

Evonik partners with the University of Mainz to commercialize a new class of PEG lipids for nucleic acid delivery

- Commercialization of rPEG lipids designed to improve immunogenicity profile for nucleic acid delivery
- rPEGs to be part of Evonik's specialized lipid platform
- Latest step in strategy to grow business in drug delivery for nucleic acid-based medicines

Essen, Germany. Evonik and the University of Mainz have signed a license agreement to commercialize randomized polyethylene glycols (rPEGs), a new class of PEGs. Evonik intends to use rPEGs for its platform of specialized lipids and commercialize the excipients under the license agreement to meet customer and market needs. Technical grade rPEG-lipids will be available in the second half of 2024.

As part of the company's Nutrition & Care life sciences division, Evonik's Health Care business has been growing its nucleic acid drug and vaccine delivery portfolio by leveraging its biosolutions, and innovation and co-creation opportunities with life science leaders. By partnering with the Johannes Gutenberg University of Mainz in Germany, where rPEGs were first developed, Evonik is able to offer its customers an expanded toolbox of technologies for nucleic acid-based medicines.

"When scientists at the University of Mainz approached us with their groundbreaking work on rPEGs, we immediately recognized the potential for broader formulation options and the benefits this could bring our customers," said Thomas Riermeier, head of the Health Care business line at Evonik.

Polyethylene glycols (PEGs) are polymers that have been used in the pharmaceutical industry for more than 30 years to improve the bioavailability, stability, targeting and performance of therapeutics. rPEG polymers have similar properties to PEGs but have a different structure that is intended to offer an improved immunogenicity profile. They are especially suitable for

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pharmaceutical applications such as in lipids for lipid nanoparticle (LNP) carriers.

“With Evonik, we have found an enthusiastic and experienced partner to bring rPEG–lipids globally to the pharmaceutical industry,” said Prof. Dr. Holger Frey, Johannes Gutenberg University of Mainz, who first developed rPEG polymers together with his research group.

Evonik’s partnership with the University of Mainz is the latest in a series of strategic steps to meet the transformative needs of the pharmaceutical industry for nucleic acid drug delivery. In 2021, Evonik began a collaboration with Stanford University to scale up the synthesis and formulation of an innovative tissue–specific delivery platform for nucleic acids. Just over a year ago, Evonik opened a new cGMP facility in Hanau, Germany for the development and manufacture of smaller batches of specialized lipids. This was followed by the start of construction of a global–scale production facility for pharmaceutical specialty lipids in Lafayette, Indiana, in partnership with the U.S. Government.

PEG lipids are used today in commercial COVID–19 vaccines. Along with cholesterol and ionizable and structural lipids, PEG lipids form the LNPs needed to deliver nucleic acids, such as mRNA effectively into the cell.

As a strategic partner to the pharmaceutical industry, Evonik has been a leader in advanced drug delivery for decades. It supports pharmaceutical companies worldwide with comprehensive services for the development and manufacture of complex parenteral and oral drug products. This includes pharmaceutical excipients such as polymers and lipids, formulation development, and the manufacturing of clinical samples, as well as commercial drug products.

Further Information

mRNA and Gene Delivery at Evonik

<https://healthcare.evonik.com/en/drugdelivery/mrna-and-gene-delivery>

Company information

Evonik is one of the world leaders in specialty chemicals. The company is active in more than 100 countries around the world and generated sales of €18.5 billion and an operating profit (adjusted EBITDA) of €2.49 billion in 2022. Evonik goes far beyond chemistry to create innovative, profitable, and sustainable solutions for customers. About 34,000 employees work together for a common purpose: We want to improve life today and tomorrow.

About Nutrition & Care

The focus of the business of the Nutrition & Care division is on health and quality of life. It develops differentiated solutions for active pharmaceutical ingredients, medical devices, nutrition for humans and animals, personal care, cosmetics, and household cleaning. In these resilient end markets, the division generated sales of €4.24 billion in 2022 with about 5,700 employees.

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