

## Supporting Information for

### Original article

# Self-assembled small molecule natural product gel for drug delivery: a breakthrough in new application of small molecule natural products

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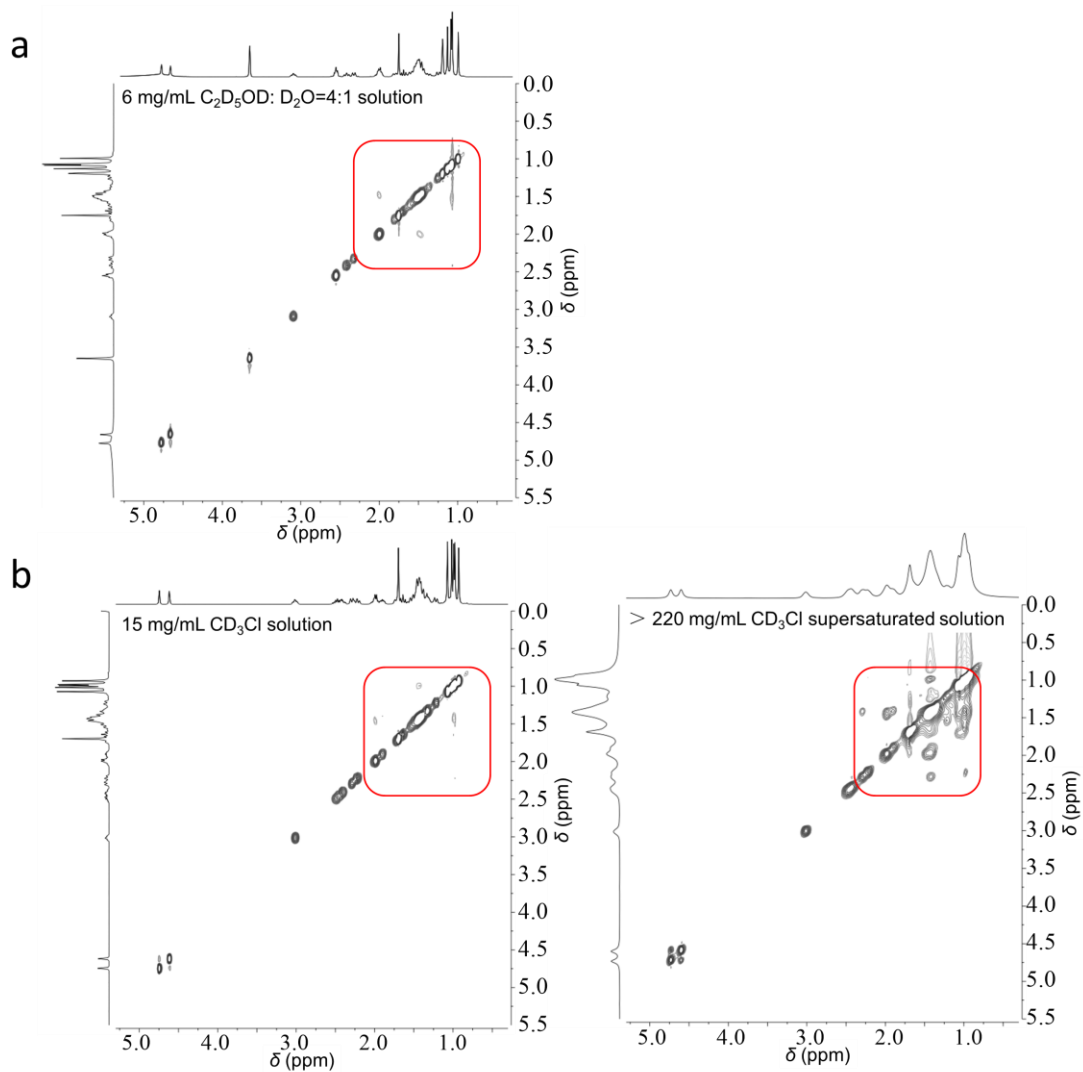
<sup>††</sup>These authors made equal contributions to this work.

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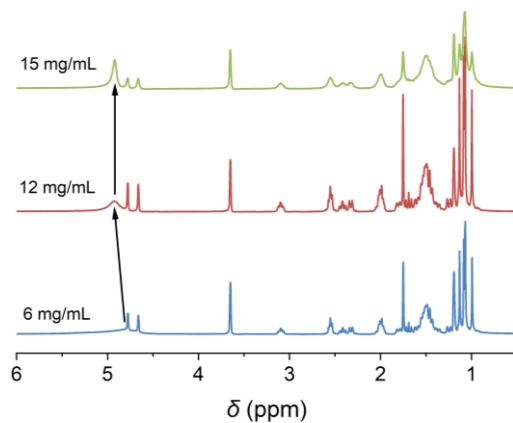
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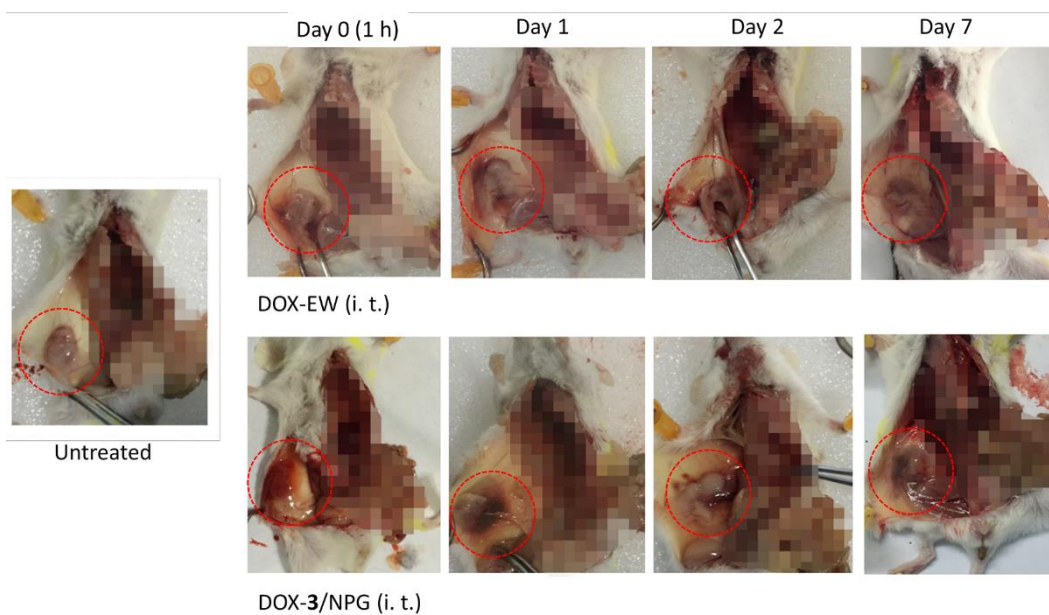
## Supporting figures



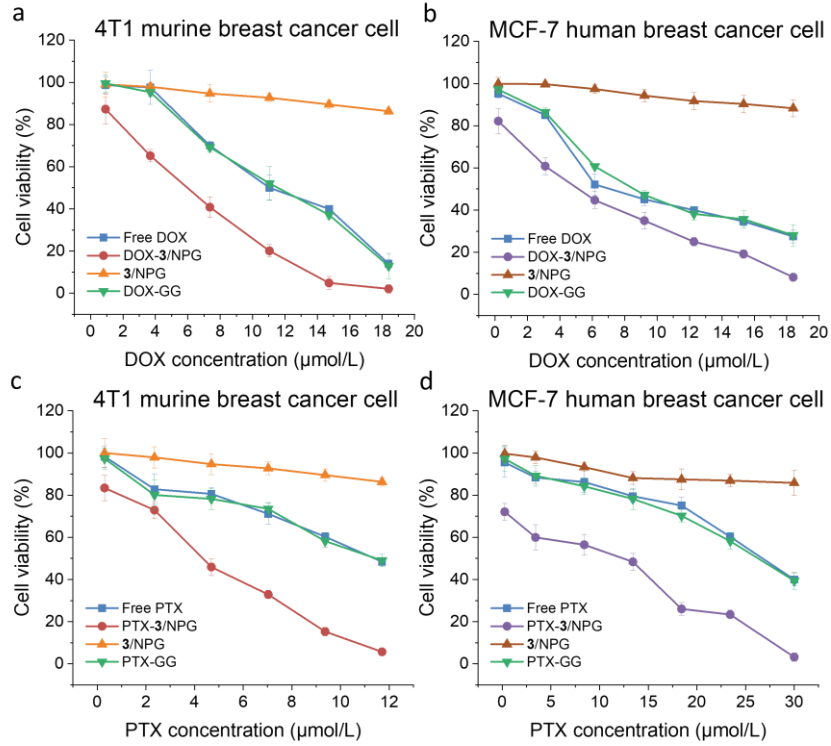
**Figure S1** 2D NOESY spectra of compound **3**. (a) Compound **3** in mixed solvent of deuterated ethanol and deuterated water (4:1) at 6 mg/mL. (b) Compound **3** in deuterated chloroform at different concentrations.



**Figure S2**  $^1\text{H}$  NMR spectra of compound **3** in mixed solvent of deuterated ethanol and deuterated water (4:1) at different concentrations.



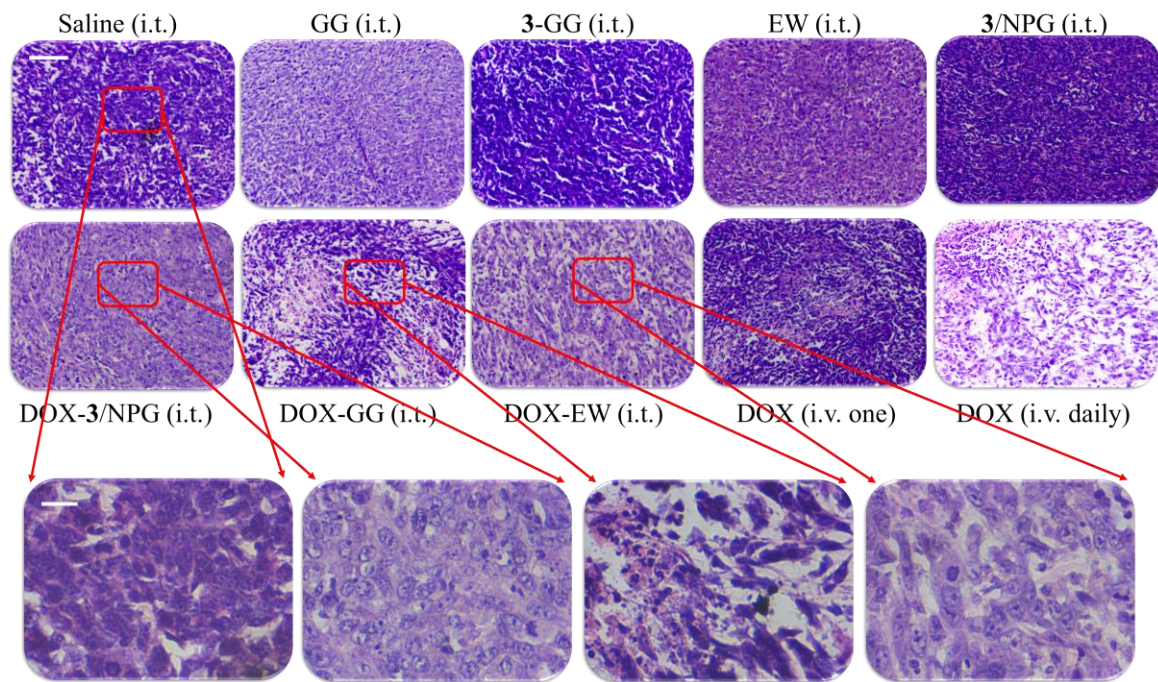
**Figure S3** Anatomical photograph of the tumor site of mice in DOX-3/NPG (i. t.) and DOX-EW (i. t.) at different times after treatment (circled as the tumor site).



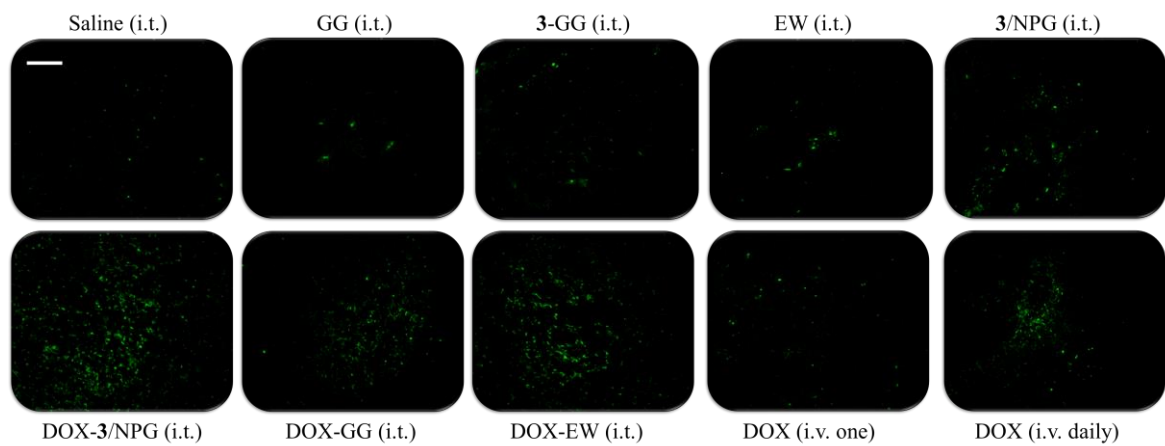
**Figure S4** *In vitro* antitumor activity of drug-loaded 3/NPG and drug-GG. (a) 4T1 cells treated with free DOX, DOX-3/NPG, 3/NPG or DOX-GG. (b) MCF-7 cells treated with free DOX, DOX-3/NPG, 3/NPG or DOX-GG. (c) 4T1 cells treated with free PTX, PTX-3/NPG, 3/NPG or PTX-GG. (d) MCF-7 cells treated with free PTX, PTX-3/NPG or 3/NPG. Data are expressed as mean  $\pm$  SD,  $n=6$ .



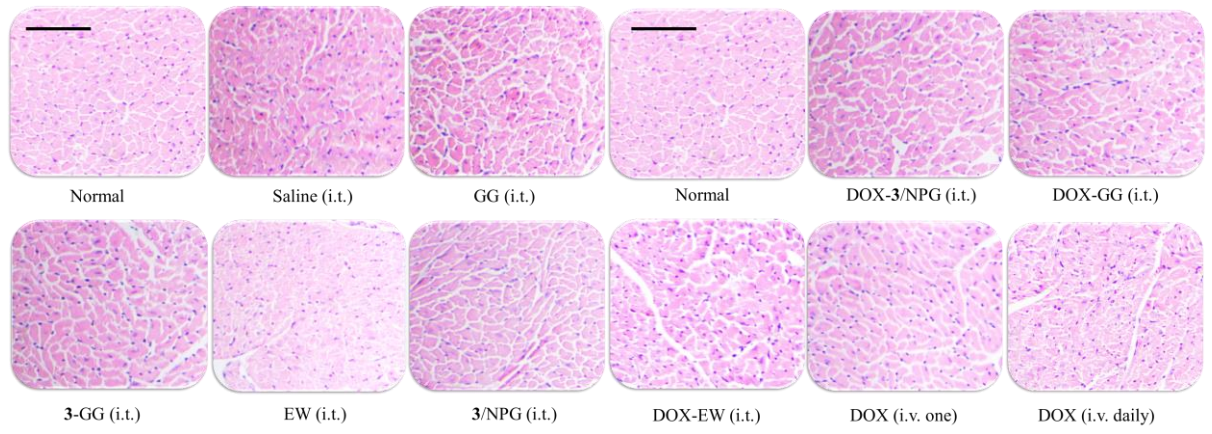
**Figure S5** Ascites mice appearing in DOX-EW (i.t.) group.



**Figure S6** H&E staining results of tumors. Scale bars, normal 20  $\mu\text{m}$ , zoom 100  $\mu\text{m}$



**Figure S7** TUNEL staining results of tumors (magnification 200 $\times$ ). Scale bars, 10  $\mu\text{m}$ .



**Figure S8** H&E staining results of hearts. Scale bars, 100  $\mu$ m.



## Supporting tables

**Table S1** Inhibitory effect of compounds **1–3** on TNF- $\alpha$  released from lipopolysaccharide-stimulated mouse macrophages (RAW264.7).

Group	IC <sub>50</sub> ( $\mu$ mol/L)
Ibuprofen	43.83
Compound <b>1</b>	160.16
Compound <b>2</b>	366.77
Compound <b>3</b>	84.19

**Table S2** Anti-inflammatory activity of compounds **1–3** on xylene-induced *in vivo* ear edema in mice.

Group	Dose (mg per mouse)	Edema degree (mg)	Inhibition rate (%)
Model	–	16.02 $\pm$ 1.37	–
Ibuprofen	0.5	11.90 $\pm$ 0.83***	25.7
	0.5	15.01 $\pm$ 0.90	6.3
Compound <b>1</b>	1.0	14.51 $\pm$ 1.21*	9.4
	2.0	14.10 $\pm$ 1.25*	12.0
	0.5	15.58 $\pm$ 1.41	2.7
Compound <b>2</b>	1.0	15.72 $\pm$ 0.56	1.9
	2.0	15.51 $\pm$ 0.87	3.2
	0.5	14.37 $\pm$ 1.60*	10.3
Compound <b>3</b>	1.0	13.48 $\pm$ 1.72**	15.9
	2.0	11.58 $\pm$ 1.22***	27.7

Values are mean  $\pm$  SD,  $n = 6$ . \* $P < 0.05$ , \*\* $P < 0.01$  and \*\*\* $P < 0.001$  when compared to model group. –Not applicable

**Table S3** Quantitative analysis of fluorescence intensity of apoptotic cells stained with TUNEL.

Group	Fluorescence intensity
Saline (i.t.)	5,883 $\pm$ 940
GG (i.t.)	3,435 $\pm$ 135
3-GG (i.t.)	8,686 $\pm$ 763
EW (i.t.)	4,942 $\pm$ 1052
3/NPG (i.t.)	10,720 $\pm$ 2,036
DOX-3/NPG (i.t.)	123,039 $\pm$ 8,996
DOX-GG (i.t.)	38,420 $\pm$ 1,390
DOX-EW (i.t.)	71,607 $\pm$ 5,219
DOX (i.v. one)	5,513 $\pm$ 245
DOX (i.v. daily)	22,792 $\pm$ 1,806

Values are mean  $\pm$  SD,  $n = 3$ .