



SLOVAK
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Technology Brief

Ferulated Alkylglycosides

A Novel Multifunctional Ingredient for Next-
Generation Skincare and Sun Care

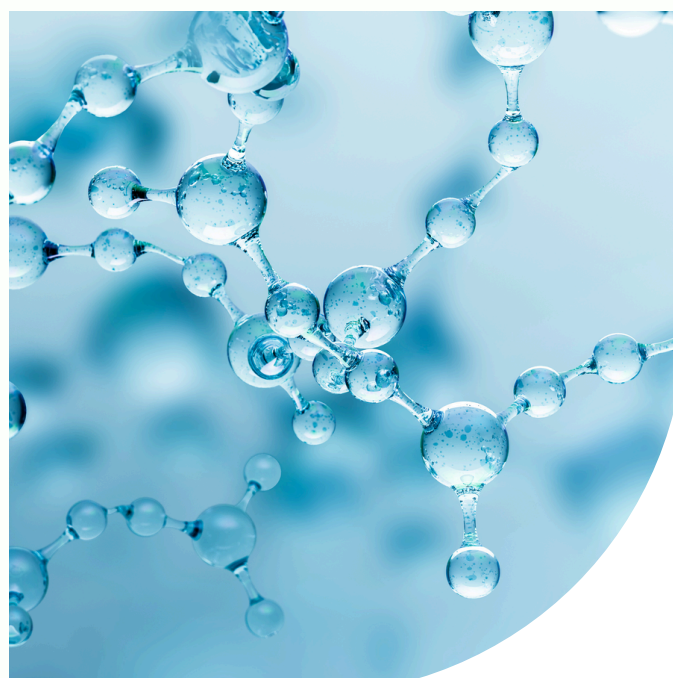
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Market Opportunity

The cosmetics industry is actively seeking **multifunctional, biodegradable** ingredients that can expand ingredient portfolios while responding to growing demand for high-performance and more sustainable formulations.

Ferulated alkylglycosides represent a **new class of cosmetic ingredients** designed to combine antioxidant, photoprotective and potential surface-active properties within a single molecule. The technology offers ingredient manufacturers an opportunity to develop a **differentiated multifunctional solution for next-generation skincare and sun-care applications**.



Technology Overview

The technology is based on the covalent attachment of **ferulic acid** to biodegradable **alkylglycosides**, resulting in a single multifunctional molecule rather than a physical mixture of individual ingredients.

Compared to conventional formulations using free ferulic acid, this molecular design integrates antioxidant functionality directly into the structure, offering potential **advantages in formulation stability**, compatibility and performance consistency.

The technology is not intended to replace UV filters, but to serve as a **multifunctional cosmetic ingredient supporting and enhancing advanced skincare and sun-care** formulations.

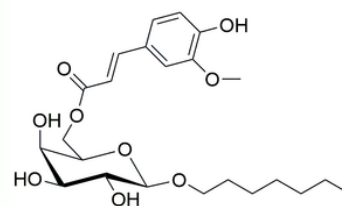
Potential Applications

- **Sun-care** formulations
- Daily facial creams with **UV protection**
- **Anti-ageing** skincare
- **After-sun** products
- Dermocosmetics
- **Premium and clean** beauty products

The technology is particularly relevant for **manufacturers of cosmetic ingredients**, surfactants and emulsifiers seeking to expand their portfolios with differentiated multifunctional solutions for skincare and sun-care applications.

Key Advantages

- Multifunctional ingredient combining several cosmetic functions in **one molecule**
- **Biodegradable** alkylglycoside-based structure aligned with sustainability trends
- **Antioxidant** and **photoprotective** potential
- Opportunity to **reduce formulation complexity** and ingredient load
- Potential to **expand existing ingredient portfolios** with a differentiated multifunctional solution



Ferulated alkylglycoside structure integrating bioactive functionality with a biodegradable surfactant platform.

Current Development Status

Laboratory studies have demonstrated promising antioxidant and photoprotective properties of the synthesized compounds. The technology is currently at a stage suitable for industrial collaboration and co-development, with the next phase focused on:



Why Partner with Us?

By partnering with us, companies gain access to an innovative multifunctional cosmetic ingredient with the potential to simplify formulations, enhance product performance and support the development of next-generation skincare and sun-care solutions.

*Experimental data are available for evaluation under confidentiality

Commercialization Opportunity

We are seeking an industrial partner with the capabilities and market access to further develop and commercialize ferulated alkylglycosides for cosmetic applications. The preferred commercialization route will be defined based on strategic fit, partner capabilities, development status and target application requirements.

Potential engagement models, individually or in combination, include:

- **Optimization** of the technology,
- **Validation** in relevant **cosmetic formulations**, including performance, compatibility and safety assessment,
- **Licensing or transfer of rights** for independent further development and commercialisation

FURTHER RESEARCH & INNOVATION COLLABORATION OPPORTUNITIES

The **Slovak Academy of Sciences (SAS)** offers companies in the cosmetics, personal care and specialty ingredients sectors access to **multidisciplinary expertise in chemistry, biotechnology and biomedical research**, supported by specialised laboratories and experienced scientific teams.

Beyond the presented technology, companies can collaborate with SAS on specific R&D challenges – from the **development and modification of functional compounds to their analytical characterisation and biological evaluation**. Collaboration can be structured as commissioned or joint research and tailored to the partner's technological and commercial objectives.



ADDITIONAL R&D CAPABILITIES & TECHNOLOGIES

- **Carbohydrate & Polysaccharide Chemistry**

Extraction, modification and characterisation of polysaccharides and oligosaccharides from natural and microbial sources, including evaluation of their biological properties.

- **Bioactive & Functional Compounds**

Isolation, synthesis and modification of biologically active and functional compounds for potential industrial applications.

- **Biocatalysis & Enzyme Technologies**

Enzymatic synthesis, transformation and optimisation of functional compounds, supporting more selective and sustainable production processes.

- **Advanced Chemical & Analytical Characterisation**

Structural and chemical characterisation of compounds using advanced analytical methods and specialised laboratory infrastructure.

- **Biological Activity & Safety Evaluation**

Experimental assessment of biological activity, cellular responses, biocompatibility and safety-relevant properties of bioactive compounds and materials. SAS capabilities include testing the effects of bioactive substances in biological models and biocompatibility evaluation.

- **Biotechnology & Microorganisms**

Research involving microorganisms, recombinant proteins and biologically derived compounds, including their production, purification and characterisation.

- **Process Development & Scale-Up**

Development and optimisation of production and purification processes from laboratory to larger scale. SAS capabilities include customised production of specialised carbohydrates from milligram quantities up to hundreds of kilograms.

HOW WE CAN FURTHER WORK TOGETHER

We welcome discussions with companies seeking **new ingredients, technologies or scientific solutions** for **future cosmetics and personal care products**.

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