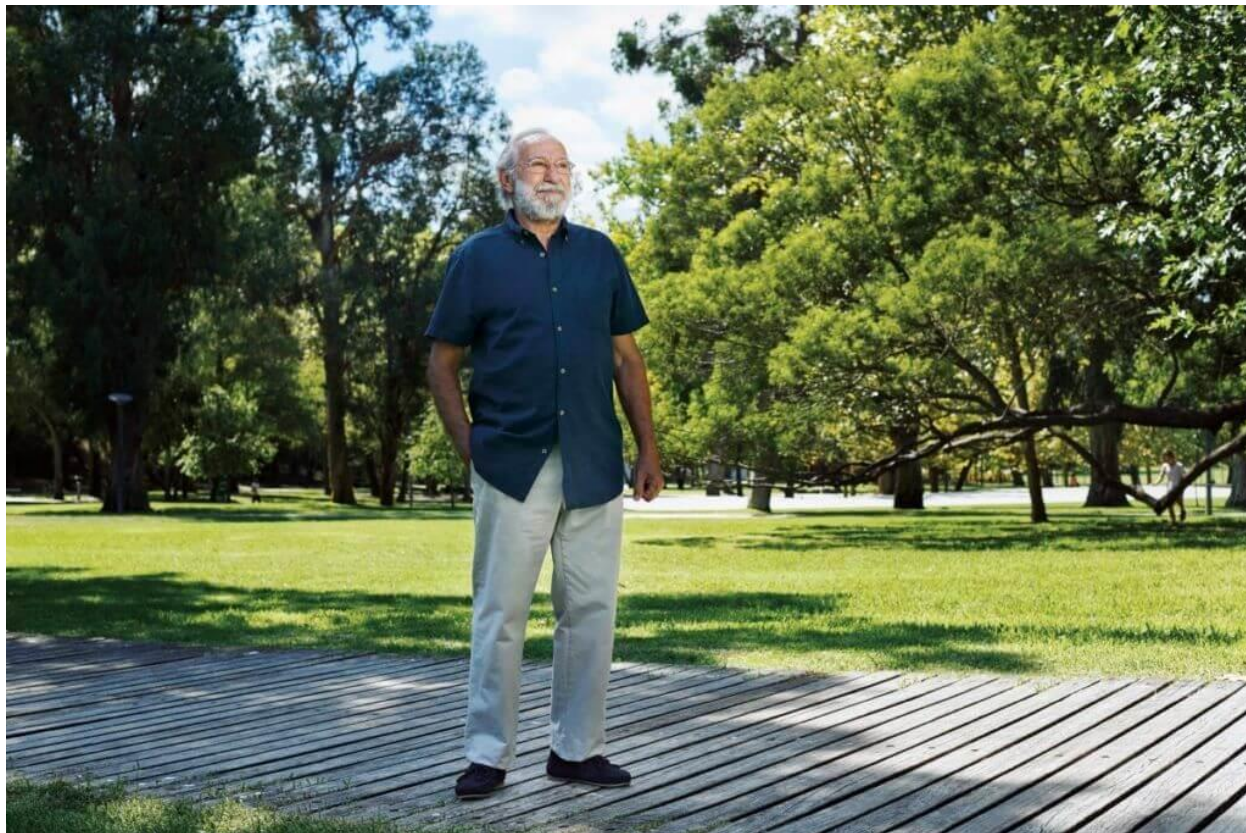


BACHEM'S NEW FACILITIES FOR LARGE-SCALE OLIGONUCLEOTIDE MANUFACTURING SUPPLIERS



Interest in **oligonucleotide** therapeutics has grown, as has the market demand, since their emergence as a new drug modality two decades ago. Initially focusing on rare diseases, oligonucleotide therapeutics are moving into more common chronic indications like asthma, diabetes, chronic renal failure, as well as cardiovascular and liver diseases. The need for large-scale manufacturing to support market requirements for oligonucleotides has never been so high and is coupled by the emergence of new challenges related to scalability, sustainability and cost. Recognizing this, at Bachem we saw the opportunity to expand our existing manufacturing capacity and expertise in large-scale active pharmaceutical ingredients (API). We built facilities and implemented new, **innovative** solutions for large-scale oligonucleotide API production. With our GMP-qualified equipment, we are already working on development of customers' oligonucleotide-based API. Thus, we are ready to tackle your projects and transform patients' lives!

BACHEM TAPS INTO SYNERGIES IN TECHNOLOGY AND KNOW-HOW

We constantly innovate to improve our processes for higher product quality, larger scale, more cost-efficiencies and sustainability. We have implemented unique engineering solutions in every piece of equipment for each step of the oligonucleotide manufacturing process. We have set up a large-scale synthesizer for oligonucleotides and customized it with solutions to improve process control and

crude API purity. For the cleavage and deprotection (C&D) step, we have designed a unique large-scale automated C&D system giving enhanced production safety and efficiency. For the purification step, we have successfully transferred our strong peptide chromatography expertise to oligonucleotides. We pioneered continuous chromatography on an industrial scale and built large-scale equipment for oligonucleotide purification. This technology brings significant advantages in capacity, cost and sustainability by improving yields and purity of products as well as reducing solvent consumption and process mass intensity.

We are working to ensure a streamlined process with the highest quality of oligonucleotides using innovations in the isolation step. For instance, lyophilization is one of Bachem's core expertise. We always have available clean rooms and high lyophilization capacity to avoid any bottlenecks. If you want to learn more on how Bachem started its journey into oligonucleotides therapeutics with the ambition of transforming patient's lives, check out our interview.

BACHEM – YOUR INNOVATIVE AND TRUSTED PARTNER TO DEVELOP YOUR OLIGONUCLEOTIDE API

We are driven by the desire to transform oligonucleotide manufacturing through innovation, and we are confident that our background in peptides is our key asset for meeting this goal. For decades we have implemented new, innovative engineering solutions to optimize the scalability, sustainability and cost-effectiveness of our peptide manufacturing to provide the highest API quality. This experience gives us a strong background and an expert eye when looking at the oligonucleotide processes, and the ability to identify where we can improve and leverage our oligonucleotide manufacturing capabilities. As a trusted and reliable partner, we want to simplify the lives of everyone we work with by helping our customers to develop and commercialize their API. Bachem offers a bunch of services in addition to expertise and knowledge:

- Large-scale GMP manufacturing capacity available from preclinical to commercial scale
 - Full range of Chemistry, Manufacturing, and Control (CMC) development services
 - Full package of in-house analytical capabilities
 - Regulatory support for IND and NDA applications
 - Experienced and dedicated Project Management
- Furthermore, by outsourcing API development and manufacturing, our customers gain flexibility, efficiency and speed of market entry. As a result, the risk for the drug developer during the drug's development and commercialization is minimized. We define the optimal manufacturing process and technology for oligonucleotide API production alongside our customers. We are ready to support and help you transforming patients' lives!

ABOUT BACHEM

Bachem is a leading, innovation-driven company specializing in the development and manufacture of peptides and oligonucleotides.

With over 50 years of experience and expertise Bachem provides products for research, clinical development and commercial application to pharmaceutical and biotechnology companies worldwide and offers a comprehensive range of services.

Bachem operates internationally with headquarters in Switzerland and locations in Europe, the US and Asia. The company is listed on the SIX Swiss Exchange.