Catalytic and biological activity of silver and gold complexes stabilized by NHC with hydroxy derivatives on nitrogen atoms.

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^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz): 9.12 (s, NC***H***N, 1H), 7.75-7.35 (m, 7H aromatic hydrogens), 5.99 (d, O***H***, 1H), 5.17 (b, O***H***, 1H), 4.97 (t, C***H***OH, 1H), 4.46-4.25 (m, NC***H***$_2$CH$_2$OH; NC***H***$_2$CHOH, 4H), 3.75 (d, NCH$_2$C***H$_2$***OH, 2H).

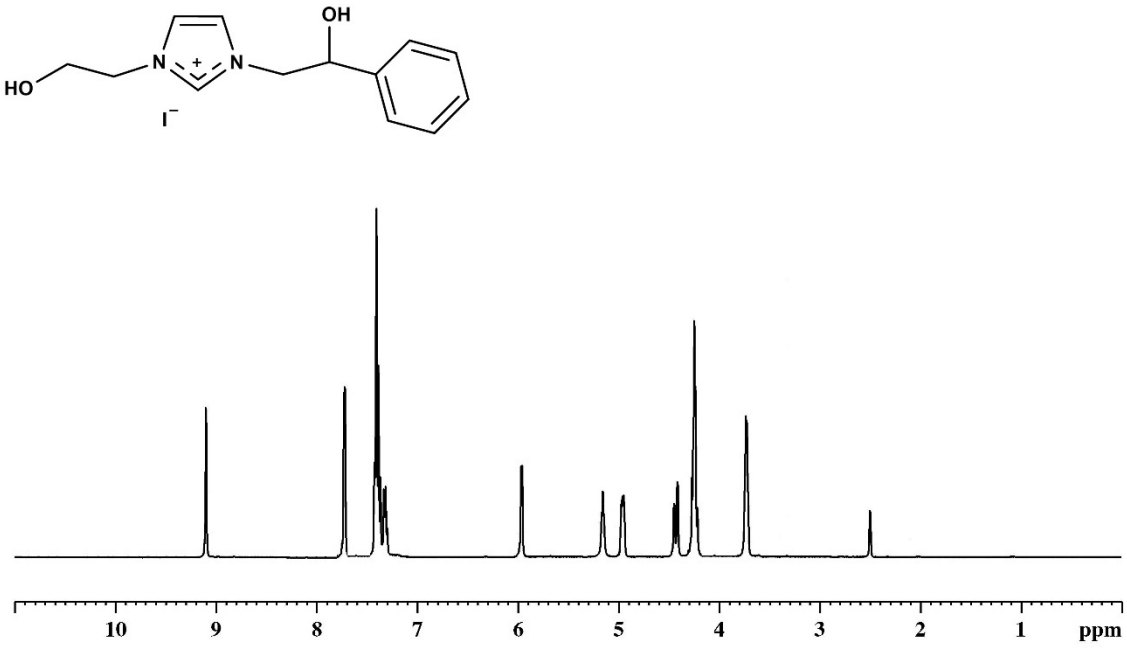


Figure S1:^{1}H-NMR of S3

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 141.28 (*ipso* carbon of aromatic ring), 136.75 (N***C***HN), 128.34, 127.82, 125.99 (aromatic carbons), 122.95, 122.28 (backbone carbons), 70.70 (***C***HOH), 59.36 (***C***H$_2$OH), 55.60 (N***C***H$_2$CHOH), 51.56 (N***C***H$_2$CH$_2$OH)

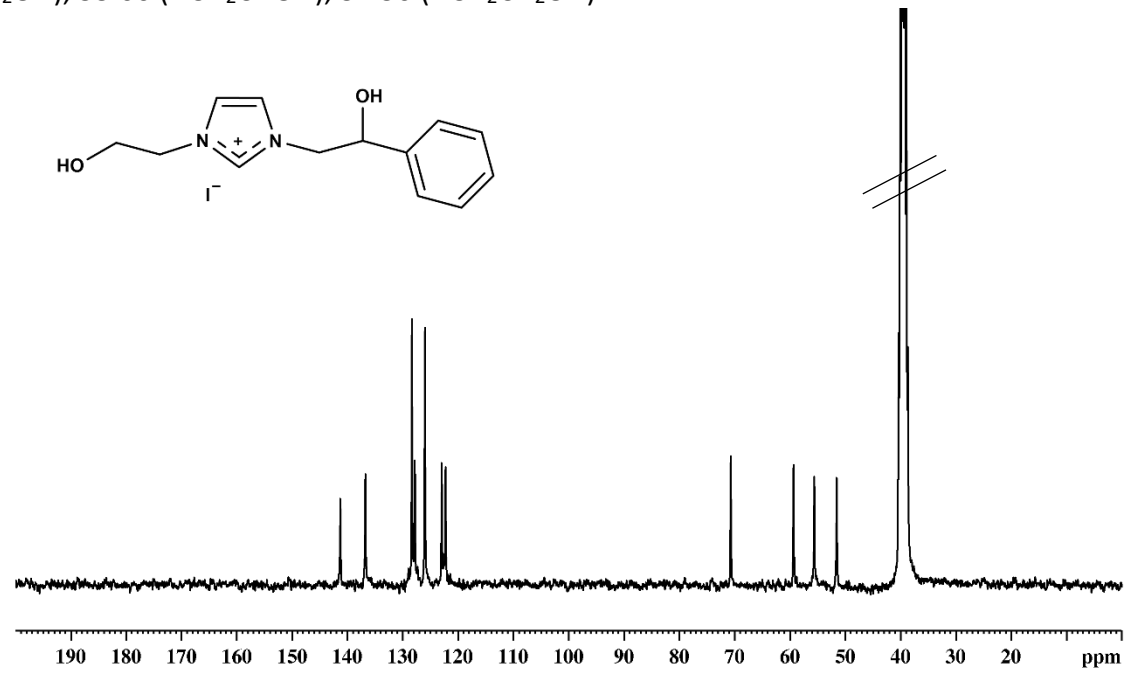


Figure S2:^{13}C-NMR of S3

MALDI, (m/z): 233.12898 Dalton attributable to $[C_{13}H_{17}N_2O_2]^+$.

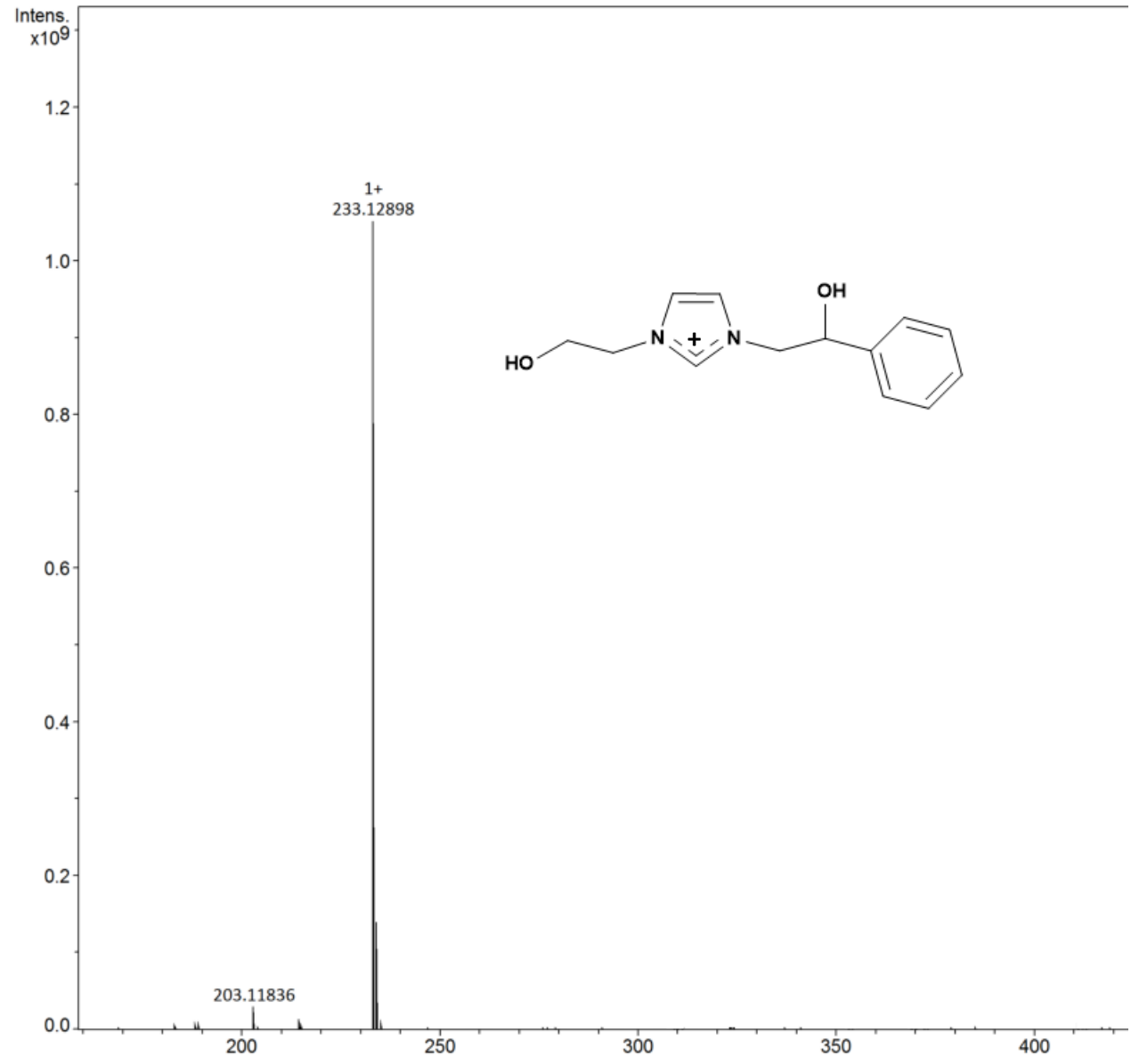


Figure S3: ESI-MS of S3

^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz)**:** 9.51 (s, NC***H***N, 1H), 7.40-7.33 (m, aromatic hydrogens, 5H), 6.05 (d, O***H***, 1H), 5.18 (t, O***H,*** 1H), 4.99 (t, C***H***OH, 1H), 4.49-4.34 (m, NC**H_2**CHOH, NC***H_2***CH_2OH; 4H), 3.77 (d, NCH_2C***H_2***OH, 2H).

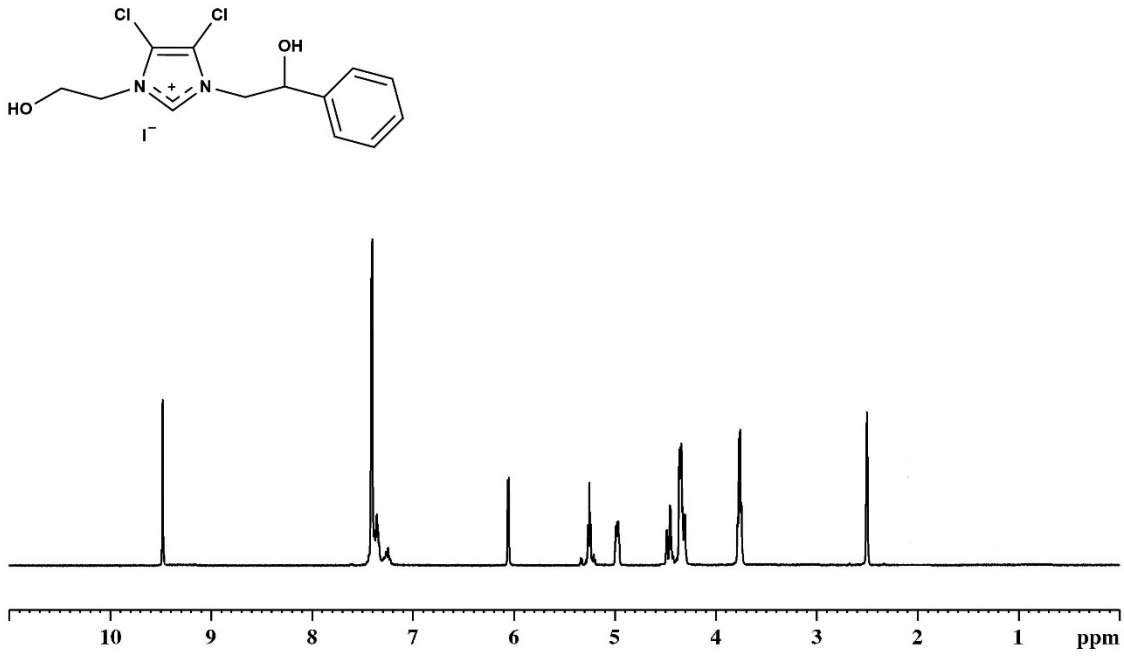


Figure S4:^{1}H-NMR of S4

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 140.44 (*ipso* carbon of aromatic ring), 137.39 (N***C***HN), 128.47, 128.10, 125.96 (aromatic carbons), 118.91, 118.47 (backbone carbons), 69.80 (***C***HOH), 58.18 (***C***H_2OH), 54.85 (N***C***H_2CHOH), 51.08 (N***C***H_2CH_2OH).

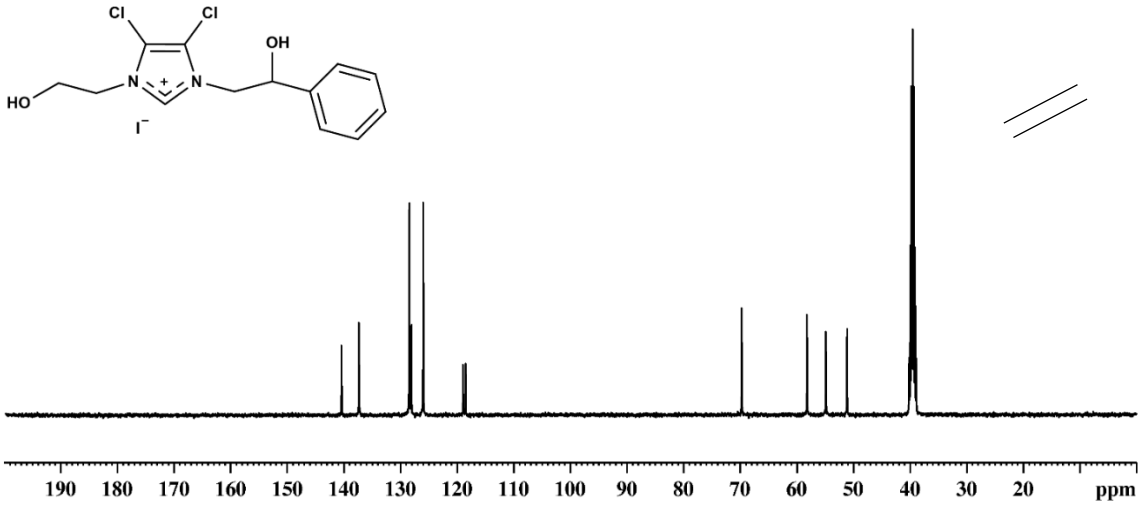


Figure S5:^{13}C-NMR of S4

MALDI: (m/z): 301.05142 Dalton attributable to $[C_{13}H_{15}Cl_2N_2O_2]^+$.

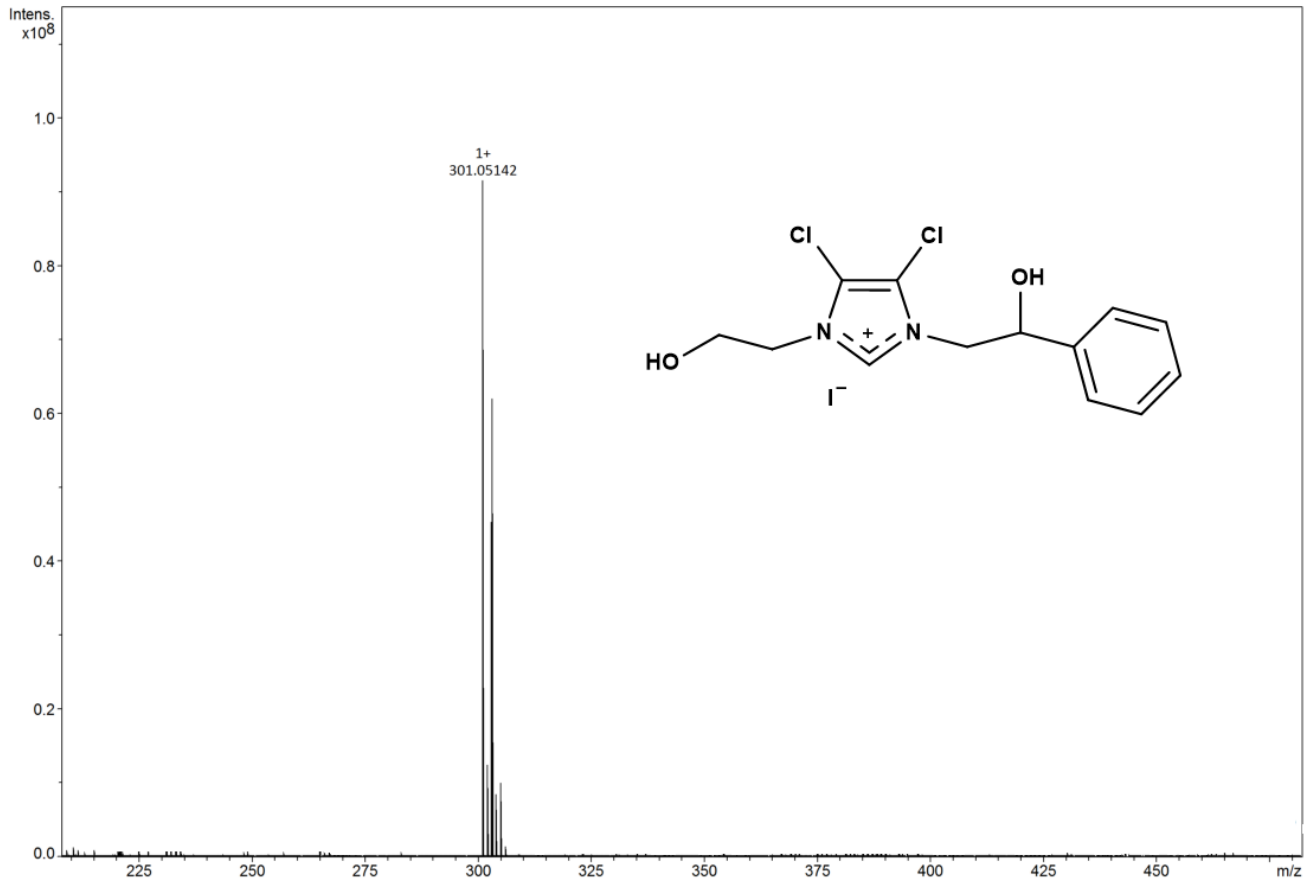


Figure S6: MALDI-MS of S4

^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz): 7.38-7.31 (m, 7H aromatic hydrogens), 5.88 (b; C**H**OH; 1H) 5.07 (b, CH_2O***H***; 1H), 4.99 (b, NCH_2C***H***OH; 1H), 4.33-4.27 (m, NC***H$_2$***CHOH, NC***H$_2$***CH_2OH; 4H), 3.73 (b, NCH_2C***H$_2$***OH, 2H).

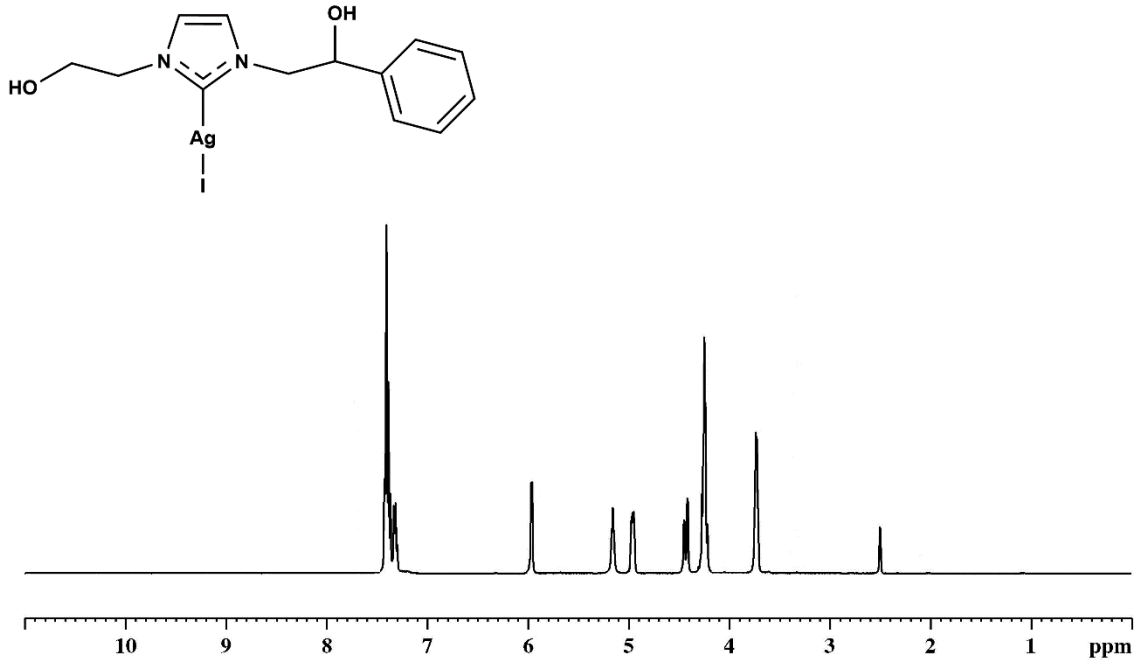


Figure S7:^{1}H-NMR of 3a

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 181.23-179.28 (dd, $^{1}J_{C\text{-}107\text{-}Ag}$ = 182.3 Hz, $^{1}J_{C\text{-}109\text{-}Ag}$ = 209.1 Hz), 142.53 (*ipso* carbon aromatic ring), 128.10, 127.10, 126.02 (aromatic carbons), 122.40, 121.85 (backbone carbons), 72.46 (***C***HOH), 61.19 (***C***H_2OH), 58.40 (N***C***H_2CHOH), 53.62 (N***C***H_2CH_2OH).

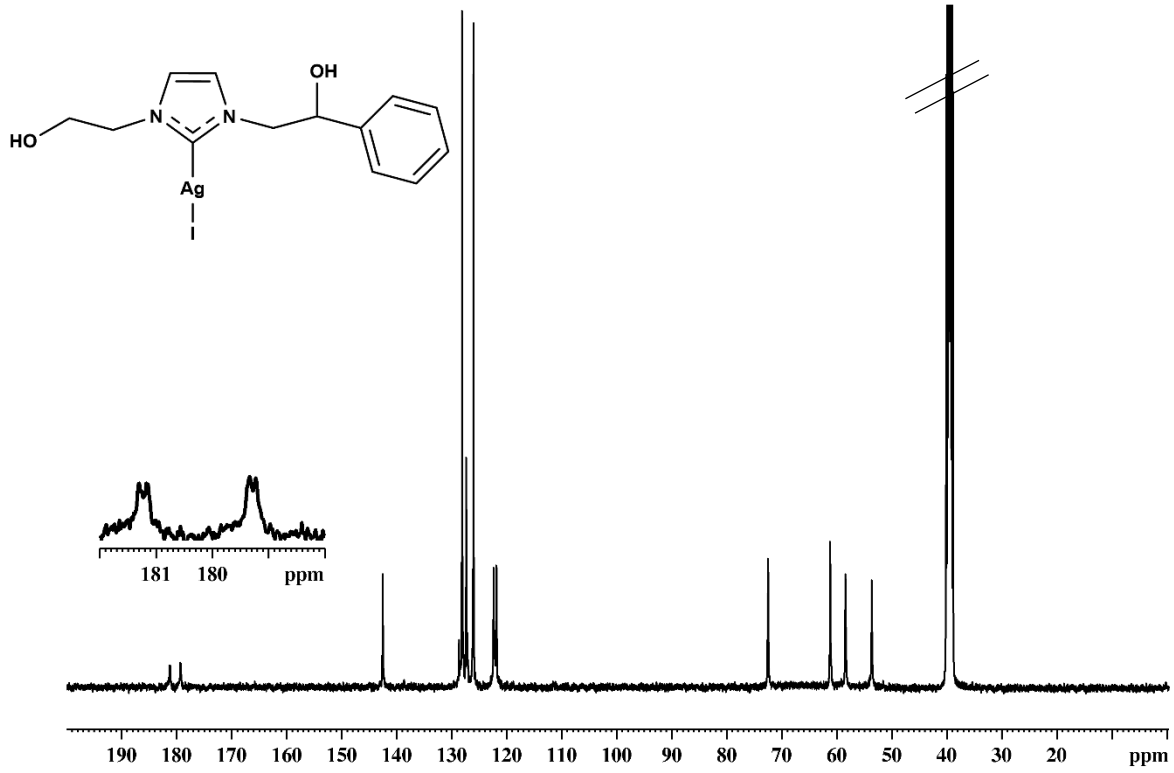


Figure S8:^{13}C-NMR of 3a

ESI-MS (CH_3CN, m/z): 573.14690 Da attributable to $[C_{26}H_{32}AgN_4O_4]^+$

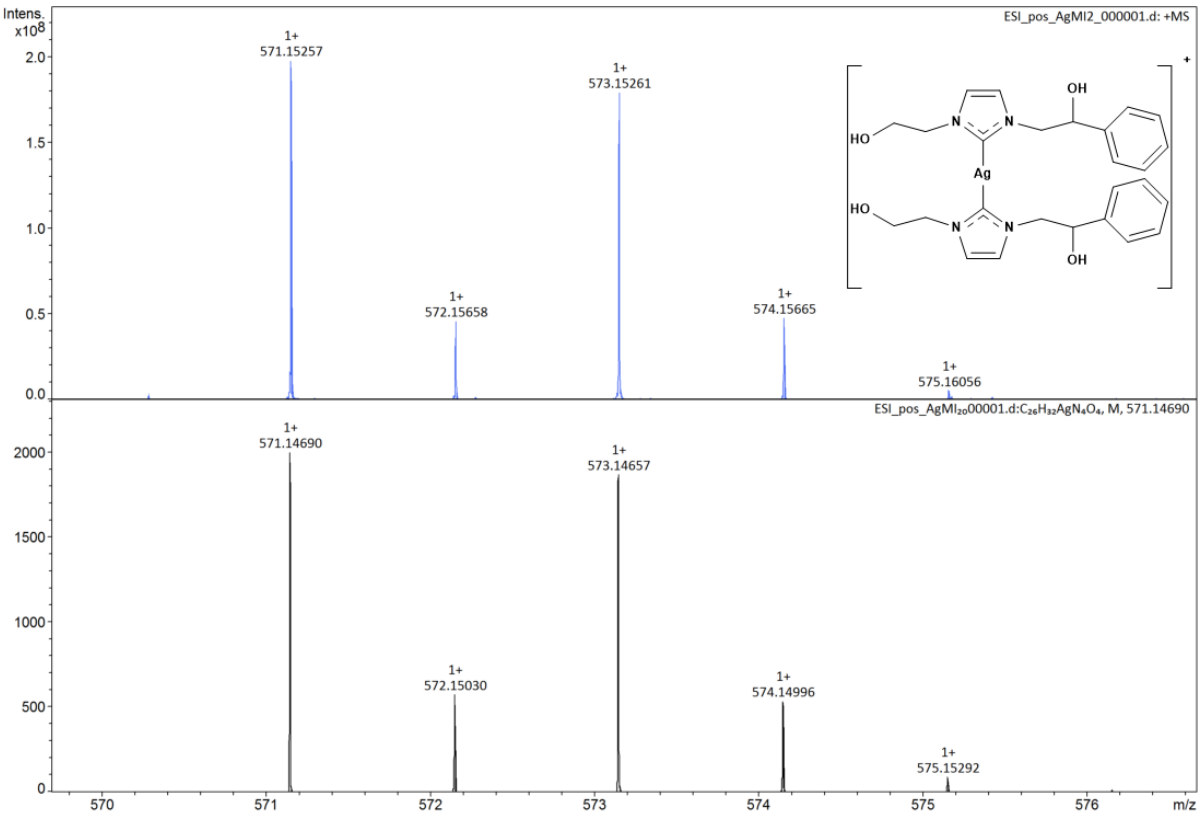


Figure S9: ESI-MS of 3a

^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz): 7.38-7.28 (m, 5H aromatic hydrogens), 5.89 (s, C***H***OH, 1H), 5.07 (b, CH_2O***H***; 1H) 4.99 (b, NCH_2C***H***OH; 1H), 4.33-4.27 (m, NC***H$_2$***CHOH, NC***H$_2$***CH_2OH; 4H), 3.74 (b, NC***H***$_2$, 2H).

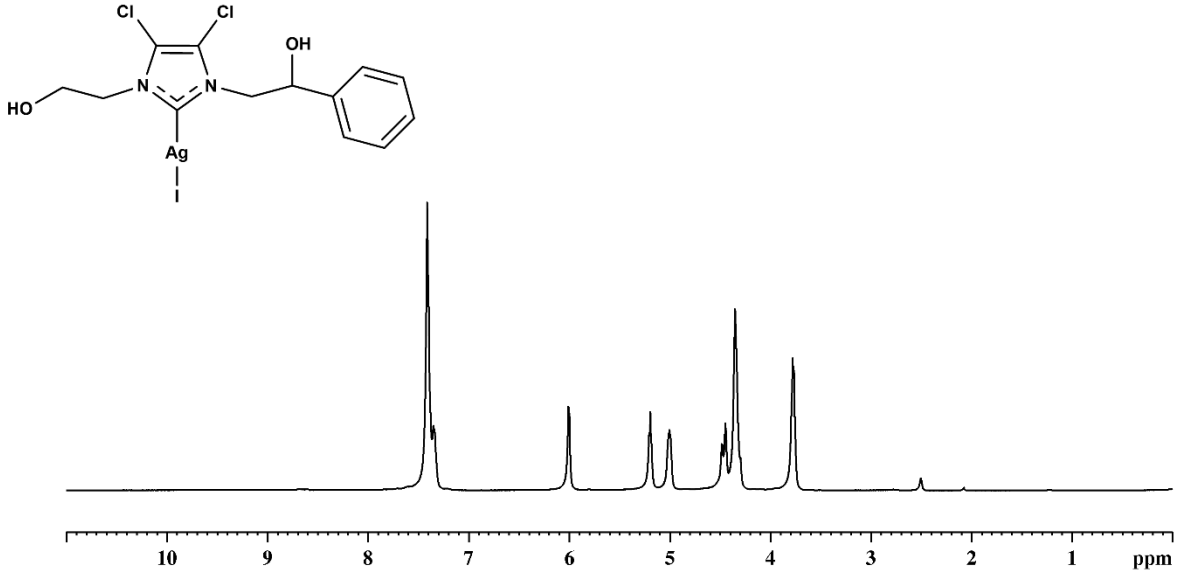
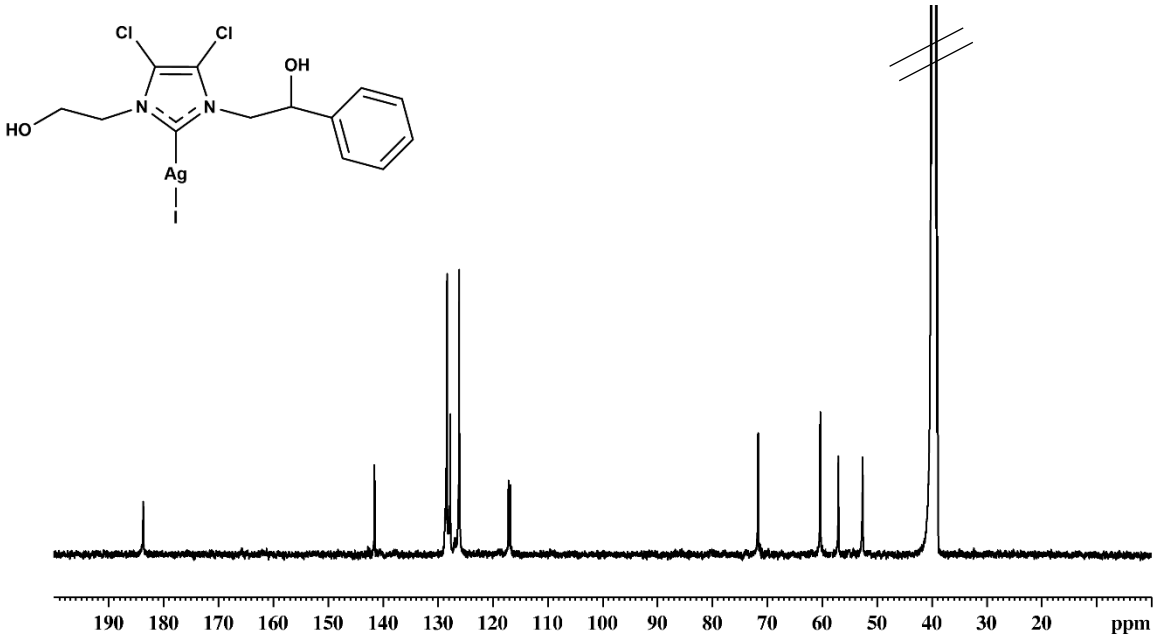


Figure S10:^{1}H-NMR of 4a

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 183.67 ($C_{carbene}$-Ag), 141.51 (*ipso* carbon aromatic ring), 128.31, 127.72, 126.08 (aromatic carbons), 117.10, 116.74 (backbone carbons), 71.63 (***C***HOH), 60.28 (***C***H_2OH), 56.99 (N***C***H_2CHOH), 52.57 (N***C***H_2CH_2OH).



ESI-MS (CH_3CN, m/z):707.99716 Dalton attributable to $[C_{26}H_{28}AgCl_4N_4O_4]^+$.

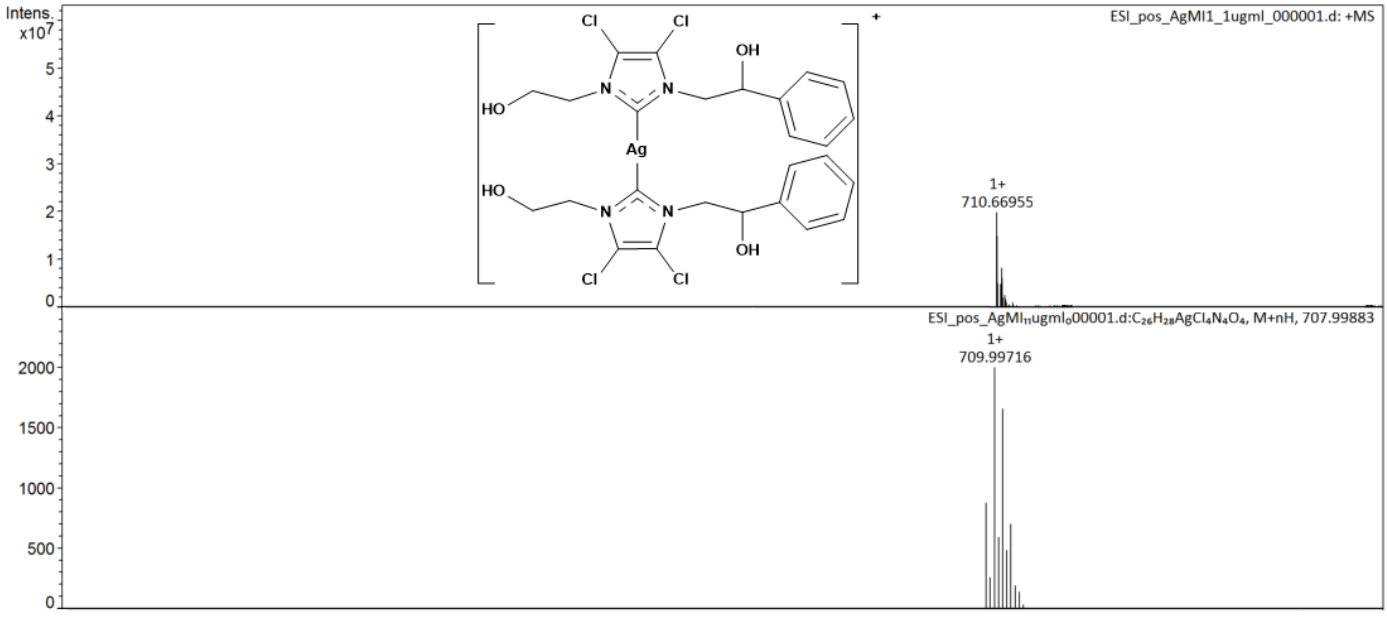


Figure S11:^{13}C-NMR of 4a

^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz): 7.40-7.36 (m, 7H aromatic hydrogens), 5.81 (m; C***H***OH; 1H) 5.08-5.02 (m, NC***H***$_2$CH$_2$OH; NC***H***$_2$CHOH, 4H), 3.74 (d, NC***H***$_2$CH$_2$, 2H)

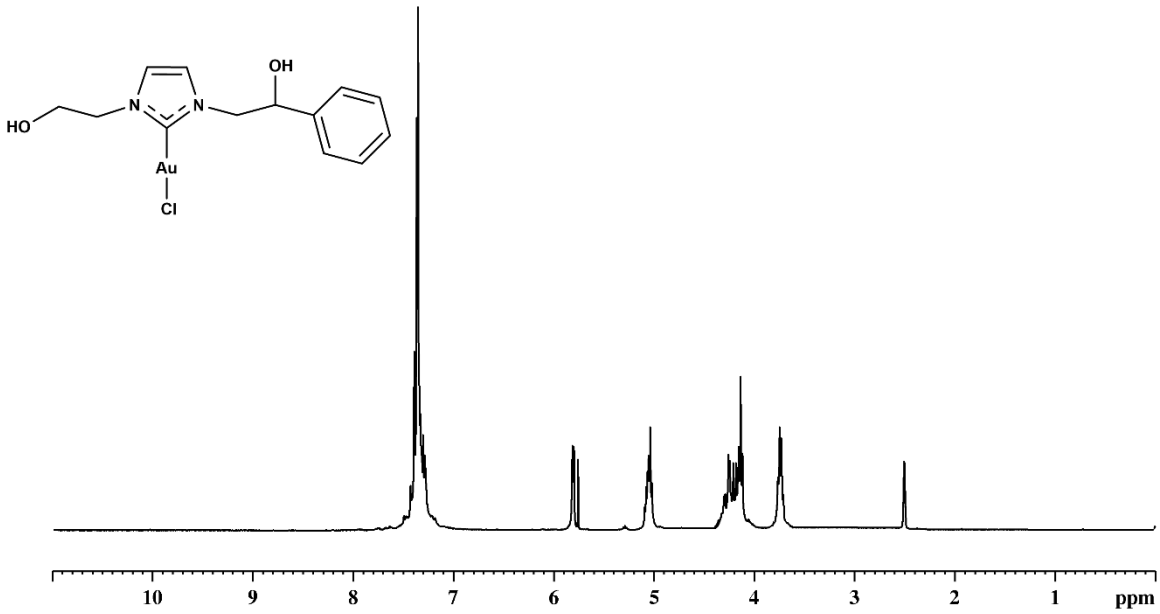


Figure S12: ^{1}H-NMR of 3b

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 168.37 ($C_{carbene}$-Au), 142.07 (*ipso* carbon aromatic ring), 128.30, 127.79, 127.61 (aromatic carbons), 122.33, 121.56 (backbone carbons), 72.36 (***C***HOH), 60.44 (***C***H$_2$OH), 57.79 (N***C***H$_2$CHOH), 53.00 (N***C***H$_2$CH$_2$OH).

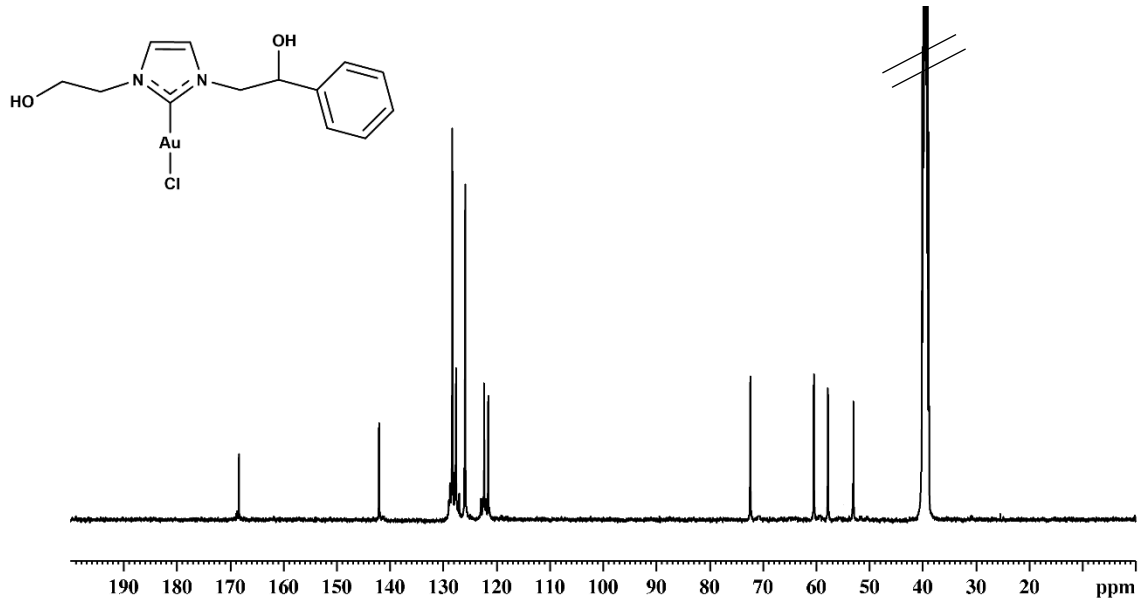


Figure S13: ^{13}C-NMR of 3b

MALDI-MS (CH_3CN, m/z): 661.20838 Dalton attributable to $[C_{26}H_{32}AuN_4O_4]^+$.

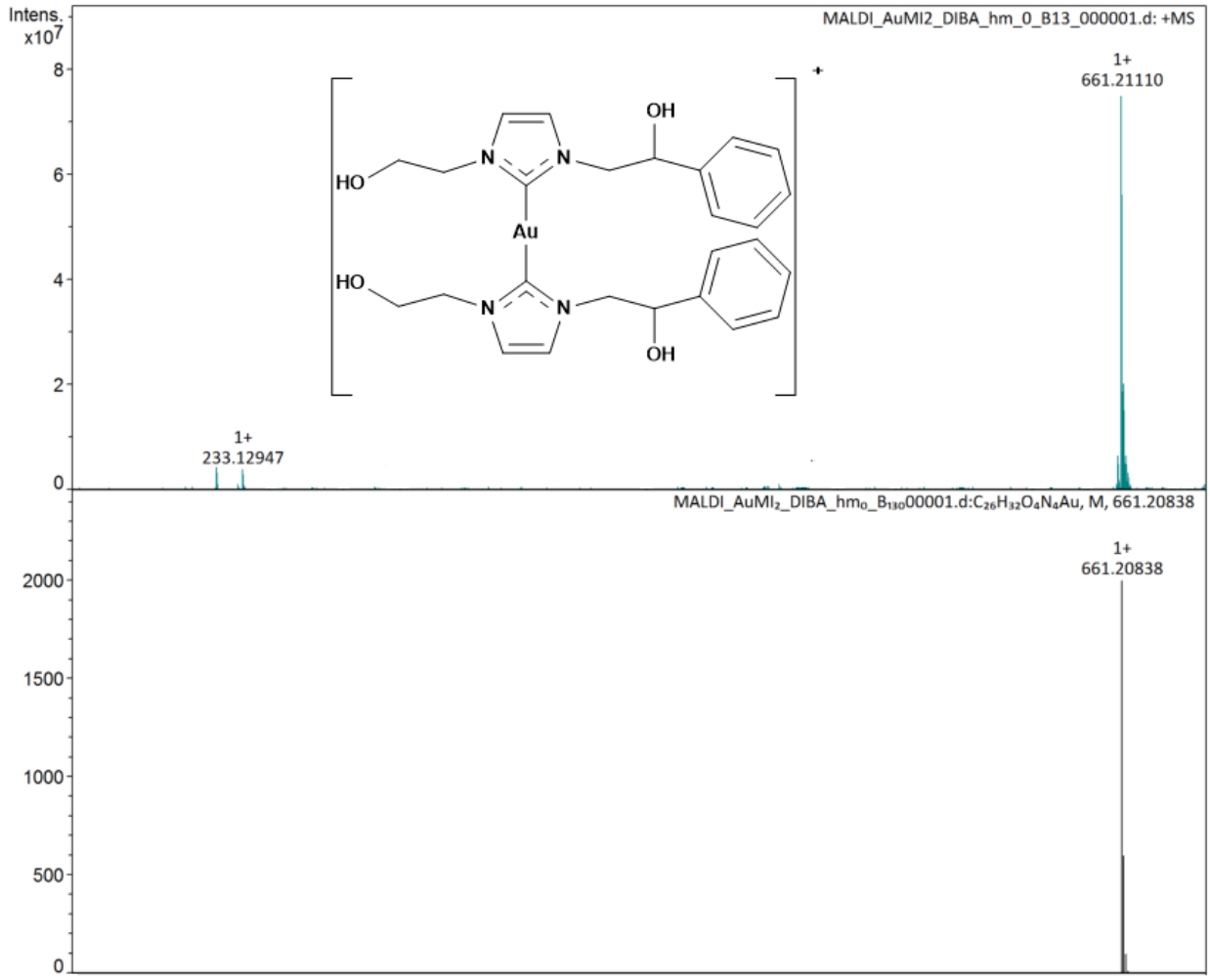


Figure S14: MALDI OF 3b

^{1}H-NMR (δ ppm, DMSO-d_6, 400 MHz): 7.38-7.28 (m, 5H aromatic hydrogens), 5.89 (s, C***H***OH, 1H), 5.07-4.99 (m; C**H_2**OH; 2H) 4.33-4.28 (m, NC***H***$_2$CH$_2$OH, 2H), 3.74 (d, NC***H***$_2$, 2H)

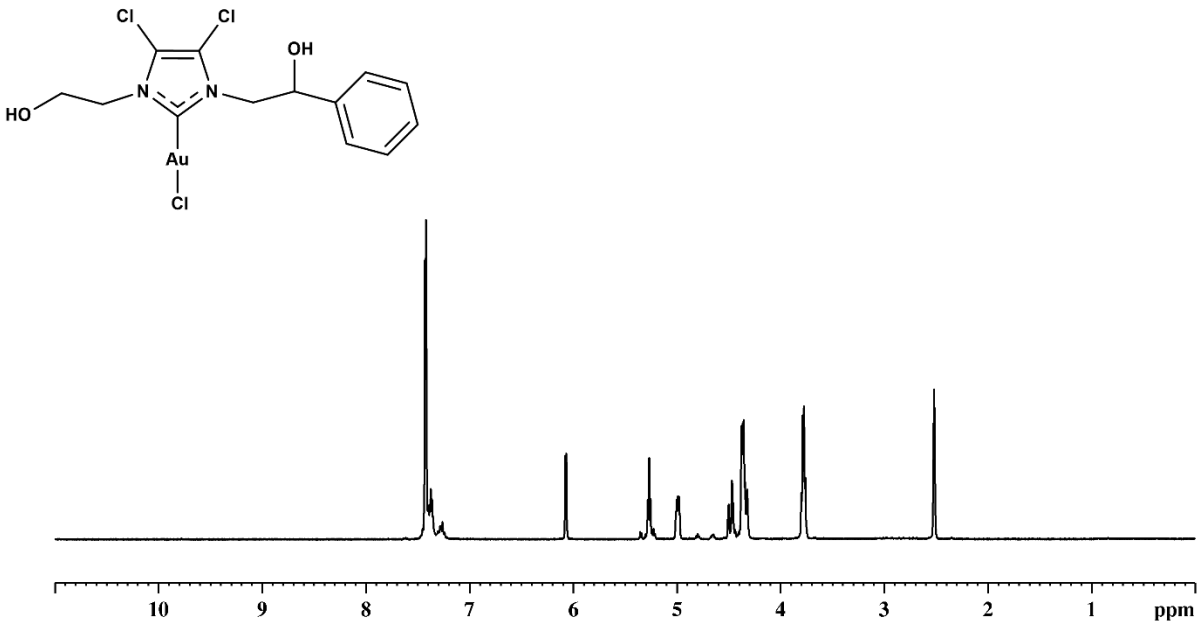


Figure S15:^{1}H-NMR of 4b

^{13}C-NMR (δ ppm, DMSO-d_6, 100 MHz)**:** 170.90 ($C_{carbene}$-Au) 141.35 (*ipso* carbon aromatic ring), 128.4, 127.94, 125.08 (aromatic carbons), 117.20, 116.74 (backbone carbons), 72.14 (***C***HOH), 59.85 (***C***H$_2$OH), 56.89 (N***C***H$_2$CHOH), 52.37 (N***C***H$_2$CH$_2$OH).

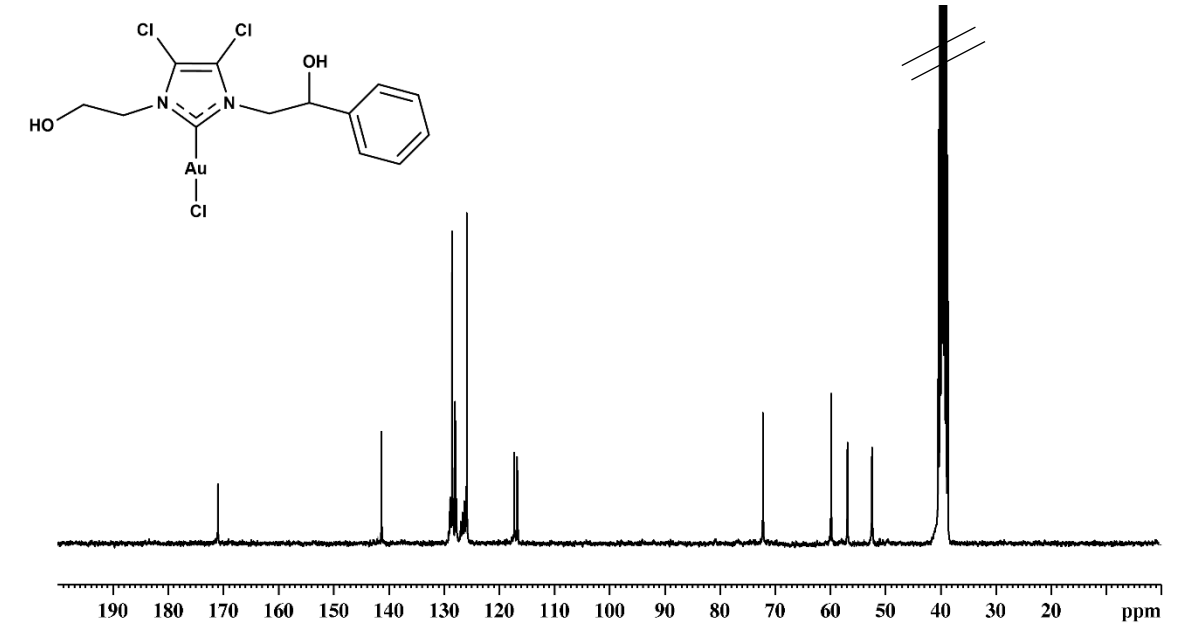


Figure S16:^{13}C-NMRof 4b

MALDI-MS (CH_3CN, m/z): 709.05720 Dalton attributable to $[C_{26}H_{28}AuCl_4N_4O_4]^+$.

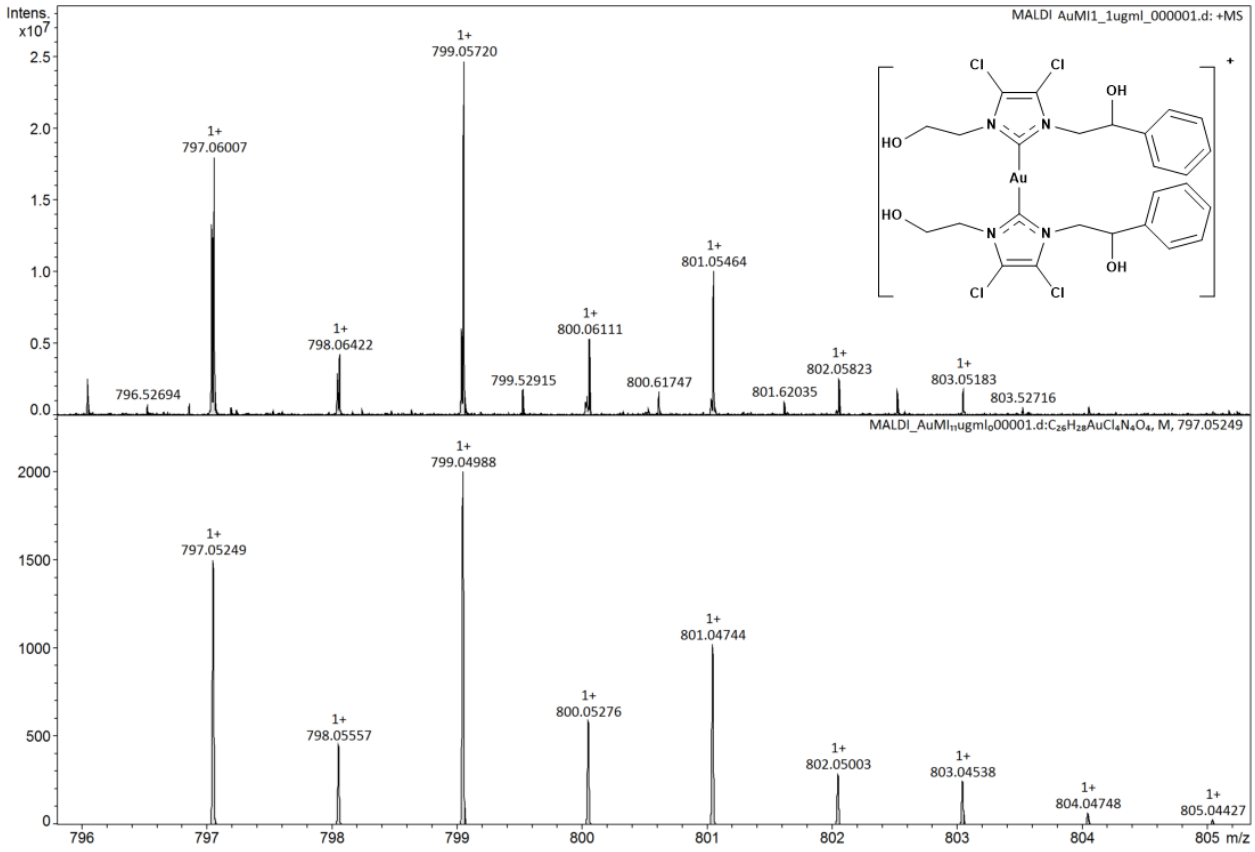


Figure S17: MALDI of 4b