

Supporting Information

Development of Anticancer Peptides with Low Hemolysis, High Penetrating Membrane Activity, Certain Analgesic Activity and the Synergistic Anticancer Effect

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1. Wheel projection, stick model and CD spectrum of P8 peptide

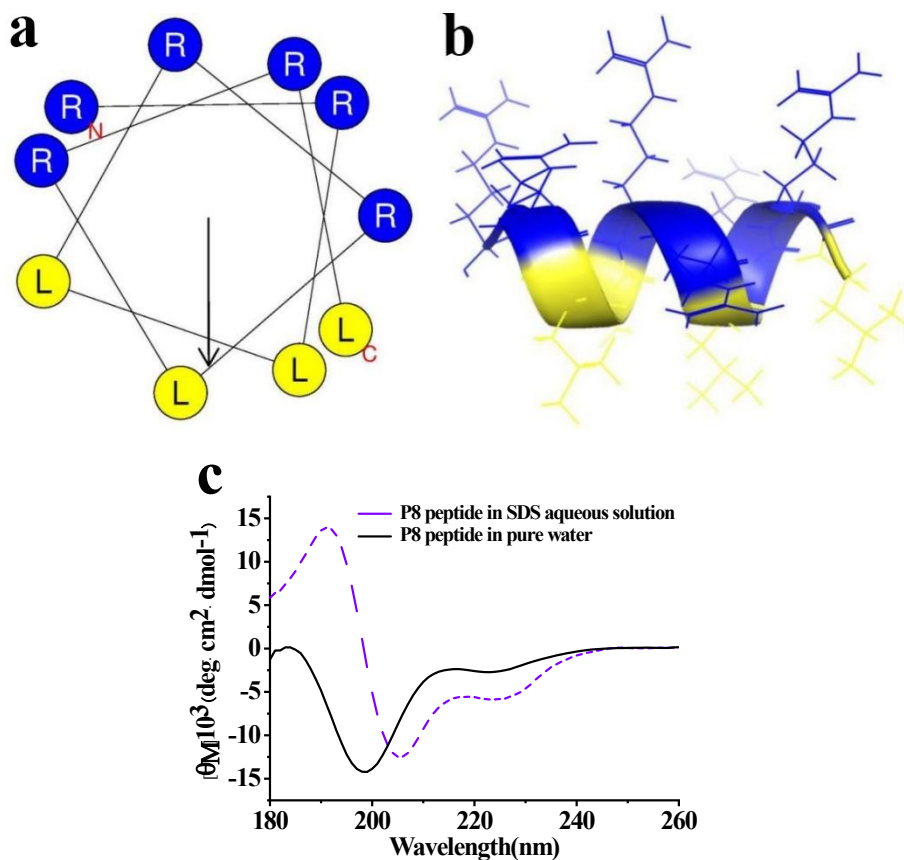


Figure S1. Wheel projection, Stick model and CD spectrum of P8 peptide. (a) α -helical wheel projection picture of P8 peptide; (b) Stick model of P8 peptide; (c) Detection of the secondary structure of P8 peptide by CD spectrum.

Talbe S1. Proportion of secondary structure at 180-260 nm.

Secondary structure	P8 in water	P10 in water	P8 in SDS solution	P10 in SDS solution
Helix	5.5%	11.0%	27.3%	34.4%
Antiparallel	4.4%	22.1%	36.3%	25.1%
Parallel	2.0%	2.0%	1.8%	2.4%
Beta-Turn	40.5%	27.8%	29.4%	27.0%
Rndm. Coil	64.5%	39.3%	20.7%	22.2%
Total Sum	116.9%	102.2%	115.4%	111.0%

2. Mass spectrum

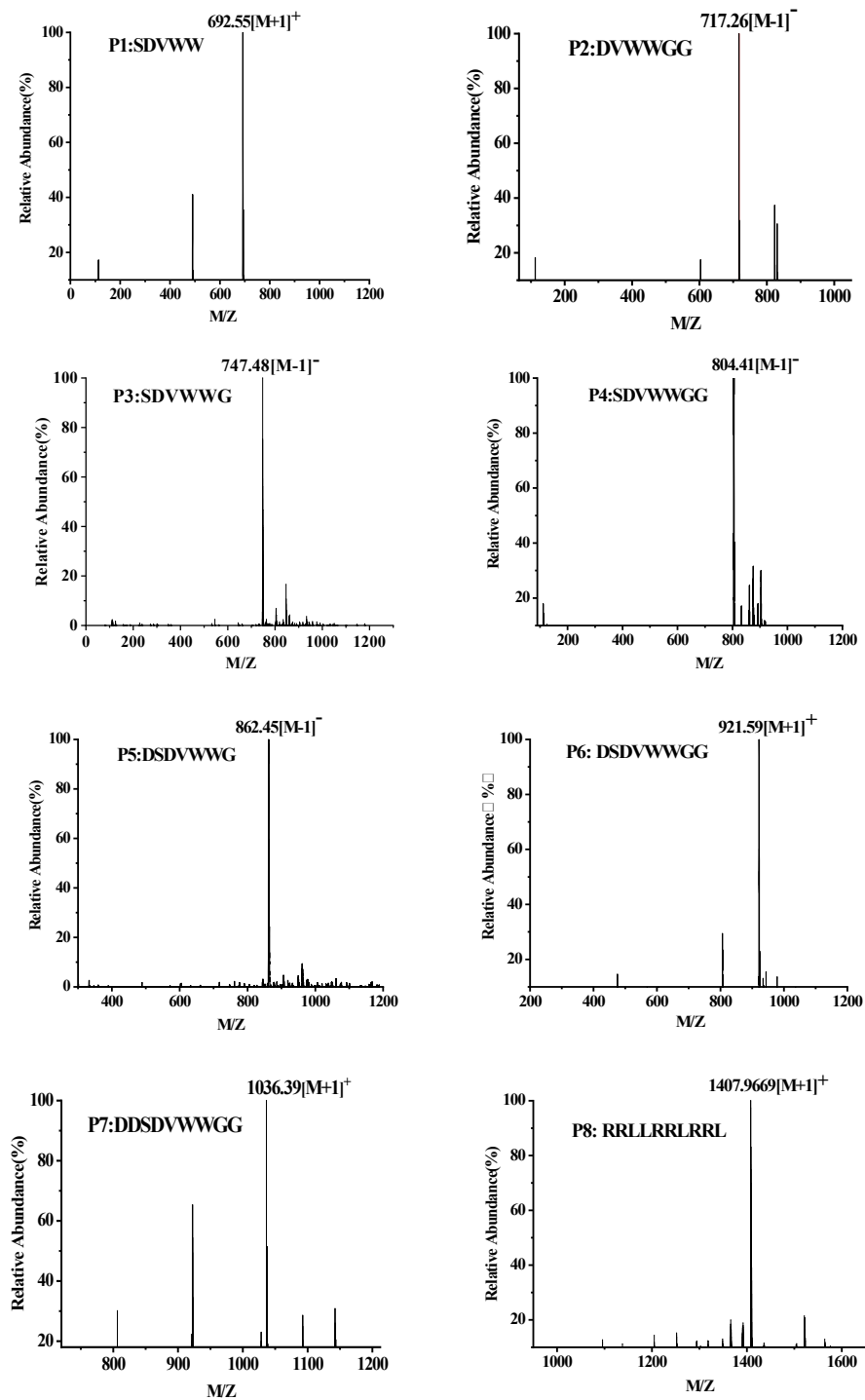


Figure S2. Mass spectrum of peptides synthesized.

3. In vitro anticancer activity

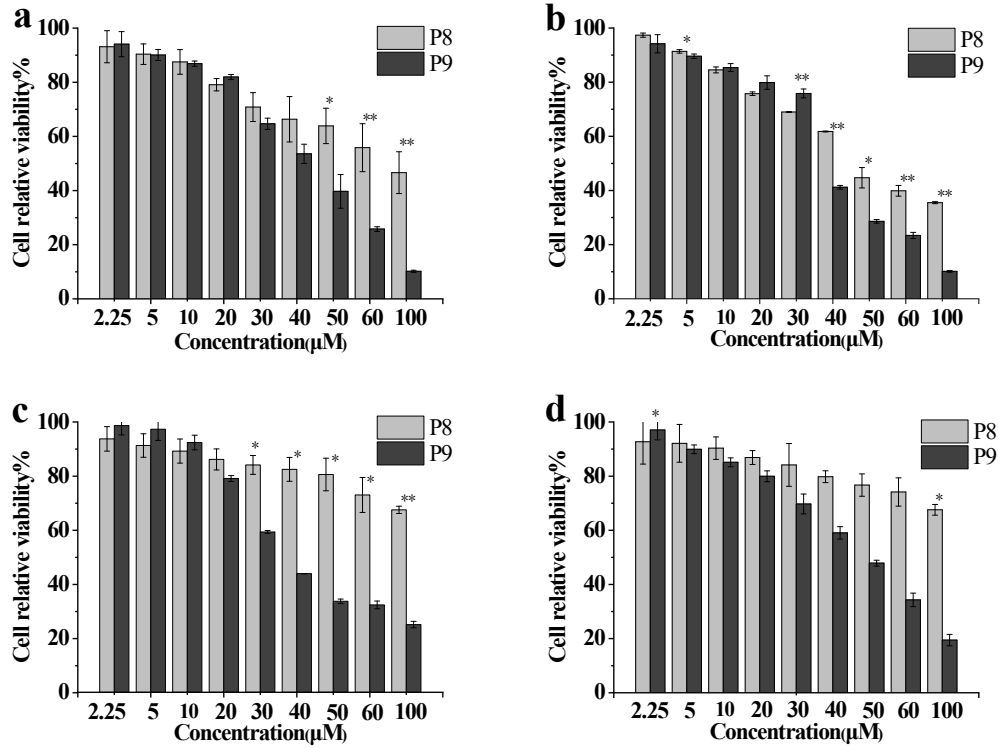


Figure S3. In vitro anticancer activity of P8 and P9. (a-b) The H22 cell relative survival rate of different concentrations of P8 and P9 which were incubated with H22 cells for 24 h(a) and 48 h(b) respectively; (c) The Hela cell relative survival rate of different concentrations of P8 and P9 which were incubated with Hela cells for 24 h; (d) The HepG2cell relative survival rate of different concentrations of P8 and P9 which were incubated with HepG2 cells for 24 h. * $p<0.05$, ** $p<0.01$.

4. Tissue anatomy

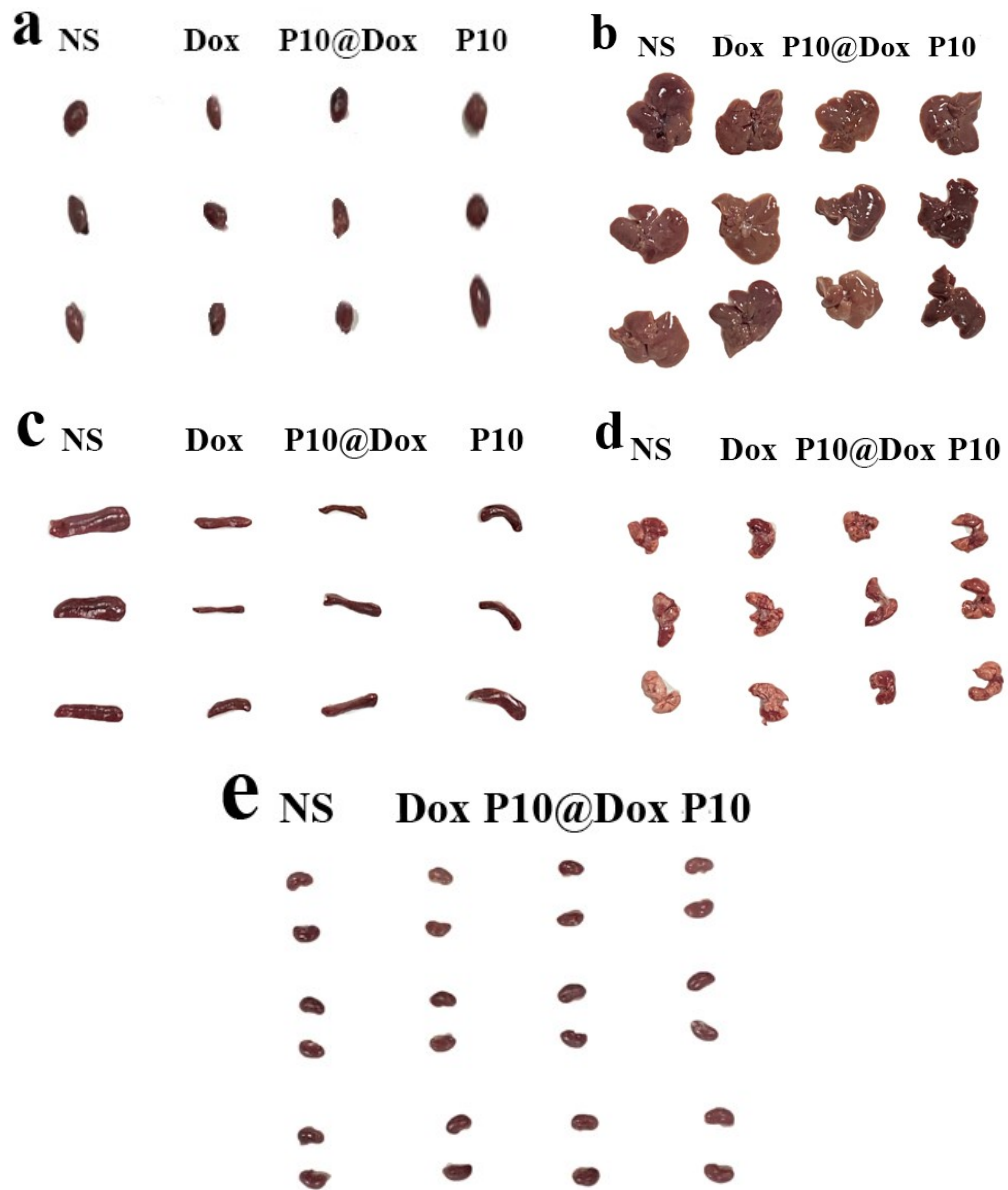


Figure S4. Tissue anatomy pictures. The heart(a), liver(b), spleen(c), lung(d) and kidney(e) anatomy pictures of the tumor-bearing mice.

5. Tissue sections

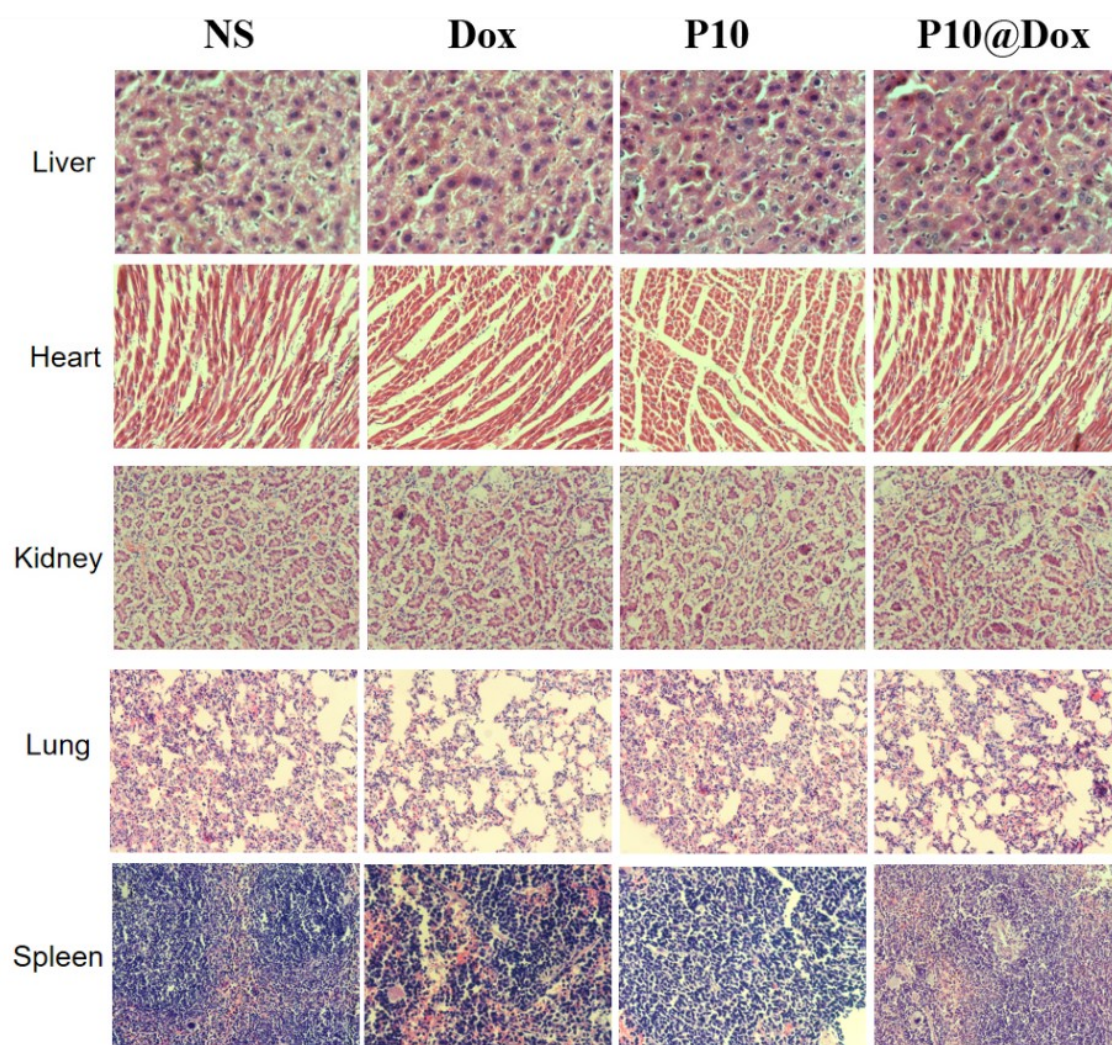


Figure S5. Mice tissue sections of liver, heart, kidney, lung and spleen.