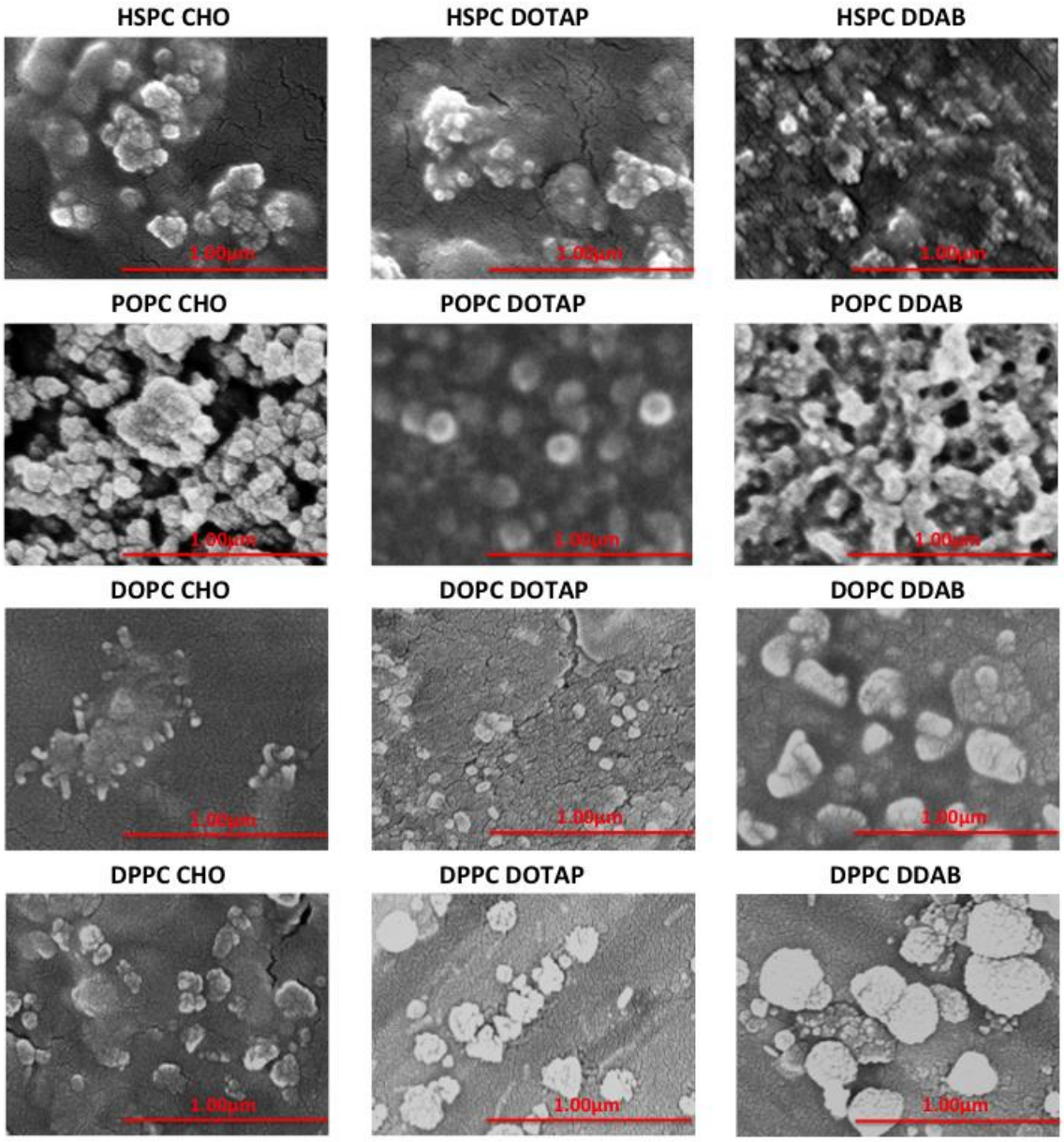
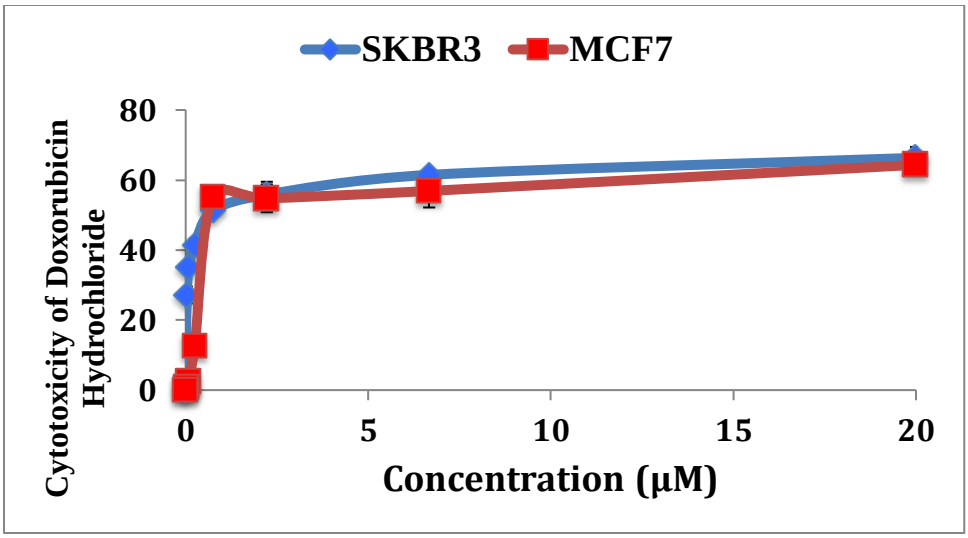
Supplement Material:



S1: Scanning Electron Microscopy (SEM) Images of Blank Liposomal Formulations



S2: Cytotoxicity of Doxorubicin Hydrochloride in Different Breast Cancer Cells;

Table S1: Molar ratio of Formulation Compositions

Components	HSPC	POPC	DOPC	DPPC	DSPE-PEG-2000	Mal-PEG-2000	CHO	DOPE	DOTAP	DDAB
	Molar Ratio									
F1	60				3		37			
F2	49				3	0.03		21	22	
F3	48				3	0.03		20		24
F4		61			3		36			
F5		50			3	0.03		20	22	
F6		49			3	0.03		20		23
F7			60		3		37			
F8			49		3	0.03		21	22	
F9			48		3	0.03		20		24
F10				62	3		35			
F11				51	3	0.03		20	21	
F12				50	3	0.03		20		23

Table S2: IC50 of Doxorubicin Solution and Liposomal Formulations over a period 48 h on MCF-7 and SKBR3 breast cancer cells. Data has been represented as the mean ± SD.

IC50 (µM)	**MCF-7**	**SKBR3**
DOX Solution	0.68±0.03	0.67±0.01
F1	0.61±0.04	0.65±0.03
F2	0.63±0.01	0.59±0.04
F3	0.42±0.02	0.53±0.03
F4	0.6±0.02	0.62±0.04
F5	0.53±0.03	0.54±0.02
F6	0.58±0.01	0.58±0.01
F7	0.57±0.01	0.55±0.01
F8	0.52±0.02	0.54±0.03
F9	0.55±0.02	0.55±0.02
F10	0.59±0.03	0.54±0.02
F11	0.56±0.03	0.52±0.03
F12	0.34±0.01	0.41±0.02

Table S3: Flow cytometric analysis of different formulations on MCF7 and SKBR3 breast cancer cells. *p<0.05, **p<0.01 and ***p<0.001 compared to the untreated control.

Samples		Count of Cells	Mean Fluorescence Intensity	P-value
MCF7	Control	10,000	4.8×10^3	
	Aptamer-A6-FITC	10,000	4.9×10^3	0.1885
	F1	10,000	4.7×10^3	0.4226
	F5	10,000	2.4×10^4	0.0173
	F8	10,000	5.0×10^3	0.1276
	F12	10,000	5.5×10^3	0.5674
SKBR3	Control	10,000	3.1×10^3	
	Aptamer-A6-FITC	10,000	4.1×10^3	0.0815
	F1	10,000	3.8×10^3	0.0624
	F5	10,000	7.6×10^3	0.00727
	F8	10,000	3.9×10^3	0.0591
	F12	10,000	4.5×10^3	0.0459

Table S4: Flow cytometric analysis of different formulations on Her-2 positive and Her-2 negative breast cancer cells. *p<0.05, **p<0.01 and ***p<0.001 compared to the untreated control.

Samples		Count of Cells	Mean Fluorescence Intensity	P-value
SKBR3	Control	10,000	3.3×10^3	
	DOX Solution	10,000	2.9×10^5	0.0016
	DOX-NP	10,000	2.2×10^4	0.0032
	DOXLP (F5)	10,000	7.5×10^5	0.0007

MDA-MB-231	Control	10,000	3.3×10^3	
	DOX Solution	10,000	2.8×10^5	0.0020
	DOX-NP	10,000	2.3×10^4	0.0027
	DOXLP (F5)	10,000	4.2×10^5	0.0004