Silver (I) *N*-Heterocyclic carbene complexes: A winning and broad spectrum of antimicrobial properties

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Analitical data of the reported compounds [19]:

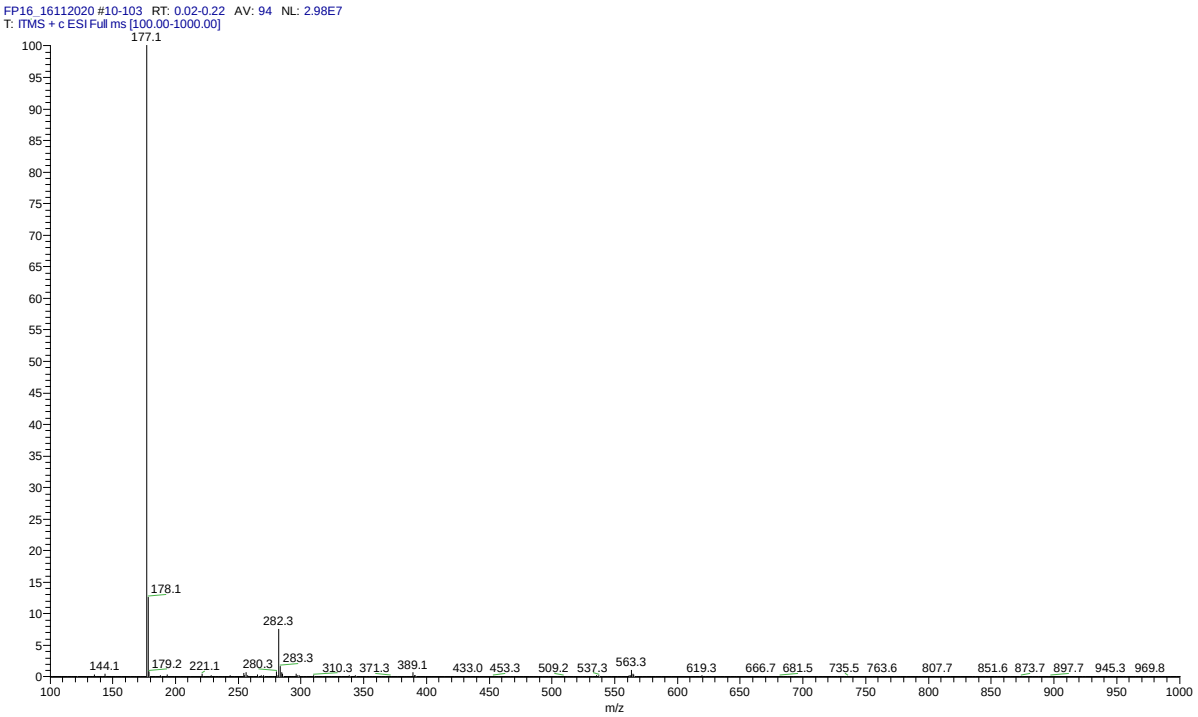
[AgCl(PhCH$_2$imAcr)] (**2MC**). ^{1}H NMR (DMSO-d$_6$,400 MHz, 298 K): δ 8.22 (br, 2H, acr), 7.86 (br, 2H, acr),7.45 (br, 2H, acr), 7.31-7.21 (br, 2H, acr and 3H, Ph), 6.93 (br, 2H, Ph), 4.93 (br, 2H, CH$_2$). ^{13}C NMR (DMSO-d$_6$,100.6 MHz, 298 K): δ 179.1 (im),148.4 (acr), 139.5 (acr), 136.2 (Ph), 130.8(acr), 129.3 (Ph), 128.7 (acr), 128.0 (Ph), 127.9 (Ph), 127.3 (acr), 125.6 (im), 122.9 (im), 121.8 (acr), 121.7 (acr), 54.1 (CH$_2$).ESI$^+$-MS, m/z: .442 [M-Cl]. Anal. Calcd (%) for $C_{23}H_{17}N_3ClAg$: C, 57.70; H, 3.58; N, 8.78. Found: C, 57.55; H, 3.32; N, 8.66

[AgCl(CH$_3$ imAcr)] (**3MC**). ^{1}H NMR (DMSO-d$_6$,400 MHz, 298 K) δ 8.26 (d, 2H, acr),7.90-7.82 (br, 4H, acr, im), 7.53 (br, 2H, acr), 7.33 (br, 2H, acr), 3.60 (br, 3H, CH$_3$). ^{13}C NMR (DMSO -d$_6$, 100.6 MHz, 298 K): δ 174.0 (im),148.4 (acr), 139.7 (acr), 130.8 (acr), 129.3 (acr), 127.8 (acr), 125.0 (im), 123.8 (im), 122.1 (acr), 121.8 (acr), 37.9 (CH$_3$). ESI$^+$-MS, m/z: .366 [M-Cl]. Anal. Calcd (%) for $C_{17}H_{13}N_3ClAg$: C, 50.71; H, 3.25; N, 10.44. Found: C, 50.88;H, 2.88; N, 10.22

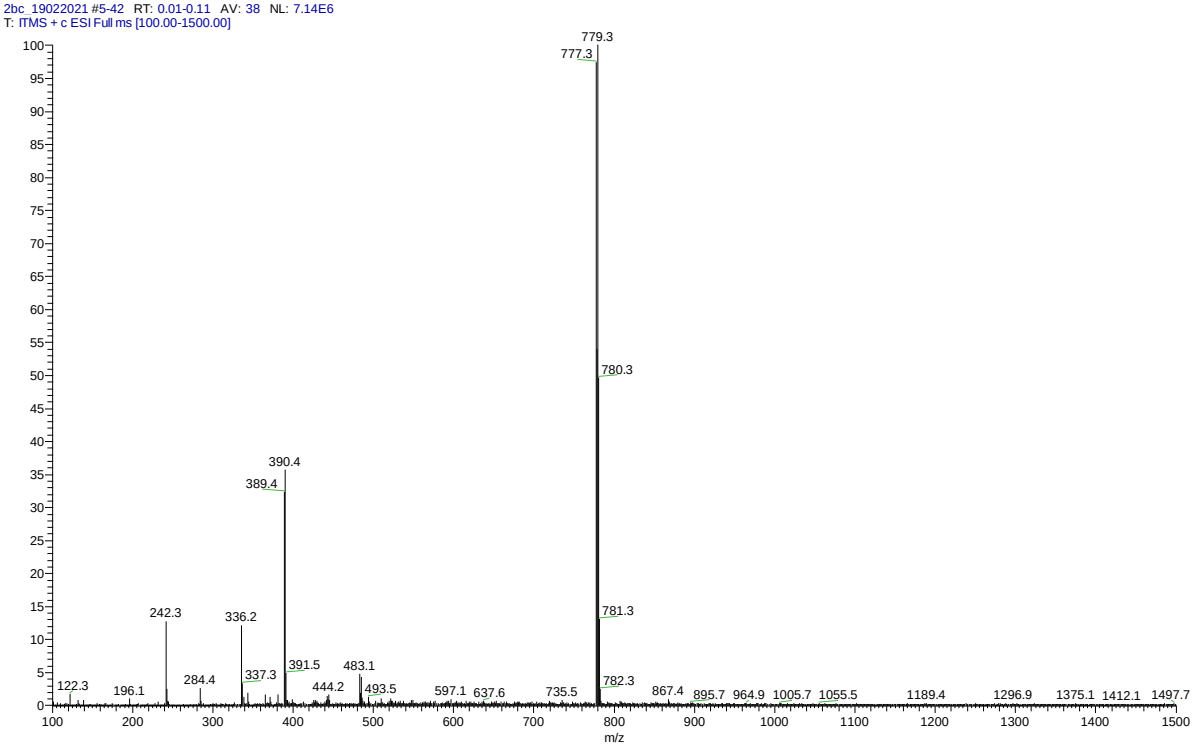
[Ag(PhCH$_2$imAcr)$_2$]BF$_4$. (**2BC**). ^{1}H NMR (DMSO-d$_6$,400 MHz, 298 K): δ 8.20 (d, 2H, acr), 7.85-7.81 (m, 2H, acr, 2H, im), 7.43 (m, 2H, acr)) 7.31-7.27 (br, 1H, Ph), 7.20 (d, 2H, Ph), 7.16 (d, 2H, acr), 6.99 (d,, 2H, Ph), 4.88 (s, 2H,CH$_2$). ^{13}C NMR (DMSO-d$_6$, 100.6 MHz, 298 K) δ 181.7 (im),148.9 (acr), 139.9 (acr), 136.6 (Ph), 131.3 (acr), 129.9 (Ph), 129.2 (acr), 128.6 (Ph), 128.5 (Ph), 127.7 (acr), 126.2 (im), 123.4 (im), 122.2 (2C, acr), 54.6 (CH$_2$). ESI$^+$-MS, m/z: .777 [M$^+$]. Anal. Calcd (%) $C_{46}H_{34}N_6BF_4Ag$: C, 63,84% ; H,3.96 ; N, 9.71%. Found C, 63.92%; H; N 9.78.

Selected Mass Spectra:

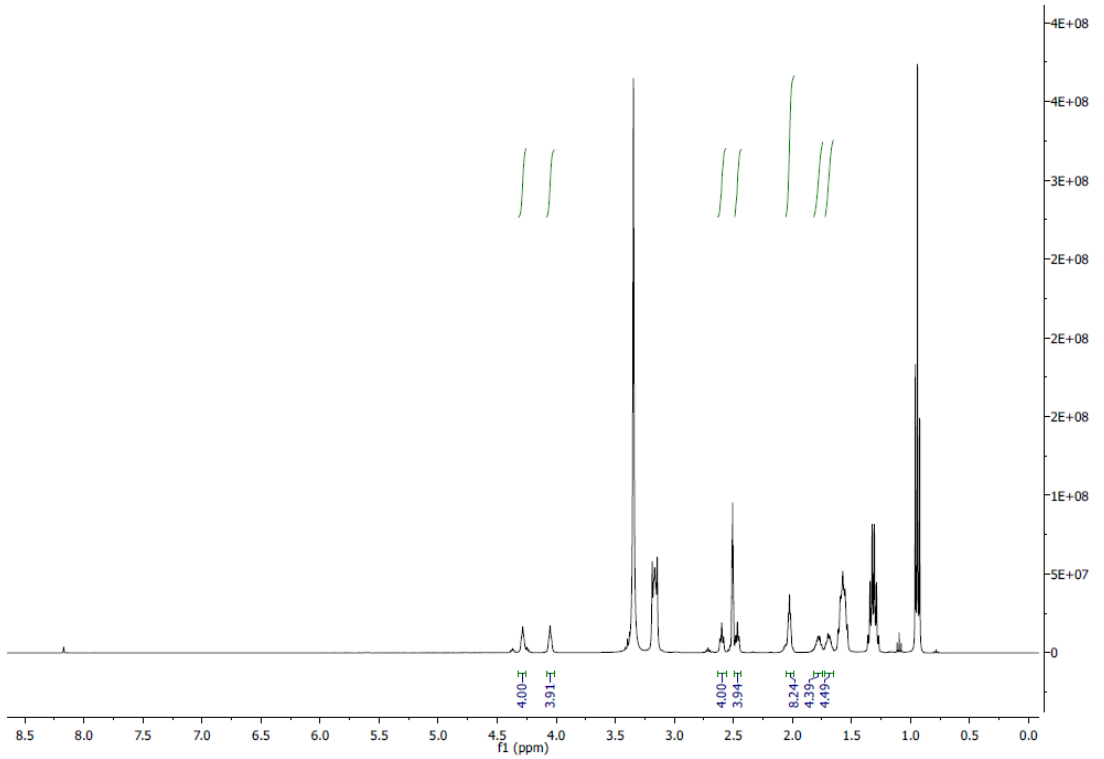
1MC

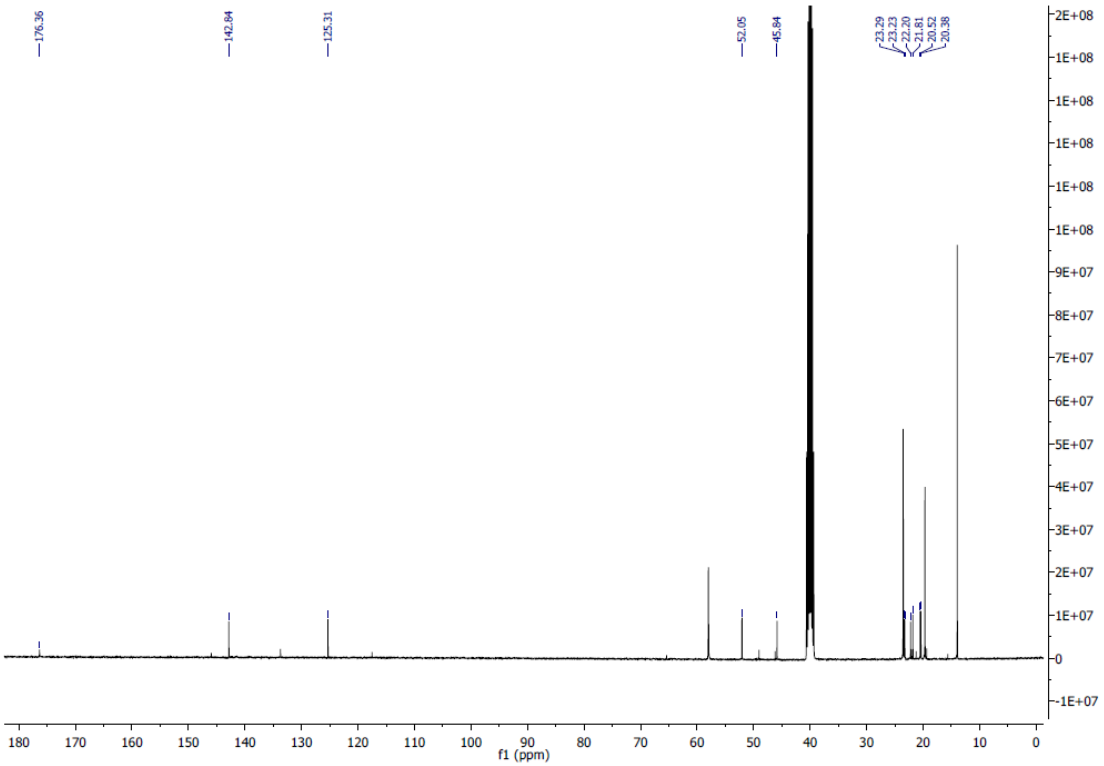


2BC

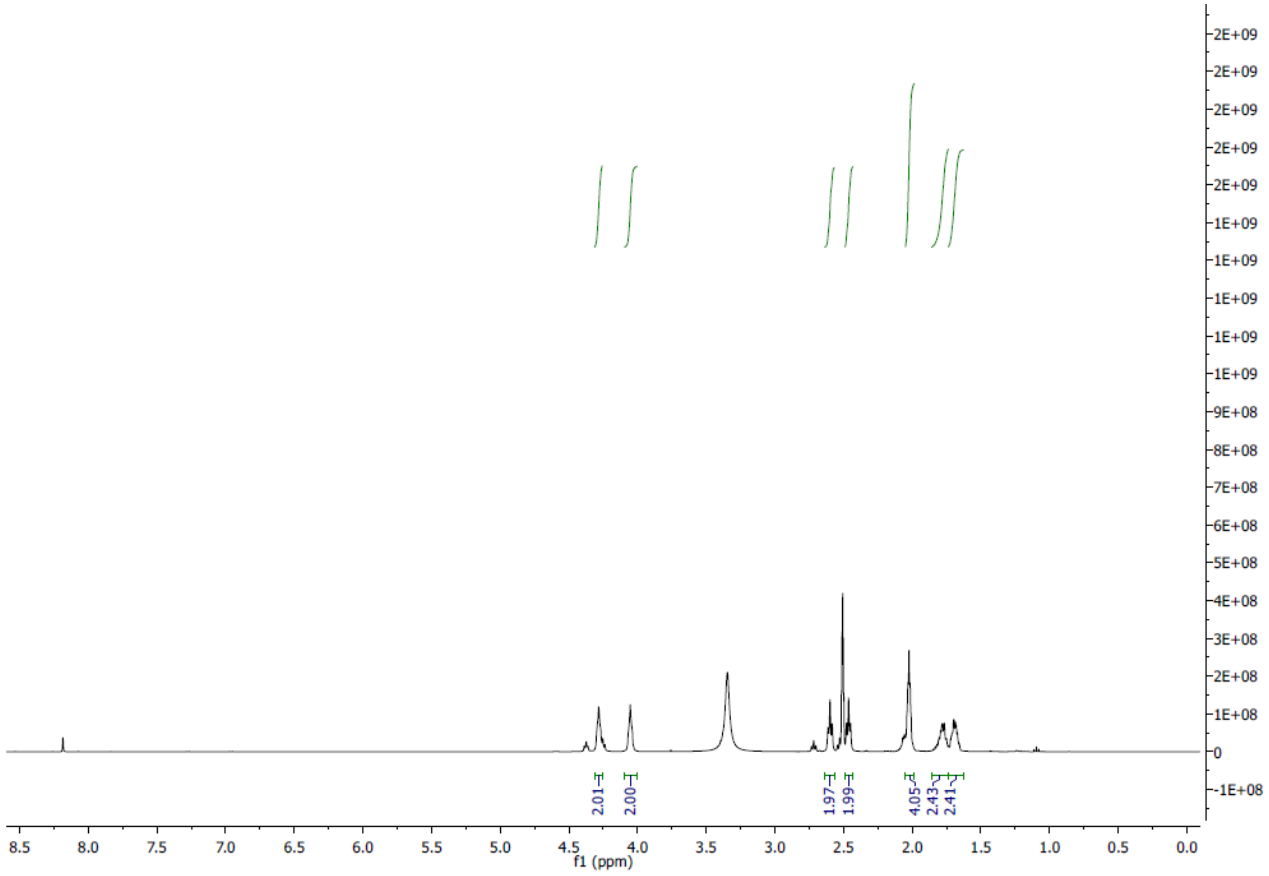


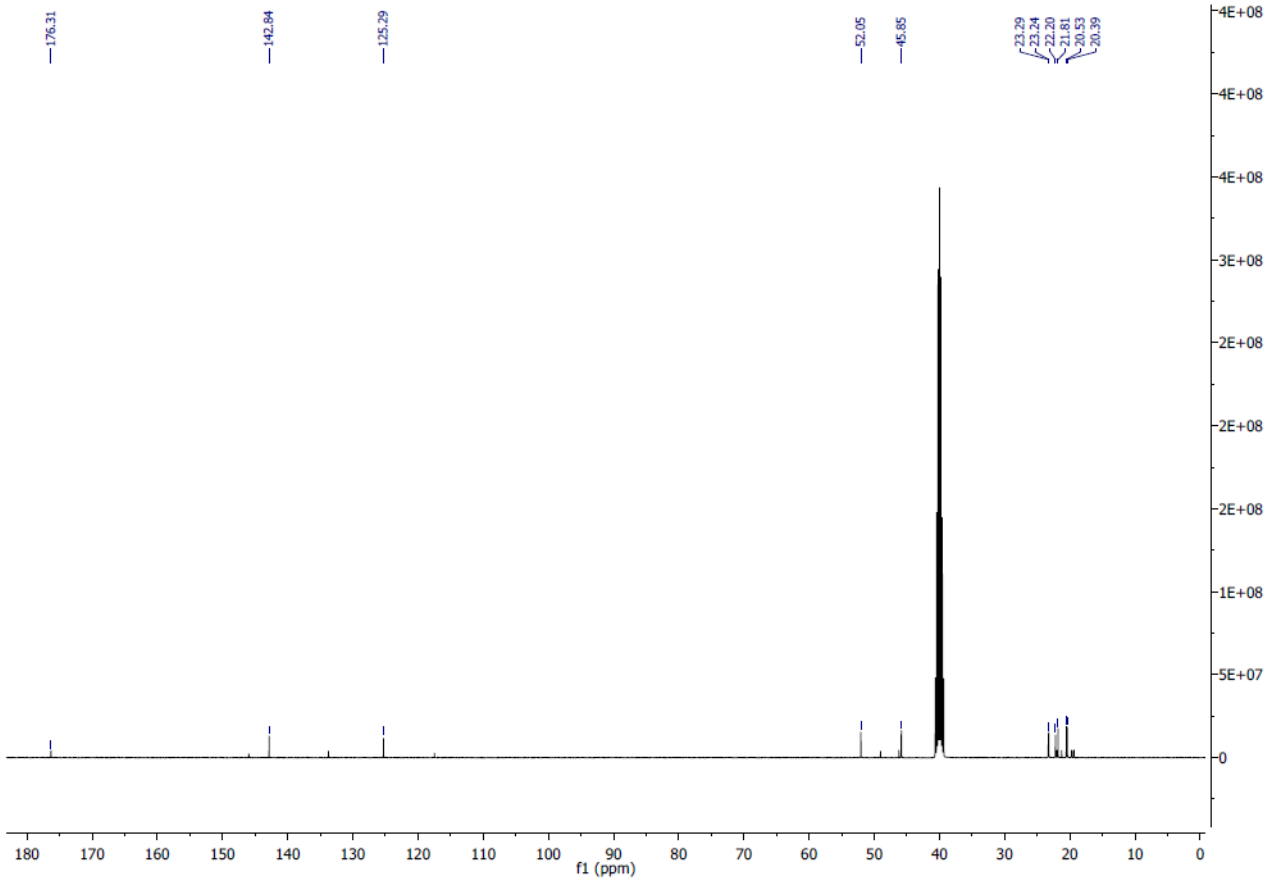
^{1}HNMR and ^{13}C NMR **1BC** Spectra



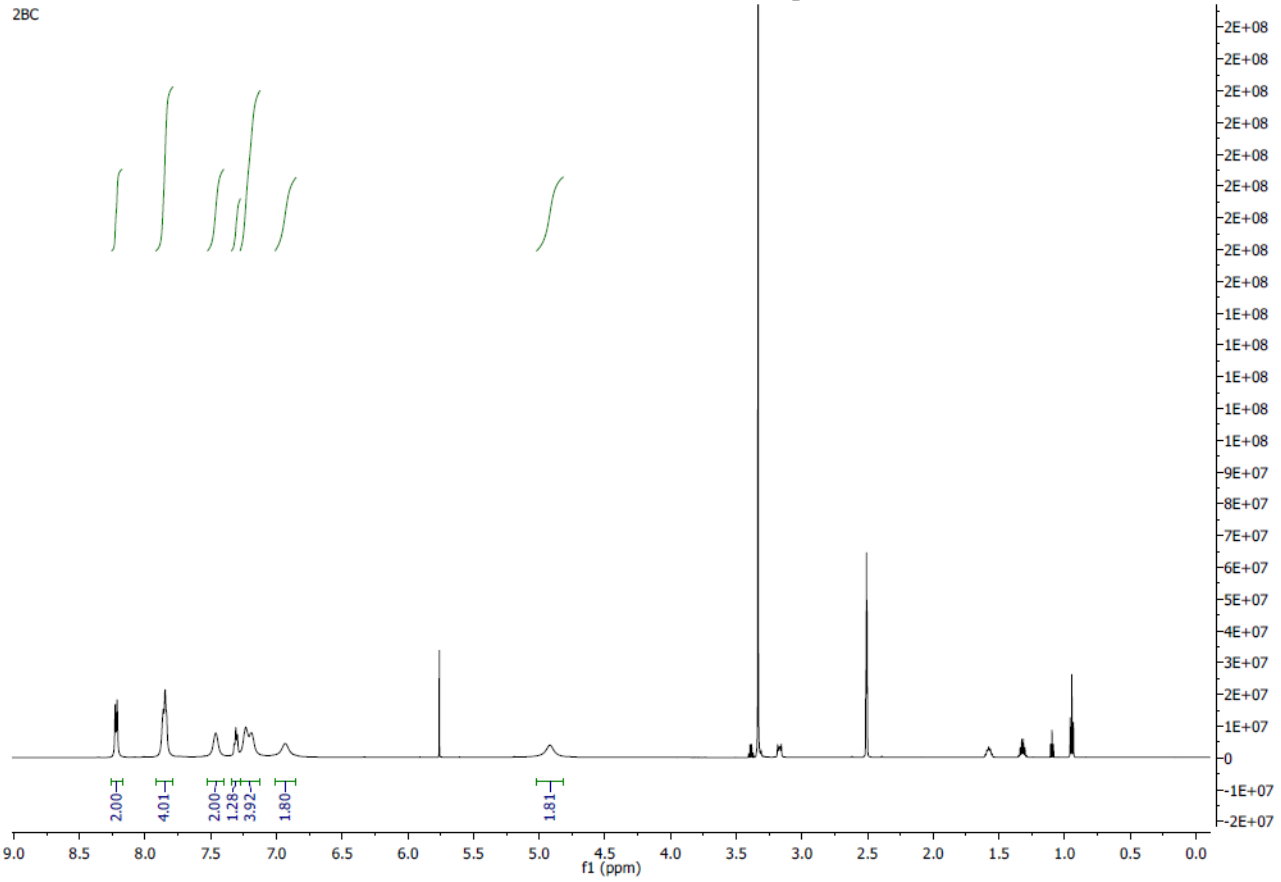


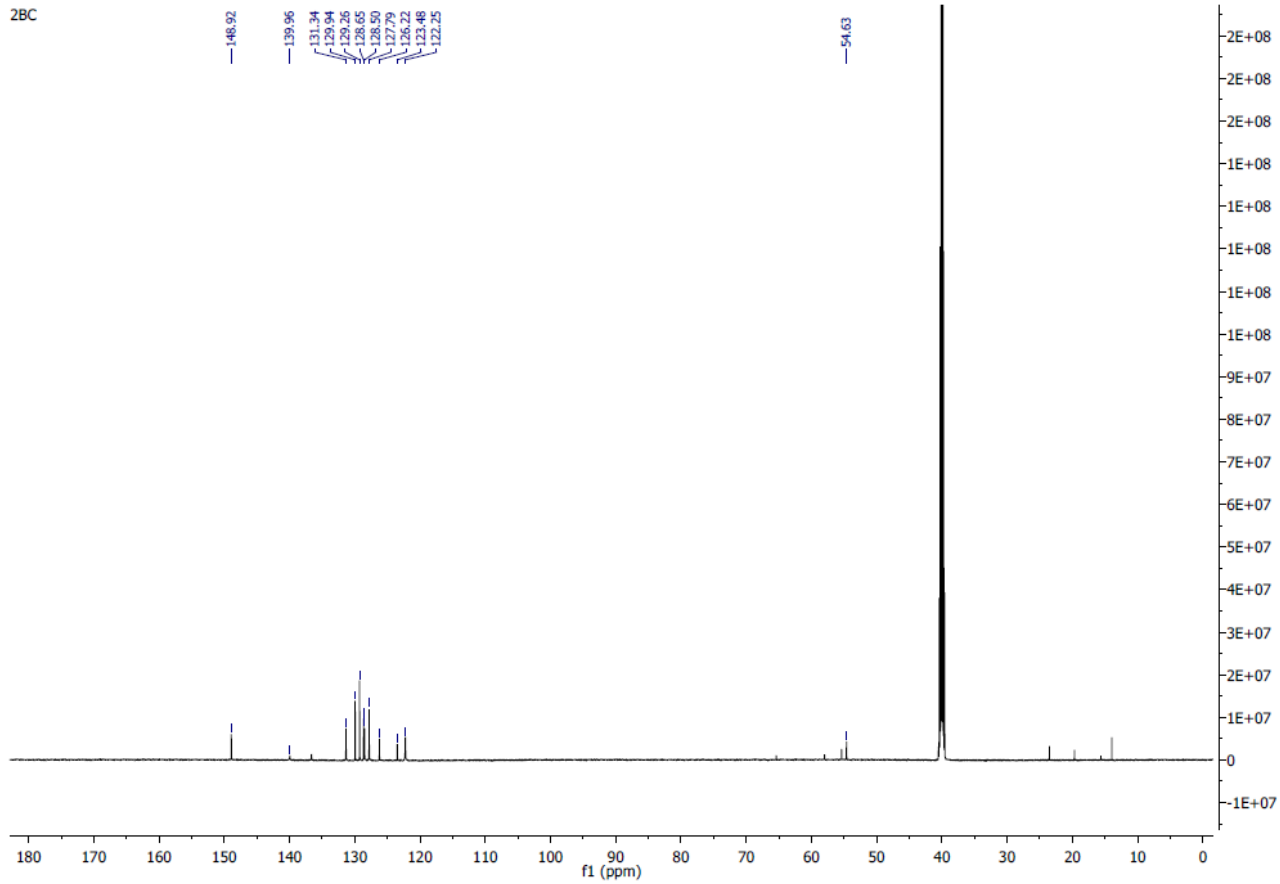
[1]HNMR and [13]C NMR **1MC** Spectra





[1]HNMR and [13]C NMR **2BC** Spectra





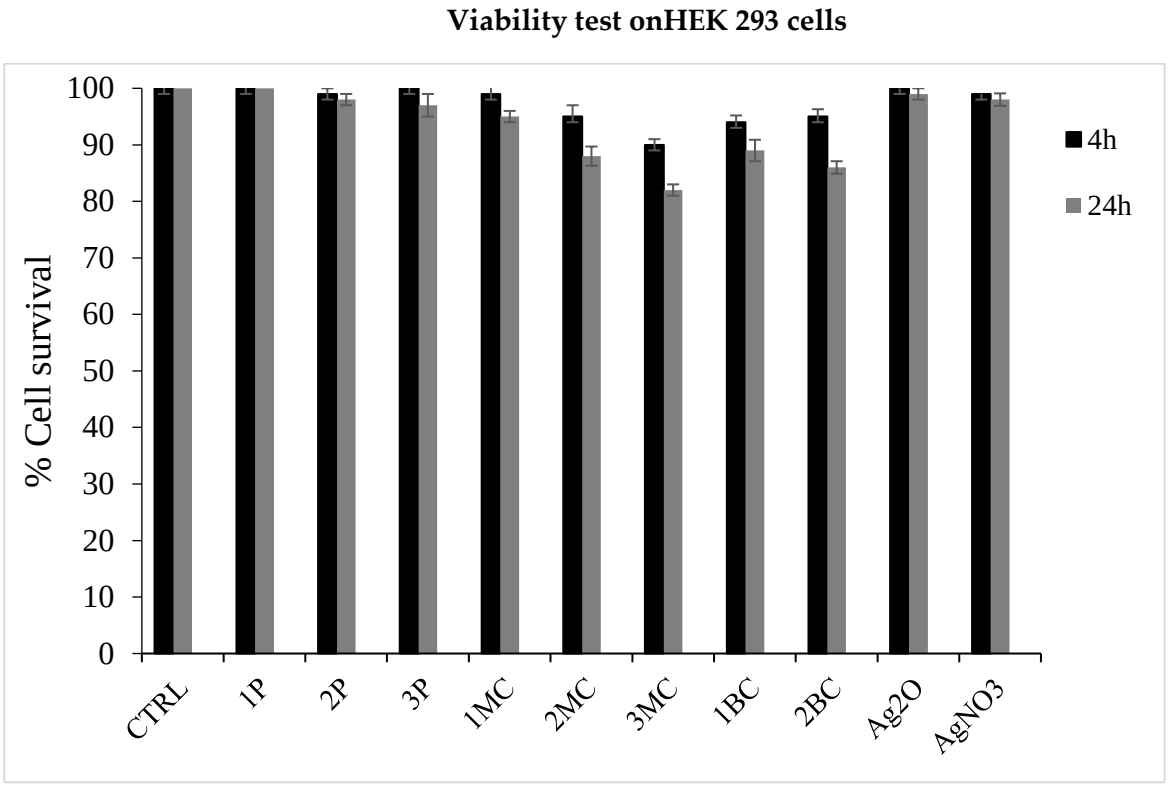


Figure S1: Cytotoxic effects of compounds [1µM] on HEK 293 cells (human embryonic kidney) by MTT assay. The mean values and SD of two independent experiments performed in triplicate are shown.