

News Release

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PeptAlde™ 4.0 – A new naturally derived active ingredient from BASF that protects skin and hair against silent inflammation

- **Artificial Intelligence was used to discover peptides capable of preventing silent inflammation effects**
- **PeptAlde™ 4.0 prevents sensitivity of skin and scalp, dryness or lack of skin firmness**
- **Derived from rice proteins, the active ingredient offers a nature-based and preventive solution for healthy looking hair and skin**

Düsseldorf-Holthausen, Germany – October 22, 2020 – PeptAlde™ 4.0, a new active ingredient from BASF, offers a safe and nature-based remedy for hair and skin damage caused by silent inflammation. To develop this plant-based product, BASF researchers used the power of Artificial Intelligence: numerous peptides, short chains of amino-acids linked by peptide bonds, were screened for their ability to help prevent the release of inflammatory mediators such as TNF α . With the help of a controlled enzymatic hydrolysis process, these peptides were then unlocked from organic rice proteins (*Oryza sativa*). PeptAlde 4.0 is scientifically proven to prevent dry skin, discomfort and loss of firmness, while soothing sensitive scalp prone to dandruff.

Tackling biochemical changes that damage the skin and scalp

Scientists have proven that unhealthy lifestyles disturb one of the body's most important defense systems: inflammation. On the one hand, acute inflammation helps the body to heal and fight off infection. On the other hand, however, silent

inflammation fights against healthy cells, causes diseases, and accelerates the body's degeneration. The effects of this process are almost invisible in young people – but it gradually creates deep damage to the hair and skin.

Artificial Intelligence – driving the new industrial revolution

With PeptAlde 4.0, BASF is now launching an innovative new cosmetic ingredient that is clinically proven to counteract the effects of silent inflammation – keeping skin and hair healthy. It is characterized by four multifunctional plant-based peptides and consisting of between 12 to 17 amino acids.

The discovery of these peptides was made possible by Artificial Intelligence (AI). This cutting-edge digital technology is accelerating the advance of modern research activities by exploring huge volumes of data to identify hidden connections faster and more accurately than traditional methods. Using in-silico predictions and a machine learning platform, it evaluated trillions of data entries to identify the plant-based peptides with the highest potential positive impact on silent inflammation.

Clinically proven benefits for skin and scalp

PeptAlde 4.0 has demonstrated positive effects on skin and hair during clinical studies. For skin, a leave-on body lotion was applied twice daily for 28 days by female subjects who had dry, itchy or uncomfortable skin on their legs. Moisturization increased by 33 percent after one week, and 92 percent of participants stated that their skin felt soothed, smooth and nourished after one month. In another study, female subjects applied a leave-on body lotion to their belly twice daily for 28 days. Skin firmness increased by 27 percent after two weeks. In addition, 79 percent of participants stated that their skin was more supple and 82 percent of them reported increased comfort after four weeks.

In clinical tests for the hair and scalp, male and female participants with sensitive or itchy scalps used a shampoo formulation three times a week for three weeks. Scalp redness decreased visibly by 9 percent and the pH level of the scalp was 0.4 units lower, which is equivalent to the difference between a sensitive and non-sensitive scalp. The shampoo was mild to the scalp, showing no disturbance of the level of sebum.

PeptAlde 4.0 is a new generation of plant-based anti-silent-inflammation peptide network that provides an answer to consumers' demand for safe skin repair

products backed up by proven science.

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

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 117,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €59 billion in 2019. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at www.basf.com.