 48 HRMS of 41

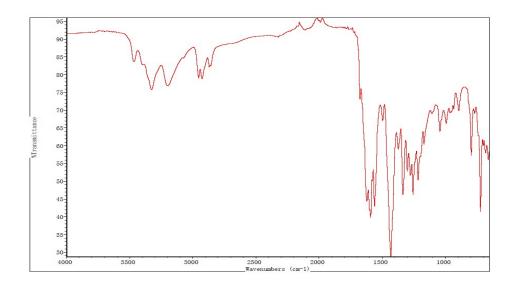


Figure 49 IR of 4m

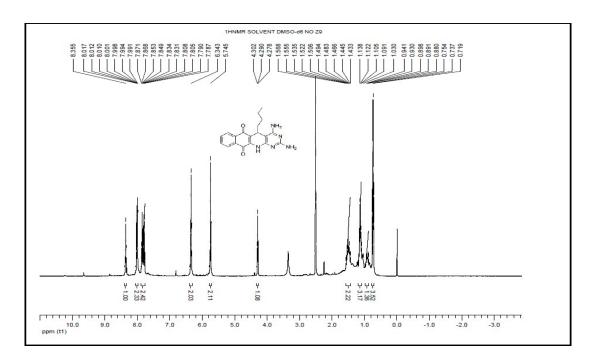


Figure 50  $^1\text{H}$  NMR of 4m

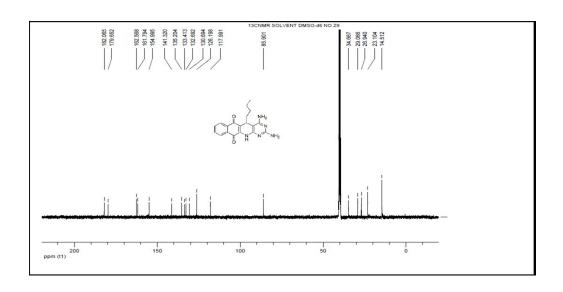


Figure 51  $^{13}$ C NMR of 4m

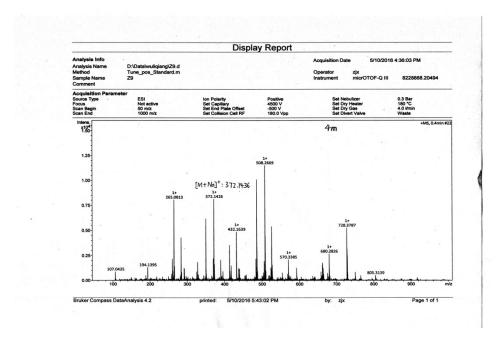


Figure 52 HRMS of 4m

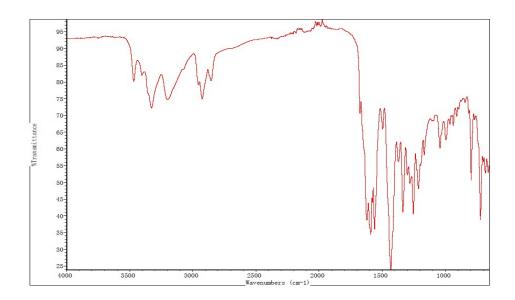


Figure 53 IR of 4n

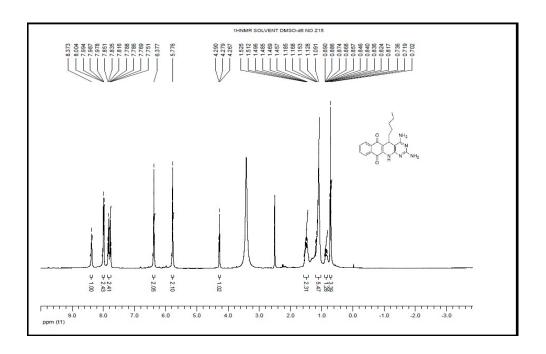


Figure 54  $^{1}\text{H}$  NMR of 4n

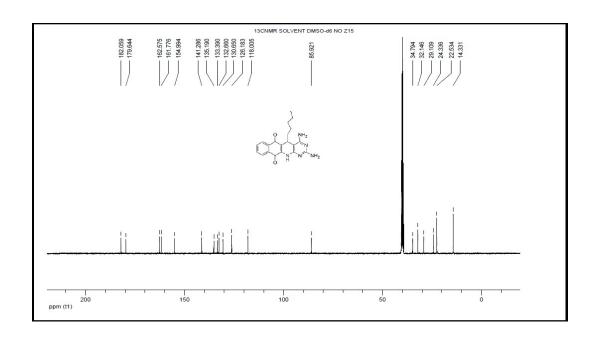


Figure 55  $^{13}\text{C}$  NMR of 4n

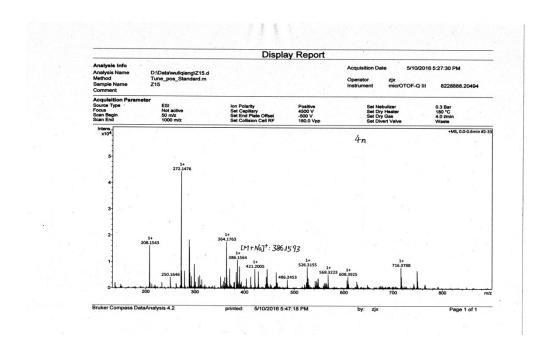


Figure 56 HRMS of 4n

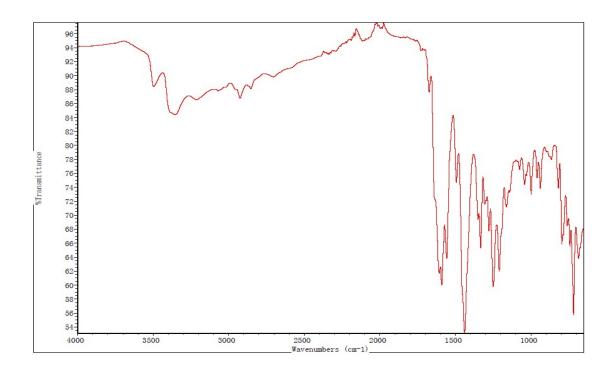


Figure 57 IR of 4o

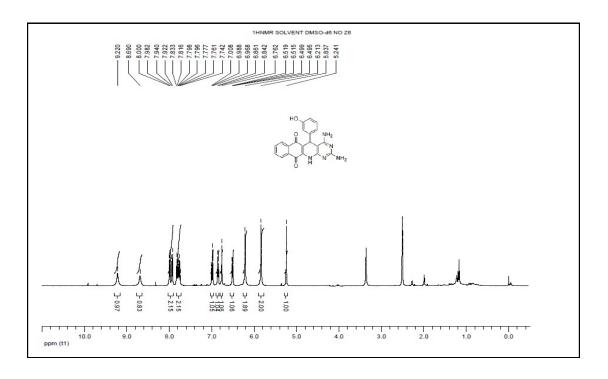


Figure 58 <sup>1</sup>H NMR of 4o

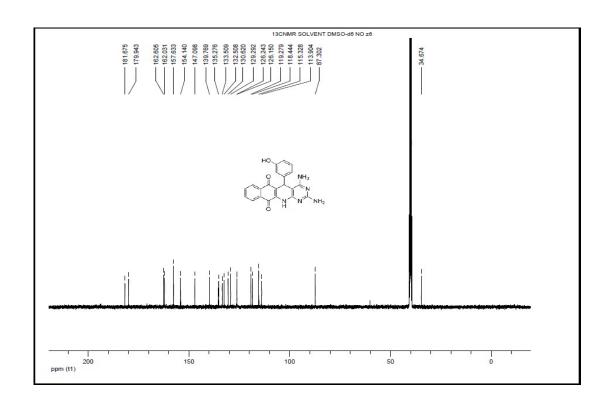


Figure 59  $^{13}$ C NMR of 4o

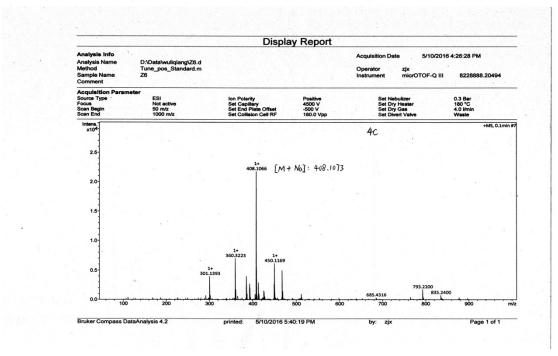


Figure 60 HRMS of 4o

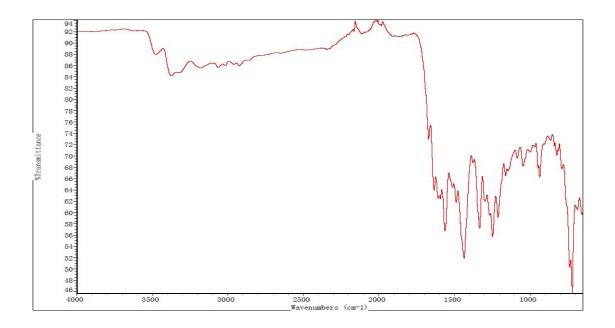


Figure 61 IR of 4p

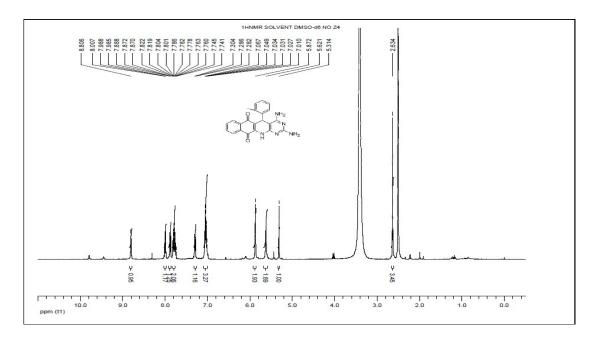


Figure 62  $^{1}\text{H}$  NMR of 4p

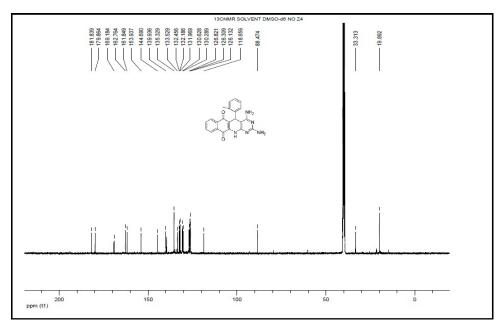


Figure 63  $^{13}\text{C}$  NMR of 4p

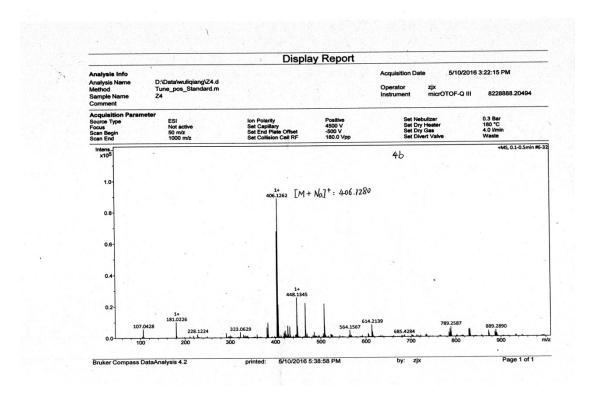


Figure 64 HRMS of 4p

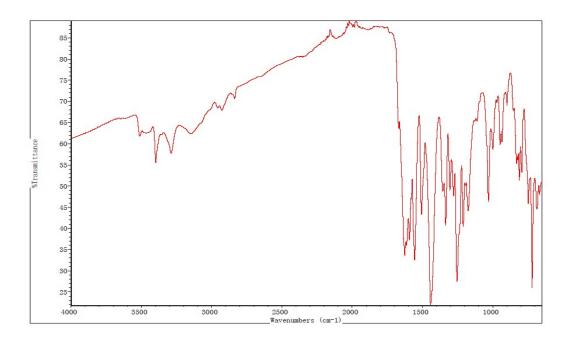


Figure 65 IR of 4q

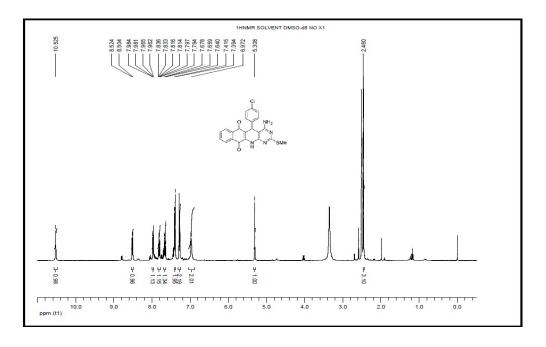


Figure 66  $^{1}\text{H}$  NMR of 4q

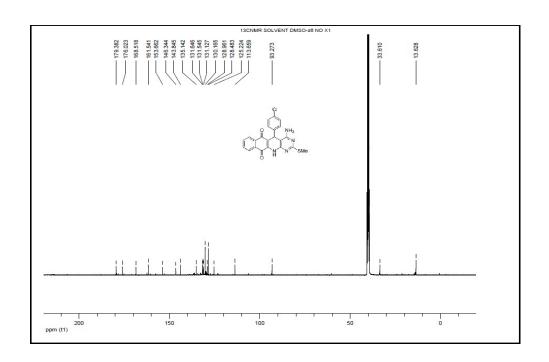


Figure 67  $^{13}\text{C}$  NMR of 4q

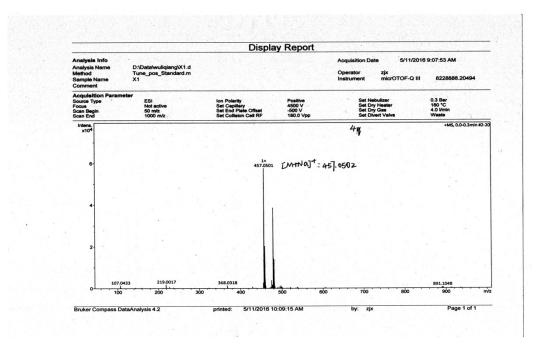


Figure 68 HRMS of 4q

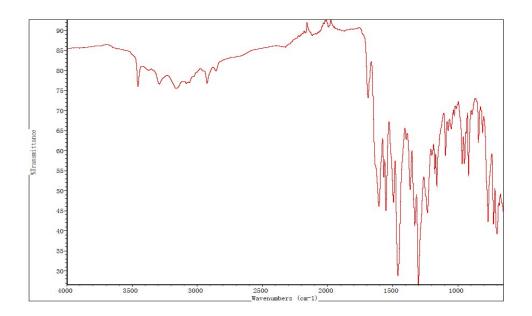


Figure 69 IR of 4r

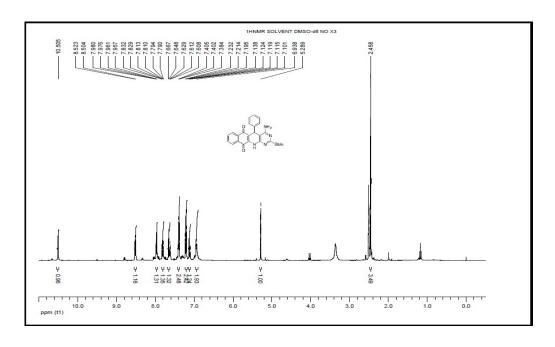


Figure 70  $^{1}\text{H}$  NMR of 4r

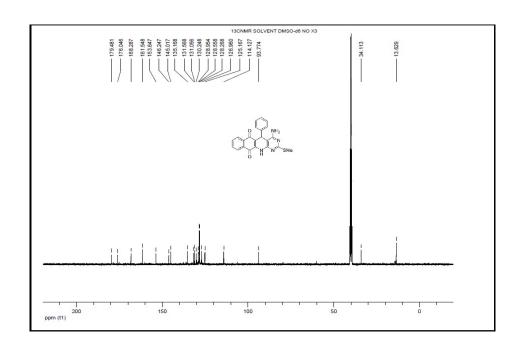


Figure 71  $^{13}\text{C}$  NMR of 4r

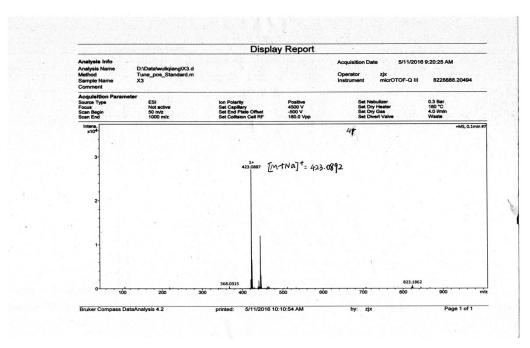


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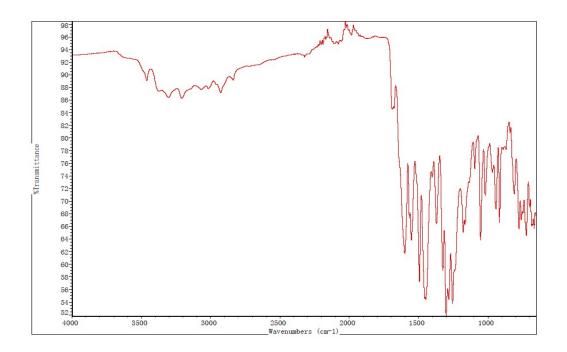


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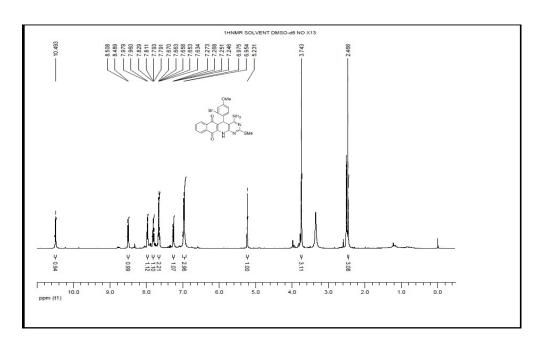


Figure 74 <sup>1</sup>H NMR of 4s

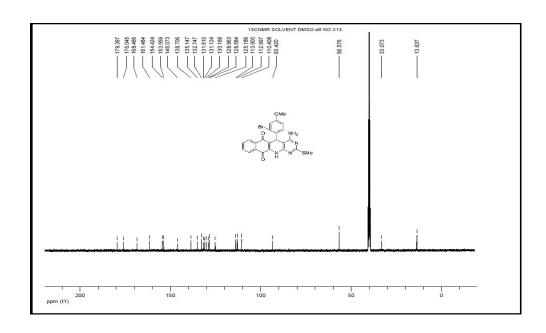


Figure 75 <sup>13</sup>C NMR of 4s

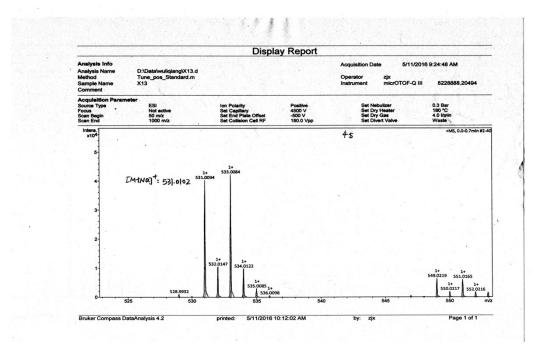


Figure 76 HRMS of 4s