

## Fight against COVID-19: Evonik supplies key technology for gene-based drugs

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- The COVID-19 pandemic has accelerated development of innovative mRNA-based therapies
- Evonik expands its position as integrated solutions provider
- Above-average growth potential for the Health Care business

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**Essen, Germany.** The COVID-19 pandemic has prompted a breakthrough in gene-based vaccines using a technology in which Evonik is a global leader. Currently, the only established process for transporting mRNA vaccines into the human cell is encapsulation by means of lipid nanoparticles (LNP). Without this protection, the mRNA with the blueprint for stimulating the immune system could not reach the right site of action in the body. Within seconds it would degrade in the bloodstream and make the vaccine ineffective.

“Coping with the pandemic depends largely on the availability of effective vaccines,” says Christian Kullmann, chairman of Evonik’s executive board. “The fact that the supply of vaccines is imminent is an outstanding achievement of the pharmaceutical and biotech industry, which we support with highly specialized applications from formulation development to production”. The innovation growth field Healthcare Solutions in the life-science division Nutrition & Care has been growing strongly ever since its formation. For decades, the company has been a leader in the field of drug delivery technologies, which includes lipid nanoparticles. “We are now consistently expanding this position as a solutions provider and integrated development partner.”

Evonik believes that its drug delivery technologies and services have great potential for above-average growth in vaccines as well as cell and gene therapies. Gene therapies, including those involving mRNA active ingredients and the use of lipid nanoparticles, open up the potential for the Health Care business line to generate revenues in the clear triple-digit millions within the next years.

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The COVID-19 pandemic has now greatly accelerated the growth of innovative therapeutic approaches. In addition to the vaccines against COVID-19, which are close to approval, the head of Evonik's Health Care business line, Thomas Riermeier, sees numerous other areas of application on the verge of breakthrough, and Evonik is helping to develop them. "Innovative vaccines against influenza, malaria or HIV are just as conceivable as promising approaches for cancer immunotherapy, the treatment of hereditary diseases or defective genes." A major step in gene editing is expected within the next five years.

Evonik has supported various COVID-19 vaccine projects, from development to the production of clinical samples. As one of the few integrated development partners for gene-based therapies, Evonik has been involved in over 100 projects in the past years, within various application fields.

"The higher efficacy as well as the significantly shorter development times are advantages of gene-based drug products that are currently becoming particularly apparent. The dynamics of the market show a paradigm shift in the way the industry will develop and produce drugs in the future," says Riermeier. Evonik intends to further expand its leading position as an integrated solutions provider in this market. This includes the marketing of special pharmaceutical excipients such as lipids, the development of formulations, i.e. the combination of excipients and active ingredients, as well as the production of clinical test samples, and the production of commercial quantities. The expansion of clinical production capacities is also being planned, as is the expansion of manufacturing capacities for commercial quantities.

Evonik recognized the potential of gene-based therapeutic approaches early on. For customers worldwide, the specialty chemicals company develops and formulates lipid nanoparticles in Burnaby (BC, Canada) and operates a plant for the production of commercial quantities in Birmingham (AL, USA). "With the acquisition of Burnaby-based Transferra Nanosciences, we deliberately invested in this promising technology in 2016," explains Riermeier. With the acquisition of Wilshire Technologies,

a US manufacturer of natural excipients for the pharmaceutical industry, the portfolio was further expanded in early 2020.

**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 €13.1 billion and an operating profit (adjusted EBITDA) of €2.15 billion in 2019. Evonik goes far beyond chemistry to create innovative, profitable and sustainable solutions for customers. More than 32,000 employees work together for a common purpose: We want to improve life, today and tomorrow.

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