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Using Labskin to investigate dermatophyte colonisation

OBJECTIVE

To develop methods for the reproducible invasion of Labskin with *Trichophyton rubrum* for use in evaluating anti-dermatophyte treatments.

METHOD

- Labskin were incubated for 5 days in the presence of the fungus, at 37°C in 5% CO_2.
- 3 Labskin inserts were pre-treated with product before application of 2.5 x 10^4 cm^{-2} conidia of *Trichophyton rubrum*.
- 3 Labskin inserts were inoculated then treated once with product at day 4.
- 3 Labskin inserts were inoculated then treated with product twice, once at day 2 and once at day 4.
- At day 5, 5 mm biopsy punches were removed from the Labskin to be used for colony counting.
- Samples were formalin fixed and paraffin embedded for histology.
- Haematoxylin and Periodic Acid Schiff (PAS) stains were used for visualising fungal cells.

RESULTS

Fungal colonisation of the epidermis was observed in all inoculated samples. Differences in product efficacy were detected, when comparing treatment schedules.

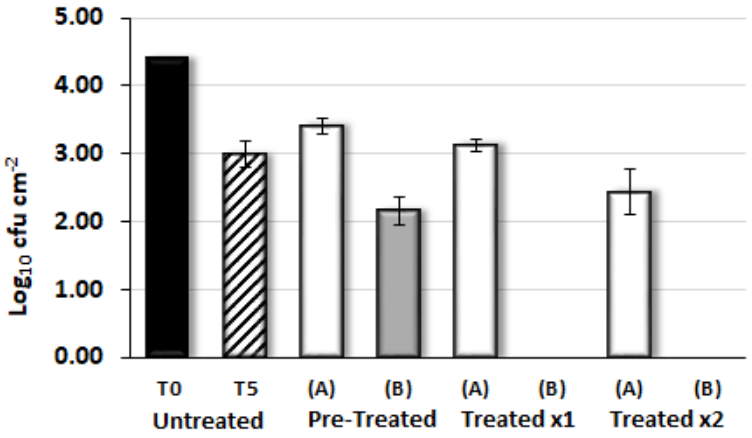
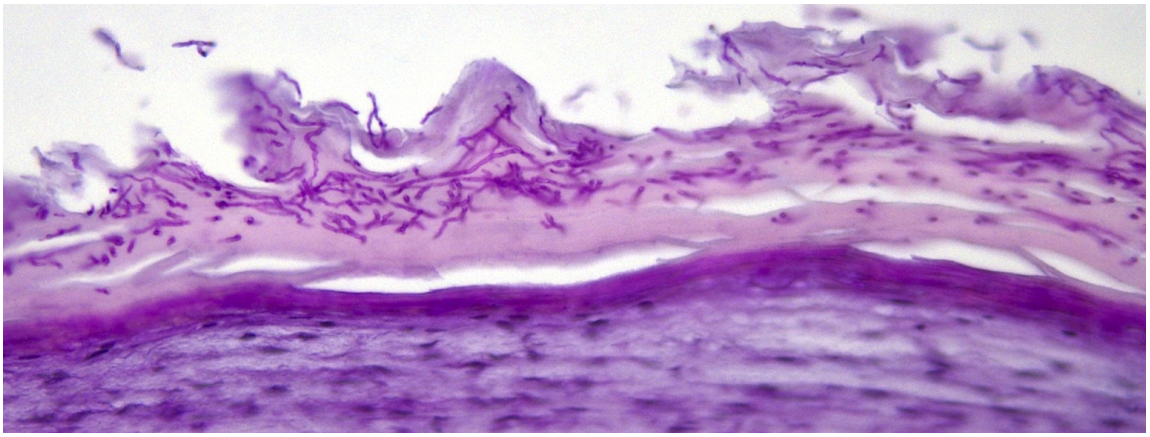


Figure 1 - Activity of topical antifungal treatments A & B against *Trichophyton rubrum* on Labskin

SUMMARY

Labskin was effectively colonised by the dermatophyte *Trichophyton rubrum*. Four days post-inoculation, fungal hyphae interspersed layers of cornified tissue but the tissue beneath remained intact making the model ideal for study of anti-dermatophyte treatments.



Labskin can be used within the same experimental design to simultaneously evaluate multiple factors including cytokine responses (i.e. IL-1a, PGE2, TNFa, IL-10 etc.), histological changes, wound repair and photo-reactivity in addition to skin commensal and pathogenic microorganisms.

Figure 2 - *Trichophyton rubrum* colonising Labskin 4 days after inoculation. Stained with Periodic Acid Schiff & Heamotoxylin.

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labskin