

# LabSkin to assess performance of ingredients and formulations making anti-dandruff claims

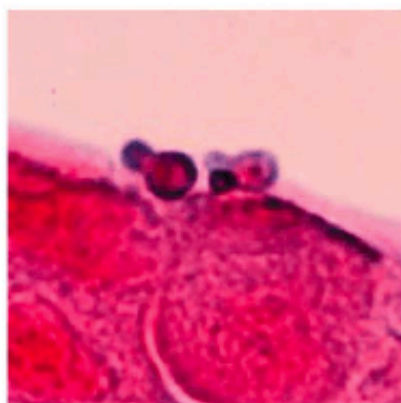
## OBJECTIVE

Application of ingredients for the treatment of dandruff to LabSkin full thickness living skin equivalent to determine the immediate and residual effects on the viability of *Malassezia globosa* and *Malassezia restricta*.

## METHODS

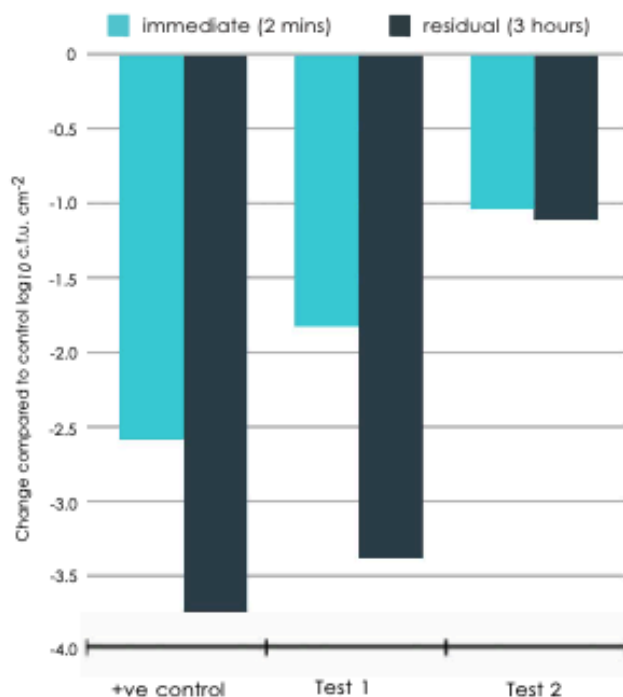
- To assess immediate anti-fungal activity, products were applied to the surface of LabSkin pre-colonised for 24h with *Malassezia globosa* and *Malassezia restricta* in GS-24. After 2 minutes exposure, the skin surface was washed using a modified scrub wash with neutraliser and viable *Malassezia* enumerated on RM-SMA agar medium.
- To assess residual anti-fungal activity, products were applied to the surface of LabSkin for 2 minutes and then removed by washing. The skin surface was then colonised with *Malassezia globosa* and *Malassezia restricta* in GS-24 and incubated. After 3h, the skin surface was washed using a modified scrub wash and viable *Malassezia* enumerated.

Figure 1 - Budding *Malassezia* on LabSkin



## RESULTS

*Malassezia* were recovered from the surface of LabSkin using our modified scrub wash technique and viable cells enumerated on our specially formulated RM-SMA growth medium.



## SUMMARY

Compared to classic *in vitro* antimicrobial testing protocols (MIC, MBC etc.) where materials are presented in solution, LabSkin provides a living, skin-equivalent testing surface which supports the growth of *Malassezia* in a phenotypically-relevant manner.

The LabSkin model can be used to evaluate ingredients and formulations benchmarked against products of recognised clinical activity, and its enhanced predictivity can help to de-risk the move from *in vitro* screening to clinical assessment.

LabSkin can be used within the same experimental design to evaluate several endpoints including cytokine responses (i.e. IL-1 $\alpha$ , IL-6, IL-8, PGE<sub>2</sub>, TNF $\alpha$ , IL-10 etc.), histological changes, wound repair and photo-reactivity in addition to skin commensal and pathogenic microorganisms.



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