MatTek CORPORATION

APPLICATION NOTE / PSORIASIS

Evaluation of Psoriasis Drug Formulations Using a Human Tissue Model of Psoriasis

OBJECTIVES

To evaluate the efficacy of topically-applied, psoriasis drug formulations by measuring gene expression in the Human Psoriasis Tissue Model.

METHODS

- Psoriasis tissues (**Figure 1**) were produced in the MatTek Corporation GMP tissue production facility.
- Each formulation (50µl) was applied topically for 72 hrs.
- After treatment, RNA was isolated from the Psoriasis tissues.
- RNA was utilized for gene expression analysis by quantitative PCR.

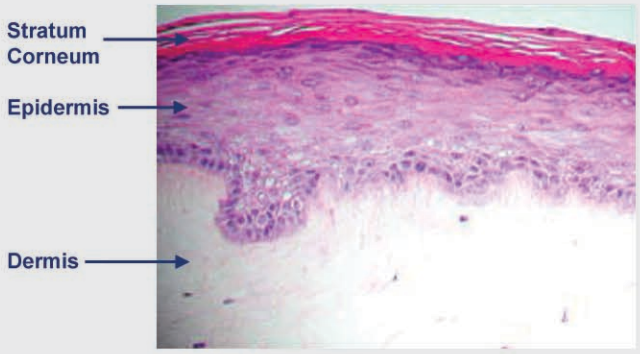

Figure 1: Histology of the Psoriasis Tissue Model. H&E stained cross-section showing that the tissue morphology of the Psoriasis Tissue Model closely parallels that of human psoriatic skin. The epidermis contains hyperproliferative basal keratinocytes, and spinous, granular and stratum corneum layers.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

RESULTS

Psoriasis tissues treated with Calcipotriol (0.005%), MG217, or Psoriasin Gel showed significant reductions in HBD-2, Elafin, and Psoriasin gene expression compared to untreated controls (**Figure 2**).

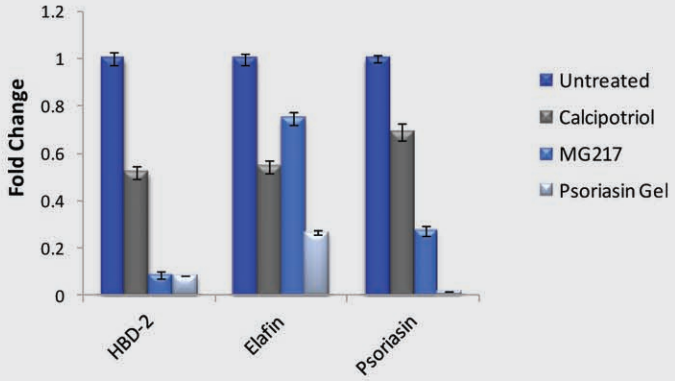

Figure 2. Gene Expression of the Human Psoriasis Tissue Model. Genes expression from psoriasis drug treated tissues are compared to untreated controls. Data are presented as the average fold change of experimental replicates.

CONCLUSION

Evaluation of psoriatic biomarkers by quantitative PCR in the Human Psoriasis Tissue Model can be used to screen new drug formulations for efficacy and claims substantiation.

Additional psoriatic endpoints include gene expression analysis (HBD-2, Psoriasis, ENA-78, Elafin, IP-9,Calgranulin C, HBD-3, etc.), protein analysis (IL-6, IL-8, GM-CSF, IP-10, RANTES, etc.), and histological/immunohistochemical analysis (H&E, Ki67, Elafin, CK 16, etc.).

www.mattek.com

MatTek Corporation
200 Homer Ave.
Ashland, MA 01721 - USA
+1-508-881-6771