Electronic Supporting Information (ESI)

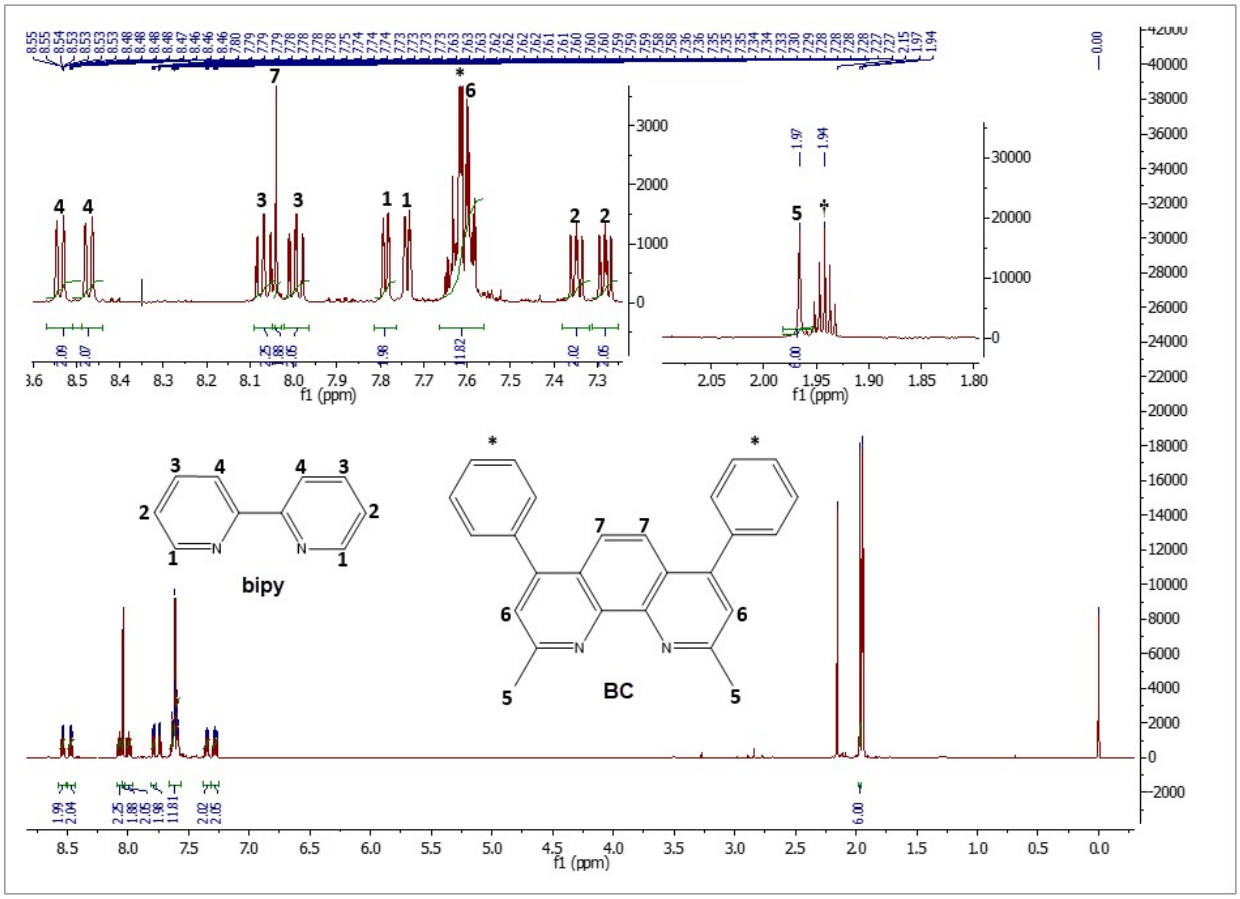

Figure S1. ^{1}H NMR spectra of complex **1** CD_3CN. The chemical shifts are expressed in ppm. The chemical structures represented belong to the coordinating ligands 2,2′-bipyridine (bipy) and bathocuproine (BC). The hydrogens are labeled by numbers and are assigned to the peaks on the spectra. * represents the hydrogens on the phenyl groups which are detected as a multiplets on the spectrum and † represents the solvent residual peaks. The peak at 0 corresponds to TMS.

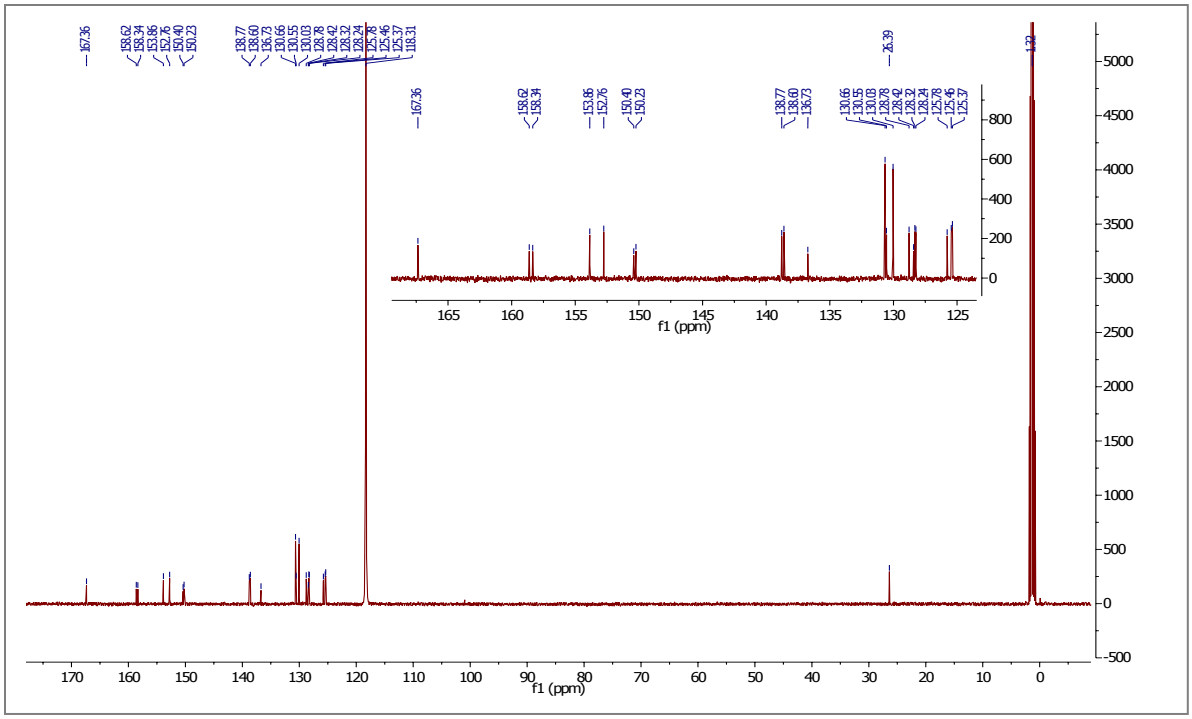

Figure S2. ^{13}C NMR spectra of complex **1** in CD_3CN. The chemical shifts are expressed in ppm and the characteristic peaks for the complex are at δ = 167.36, 158.62, 158.34, 153.86, 152.76, 150.40, 150.23, 138.77, 138.60, 136.73, 130.66, 130.55, 130.03, 128.78, 128.42, 128.32, 128.24, 125.78, 125.46, 125.37, 26.39.

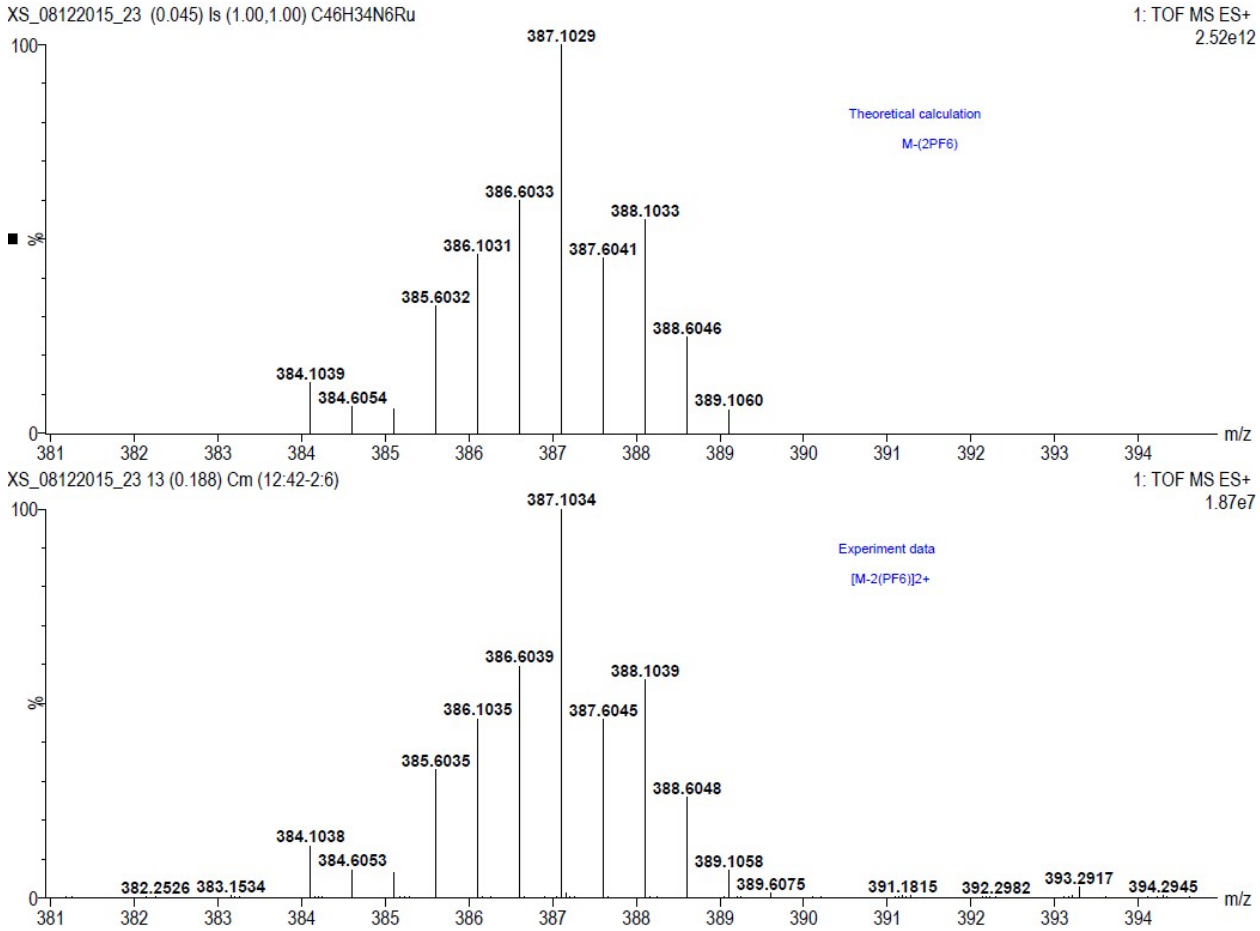

Figure S3. HRMS of complex **1**. The m/z value is assigned to the peaks and the y axis represents the percent abundance of the signals (%). The exact mass of the counter-ion free complex $[M-2(PF_6)]^{2+}$ was found to 387.1034 as compared to 387.1029 which is the theoretical mass.

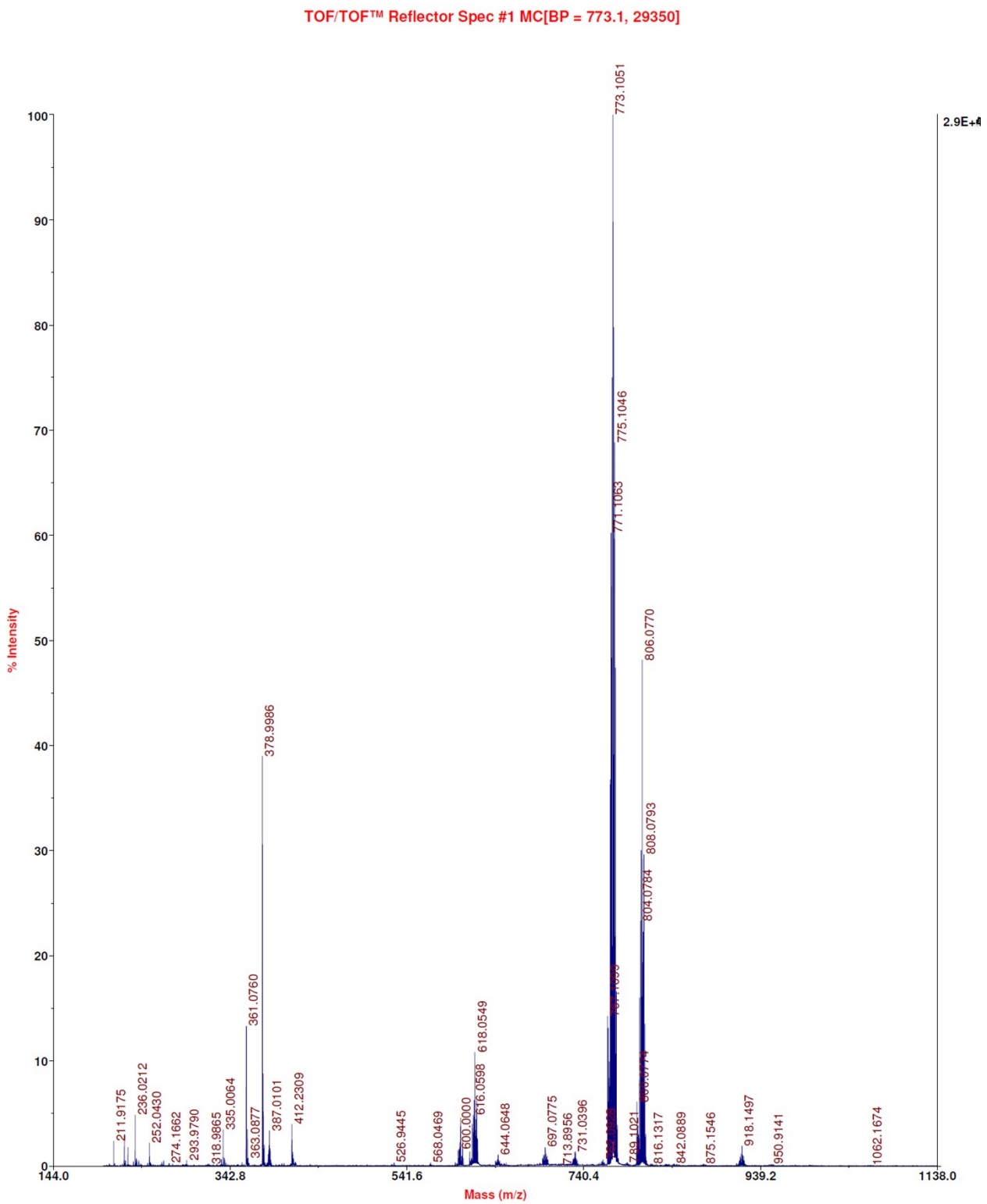

Figure S4. MALDI spectrum of complex **1**. The m/z value is assigned to the peaks and the y axis represents the percent intensity of the signals (%). The complex was detected as $[Ru(bipy)_2(BC) - H^+]^+$ at m/z = 773.1.

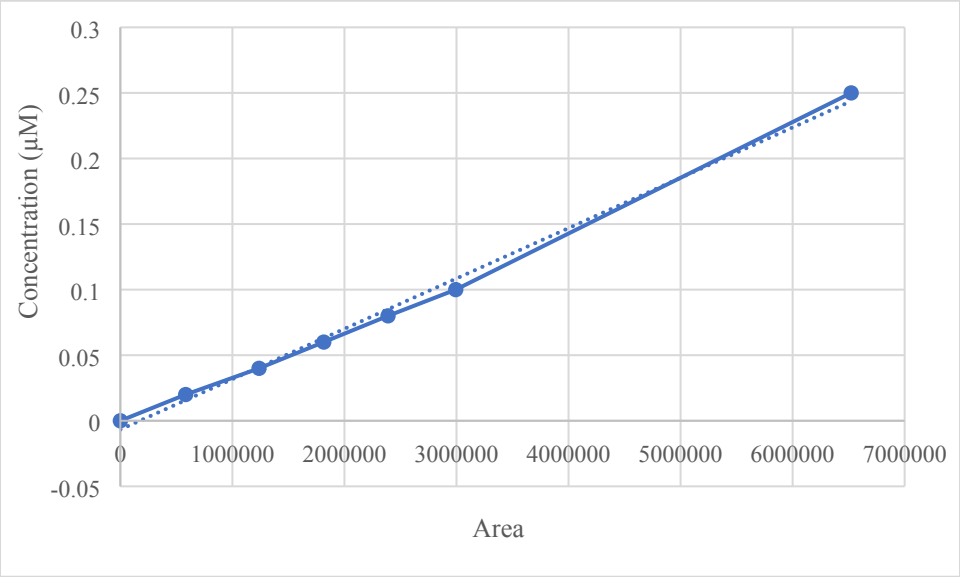

Figure S5. LC-MS/MS calibration curve of $[Ru(bipy)_2BC]Cl_2$.

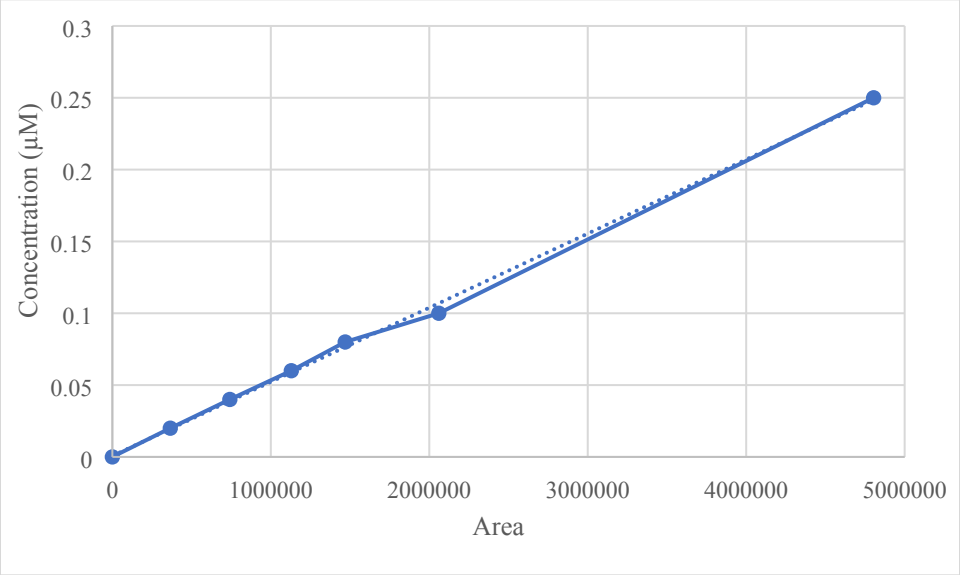

Figure S6. LC-MS/MS calibration curve of $[Ru(bipy)_2phen]Cl_2$. y = 5.16E-08x + 6.55E-04; R^2 = 0.998.

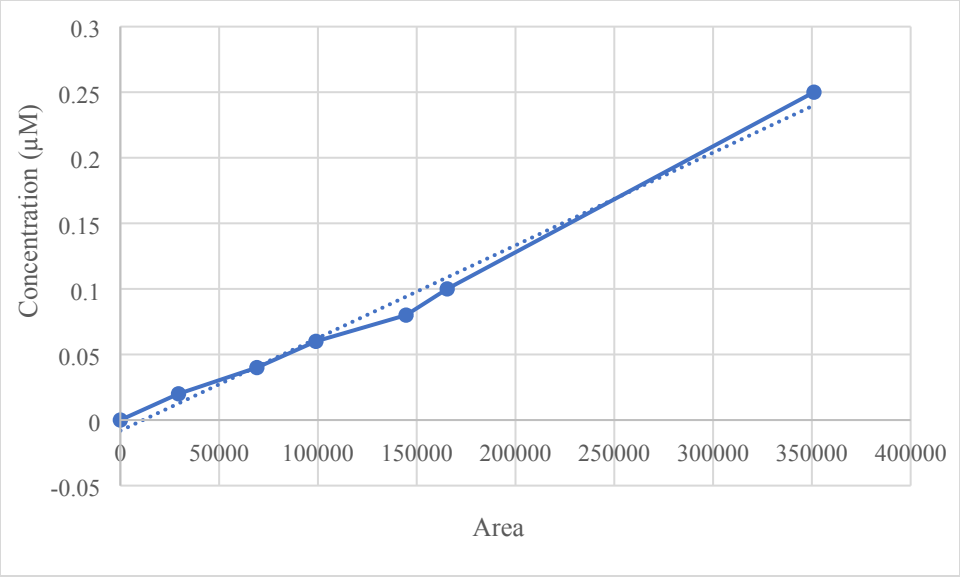

Figure S7. LC-MS/MS calibration curve of BC. y = 7.07E-07x - 8.12E-03; R^2 = 0.988.

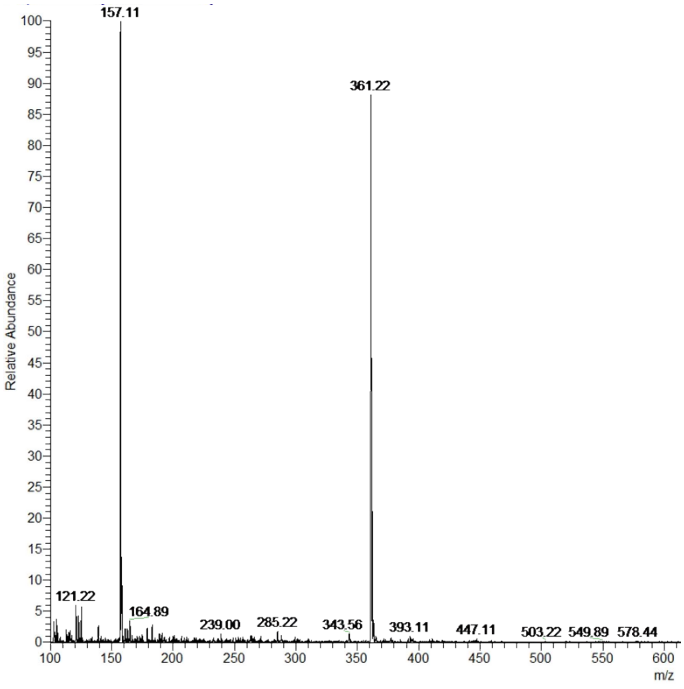

Figure S8. ESI-MS full scan spectrum of 1:1 bipy:BC mixture. bipy: m/z $[M + H^+]^+$ = 157.11, BC: m/z $[M + H^+]^+$ = 361.22.

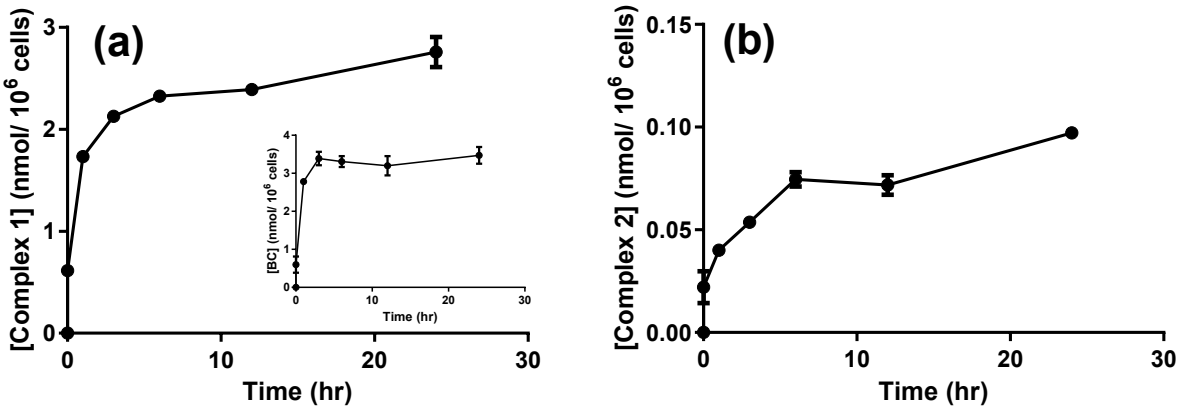

Figure S9. LC-MS/MS analysis for the uptake of complex **1** (a), BC (a, inset), and complex **2** (b) by A549 cells. Results are averages of four different experiments (±SEM) and are expressed in nmol/ 10^6 cells, as estimated from the calibration curves (Figures S5, S6, and S7).

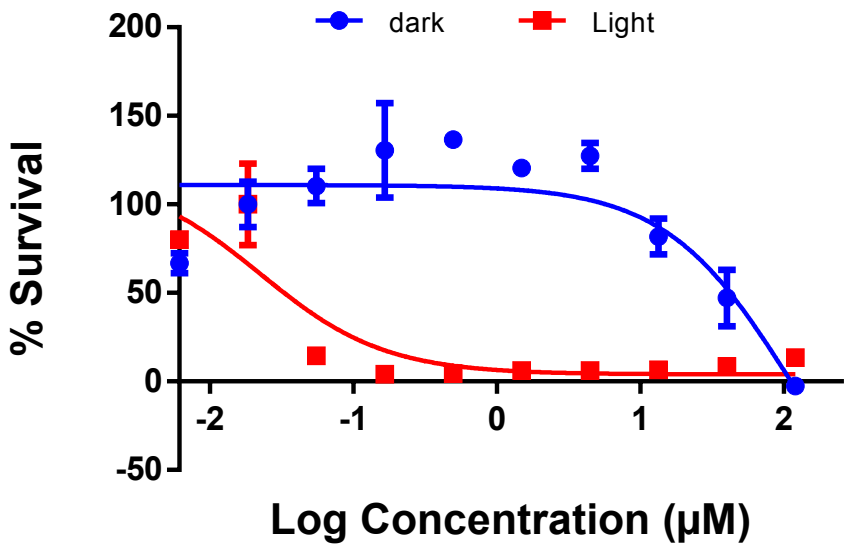

Figure S10. Effect of complex **1** on the survival of MSCs. Treatment was performed with 3-fold dilutions of the complex starting at 120 μM. Cytotoxicity was evaluated in both dark and light conditions (blue LED at a power of 100 mW/cm^2) and the experiment was repeated three times, with measurements performed in triplicates. IC_{50} (Dark) = 52 ± 13 μM, IC_{50} (Light) = 0.024 ± 0.002 μM, $p < 0.05$. The graph shown here corresponds to a single representative trial.