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## Rutin Attenuates Neuroinflammation in Spinal Cord Injury Rats

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**Background:** Neuroinflammatory responses involve the activation of the interleukin (IL) -1 $\beta$  and IL-18. Processing and activation of the pro-inflammatory IL require NLRP3 inflammasome activation. Rutin can protect spinal cord against damage, but the potential mechanisms underlying remains unknown. Here, we investigated the molecular mechanisms of rutin-mediated neuroprotection in a rat model of spinal cord injury(SCI).

**Materials and methods:** One hundred and twenty female Sprague-Dawley rats were randomly assigned to four groups: sham group, SCI group, SCI + Rutin50 group, and the SCI + Rutin100 group. The influences of rutin on inflammatory marker levels, histological alterations, and locomotion scale were analysed.

**Results:** SCI significantly increased the expression of the NLRP3, ASC, IL-1 $\beta$ , IL-18 and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ). Rutin significantly reduced the levels of reactive oxygen species (ROS), malondialdehyde (MDA), NLRP3, ASC, caspase-1, IL-1 $\beta$ , IL-18, and TNF- $\alpha$ . Furthermore, rutin administration significantly attenuated histological alteration and improved locomotion recovery.

**Conclusions:** Our data provide clear evidence that rutin attenuates tissue damage and improves locomotion recovery, and the mechanism may be related to the alleviation of inflammation and oxidative stress.

### Biography

Wu Jiang Graduated from Anhui Medical University and studied in General Hospital of Beijing Military Command. Work on experimental study of spinal cord injury.

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