Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting information

Structure-Activity Relationship of Drug Conjugated Polymeric Materials against Uropathogenic Bacteria Colonization under *In Vitro* and *In Vivo* Settings

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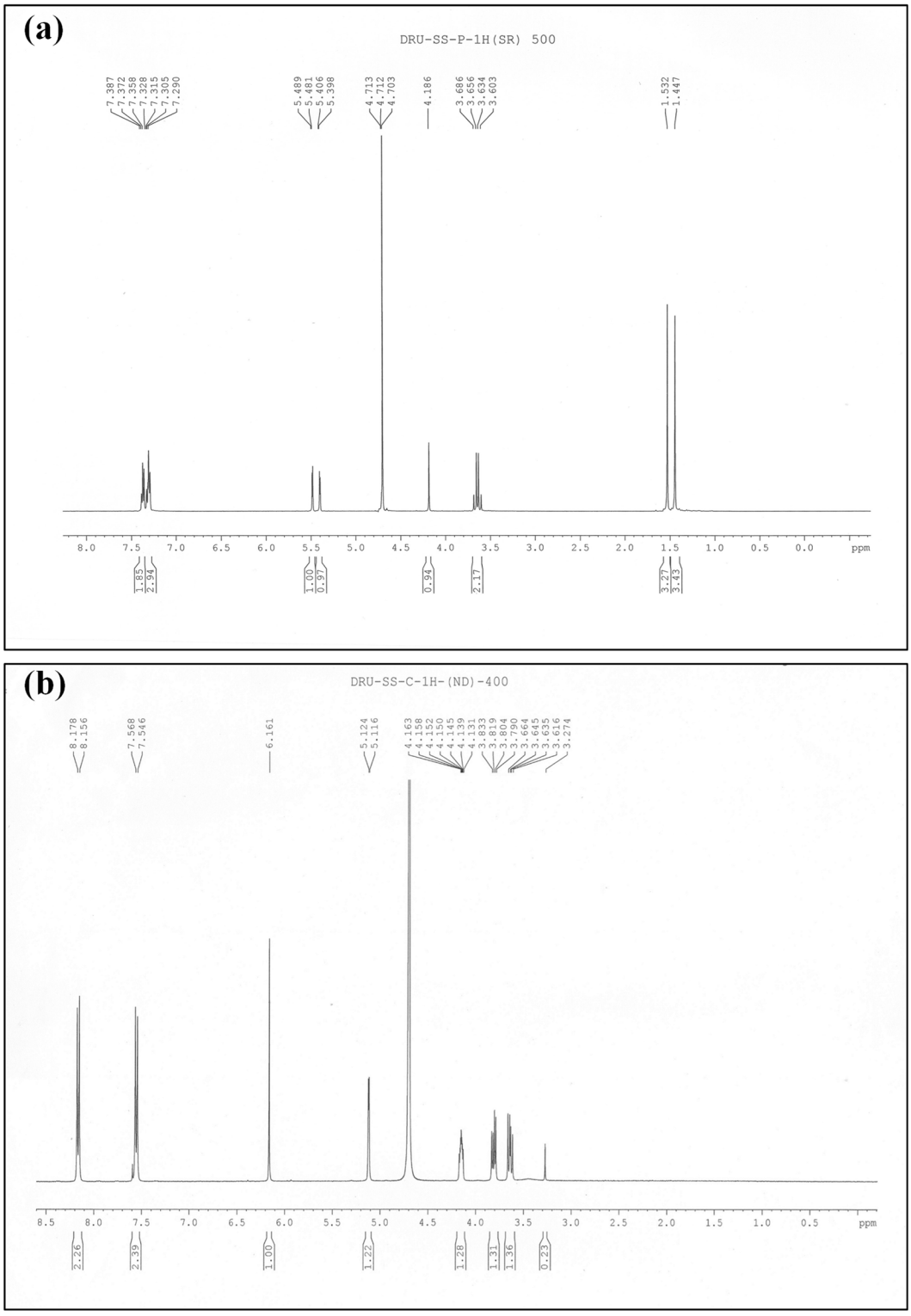

Figure S1. The spectra of penicillin G sodium salt (a) and chloramphenicol (b) alone used in this study for conjugation with PI backbones.

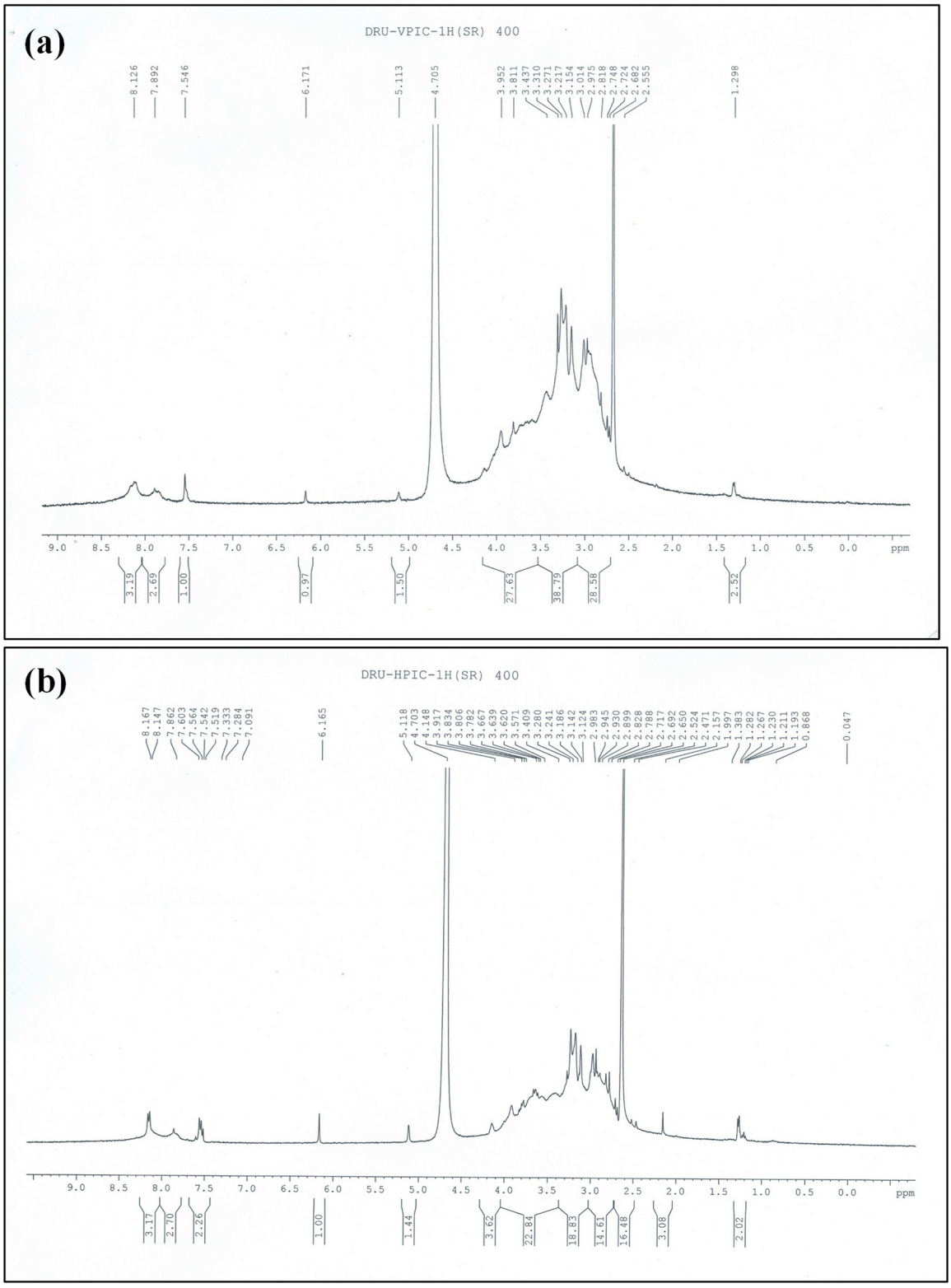

Figure S2. The ^{1}H-NMR spectra of chloramphenicol conjugated VPIC (a) and HPIC (b).

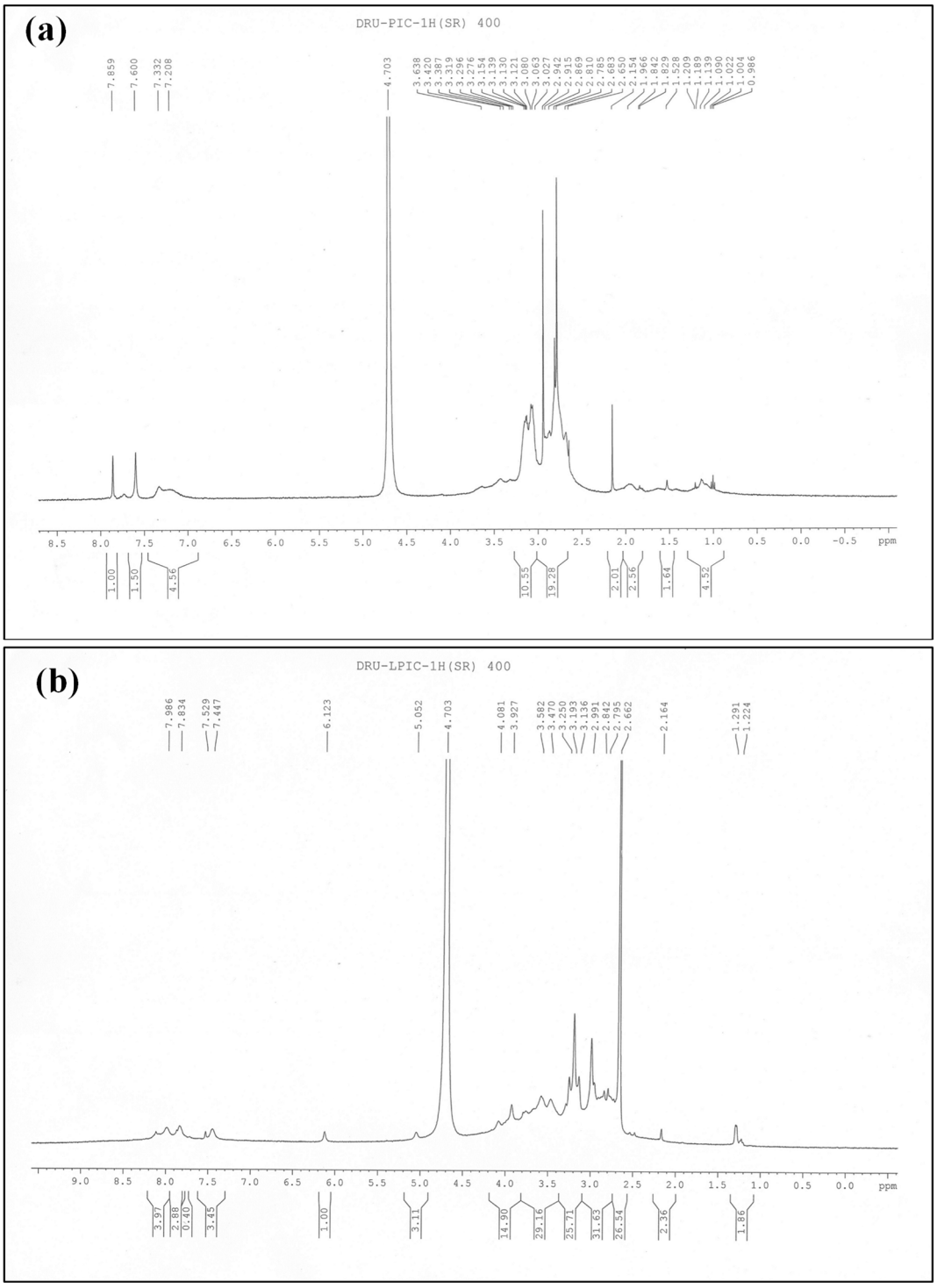

Figure S3. The ^{1}H-NMR spectra of chloramphenicol conjugated MPIC (a) and LPIC (b).

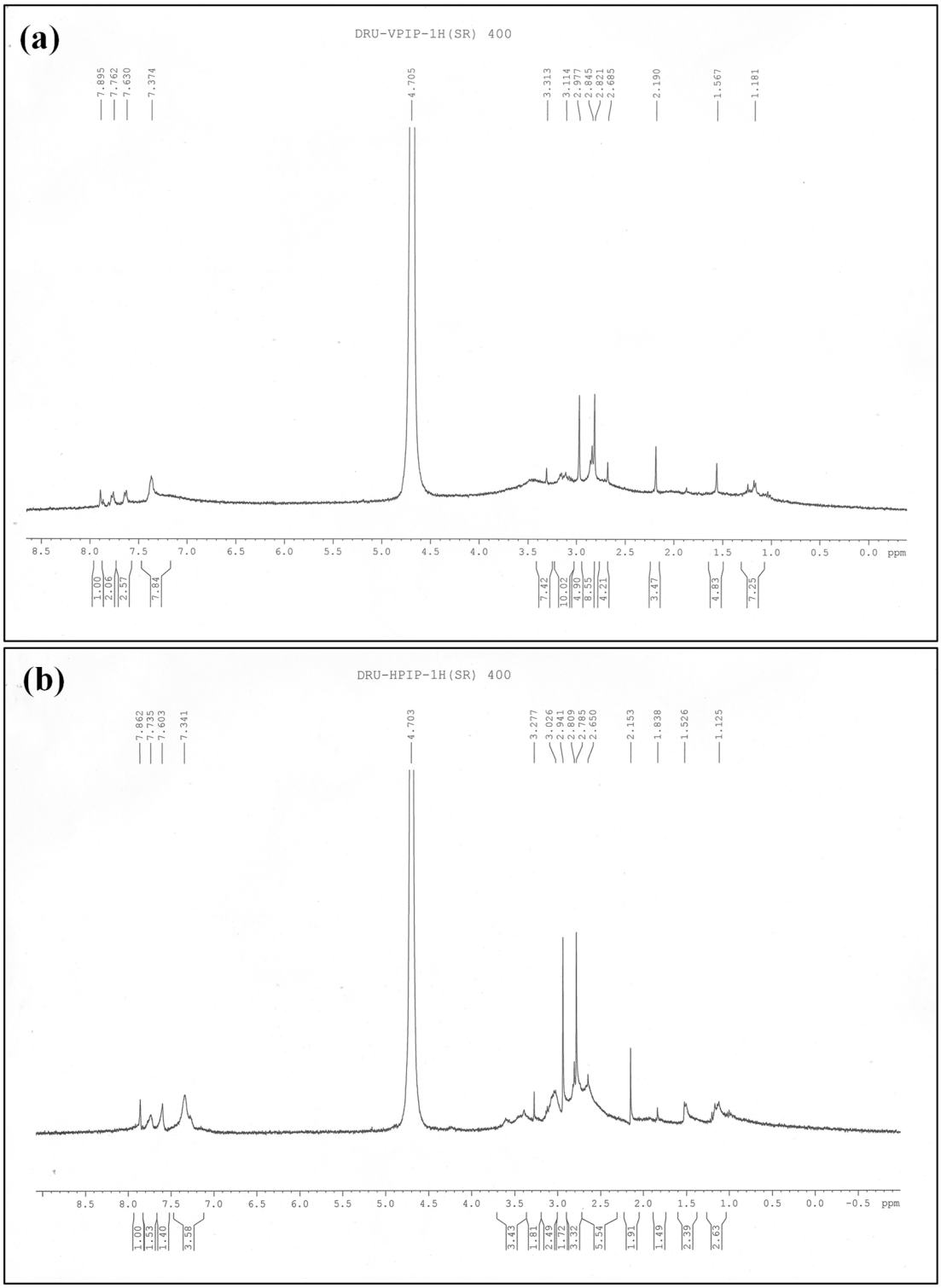

Figure S4. The ^{1}H-NMR spectra of penicillin G conjugated VPIP (a) and HPIP (b).

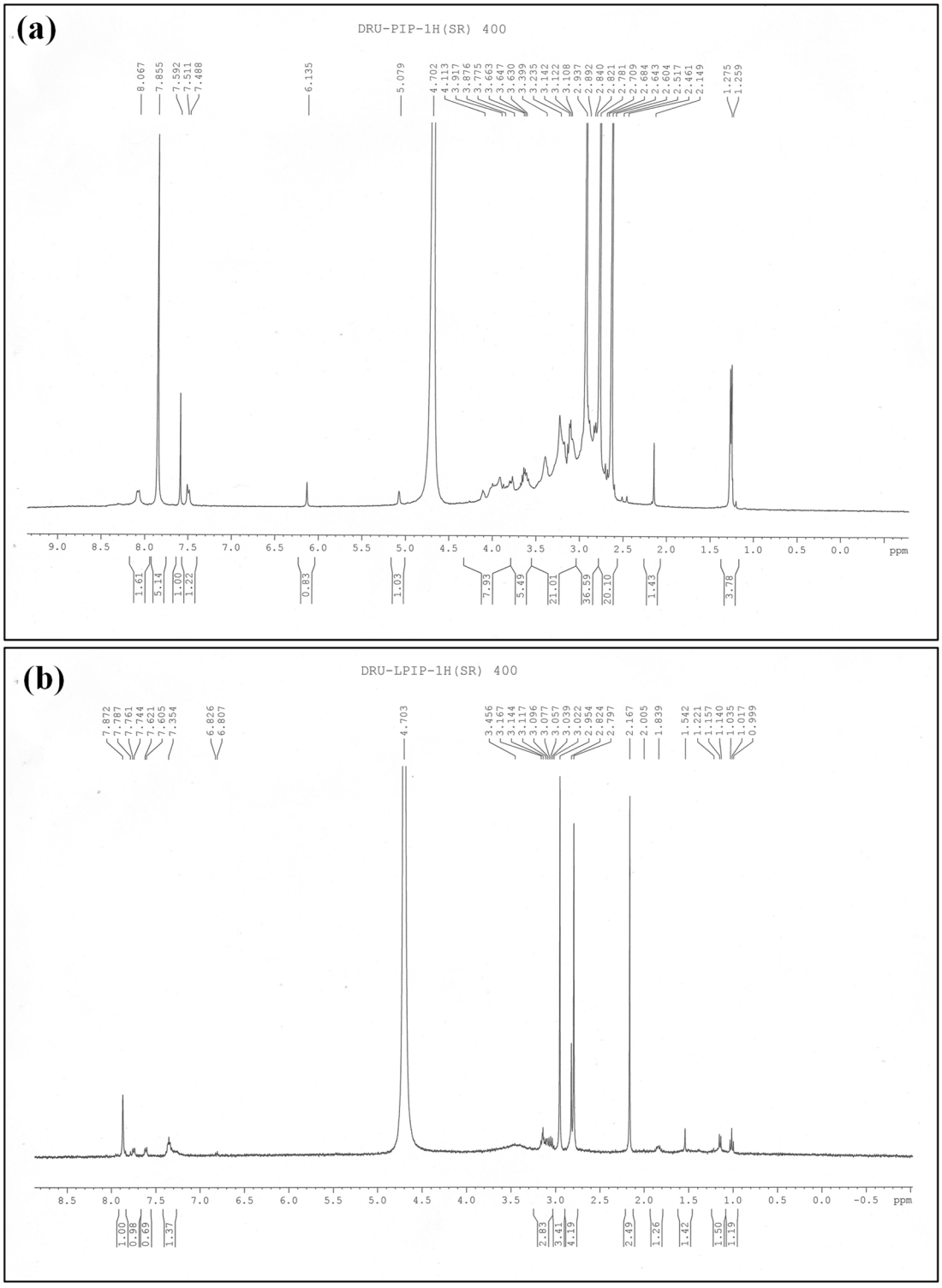

Figure S5. The ^{1}H-NMR spectra of penicillin G conjugated MPIP (a) and LPIP (b).

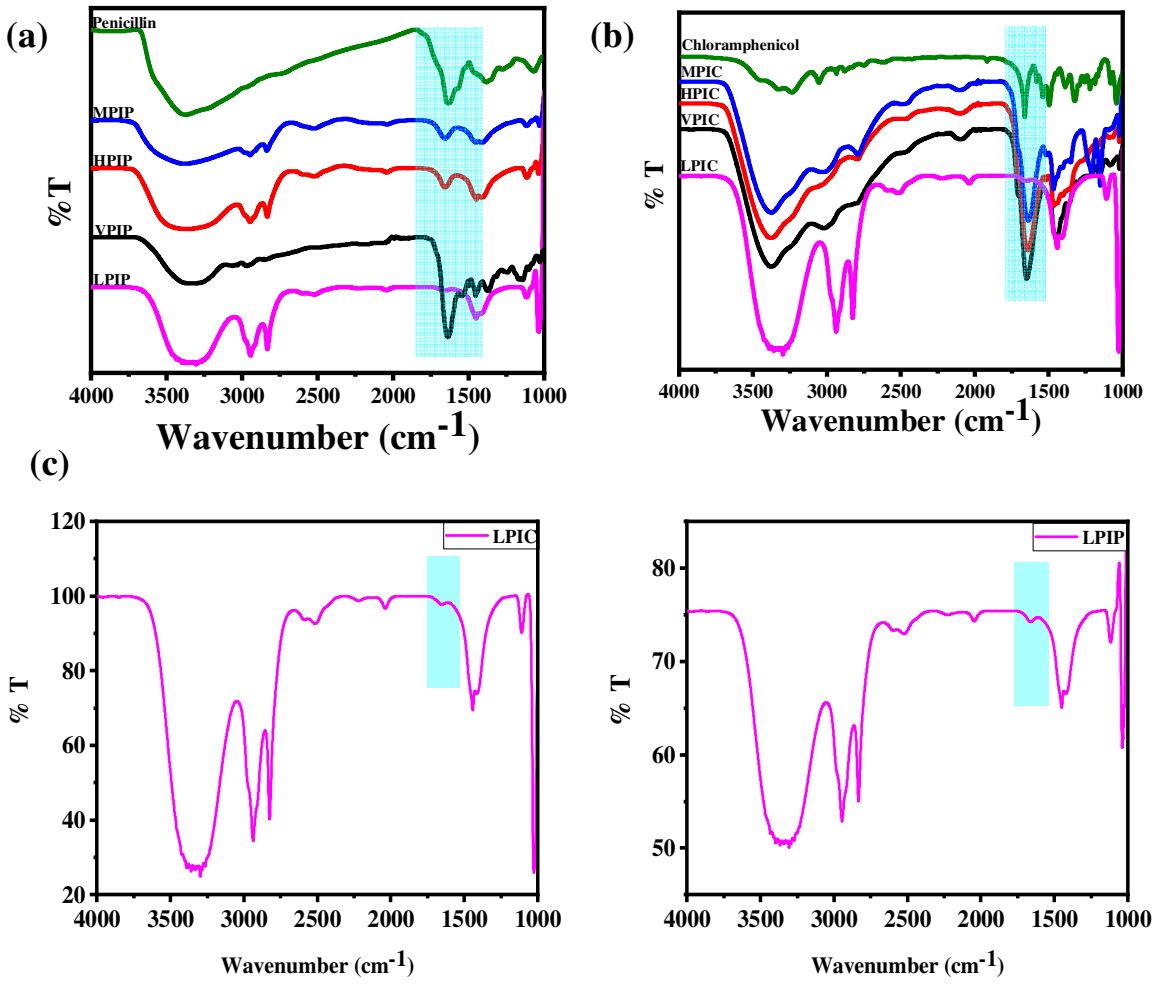

Figure S6. The FTIR spectra of the synthesized materials: (a) penicillin conjugated PI molecules and (b) chloramphenicol conjugated PI molecules. The spectra for LPIC and LPIP were plotted separately for better clarity and understanding (c).

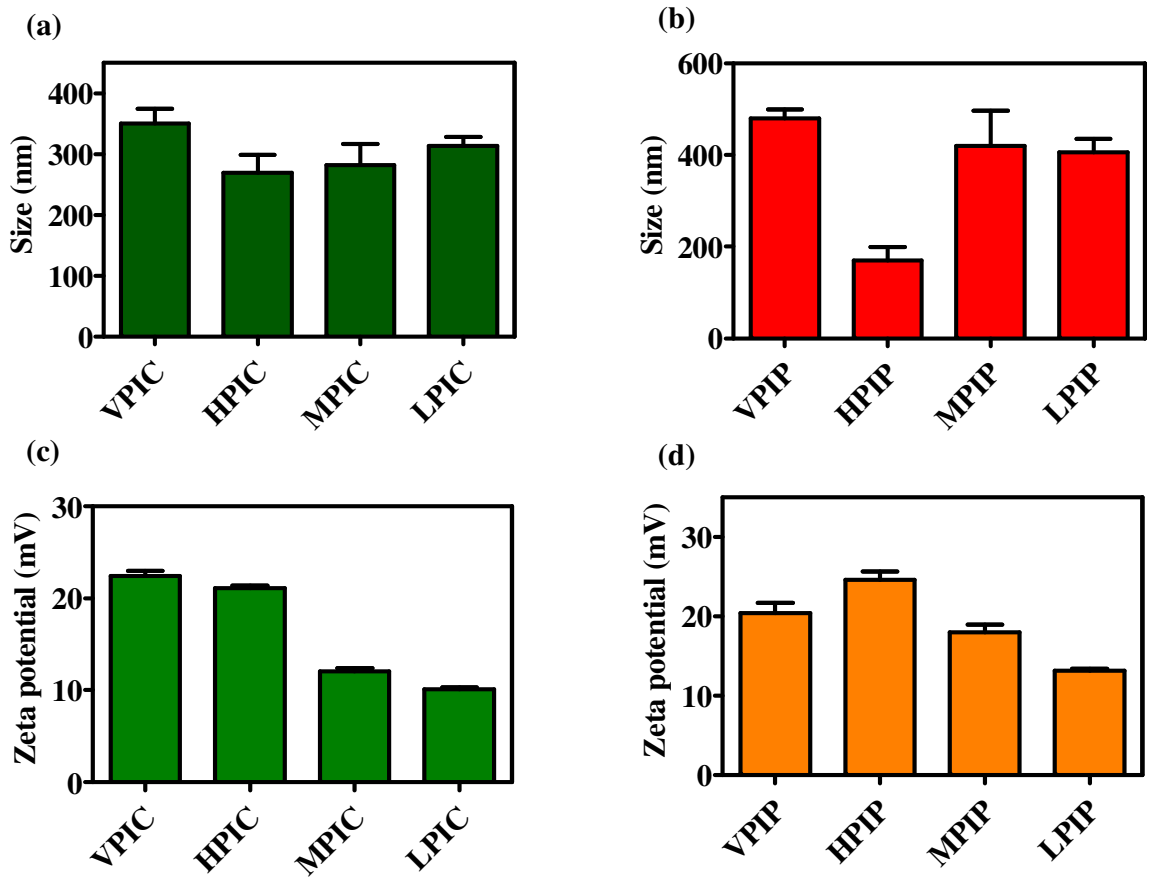

Figure S7. The DLS average size distribution of the chloramphenicol conjugated and penicillin G conjugated PI molecules are given in (a) and (b) respectively. The zeta potential of the same series is provided below (c) and (d).

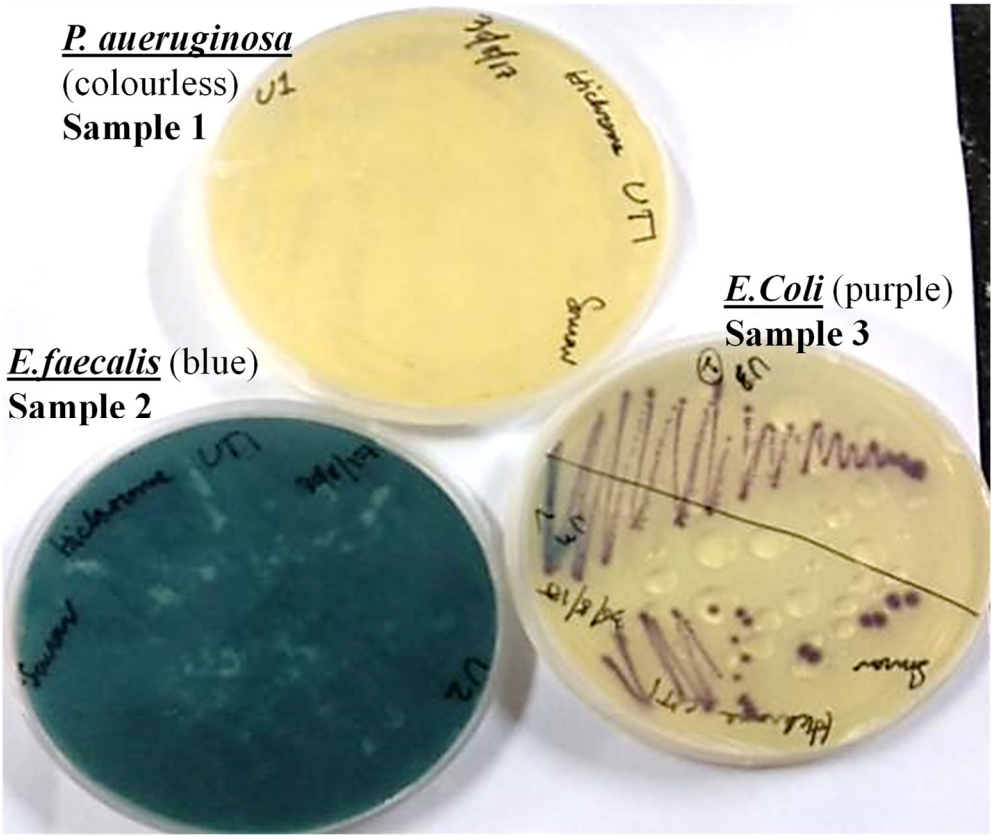

Figure S8. The uro-pathogenic bacteria from patient's urine samples were isolated and identified by their unique colors over the Hichrome UTI agar.

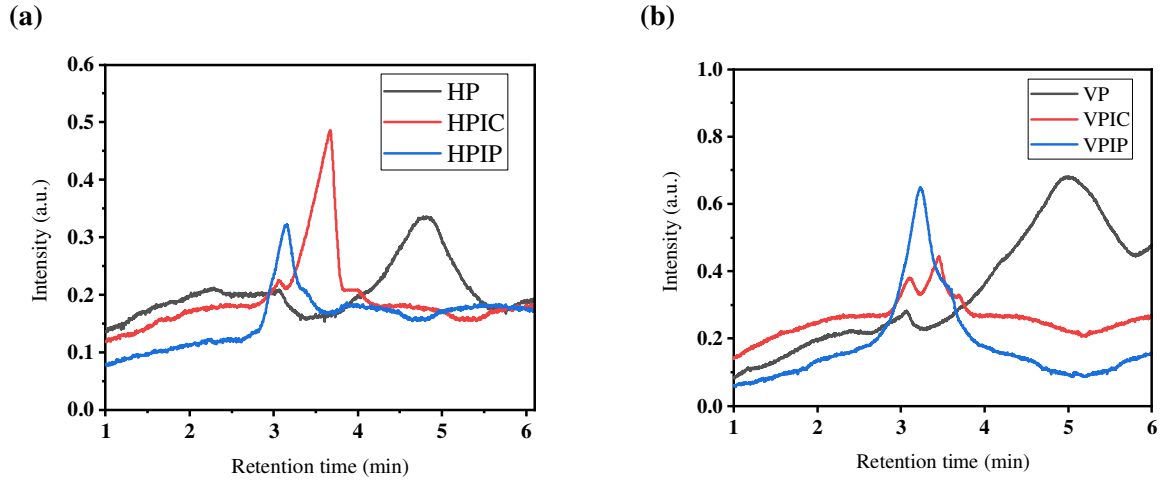

Figure S9. The gel permeation chromatography curves for the two polymer backbones HP and VP, before and after the modification with two antibacterial drugs penicillin G and chloramphenicol.

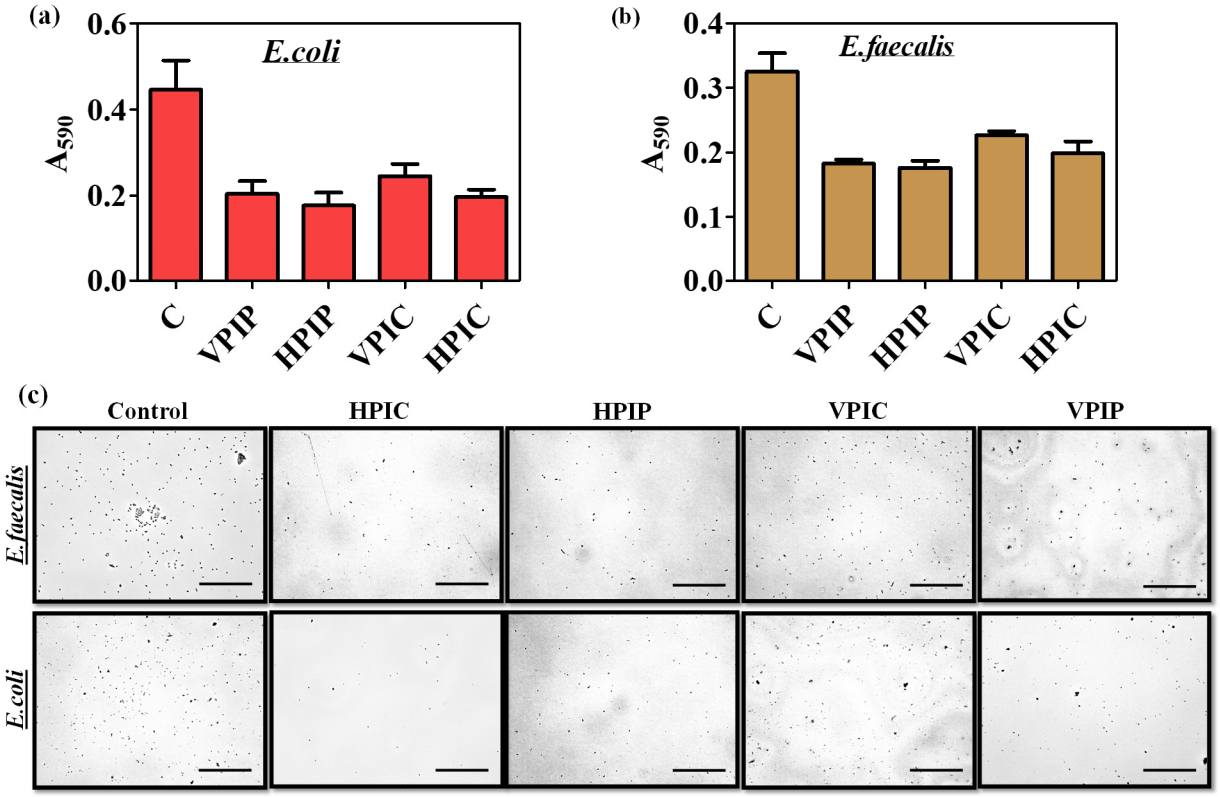

Figure S10. The crystal violet staining of the respective biofilms after being incubated with desired concentrations of VPIP, HPIP and VPIC, HPIC and compared against control samples in both *E. coli* (a) and *E. faecalis* (b) bacteria. The crystal violet stained images of the bacterial biofilm after respective treatments for both *E. coli* and *E. faecalis* bacteria are taken as greyscale images in optical microscope(c).

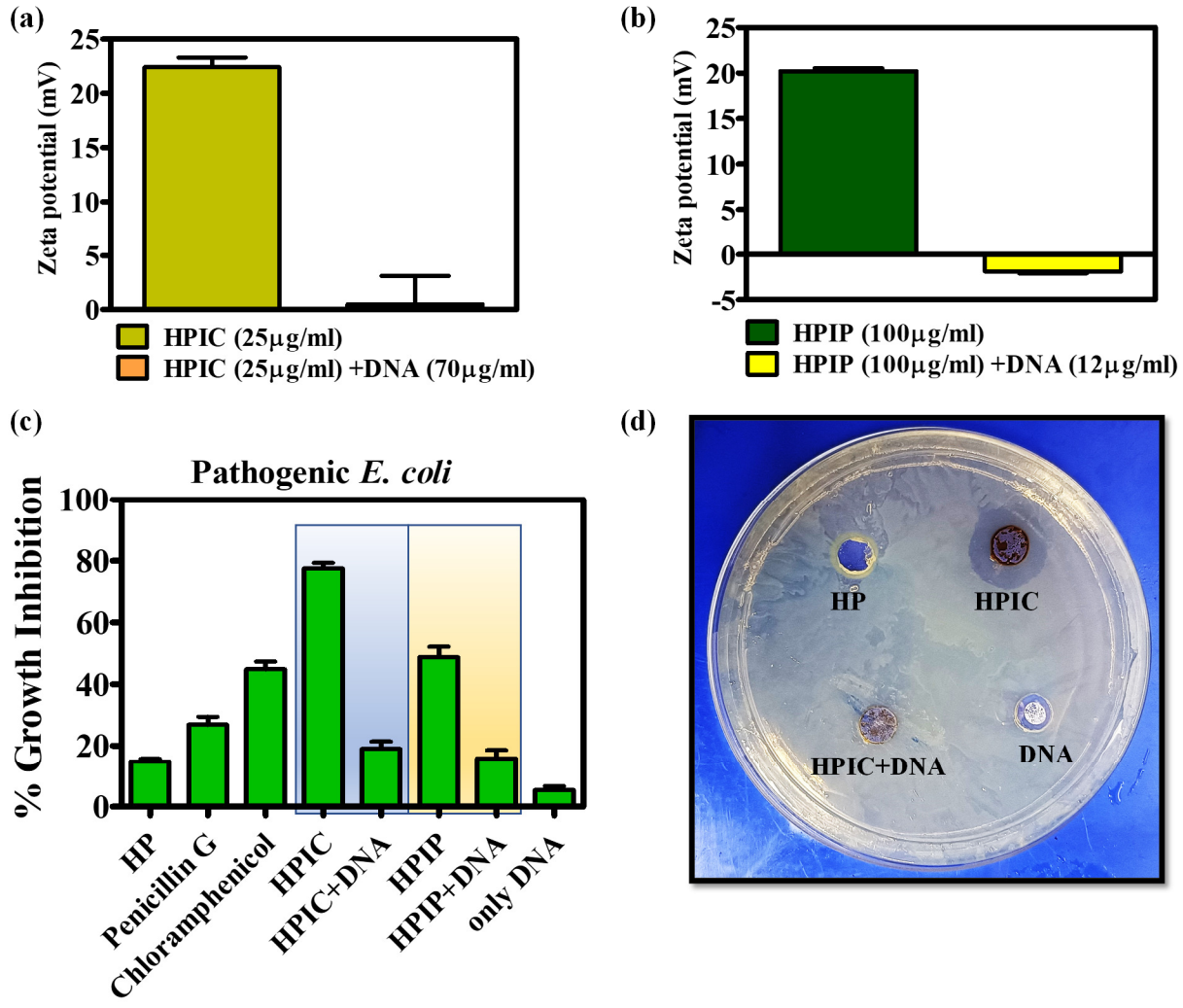

Figure S11. The zeta potential of the two potent drug conjugated PI molecules HPIC (a) and HPIP (b) were measured and the cationic charge density was neutralized by addition of respective amount of calf thymus DNA. The pathogenic E.coli bacterial inoculum were then incubated overnight in shaking condition at 37°C with respective treatments (c). The zone of inhibition assay was done with same bacterium against HPIC and HPIC neutral with DNA along with only HP and only DNA controls (d).

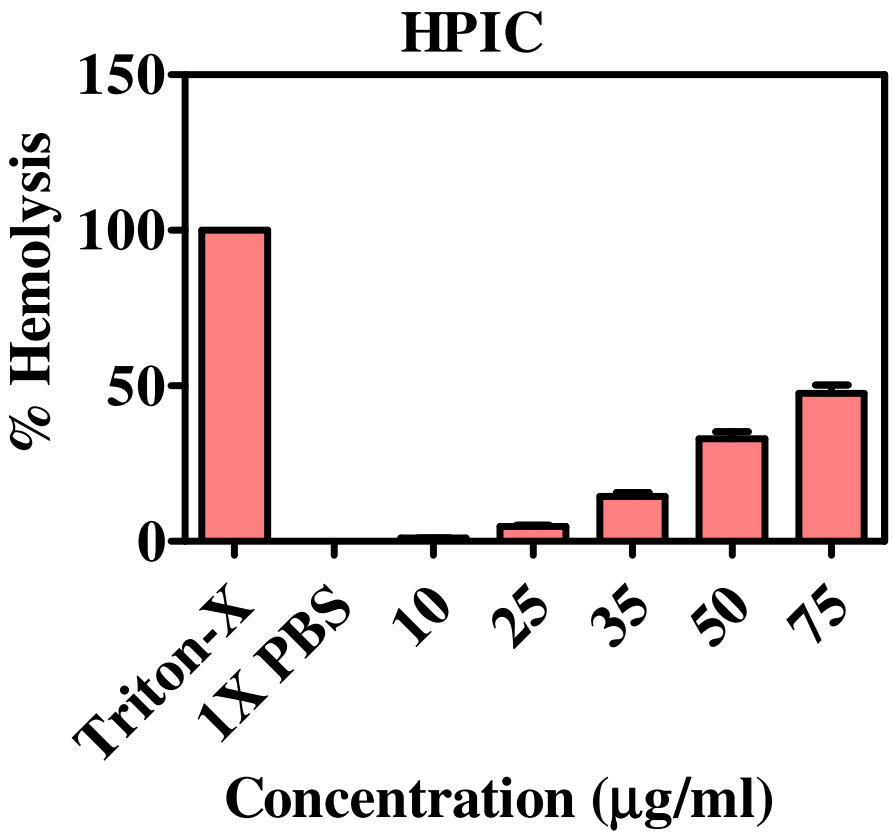

Figure S12. The toxicity of the HPIC material was tested by Hemolysis assay on mouse blood compared to Triton-X as positive control.

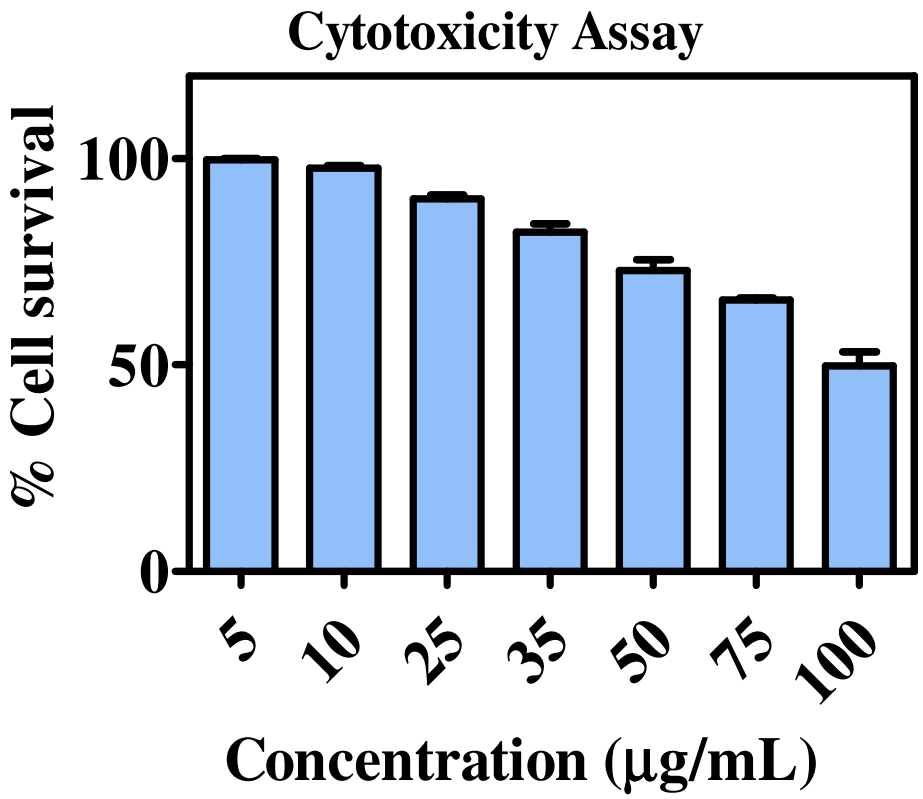

Figure S13. The cellular cytotoxicity of different concentrations of HPIC was monitored in McCoy cell line by MTT assay.