PSORIASIS

C19, A C-TERMINAL PEPTIDE OF CKLF1, DECREASES INFLAMMATION AND PROLIFERATION OF DERMAL CAPILLARIES IN PSORIASIS

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Introduction: Psoriasis is a chronic inflammatory autoimmune disease with undefined etiology. Chemokine-like factor 1 (CKLF1), a human cytokine that is a functional ligand for CCR4, displays chemotactic activities in a wide spectrum of leukocytes and plays an important role in psoriasis development.

Objective: In previous study, our laboratory found that the expression of CKLF1 increased in psoriatic lesions. C19 as a CKLF1's C-terminal peptide has been reported to exert inhibitory effects on a variety of diseases. However, the protective roles of C19 in endothelial cells proliferation and inflammatory cells chemotaxis remain elusive in psoriasis. In this study we examined the protective effect of C19 on both the cellular model and the animal model.

Materials and Methods: The effects of C19 on endothelial cells proliferation and inflammatory cells chemotaxis were investigated in cultured human umbilical vein endothelial cells (HUVECs) and imiquimod-induced psoriasiform inflammation of BALB/c mice based on techniques including immunohistochemical analysis, quantitative real-time PCR (qRT-PCR), western blot, transwell, and EdU assay.

Results: There were more CCL17 expressing cells in plaque psoriasis than in normal skin using immunohistochemistry. TNF-α promoted expression of chemokines in HUVECs via activating ERK and JNK pathways. C19 inhibited chemotaxis of T cells. Antagonistic effect of CKLF1-C19 on proliferation of HUVEC through ERK1/2 and p38-MAPK signaling pathways induced by CKLF1. CKLF1-C19 considerably ameliorated imiquimod-induced psoriasiform inflammation (IPI). C19 reduced in ltration of in ammatory cells and dermal endothelial cells.

Conclusions: CKLF1-C19 significantly protects against psoriasis by inhibiting the infiltration of inflammatory cells and proliferation of microvascular cells, possibly via inhibiting MAPK pathways.