عنوان مقاله:

Down-regulation of microRNA-۲۳b aggravates LPS-induced inflammatory injury in chondrogenic ATDC۵ cells by targeting PDCD۴

محل انتشار:

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خلاصه مقاله:

Objective(s): Osteoarthritis (OA), characterized by degradation of articular cartilage, is a leading cause of disability. As the only cell type present in cartilage, chondrocytes play curial roles in the progression of OA. In our study, we aimed to explore the roles of miR-۲۳b in the lipopolysaccharide (LPS)-induced inflammatory injury. Materials and Methods: LPS-induced cell injury of ATDC۵ cells was evaluated by the loss of cell viability, enhancement of cell apoptosis, alteration of apoptosis-associated proteins, and release of inflammatory cytokines. Then, miR-۲۳b level after LPS treatment was assessed by qRT-PCR. Next, the effects of aberrantly expressed miR-۲۳b on the LPS-induced inflammatory injury were explored. The possible target genes of miR-۲۳b were virtually screened by informatics and verified by luciferase assay. Subsequently, whether miR-۲۳b functioned through regulating the target gene was validated. The involved signaling pathways were investigated finally.Results: Cell viability was decreased but cell apoptosis, as well as release of inflammatory cytokines, was enhanced by LPS treatment. MiR-۲۳b was down-regulated by LPS and its overexpression alleviated LPS-induced inflammatory injury. PDCD۴, negatively regulated by miR-۲۳b expression, was verified as a target gene of miR-۲۳b. Following experiments showed miR-۲۳b alleviated LPS-induced cell injury through down-regulating PDCD۴ expression. Phosphorylated levels of key kinases in the NF-κB pathway, as well as expressions of key kinases in the Notch pathways, were increased by PDCD۴ overexpression.Conclusion: MiR-۲۳b was down-regulated after LPS treatment, and its overexpression ameliorated .LPS-induced inflammatory injury in ATDC۵ cells by targeting PDCD۴, which could activate the NF-κB/Notch pathways

کلمات کلیدی: