

TEWL

Two-Part Study Assessing Skin Sample Integrity and the Effects of Tattooing Using the DermaLab TEWL Probe



Case Information

Study Title: A Novel Approach for Dermal Application of Pranoprofen-Loaded Lipid Nanoparticles for the Treatment of Post-Tattoo Inflammatory Reactions

Published in: *Pharmaceutics* (2024): 16(5) 643

Authors: G. De Garu-Bassal et al.

Aim: Investigating the effect of tattooing on skin integrity and the efficacy of a tattoo aftercare formulation (PRA-NLC) in both ex vivo and in vivo studies.

Investigating Ex-Vivo Skin Integrity

Human skin was obtained from the surgical waste following abdominoplasty procedure in healthy patients.

The integrity of each skin sample was assessed using the DermaLab TEWL Probe. Skin discs with TEWL values higher than 10 g/m²/h were discarded from the study and replaced by skin discs with suitable skin integrity. The selected skin biopsies were subsequently used in a skin permeation assay.

The DermaLab TEWL Probe made it possible to identify suitable skin biopsies, thus supporting a reliable study setup.

Investigating In-Vivo Product Efficacy

Six 10-week-old hairless female rats were tattooed on their backs. PRA-NLC was subsequently applied to the tattooed area. TEWL was measured before and after tattooing and again following treatment with PRA-NLC.

TEWL values increased following tattooing, indicating damaged skin integrity. However, topical application of PRA-NLC restored TEWL values after 20 min of treatment.

This finding suggests that PRA-NLC may be an effective formulation for tattoo aftercare.

BENEFITS

of DermaLab TEWL

- Non-invasive measurements allow for repeated measurements without altering the skin barrier.
- The open-chamber design maintains natural skin conditions and allows for continuous measurements of TEWL without saturation.

Please note: Cortex devices provide objective measurement data for research and cosmetic studies. They are not intended for diagnosis or treatment of medical conditions.



Using the DermaLab TEWL Probe to investigate tattooed rat skin.

Reference: De Garu-Bassal et al.: "A Novel Approach for Dermal Application of Pranoprofen-Loaded Lipid Nanoparticles for the Treatment of Post-Tattoo Inflammatory Reactions", *Pharmaceutics* (2024): 16(5) 643, Figure 4C.

The DermaLab Combo

Is highly customizable and provides advanced measurements. Choose between 12 probes and combine up to 9 skin parameters in one device.

To learn more about our solutions, visit www.cortex.dk



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