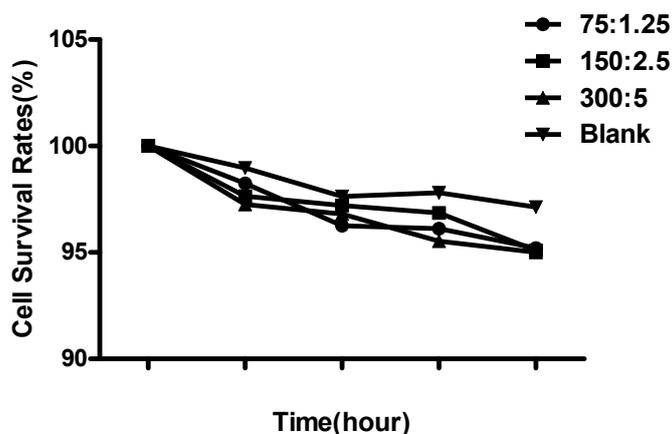
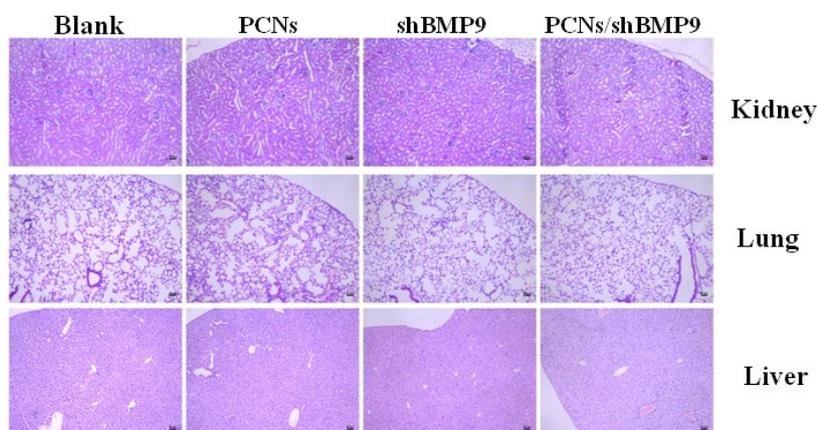


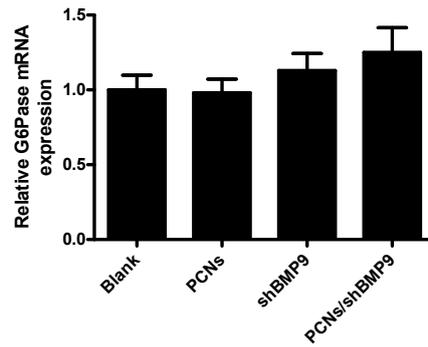
### Supplemental Materials



**Supplemental Figure 1** The cytotoxic effect of the PCNs/pENTR-shBMP9 on HepG2 cells. HepG2 cells were treated with the PCNs/pENTR-*shBMP9* at various mass ratios of PCNs to pENTR-*shBMP9* (75:1.25, 150:2.5 and 300:5  $\mu\text{g}/\mu\text{g}$ ) for 12, 24, 48 and 72h based on the CCK-8 assay.



**Supplemental Figure 2** H&E staining in the liver, kidney and lung in different groups. Original magnification is  $\times 100$ .



**Supplemental Figure 3:** G6Pase mRNA expression in the liver of different-treated mice.

**Supplemental Table 1** General characteristics and biochemical parameters in different groups

	<b>Blank</b>	<b>PCNs</b>	<b>shBMP9</b>	<b>PCNs/shBMP9</b>
BW (g)	35.3 ± 1.1	34.9 ± 0.9	32.2 ± 1.3	38.0 ± 1.4
Food intake (g)	3.28 ± 0.34	3.47 ± 0.21	3.63 ± 0.54	3.67 ± 0.31
FIns (mU/L)	46.14 ± 1.93	47.0 ± 1.3	51.3 ± 0.9 <sup>#</sup>	61.2 ± 2.0 <sup>***</sup>
ALT (IU/L)	64.4 ± 7.3	62.2 ± 6.9	66.8 ± 8.2	70.1 ± 8.0
AST (IU/L)	57.3 ± 3.9	54.6 ± 6.3	63.2 ± 6.0	66.5 ± 5.9

BW, body weight; FIns, fasting insulin; ALT, alanine aminotransferase; AST, aspartate aminotransferase. <sup>#</sup> $P < 0.01$  vs. PCNs; \* $P < 0.05$ , \*\* $P < 0.01$  vs. shBMP9.