



In Vitro Evaluation of Cosmetic Ingredients and Formulations for Anti-Aging Efficacy using EpiDermFT™

OBJECTIVES

To evaluate the anti-aging efficacy of topically applied cosmetic ingredients and formulations by measuring the expression of ECM components in the EpiDermFT *in vitro* human skin model.

METHODS

- EpiDermFT tissues (**Figure 1**) were produced in the MatTek Corporation GMP tissue production facility.
- 25µl of each formulation was applied topically for 24 hrs.
- After treatment, EpiDermFT tissues were processed for total RNA isolation.
- Total RNA was utilized for gene expression analysis by quantitative PCR.

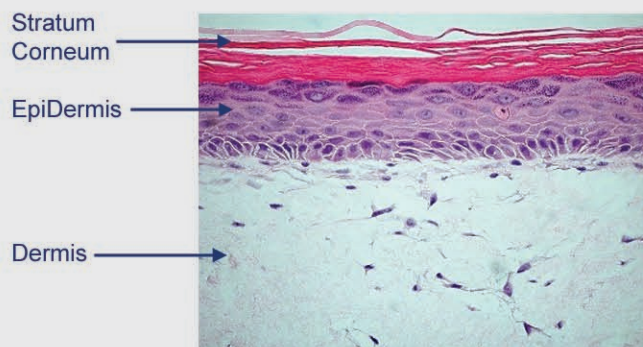
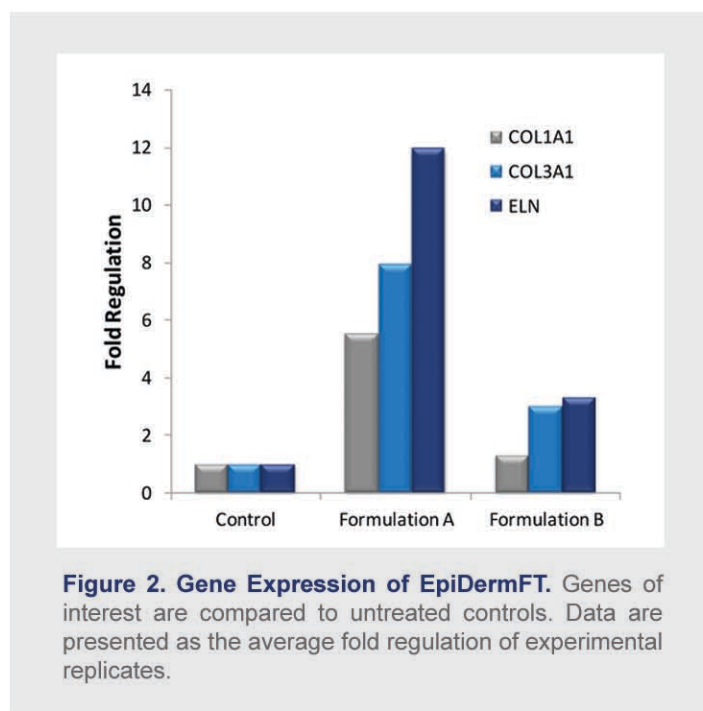


Figure 1. Histology of EpiDermFT. H&E stained cross-section showing that the tissue morphology of EpiDermFT closely parallels that of normal human skin. The epidermis contains basal, spinous, granular keratinocytes and stratum corneum layers and the dermis contains viable fibroblasts. (400x)

RESULTS

EpiDermFT tissues treated with Formulation A showed significant increases in Collagen 1A1, collagen 3A1 and Elastin gene expression. Tissues treated with Formulation B showed significant increases in COL3A1 expression (**Figure 2**).



CONCLUSION

Evaluation of ECM components by quantitative PCR in the EpiDermFT *in vitro* human skin model can be used in efficacy and claims substantiation studies.

Additional anti-aging capabilities with the EpiDermFT tissue model include gene expression analysis (e.g. MMPs, TIMPs, etc.), protein analysis (Pro-collagen Type I C-terminal Peptide, Hyaluronic Acid, Elastin, MMPs, TIMPs, Inflammatory Mediators, etc.), and histological analysis,

