Results of a 4-weeks-treatment *in vivo* study:

**A multifunctional moisturizing repair body lotion improves subjective and objective symptoms of patients suffering from mild to moderate psoriasis.**

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### Introduction

Psoriasis is an immune-mediated incurable disease, which can affect every part of the skin, including scalp and nails. Characteristic symptoms of chronic plaque type psoriasis are dry and raised skin lesions covered with silvery scales often accompanied with persistent itch. Topical treatment with urea alleviates itch and improves stratum corneum hydration and water content which highly influences the keratolysis, as well as the skin barrier function.

### Objective

The aim of this *in vivo* study was to evaluate the efficacy and tolerability of a multifunctional moisturizing dry skin repair product, formulated with components of the natural moisturizing factor, ceramide 3, and the novel humectant, gluco-glycerol, on dry psoriatic skin.

![Chemical structure of gluco-glycerol](image)

![Mode of Action of a Humectant](image)
A multifunctional moisturizing repair body lotion improves subjective and objective symptoms of patients suffering from mild to moderate psoriasis.

**Methods**

25 subjects (20 females, 5 males), aged 20 to 65 years, suffering from psoriasis with dry skin lesions on the forearms were enrolled. The product was applied at least twice daily or as often as needed over a period of 4 weeks.

Skin moisture was determined by means of Corneometer measurements, and water retaining potential was assessed with a Tewameter. Skin scaling and epidermal turn-over rate (corneocyte size) were assessed by means of optical topometry of adhesive sampling discs (D-Squames) before and after 4 weeks of regular product application. Additionally, the local PASI score of the involved skin regarding desquamation and infiltration was assessed, and clinical photographs were taken at baseline and after 4 weeks.

Furthermore, all subjects completed self-assessment questionnaires regarding product tolerability, sensoric properties and skin care efficacy.

**Results**

The results of this in vivo study revealed significant improvements in skin moisture and barrier function (Figure 1) after regular application of a 10% urea-containing skin care lotion.
A multifunctional moisturizing repair body lotion improves subjective and objective symptoms of patients suffering from mild to moderate psoriasis.

Furthermore, skin roughness values significantly decreased (Figure 2), and significant decreases in desquamation and infiltration of skin lesions (Figure 3) resulted in visibly improved psoriatic skin.
A multifunctional moisturizing repair body lotion improves subjective and objective symptoms of patients suffering from mild to moderate psoriasis.

The test product was well tolerated by the study population over the entire duration of usage and led to significant agreement to the statements concerning product performance on psoriatic skin (Figure 4).

4 | Self-Assessment of Product Performance After 4 Weeks of Treatment

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>... spreads easily</td>
<td>96%</td>
</tr>
<tr>
<td>... provides moisture to the skin</td>
<td>88%</td>
</tr>
<tr>
<td>... is suitable for dry skin</td>
<td>84%</td>
</tr>
<tr>
<td>... reduces desquamation</td>
<td>83%</td>
</tr>
<tr>
<td>... does not induce unpleasant skin feel</td>
<td>100%</td>
</tr>
<tr>
<td>I tolerated the lotion well</td>
<td>100%</td>
</tr>
</tbody>
</table>
Clinical photographs of representative volunteers with involved psoriatic skin demonstrated visible improvement in skin lesions at the end of the study (Figure 5).

**Conclusion**

This *in vivo* study in patients suffering from mild to moderate psoriasis demonstrates clearly that the regular application of a cosmetic, multifunctional moisturizing repair body lotion alleviates symptoms like dryness, roughness and visible lesions after 4 weeks of treatment. Taken together, the results provide evidence that the urea-containing body lotion can relieve subjective and objective symptoms of psoriatic skin and thus improve the quality of life of these patients.