Gene Therapy of Arthritis

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Abstract—Gene therapy can offer a new approach to arthritis treatment which acts at an inflammation site. Numerous studies show high efficacy of gene therapy in different models of arthritis in humans. Even a single injection of a recombinant vector results in a stable prolonged expression of a therapeutic gene and a long-term therapeutic effect. In contrast to biologic therapy involving numerous systemic injections of recombinant anti-inflammatory proteins, gene therapy does not produce systemic side effects. Vectors based on retroviruses, adenoviruses, adeno-associated viruses, and recombinant plasmids could provide delivery of target genes. Of significant importance is the development of noninvasive methods of gene therapy: intranasal and peroral. The current state of research in arthritis gene therapy is discussed in this review.

Keywords: gene therapy, arthritis, cytokines, cytokine antagonists

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