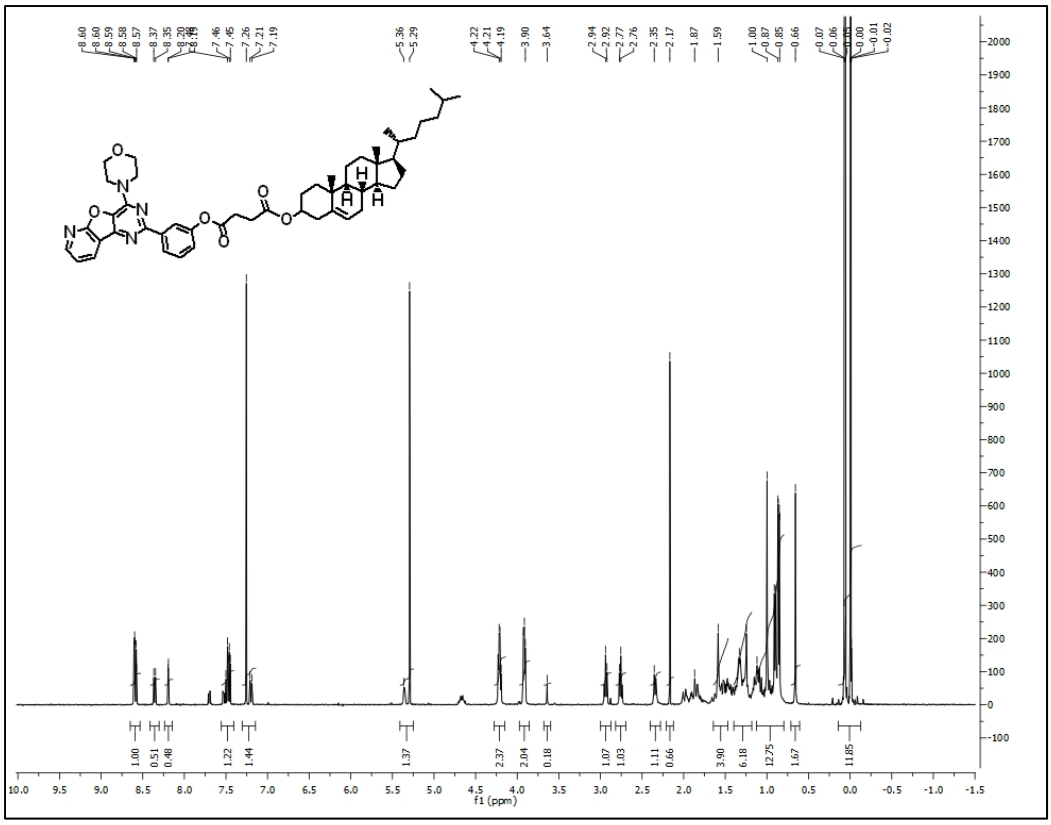


Figure S1: **Characterization of PI103-cholesterol conjugated.** Trace shows ^{1}H NMR spectra of PI103-cholesterol Conjugate

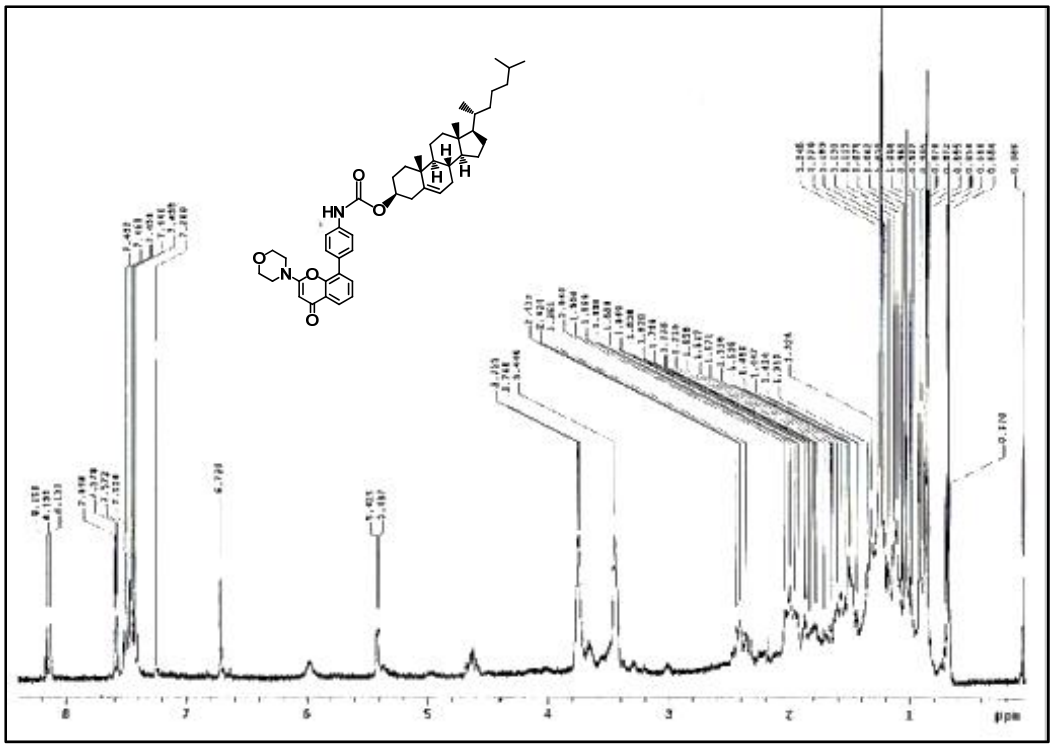


Figure S2: **Characterization of PI828-cholesterol conjugated.** Trace shows ^{1}H NMR spectra of PI828-cholesterol Conjugate

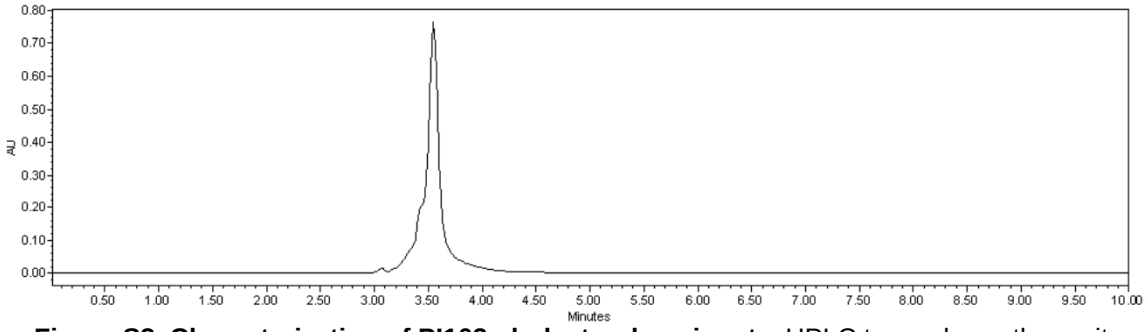
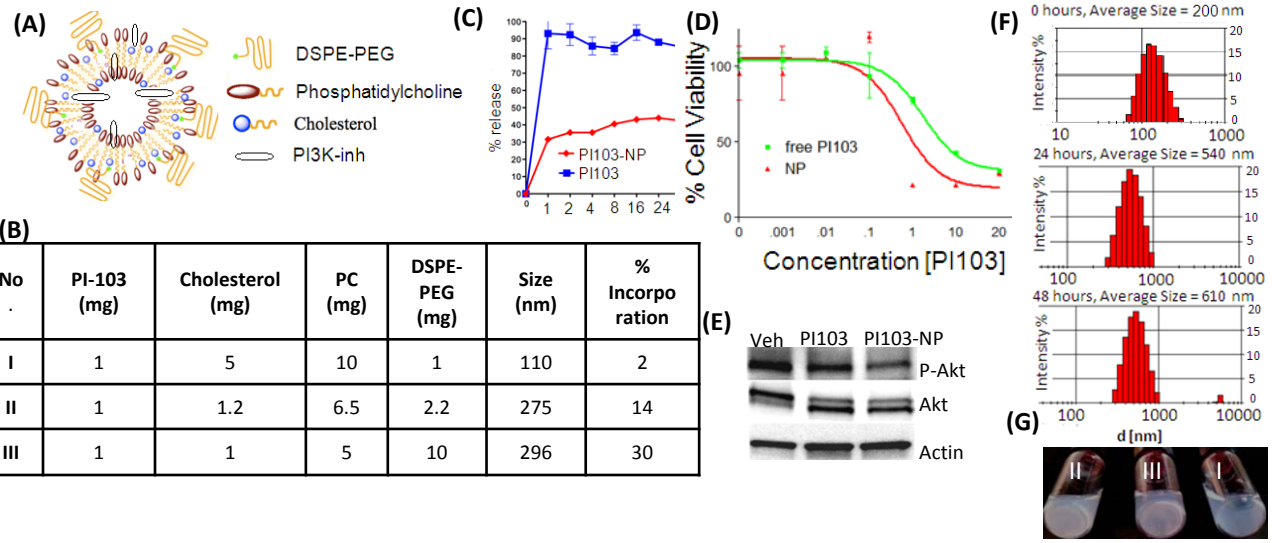


Figure S3: **Characterization of PI103-cholesterol conjugate.** HPLC trace shows the purity of PI-103-cholesterol conjugate.



(B)

No.	PI-103 (mg)	Cholesterol (mg)	PC (mg)	DSPE-PEG (mg)	Size (nm)	% Incorporation
I	1	5	10	1	110	2
II	1	1.2	6.5	2.2	275	14
III	1	1	5	10	296	30

Figure S4: **Synthesis and characterization of PI103-encapsulated nanoparticles. (A)** Representation shows PI103 encapsulated nanoparticles synthesized by self-assembly from phosphatidylcholine (PC), cholesterol conjugate and DSPE-PEG; **(B)** Table shows effect of different nanoparticle formulations on size and incorporation efficiency of PI-103; **(C)** Release kinetics studies of PI103 as a free drug and from PI103 encapsulated nanoparticle; MTS assay showing the effect of free PI-103 or PI103 encapsulated nanoparticle at different concentrations on cell viability of 4T1 cells **(D)** at 48h; **(E)** Expression of phospho AKT and Total AKT in 4T1 cells at 48 hours after treatment with either 5 µM of Free PI103 or PI-103 encapsulated nanoparticle; **(F)** Physical stability of PI103 encapsulated nanoparticles at different time intervals as shown by DLS graphs; **(G)** Pictorial presentation showing the physical stability of different PI-103 nanoformulation during storage conditions at 4^0C after 24h. In case of formulation I and II, the nanoparticles showed significant instability as seen by settling.

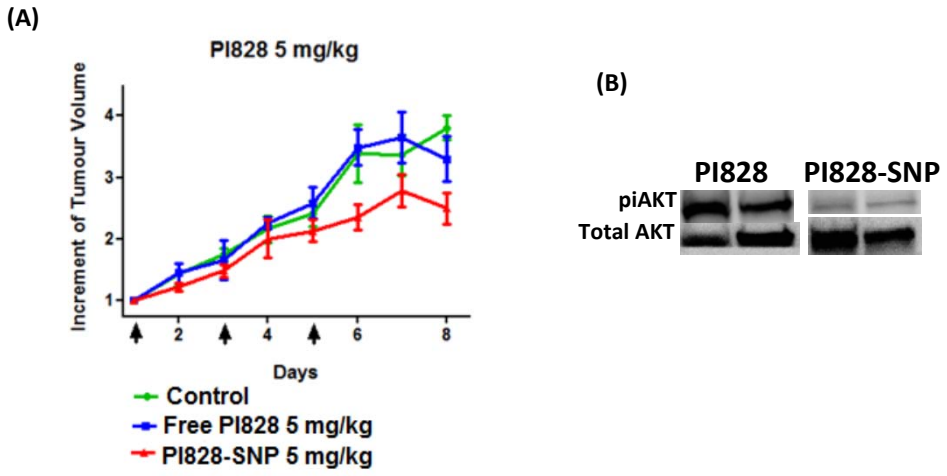


Fig. S5: ***In vivo*** **efficacy of PI828-SNPs in 4T1 breast cancer BALB/c mice bearing 8 day old subcutaneous tumors.** Each animal were injected with three doses of either PBS (for control group), 5 mg/kg of free PI828, 5mg/kg of PI828-SNP at same dose on each alternate days. **(A)** Graph shows tumor volumes measured starting Day 8 post-implantation. End point for each animal was tumor size>2000cm3 or tumor ulceration or necrosis or animal death. **(B)** Expression of piAKT in tumour after 72 hours of treatment with either free or Nanoparticle of PI828 in 5mg/Kg dose.