

Viruses Against Bacteria: Development of Novel Therapeutics Boosted With Millions of Euros

Vienna, 28 August 2018: The development of alternative therapies to combat antibiotic-resistant bacteria has attracted more than €4 million in grants and private investments for Vienna-based biotech company PhagoMed Biopharma GmbH (PhagoMed). PhagoMed, located at the Vienna Biocenter, is focused on developing virus-(phage-) based therapies against bacterial infections. The financing will be used to continue the pre-clinical development of three drug candidates.

Multiresistant bacteria – meaning bacteria against which multiple antibiotics have become ineffective – are a critical medical problem. Across the EU more than 25,000 deaths per year are attributed to multi-drug resistant bacteria and the death toll is expected to rise further. Phages, a specific class of viruses infecting and destroying bacteria, are a promising alternative to combat these bacteria. The potential of phages as a novel therapeutic has been recognized by the Austrian Research Promotion Agency (Österreichische Forschungsförderungsgesellschaft mbH, FFG), the Austria Wirtschaftsservice Gesellschaft mbH (aws) and private investors. Together they provided PhagoMed with more than €4 million to further develop these novel therapeutics.

Effectiveness instead of resistance

“Phages are able to destroy bacteria effectively by using a mechanism of action regardless of a resistance to antibiotics”, says Prof. Dr. Wippermann, Head of Surgery at a large German hospital as well as Director Medical and Co-Founder of PhagoMed. “Studies and experimental treatments performed by us and colleagues have shown that phages are able to succeed where antibiotics have previously failed.” PhagoMed was incorporated in November 2017 in Vienna to further develop this novel therapeutic approach and bring phage drugs to market that comply with the strict regulations for pharmaceuticals.

The studies conducted by Prof. Wippermann as well as the other co-founders are the basis for PhagoMed's project development. Currently, the company is evaluating three potential drug candidates. One specific field of focus is the treatment of infected artificial joints, such as hip prostheses. These infections are difficult to treat since they are often caused by multiresistant bacteria. In addition, the bacteria typically form a so-called biofilm on the surface of the prosthesis, which further inhibits the effectiveness of antibiotics. In these types of complex infections phages are especially promising as a treatment alternative since they can degrade the bacterial biofilms as well as kill the multiresistant bacteria. The treatment of infected prostheses with phages will be further evaluated by PhagoMed in an animal trial starting later this year.

Successful financing

To fund its activities, the company has now received more than €4 million in grants and private investments. The cornerstone of this three-part financing is an FFG funded research project with a total volume of €3.5 million until 2021. For the first research year the FFG has approved a

funding rate of 70%. In addition, private investors contributed €750.000 in seed financing. The final part of the financing round is an €800.000 aws-Seedfinancing.

About PhagoMed Biopharma GmbH

PhagoMed Biopharma GmbH is a biotech company focused on the development of human therapeutic applications of phage therapy. Its development programs are based on the last-resort treatment experiences of its clinical co-founders with phages as well as research collaborations with highly prestigious scientists and research institutions in Germany (Leibniz-Institute DSMZ-German collection of microorganisms and cell cultures GmbH, Braunschweig as well as Justus-Liebig-Universität Gießen) and Belgium (Ghent University). Currently, PhagoMed employs six highly qualified employees at the Campus Vienna Biocenter in Vienna, Austria.

About Phages

Phages are viruses that only infect bacteria. Phages multiply by injecting their DNA into the bacteria and reprogramming the bacteria cells to produce new phages. As soon as sufficient phages have been produced by the bacteria, the phages express special enzymes that degrade the bacterial cell wall and lead to the death of the bacterial cell. Individual phages are only active against a limited spectrum of bacteria (typically even only within one species). The combination of high selectivity as well as high effectiveness in killing bacteria makes phages highly attractive as an alternative to antibiotics for the treatment of serious bacterial infections.

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