Electronic Supplementary Material (ESI) for Dalton Transactions.

Bifunctional Ruthenium(II) Polypyridyl Complexes of Curcumin as Potential Anticancer Agents

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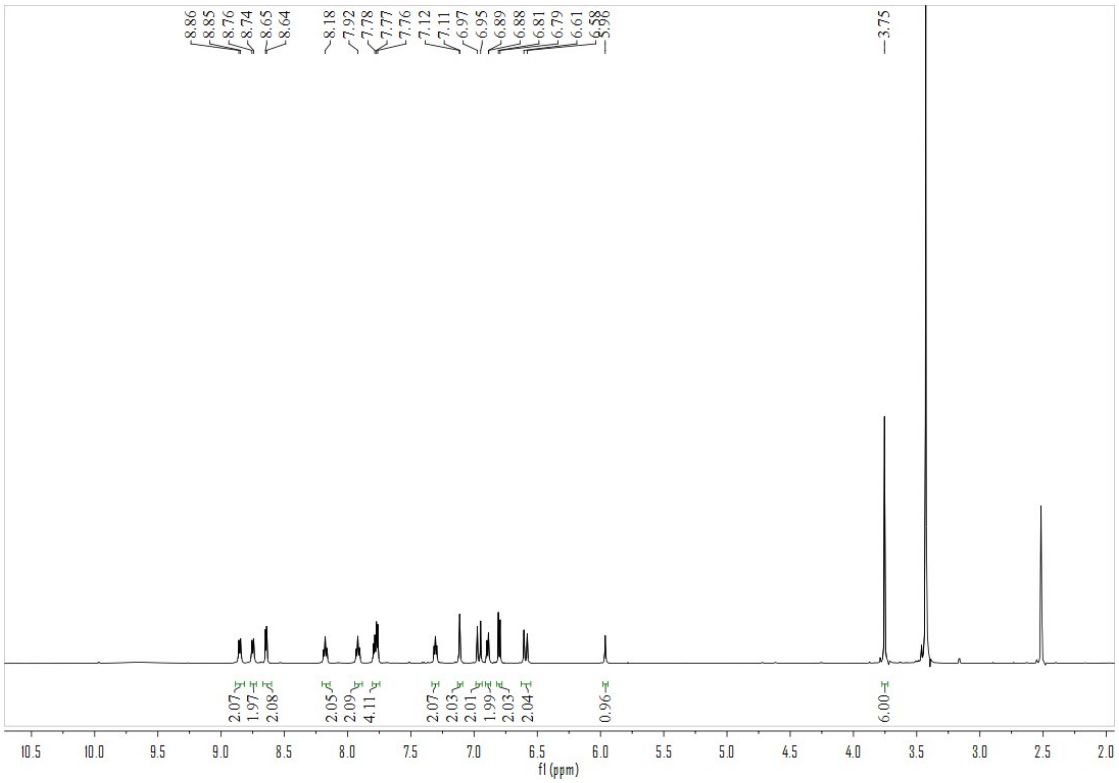

Figure S1. [1]H NMR spectrum of complex **1** (600MHz, dmso-d_6).

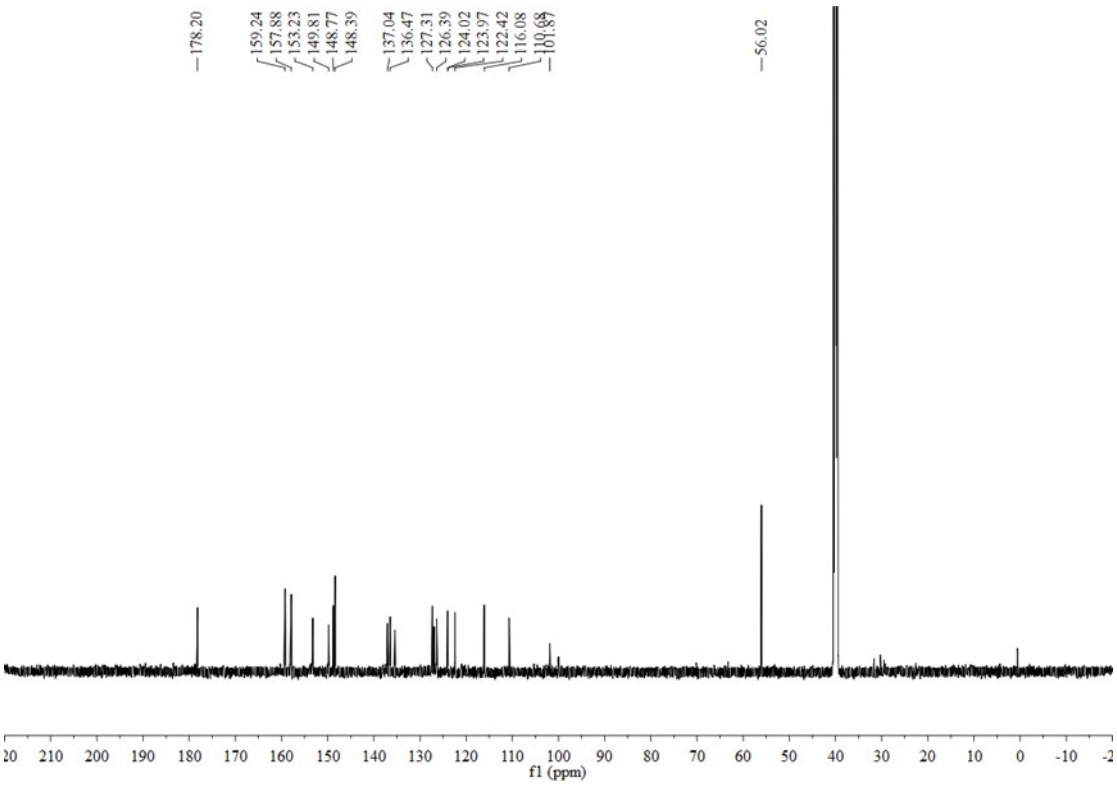

Figure S2. [13]C NMR spectrum of complex **1** (150 MHz, dmso-d_6).

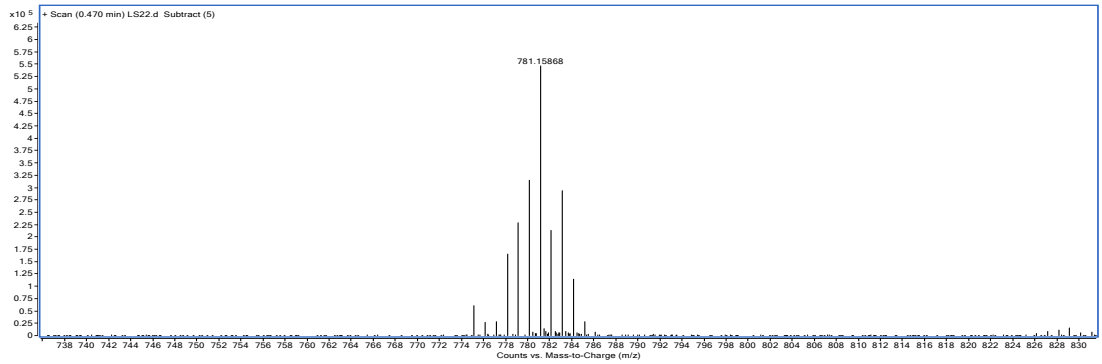

Figure S3. ESI-HRMS of complex **1** measured in the positive mode. The measured *m/z* is 781.1587 and the calculated *m/z* is 781.1600.

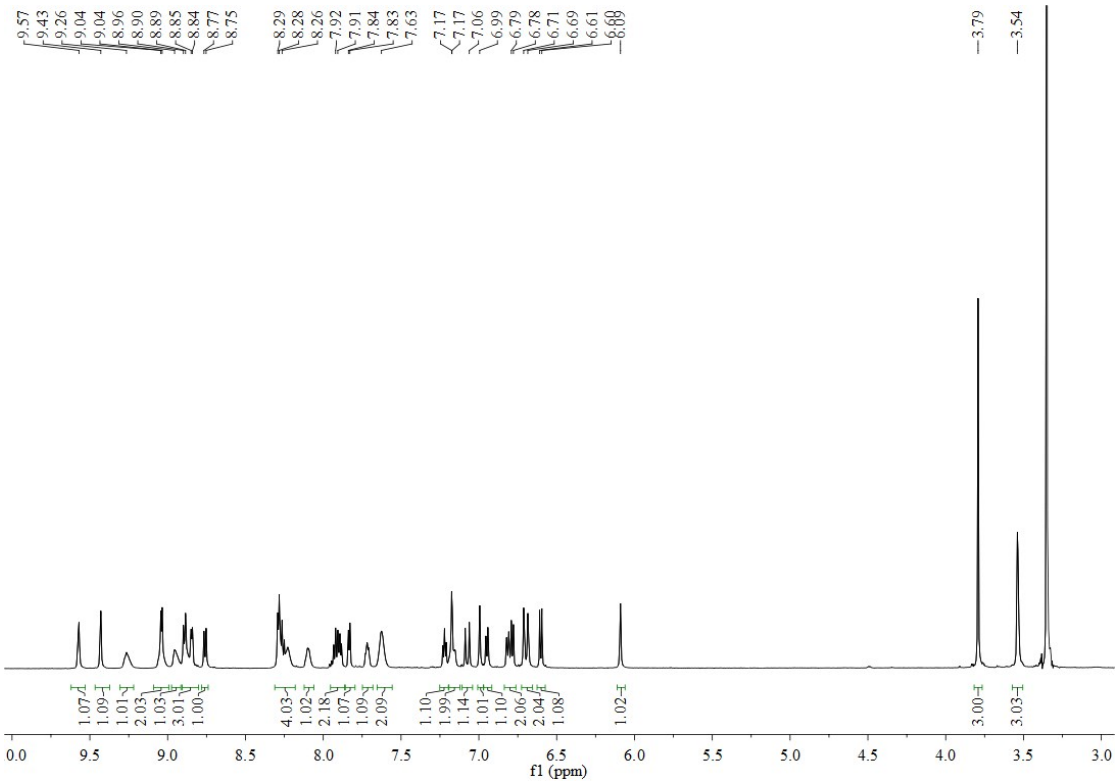

Figure S4. ^{1}H NMR spectrum of complex **2** (600MHz, dmso-d_6).

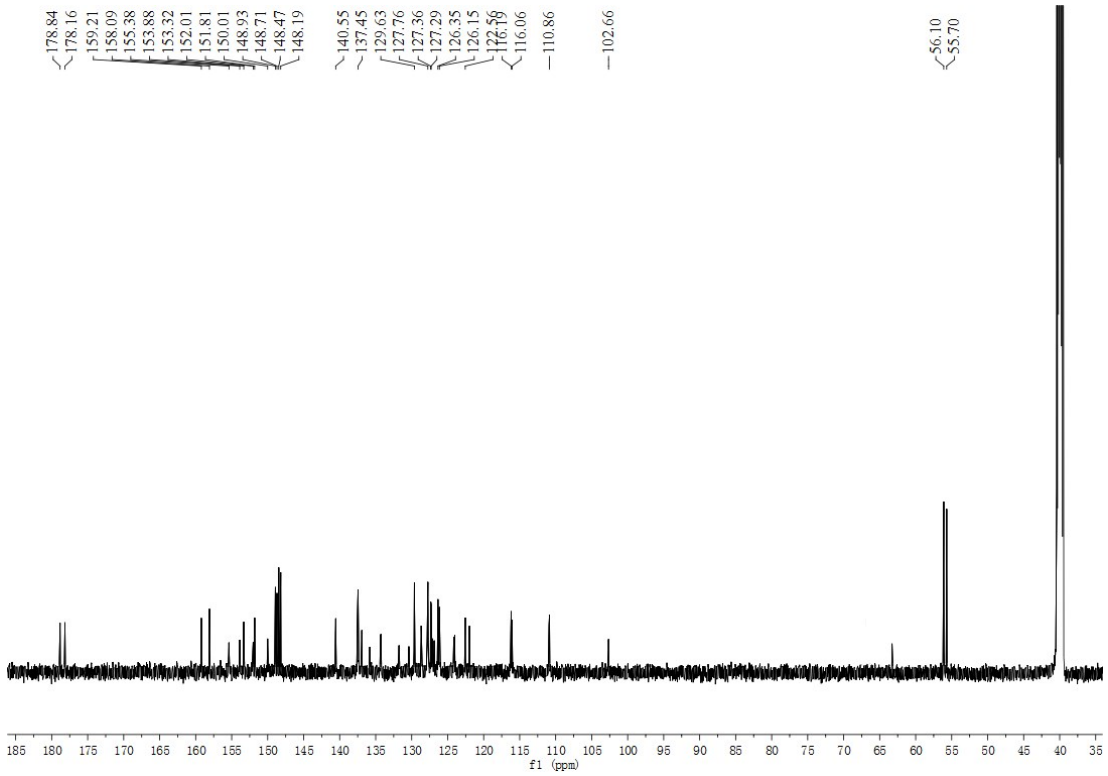

Figure S5. ^{13}C NMR spectrum of complex **2** (150 MHz, dmso-d_6)

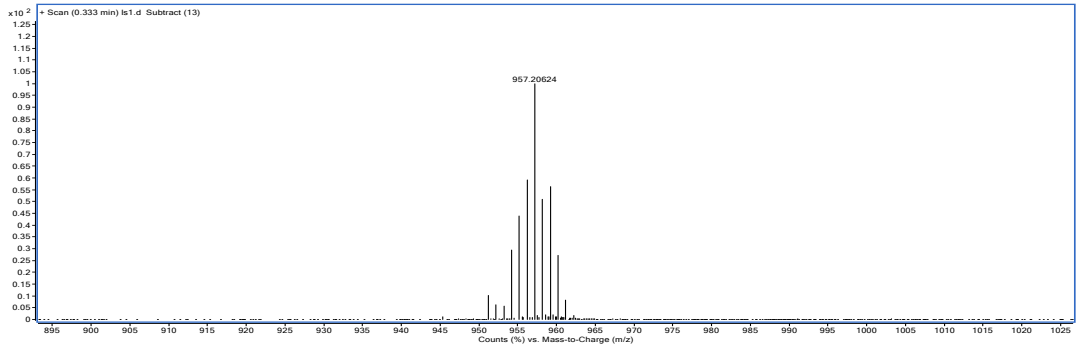

Figure S6. ESI-HRMS of complex **2** measured in the positive mode. The measured *m/z* is 957.2062 and the calculated *m/z* is 957.1975.

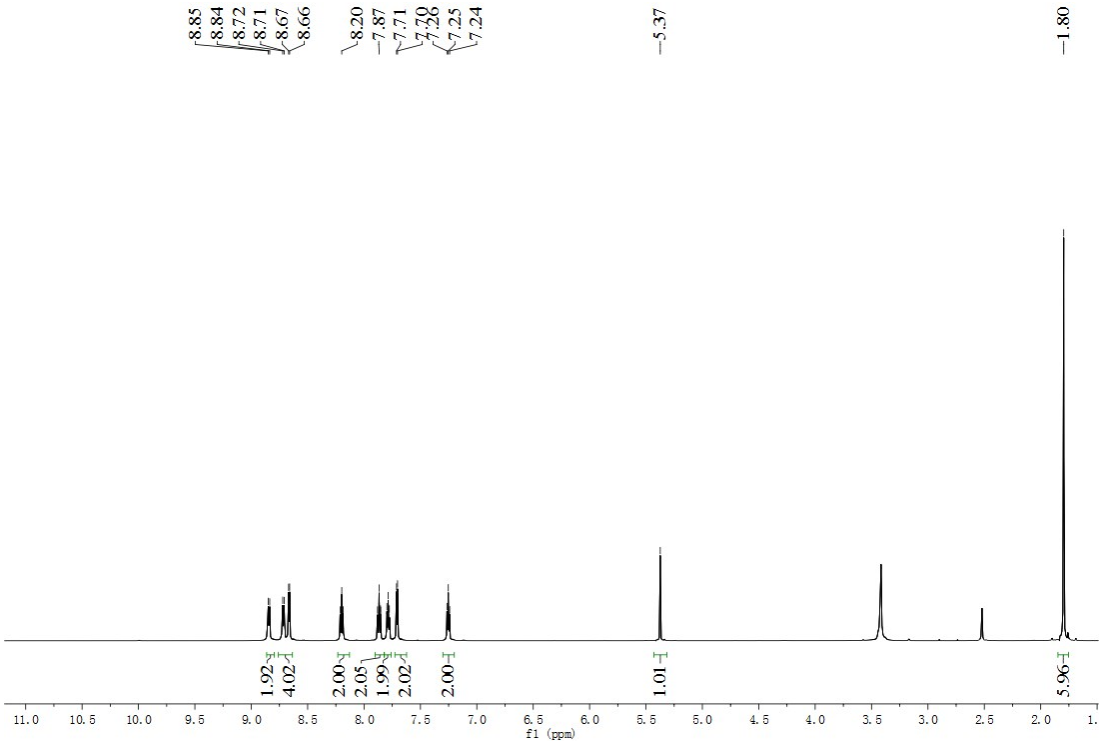

Figure S7. ^{1}H NMR spectrum of $[Ru(bpy)_2(acac)]Cl_2$ (600MHz, dmso-d_6)

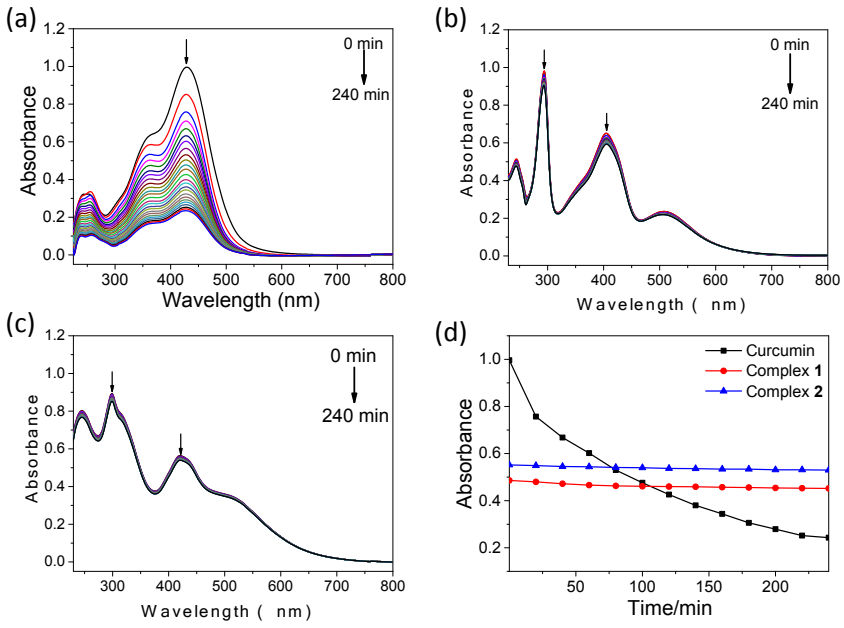

Figure S8. The UV-vis spectra of **1**, **2** and curcumin (20 μM) in 5% CH_3OH/95 % H_2O (Hepes buffer, pH = 7.2) recorded at different times at 310K: (a) curcumin; (b) complex **1**; (c) complex **2**; (d) The changes of absorption intensity of **1**, **2** and curcumin within 4 hours at 427 nm.

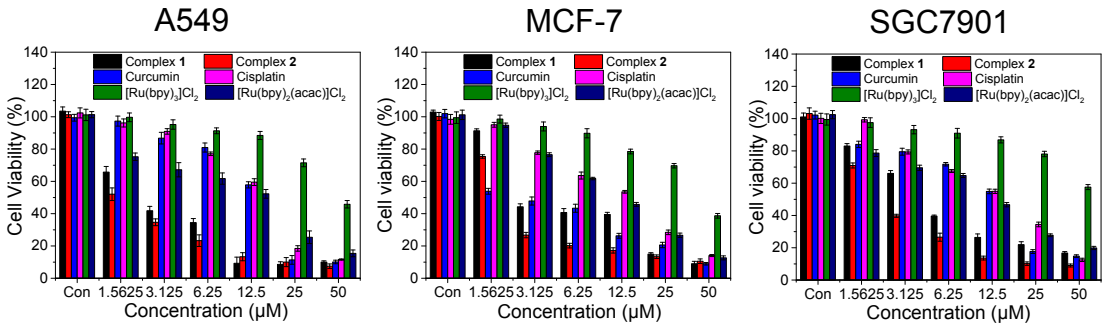

Figure S9. Dose-dependent drug efficacy for **1**, **2**, curcumin, cisplatin, $[Ru(bpy)_3]Cl_2$ and $[Ru(bpy)_2(acac)]Cl_2$ on three cancer cell lines. Data are expressed as the mean (± SD) for three independent experiments.

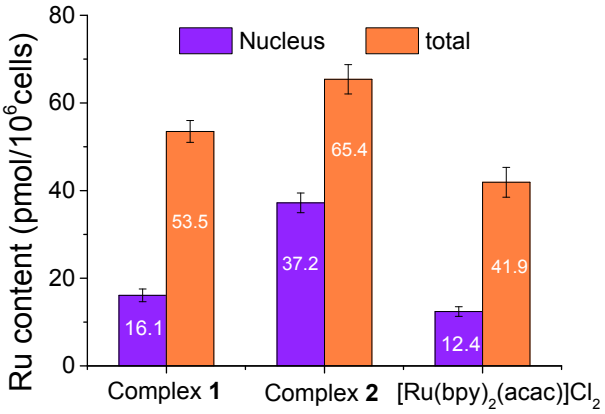

Figure S10. Cellular uptake and nuclear distribution of complexes **1**-**2** and $[Ru(bpy)_2(acac)]Cl_2$ at the concentration of 5 μM determined by ICP-MS after 12 h of co-incubation with A549 cells.

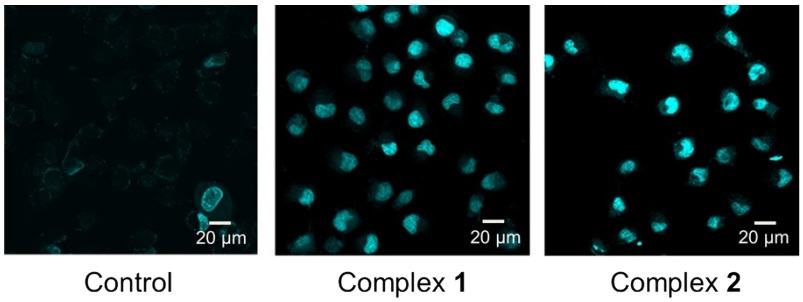

Figure S11. Cell morphological observation for cell apoptosis induction on the A549 cells treated with complexes **1** and **2** at concentration of 10 μM for 24 h. Cells were stained by Hoechst 33358 (size bar = 20 μm).