Electronic Supplementary Material (ESI) for Polymer Chemistry

Stimuli responsive nanocarrier for an effective delivery of multi-frontline tuberculosis drugs

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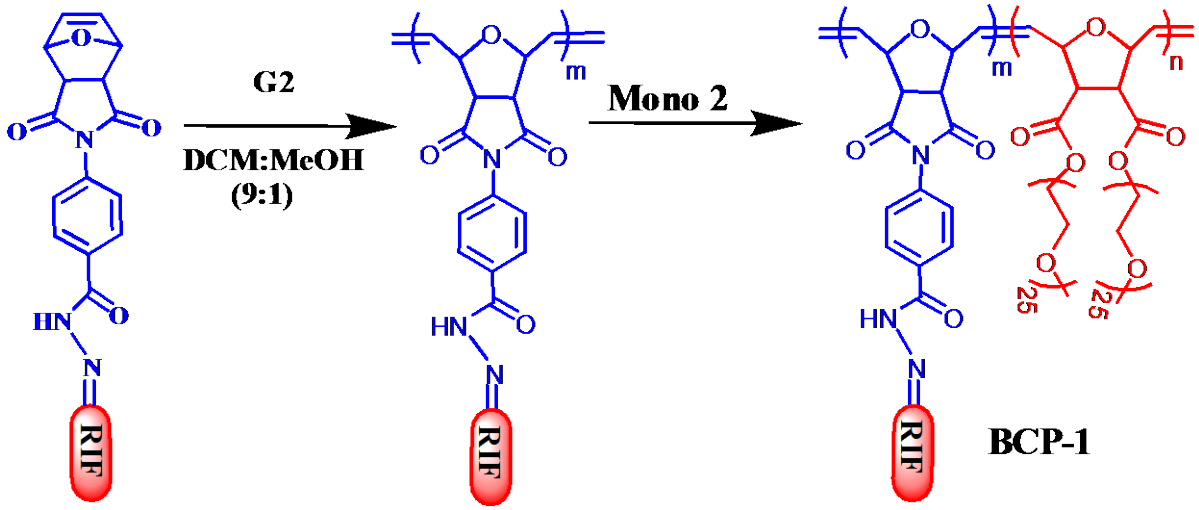
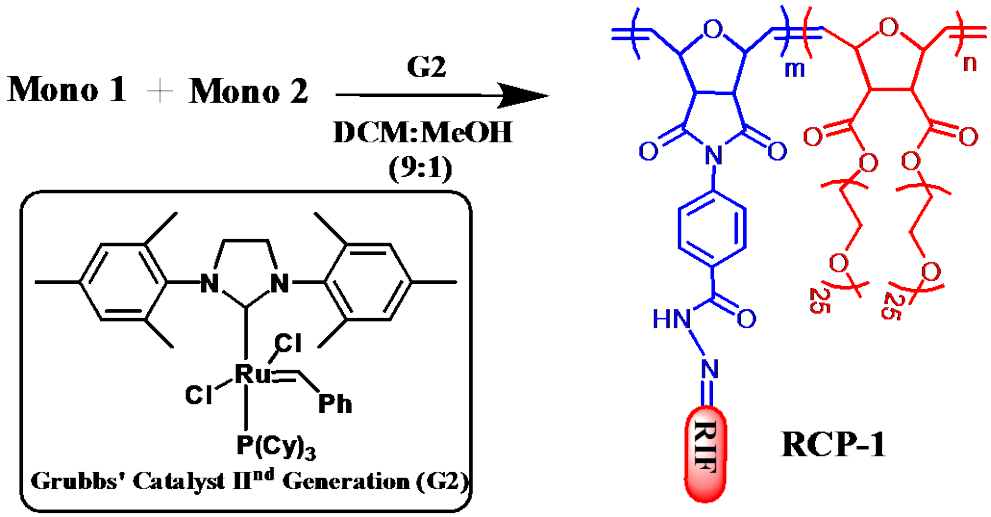
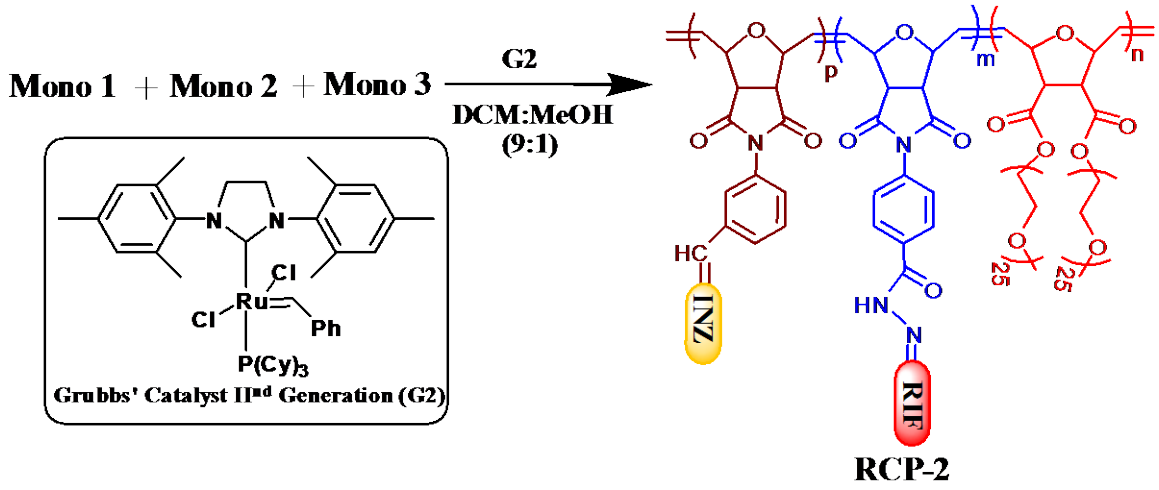
Scheme S1. Schematic representation of block copolymer, **BCP-1** synthesis.



Scheme S2. Schematic representation of synthesis of randaom copolymer **RCP-1**.



Scheme S3. Schematic representation of synthesis of randaom copolymer **RCP-2 (NOR-INZ-RIF-PEG).**



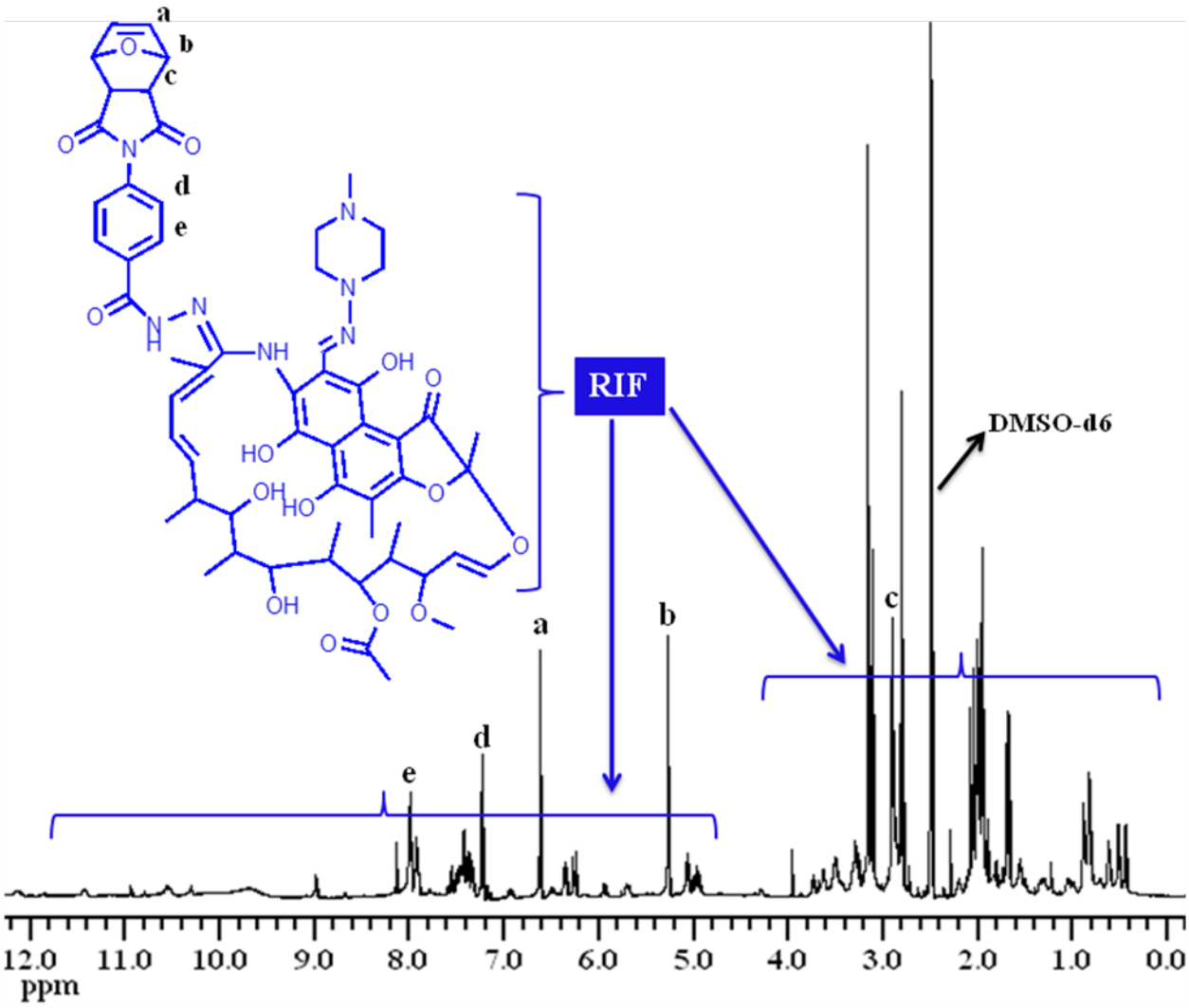


Fig. S1: ^{1}H NMR spectrum of **Mono 1** in DMSO-d_6.

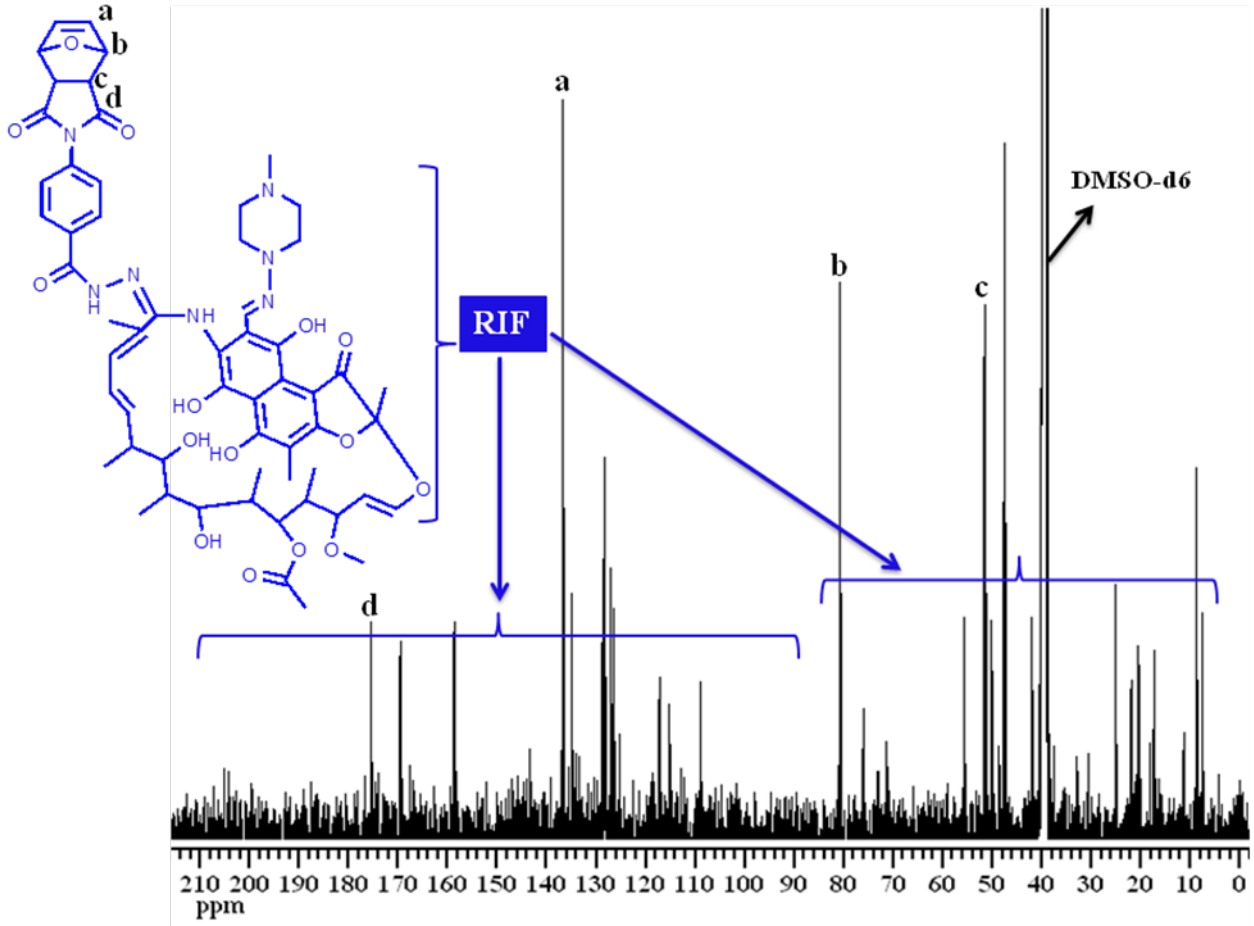


Fig. S2: ^{13}C NMR spectrum of **Mono 1** in DMSO-d_6.

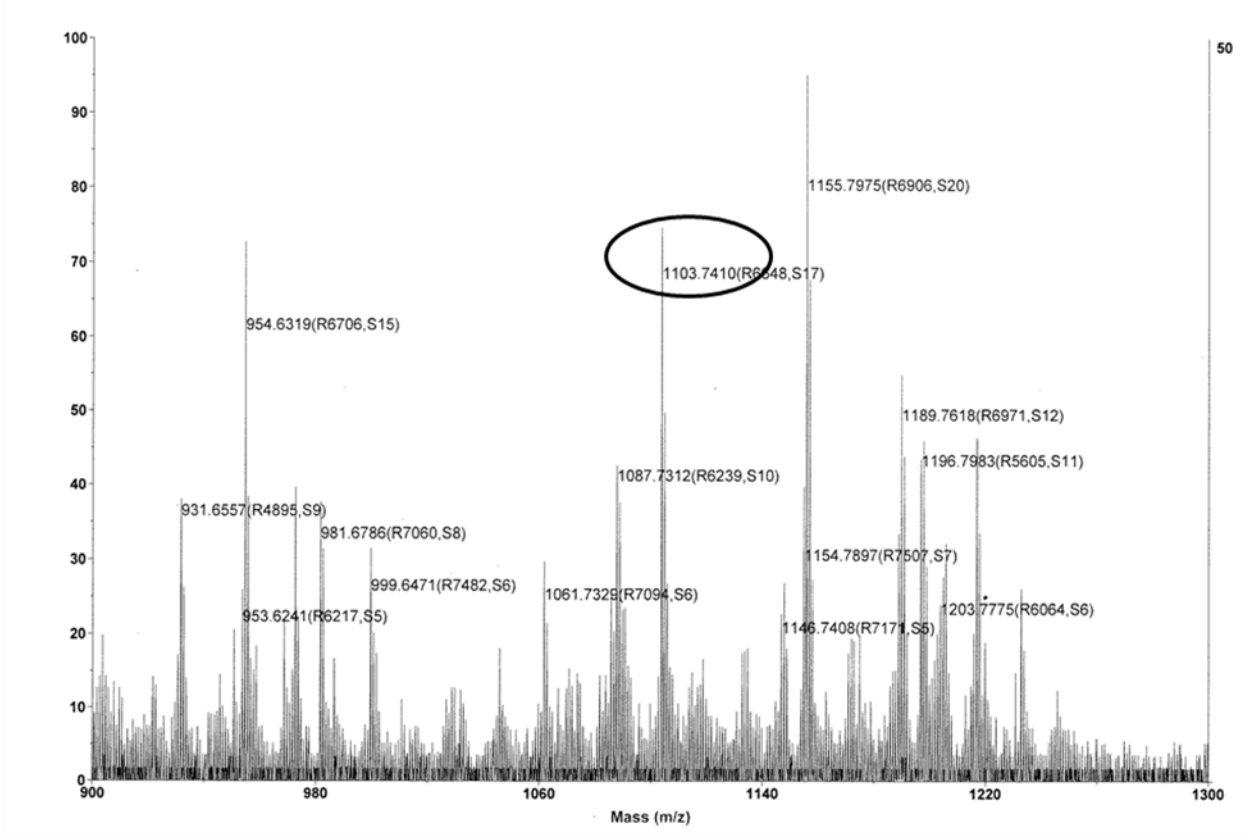


Fig. S3: MALDI-TOF spectrum of **Mono 1**.

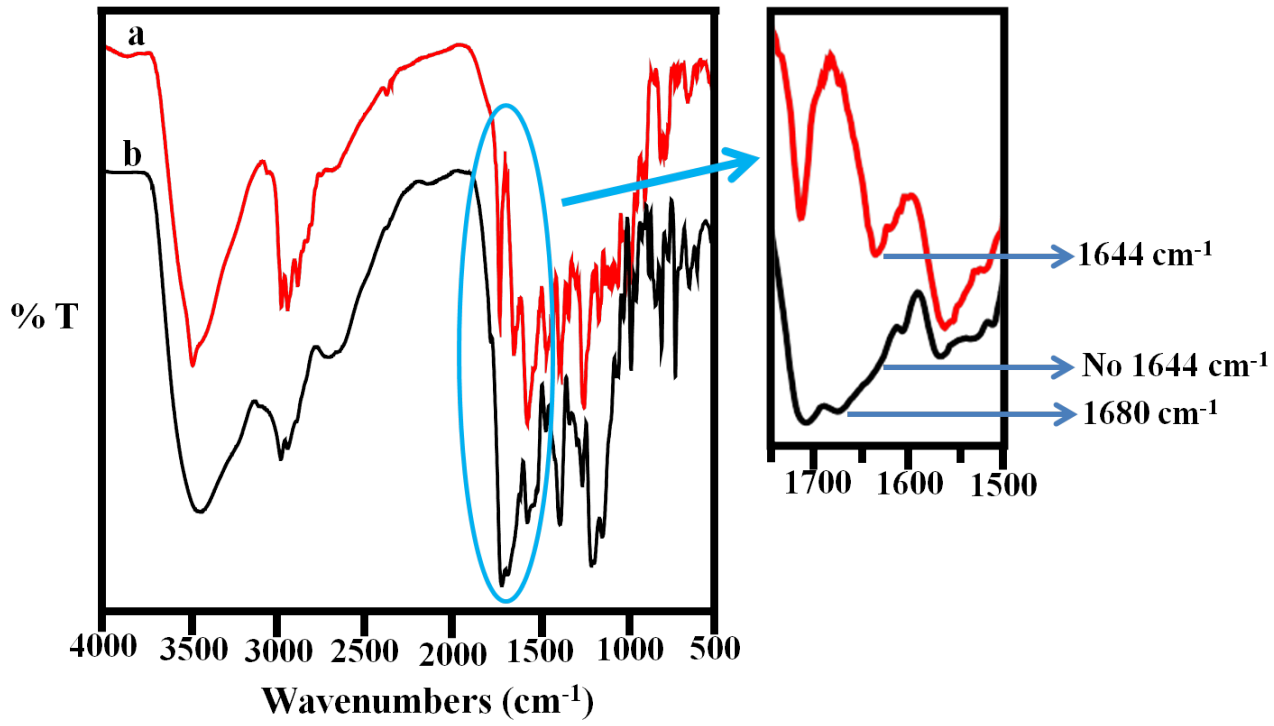


Fig. S4: FT-IR spectrum of (a) Rifampicin and (b) **Mono 1**.

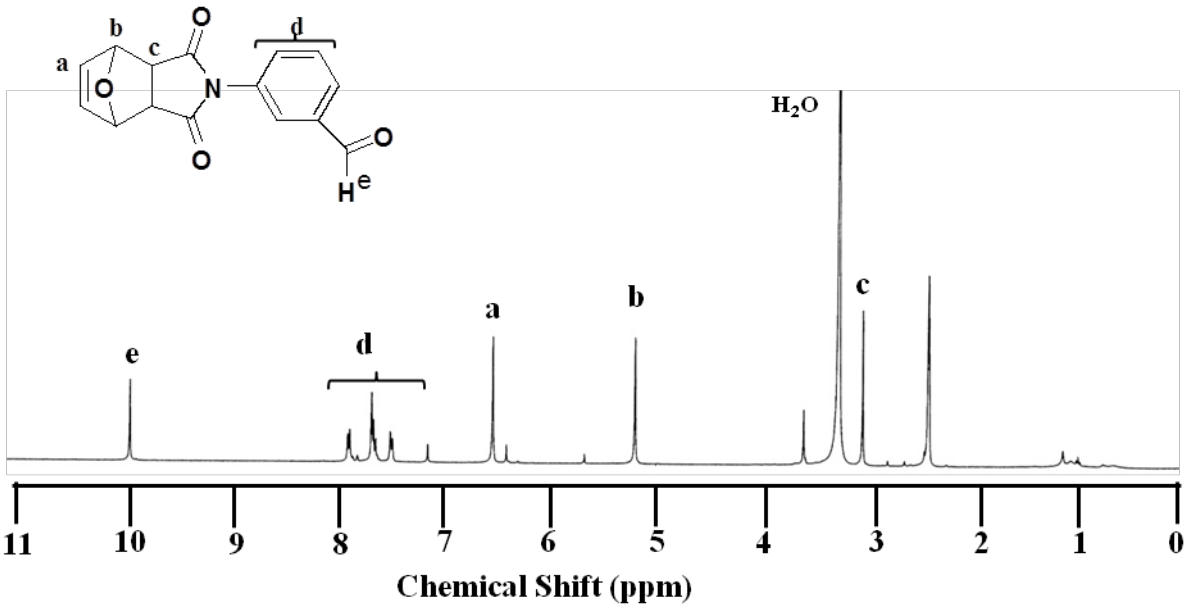


Fig. S5: ^{1}H NMR spectrum of compound **5** in DMSO-d_6

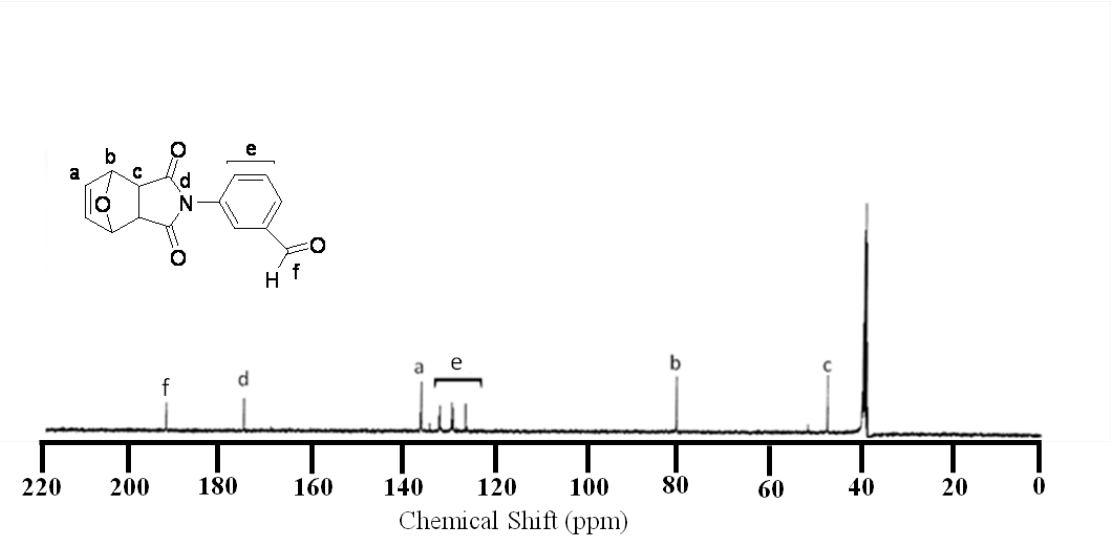


Fig. S6: ^{13}C NMR spectrum of compound **5** in DMSO-d_6.

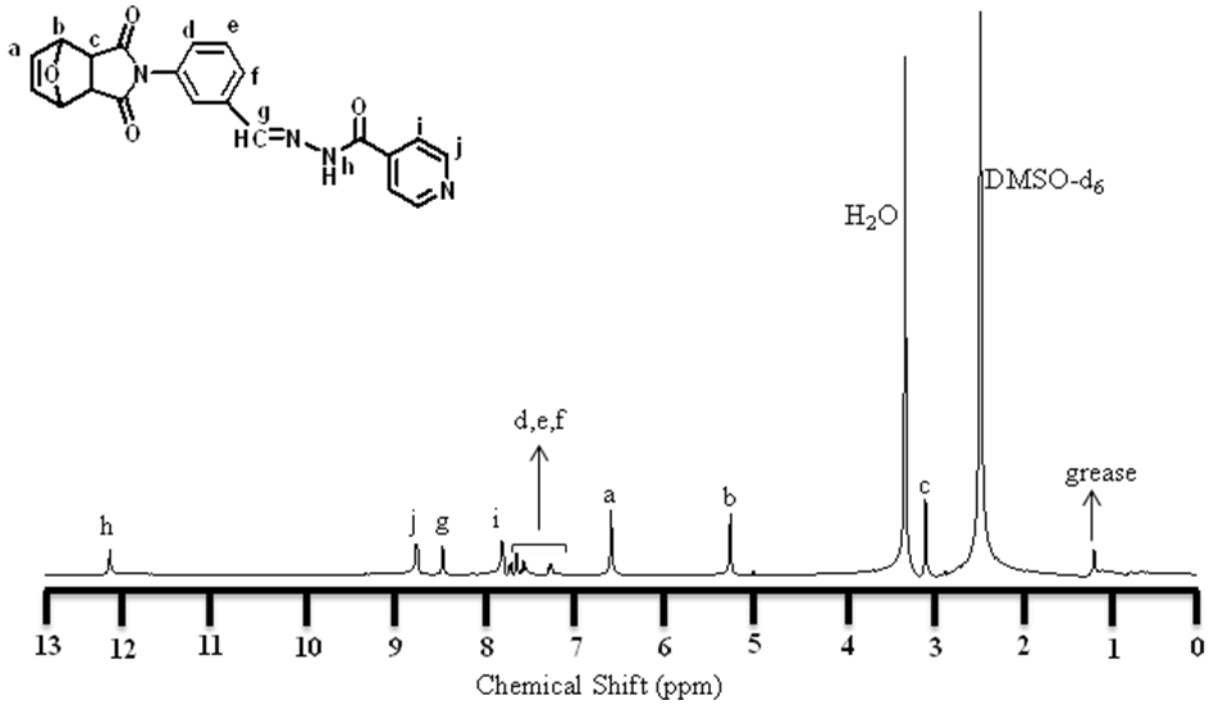


Fig. S7: ^{1}H NMR spectrum of **Mono 3** in DMSO-d_6**.**

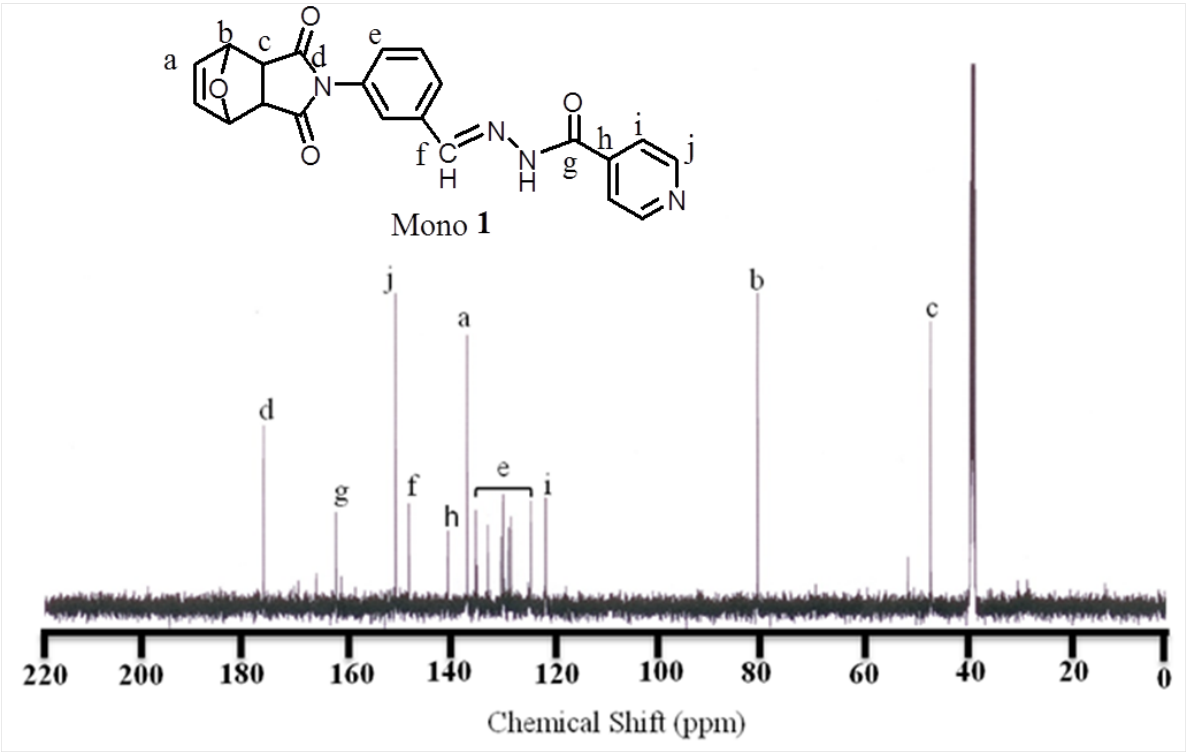


Fig. S8: ^{13}C NMR spectrum of **Mono 3** in DMSO-d_6.

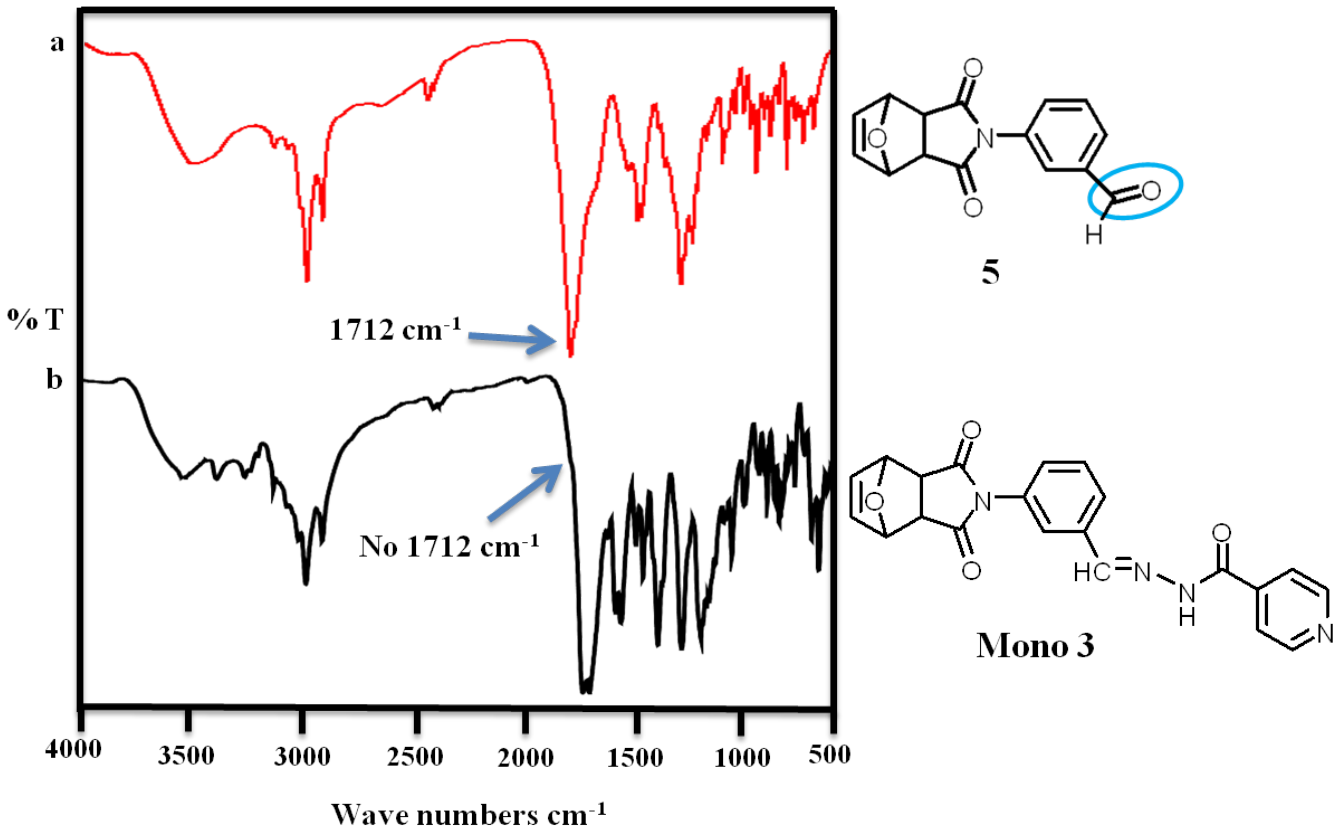


Fig. S9: FT-IR spectrum of (a) compound **5** and (b) **Mono 3**.

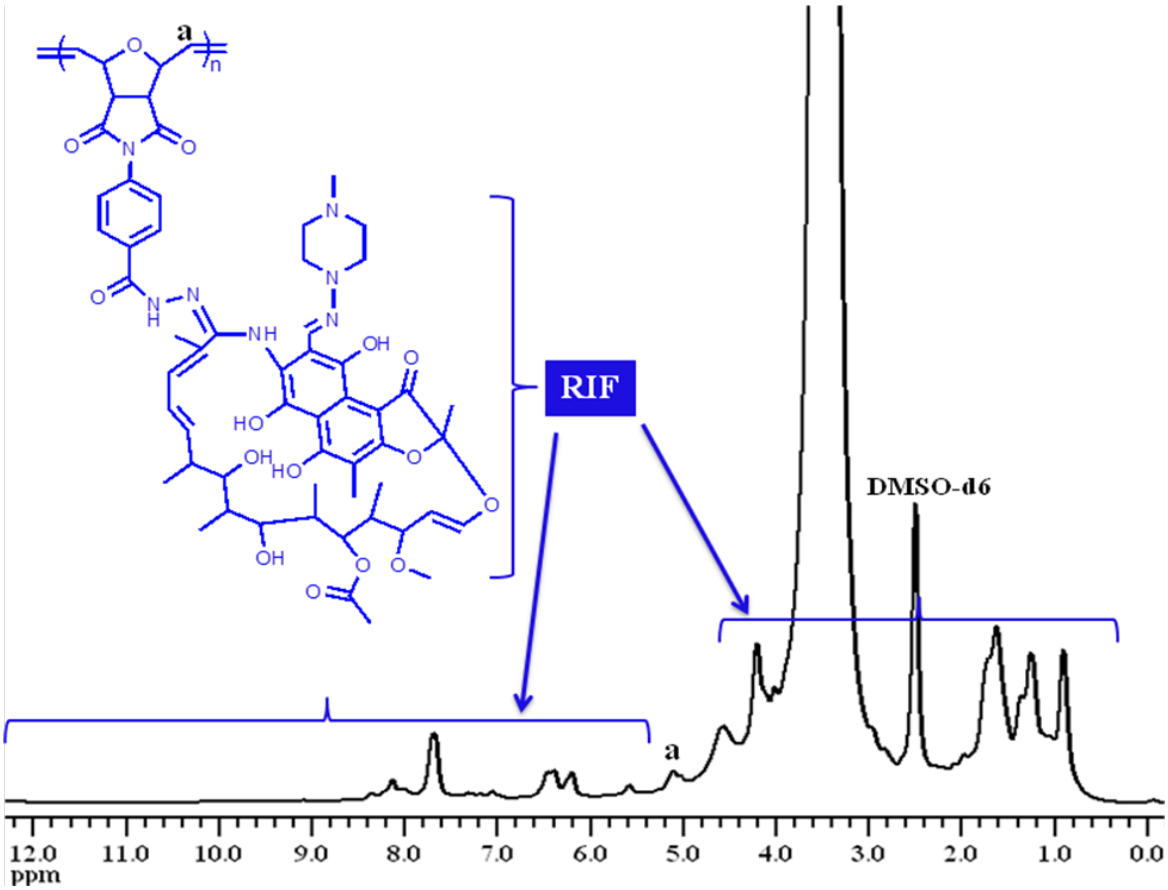


Fig. S10: ^{1}H NMR spectrum of **RIF-HP 4.**

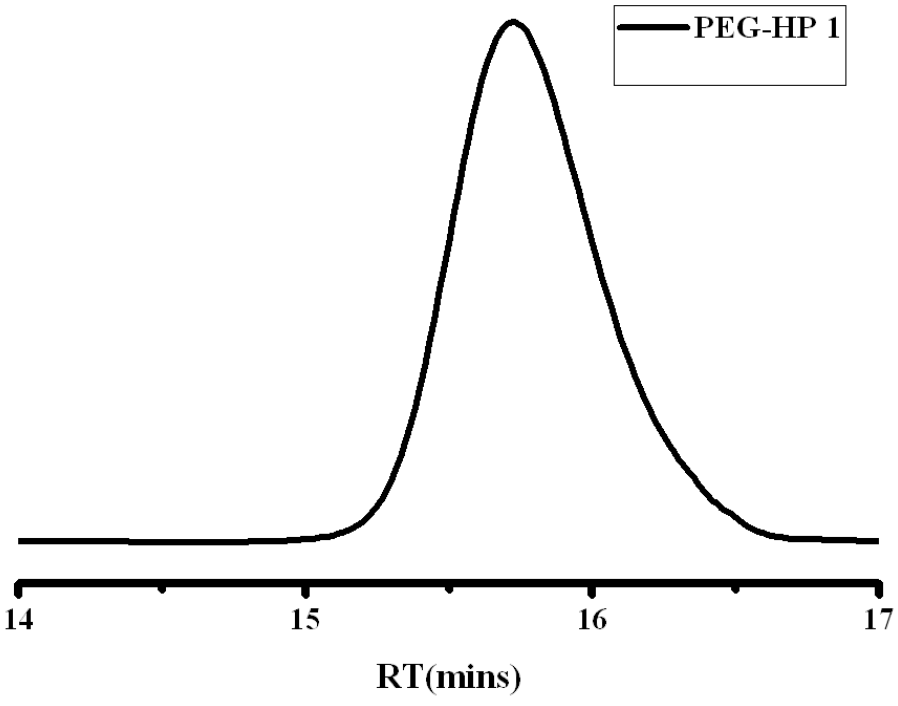


Fig. S11: GPC traces for **PEG-HP 1** (Mn = 11400, PDI 1.07).

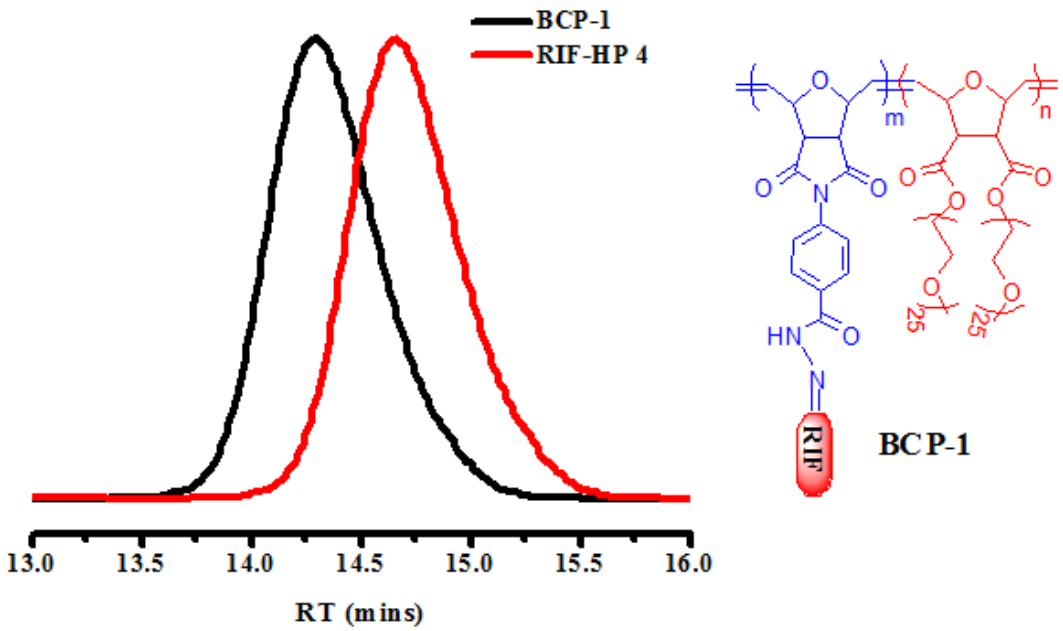


Fig. S12: A representative GPC traces for **BCP-1**(Mn = 42000, PDI 1.10) (black) and **RIF-HP 4** (Mn = 32200, PDI 1.09) (red)**.**

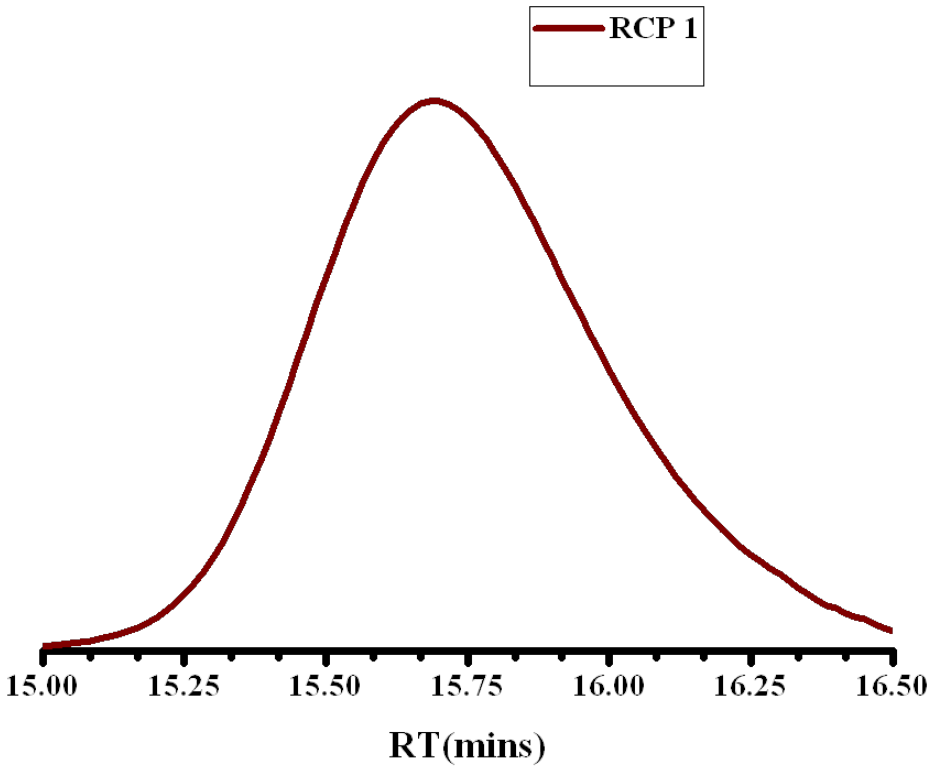


Fig. S13: GPC traces for **RCP- 1** (Mn = 11700, PDI 1.09).

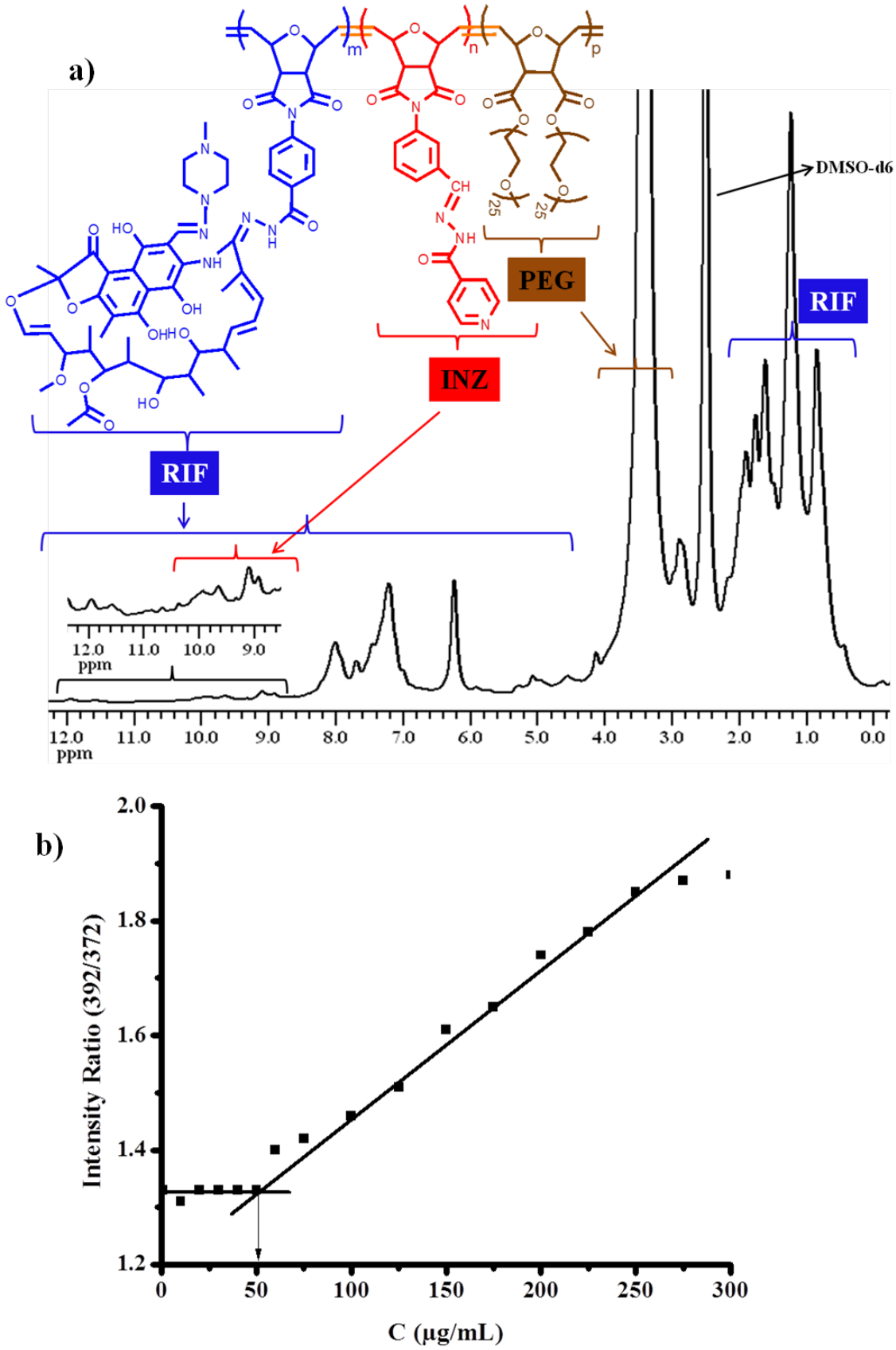


Fig. S14: (a) ^{1}H NMR spectra for **RCP-2** in DMSO-d_6. (b) CAC study of **RCP-2** in water using pyrene as the probe, the observed CAC is 50 μg mL^{-1},

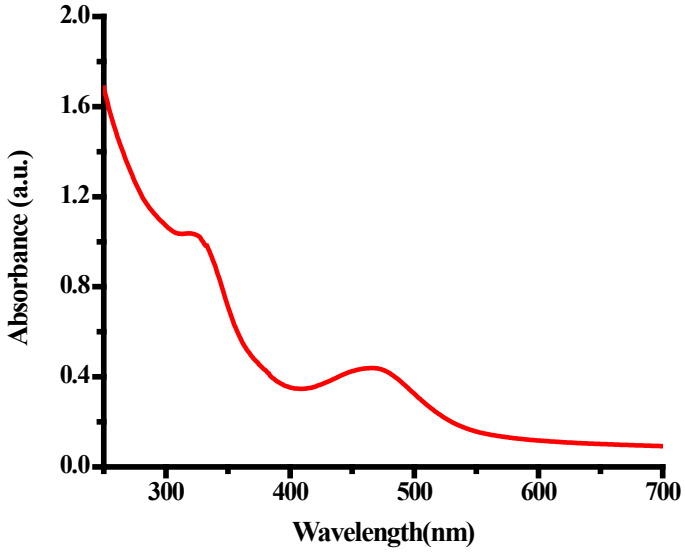


Fig. S15: UV spectra of **RCP- 2**.

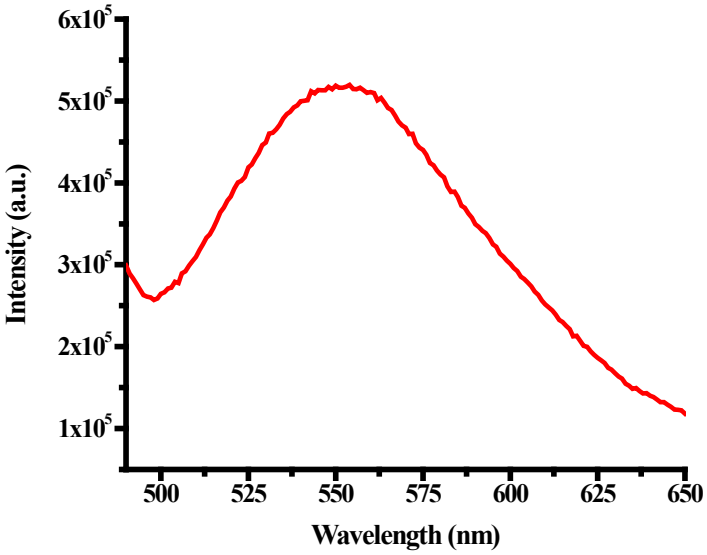


Fig. S16: Fluorescence spectra of **RCP -2** excited at 469 nm.

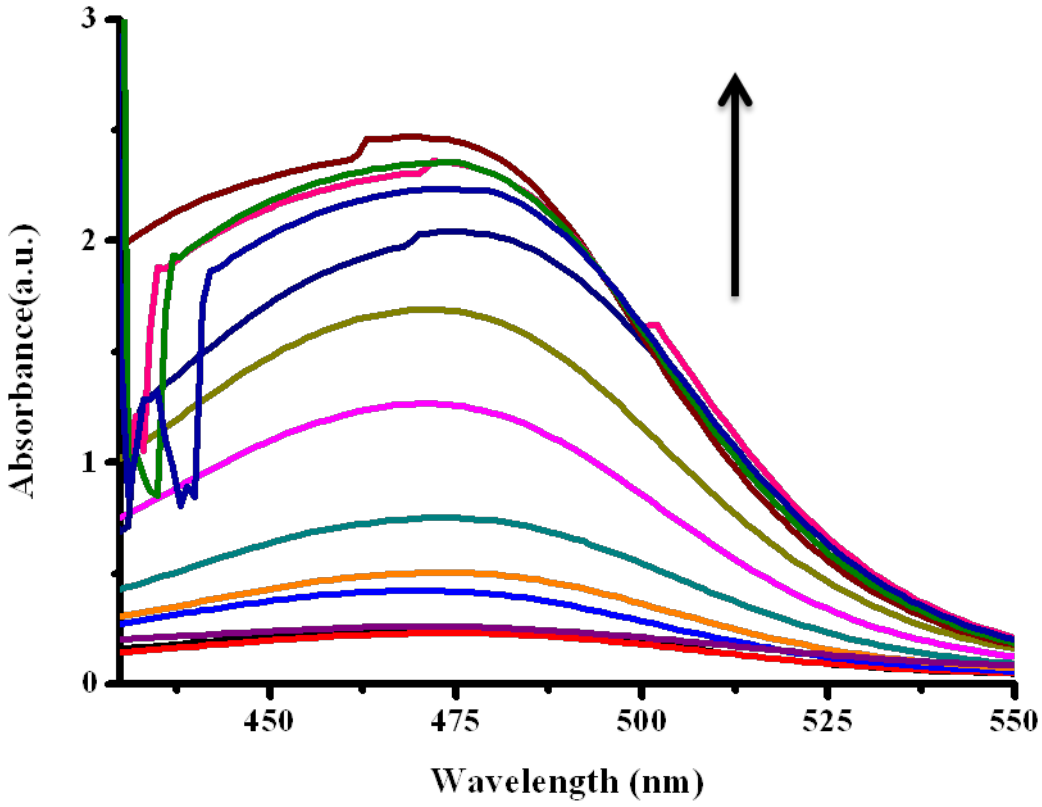


Fig. S17: UV spectra for drug release from **RCP-2** at pH 5.5 by Dialysis method .

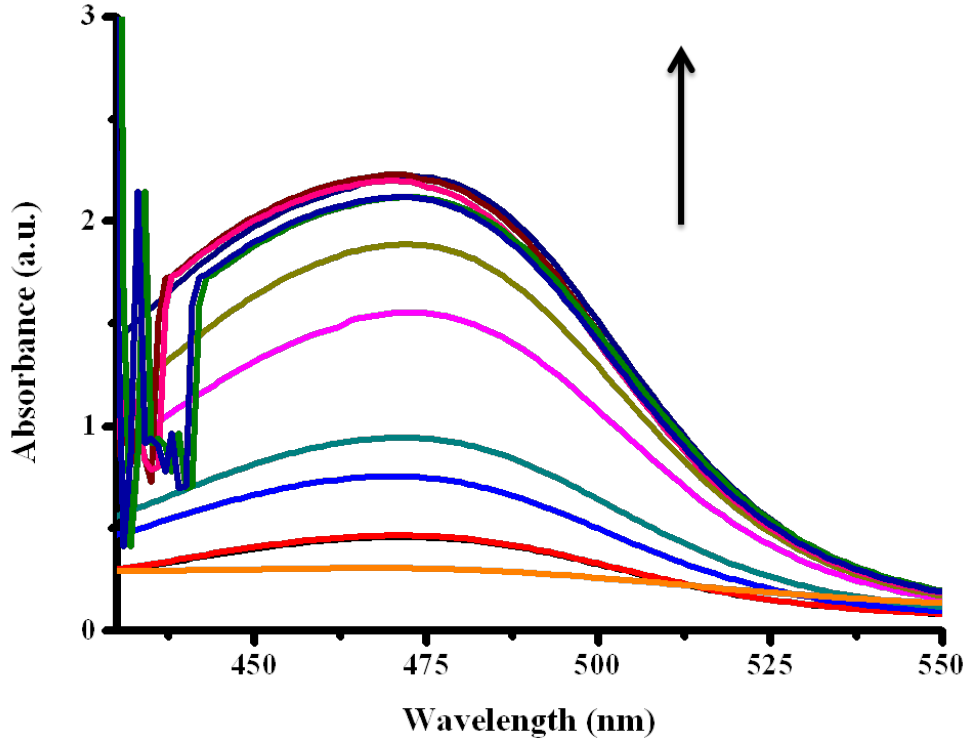


Fig. S18: UV spectra for drug release from **RCP-2** at pH 6.5 by Dialysis method .

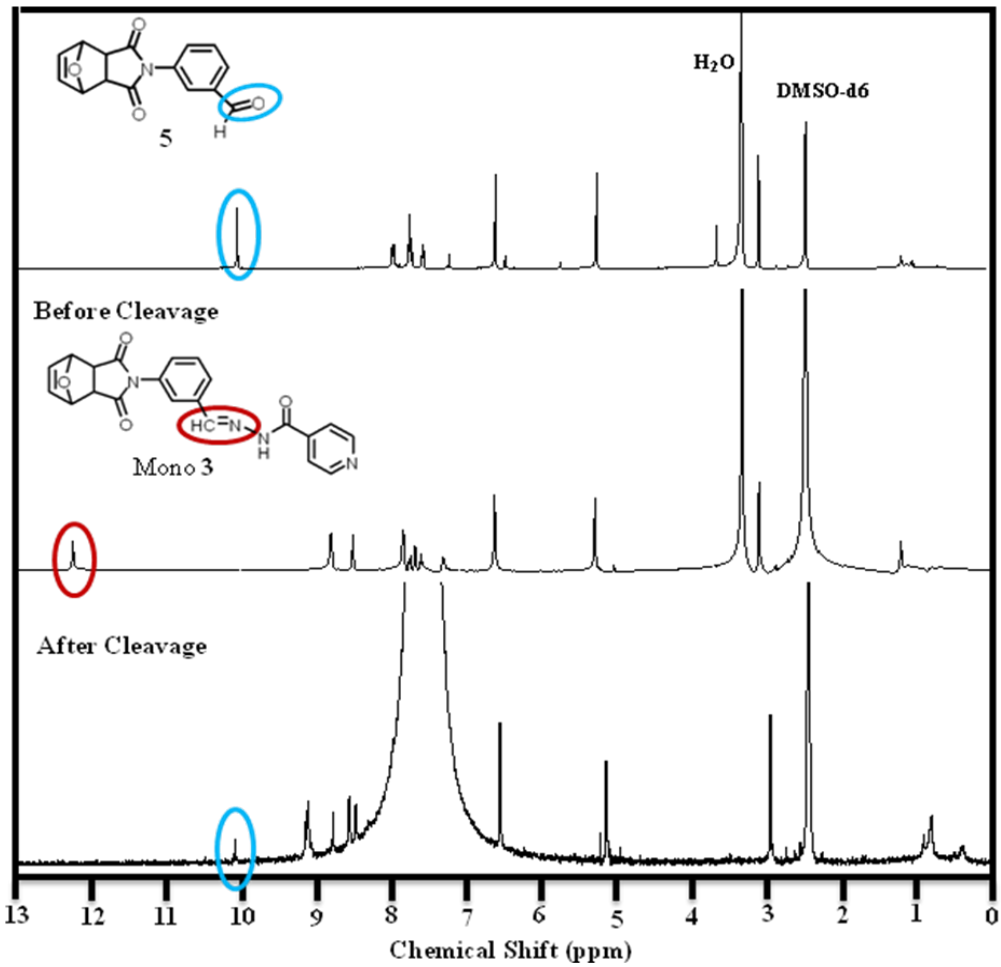


Fig. S19: A comparative ^{1}H NMR spectroscopy of compound **5**, **Mono 3** and **Mono 1** after exposure to the acidic condition in DMSO-d6.

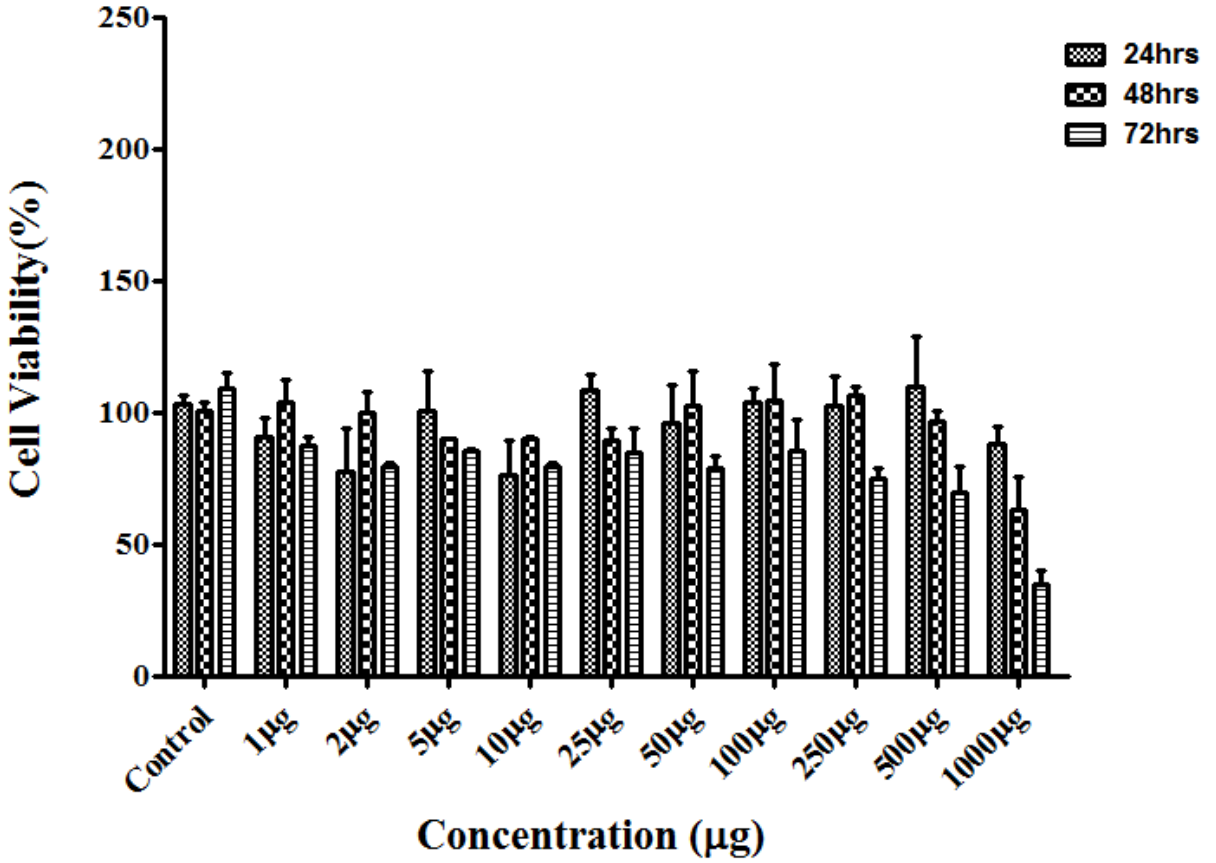


Fig. S20 : Cytotoxicity assay of Isoniazid.

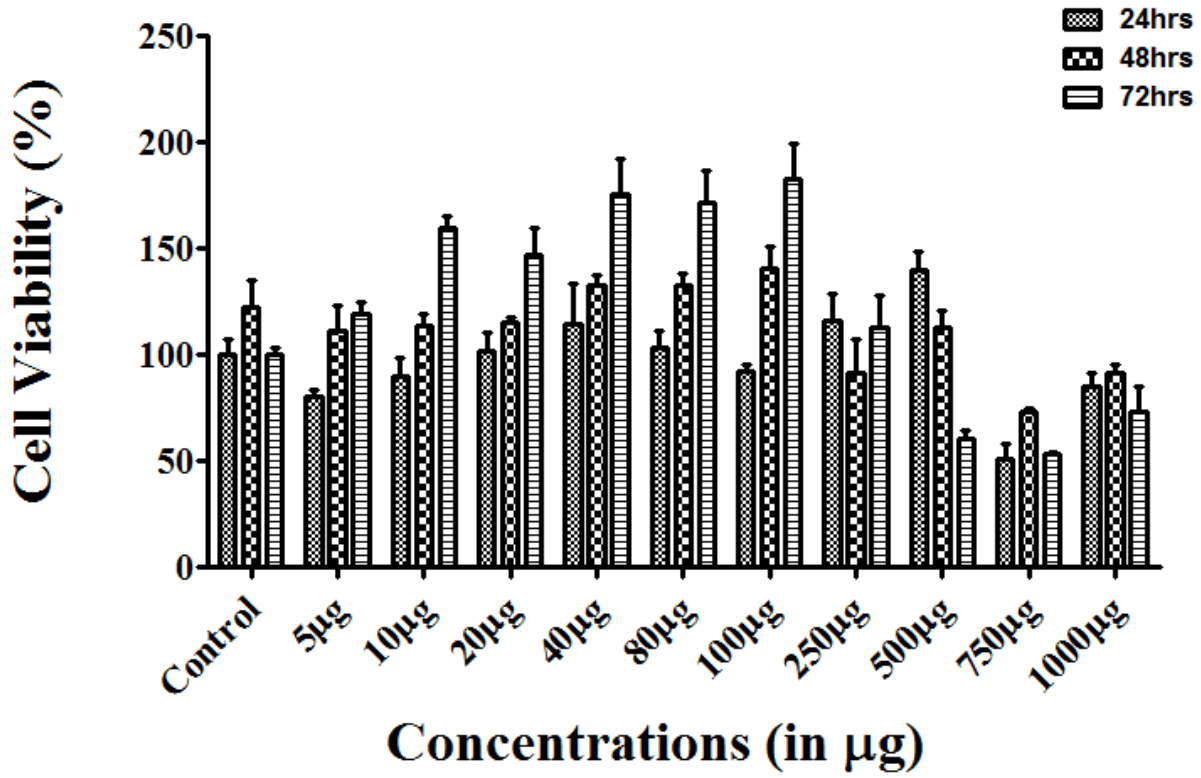


Fig. S21 : Cytotoxicity assay of Rifampicin on A549 cell line.

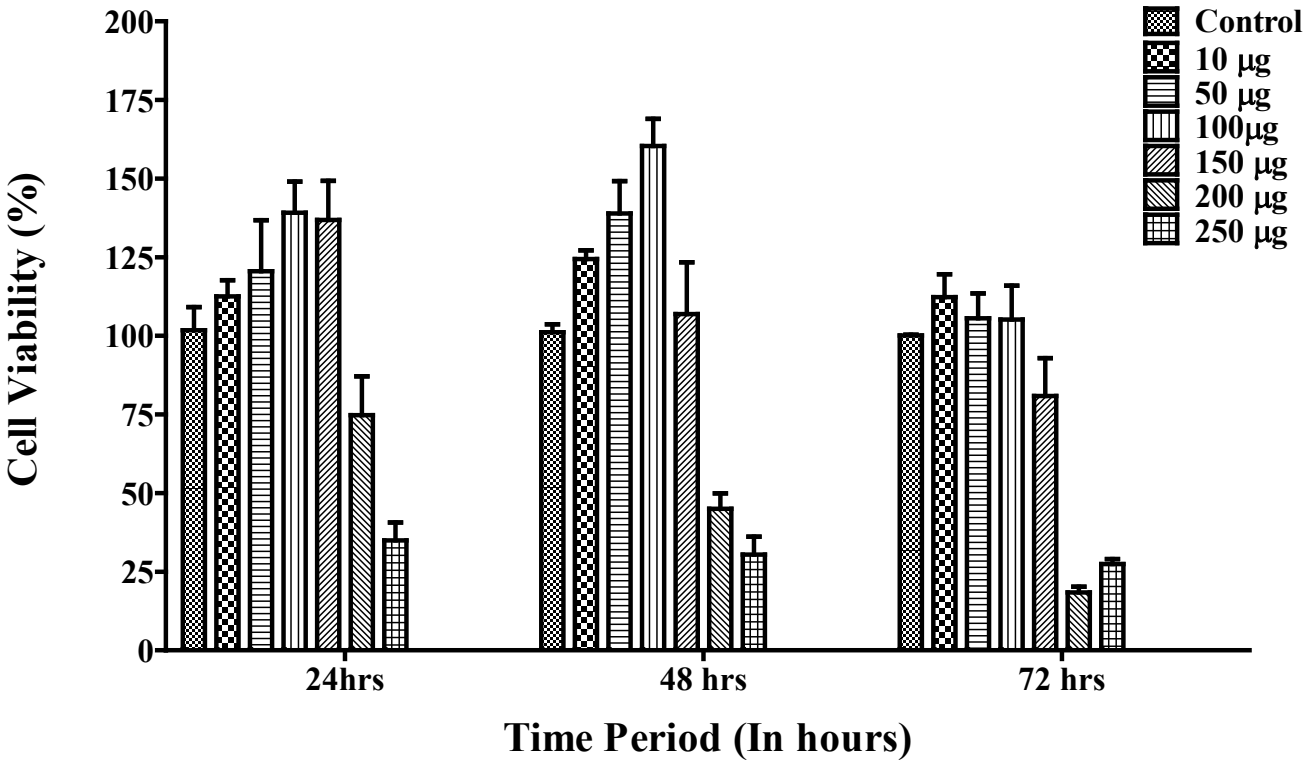


Fig. S22 : Cytotoxicity assay of Norbornene polymer alone tested in HEK 293 cell line.

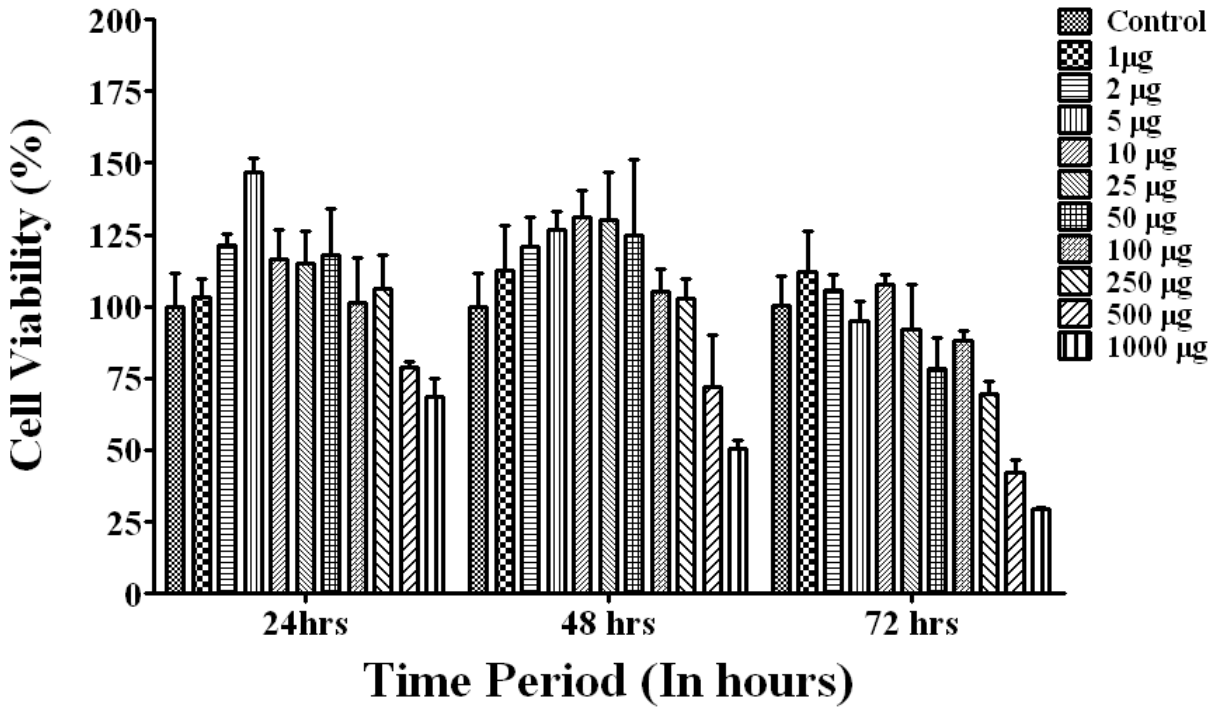


Fig. S23 : Cytotoxicity assay of the nanocarrier tested in normal healthy cells(HEK 293 cell line).

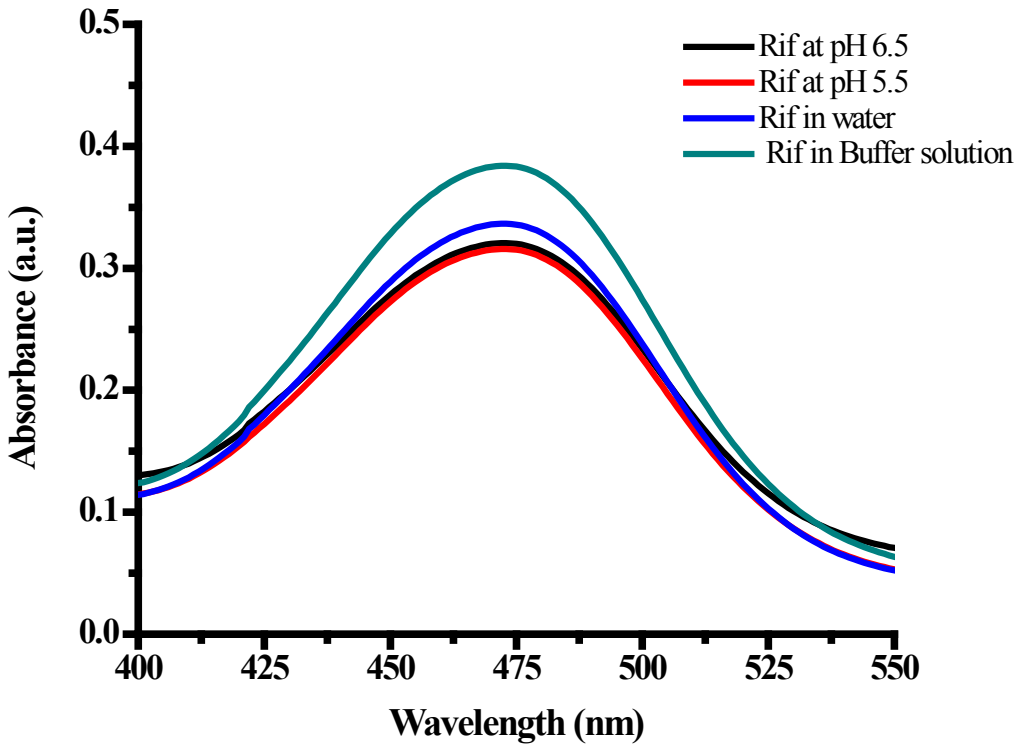


Fig. S24 : UV spectra of Rifampicin in different solutions.

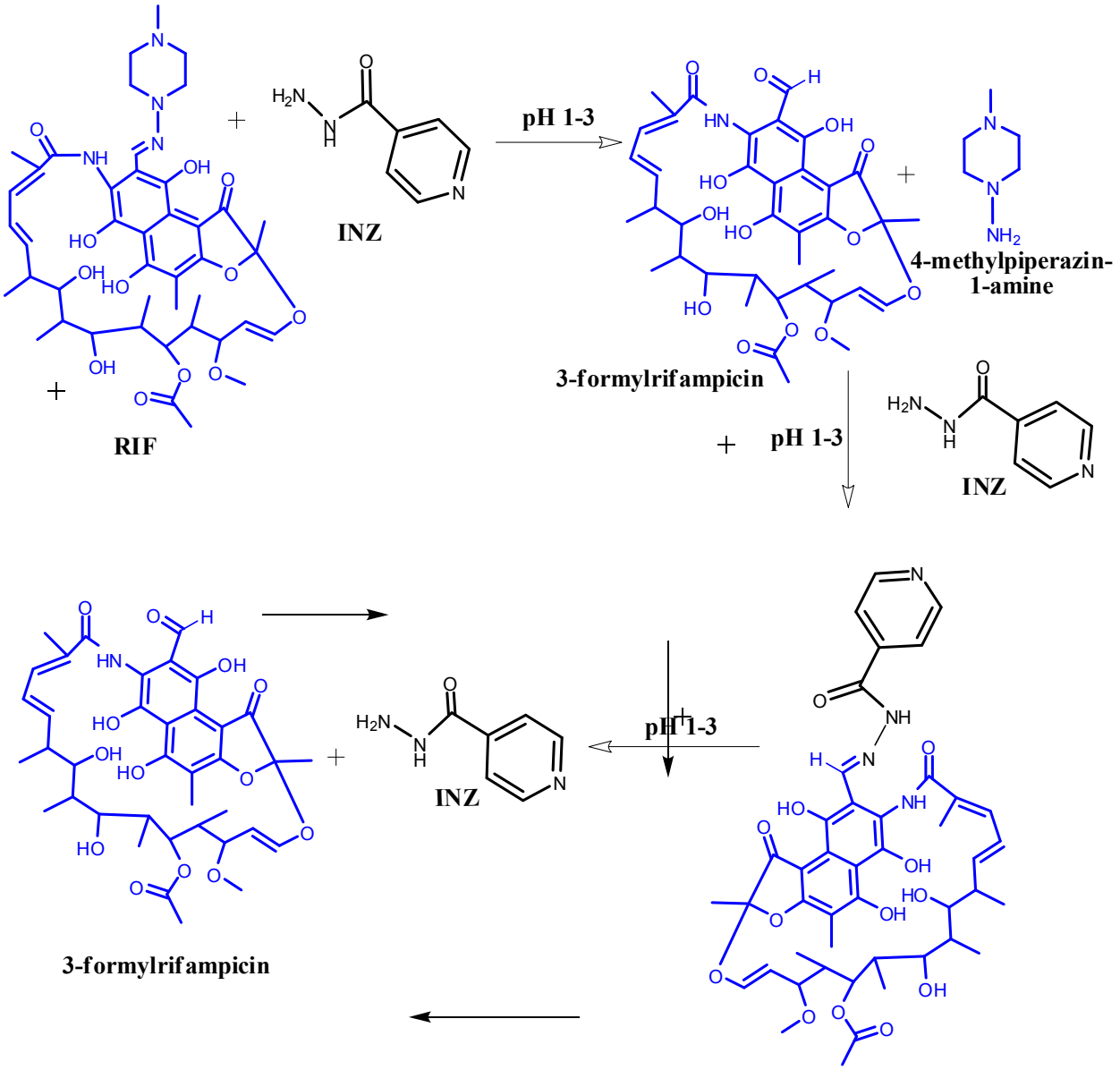


Fig. S25 : Decomposition scheme for RIF. **Ref:** Singh, S., Mariappan, T. T., Sharda, N., Kumar, S., Chakraborti, A. K. *Pharm. Pharmaco. Commun.* **2000**, *6,* 405-410.

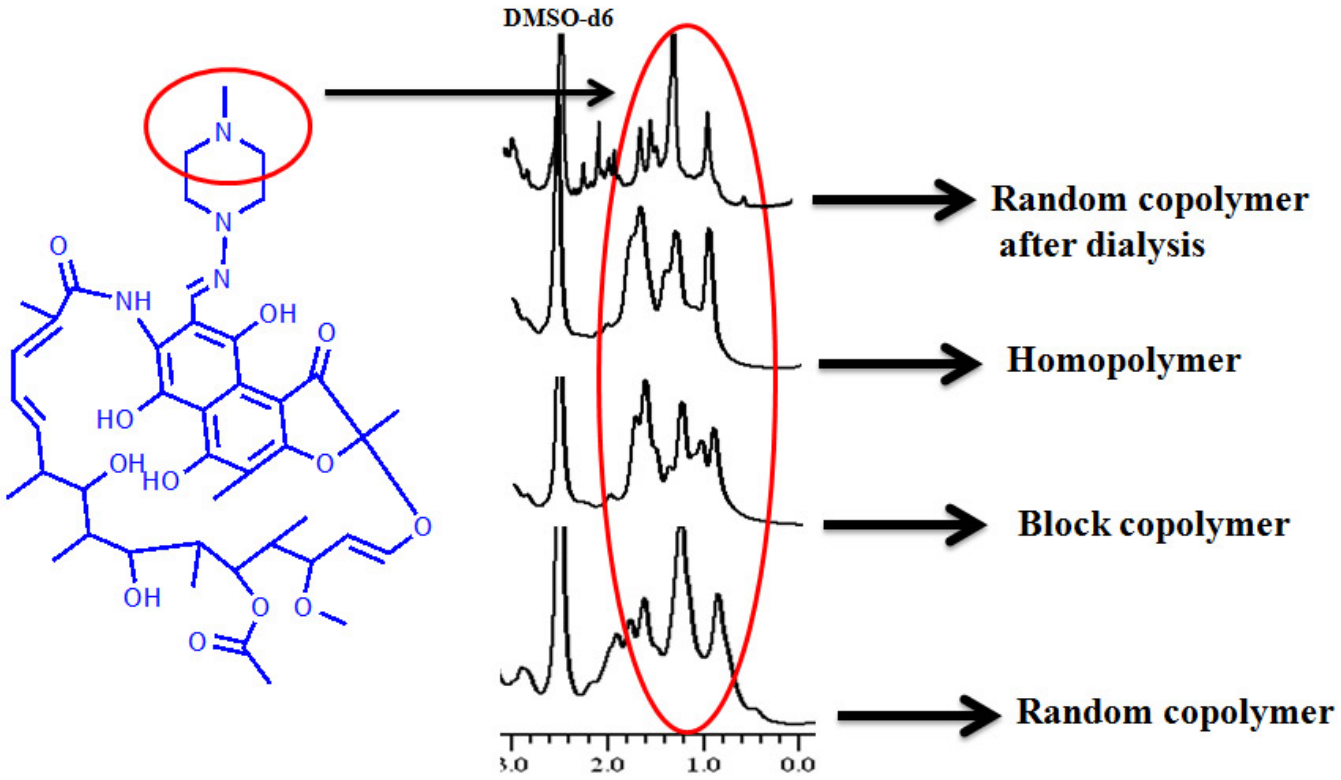


Fig. S26 : Control experiement to prove the delivery of undecomposed RIF drug.

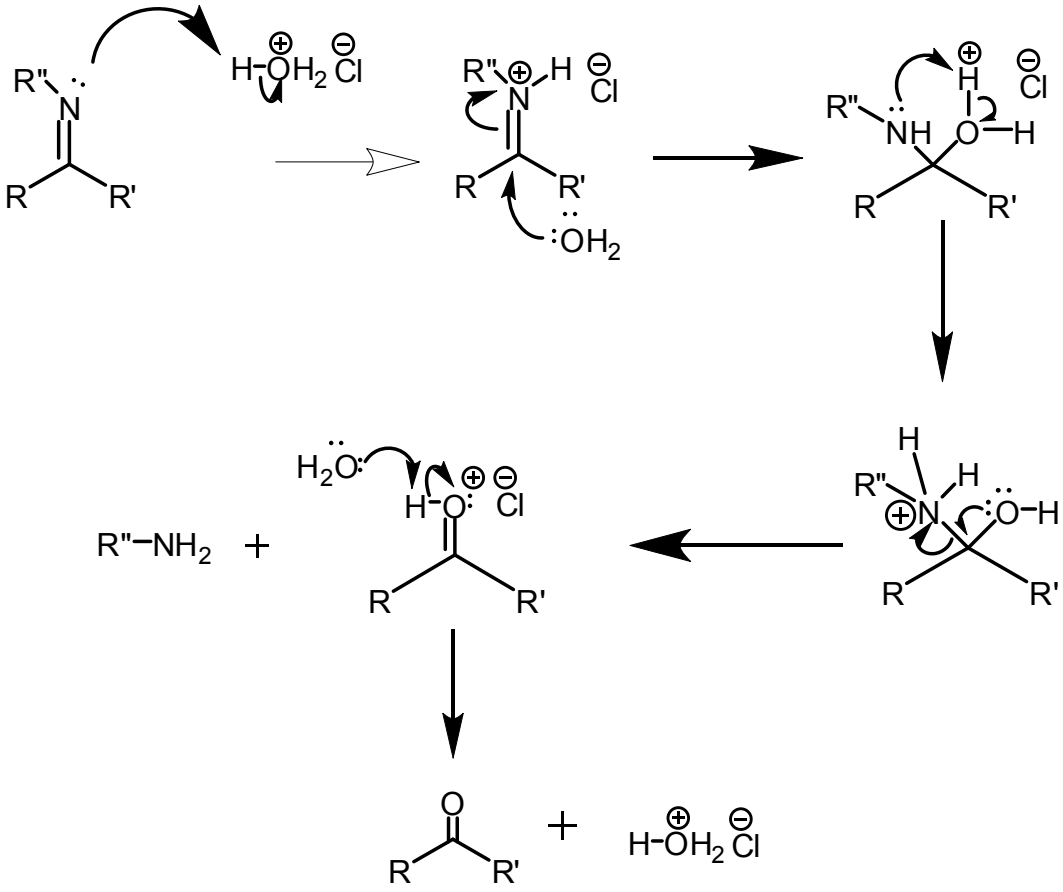


Fig. S27 : General mechanism for imine hydrolysis in acidic condition.