Electronic Supplementary Material (ESI) for New Journal of Chemistry.

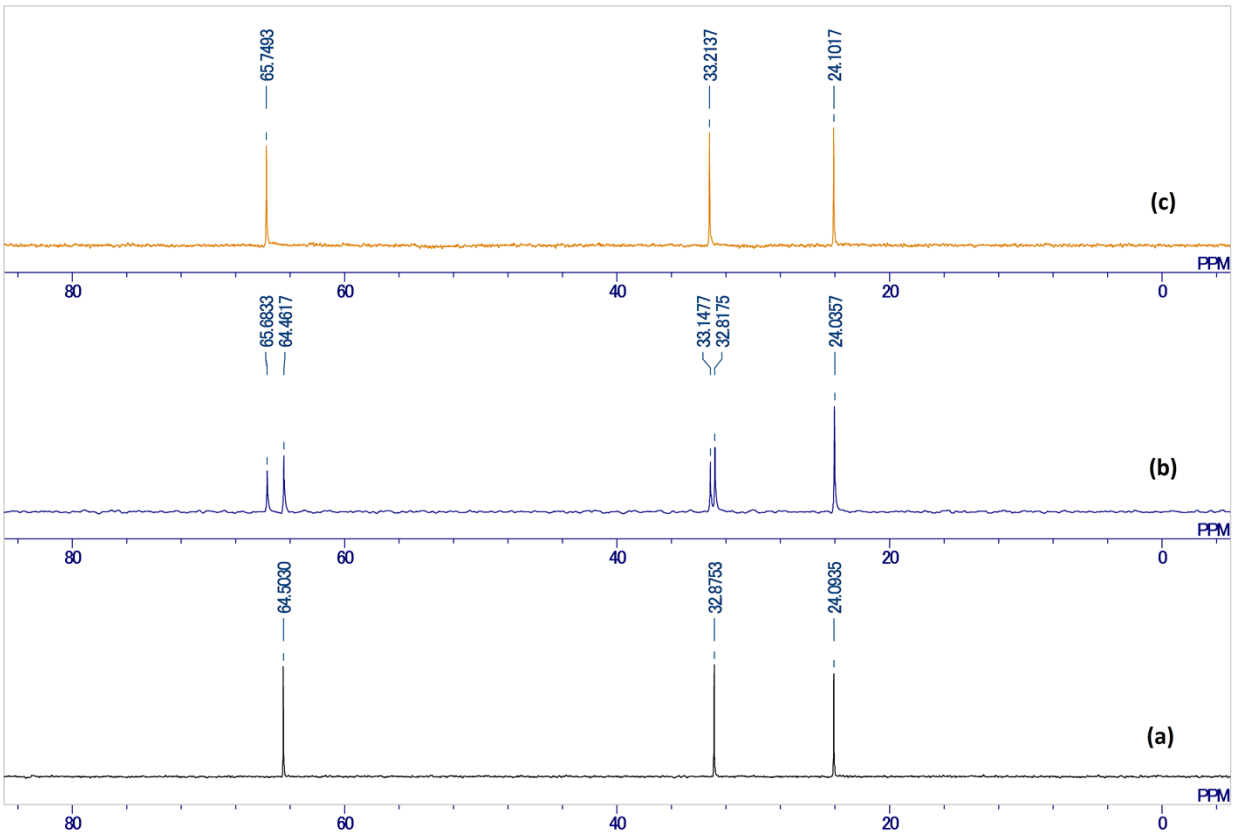


Figure S1 Solution $^{13}C\{^{1}H\}$ NMR spectra of : (a) compound **2**, [{*trans*-(±)-1,2-DACH)}$_2$Au(III)]Cl_3, (b) compound **2c**, the co-crystal and (c) the mono chelate, [trans-(±)-1,2-(DACH)$AuCl_2$]Cl.

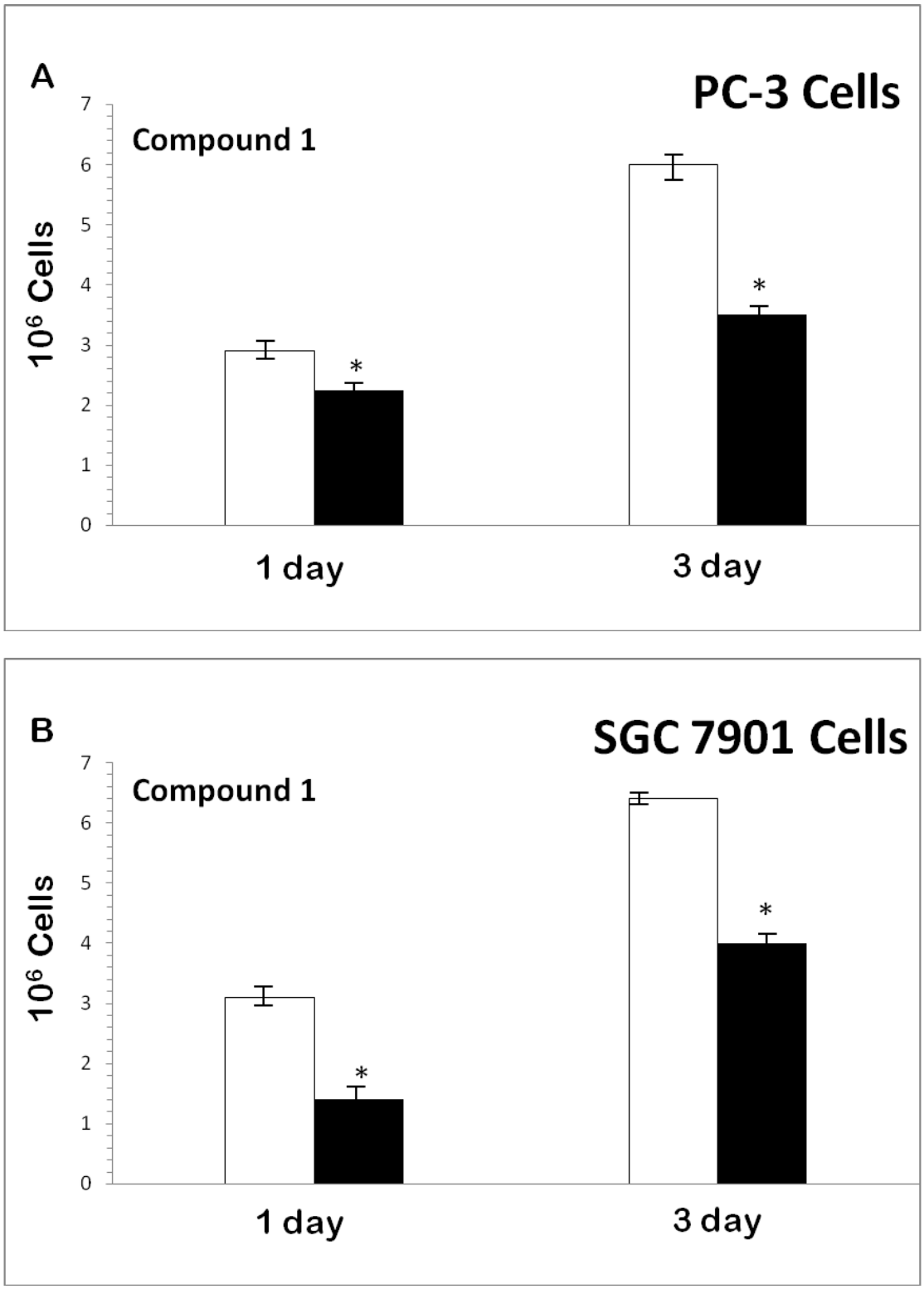


Figure S2 Time dependent inhibitory effect of 10 μM compound **1** on growth of (A) PC3 and (B) SGC7901 cells in 1 day and 3 days using MTT assay. Results were expressed as the mean, SD *P<0.05.

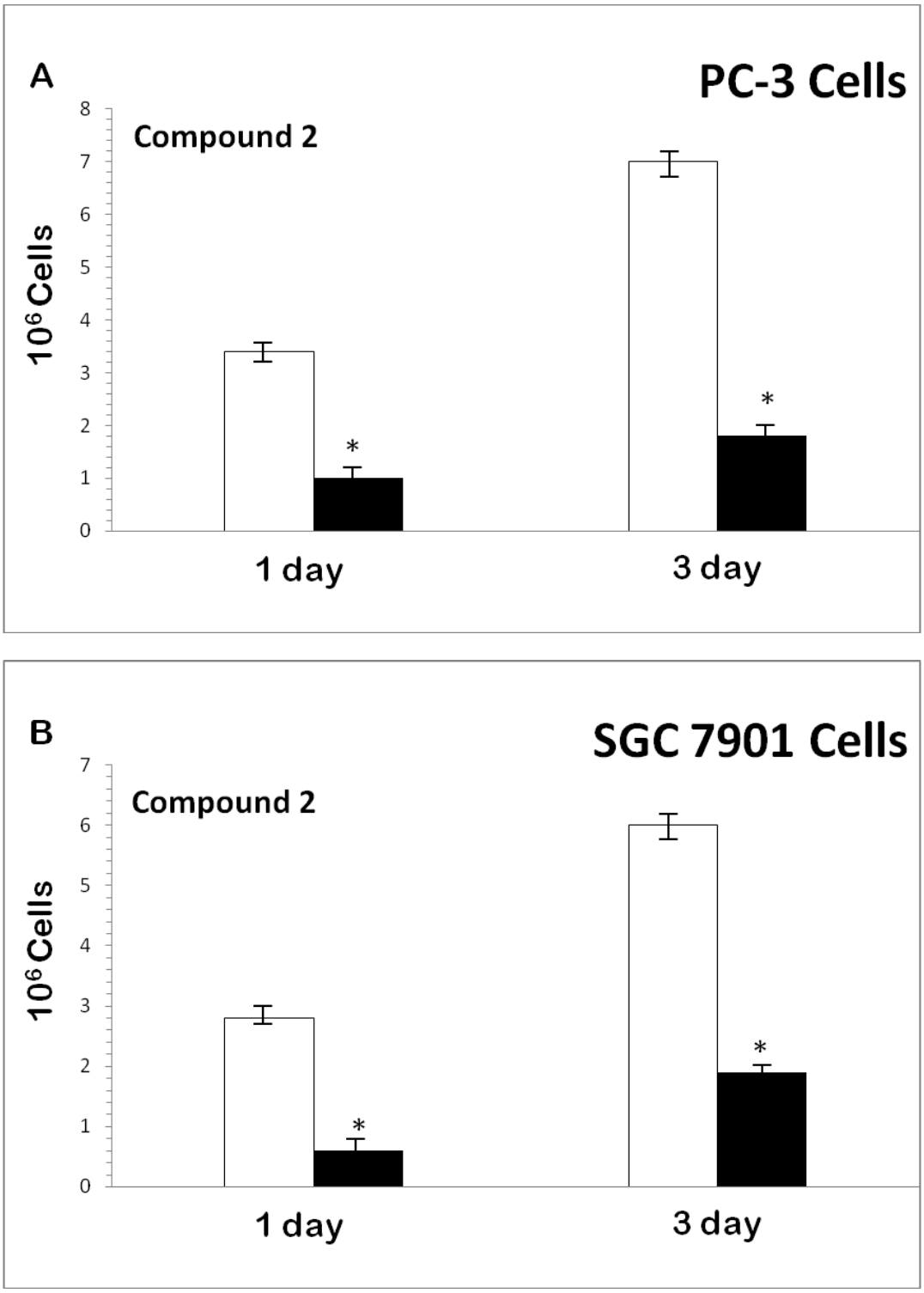
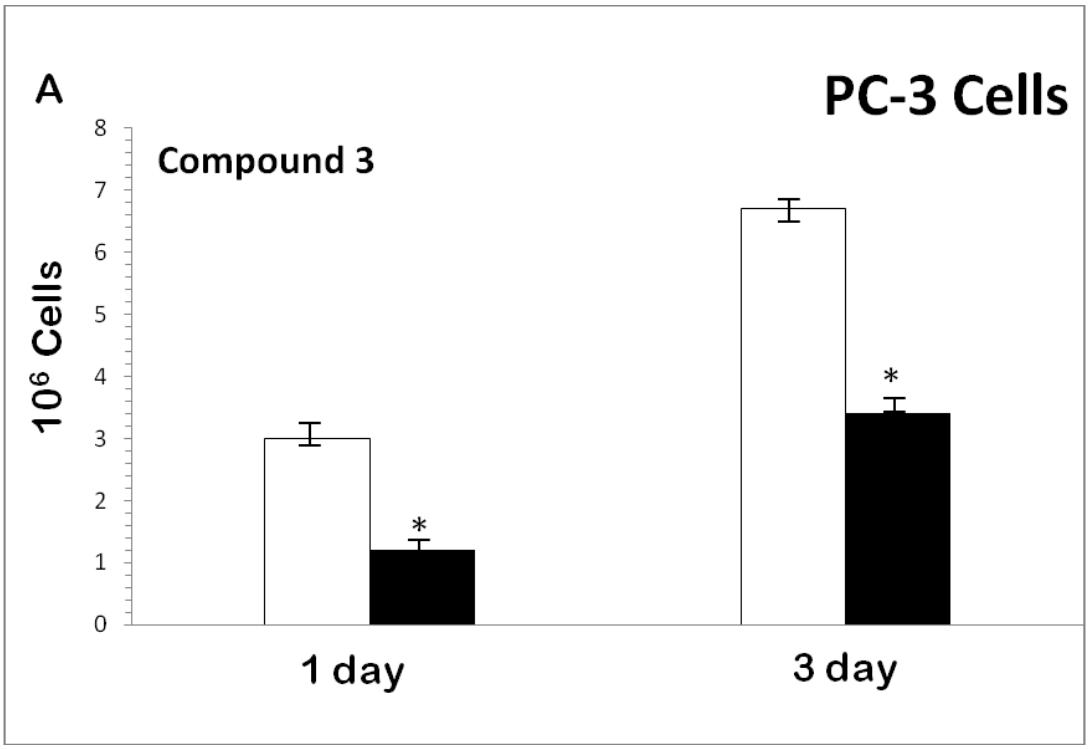


Figure S3 Time dependent inhibitory effect of 10 μM compound **2** on growth of (A) PC3 and (B) SGC7901 cells in 1 day and 3 days using MTT assay. Results were expressed as the mean, SD *P<0.05.



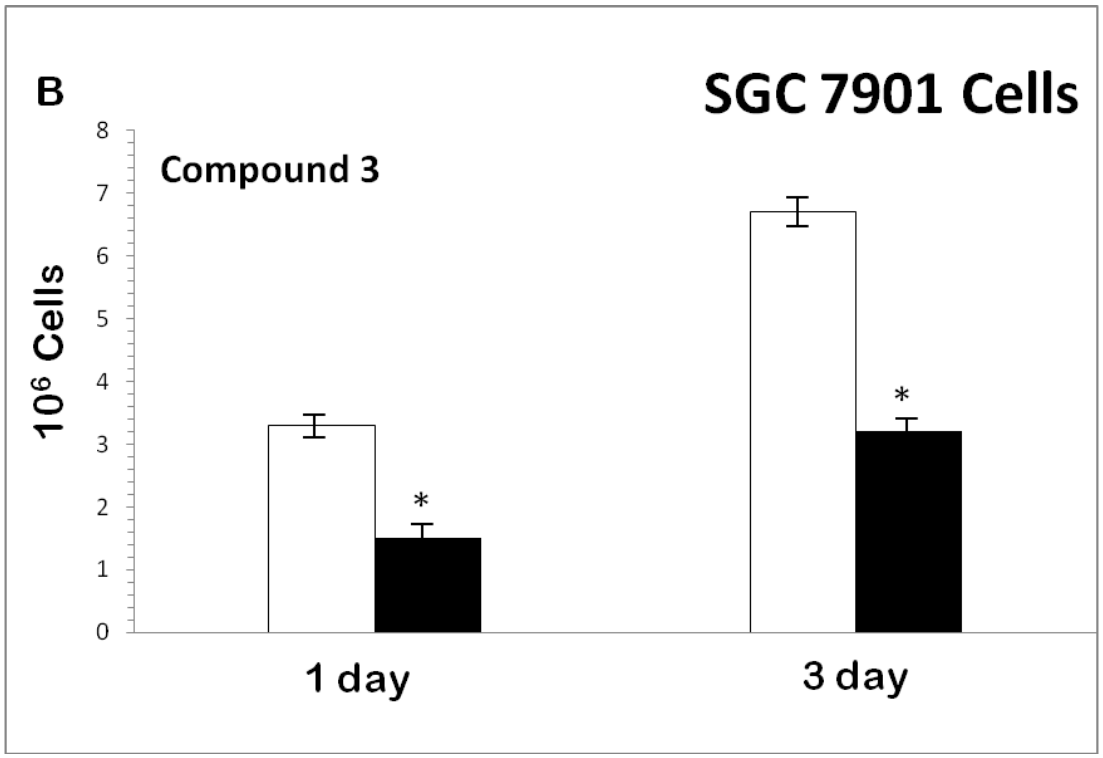


Figure S4 Time dependent inhibitory effect of 10 μM compound **3** on growth of (A) PC3 and (B) SGC7901 cells in 1 day and 3 days using MTT assay. Results were expressed as the mean, SD *P<0.05.

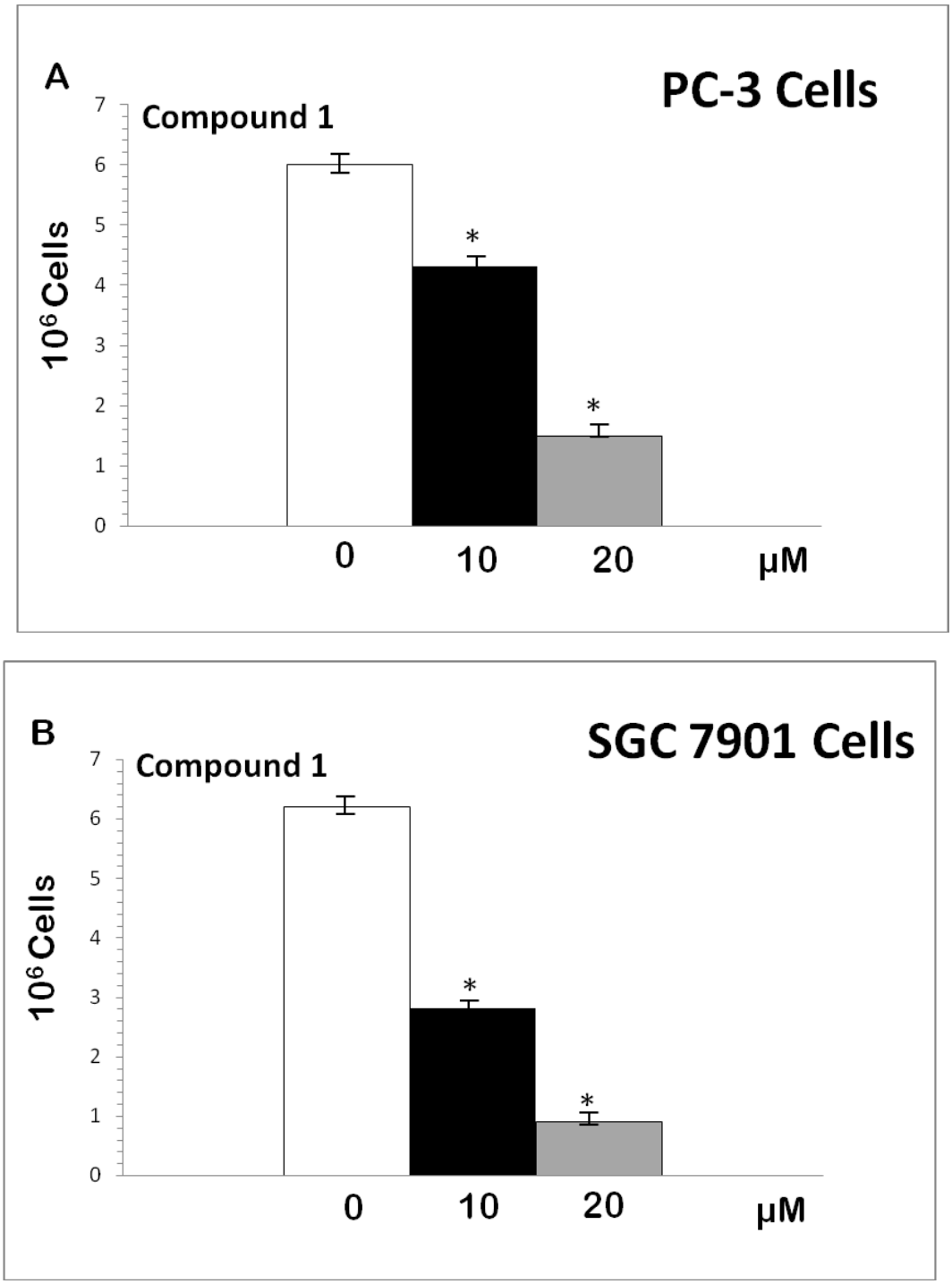


Figure S5 Concentration dependent inhibitory effects of 10, 20 and 30 μM compound **1** on growth of (A) PC3 and (B) SGC7901 cells in 1 day using MTT assay. Results were expressed as the mean, SD *P<0.05.

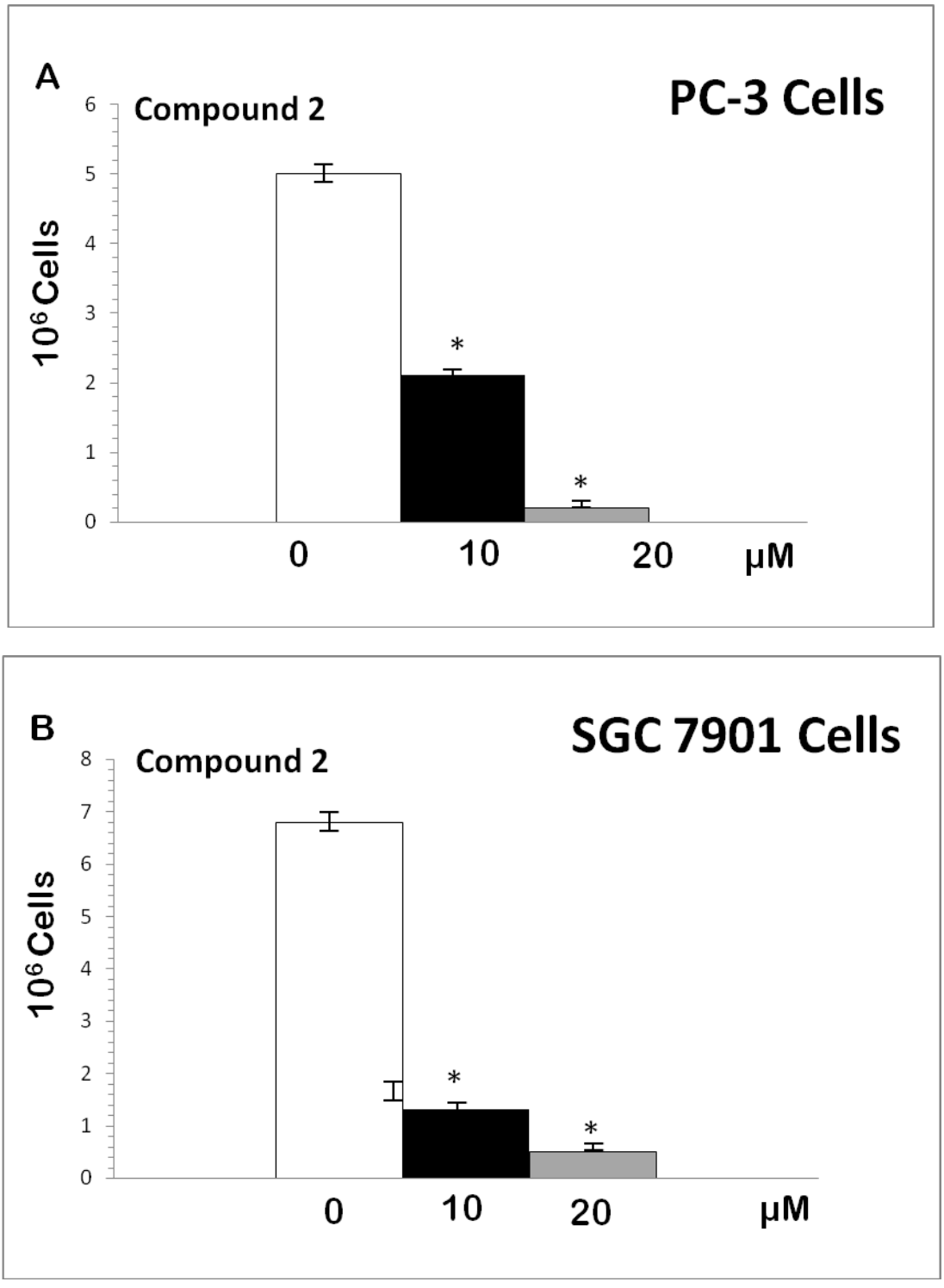


Figure S6 Concentration dependent inhibitory effects of 10, 20 and 30 μM compound **2** on growth of (A) PC3 and (B) SGC7901 cells in 1 day using MTT assay. Results were expressed as the mean, SD *P<0.05.

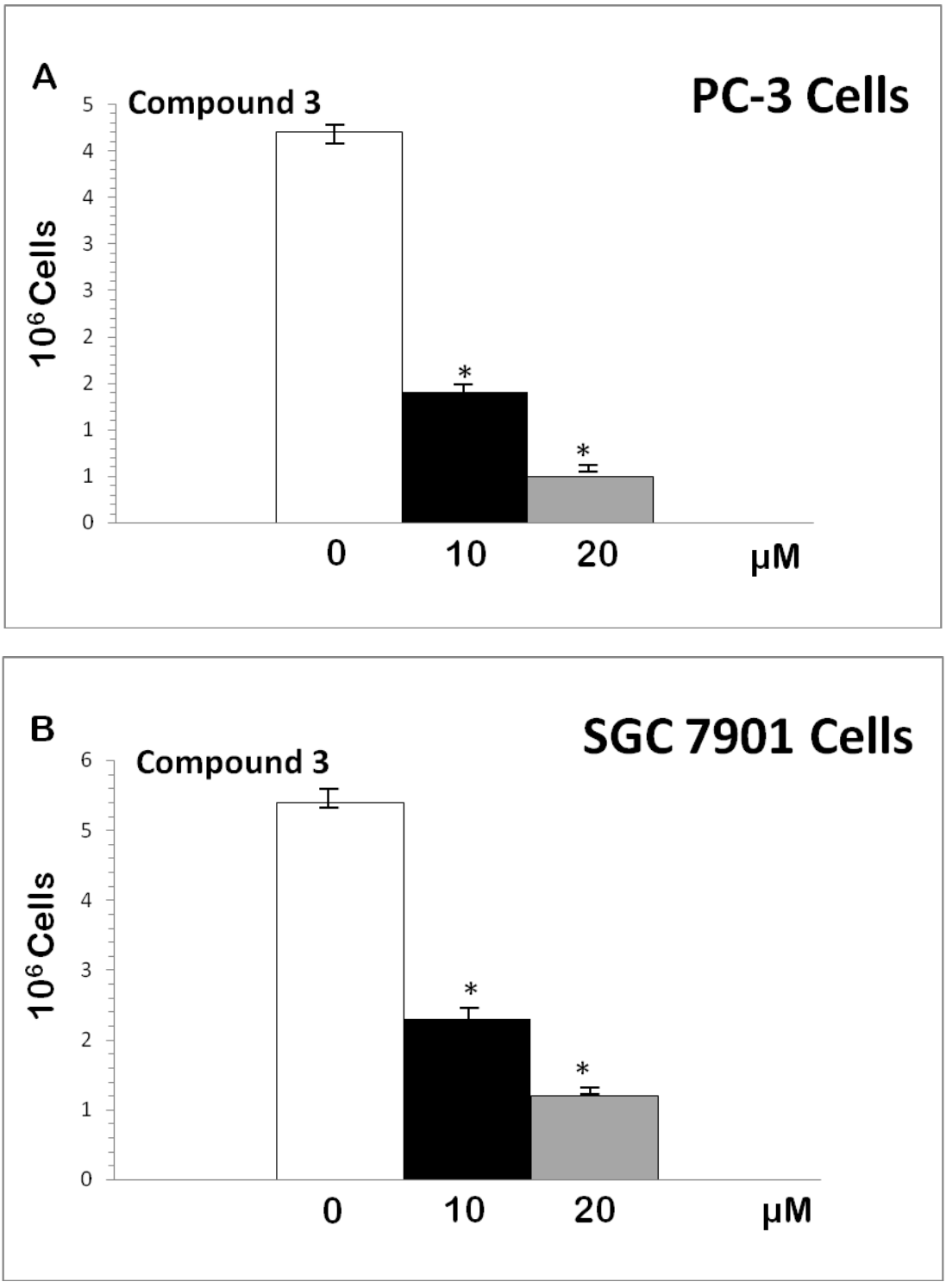


Figure S7 Concentration dependent inhibitory effects of 10, 20 and 30 μM compounds **3** on growth of (A) PC3 and (B) SGC7901 cells in 1 day using MTT assay. Results were expressed as the mean, SD *P<0.05.

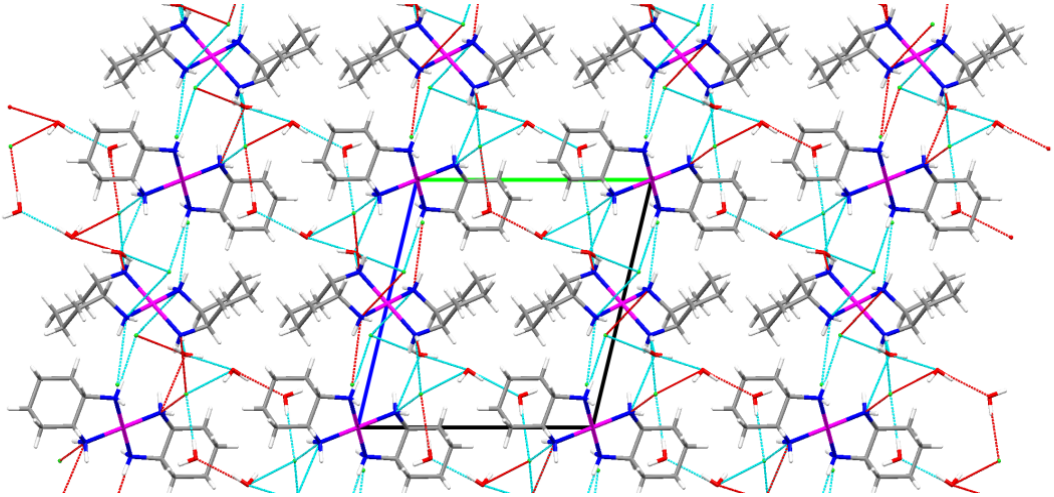


Figure S8 Hydrogen bonding network in compound **1**.

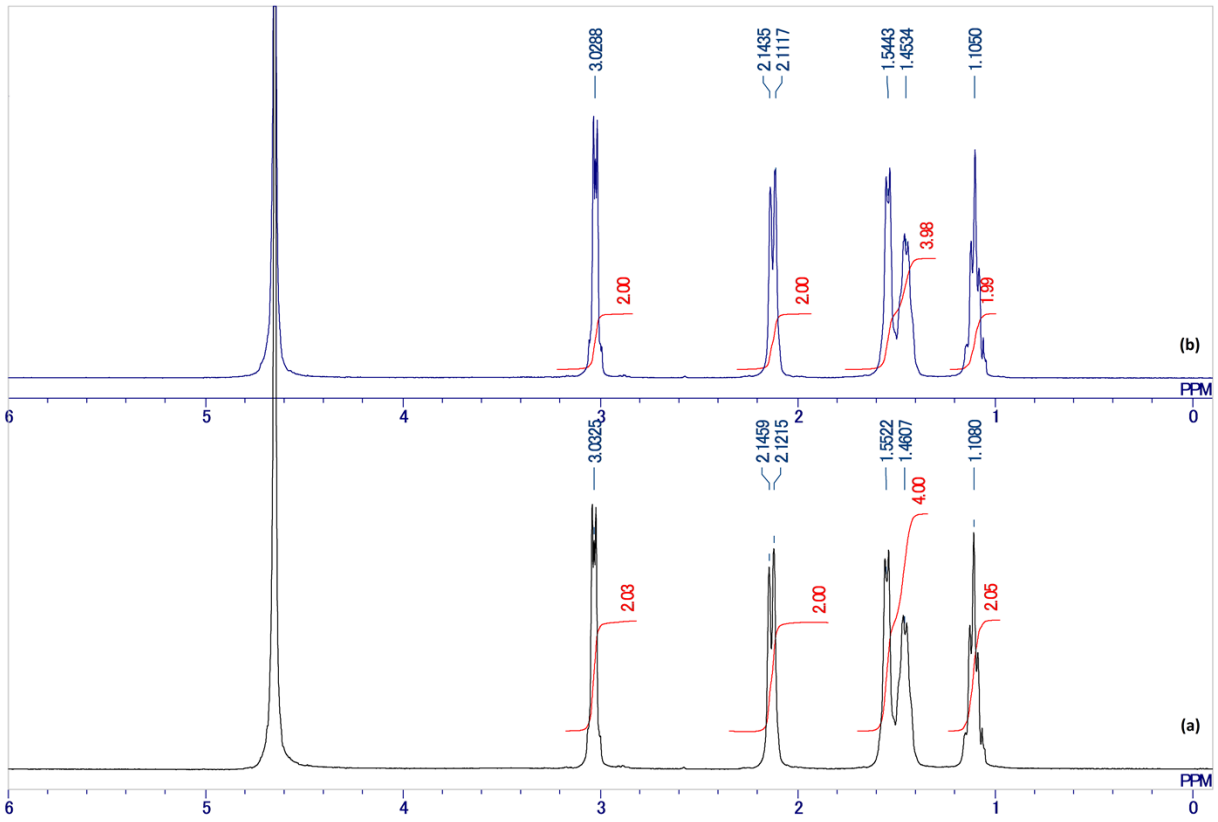


Figure S9 ^{1}H NMR spectrum of compound **2**in D_2O (**a**) just after mixing and (**b**) 3 days.

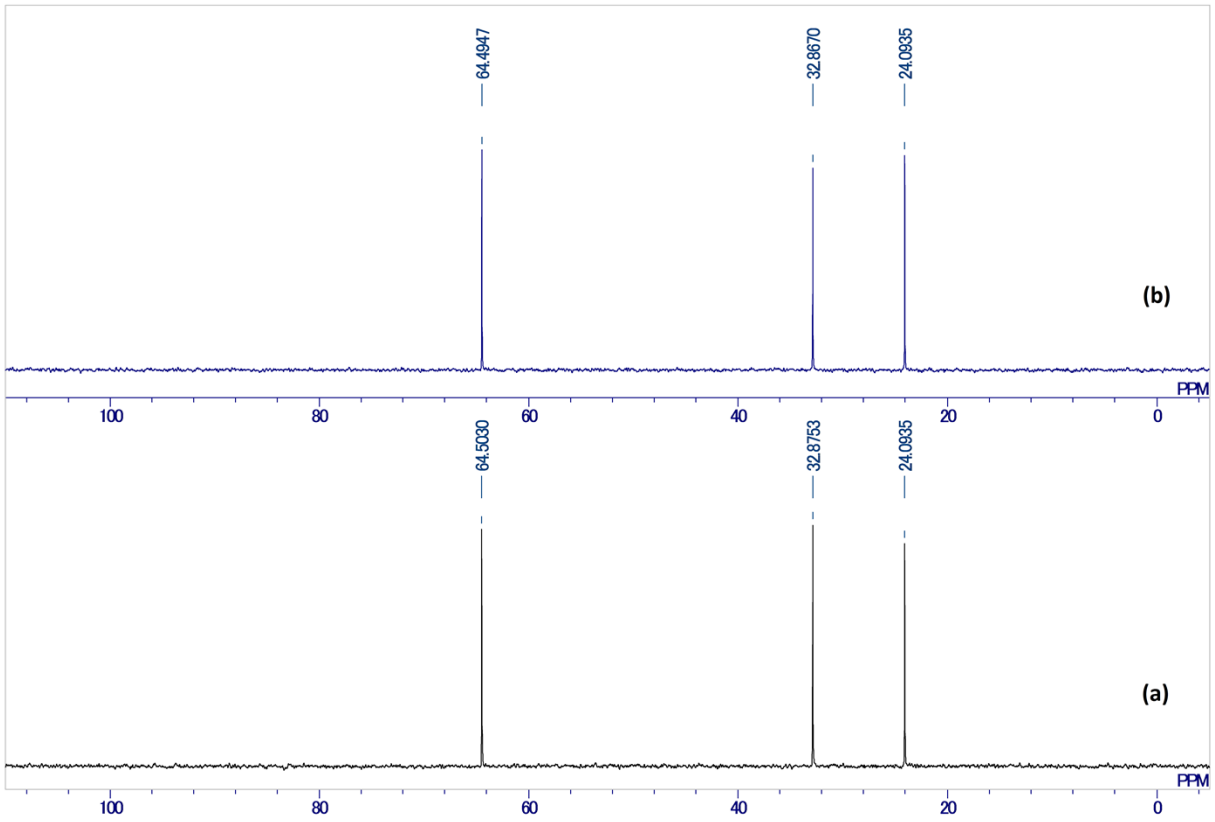


Figure S10 $^{13}C\{^{1}H\}$ NMR spectrum of compound **2** in D_2O (**a**) after mixing and (**b**) 3 days.

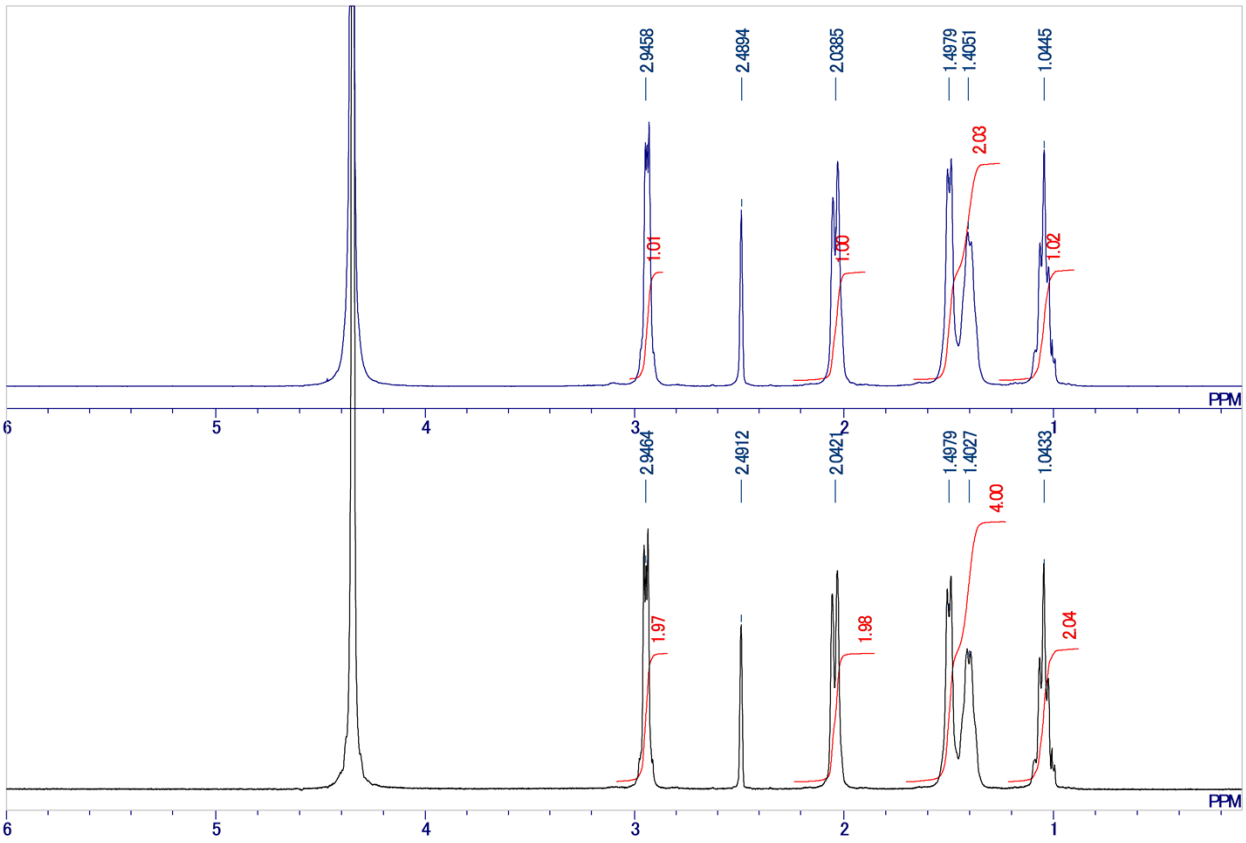


Figure S11 ^{1}**H** NMR spectrum of compound **2** in (DMSO/D_2O, 3:1) (**a**) just after mixing and (**b**) 3 days.

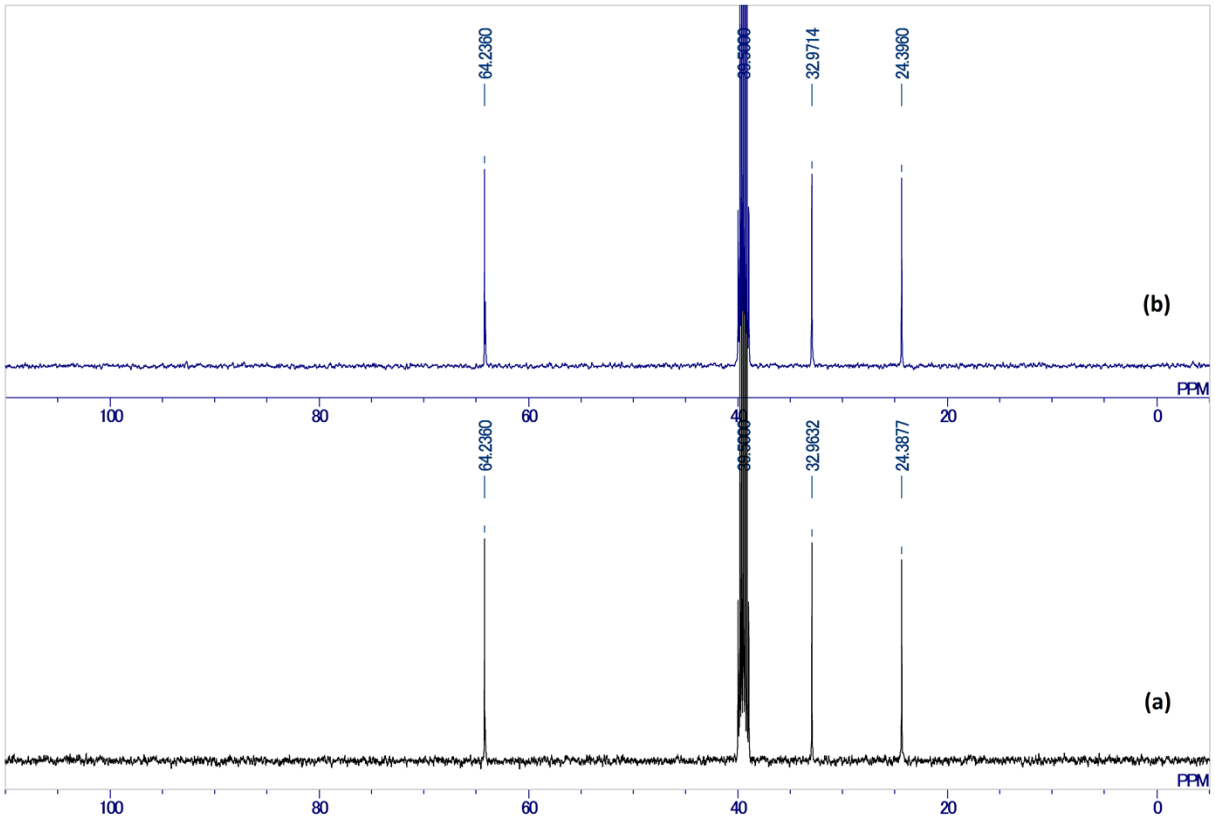


Figure S12 Solution state $^{13}C\{^{1}H\}$ NMR spectrum of compound **2**in ($DMSO/D_2O$, 3:1 v/v ratio) (**a**) after mixing and (**b**) 3 days.