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Skin Brightening | Application Note

In vitro Evaluation of Cosmetic Ingredients and Formulations for Skin Brightening Using MelanoDerm

Objective

To evaluate skin brightening following treatment with topically or systemically applied cosmetic ingredients and formulations by measuring macroscopic darkening and melanin production in the MelanoDerm *in vitro* human skin model.

Methods

MelanoDerm tissues were dosed topically with 25 µL of each ingredient or formulation every other day and then cultured at 5% CO_2, 37 ºC, 95% humidity. for up to 14 days. After treatment, MelanoDerm tissues were processed for macroscopic imaging and melanin analysis.

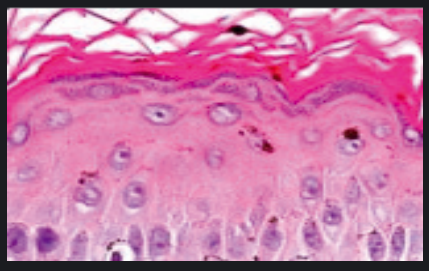

Figure 1. Histology of MelanoDerm. H&E stained cross-section showing that the tissue morphology of MelanoDerm closely parallels that of normal human skin. The epidermis contains basal, spinous, granular and stratum corneum layers and functional human melanocytes (400x).

Results

Progressive skin darkening (Figure 2) and melanin production (Figure 3) were observed in untreated control tissues. Treatment of the MelanoDerm tissue model with known lightening ingredients of commercially available dark spot corrector formulations caused macroscopic skin lightening (Figure 2) and a reduction in melanin production (Figure 3) compared to untreated controls.

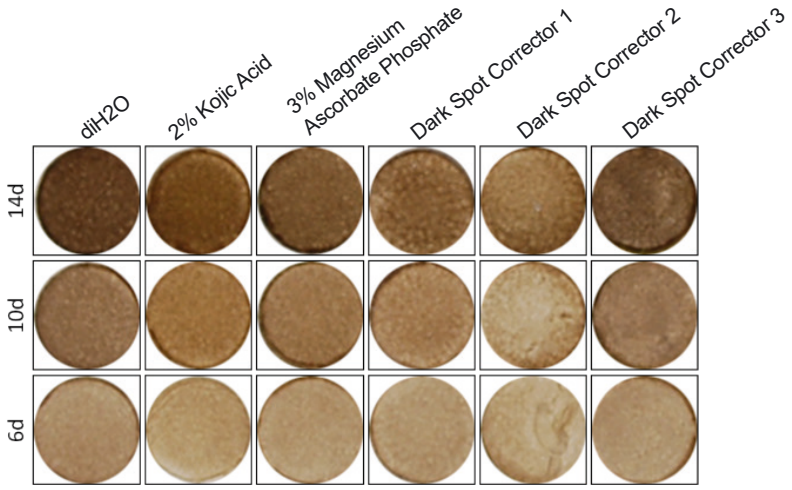

Figure 2. Effect of cosmetic ingredients and formulations on macroscopic darkening in the MelanoDerm tissue model.

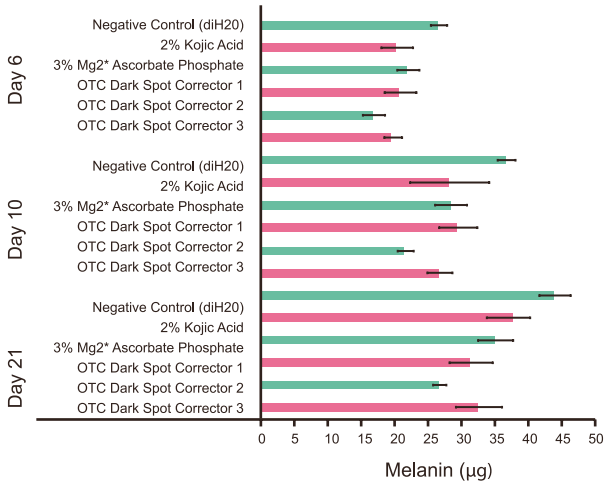

Figure 3. Effect of cosmetic ingredients and formulations on melanin production in the MelanoDerm tissue model.

Conclusion

Assessment of skin brightening following treatment with topically or systemically applied cosmetic ingredients or formulations in the MelanoDerm *in vitro* human skin model can be used in efficacy and claims substantiation studies.