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Inhibitory effect of microRNA-27b on interleukin 17 (IL-17)-induced monocyte chemoattractant protein-1 (MCP1) expression

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ABSTRACT. We investigated the effect of microRNA-27b (miR-27b), a gene expression regulatory factor, on the expression of monocyte chemoattractant protein-1 (MCP1) stimulated by interleukin 17 (IL-17). After IL-17 had been added to H9C2 cardiomyocytes, an miR-27b mimic was transfected into the H9C2 cells. The mRNA expression levels of miR-27b and MCP1 in the H9C2 cells were detected by SYBR green I fluorescence quantitative reverse transcription polymerase chain reaction. Enzyme-linked immunosorbent assay was used to measure the expression levels of MCP1 protein in the H9C2 cells. The expression of MCP1 mRNA in the H9C2 cells began to increase 2 h after IL-17 stimulation, reached a peak at 4 h, and then decreased. The MCP1 protein level increased gradually in the 24 h following IL-17 stimulation. After transfection with the miR-27b mimic, the expression of miR-27b in the H9C2 cells significantly increased than that in the miRNA negative control group ($P < 0.01$). The MCP1 mRNA and protein levels in the miR-27b mimic + IL-17 group were significantly reduced than that in the miRNA negative control + IL-17 group ($P < 0.01$). miR-27b inhibited IL-17-induced MCP1 expression in the H9C2

cells, which demonstrates that treatment with microRNA could alleviate myocardial injury in viral myocarditis.

Key words: H9C2 cardiomyocytes; miR-27b; Interleukin 17; Monocyte chemoattractant protein-1

