



Silicone-Glycerol formulations embedded with cosmetic ingredients for Dermatological Applications: A Clinical Trial

Echarri Giacchi, M.; Yu, L.; Skov, A. L.

Publication date:
2023

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Echarri Giacchi, M., Yu, L., & Skov, A. L. (2023). *Silicone-Glycerol formulations embedded with cosmetic ingredients for Dermatological Applications: A Clinical Trial*. Abstract from 10th European Silicon Days, Montpellier, France.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



Silicone-Glycerol formulations embedded with cosmetic ingredients for Dermatological Applications: A Clinical Trial.

M. Echarri Giacchi,^[a,b] L. Yu^[a] and A. L. Skov^[a,b]

^[a] Danish Polymer Centre, DTU Chemical and Biochemical Engineering, Technical University of Denmark (DTU).

^[b] Glyscious, Kong Valdemarsvej 58, 2840 Holte, Denmark.

Silicone transdermal drug delivery patches have potential applications in skin care products, providing a promising approach for administering active ingredients and drugs directly through the skin. However, due to the protective barrier function of the outermost layer of the skin, the penetration of most actives into the deeper layers of the skin is limited. To address this, two-phase glycerol-silicone biocompatible skin cure patches have been investigated, offering substance release capabilities, while ensuring a comfortable and gentle adaptation to the skin [1]. One of the main challenges of achieving efficacy with such transdermal drug delivery systems lies in their design, involving the selection of compatible active ingredients and their efficient absorption within the matrix.

In this study, we compared the efficacy and stability of two glycerol-silicone skin cure formulations containing different hyaluronic acids and vitamin C. A clinical trial was conducted with 8 subjects, where the two different glycerol-silicon skin cure formulations were placed on the forearm for 8 days and 18 hours per day. Ultrasound imaging of the skin was conducted along with assessment of other skin properties, such as hydration, viscoelasticity and transepidermal water loss. Efficacy of the glycerol-silicone skin cure formulations in improving skin properties was demonstrated.

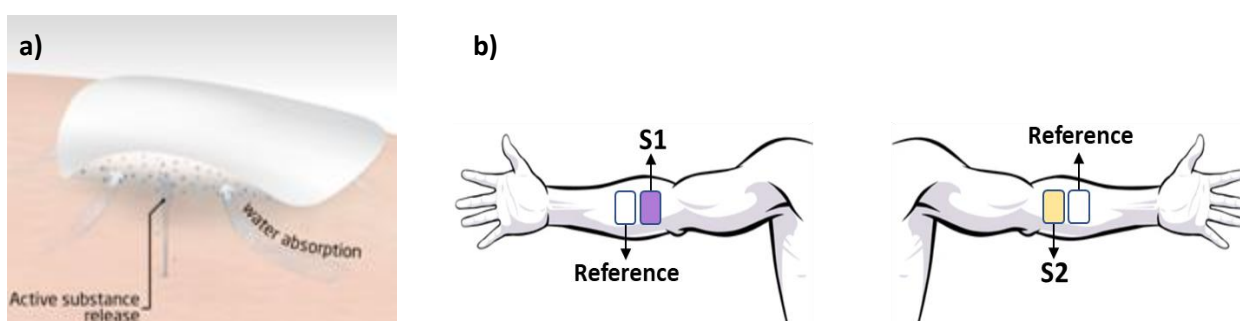


Figure 1. a) Scheme of glycerol-silicone patches with active substances attached to the skin. b) Proposed glycerol-silicone application for the clinical trial.

References

[1]: V. Chiaula, P. Mazurek, J. Eiler, A.C. Nielsen, A. L. Skov, *Int. J. Adhes. Adhes.* **2020**, 102, 102667.