Supporting Information

Table S1 Orthogonal experiment of HDTM micelles.

Test	A	B	C	D	Size (nm)	EE of HYP	EE of DXM
1	2.50%	20%	0.5	1 : 4	91.72	1	0.4
2	2.50%	30%	1	1 : 8	144.77	1	0.41
3	2.50%	40%	1.5	1 : 10	172.67	1	0.53
4	5.00%	20%	1	1 : 10	501	0.97	0.43
5	5.00%	30%	1.5	1 : 4	272.9	0.98	0.46
6	5.00%	40%	0.5	1 : 8	254.23	1	0.36
7	7.50%	20%	1.5	1 : 8	155	1	0.5
8	7.50%	30%	0.5	1 : 10	579.9	1	0.39
9	7.50%	40%	1	1 : 4	123.07	0.83	0.38
				Size			
K1	136.38	249.24	308.62	162.56	**Optimization levels**		
K2	342.71	332.52	256.28	184.67	**DABC**		
K3	285.99	183.32	200.19	417.85	**Optimal formulation for size**		
R	206.33	149.2	108.43	255.29	**D1 A1 B3 C3**		
				EE of HYP			
T1	1	0.991	1	0.94	**Optimization levels**		
T2	0.986	0.995	0.936	1	**CDAB**		
T3	0.945	0.945	0.995	0.991	**Optimal formulation for EE of HYP**		
R	0.055	0.05	0.064	0.06	**C1 D2 A1 B2**		
				EE of DXM			
Z1	0.447	0.443	0.383	0.41	**Optimization levels**		
Z2	0.417	0.42	0.407	0.427	**CDAB**		
Z3	0.423	0.423	0.5	0.45	**Optimal formulation for EE of DXM**		
R	0.03	0.023	0.117	0.04	**C3 D3 A1 B1**		
					Optimal combination		
					A1 B3 C3 D1		

Note: A, HYP (%); **B**, Ultrasonic power (w); **C**, F68 concentration (%); **D**, Oil / Water (v/v)

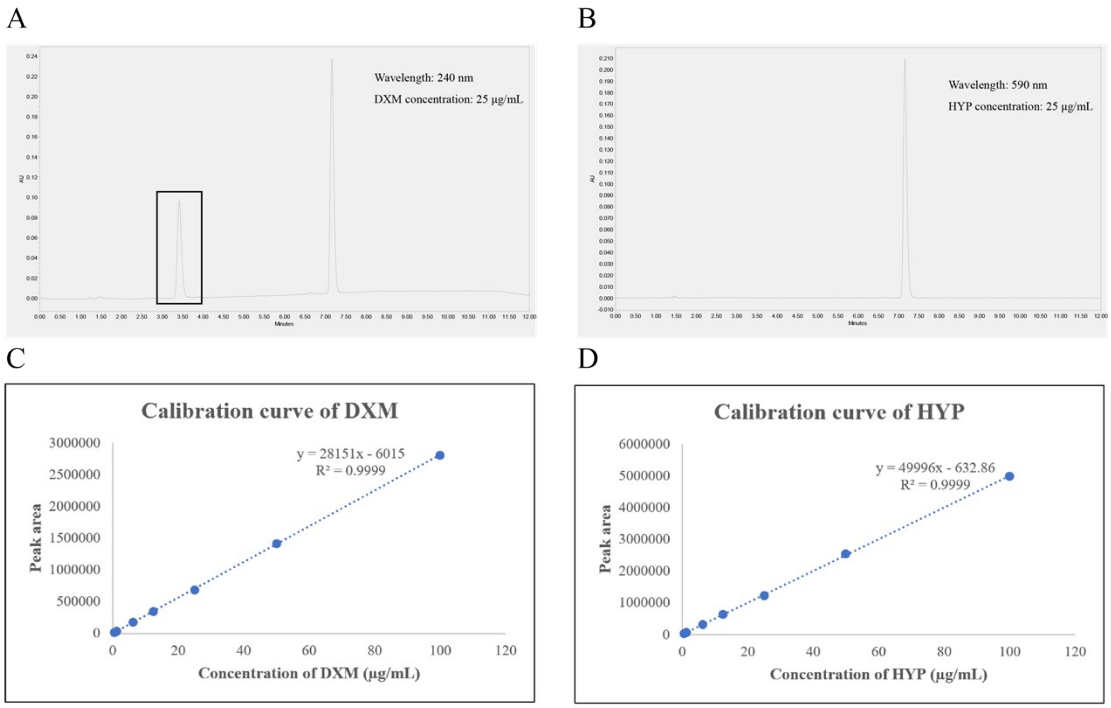

Fig. S1 Chromatogram and Calibration Curves of HYP and DXM. (**A**) Chromatographic peak of DXM and (**B**) chromatographic peak of HYP. (**C**) Calibration curves of DXM and (**D**) HYP.

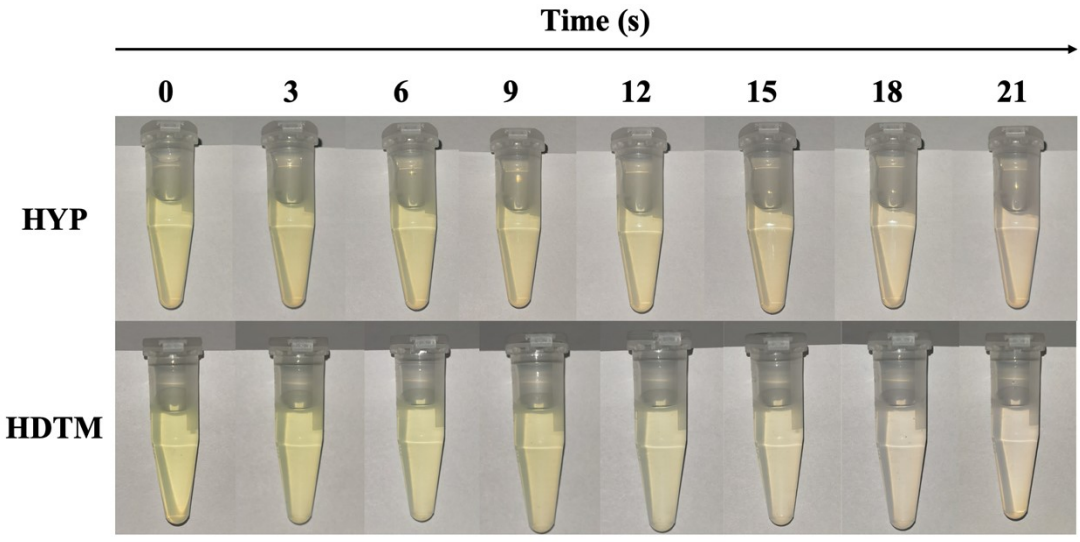

Fig. S2 The fading process after DPBF reacts with ROS produced by HYP.

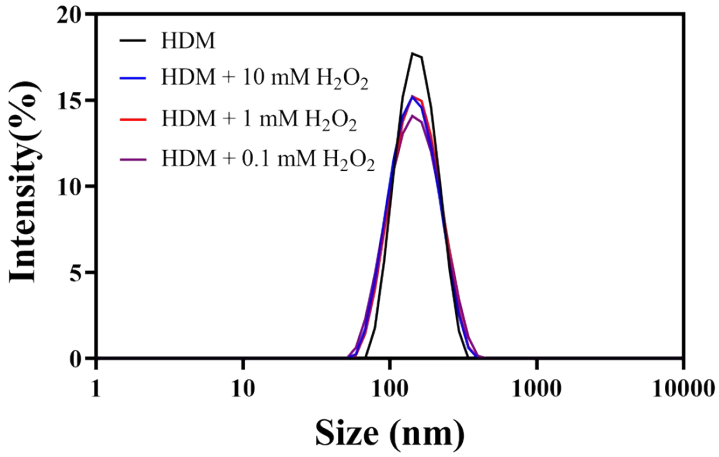

Fig. S3 Particle size changes of the HDM in response to various ROS conditions.

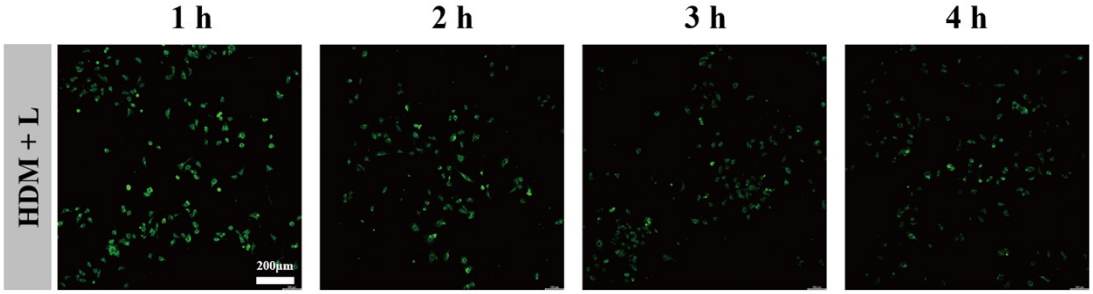

Fig. S4 Fluorescence analysis of intracellular ROS produced by HDM in 4T1 cells.

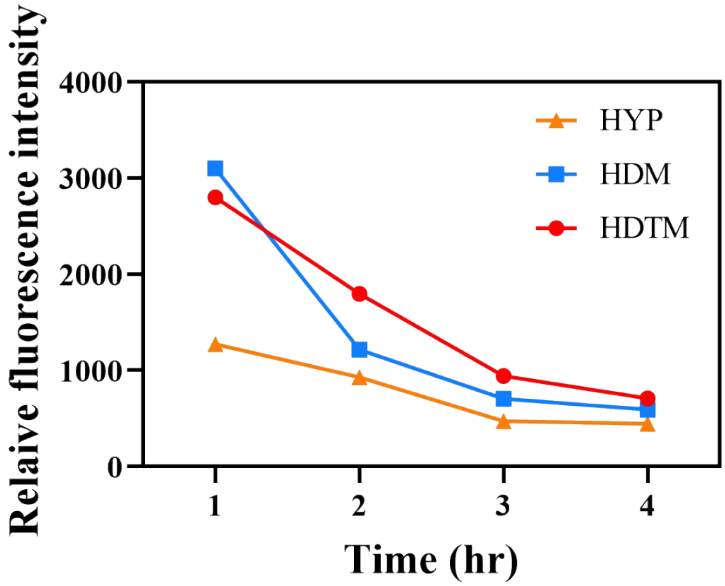

Fig. S5 Quantitative analysis of intracellular ROS produced by HYP formulations in 4T1 cells.

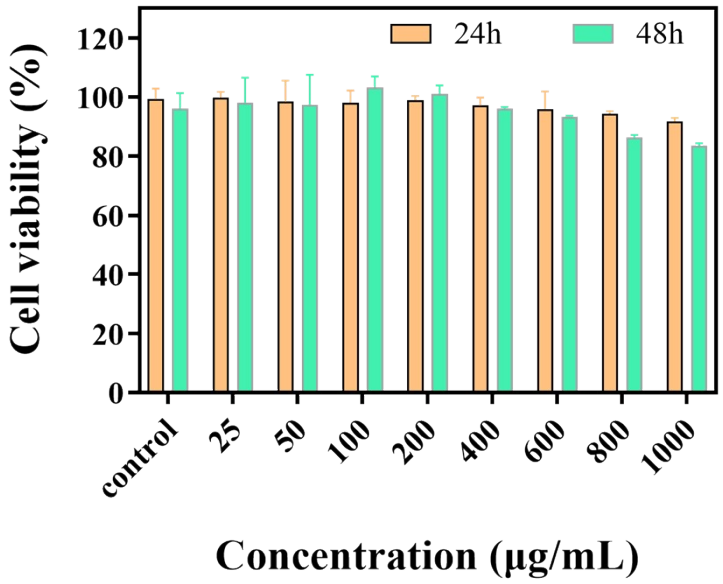

Fig. S6 The cytotoxicity of polymer $PLGA_{10k}$-TK-PEG_{2k} in 4T1 cells determined by MTT assay (n=3).

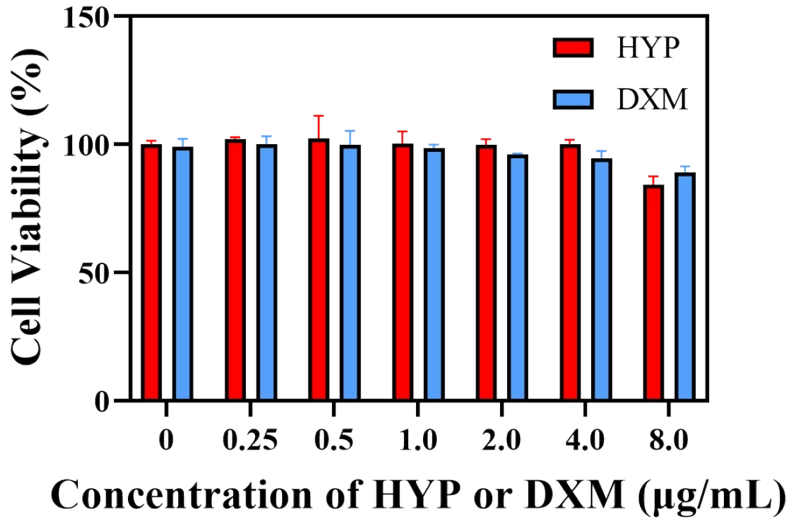

Fig. S7 The cytotoxicity of HYP and DXM in 4T1 cells determined by MTT assay (n=3).

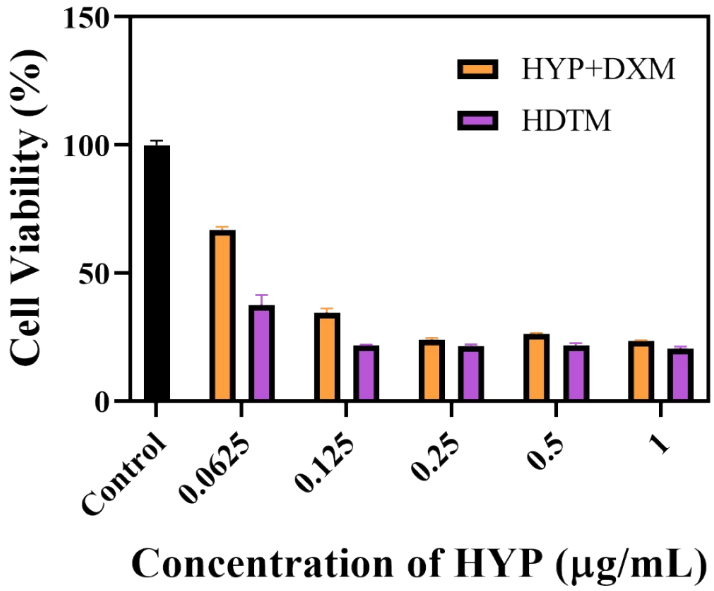

Fig. S8 Phototoxicity of HYP formulations in B16 cells determined by MTT assay (n=3).

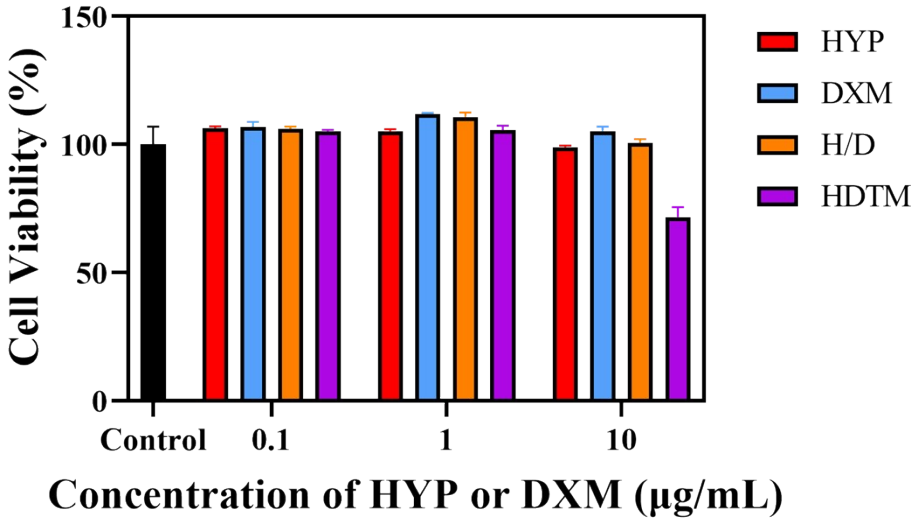

Fig. S9 Cytotoxicity of DXM and HYP formulations in HUVEC cells determined by MTT assay (n=3).