

SNIPR BIOME Announces Pioneering Work on CRISPR Targeting of Microbiomes is Recognised as European Patent Office Grants Fundamental Patent Rights

Copenhagen, December 15th, 2021: SNIPR BIOME ApS, a leading CRISPR and microbiome biotechnology company, today announced that the European Patent Office has granted a fundamental patent in the field of CRISPR-based targeting in microbiomes. The broad protection afforded by the patent recognizes pioneering work by SNIPR scientists as innovators of CRISPR/Cas modulation in microbiomes. SNIPR BIOME is applying its proprietary CRISPR platform to target bacterial and microbiome based diseases. The importance of the microbiome is increasingly being recognised in human diseases, and the company has successfully secured collaborations with CARB-X, Novo Nordisk and University of Texas MD Anderson Cancer Center to exploit its breakthrough CRISPR technology.

The patent, EP3291679, entitled “Altering Microbial Populations & Modifying Microbiota”, claims phage and plasmid vectors carrying CRISPR/Cas systems for targeting species in mixed populations of bacteria. Use of Cas9, Cas3, Cas12a or any other type of Cas is covered, as is the targeting of any species of bacteria and in any microbiome. Equivalent scope for phagemid delivery is also pending. In recognition that SNIPR scientists pioneered the use of CRISPR to shape microbiomes, SNIPR was the first worldwide to receive a patent to this important development. The US patent (US9,701,964) was granted in 2017 and has undergone 2 third party requests for re-examination at the USPTO. The USPTO Patent Trial & Appeal Board (PTAB) rejected both requests and upheld the patent, which remains in force. To date, a total of 20 US SNIPR patents have been granted for CRISPR targeting of bacteria in microbiomes. SNIPR BIOME has exclusive, worldwide access to this patent estate for medical applications, which supports the company’s pipeline and lead program (SNIPR001), a CRISPR antibacterial targeting *E. coli* in hematological cancer patients. This experimental medicine is en route to enter clinical trials in the first part of 2022 in the USA. SNIPR has gained valuable funding from CARB-X for its first clinical program with payments up to \$10 million.

SNIPR’s extensive patent estate protects many important aspects of CRISPR anti-bacterials and microbiome modulating medicines, their uses, delivery and production. The estate includes granted protection for CRISPR targeting of bacteria in lung conditions, kidney conditions (such as UTIs), infections associated with sepsis and septicemia (including in cancer and transplant patients), as well as granted protection for modulation of microbiomes to enhance immunotherapies, such as for immune-oncology, CAR-T and vaccine therapy. The company also has protection for various technologies for engineering microbiomes to express therapeutic proteins for *in situ* gene therapy in patients.

SNIPR has protected CRISPR technologies that may be applied to a mammalian cell engineering, such as CRISPR viruses, self-cutting Cas and the combined use of CRISPR with reverse transcriptases or transposons. The company has a licensing program to enable wide adoption of these important techniques in medicine.

Dr. Christian Grøndahl, Co-founder & CEO commented:

“We are delighted that SNIPR BIOME now holds such important patent protection that covers CRISPR/Cas targeting of microbiomes for all medical applications. In deciding to grant our European patent, the EPO looked into the validity of this very closely for several years and concluded that a broad scope could be justified, as SNIPR scientists was the first to demonstrate specific CRISPR killing in a mixed bacterial population, which can be achieved both in vivo and ex vivo. Consequently, the patent has been granted with no limitation to any specific Cas, CRISPR cutting points or target bacteria. This is a major step to support our efforts as we transition in the next year to a clinical stage company with

the commencement of trials for SNIPR001 in USA targeting life-threatening infections with multi-drug resistant bacteria in hematological cancer patients.”

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About SNIPR BIOME

About SNIPR BIOME SNIPR BIOME is a leading CRISPR and microbiome biotech company incorporated in Copenhagen, Denmark. SNIPR BIOME is engaged in the discovery and development of CRISPR/Cas-based medicines deploying its proprietary and patent-protected CRISPR/Cas platform. The company applies its CRISPR technologies to selectively target microbial pathogens and remodel the microbiome to address important unmet medical needs. SNIPR BIOME is pioneering a novel use of CRISPR/Cas technology to selectively and precisely eradicate target bacteria, while leaving the rest of the patient’s microbial community intact. SNIPR BIOME was recently awarded a grant by CARB-X of up to 10.2m USD for CRISPR-based treatment of hematological cancer patients at risk of neutropenic fever and life-threatening infections that is expected to enter clinical trials early next year. In addition SNIPR BIOME and The University of Texas MD Anderson Cancer Center has a strategic collaboration agreement to advance new CRISPR based microbiome therapeutics to reduce immune-related adverse events (irAE) in patients being treated with combined immune checkpoint inhibitors. The company also develops proprietary technologies for *in situ* production of therapeutics in the human microbiome. SNIPR BIOME and Novo Nordisk recently entered into a research agreement on an undisclosed target to evaluate this technology for gene therapy of the microbiome ie. *in situ* production of therapeutics in the human microbiome. SNIPR BIOME holds an extensive portfolio of granted patents protecting CRISPR modification of microbiota as an adjunct to cancer therapy, vaccine therapy and other immunotherapies. In March 2019, SNIPR BIOME closed a \$50 million Series A financing by Lundbeckfonden Emerge (Copenhagen), Life Sciences Partners (Amsterdam), North-East Family Office (Copenhagen) and Wellington Partners (Munich).

For more details, please visit: www.sniprbiome.com

About SNIPR001

SNIPR BIOME is developing a new precision therapy to target *E. coli* in cancer patients with hematological malignancies, without harming beneficial bacteria in the microbiome. Cancer patients with hematological malignancies, which are cancers that affect the blood, bone marrow, and lymph nodes, are at increased risk of bloodstream infections due both to the disease and to chemotherapy treatment, with the pathogen *E. coli* posing a heightened risk. The company is pioneering a novel and patented use of CRISPR/Cas technology to selectively eradicate target bacteria based on specific DNA sequence signatures in the bacterial genome, while leaving the rest of the patient’s microbiome intact. SNIPR001 aims to target only *E. coli* bacteria in the gut, preventing the translocation of the bacteria to the bloodstream and sparing the beneficial bacteria in the patient’s microbiome. This precision approach to killing harmful bacteria could transform the way *E. coli* infections are prevented and treated. Today, there are no approved therapies for prophylactic therapy in this setting. SNIPR001 is planned to enter clinical trials in the US by H1, 2022.

About CARB-X

Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator (CARB-X) is a global non-profit partnership dedicated to accelerating antibacterial research to tackle the global rising threat of drug-resistant bacteria. With up to US\$480 million to invest in 2016-22, CARB-X funds the best science from around the world. CARB-X is led by Boston University and is funded by the US Department of Health and Human Services Biomedical Advanced Research and Development Authority (BARDA), part of the Office of the Assistant Secretary for Preparedness and Response (ASPR), the Wellcome Trust, a global charity based in the UK working to improve health globally, Germany's Federal Ministry of Education and Research (BMBF), the UK Government's Global Antimicrobial Resistance Innovation Fund (UK GAMRIF), the Bill & Melinda Gates Foundation, the world's largest foundation dedicated to improving the quality of life for individuals around the world, and receives in-kind support from National Institute of Allergy and Infectious Diseases (NIAID), part of the US National Institutes of Health (NIH).