

BRAIN and SAMS apply BEC gene-editing technology to Omega-3 Compounds from Marine Organisms

Oban (Scotland) / Zwingenberg (Germany), 3 November 2021 – The BRAIN Engineered Cas (BEC) gene-editing tool will be applied to one of the world’s largest libraries of marine organisms to search for ways to make compounds more sustainable and cost effective, under a research collaboration announced by Germany’s BRAIN Biotech and the Scottish Association for Marine Science (SAMS).

The collaborators will initially focus on marine sources of omega-3 fatty acids, and believe the alignment of their various skills will enable the development of approaches that will be more environmentally sustainable, and have applications for the nutritional, pharmaceutical and cosmetic sectors. One of the main aims of the research strategy is to look for new and more efficient ways to express existing marine compounds, without actually altering their genetic structure.

BRAIN Biotech AG, a publicly-listed company based in Germany, will licence its proprietary genome editing technology BEC to SAMS, which is based in Oban, Scotland, where its marine and freshwater organism library (Culture Collection of Algae and Protozoa) – one of the world’s largest – holds some 3,000 different algae strains. The research license will allow SAMS to activate, adapt and optimize the BEC technology for the various marine-based compounds. Under the agreement, any future commercial applications will then be explored by Adam Kelliher, a life science entrepreneur who has founded and sold two companies in the omega-3 field, the most recent being based in the Western Isles of Scotland.

“With our BEC technology, we are aiming to build a leading commercial platform for genome editing,” said Lukas Linnig, CFO at BRAIN Biotech AG. “Strong partners are essential to quickly develop our BEC tool for a number of applications. With SAMS we will now advance our research and application knowledge in the marine space. We are also very much looking forward to working with Adam Kelliher, who will lead the commercialization of the project. Adam is a serial entrepreneur and has demonstrated his strong commercial skills by already successfully launching two companies in the Omega-3 space. The terms of a potential commercial license will be negotiated at a later stage.”

Dr David Green, SAMS principal investigator in molecular microbiology, said: “This unique relationship with BRAIN will allow us to apply our significant knowledge of marine microorganisms to springboard development of novel algal production systems. And coupling this with the commercial acumen of Adam Kelliher, will expedite translation of concepts through to real-world commercial solutions.”

Adam Kelliher, life science entrepreneur and project sponsor, said: “I strongly believe that this project has the potential to be truly disruptive in the omega-3 space. Bringing together the skillsets of both BRAIN and SAMS should allow us to unlock compounds with great commercial potential. There is a strong body of science to show that lipids are life-enhancing for a myriad of conditions and applications, and our aim is to deliver these with approaches that are both cost effective and sustainable.”

The BRAIN Engineered Cas (BEC) protein is 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. BEC is now further developed into a leading genome-editing platform within a strong partner network.

About the Scottish Association for Marine Science ([SAMS](#))

SAMS is Scotland's largest and oldest independent marine research institute, delivering research, education and commercial enterprise from its base on the west coast of Scotland, UK. SAMS' mission is to understand how the marine environment works, why it is changing and how we can use it without causing harm, and to promote this knowledge for the public good through education and communication.

SAMS undertakes research into many aspects of the marine system that encompass: Ocean systems (fundamental science in physical oceanography; biogeochemistry; ecosystem function; Arctic seas); Dynamic coasts (research relevant to society to plan and manage the marine environment relating to climate change; marine conservation; society and the sea; industrial impacts) and the Blue Economy (applied science related to algae, aquaculture, marine biotechnology, ocean energy and fisheries).

SAMS' core partners include: University of the Highlands and Islands; United Nations University; Marine Alliance for Science and Technology for Scotland; Scottish Alliance for Geoscience, Environment and Society; Highlands and Islands Enterprise.

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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