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RANTES/CCL5 in tissue remodeling of Rheumatoid Arthritis: Novel mechanism and potential therapeutic regulation

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Abstract

RANTES/CCL5 is a C-C chemokine that participates in rheumatoid arthritis (RA) pathogenesis by facilitating leukocyte infiltration in the affected joints. However, its impact on other pathological functions, including gene regulation, cell proliferation, and tissue destruction are not fully defined in RA. In recent years, there is a growing interest in understanding the role of chemokines in propagating inflammation and tissue destruction in RA. The present study was designed to evaluate the effect of RANTES/CCL5 on the expression of matrix degrading enzymes, matrix metalloproteinases (MMPs), in human RA synovial fibroblasts (RASFs) and its underlying molecular mechanism. Our study provides a novel mechanistic insight to the role of RANTES/CCL5 in selectively inducing MMP-1 and MMP-13 expression in human RASFs. Further understanding of these mechanisms will provide scientific rationale for targeting RANTES/CCL5 to minimize tissue destruction and inflammation in RA and possible other chronic inflammatory diseases.