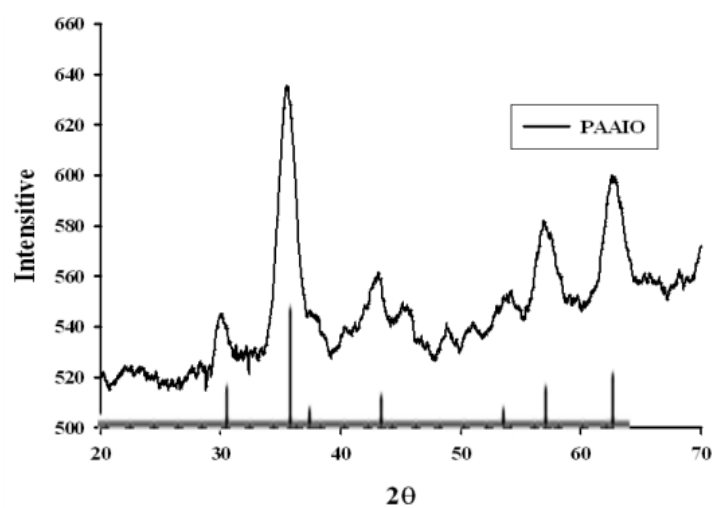
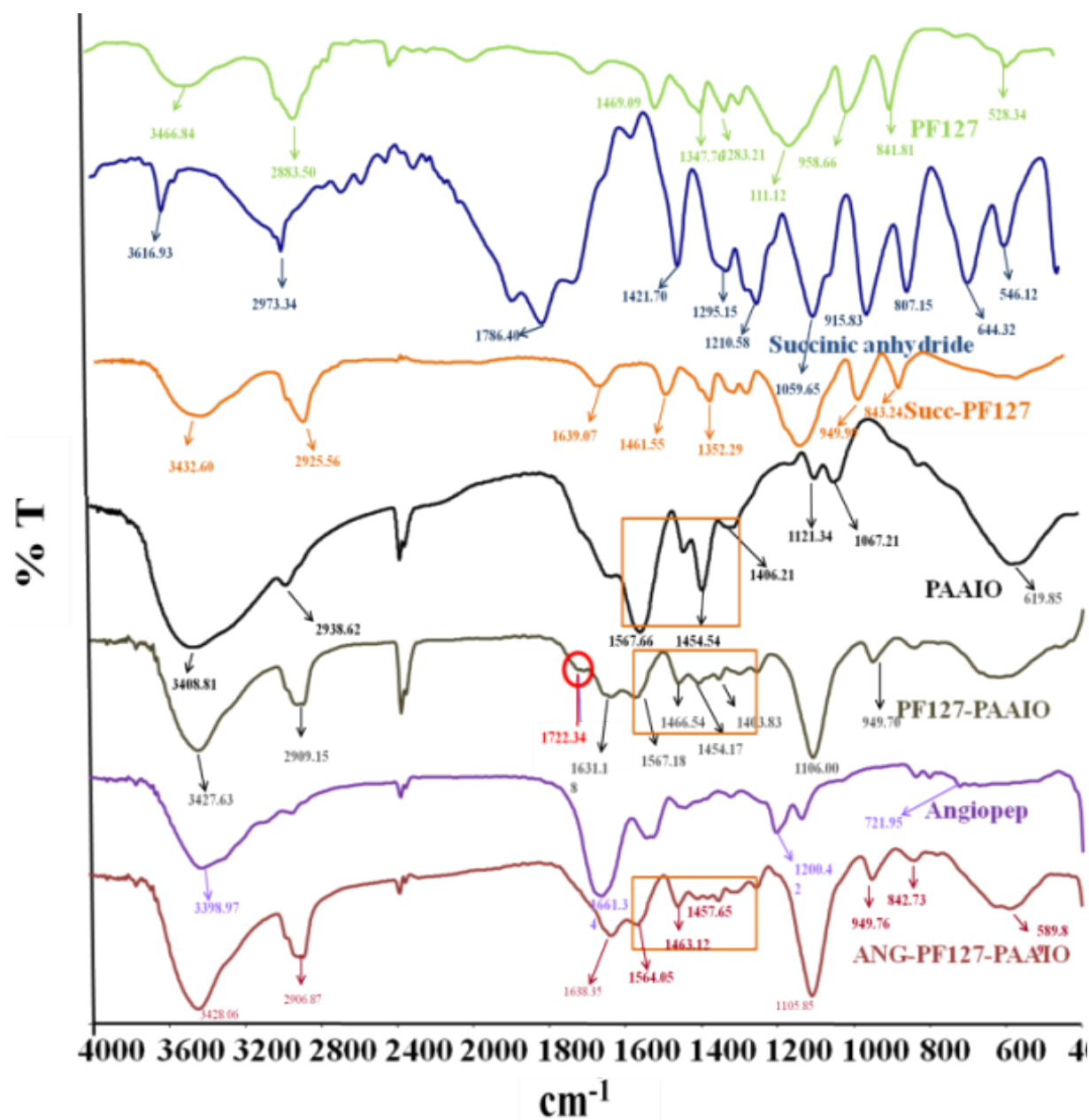


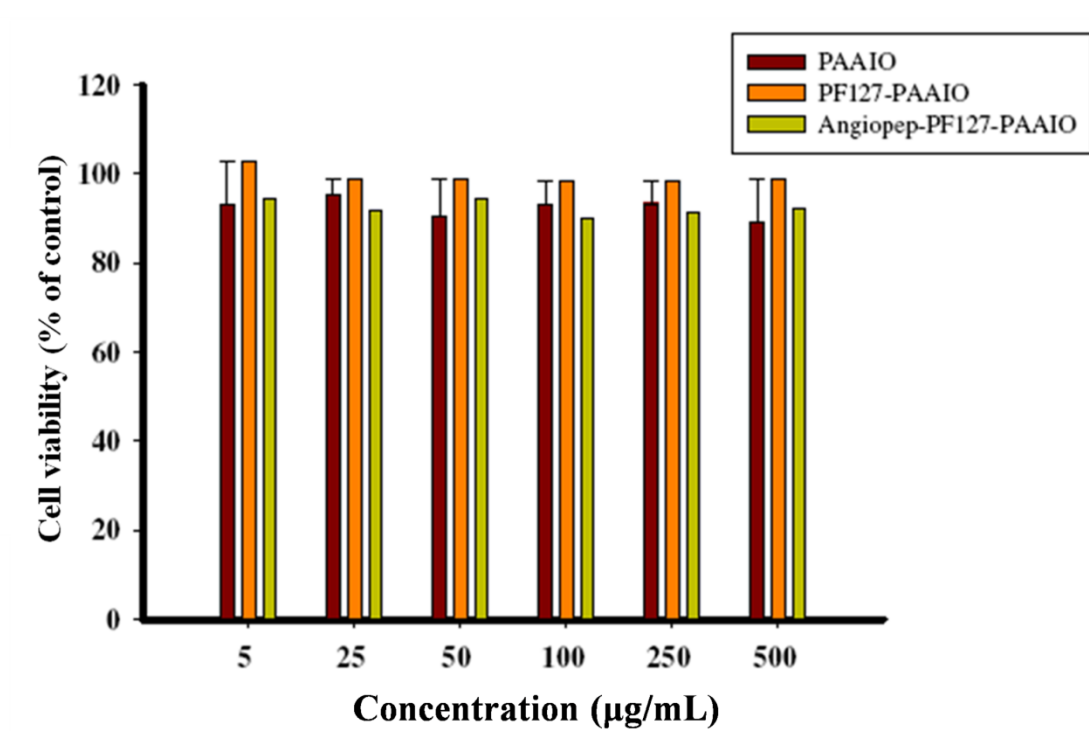
**Figure S1.** <sup>1</sup>H NMR spectrum of Succ-PF127



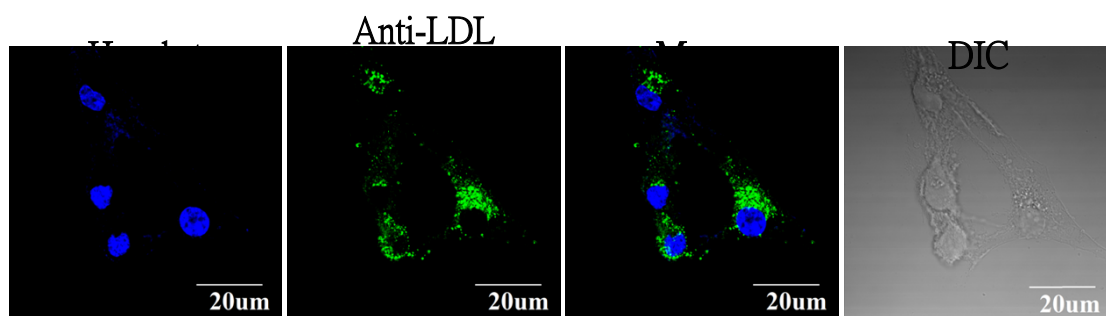
**Figure S2.** X-ray diffraction patterns for PAAIO nanoparticles.



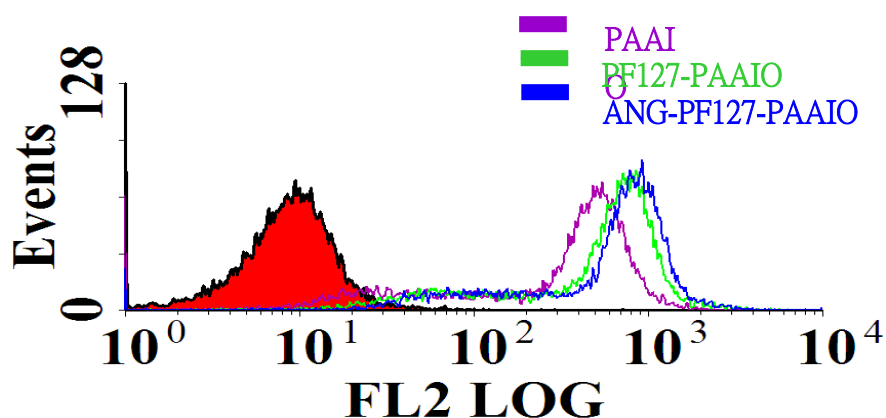
**Figure S3.** FTIR spectrum of PF127, succinic anhydride, Succ-PF127, PAAIO, PF127-PAAIO, Angiopep-2, ANG-PF127-PAAIO.



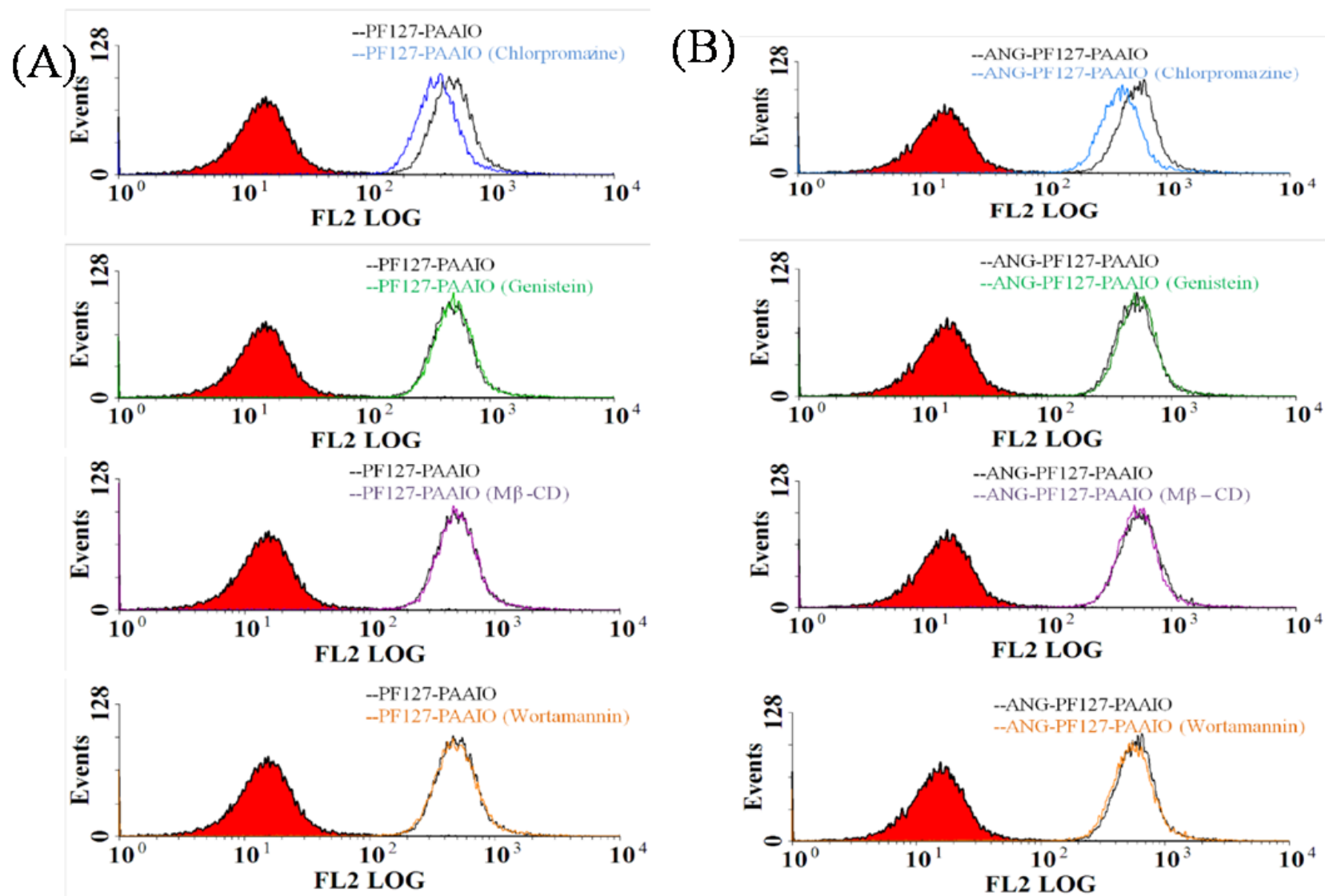
**Figure S4.** The viability of U87 cells exposed to PAAIO, PF127-PAAIO and ANG-PF127-PAAIO after 24 h of incubation. (n= 3)



**Figure S5.** CLSM images of anti-LDL receptor antibody stained U87 cells. The cells were fixed with 4% PFA and blocked in 1% BSA/PBS for 1h followed by incubated with anti-LDL antibody (2 $\mu$ g/ml) overnight at 4 °C. The secondary antibody, FITC (green) goat anti-rabbit IgG, was used at a 1/500 dilution for 1h. The nuclei were stained with Hoechst 433342.



**Figure S6.** Flow cytometric diagrams of PAAIO, PF127-PAAIO and ANG-PF127-PAAIO uptake in U87 cells at 2 h of incubation using a concentration of 300  $\mu$ g /mL.



**Figure S7.** Flow cytometric diagrams of (A) PF127-PAAIO and (B) ANG-PF127-PAAIO uptake in U87 cells with different inhibitors.