

News Release

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BASF scientists provide insights into latest R&D projects at IFSCC Conference

- **From October 18-28, BASF and its research partners share scientific findings in skin and hair care**
- **Poster and podium sessions address advances in epigenetics, microbiome research, extraction, as well as the study of acne-prone skin and hair loss**
- **The 26th IFSCC Conference will be held as a virtual-only event**

Cancun, Mexico – October 18, 2021 – At this year's two-week conference of the International Federation of Societies of Cosmetic Chemists (IFSCC), BASF experts will present their latest research findings in the field of innovative skin and hair care. In six poster sessions and one oral presentation, they will cover a wide range of research projects, including studies on the skin microbiome, epigenetics, and acne-prone skin. As in the previous year, the conference will be held as a virtual-only event due to the ongoing Covid-19 pandemic.

Using epigenetic regulation to improve skin elasticity after UVA damage

In a podium session, BASF scientists will share findings on how to reverse histone modification induced by UVA damage. Epigenetic regulation has been increasingly considered to play an important role in photoaging. Several of the classical hallmarks of aging correlate with epigenetic alterations that regulate transcription. The research team has now clarified the impact of a specific acetylation among post-translational modifications of histones, and its impact on the expression of dermal proteins involved in skin elasticity. The study results provided the basis for selecting

products that could help support healthier skin post photo exposure.

Exploiting untapped potential in skin microbiome research

The skin microbiome has been shown to be essential for skin health and has therefore been the subject of many studies in the cosmetics field in recent years. Scientists at BASF have now tapped into two hitherto little researched areas and will present their results in two poster sessions. The first will illuminate the differences of skin microbiota composition between young and aged skin, with a specific focus on wrinkles. Having identified a number of microbiome species that are more prevalent on younger persons' skin, the next step will be to elucidate their potential function and impact on the skin to ultimately develop solutions that help preserve a youthful appearance.

While much focus is currently being given to individual bioactives that can affect the microbial composition of the skin, the second study explores the effects of galenics contained in a cosmetic formulation, such as emollients, emulsifiers, and polymers. The main intent was to identify ingredients and then to design formulations that do not disrupt the complex microbial community found on healthy skin. Based on the obtained results, careful ingredient selection, and formulation expertise, microbiome-friendly skin care formulations were successfully developed.

Harnessing the power of Traditional Chinese Medicine through extraction

Even though Traditional Chinese Medicine (TCM) has been used in cosmetics for thousands of years, it is recently experiencing a significant revival. In this poster session, BASF researchers will share results on their study of three TCM plants from the Yunnan province of China and their extracts' efficacy for skin health and beauty. The team was able to perform highly titrated extracts containing either iridoids, flavonoids, or a polysaccharide, and to evaluate their biological potential. The results encourage the use of those TCM extracts to respond to three major cosmetic market demands: moisturization (*Dendrobium sp. stems*), anti-aging (*Pyracantha sp. fruits*) and sensitive skin (*Gentiana sp. roots*).

Exploring *C. acnes* to fight acne-prone skin

Two further poster sessions led by BASF will deal with different approaches to developing effective ingredients for acne-prone skin, focusing on the impact of *Cutibacterium acnes* (*C. acnes*). In one of the studies, BASF experts explored the

potential of the commensal strain *Staphylococcus epidermidis* to protect the skin against this opportunistic pathogen. To evaluate bacterial interactions, the research team developed bacterial and 3D microbiotic skin models. The insights gained helped the team develop active ingredients inspired by the ecology of the skin microbiota to support the natural mechanisms of skin defense.

The second study builds on the finding that different phylogenetic groups (phylotype I to III) are present within the *C. acnes* population and that *C. acnes* can be also characterized by their difference in the release of virulence factors. BASF scientists now defined relevant methods to characterize and efficiently modulate these virulence factors. Having a more precise understanding of their efficacy and evaluating ingredients on various strains of *C. acnes* turned out to be crucial to improve the signs of acne-prone skin.

Assessing hair follicle structures with infrared spectral imaging

Heparan sulfate proteoglycans (HSPGs) play an important role in the regulation of hair shaft growth. Together with research partners from the University of Reims Champagne-Ardenne, BASF scientists will present a new approach to assess hair histology and HSPG distribution changes in hair follicles at different phases of the hair growth cycle. The infrared spectral imaging method used allows simultaneous revealing of the location, signatures and, in a semi-quantitative manner, the content of proteins, proteoglycans, glycosaminoglycans, and sulfated glycosaminoglycans in hair follicles. From a cosmetologically point of view, it thus represents a promising technique for studying the causes of hair loss.

BASF experts on the scientific program

Podium Presentation	
Trends in skin care and sun protection Podium SC_423	Nicolas Pelletier: Improving elasticity by reversing histone modification induced after UVA damage
Poster Sessions	
Beauty innovation Poster BI_381	Louis Danoux: The importance of taking into account <i>Cutibacterium acnes</i> ribotype diversity in acne-prone skin

Beauty innovation Poster BI_384	Manon Gault: Models to study optimized combinations of physiological biotics for acne-prone skin
Beauty innovation Poster BI_385	Sabrina Leoty-Okombi: First time skin microbiome exploration into wrinkle area
Endemic ingredients for cosmetic products Poster EP_421	Emilly Shao: Characterization and biological potential of three Traditional Chinese Medicine plants from the Yunnan province of China
Main goals and issues in hair care Poster HC_422	Charlie Colin-Pierre: Benefits of infrared spectral imaging for hair follicle structure identification and glycosaminoglycans distribution
New technologies in cosmetics Poster NT_94	Annette Mehling: The microbiome miracle – developing true microbiome-friendly formulations

About the Care Chemicals division at BASF

The BASF division Care Chemicals offers a broad range of ingredients for personal care, home care, industrial & institutional cleaning, and technical applications. We are a leading global supplier for the cosmetics industry as well as the detergent and cleaner industry, and support our customers with innovative and sustainable products, solutions and concepts. The division's high-performance product portfolio includes surfactants, emulsifiers, polymers, emollients, chelating agents, cosmetic active ingredients and UV filters. We have production and development sites in all regions and are expanding our presence in emerging markets. Further information is available online at www.care-chemicals.basf.com.

About BASF

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