Antimicrobial peptide – DNA complexes are implicated in initial pathogenesis of rosacea

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Rosacea is a common chronic skin disease that starts with fleeting inflammation and subsequently disfigures patients by induction of sebaceous gland and fibrous hyperplasia. Recently, antimicrobial peptides have been shown to be expressed in rosacea and to play a major role in induction of inflammation. Here we show that antimicrobial peptide overexpression in rosacea is accompanied by intake of nucleic acid into plasmacytoid dendritic cells and production of type I interferon. This was associated with expression of the interferon-signalling surrogate markers MxA protein and IRF-7 in rosacea. In addition, presence of plasmacytoid dendritic cells correlated with T cell numbers, but not with grade of rosacea or number of blood vessels, indicating that these events play a major early role in inducing typical fleeting inflammation, leading to flares and disease exacerbation in rosacea.