



Tetrandrine induces microRNA differential expression in human hypertrophic scar fibroblasts *in vitro*

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ABSTRACT. MicroRNAs (miRNAs) have recently been shown to play a role in normal wound healing process. miRNAs may be linked to pathologic wound healing and closely related to the formation of hypertrophic scars. This study aimed to explore the effects of tetrandrine on the miRNA expression profile in human hypertrophic scar fibroblasts (HSFs) *in vitro*. HSFs were randomly divided into two groups: the tetrandrine treatment group and the control group. The experimental and control groups were collected and analyzed by miRNA array after a 48-h culture. Real-time reverse transcriptase-polymerase chain reaction (RT-PCR) was performed to confirm the array results. The targets of differentially expressed miRNA were functionally annotated using bioinformatic approaches. miRNA microarray analysis identified 193 differentially expressed miRNAs and the expression of 186 miRNAs in the experimental group decreased while that of 7 miRNAs increased compared to the control group. The most significantly

downregulated miRNA was hsa-miR-1246, and hsa-miR-27b had the highest expression level. Significant differentially expressed miRNAs were predicted to be related to several important signaling pathways related to scar wound healing. The differential miRNA expression identified in this study provides the experimental basis for further understanding the anti-fibrosis effect of tetrandrine.

Key words: Fibroblasts; Hypertrophic scars; MicroRNA; Expression profile; Tetrandrine