Supplementary Materials

This supplementary materials file contains the following contents:

Supplementary Tables	Table S1 to S9
Supplementary Figures	Figure S1 to S7

Table S1: Body weight of mice during weeks 0–7.

Group	0 week	1 week	2 week	3 week	4 week	5 week	6 week	7 week
Control	20.59±0.60	22.05±0.87	21.84±1.18	23.27±0.96	23.40±0.82	23.93±1.02	24.89±0.99	25.46±0.91
Model	20.59±0.68	22.67±1.03	23.60±1.22	25.80±1.26	26.39±1.32	27.48±1.44	28.81±1.36	30.10±2.04
ACT(120mg/kg)	20.29±0.75	22.05±0.87	22.71±1.25	24.75±1.29	25.63±1.35	26.60±1.46	28.02±1.21	28.96±1.44
ACT(60mg/kg)	20.35±0.90	21.69±1.25	22.51±1.18	24.08±1.25	25.21±1.27	26.24±1.76	28.46±1.76	29.09±1.90
ACT(30mg/kg)	20.25±0.65	21.47±1.61	23.78±1.25	25.59±1.41	26.47±1.50	26.97±1.21	28.51±1.57	29.91±2.31
RSF (3mg/kg)	20.57±0.66	22.28±1.42	23.58±1.06	25.12±1.33	25.88±1.43	26.76±1.08	28.22±1.57	28.63±1.41

Data are presented as mean ± SEM (n = 8).

Table S2: Body weight of mice during weeks 7-14

Group	8 week	9 week	10 week	11 week	12 week	13 week	14 week
Control	25.36±1.17	26.01±1.85	25.81±1.28	26.31±1.24	26.25±1.52	26.60±1.30	26.25±1.47
Model	30.86±2.46	32.05±2.58	32.95±2.78	34.16±2.58	34.74±2.55	35.45±2.67	36.41±2.14
ACT(120mg/kg)	29.95±1.34	30.71±1.59	31.11±1.32	31.34±1.30	31.73±1.45	31.88±1.39	31.91±1.41
ACT(60mg/kg)	30.17±2.12	30.91±2.15	31.75±2.16	32.11±2.25	33.42±2.39	33.94±2.17	34.42±2.09
ACT(30mg/kg)	30.19±2.66	31.06±2.06	32.40±2.23	32.27±2.17	33.87±2.17	34.21±2.08	34.74±1.98
RSF (3mg/kg)	29.13±1.64	29.83±1.83	30.54±1.58	31.37±1.73	32.21±1.44	32.44±1.62	31.94±1.36

Data are presented as mean ± SEM (n = 8).

Table S3: Effects of ACT on body weight, liver weight, liver index, liver weight, and serum ALT and AST levels in mice

Group	body weight /g	liver weight /g	liver index /%	AST/U·L^{-1}	ALT/U·L^{-1}
Control	26.25±1.47**	0.95±0.07**	2.79±0.11**	98.8±9.94**	31.98±4.93**
Model	36.41±2.14	1.34±0.14	3.96±0.23	216.01±29.70	59.61±7.59
ACT(120mg/kg)	31.91±1.41**	1.10±0.03*	3.28±0.12**	111.40±13.30**	20.88±0.79**
ACT(60mg/kg)	34.42±2.09*	1.21±0.07*	3.68±0.34	121.03±12.30**	33.65±3.46*
ACT(30mg/kg)	34.74±1.98*	1.28±0.15	3.72±0.39	136.26±8.93**	22.05±2.19**
RSF (3mg/kg)	31.94±1.36**	1.03±0.09**	3.29±0.36*	133.41±5.19**	18.27±2.84**

Data are presented as mean ± SEM (n = 8). *P < 0.05, **P < 0.01, compared with Model group.

Table S4: Effects of ACT on serum TC, HDL-C, TG, and LDL-C levels in mice

Group	TG/mmol·L^{-1}	TC/mmol·L^{-1}	HDL-C/mmol·L^{-1}	LDL-C/mmol·L^{-1}
Control	0.81±0.05**	2.79±0.07**	1.89±0.09**	0.36±0.07**
Model	1.10±0.11	5.34±0.34	0.73±0.16	0.76±0.12
ACT(120mg/kg)	0.71±0.07**	4.30±0.15*	1.91±0.15**	0.58±0.05*
ACT(60mg/kg)	1.03±0.14	4.73±0.16*	1.40±0.20*	0.70±0.09
ACT(30mg/kg)	1.04±0.07	5.33±0.25	1.27±0.21*	0.73±0.09
RSF (3mg/kg)	0.71±0.09**	4.11±0.43*	1.77±0.17**	0.40±0.07**

Data are presented as mean ± SEM (n = 8). *P < 0.05, **P < 0.01, compared with Model group.

Table S5: Effects of ACT on FBG, FINS, HOMA-IR index in mice

Group	FBG/ mmol·L^{-1}	FINS/μIU·L^{-1}	HOMA-IR
Control	6.10±0.60**	8.66±0.55**	2.35±0.26**
Model	9.89±0.77	12.73±0.98	5.60±0.68
ACT(120mg/kg)	7.88±0.70*	9.75±0.47*	3.41±0.32**
ACT(60mg/kg)	8.88±0.80	10.18±0.50*	4.01±0.40*
ACT(30mg/kg)	9.55±0.57	10.43±0.64*	4.43±0.45*
RSF (3mg/kg)	8.18±0.97*	9.60±0.64*	3.48±0.43**

Data are presented as mean ± SEM (n = 8). *P < 0.05, **P < 0.01, compared with Model group.

Table S6: Effects of ACT on SOD activity and MDA and GSH-PX levels in mice

Group	SOD/U·mL^{-1}	GSH-Px/U·mgprot^{-1}	MDA/U·mL^{-1}
Control	268.00±14.61**	6811.08±833.87**	223.74±12.03**
Model	194.67±11.62	4601.78±1036.13	261.52±10.72
ACT(120mg/kg)	235.90±6.63*	6965.07±719.44**	222.56±12.21**
ACT(60mg/kg)	228.57±9.75*	6516.29±1195.79*	230.03±12.67*
ACT(30mg/kg)	215.69±11.99	5873.61±869.92	233.08±6.15*
RSF (3mg/kg)	233.79±8.33**	6883.92±1328.80**	219.79±19.14**

Data are presented as mean ± SEM (n = 8).*P < 0.05, **P < 0.01, compared with Model group.

Table S7: Effects of ACT on TNF-α, IL-1β, and IL-6 levels in liver tissue of mice

Group	TNF-α/pg·ug^{-1}	IL-1β/pg·ug^{-1}	IL-6/pg·ug^{-1}
Control	3.71±0.25**	2.11±0.37**	8.56±0.34**
Model	7.69±0.47	3.81±0.37	18.48±1.19
ACT(120mg/kg)	5.43±0.57**	2.25±0.27**	8.79±0.18**
ACT(60mg/kg)	6.74±0.25*	3.10±0.51*	9.65±0.44**
ACT(30mg/kg)	7.03±0.52	3.51±0.34	12.17±0.38*
RSF (3mg/kg)	4.78±0.64**	2.07±0.25**	8.35±0.35**

Data are presented as mean ± SEM (n = 8). *P < 0.05, **P < 0.01, compared with Model group.

Table S8: Quantification of PINK1, Parkin, LC3, p62, and p-p62 protein expression by western blot

Group	Parkin	PINK1	p-P62	P62	LC3II/LC3I
Control	0.47±0.08**	0.72±0.09**	0.16±0.04***	0.05±0.01**	0.81±0.06**
Model	0.04±0.01	0.07±0.03	0.69±0.06	0.64±0.06	0.36±0.01
ACT(120mg/kg)	0.27±0.06**	0.48±0.05**	0.26±0.04**	0.15±0.04**	0.66±0.01**
ACT(60mg/kg)	0.17±0.04*	0.28±0.06*	0.36±0.03**	0.24±0.03**	0.54±0.04*
ACT(30mg/kg)	0.06±0.01	0.12±0.04	0.52±0.06*	0.46±0.06*	0.43±0.04
RSF (3mg/kg)	0.15±0.07*	0.24±0.09*	0.37±0.04**	0.28±0.07**	0.52±0.02*

Data are presented as mean ± SEM (n = 3). *P < 0.05, **P < 0.01, ***P < 0.001, compared with Model group.

Table S9: Quantification of PINK1, Parkin, LC3, p62, and p-p62 immunoreactivity

Group	Parkin	PINK1	p-P62	P62	LC3II/LC3I
Control	16.52±3.30***	13.12±6.31**	0.75±0.31***	0.55±0.31***	7.98±3.81**
Model	0.56±0.12	0.74±0.13	13.10±1.33	11.40±2.18	0.98±0.12
ACT(120mg/kg)	13.44±1.95***	6.89±3.89**	3.08±1.19**	1.81±1.07***	6.41±1.02**
ACT(60mg/kg)	9.37±1.86***	6.32±4.23*	8.86±2.54*	6.08±1.49**	5.81±2.07**
ACT(30mg/kg)	2.17±0.78*	1.57±0.21	10.32±3.59*	9.84±1.89	2.71±1.23*
RSF (3mg/kg)	6.92±1.94**	3.86±1.16*	7.69±0.96*	4.36±0.94**	4.35±0.19**

Data are presented as mean ± SEM (n = 3). *P < 0.05, **P < 0.01, ***P < 0.001, compared with Model group.

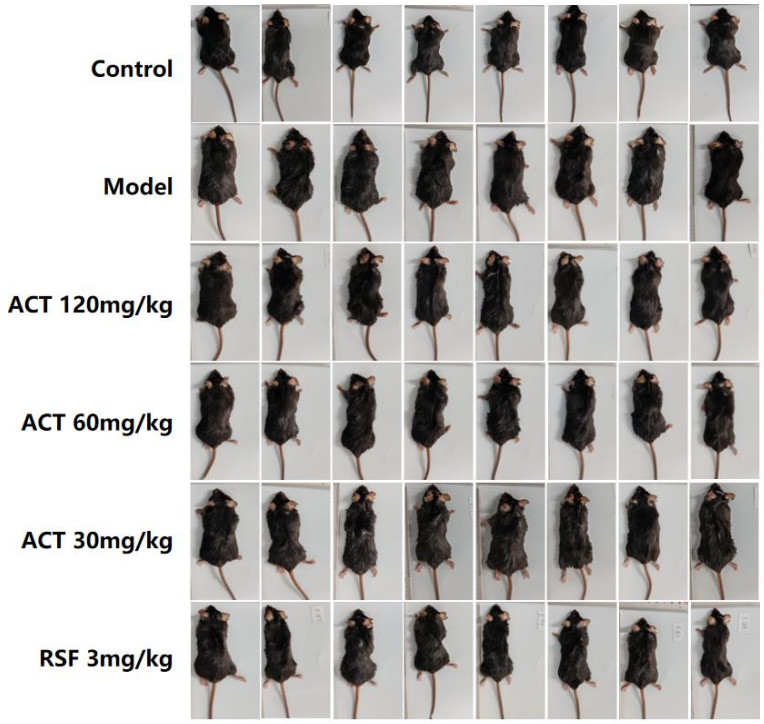


Figure S1. Body weight of mice in each group at the end of the experiment

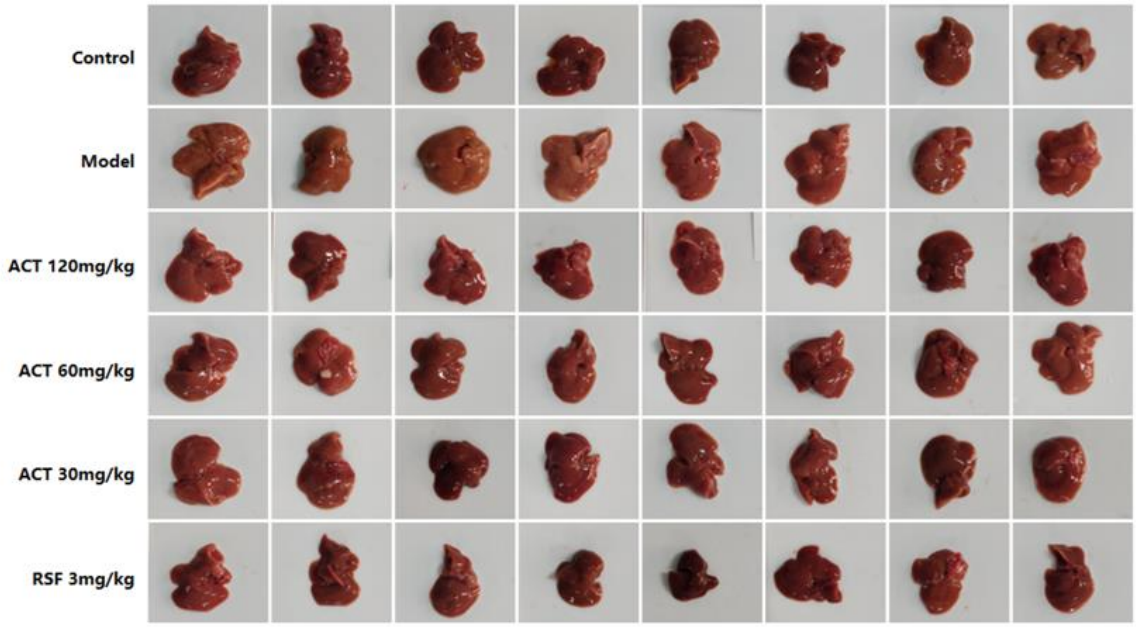


Figure S2. Gross morphology of liver tissues from each group at the end of the experiment

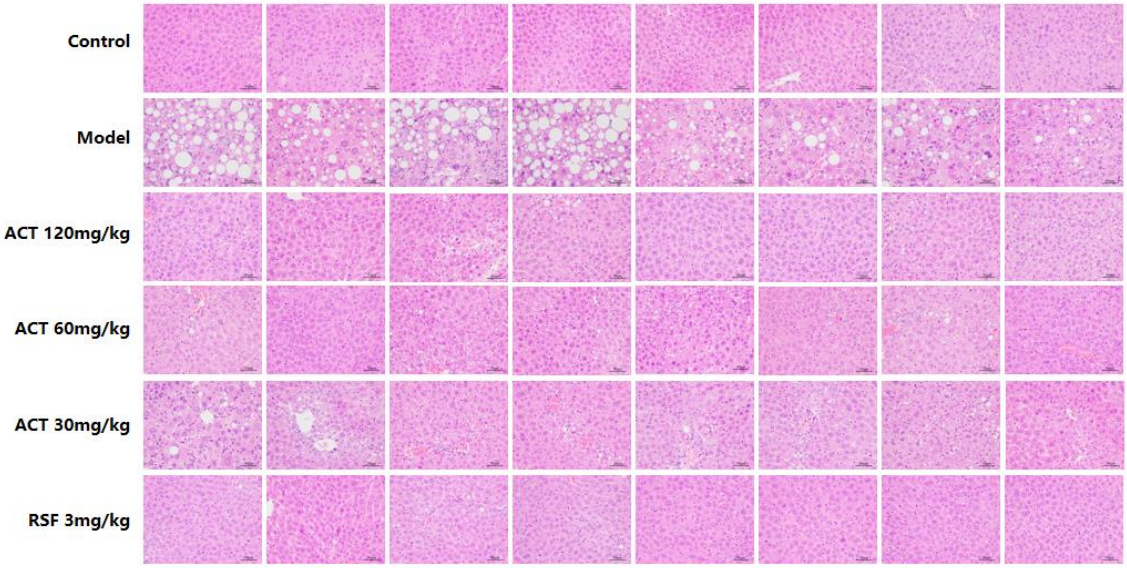


Figure S3. Representative photomicrographs of H&E-stained liver sections

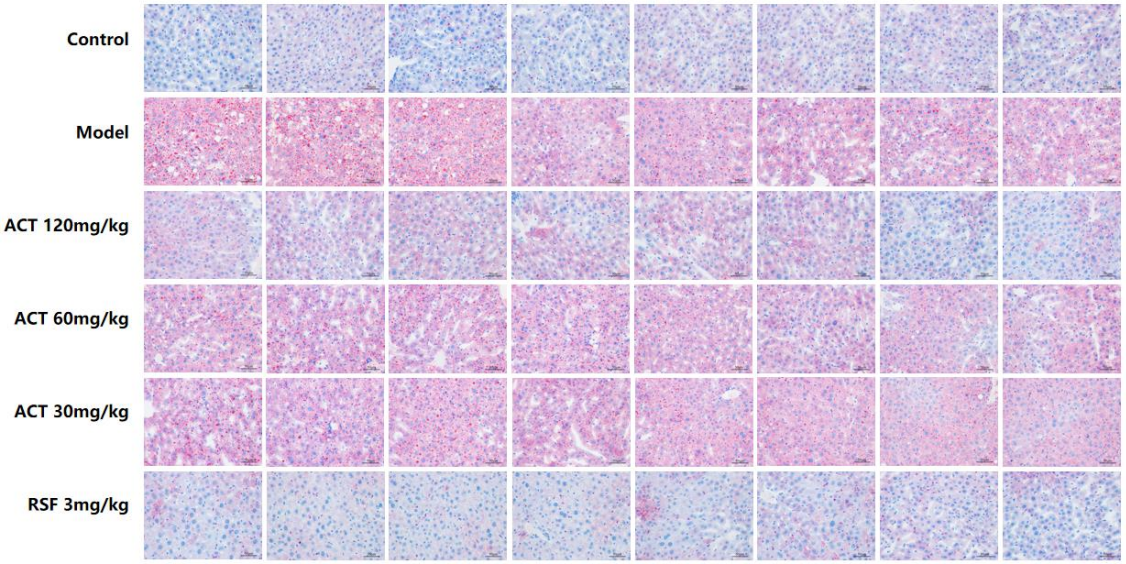


Figure S4. Representative photomicrographs of Oil Red O-stained liver sections

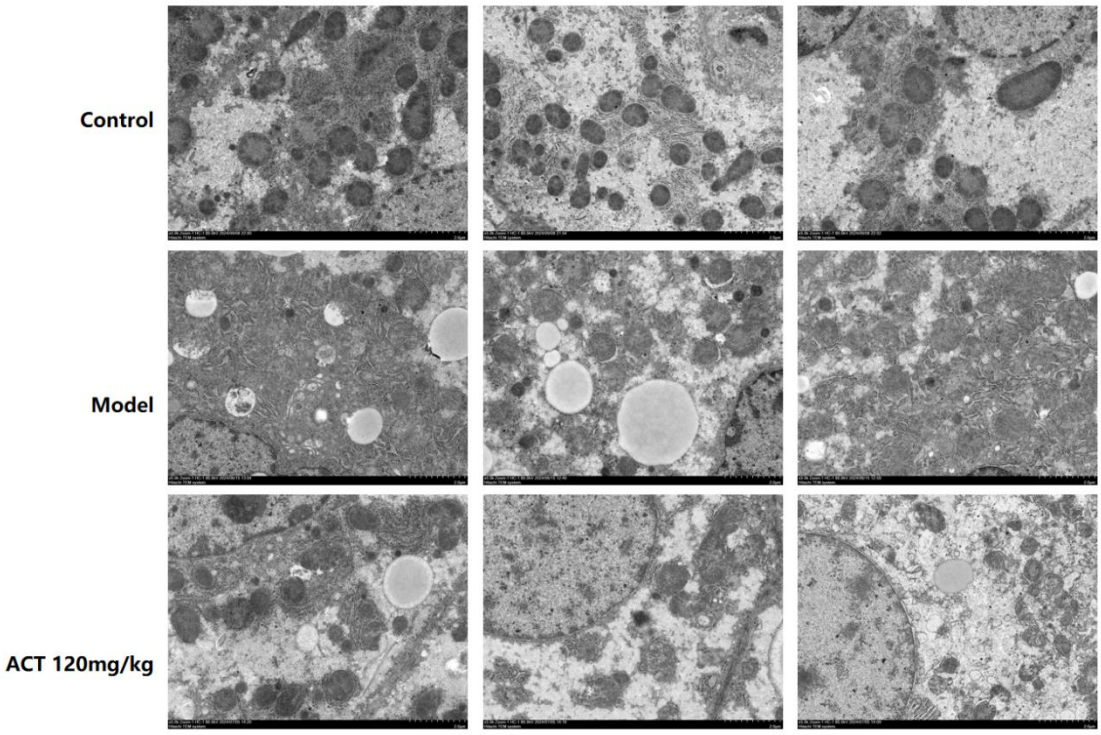
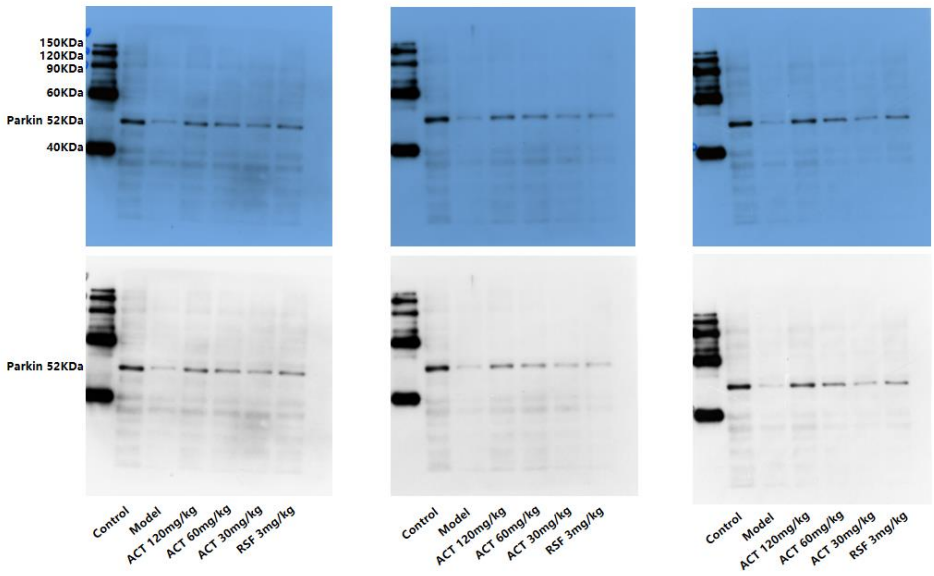
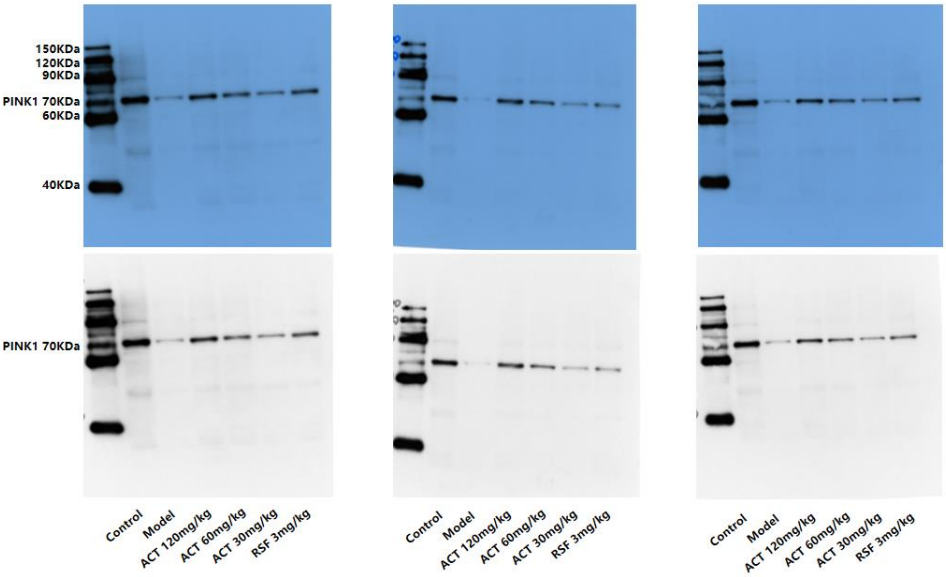
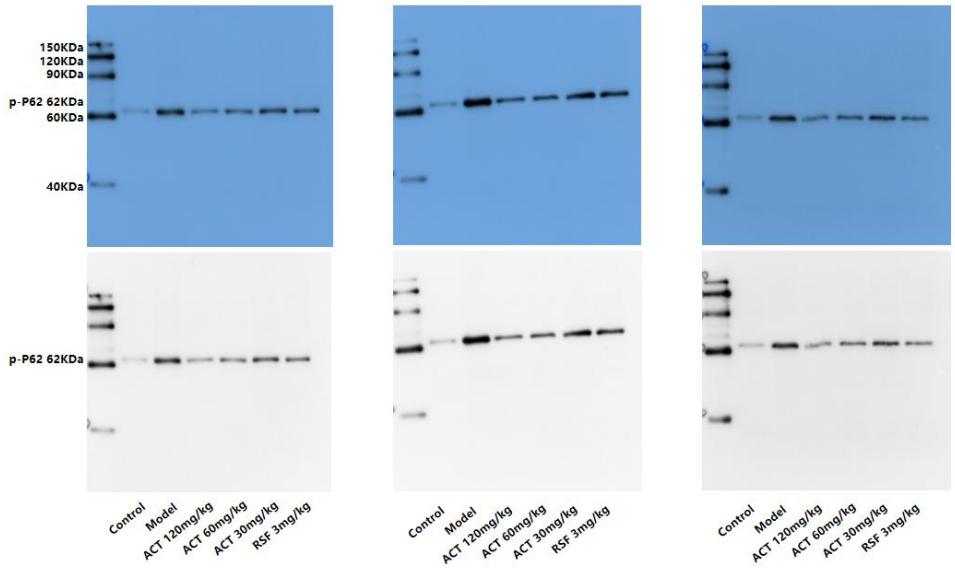


Figure S5. Representative transmission electron microscopy (TEM) images of liver sections


150KDa
120KDa
90KDa
60KDa
Parkin 52KDa
40KDa
Parkin 52KDa
Control
Model
ACT 120mg/kg
ACT 60mg/kg
ACT 30mg/kg
RSF 3mg/kg


150KDa
120KDa
90KDa
PINK1 70KDa
60KDa
40KDa
PINK1 70KDa
Control
Model
ACT 120mg/kg
ACT 60mg/kg
ACT 30mg/kg
RSF 3mg/kg


150KDa
120KDa
90KDa
p-P62 62KDa
60KDa
40KDa
p-P62 62KDa
Control
Model
ACT 120mg/kg
ACT 60mg/kg
ACT 30mg/kg
RSF 3mg/kg

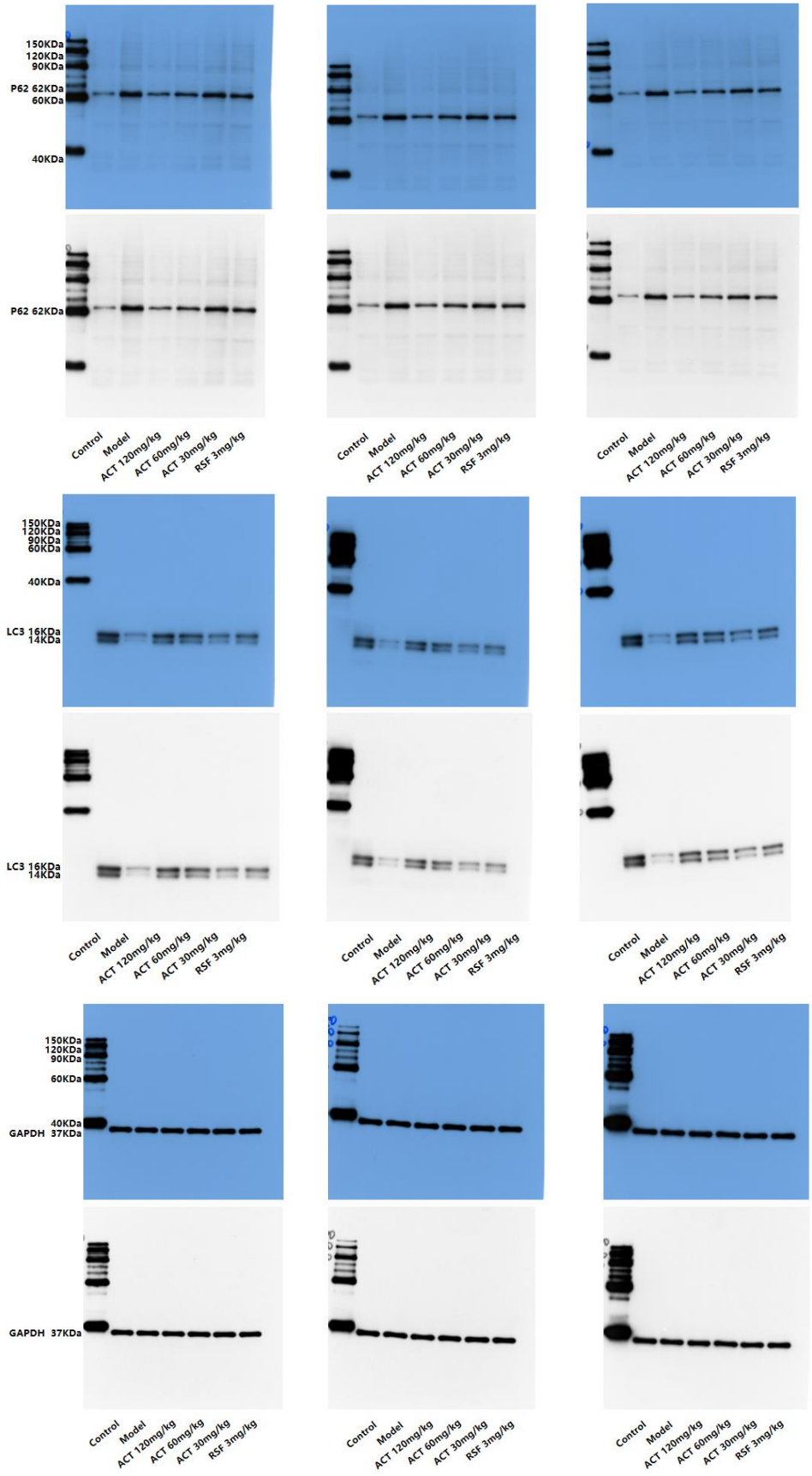
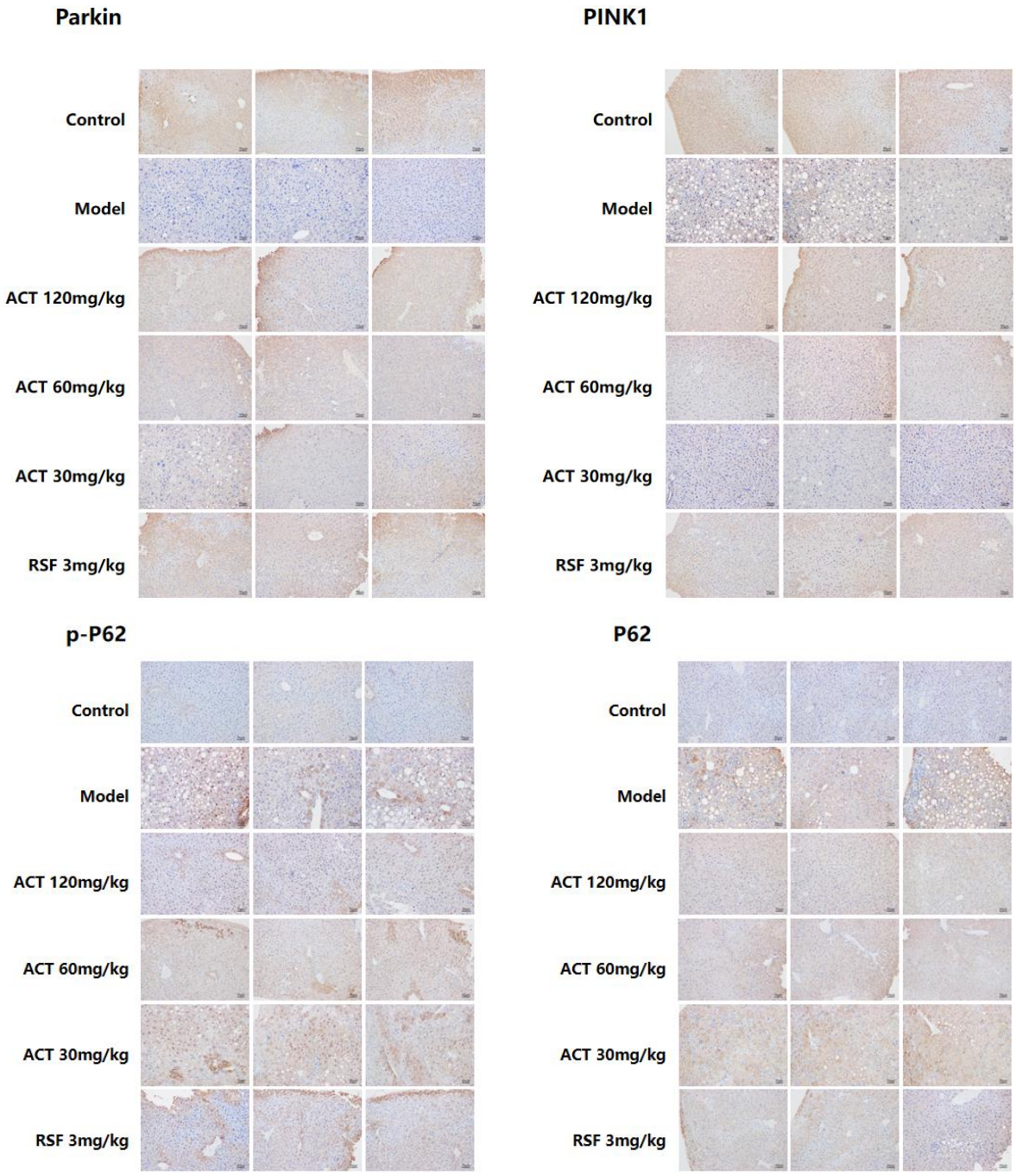


Figure S6. Western blot analysis of PINK1, Parkin, LC3, p62, and p-p62 protein expression in mouse liver tissues


Parkin
PINK1
Control
Model
ACT 120mg/kg
ACT 60mg/kg
ACT 30mg/kg
RSF 3mg/kg
p-P62
P62

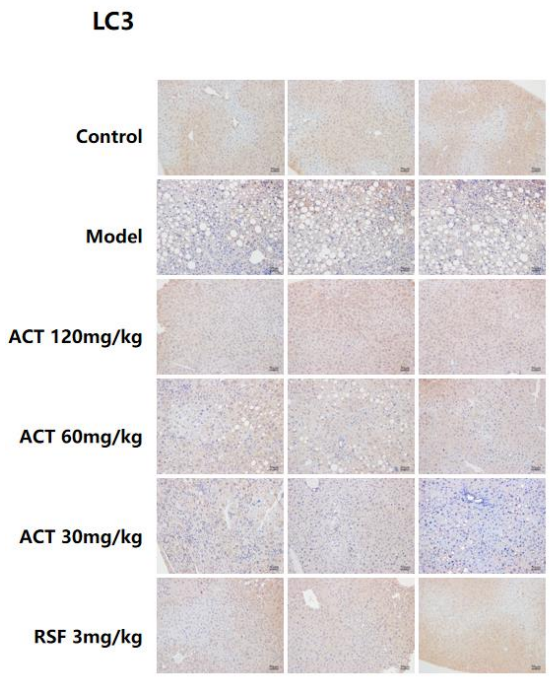


Figure S7. Immunohistochemical staining of PINK1, Parkin, LC3, p62, and p-p62 in mouse liver tissues.