

# ABSTRACT

**PRESENTER:** Jakob Bredsguard

**COMPANY:** Biosynthetic Technologies - Food Drug and Personal Care

**JOB TITLE:** President

**Podium Title:** *BioEstolides... Sustainable, Biodegradable, Functional and Affordable natural ingredients for Personal Care applications*

## Background information (Short introduction)

Biosynthetic Technologies manufactures a revolutionary new class of biobased synthetic compounds called Estolides that are made from organic fatty acids found in various bio-derived oils. These highly functional “biosynthetic” oils have numerous uses in cosmetics applications often outperforming their petroleum counterparts in similar applications especially in the area of inherent UV properties, sustainability and dry feel.

## Objective

Biosynthetic Technologies formulated and tested five different lotions to compare the performance of BioEstolide as a moisturizer and barrier to water loss against three of the industry’s leading ingredients (plus a control lotion). These popular benchmark materials, which were blended at identical concentration levels, include a silicone (Dimethicone 250), a naturally derived ester (Isopropyl Palmitate), and a natural oil (Sunflower Oil). Showing that BioEstolides has superior properties.

## Methodology

Testing preformed and results shared on: TEWL, RIPT, OSI, UV absorption etc.

## Results

- With a refractive index of 1.45, BioEstolide has the added benefit of increasing hair shine, etc.
- BioEstolide overcomes the challenge of the low oxidative stability often seen in natural oils.
- In a repeated insult patch test (RIPT), BioEstolide was found to be non-irritating and non-sensitizing to the skin.
- UV absorption data for BioEstolides and the inherent properties found.

## Conclusion

BioEstolide™ esters are new plant-based emollients that combine high stability and exceptional moisturization characteristics. They impart a light satiny feel, excellent absorption, and superior functionality as an emollient. BioEstolide esters also exhibit excellent oxidative and hydrolytic

stability, which helps to provide an extended shelf life when compared to natural plant-based oils.

**Why is this important to the industry?**

It is a new technology used that could replace silicones and has some inherent UV properties, yet is biobased and sustainable.

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Jakob is one of the founding members of Biosynthetic Technologies and is named on over 30 of the patents. Jakob helped raised millions of dollars for the company and closely managed due diligence. He now helps support corporate strategy, commercialization efforts, and oversees all personal care or other related efforts. Jakob received his B.S. in Chemical Engineering from the University of California Irvine. He sits on the advisory board for the Chemical and Biomolecular Engineering Department at the University of California Irvine. He has served as an industry expert for the US Government to audit federal research and development efforts. Jakob

volunteers some of his free time to coach youth sports teams and looks to support families dealing with pediatric cancer.