

Supplementary Information

Synthesis, Anti-Diabetic and Renoprotective Activity of Some New Benzazole, Thiazolidin-4-one and Azetidin-2-one Derivatives

Ahmed Abdou O. Abeer,^a Mohamed Salah K. Youssef^{*a} and Rehab Hegazy^b

^aDepartment of Chemistry, Faculty of Science, Assiut University, 71516 Assiut, Egypt

^bDepartment of Pharmacology, Medical Division, National Research Centre, Giza, Egypt

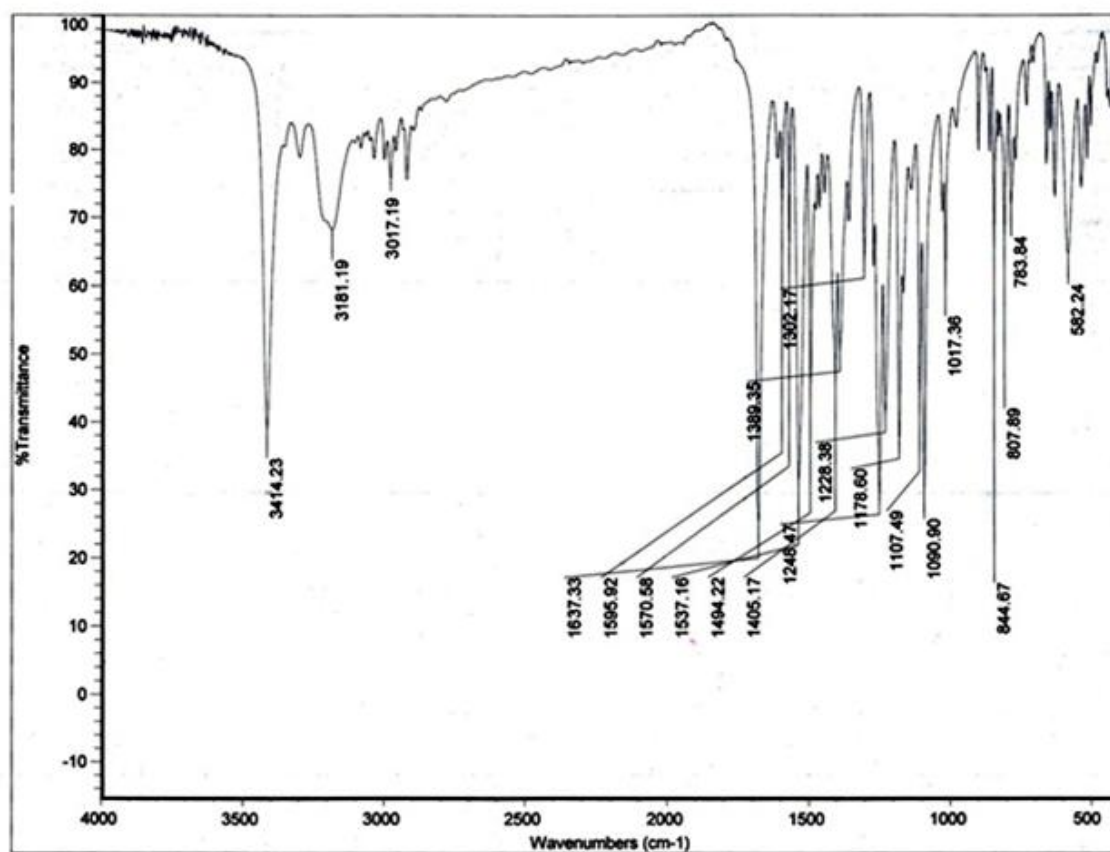


Figure S1. IR spectrum (KBr) of 2-((1,3-diphenyl-1H-pyrazol-4-yl)methylene)hydrazinyl)-1H-benzimidazole (3a).

*e-mail: salah_kamel2000@yahoo.com

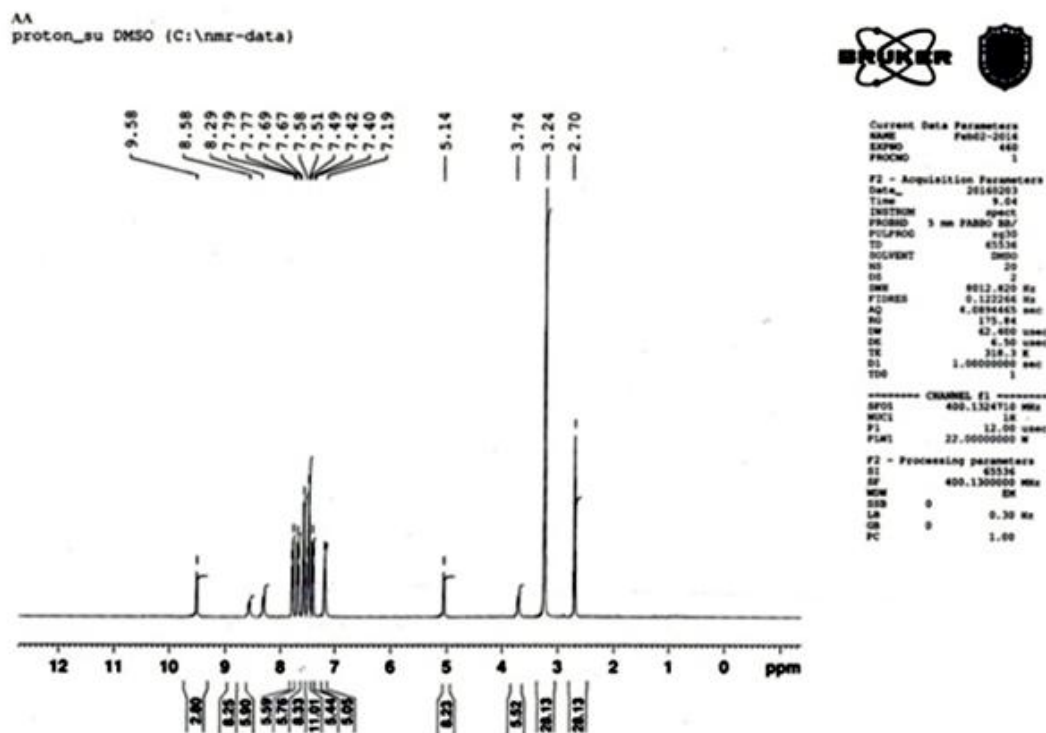


Figure S4. ^1H NMR spectrum (400 MHz, $\text{DMSO-}d_6$) of 2-[2'-(1,3-diphenyl-1*H*-pyrazol-4-yl)thiazolidine-5'-one]hydrazinobenzimidazole (**4a**).

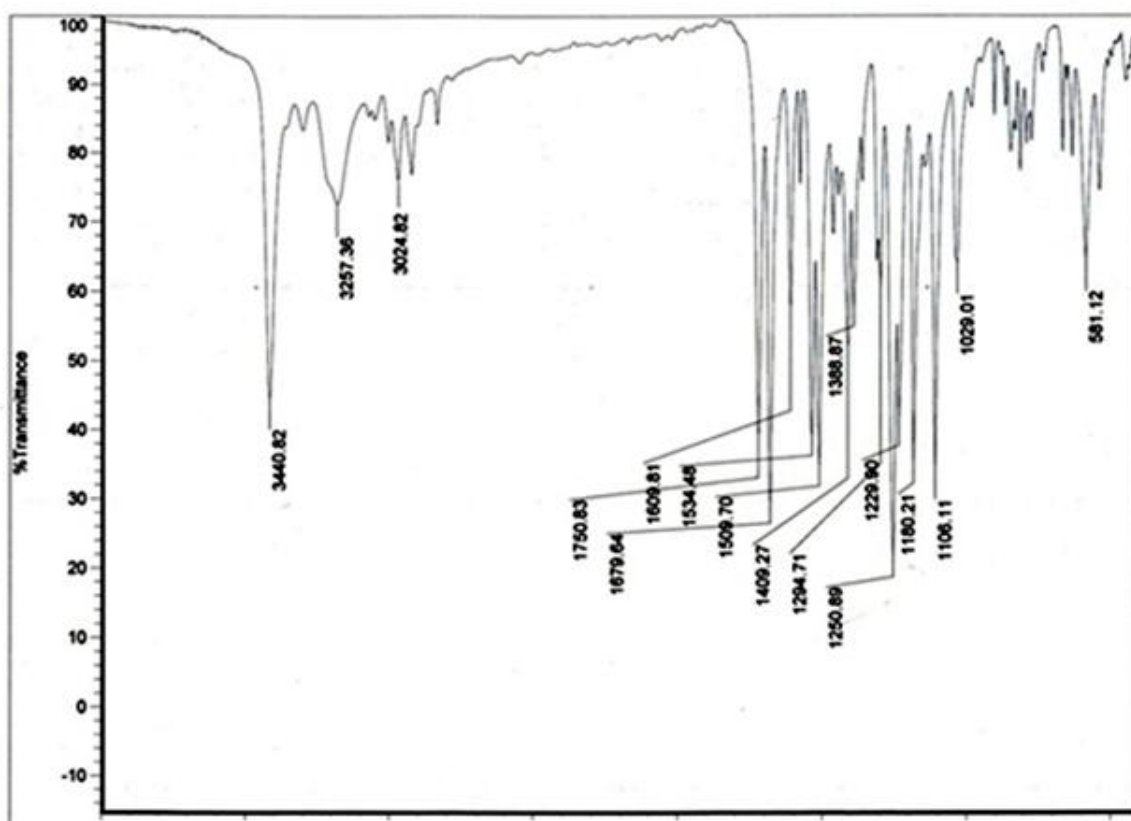


Figure S5. IR spectrum (KBr) of 2-[4'-(1,3-diphenyl-1*H*-pyrazol-4-yl)-3'-chloro-2'-oxoazetidine]hydrazinobenzimidazole (**5a**).

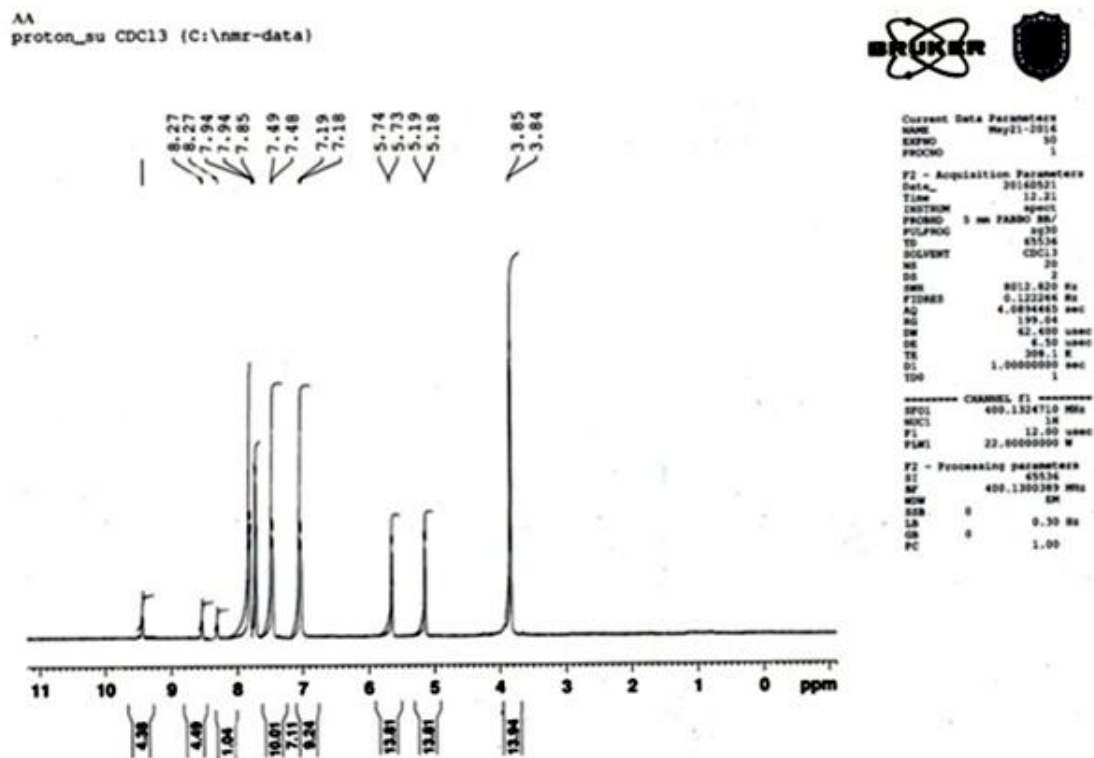


Figure S6. ^1H NMR spectrum (400 MHz, CDCl_3) of 2-[4'-(1,3-diphenyl-1*H*-pyrazol-4-yl)-3'-chloro-2'-oxoazetidine]hydrazinobenzimidazole (**5a**).

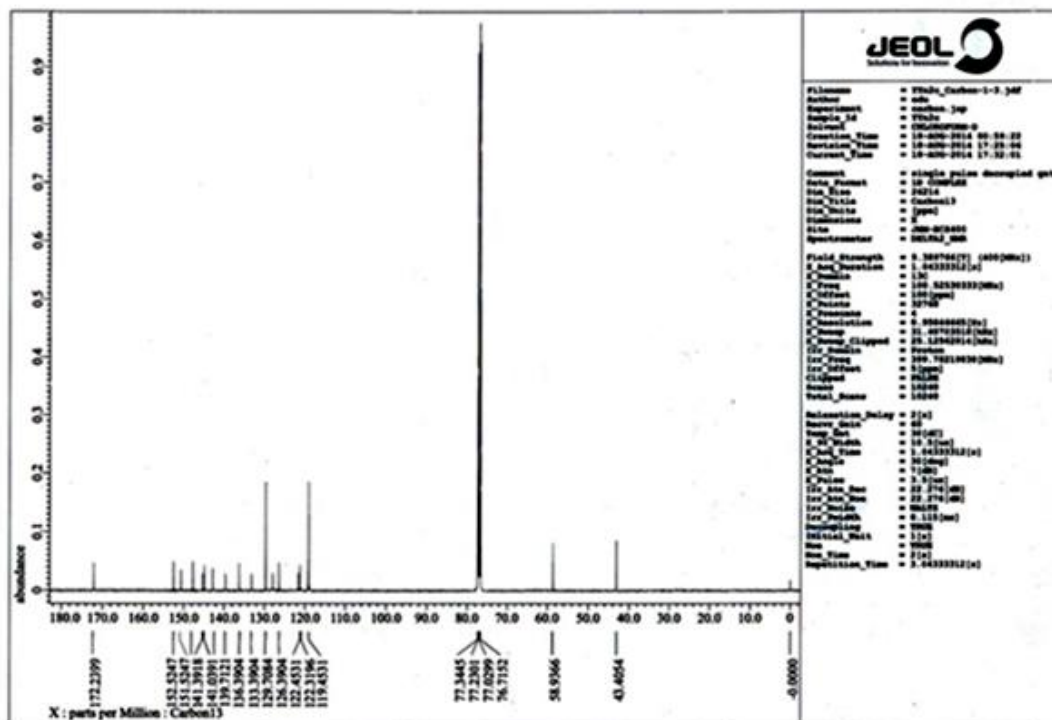


Figure S7. ^{13}C NMR spectrum (100 MHz, CDCl_3) of 2-[4'-(1,3-diphenyl-1*H*-pyrazol-4-yl)-3'-chloro-2'-oxoazetidine]hydrazinobenzimidazole (**5a**).

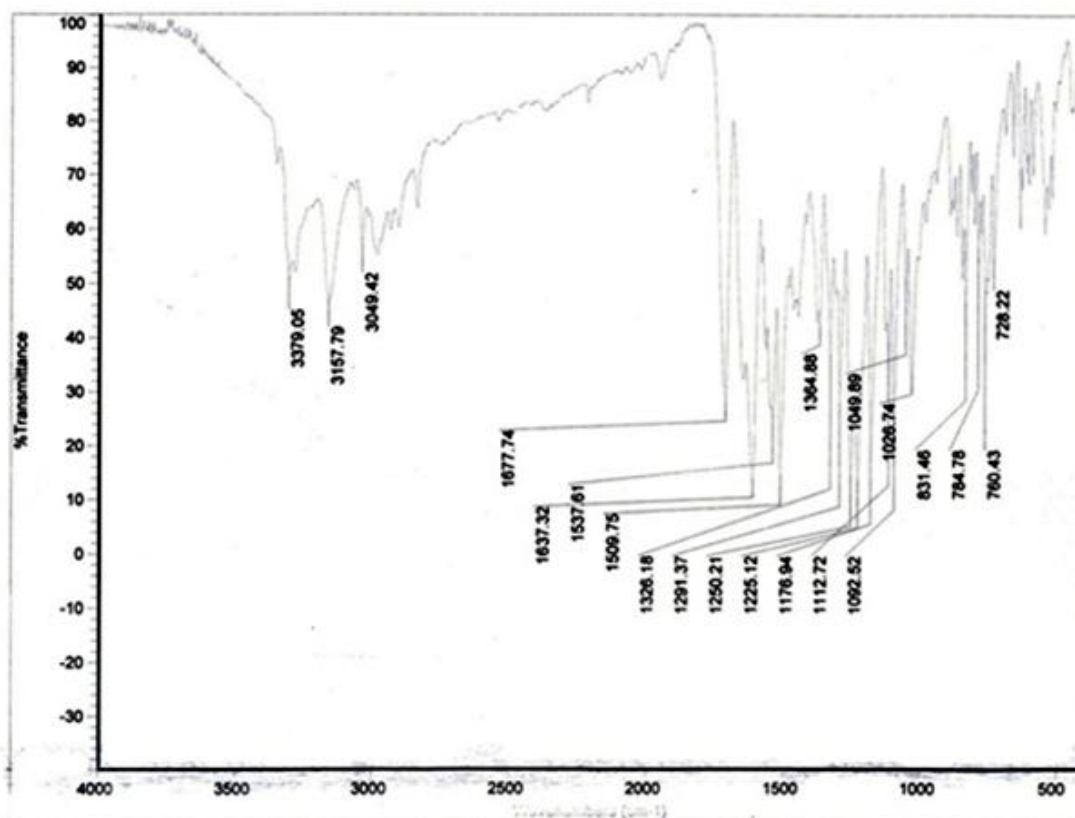


Figure S8. IR spectrum (KBr) of benzoimidazol-2-yl 2-(2-((1,3-diphenyl-1*H*-pyrazol-4-yl)methylene)hydrazinyl)ethanethioate (**7a**).

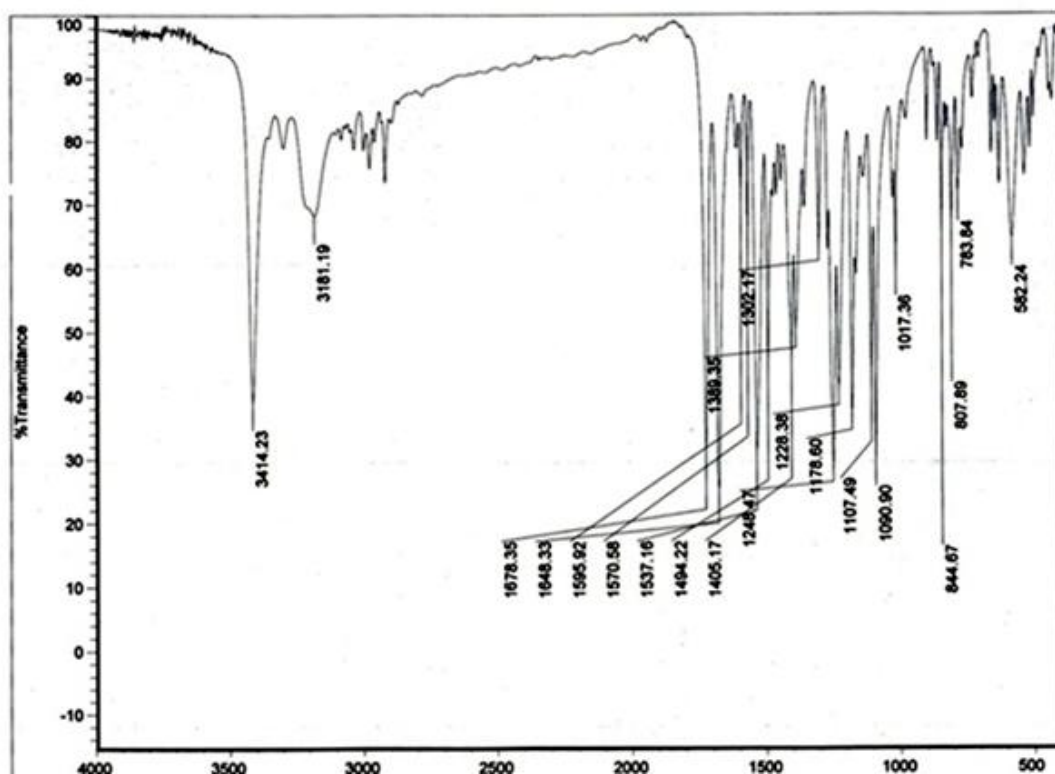


Figure S9. IR spectrum (KBr) of 2-[2'-(2-(1,3-diphenyl-1*H*-pyrazol-4-yl)thiazolidine-5-one)acetyl-aminomercapto] benzimidazole (**8a**).

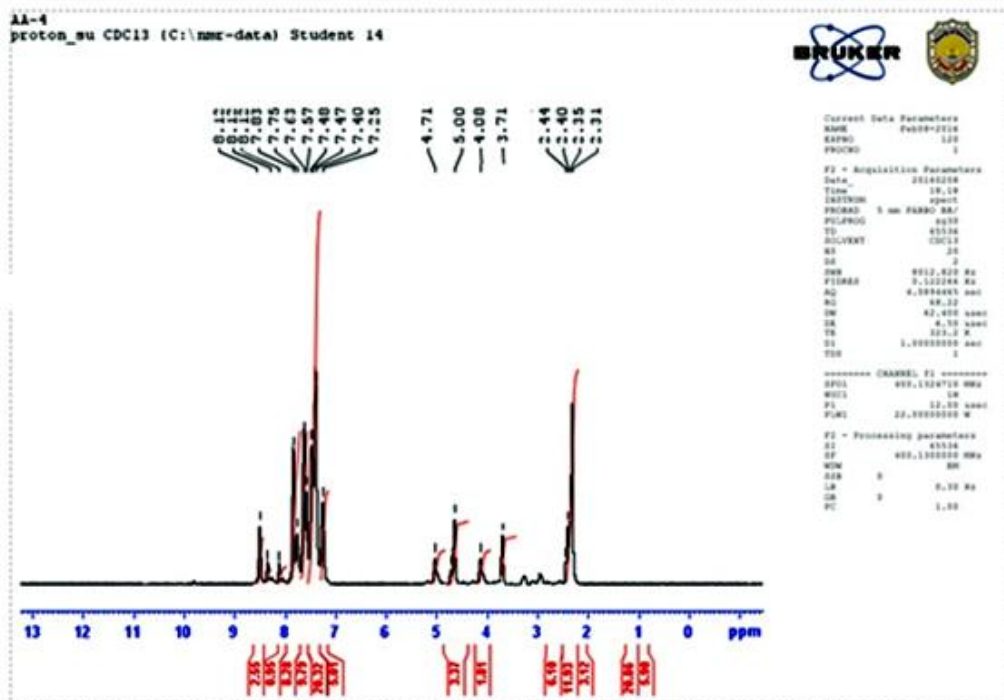


Figure S10. ^1H NMR spectrum (400 MHz, CDCl_3) of 2-[2'-(2-(1,3-diphenyl-1*H*-pyrazol-4-yl)-thiazolidine-5-one)acetylaminomercapto] benzimida-zole (**8a**).

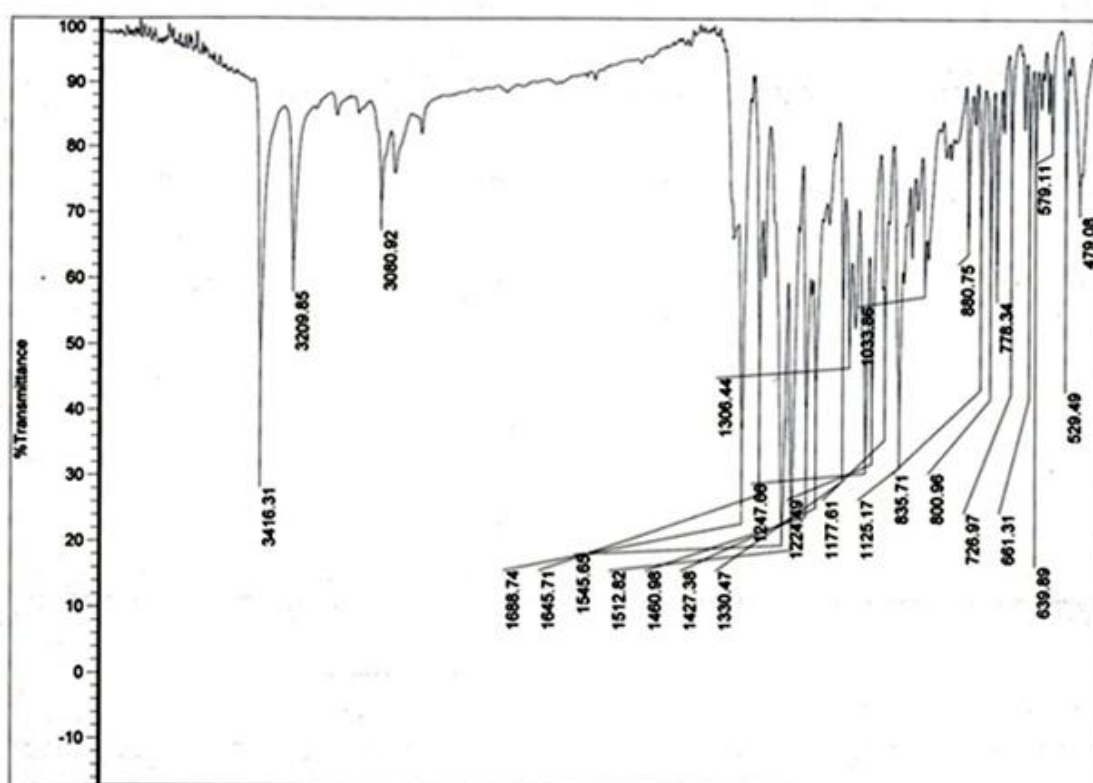


Figure S11. IR spectrum (KBr) of 2-[2'-(4-(1,3-diphenyl-1*H*-pyrazol-4-yl)-3-chloro-2-oxo-azetidine)acetylaminomercapto]benzimidazole (**9a**).

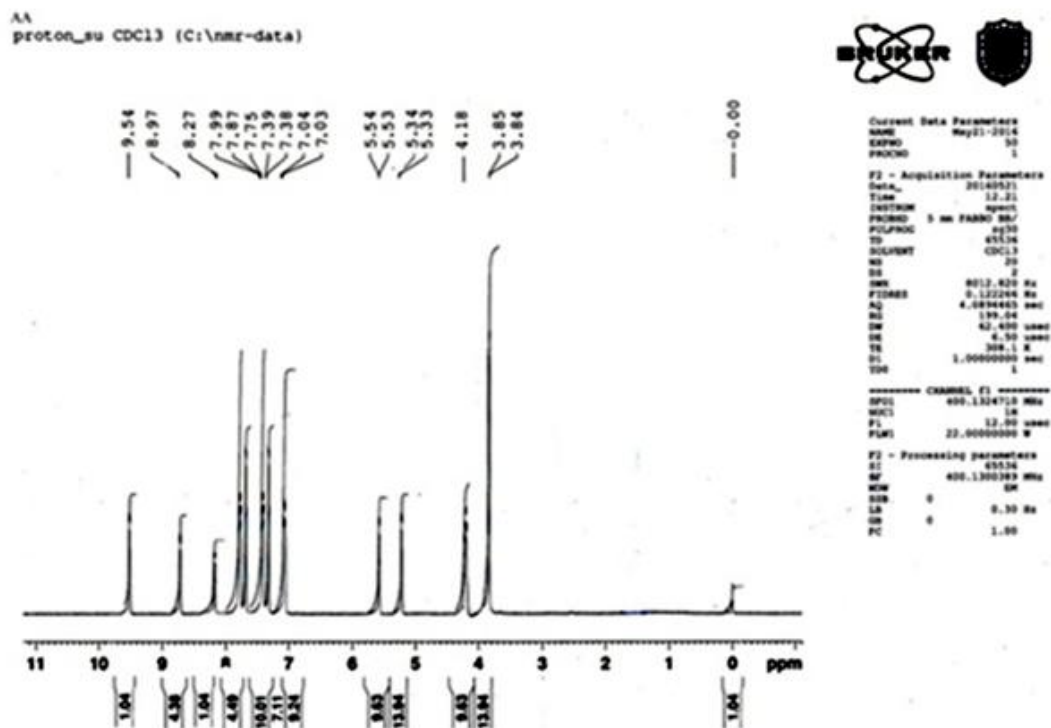


Figure S12. ^1H NMR spectrum (400 MHz, CDCl_3) of 2-[2'-(4-(1,3-diphenyl-1*H*-pyrazol-4-yl)-3-chloro-2-oxoazetidine)acetylaminomercapto]benzimidazole (**9a**).

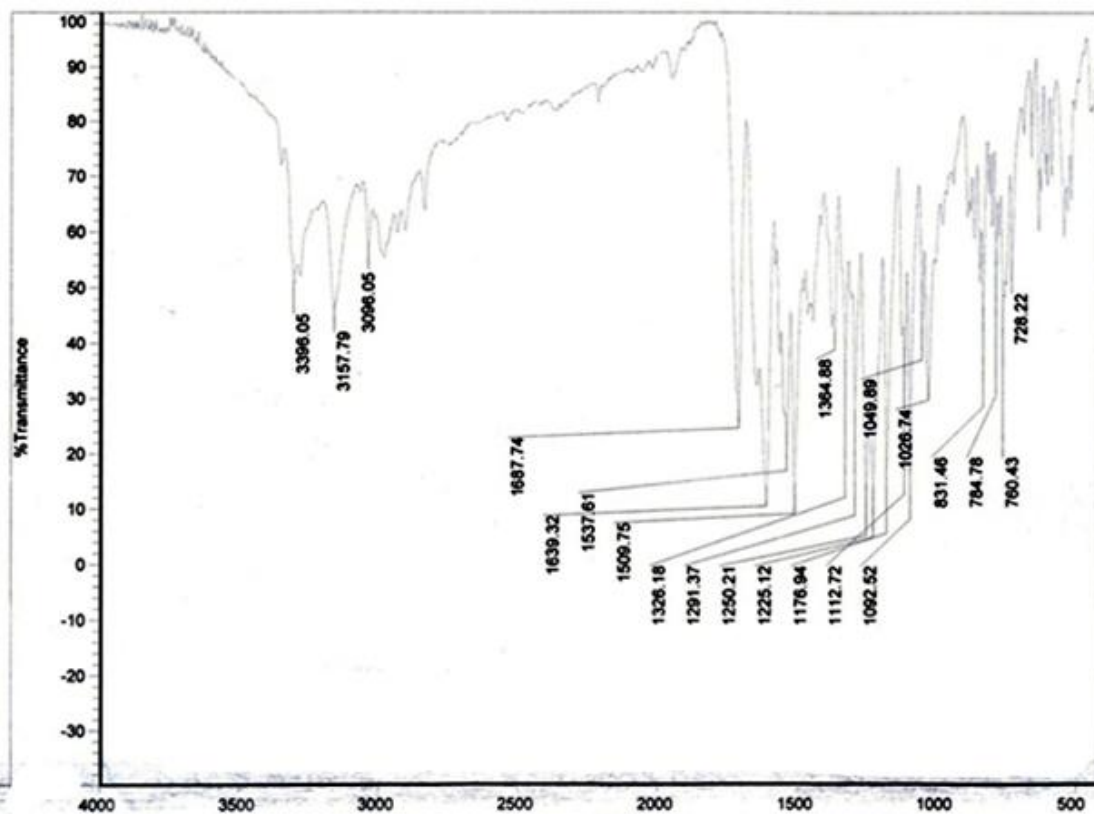


Figure S13. IR spectrum (KBr) of (benzimidazol-2-ylsulfanyl)acetic acid ((1,3-diphenyl-1'*H*-pyrazol-4-yl)methylidene) hydrazide (**11a**).

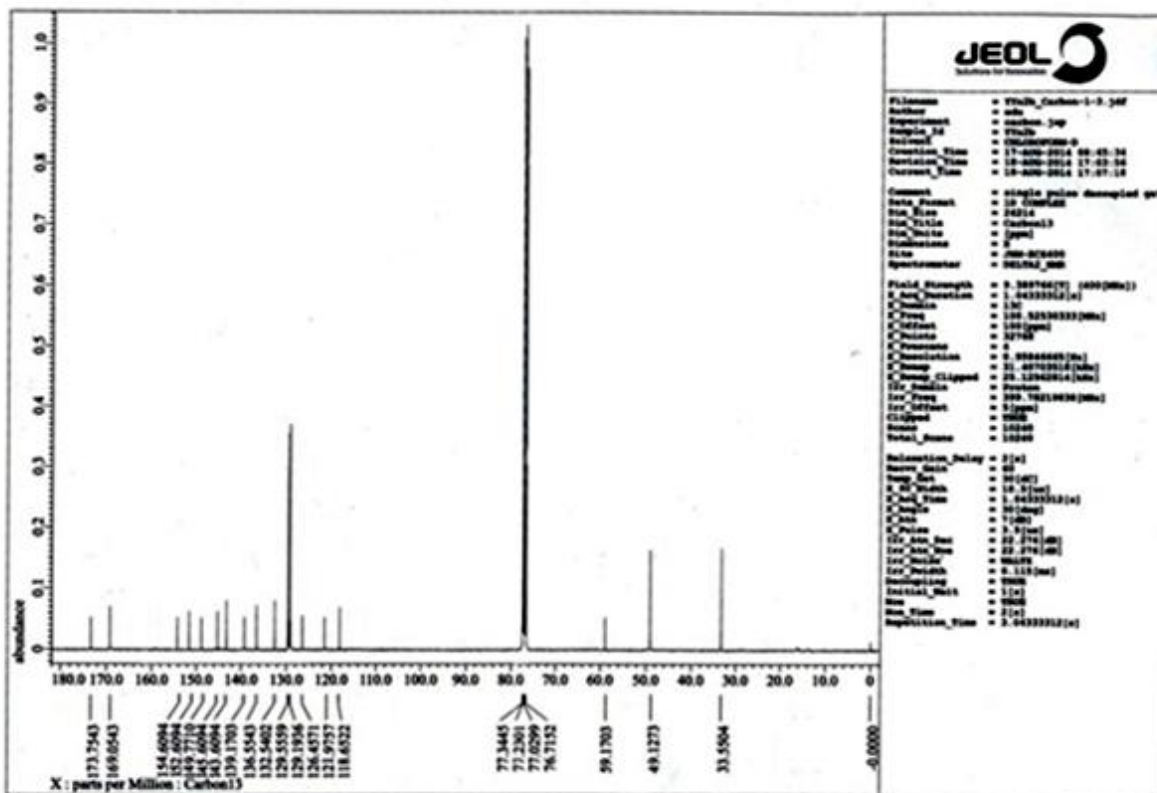


Figure S16. ^{13}C NMR spectrum (100 MHz, CDCl_3) of 1-[(benzimidazol-2''-yl)thioacetamidyl]-3-chloro-4-(1',3'-diphenyl-1'*H*-pyrazol-4'-yl)azetidin-2-one (**13a**).