Supporting Information

Verteporfin-loaded poly(ethylene glycol)-poly(beta-amino ester)- poly(ethylene glycol) triblock micelles for cancer therapy

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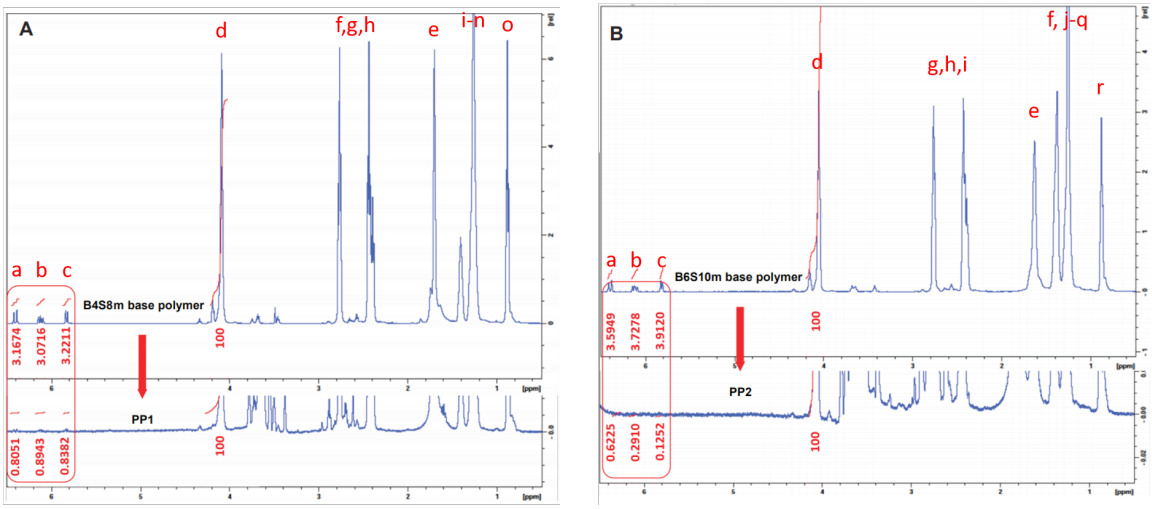


B4S8m:

0.85-1.00 (o, 3H, t, NCH2CH2CH2CH2CH2CH2CH2C***H3)***

1.2-1.35 (j/k/l/m/n, 10H, br, NCH2CH2C***H2***C***H2***C***H2***C***H2***C***H2***CH3),

1.35-1.45 (i, 2H, br, NCH2C***H2***CH2CH2CH2CH2CH2CH3),

1.65-1.8 (e, 4H, br, CH2CH2NCH2CH2(COO)CH2C***H2***C***H2***CH2(COO)),

2.3-2.4 (f/h, 6H, br, C***H2***CH2NCH2C***H2***(COO)CH2CH2CH2CH2(COO) and NC***H2***CH2CH2CH2CH2OH),

2.6-2.7 (g, 4H, br, CH2C***H2***NC***H2***CH2(COO)CH2CH2CH2CH2(COO)),

3.9-4.05 (d, 4H, br, CH2CH2NCH2CH2(COO)C***H2***CH2CH2C***H2***(COO)),

5.9-6 (b, 1H, d, COOCH=C***H2***),

6.1-6.2 (c, 1H, dd, COOC***H***=CH2),

6.3-6.4 (a, 1H, d, COOCH=C***H2***)

B6S10m:

0.85-1.00 (r, 3H, t, NCH2CH2CH2CH2CH2CH2CH2CH2CH2CH2C***H3)***

1.2-1.35 (k/l/m/n/o/p/q, 14H, br, NCH2CH2C***H2***C***H2***C***H2***C***H2***C***H2***C***H2***C***H2***CH3),

1.35-1.45 (j/f, 6H, br, NCH2C***H2***CH2CH2CH2CH2CH2CH2CH2CH3 and CH2CH2NCH2CH2(COO)CH2CH2C***H2***C***H2***CH2CH2(COO)),

1.65-1.8 (e, 4H, br, CH2CH2NCH2CH2(COO)CH2C***H2***CH2CH2C***H2***CH2(COO)),

2.3-2.4 (g/i, 6H, m, C***H2***CH2NCH2C***H2***(COO)CH2CH2CH2CH2(COO) and NC***H2***CH2CH2CH2CH2OH),

2.6-2.7 (h, 4H, t, CH2C***H2***NC***H2***CH2(COO)CH2CH2CH2CH2(COO)),

3.9-4.05 (d, 4H, br t, CH2CH2NCH2CH2(COO)C***H2***CH2CH2CH2CH2C***H2***(COO)),

5.9-6 (b, 1H, d, COOCH=C***H2***),

6.1-6.2 (c, 1H, dd, COOC***H***=CH2),

6.3-6.4 (a, 1H, d, COOCH=C***H2***)

D

PBAE base polymer	Molecular Weight (Da)	Partition Coefficient (logP)
B4S8m	5100	4.71
B6S10m	4305	6.63

Figure S1. Polymer characterization. ^{1}H NMR spectra for the backbone PBAE (top) and the PEG-thiol endcapped PBAE (bottom) for (A) PP1 and (B) PP2 polymers. The absence of the acrylate peaks (red box) in the copolymer plot confirms that methoxy-PEG-thiol has successfully conjugated to the diacrylate ends of the PBAE base polymer. (C) Polymer structure of B4S8m and B6S10m PBAE base polymers with letters to indicate corresponding hydrogen peaks in NMR spectra. (D) Molecular weight and partition coefficient of two base PBAE polymers used to synthesize PEGylated triblock copolymer.

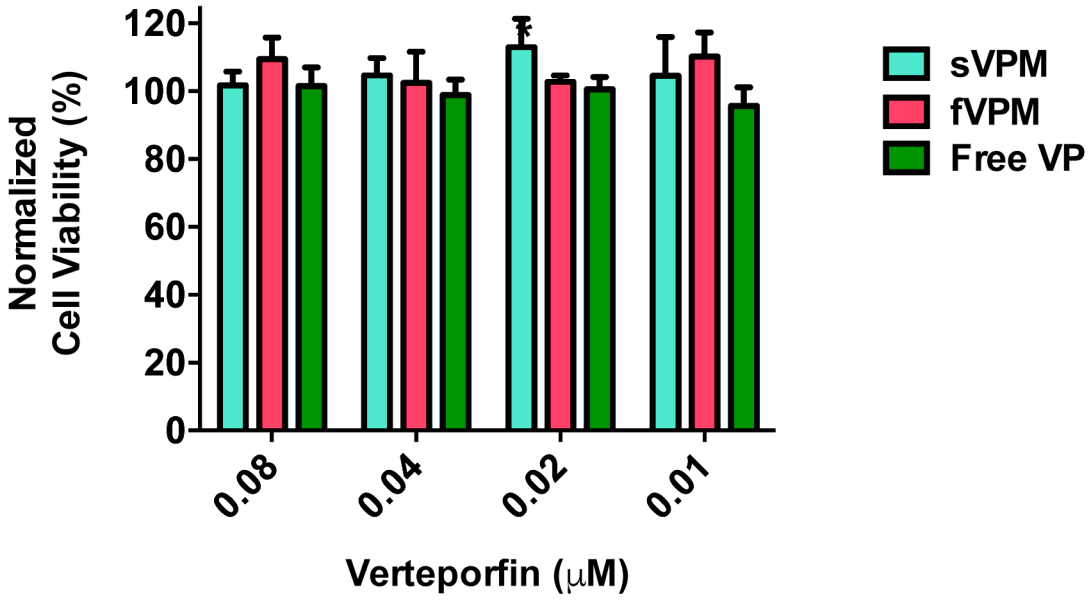
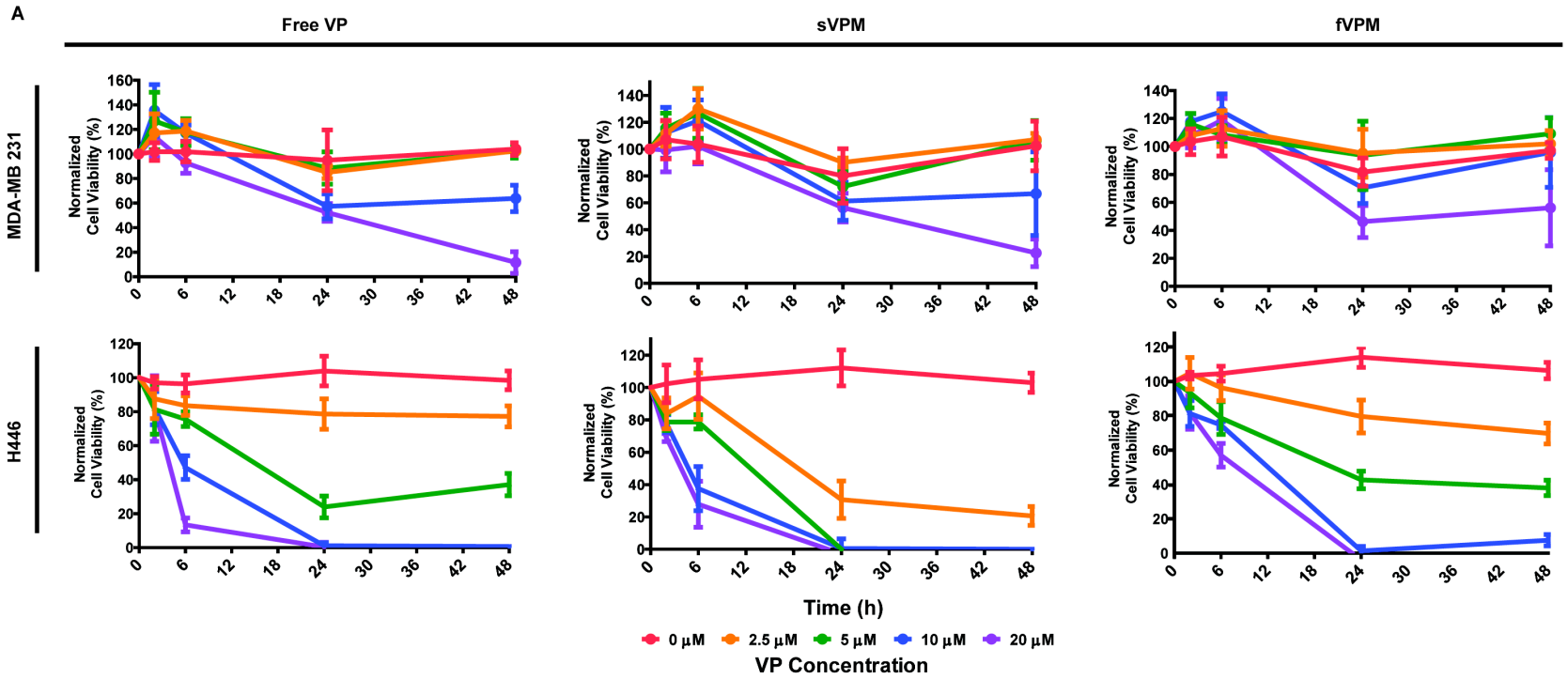


Figure S2. RAW 264.7 cell viability. Metabolic activity measured by MTS assay of macrophages 24 h post-treatment with free VP, sVPM, and fVPM at concentrations ranging from 0.01 – 0.08 μM (n=4, mean ± SD, One-way ANOVA with Tukey post-hoc test).


A
Free VP
sVPM
fVPM
MDA-MB 231
H446
Normalized Cell Viability (%)
Time (h)
0 μM
2.5 μM
5 μM
10 μM
20 μM
VP Concentration

B

MDA-MB 231		2 hr					6 hr					24 hr					48 hr				
		0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM
Free VP	2.5 μM	ns					ns					ns					ns				
	5 μM	ns	ns				ns	ns				ns	ns				ns	ns			
	10 μM	ns	ns	ns			ns	ns	ns			*	ns	ns			***	***	***		
	20 μM	ns	ns	ns	ns		ns	**	**	*		**	*	*	ns		***	***	***	***	
sVPM	2.5 μM	ns					ns					ns					ns				
	5 μM	ns	ns				ns	ns				ns	ns				ns	ns			
	10 μM	ns	ns	ns			ns	ns	ns			ns	ns	ns			ns	ns	ns		
	20 μM	ns	ns	ns	ns		ns	ns	ns	ns		ns	*	ns	ns		***	***	***	*	
fVPM	2.5 μM	ns					ns					ns					ns				
	5 μM	ns	ns				ns	ns				ns	ns				ns	ns			
	10 μM	ns	ns	ns			ns	ns	ns			ns	ns	ns			ns	ns	ns		
	20 μM	ns	ns	ns	ns		ns	ns	ns	ns		ns	**	**	ns		ns	*	**	ns	

H446		2 hr					6 hr					24 hr					48 hr				
		0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM	0 μM	2.5 μM	5 μM	10 μM	20 μM
Free VP	2.5 μM	ns					*					***					***				
	5 μM	ns	ns				ns	***				***	***				***	***			
	10 μM	ns	ns	ns			***	***	***			***	***	**			***	***	***		
	20 μM	ns	ns	ns	ns		***	***	***	***		***	***	**	ns		***	***	***	ns	
sVPM	2.5 μM	8					ns					***					***				
	5 μM	**	ns				ns	ns				***	***				***	***			
	10 μM	**	ns	ns			***	***	**			***	***	ns			***	***	ns		
	20 μM	***	ns	ns	ns		***	***	***	ns		***	***	ns	ns		***	***	ns	ns	
fVPM	2.5 μM	ns					ns					***					***				
	5 μM	ns	ns				***	*				***	***				***	***			
	10 μM	*	**	ns			***	**	ns			***	***	***			***	***	***		
	20 μM	*	*	ns	ns		***	***	**	*		***	***	***	ns		***	***	***	ns	

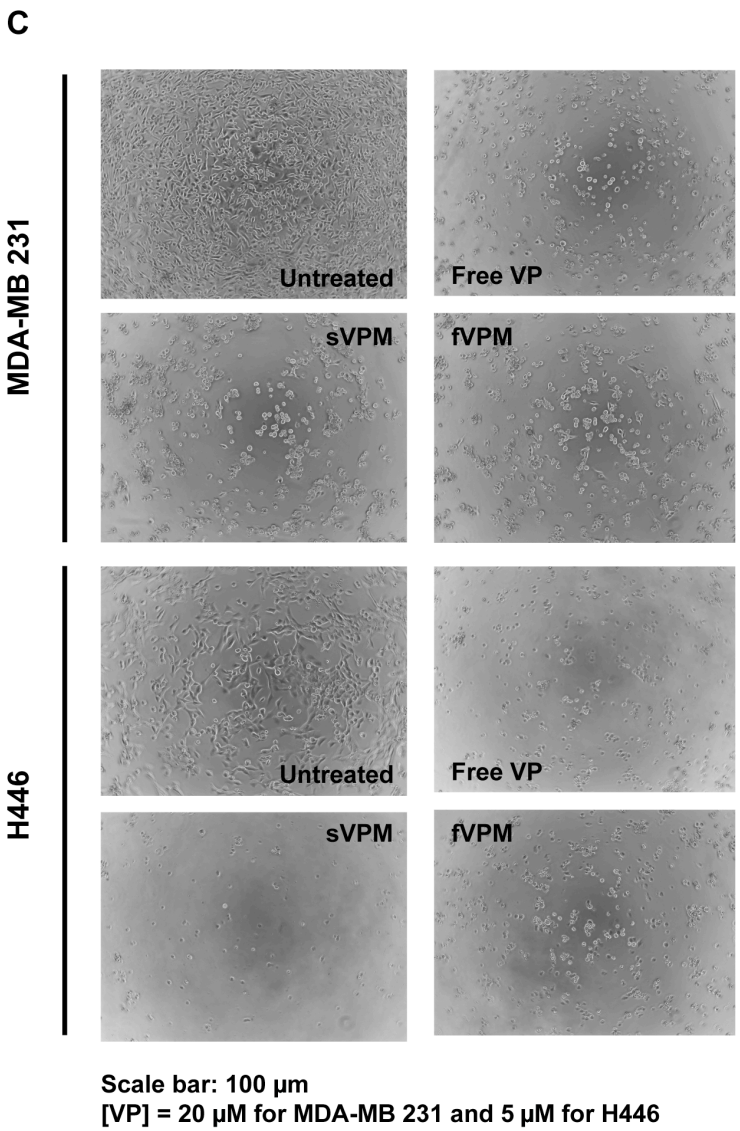


Figure S3. VP-induced cell death. (A) Cell killing kinetics with free VP, sVPM, and fVPM measured at 2, 6, 24, and 48 hr timepoints at equivalent VP concentrations from 2.5 - 20 µM (n=4, mean ± SD, One-way ANOVA with Tukey post-hoc test), (B) statistical analysis summary, and (C) representative bright-field image of MDA-MB 231 and H446 cells at stated VP concentration at 24 hr.