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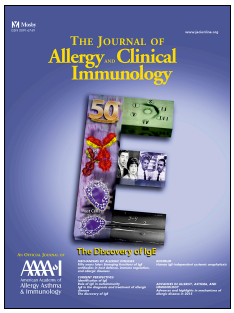

Vitiligo: Mechanistic Insights Lead to Novel Treatments

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Vitiligo: Mechanistic Insights Lead to Novel Treatments

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Abbreviations/Acronyms: Alpha-melanocyte stimulating hormone (α-MSH), damage-associated molecular patterns (DAMPs), glycogen synthase kinase-β (GSK-β), Genome wide association studies (GWAS), Herpes Simplex Virus (HSV), Janus Kinase (JAK), narrow band UVB (nbUVB), psoralen plus UVA (PUVA), reactive oxidative species (ROS), single-nucleotide polymorphisms (SNPs), Signal Transducer and Activator of Transcription (STAT), T regulatory cell (Treg), resident-memory T cells (Trm), Wingless-related integration site (WNT), vitiligo activity scoring index (VASI), vitiligo extent score (VES), vitiligo European task force measurement (VETF).

Key words:

vitiligo, treatment, T cell, IFN-g, CXCL9, CXCL10, CXCR3, resident memory, regulation, stress, innate immunity, inflammasome, NLRP1, NLRP3, melanocyte, regeneration, clinical trials, repigmentation, hair.

Abstract

Vitiligo is an autoimmune disease of the skin characterized by patchy depigmentation. Current treatments are moderately effective at reversing disease by suppressing autoimmune inflammation in the skin and promoting the regeneration of melanocytes. Recent basic and translational research studies have significantly improved our understanding of disease pathogenesis, which is now leading to emerging treatment strategies based on targeted therapy. Here we discuss important clinical characteristics of vitiligo, current therapies, their limitations, advances in understanding disease pathogenesis, emerging targeted treatments, and strategies to optimize clinical trials to efficiently and effectively test these new treatments.