

## Press release

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Joint press release by WACKER and Gearbox Biosciences

## WACKER and Gearbox Biosciences announce strategic collaboration to advance plasmid DNA manufacturing technologies

- The partnership aims to co-develop technologies set to revolutionize manufacturing of plasmid DNA (pDNA), a critical raw material for advanced medicines
- Focus on innovative workflows for antibiotic-free pDNA manufacturing and difficult-to-manufacture sequences
- Joint solutions promise better scalability, efficiency and cost-effectiveness in production

Munich/Tartu – Wacker Chemie AG and OÜ Gearbox Biosciences announced a strategic collaboration today. Gearbox Biosciences, based in Estonia, are pioneers in the antibiotic-free microbial production of biologics. This partnership aims to co-develop technologies that will revolutionize the manufacturing of pDNA, the critical starting material for advanced mRNA therapies and vaccines, gene or gene-modified cell therapies, as well as vector-delivered therapies.

High-quality pDNA serves as a foundational source of genetic information in the development of life-saving therapies, yet current manufacturing processes face challenges in terms of scalability, efficiency, and cost-effectiveness. By combining WACKER's expertise in GMP manufacturing of biologics, including pDNA, with Gearbox Bioscience's innovative solutions for antibiotic-free plasmid proliferation,

this collaboration seeks to address these challenges while aiming to set new industry standards.

“We are thrilled to partner with Gearbox Biosciences to accelerate the development of next-generation plasmid DNA manufacturing technologies,” said Ralph Krafczyk, nucleic acids expert at WACKER R&D. “This collaboration underscores our commitment to continuously enhance our proprietary PLASMITEC® toolbox in order to provide even greater benefits to our clients, who develop cutting edge therapies that are aimed at improving the life of patients worldwide.”

WACKER previously developed an antibiotic-free system for recombinant pharmaceutical protein, leveraging its ESETEC® (*E. coli* secretion technology) platform. The joint effort with Gearbox will focus on innovative workflows for antibiotic-free plasmid DNA manufacturing and difficult-to-produce pDNA products. By leveraging the complementary strengths of both partners, the collaboration is focused on delivering solutions that are more sustainable than current technologies, while also providing superior quality and reduced timelines. “We are excited to collaborate with WACKER to bring newly developed technology from the lab to industrial scale,” said Arvi Jöers, co-founder and CEO of Gearbox Biosciences. “Our proprietary Pop-Out-Plasmid® technology is already in use in antibiotic-free protein production and now we are applying it to plasmid production as well. Eliminating the risk of spreading antibiotic resistance through pDNA is a great relief for regulatory agencies and society.”

The collaboration is already underway, with initial milestones including the evaluation of Gearbox Biosciences innovative Pop-Out-Plasmid® technology within the PLASMITEC® toolbox. Both partners are committed to fostering a culture of innovation and collaboration, with the shared goal of advancing the field of biologics manufacturing to improve the accessibility of raw materials for the development and application of next-generation therapies, and to facilitate clinical translation from bench to bedside. The recently opened WACKER Biotechnology Center at WACKER’s central research and development site in Munich offers excellent conditions for this project.

### **About Wacker Chemie AG**

WACKER is a global company with state-of-the-art specialty chemical products found in countless everyday items, ranging from tile adhesives to computer chips. The company has a global network of 27 production sites, 21 technical competence centers and 46 sales offices. With around 16,600 employees, WACKER generated annual sales of around €5.7 billion in fiscal 2024.

WACKER operates through four business divisions. The Silicones and Polymers chemical divisions supply products (silicones, polymeric binders) for the automotive, construction, chemical, consumer goods and medical technology industries. Biosolutions, the life sciences division, specializes in bioengineered products such as biopharmaceuticals and food additives. Polysilicon produces hyperpure polysilicon for the semiconductor and photovoltaic industries.

For more information on WACKER's biotechnology business go to:  
[www.wacker.com/biologics](http://www.wacker.com/biologics)

### **About OÜ Gearbox Biosciences**

Gearbox Biosciences is a start-up company from Tartu, Estonia. The company has developed a proprietary Pop-Out-Plasmid technology for antibiotic-free protein and plasmid production. This technology can eliminate antibiotics from bioproduction and curb the spread of antibiotic resistance in the environment. Gearbox Biosciences operates by licensing out the Pop-Out-Plasmid technology to its partners, who then use it to produce proteins or plasmids. In addition to being antibiotic-free, Pop-Out-Plasmid technology offers increased strain stability and inducer-free induction of protein production.

For more information on Gearbox Biosciences and Pop-Out-Plasmid technology go to: [www.gearbox.bio](http://www.gearbox.bio)



In San Diego, WACKER operates microbial fermentation lines with a capacity of up to 650 liters for production and purification of pDNA. After a successful evaluation process, the CDMO production of antibiotic-free pDNA is likely to be carried out here. (Photo: WACKER)

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## Additional information

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