

Melatonin prevents acute kidney injury in severe burn rats via the activation of SIRT1

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Short running title: Melatonin prevents kidney injury through SIRT1

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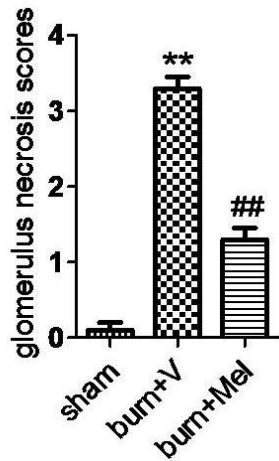


Figure S1 The glomerulus scores in each group. There were more necrotic glomerulus in burn + vehicle group than that in the burn + melatonin group ($p < 0.05$). ** $p < 0.05$, compared to the value of sham group; ## $p < 0.05$, compared to the value of burn + vehicle group.

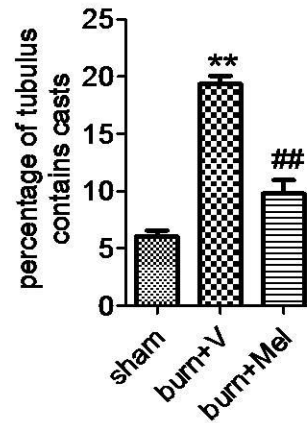


Figure S3 The percentage of tubulus containing casts in each group. There were more casts in burn + vehicle group than that in the burn + melatonin group ($p < 0.05$). ** $p < 0.05$, compared to the value of sham group; ## $p < 0.05$, compared to the value of burn + vehicle group.

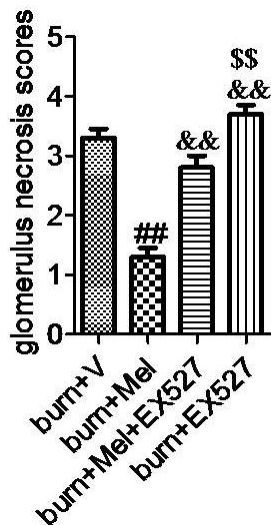


Figure S2 The glomerulus scores in each group. The administration of melatonin could reduce the necrosis of glomerulus while EX527 inhibited this effects even when EX527 was given to rats with melatonin ($p < 0.05$). ## $p < 0.05$, compared to the value of burn + vehicle group; && $p < 0.05$, compared to the value of burn + Melatonin group; \$\$ $p < 0.05$, compared to the value at burn + Melatonin + EX527 group.

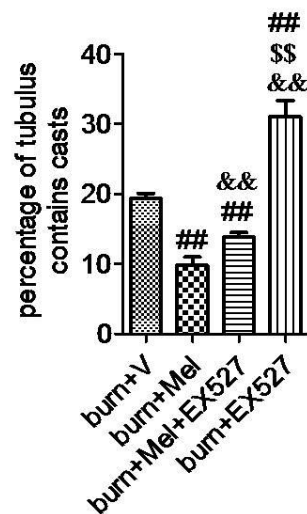


Figure S4 The percentage of tubulus containing casts in each group. The administration of melatonin could reduce the necrosis of glomerulus while EX527 inhibited this effects even when EX527 was given to rats with melatonin ($p < 0.05$). ## $p < 0.05$, compared to the value of burn + vehicle group; && $p < 0.05$, compared to the value of burn + Melatonin group; \$\$ $p < 0.05$, compared to the value at burn + Melatonin + EX527 group.

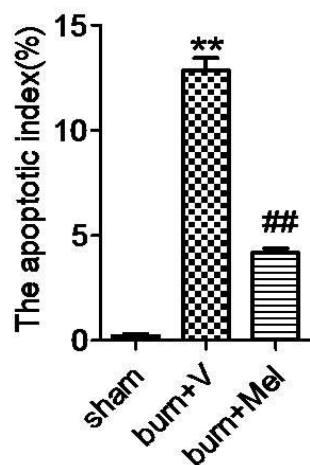
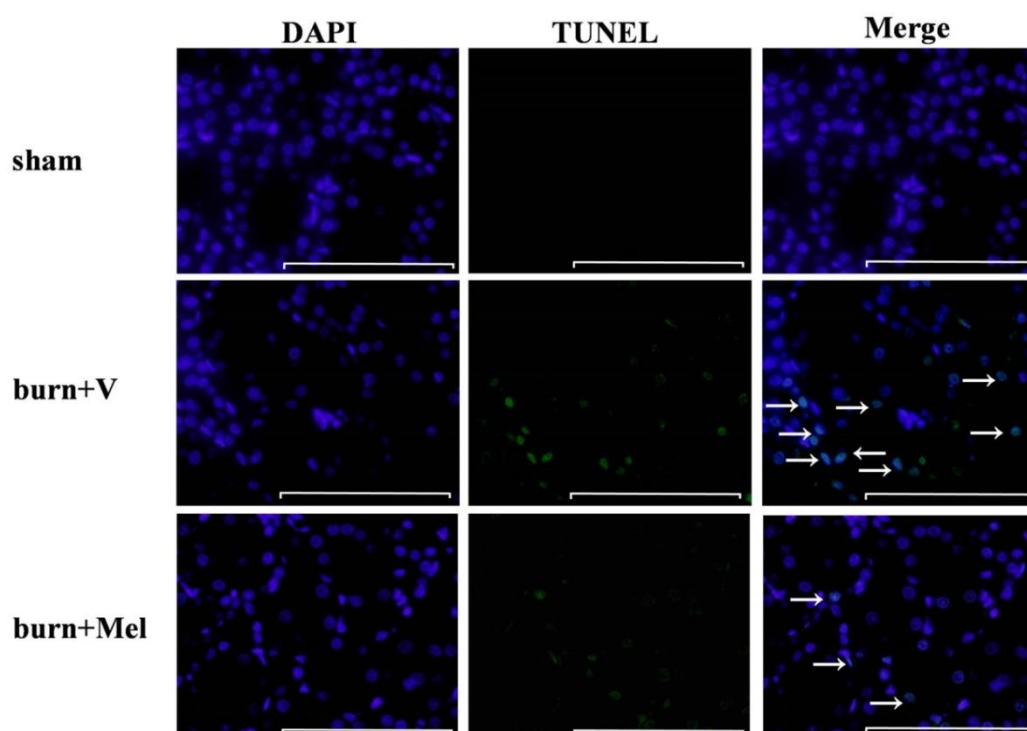


Figure S5 TUNEL assay for apoptosis. Twenty-four hours after the burn injury, rats were sacrificed and kidneys were harvested and subjected for TUNEL staining. TUNEL staining revealed increased numbers of apoptotic cells in burn group compared with sham group, while in burn + melatonin group, the apoptotic cells reduced significantly ($p < 0.05$). White arrow: apoptotic cell. Scale bars in right lower corner represent $100\mu\text{m}$. ** $p < 0.05$, compared to the value of sham group; ## $p < 0.05$, compared to the value of burn + vehicle group.