



Technology Opportunity, Ref. No. UZ-23/573

## Innovative Gluconolactone Therapy for Skin Autoimmune Diseases

Gluconolactone enhances Treg function and inhibits TH17 cells, offering a novel treatment for autoimmune diseases like lupus.

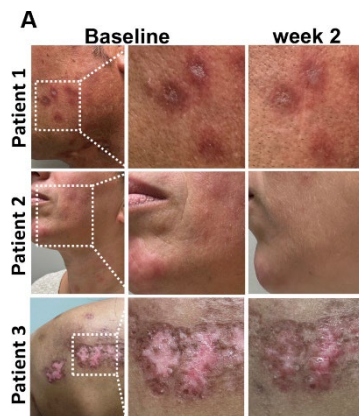
**Keywords** gluconolactone, autoimmune disease, inflammatory disease, lupus, vitiligo, psoriasis

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**Reference** Sci. Transl. Med. 2025:17(786); doi: 10.1126/scitranslmed.adp4447

**Background** Inflammatory autoimmune diseases of the skin such as systemic lupus erythematosus (SLE), vitiligo, eczema, or psoriasis are challenging autoimmune disease where the immune system attacks the body's own tissues, leading to widespread inflammation and damage. Current treatments rely on immunosuppressive drugs, which can cause significant side effects. There's a need for more targeted therapies that can modulate the immune system without these drawbacks.

**Invention** Our innovative approach uses gluconolactone (GDL), a natural metabolite, to enhance the function of regulatory T cells (Tregs) and inhibit harmful TH17 cells. This dual action helps restore immune balance, reducing inflammation and improving symptoms in affected patients. In both animal models and individual treatment attempts, GDL has shown promise in alleviating skin lesions and controlling autoimmune responses. This breakthrough offers a safer, more effective treatment option for autoimmune diseases like lupus.



*Improvement of skin lesions in three patients with severe, therapy-refractory cutaneous lupus after GDL treatment of 14 days. Complete response is possible after longer treatment.*

**Fields of Use** Systemic or topical use of gluconolactone in the treatment of autoimmune skin diseases.

**Patent Status** Patent application filed, EP 25/158027.0

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