

Galapagos is living proof that it is possible in Belgium to build an end-to-end biotech company in just twenty years, in other words: a biotech that leads the entire research and development (R&D) process and the marketing of its own medicine. The most recent milestone in that journey is the availability of the first Galapagos medicine for patients in Belgium and Europe. This brings them full circle.

Galapagos, headquartered in Mechelen (Belgium), is active in R&D of synthetic drugs ('small molecules') with a mode of action based on the discovery of new targets. The biotech focuses on medicines that address the root cause of diseases with a high medical need, rather than just treating the symptoms. Dr. Erik Present, medical director Benelux, gives an overview of Galapagos' current and upcoming developments.

"We have been active in R&D of small molecules for over twenty years now. We started in 1999. Our culture is based on our ambition to pioneer for patients, a way of thinking and acting that is still deeply ingrained in the company and its employees. This means that our organization is flat, with short decision-making lines and little hierarchy. We also challenge existing conventions, which enables us to move quicker to the next stage of drug research when there is an urgent need for a medicine for a certain condition. We are not treading on the well-trodden path and are trying to think and act differently than others in our domain. This also implies that we take more risks and that some projects fail. Failure is inherent in our business and, for us, part of the process of progress. We leave room to learn from mistakes," says Dr. Present.



© Galapagos - Dr. Erik Present, medical director Benelux

Ambition

From the outset, Galapagos demonstrated its ambition to become a fully integrated end-to-end biotech company. “This means that the entire process of drug discovery and development, from the proof-of-concept clinical trials all the way up to commercialization, is in Galapagos’ hands. The most recent milestone in that journey is the availability of our first medicine for patients in Belgium and Europe. This takes us much further than most other biotech companies, where the involvement often stops after the discovery and development phase. Usually, biotech companies sell their potential treatment to one of the global pharmaceutical players, who take care of the international commercialization. Galapagos has chosen a path of independence and continues to develop as a leading European biotech company.”

Expertise

In R&D, Galapagos focuses solely on discovering new targets. “In the last two decades, our researchers have built extensive expertise in this area. We have developed molecules that have gone through the different clinical phases. But we also have several research programs in inflammation, fibrosis and chronic kidney disease, which are progressing in the earlier stages of clinical research (phase 1 and 2). Hopefully, we will be able to make these potential treatments available to patients in the next few years, like we did in 2020, making our first medicine - a treatment option for patients with rheumatoid arthritis or colitis ulcerosa - available for patients.”

Innovation

Discovering novel medicines is challenging and does not only require innovative technology, but also expertise. Galapagos uses human primary cells and cells of patients to identify the proteins (‘targets’) that play a key role in causing a disease. “We then develop small molecules that inhibit these targets, restore the balance and thereby positively influence the course of the disease.”

To realize this efficiently and effectively, Galapagos has developed a unique target discovery platform (illustration on the next page). “Normal adenoviruses are causing colds. We use inactivated adenoviruses as viral vectors to insert specific knockdown (KD) molecules into human cell cultures originating from patients. Doing so, we can find out which molecules can suppress the target disease. Proteins blocked by the KD molecules can be a target for a new treatment. Over the years, we have built a library of more than 6,000 molecules linked to potential targets.”

The platform is unique because it looks at patient-derived tissues without bias. “This has already yielded a broad range of potential targets. As a next step, we further develop drug candidates for

these targets,” explains Dr. Present.



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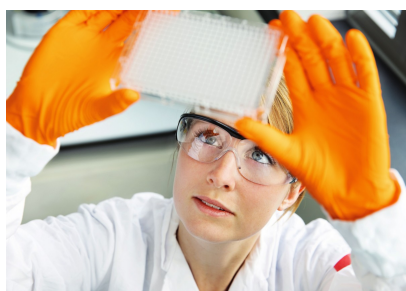
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European expansion, Belgian roots

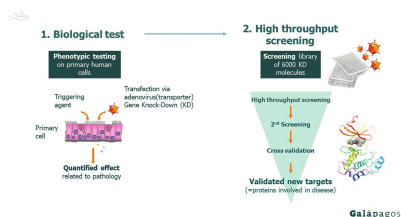
As a leading European biotech company, Galapagos staffs employees in more than 10 European countries with more than 1,300 colleagues who are pioneering for patients. Most of them work at the headquarters in Mechelen, where both R&D activities and central functions are located, like Human Resources, Finance and Legal. In addition, some 250 employees work in the research facilities in Leiden (the Netherlands) and in Romainville, near Paris (France). Overall, most of the workforce is involved in R&D activities, which accounts for 75% of Galapagos’ human and budgetary resources.

The cornerstones of the company are the researchers’ accumulated and combined knowledge of diseases and medicines, the target discovery platform with the gene library and the insights

generated via clinical trials. For the Belgian organization, the vibrant life sciences ecosystem also plays an important role. On a small surface, there is a lot of expertise and many opportunities for collaboration with academic centers, scientists, hospitals, doctors, patient organizations and other companies. Such a proximity in the Belgian healthcare landscape creates a wealth of opportunities for all stakeholders, of which patients are the beneficiaries. There are still untapped opportunities though, like data science and data sharing. Belgium can take up a leading role in Europe in those fields.



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Target Discovery Platform: How Galapagos identifies biological targets

Galapagos' unique discovery platform uses an adenoviral library to knock-down target proteins as a functional genomic screen in a disease-relevant human primary cell phenotypic assay.

Galapagos
Pioneering for patients

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Galapagos: Building a biotech company with end-to-end capabilities in 20 years

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