Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary Material

Table S1 The ratio of SiNPs dosage *in vitro* to *in vivo*

In vitro (mg/10^9 cell)	In vivo (mg/10^9 cell)[a]	Ratio
100[b]	0.18[c]	555.56
100[b]	1.32[d]	75.76

a: the predicted concentration of SiNPs in liver corresponds to the detected SiNPs deposition in postmortem human liver samples, assuming human liver with the average weight of 1.5 kg and 2.5 $\times 10^9$ hepatocytes;
b: the actual *in vitro* SiNPs concentration of 100 μg/mL corresponds to 100 mg/10^9 cells, calculated by the actual exposure volume of particle suspension in culture dish (10 mL) and the total cell number (1×10^7);
c: 0.3 mg/kg SiNPs deposition in human liver assumed;
d: 2.2 mg/kg SiNPs deposition in human liver assumed.

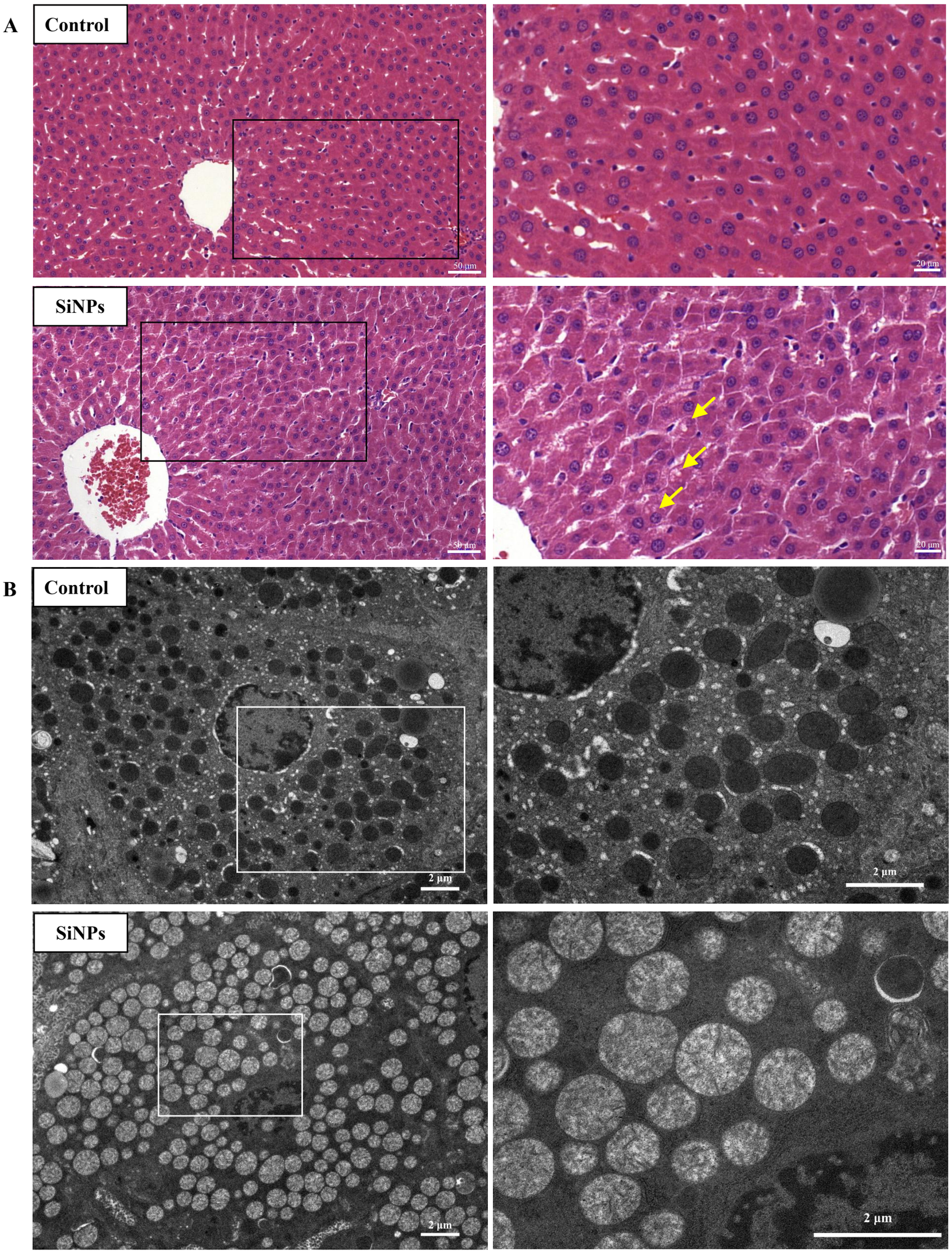

Fig. S1. HE staining and TEM images of the liver tissue exposed to SiNPs.(A) Representative HE images of the Control and SiNPs-exposed liver were obtained from three rats in each group. The scale bar indicates 50 and 20 μm. The inset at a higher magnifcation shows the degeneration of hepatocytes (yellow arrows). (B) Representative TEM images of the Control and SiNPs-treated liver indicated a severe mitochondrial damage.

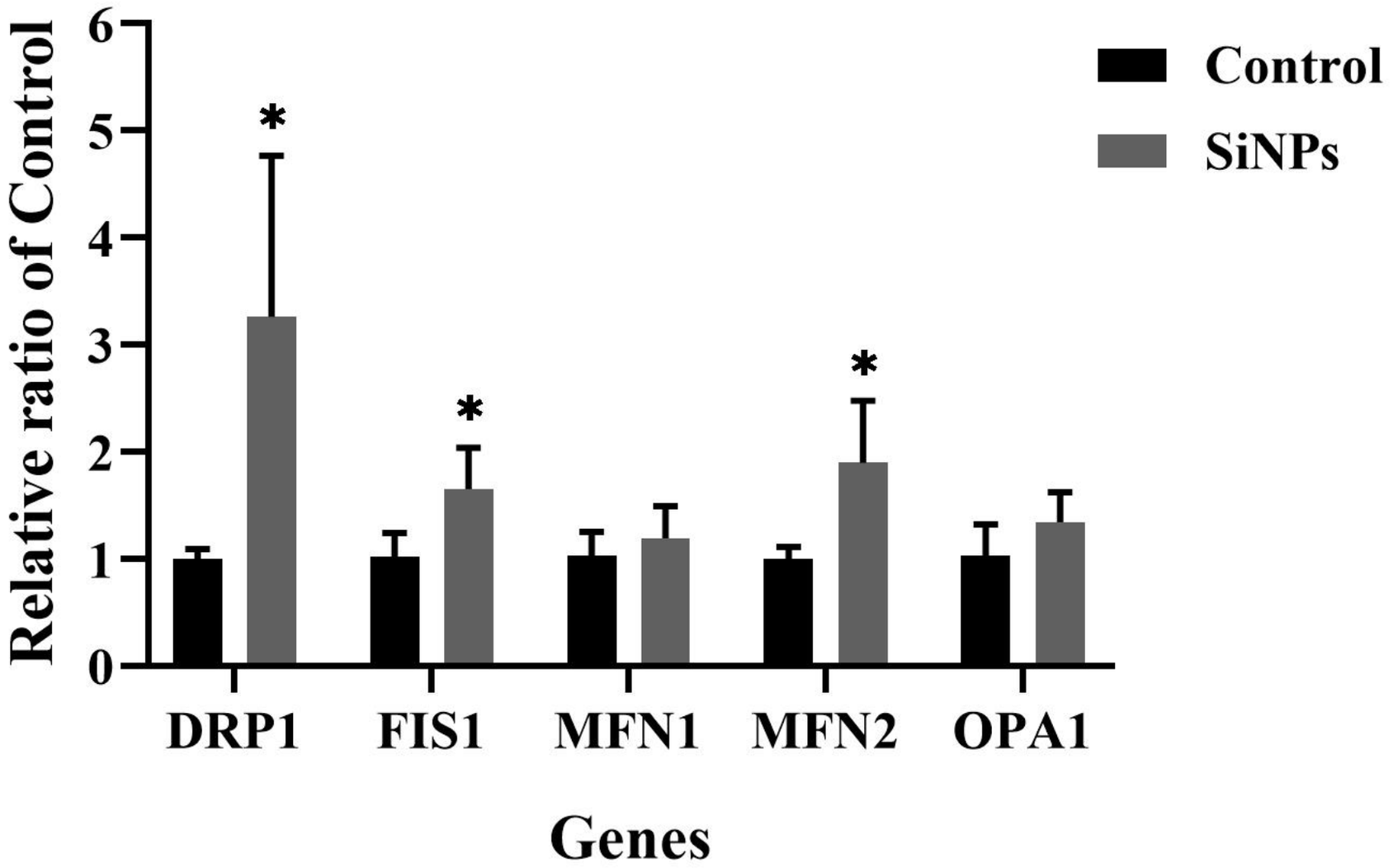

Fig. S2 qRT-PCR analysis of gene expressions related to mitochondrial dynamics in the rat liver tissue.
Data are expressed as the mean ± SD. n = 4, *$p < 0.05$ vs Control