Supplementary Data

Melatonin improves mitochondrial function by promoting MT1/SIRT1/PGC-1 alpha-dependent mitochondrial biogenesis in cadmium-induced hepatotoxicity in vitro

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Table S1

The treatment groups in our study

	Step 1	Step 2	Step 3		Step 4
			i	ii	
The group in each step	Control	Control	Control	Control-siRNA+ Cd	Control
	Cd (2.5 μM)	Melatonin	Melatonin+ Cd	Control-siRNA+ melatonin + Cd	Cd
	Cd (5 μM)	Cd	Sirtinol +melatonin + Cd	SIRT1-siRNA+ melatonin + Cd	Melatonin+ Cd
	Cd (10 μM)	Melatonin+ Cd	Sirtinol +Cd	SIRT1-siRNA+ Cd	luzindole(10 μM) + Cd

Note: In step 2, 3 and 4, the doses of Cd, melatonin and sirtinol were 5 μM, 0.5 μM and 30 μM, respectively.

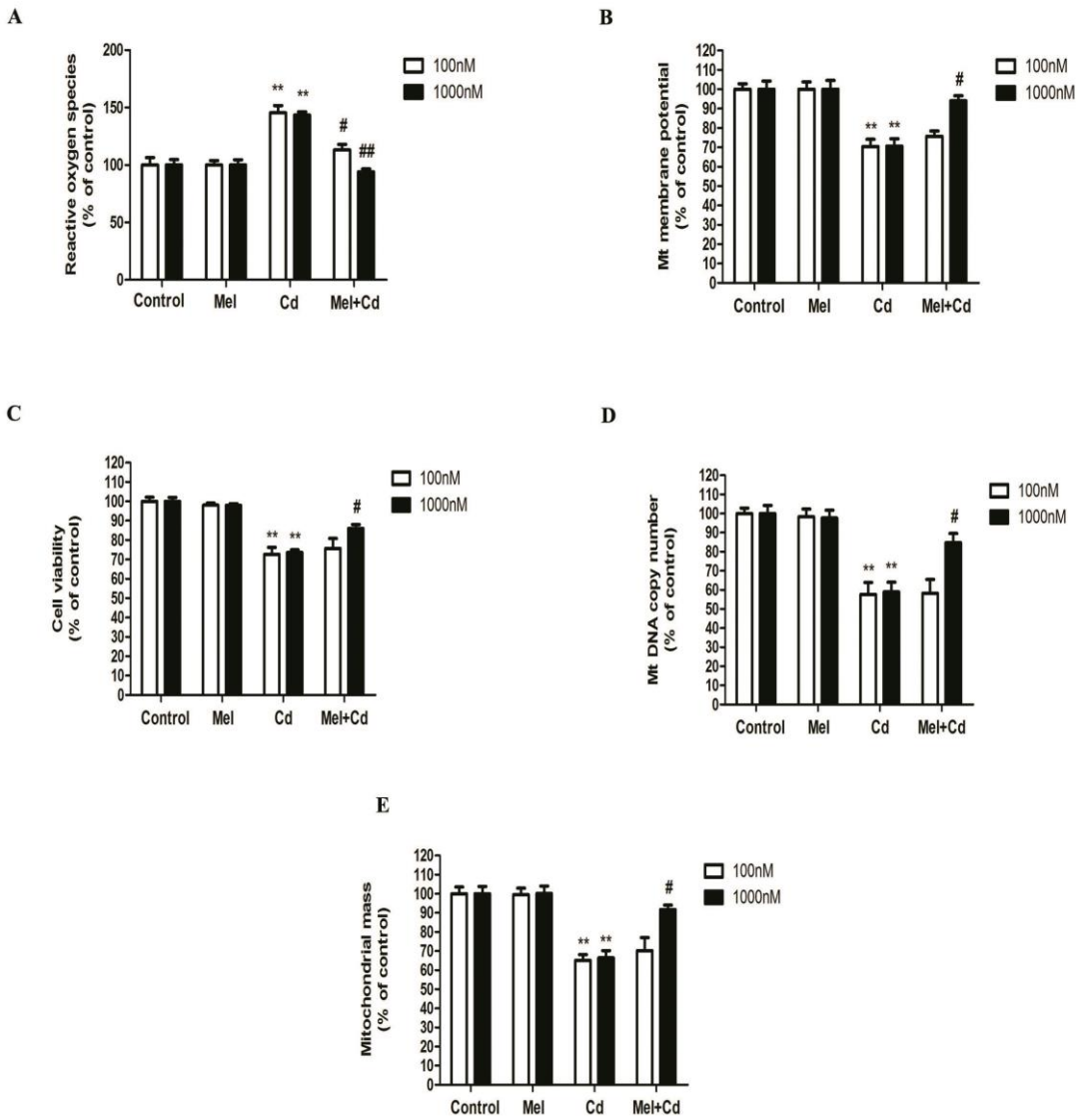

Fig. S1. Melatonin protects against mitochondrial dysfunction and mitochondrial biogenesis disruption after exposure to Cd *in vitro*. HepG2 cells were pretreated with 0.1 μM or 1 μM melatonin for 2 h prior to 5 μM Cd treatment. (A) ROS production, (B) ΔΨm level, (C) cell viability, (D) mtDNA copy number, (E) mitochondrial mass. The results are expressed as a percentage of the control, which was set at 100%. The values are presented as the mean ± SEM, $^{**}p < 0.01$ versus control group, $^{\#}p < 0.05$, $^{\#\#}p < 0.01$ versus the Cd (5 μM) group (n=6).

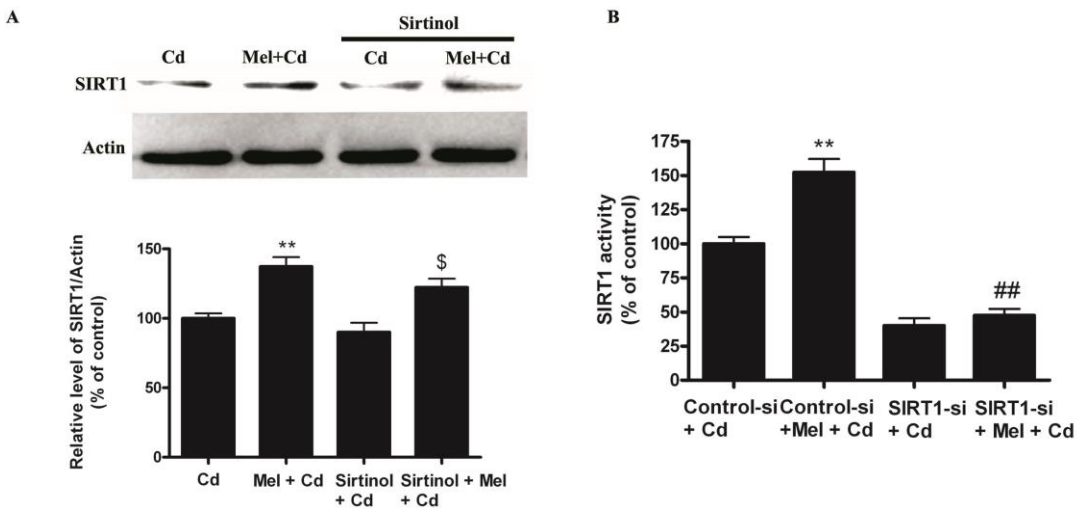

Fig. S2. (A) The effects of melatonin and sirtinol pretreatment on SIRT1 expression, **$p < 0.01$ versus the Cd (5 μM) group, and $^{\$}p < 0.05$ versus the sirtionl + Cd (5 μM) group (n=6). (B) The effects of melatonin and SIRT1 siRNA pretreatment on SIRT1 activity. **$p < 0.01$ versus the Control siRNA + Cd (5 μM) group, $^{\#\#}p < 0.01$ versus the Control siRNA + Cd (5 μM) + melatonin group (n=6). The results are expressed as a percentage of the control ("Cd" group taken as a control), which is set at 100%. The values are presented as the mean ± SEM.