

## **Supplementary Information**

### **Development of nanoparticles derived from corn as mass producible bionanoparticles with anticancer activity**

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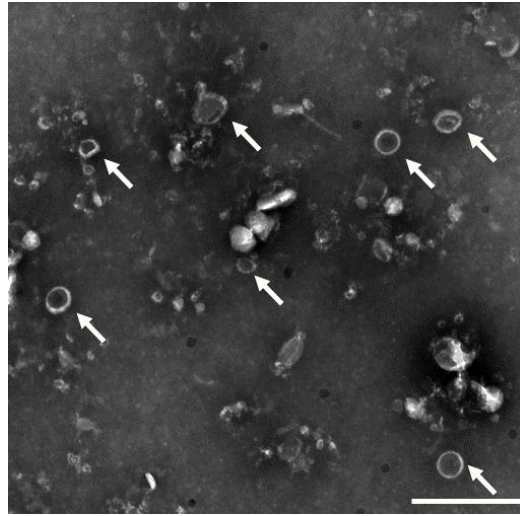
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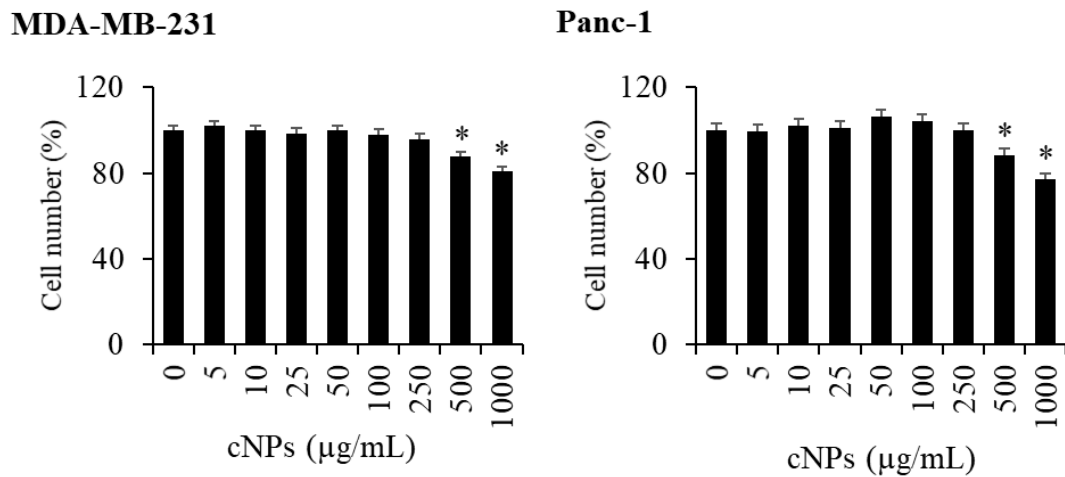
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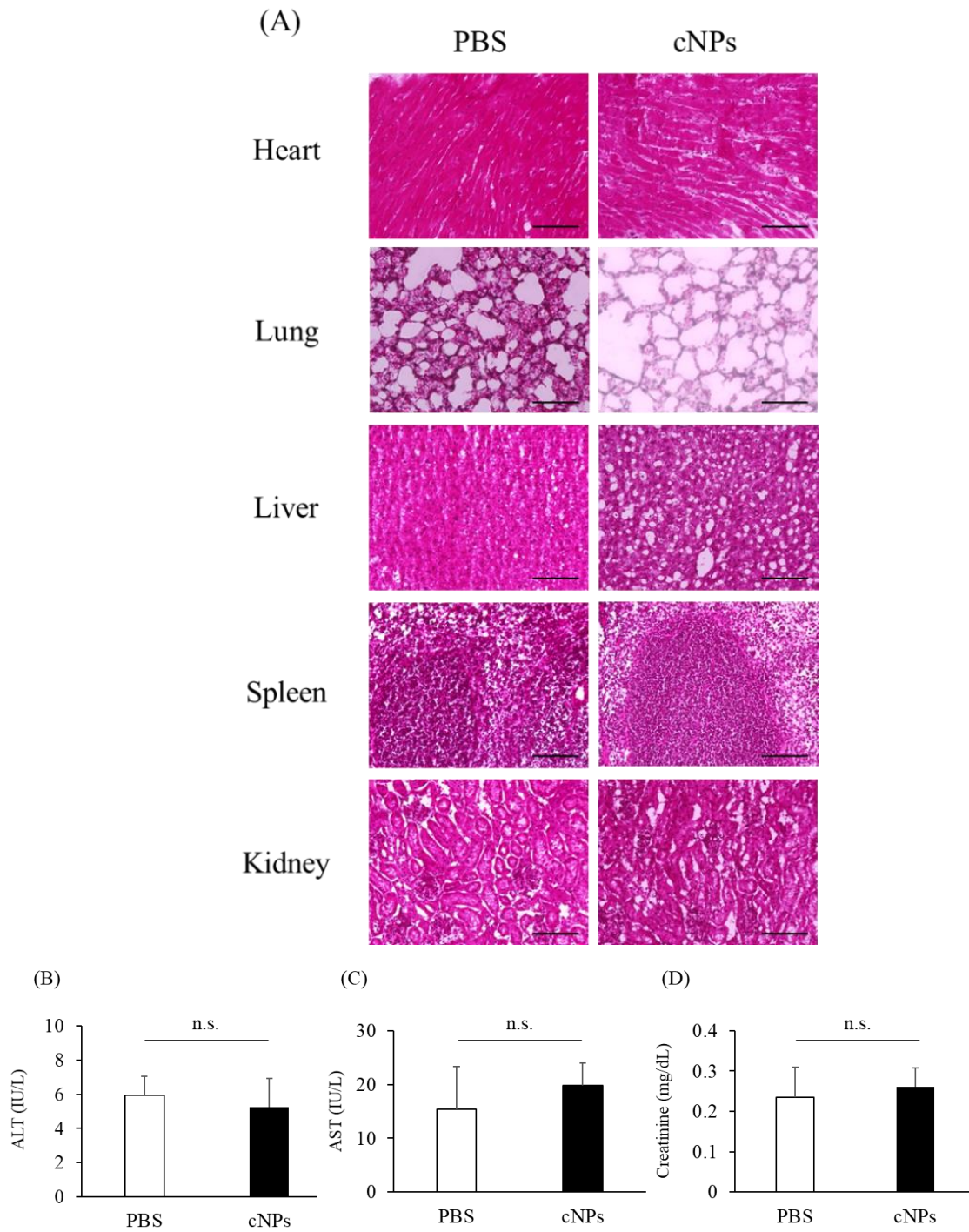


**Fig. S1. TEM image of cNPs at low magnification.** A TEM image was captured using H-7650 TEM. The scale bar indicates 500 nm. White arrows indicate cNPs.



**Fig. S2. Cell number after incubation with cNPs.** Cell number was measured by CCK8 assay after 24 h of cNP addition. MDA-MB-231 and Panc-1 cells were incubated with 5–1000 µg/mL of cNPs. Results are expressed as the mean  $\pm$  SD of four samples. \* $p < 0.05$  vs. 0 µg/mL cNP

group.



**Fig. S3. Adverse effects in mice after cNP injection.** PBS or cNPs (1000  $\mu\text{g}/\text{mL}$ ) were

subcutaneously injected to the back area of BALB/c mice every day. On day 7, organs and blood were collected, and blood was incubated on ice overnight. The extracted organs were sectioned, and H&E stained. (A) H&E stained tissue sections. Scale bars indicate 100  $\mu$ m. (B-D) Serum levels of AST (B), ALT (C), and creatinine (D).

Table S1. Peak area ratio of phospholipids in cNPs

Phospho- lipids	Acyl chain *	Peak area ratio (sample/IS)	
		cNPs	Corn homogenized juice (before centrifugation)
LPC	16:0	0.224 $\pm$ 0.032	0.070 $\pm$ 0.003
	18:1	0.107 $\pm$ 0.016	0.022 $\pm$ 0.003
	18:2	0.115 $\pm$ 0.020	0.018 $\pm$ 0.002
PC	16:0-16:0	0.018 $\pm$ 0.005	N.D.
	16:0-18:0	0.020 $\pm$ 0.006	N.D.
	16:0-18:1	0.410 $\pm$ 0.049	0.142 $\pm$ 0.010
	16:0-18:2	0.597 $\pm$ 0.100	0.187 $\pm$ 0.012
	16:0-18:3	0.011 $\pm$ 0.003	N.D.
	18:0-18:1	0.011 $\pm$ 0.002	N.D.
	18:1-18:1	0.953 $\pm$ 0.137	0.297 $\pm$ 0.008
	18:1-18:2	1.303 $\pm$ 0.243	0.474 $\pm$ 0.007
	18:1-18:3	0.012 $\pm$ 0.006	N.D.
	18:2-18:2	1.010 $\pm$ 0.111	0.261 $\pm$ 0.025
	18:2-18:3	0.015 $\pm$ 0.005	N.D.
	LPE	16:0	0.011 $\pm$ 0.003
18:1		0.016 $\pm$ 0.003	N.D.
PE	16:0-18:1	0.035 $\pm$ 0.007	0.006 $\pm$ 0.005
	16:0-18:2	0.100 $\pm$ 0.012	0.030 $\pm$ 0.007
	16:0-20:1	0.021 $\pm$ 0.003	N.D.
	18:1-18:1	0.076 $\pm$ 0.027	0.018 $\pm$ 0.006
	18:1-18:2	0.267 $\pm$ 0.046	0.085 $\pm$ 0.011
	18:2-18:2	0.440 $\pm$ 0.047	0.125 $\pm$ 0.012

PG	16:0-16:0	0.604 ± 0.017	N.D.
	14:0-20:1	0.009 ± 0.003	N.D.
	16:0-18:1	1.373 ± 0.168	0.036 ± 0.003
	16:0-18:2	0.139 ± 0.020	N.D.
PS	16:0-18:2	0.015 ± 0.006	N.D.
SM	18:1-20:0	0.020 ± 0.005	N.D.
	18:1-22:1	0.010 ± 0.005	N.D.

Results are expressed as the mean ± SD. N.D.: Not detected.

LPC: Lysophosphatidylcholine, PC: Phosphatidylcholine, LPE: Lysophosphatidylethanolamine, PE: Phosphatidylethanolamines, PG: Phosphatidylglycerol, PS: Phosphatidylserine, SM: Sphingomyelin.

\*The numbers indicate the carbon number and degree of unsaturation of the acyl chains of phospholipids.