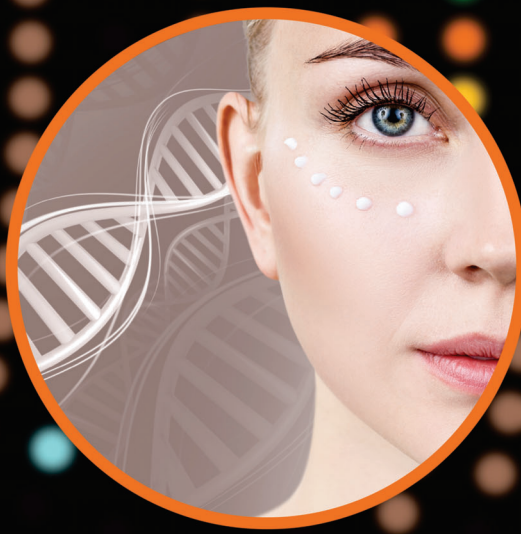
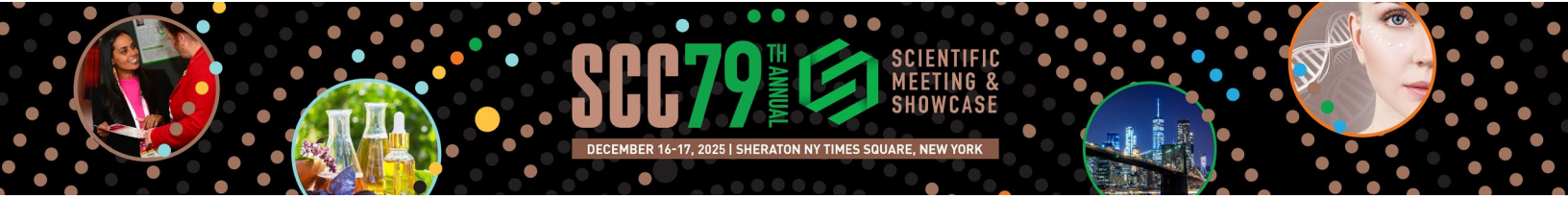
SCC 79TH ANNUAL SCIENTIFIC MEETING & SHOWCASE

DECEMBER 16-17, 2025 | SHERATON NY TIMES SQUARE, NEW YORK

# Speaker Abstracts

## Session G: Claims Substantiation






# Clinical Evaluation of Skin and Scalp Physiology Using Vibrational Spectroscopy to Substantiate Cosmetic Claims

*Marcella Gabarra Almeida Leite*[1] *and Samuel Gourion-Arsiquaud*[1]

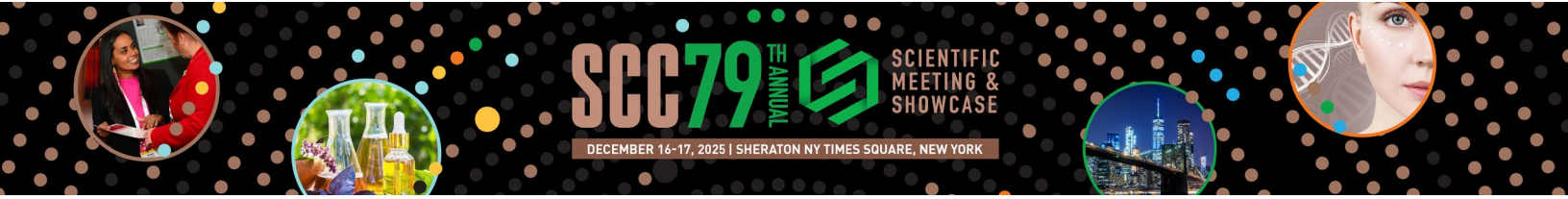
[1]*TRI Princeton*

**Abstract**

This study highlights the application of *in vivo* ATR-FTIR spectroscopy (REMSpec) for skin surface analysis and *in vivo* Confocal Raman Spectroscopy for in-depth evaluation of skin and scalp physiology to support cosmetic testing.

These advanced, non-invasive techniques were integrated into clinical studies to directly assess structural and compositional changes in response to environmental factors and cosmetic product use.

Skin hydration and lipid content were measured to evaluate the effects of moisturizers and cleansers, while the retention and penetration of active ingredients, especially UV filters, were assessed to investigate sunscreen efficacy and safety profiles. All together, these methods provide a powerful platform for real-time, site-specific measurements, enabling comprehensive evaluation of product performance and supporting a range of cosmetic claims.




# A New Reconstructed Pigmented Epidermis Model to Explore the Pigmentary Changes in Atopic Dermatitis and Pityriasis Alba

*Silvia Benito-Martínez; Provital*

*Julia Bajsert*[*#], *David Manzano*[*], *Silvia Benito-Martínez*[*], *Francesc Jiménez-Altayó*[#], *Miguel Perez-Aso*[*]

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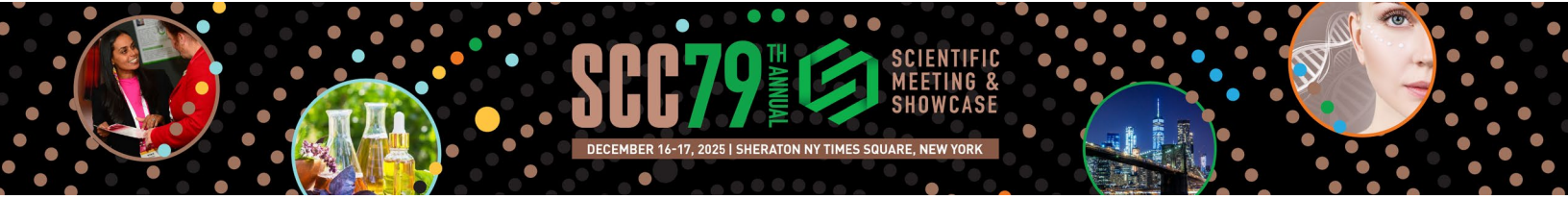
Post-inflammatory pigmentary disorders such as pityriasis alba (PA) are common complications of atopic dermatitis (AD), particularly in children with darker skin. However, the mechanisms linking inflammation and pigmentation remain poorly understood due to the lack of suitable *in vitro* models. This study presents a novel reconstructed human pigmented epidermis (RHPE) model incorporating melanocytes and mimicking the inflammatory and pigmentary alterations associated with AD and PA disorders. Upon elicitation with AD-related cytokines (IL-4, IL-13, IL-31), the RHPE-AD model exhibited progressive pigment disruption, epidermal disorganization, and spongiosis. Ultrastructural analysis revealed melanin aggregation and reduced melanocyte dendricity. Gene expression profiling confirmed the upregulation of inflammatory markers, downregulation of melanogenesis and skin barrier genes, and decreased antioxidant markers. This is the first melanocyte-integrated 3D epidermal model to recapitulate key clinical and molecular features of pigmentary disorders in AD, providing a powerful, animal-free platform for studying skin tone alterations and developing targeted dermocosmetic strategies.




# Epigenetics Analyses – Shining a Light on How Multifunctional Traditional Active Ingredients Truly Are

*Dr. Paul Lawrence; Biocogent, LLC*

*Brianna Scacchi; Biocogent, LLC*

*Joseph Ceccoli; Biocogent, LLC*

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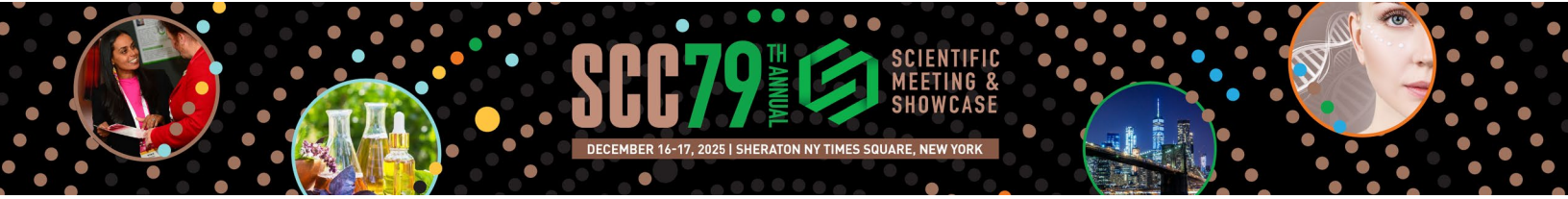
Most skincare products' efficacy studies are rooted in traditional biochemical and cellular-based assays. They are limited to single hypotheses, narrowing our knowledge an ingredient's cumulative activity. Epigenetic analyses including microRNA and gene expression profiling gather a comprehensive picture of a material's impact. Both techniques were used to investigate three naturally derived ingredients; including a dual extract of two plants, a marine ferment, and a flower extract.

Keratinocyte monolayers and 3D tissues were treated with each ingredient individually. Total RNA was purified and analyzed for microRNA and/or gene expression. These downstream effects were considered relative their reported functions. Each of the three materials affected multiple gene pathways that broadened the scope of their purported effects. Indeed, one product was a veritable epigenetic "powerhouse".

These findings reinforced data from traditional methods, and identified new avenues of research. This supports the contention that developmental processes for new cosmetics should include epigenetic investigations.




# Texture beyond the INCI - Texture Analysis Comparison of Systems with Several Acrylate Thickeners

*Daphne Benderly PhD; Presperse*

An enduring trend in all segments of personal care is innovation in product texture and format. While new formulators associate choice of emollient with product texture, research by Weichers and Chandler has shown that choice of emulsifiers has a significant effect and can outweigh the effect of emollient.

Another class of ingredients that has been studied for their effect on emulsion texture is rheology modifiers. In these works, the categories used for rheology modifiers are very broad, such as synthetic polymers or gums.

However, within these broad categories, final product texture can differ within a family such as acrylate thickeners. This opens up another avenue for product differentiation. In this work, simple gels were prepared with three such thickeners (2 specialty and 1 standard grade) and evaluated using a texture analyzer. As large differences were seen both instrumentally and by in-house sensory evaluations, an emulsion model was evaluated as well.