

Publication

The antimicrobial peptide LL37 is a T-cell autoantigen in psoriasis

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Psoriasis is a common T-cell-mediated skin disease with 2-3% prevalence worldwide. Psoriasis is considered to be an autoimmune disease, but the precise nature of the autoantigens triggering T-cell activation remains poorly understood. Here we find that two-thirds of patients with moderate-to-severe plaque psoriasis harbour CD4(+) and/or CD8(+) T cells specific for LL37, an antimicrobial peptide (AMP) overexpressed in psoriatic skin and reported to trigger activation of innate immune cells. LL37-specific T cells produce IFN- γ , and CD4(+) T cells also produce Th17 cytokines. LL37-specific T cells can infiltrate lesional skin and may be tracked in patients blood by tetramers staining. Presence of circulating LL37-specific T cells correlates significantly with disease activity, suggesting a contribution to disease pathogenesis. Thus, we uncover a role of LL37 as a T-cell autoantigen in psoriasis and provide evidence for a role of AMPs in both innate and adaptive immune cell activation.

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