

BRAIN appoints University of Leiden as partner for BEC-enabled production strain development

BRAIN Biotech and the Leiden University will jointly develop an Aspergillus based production strain with high yield and thus contribute to a bio-based circular economy. The cooperation is based on BRAIN's molecular tool BEC.

Leiden (Netherlands) / Zwingenberg (Germany), September 1st, 2021 – BRAIN Biotech AG in Germany has chosen the University of Leiden, Netherlands, as a partner for the development of a high efficiency microbial production strain. Microbial production strains play an important role in industrial biotechnology to produce proteins and enzymes in mass quantities. As such, microbial production enables the environmentally friendly use of enzymes for industrial processes. Within this joint development project, BRAIN's proprietary genome editing technology, BRAIN Engineered Cas (BEC), will be employed to optimize various production strains. The University of Leiden will focus on applying this technology to further improve particularly the Aspergillus based production technology. The University of Leiden is internationally renowned for its expertise in biotechnology and, especially, the development of aspergillus based biological production technologies.

Adriaan Moelker, CEO at BRAIN Biotech AG says: "We are pleased to appoint a very experienced partner with the University of Leiden for the development of an Aspergillus based high yielding production strain. The development of high yielding production hosts is a strategic target for BRAIN and offers excellent commercial opportunities to increase our own production yields in the BioIndustrial segment as well as license the technology to third parties. By utilizing our own BEC system for genome editing we are about to enjoy full freedom to operate and can demonstrate its editing properties for commercial use."

Arthur Ram, Principle Investigator at the Institute Biology Leiden (IBL) of Leiden University says: "It is a great pleasure and opportunity to further develop and study the new BEC genome editing tool for Aspergillus in collaboration with BRAIN. This project fits well with our mission to develop molecular genetic tools for fungal biotechnology to contribute to a bio-based circular economy. The development and optimization of these molecular tools not only allows efficient ways for industrial strain improvement, the tools will also speed up and accelerate our research to understand fundamental processes in fungi related to the enormous secretion capacity of filamentous fungi."

On May 6, 2021, BRAIN had announced the development of the BRAIN Engineered Cas (BEC) protein as a novel genome editing nuclease with validated genome editing activity in various

microorganisms. The technology is already employed in BRAIN's tailor made solution segment within customer projects and for the development of BRAIN's own incubator projects.

About University of Leiden

Leiden University was founded in 1575 and is one of the leading international research universities in Europe. The University has seven faculties and a campus in both Leiden and The Hague. Their motto is Praesidium Libertatis – Bastion of Freedom.

Vision: As a prestigious European research university, Leiden University plays a foremost role in academic research and teaching. High-quality academic research and teaching are crucial to a safe, healthy, sustainable, prosperous and just world. The University is committed to developing, disseminating and applying academic knowledge and is a trusted figure in societal and political debates in the national and international arena.

Mission: Leiden University is an internationally operating research-driven university with a wide range of academic disciplines and degree programmes. It aims for excellence in all its research and teaching. The University focuses its efforts on achieving the maximum impact from its research and teaching – academic, cultural, societal and economic. It does this in close collaboration with local, regional, national and international partners. Based on a careful consideration of its disciplinary structure, Leiden University focuses on disciplinary and interdisciplinary research and teaching. Leiden University trains students and PhD candidates for academic posts in academia and beyond. Its graduates are able to conduct a critical assessment of academic and societal problems and make considered choices when seeking solutions to these problems. Leiden University aspires to create a close academic community of staff and students. Leiden alumni inform this community with their experience, expertise and involvement. Leiden University also works closely with its university partners: Delft University of Technology and Erasmus University Rotterdam, and at European level with its partners in the League of European Research Universities (LERU).

About BRAIN

BRAIN Biotech AG ("BRAIN") is a leading European specialist in industrial biotechnology. As a technology provider and developer of bio-based products and solutions for nutrition, health and the environment, the company supports the biologization of industry and contributes to a more sustainable economy. BRAIN is the parent company of the BRAIN Group. Two pillars form BRAIN Group's business: The BioScience segment includes contract research for renowned industrial partners as well as an incubator for the development of the company's own highly innovative products. In the BioIndustrial segment, the company focuses on specialty business in the production and refinement of enzymes, microorganisms and bioactive natural products and the respective distribution.

The BRAIN Group maintains its own diverse collection of natural resources: the BRAIN Bioarchive comprises microorganisms, genetic material and natural substances. Based on this collection and with a comprehensive technology portfolio, BRAIN addresses technological challenges and develops bio-based products and solutions that are already successfully employed in the industry. The BRAIN Group has its own production facilities in Germany, UK and the US, which together with the associated biotechnological production expertise, complete the value chain within the Group.

As a Participant of the United Nations Global Compact, BRAIN Biotech AG is committed to aligning strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals.

Since its IPO in 2016, BRAIN Biotech AG has been listed in the Prime Standard of the Frankfurt Stock Exchange (ISIN DE0005203947 / WKN 520394).

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