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Identification of 15 new psoriasis susceptibility loci highlights the role of innate immunity.

To gain further insight into the genetic architecture of psoriasis, we conducted a meta-analysis of 3 genome-wide association studies (GWAS) and 2 independent data sets genotyped on the Immunochip, including 10,588 cases and 22,806 controls. We identified 15 new susceptibility loci, increasing to 36 the number associated with psoriasis in European individuals. We also identified, using conditional analyses, five independent signals within previously known loci. The newly identified loci shared with other autoimmune diseases include candidate genes with roles in regulating T-cell function (such as RUNX3, TAGAP and STAT3). Notably, they included candidate genes whose products are involved in innate host defense, including interferon-mediated antiviral responses (DDX58), macrophage activation (ZC3H12C) and nuclear factor (NF)-κB signaling (CARD14 and CARM1). These results portend a better understanding of shared and distinctive genetic determinants of immune-mediated inflammatory disorders and emphasize the importance of the skin in innate and acquired host defense.