VYNE™ THERAPEUTICS

Topical BET Inhibitor (VYN201) Preclinical Study Update

November 10, 2021

ROOTED IN INNOVATION

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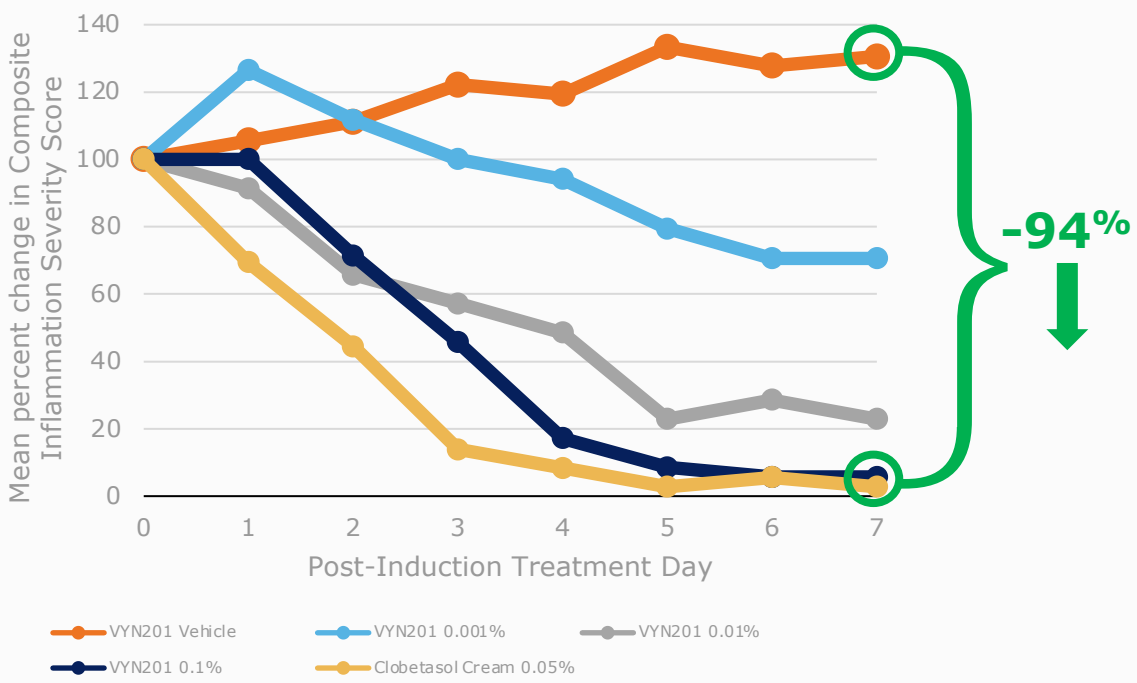
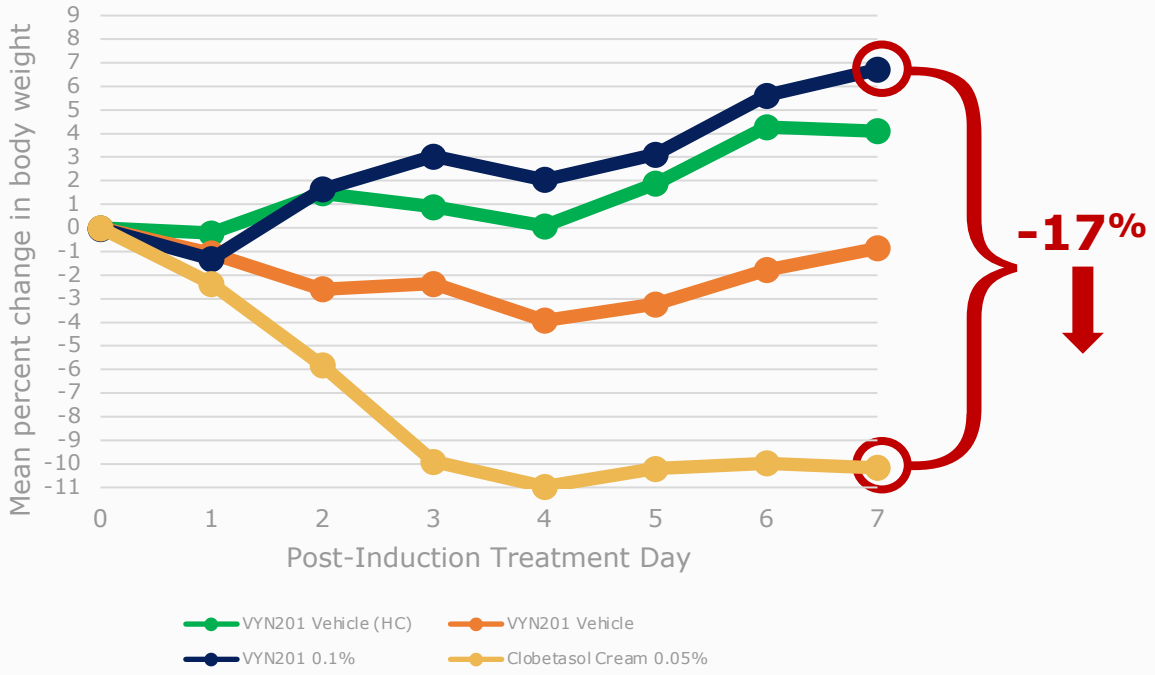
VYN201: Comparable Efficacy to Superpotent Steroid Clobetasol in a TH17-Mediated Murine Inflammation Model; Potential for Greater Tolerability

Dorsal depilated BALB-C mice were dosed topically for 14 days with 100mg topical IMI cream (Day 1-7: induction phase, Day 8-14: treatment phase). N=4 animals were assigned to each treatment group with each group receiving 100mg of allocated treatment on Day 8-14 once daily





- Dose dependent response was observed over the VYN201 concentration range 0.001% to 0.1%
- There was a 94% reduction in composite score for VYN201 0.1% relative to vehicle control group at Day 7
- VYN201 0.1% had comparable efficacy to clobetasol propionate 0.05% cream

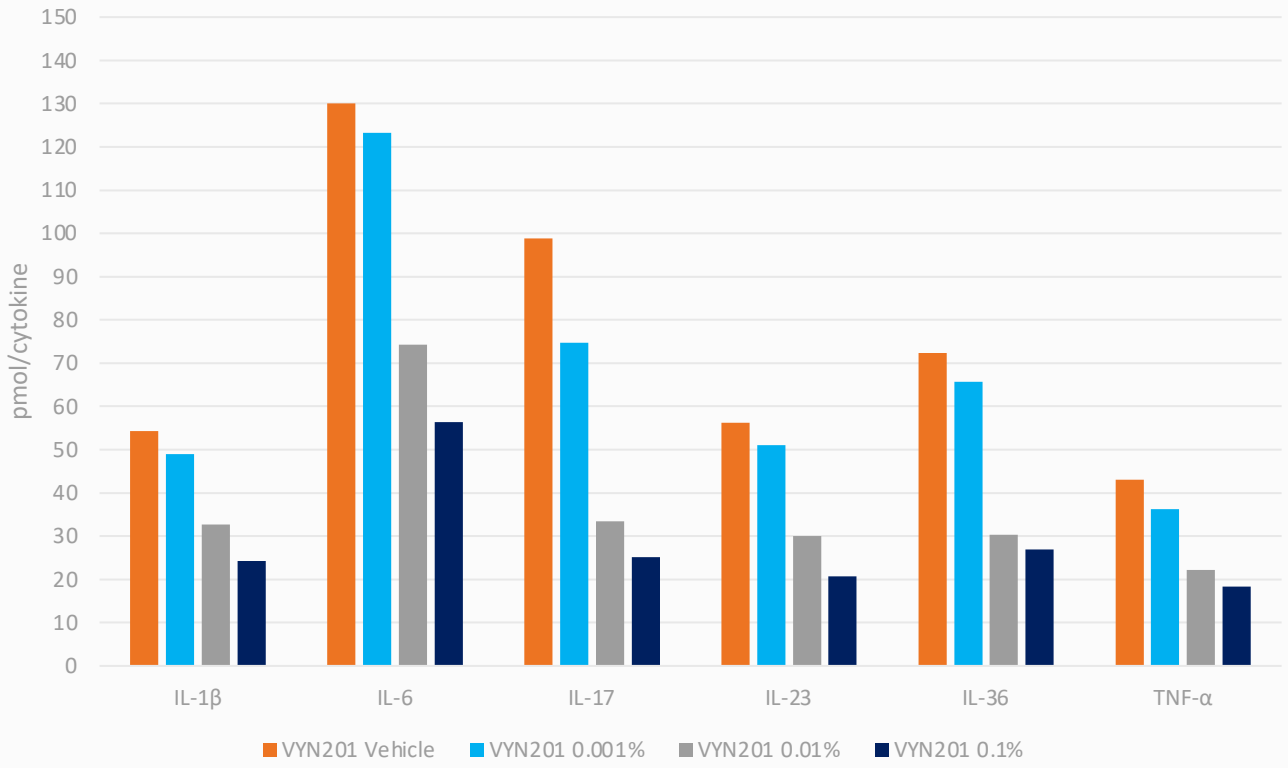
- Animals treated with VYN201 0.1% continued to gain body weight in a similar manner to healthy control group treated with vehicle
- Clobetasol cream 0.05% group had a 17% reduction in body weight compared to the VYN201 0.1% group at treatment day 7

IMI – Imiquimod.

*Composite Inflammation Severity Score is a composite mean score of erythema and peeling severity scored on a 4-point ordinal scale per domain (0=none, 1=mild, 2=moderate and 3=severe for a maximum score of 6), data expressed as a mean percentage change from initiation of treatment phase.

VYN201: Dose-Dependent Reduction in Pro-Inflammatory Biomarkers in TH17-Mediated Murine Inflammation Model Indicates Target Engagement

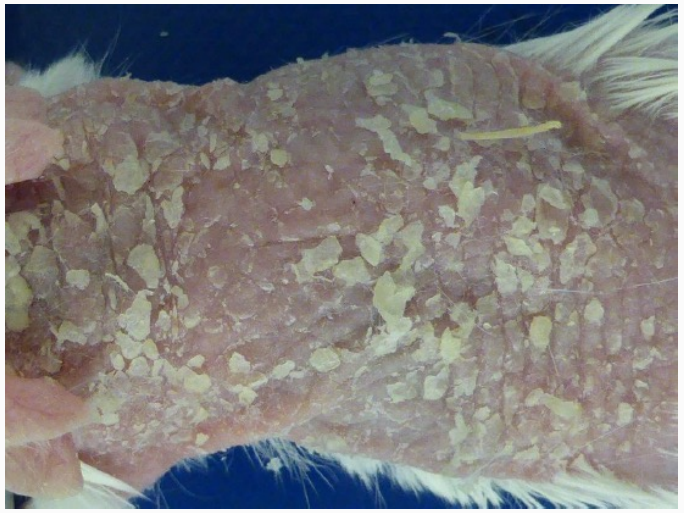
Dorsal depilated BALB-C mice were dosed topically for 14 days with 100mg topical IMI cream (Day 1-7: induction phase, Day 8-14: treatment phase). N=4 animals were assigned to each treatment group with each group receiving 100mg of allocated treatment on Day 8-14 once daily



- **Strong correlation between improvement in clinical severity scores and reduction in many pro-inflammatory biomarkers relevant to Th17-mediated autoimmune diseases**
- Dose-dependent reduction in biomarker expression was observed with VYN201 0.1% as having the greatest effect
- IL1β, IL-6 and IL-23 precipitate the differentiation of naïve Th0 immune cells to Th17 cells
- Th17 cells produce a range of cytokines that drive inflammation in autoimmune diseases. These include IL17, IL36 and TNFα

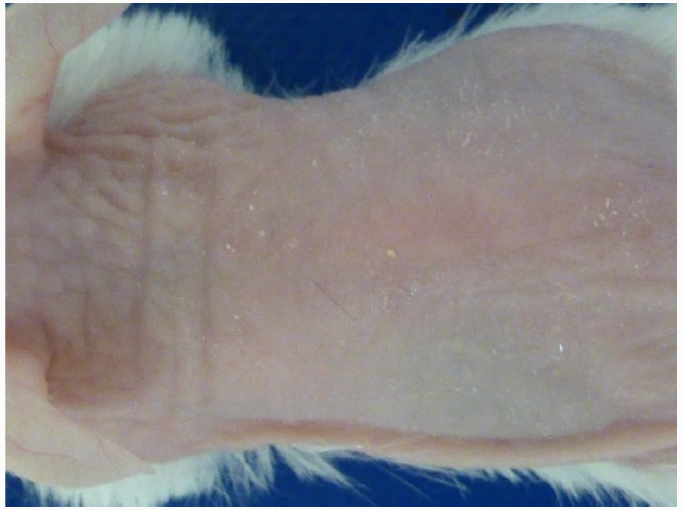
IMI – Imiquimod.

VYN201: Normal Skin Physiology in TH17-Mediated Murine Inflammation Model Suggests VYN201 Well Tolerated (Day 7)



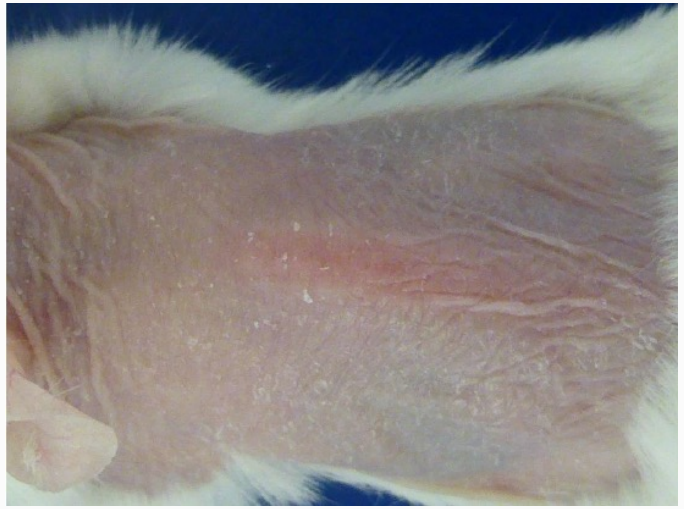
VYN201 Vehicle

- No appreciable improvement in clinical signs



VYN201 0.1%

- Substantial resolution of clinical signs
- Skin presents with normal physiology with no evidence of striae rubrae or atrophy
- No evidence suggestive of intolerance



Clobetasol Cream 0.05%

- Substantial resolution of clinical signs
- Significant evidence of dermal atrophy (clear presence of both rhytides/fine wrinkles and deep wrinkles)
- Marked dermal translucency and elastolysis

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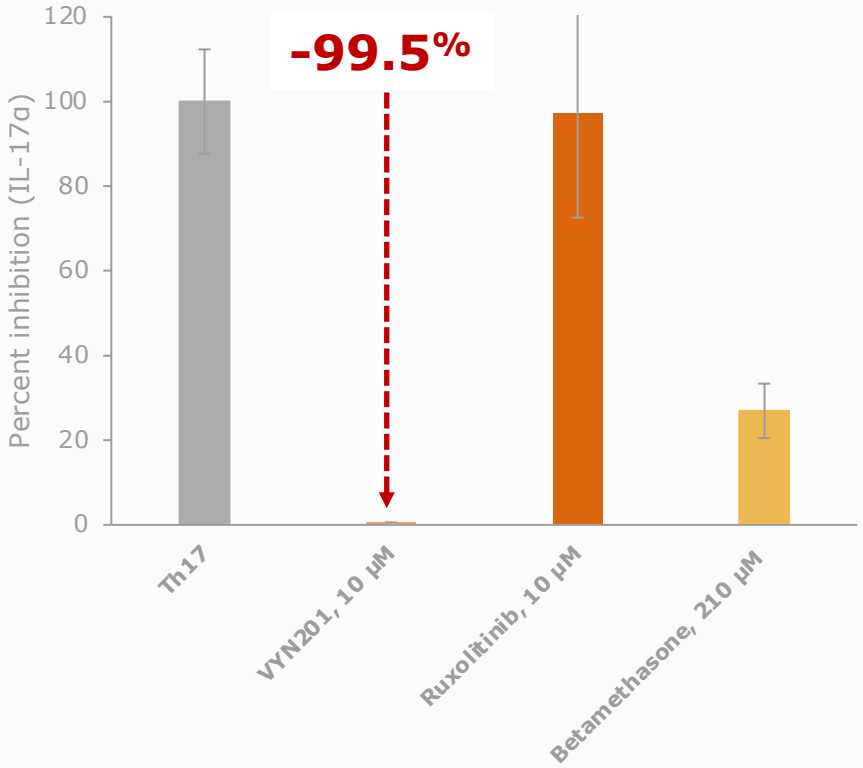
VYN201 Significantly Reduced Expression of Several Key Pro-Inflammatory Proteins Relevant to Th17-mediated Autoimmune Diseases in Human Tissue[1]



Interleukin 17-alpha

T-cells are polarized to Th1 and Th17 cells, the latter of which drives the production of IL17a which further upregulates the migratory action of pro-inflammatory cells and further inflammatory cell activation.

>95% Inhibition seen with assays for IL-36γ & LP-10

Interleukin 36-gamma

IL36γ is implicated in upregulating IL-17A signaling-related genes and so able to amplify keratinocyte inflammatory responses by promoting not only their own expression but also that of other cytokines related to Th17 signaling

CXC motif chemokine ligand 10 (LP-10)

An inflammatory cell chemoattractant secreted in response to interferon gamma. LP-10 is significantly overexpressed in many autoimmune diseases (>25-fold) vs. healthy skin[1]

1. Data on file. Results presented from qPCR analysis of processed and Th17-stimulated ex vivo human skin tissue based on a method derived from Garrett S.M., Zhao Q., and Feghali-Bostwick C. (2019) Induction of a Th17 phenotype in human skin – a mimic of dermal inflammatory diseases, *Methods and Protocols*, 2, 45

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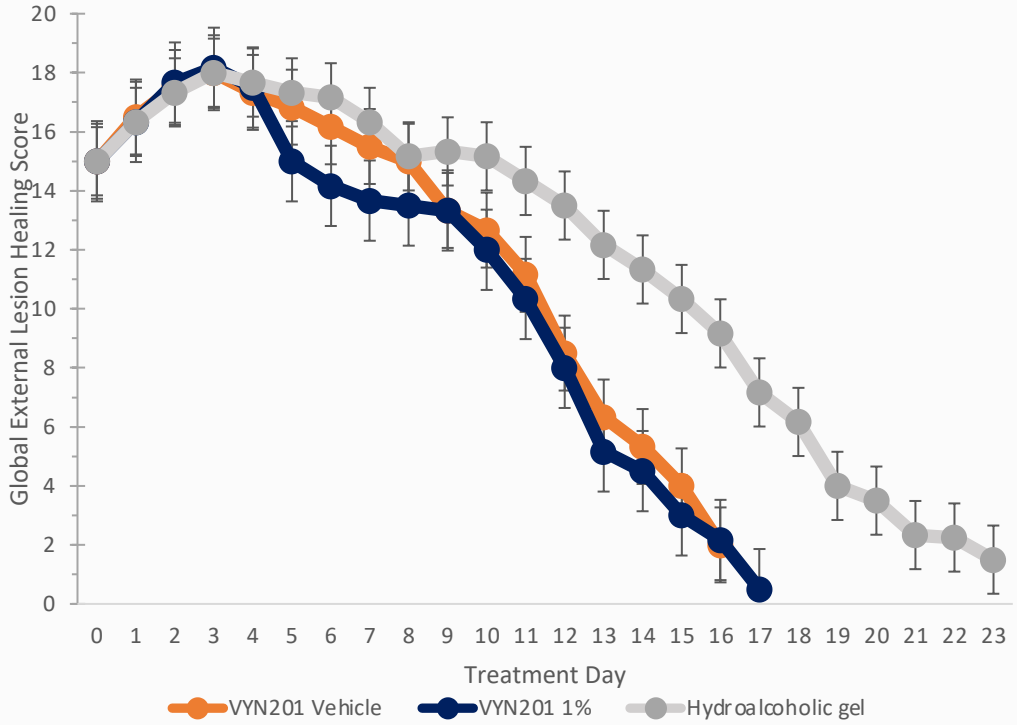
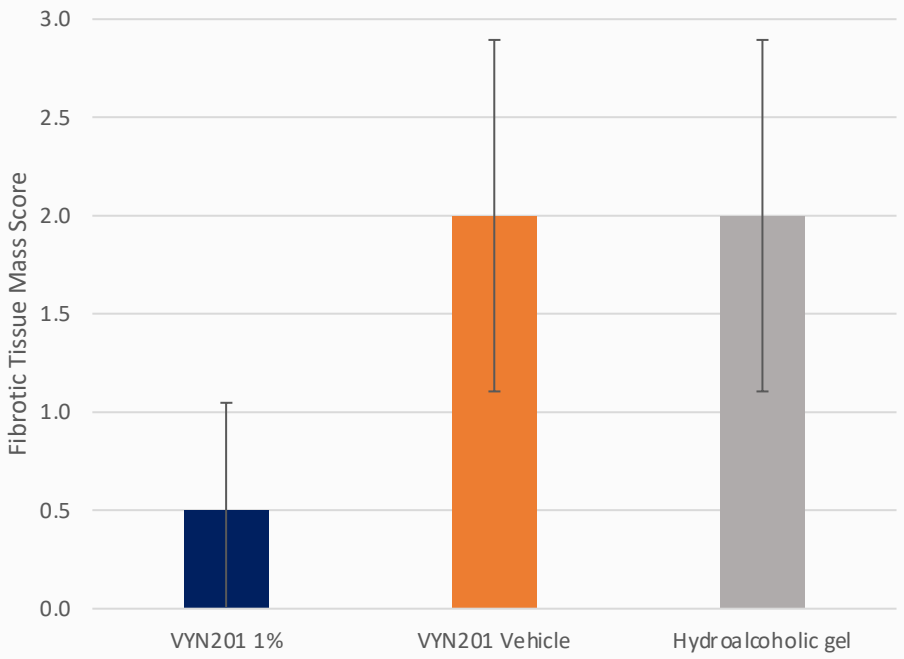
VYN201: Demonstrated Anti-Fibrotic Activity without Delay in Healing Time in Murine Skin Healing Model

Female hairless mice (n=4/group) had two identical 10mm incisions made either side of the flank. Animals were topically dosed 1X daily with 100mg VYN201 vehicle, VYN201 1% or a hydroalcoholic gel* until each wound had completely healed



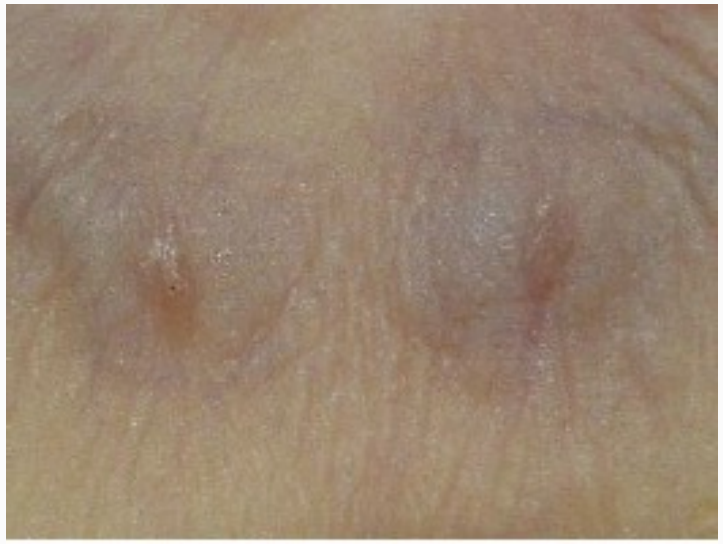


- Statistically significant difference in composite global external healing score for VYN201 vehicle and 1% compared to Hydroalcoholic gel
- Complete healing occurred for VYN201 1% and VYN201 vehicle approximately 5 days earlier compared to Hydroalcoholic gel (Mean day to heal:15.5 vs. 21 days)

- Animals treated with VYN201 1% had statistically significant less tissue mass/fibrosis compared to VYN201 vehicle or Hydroalcoholic gel, indicative of the known anti-fibrotic mechanism for BET inhibition

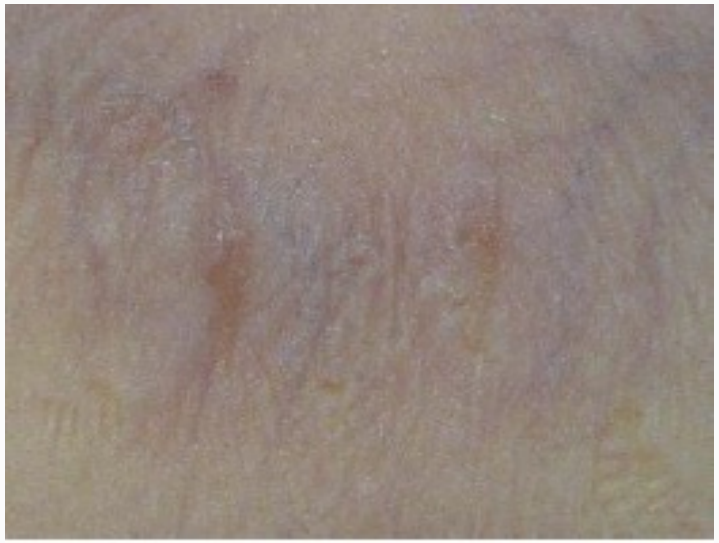
*A negative control known to delay wound healing
Global External Lesion Score is a composite severity score of lesion length, width, swelling and visibility
Fibrotic tissue mass is scored on a 4-point severity scale: 0=No tissue mass; 1=small tissue mass; 2=moderate tissue mass; 3=large tissue mass

VYN201: Little Evidence of Residual Swelling and Macular Wound Appearance in Murine Skin Healing Model



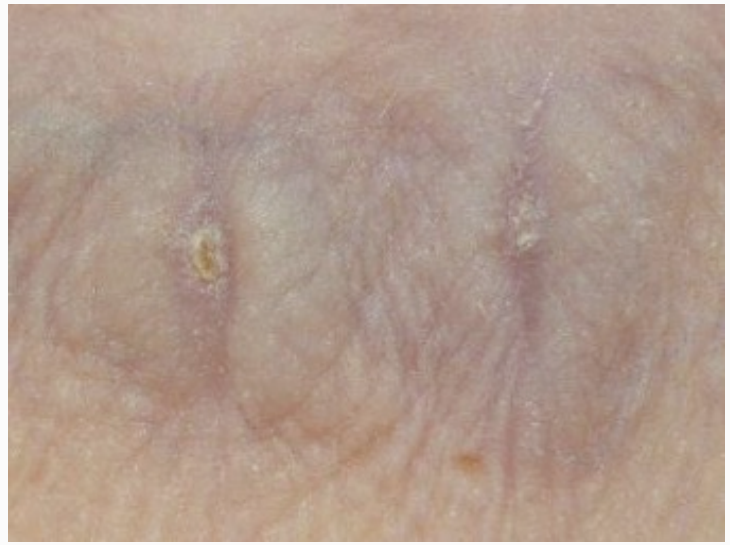
VYN201 Vehicle

- Still evidence of minor swelling around incision sites



VYN201 1%

- Little evidence of residual swelling
- Wound appears more macular in nature compared to VYN201 vehicle or the hydroalcoholic gel
- Incision sites appear less distinct and leave a more aesthetic outcome compared to other treatments



Hydroalcoholic gel

- Moderate swelling clearly evident at end of treatment
- Although healed, residual scabbing still remains
- Incision sites clearly visible

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Summary of Preclinical Studies

- **VYN201 significantly reduced the expression of several key pro-inflammatory cytokines relevant to Th17-mediated autoimmune diseases**
- **VYN201 demonstrated improvement in reducing fibrotic tissue mass and overall skin repair outcomes**
- **Key highlights from the preclinical studies:**
  - VYN201 exhibited anti-inflammatory effect similar to super-potent glucocorticosteroids.
  - VYN201 appeared well-tolerated in mice, as seen through animal body weight and skin condition.
  - VYN201 also demonstrated stronger inhibition of key Th17 cytokines in ex vivo data with human skin tissue when directly compared to JAK1/2 inhibitor, ruxolitinib.
  - VYN201, demonstrated improvements in reducing fibrotic tissue mass and overall skin repair outcomes with no negative impact on healing time. The results support the continued progression of VYN201 development program.

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