Inhibition of IL-18 Reduces Inflammation and Promotes Functional Recovery After Spinal Cord Injury

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The prognosis of spinal cord injury (SCI) is closely related to secondary injury, which is dominated by neuroinflammation. IL-18 plays important roles in the mechanism of inflammation. We previously generated an anti-IL-18 antibody, which neutralize the active form of IL-18. In the present study, we assessed the effect of this antibody in an SCI mouse model. IL-18 expression was increased in the spinal cord following the injury. Following SCI, mice were treated with anti-IL-18 antibody intraperitoneally. Inhibition of IL-18 by treatment of this antibody promoted motor functional recovery following the injury. Administration of IL-18 antibody suppressed neuronal death, reactive gliosis, microglia/macrophage activation, and neutrophil infiltration. Our results demonstrated that inhibition of IL-18 promotes motor functional recovery and confer a neuroprotective immune microenvironment in mice with SCI.