

## **AiCuris selects three novel anti-infective treatment approaches as winners of the AiCubator Resident Status, a corporate innovative accelerator initiative**

- “AiCubator” was launched by AiCuris mid-2020 to provide long-term support for early but promising research projects in the field of anti-infectives
- The first three winning projects of this initiative cover artificial chimeric interferons with improved antiviral activity developed by researchers from the Institute of Virology, University of Duisburg and Essen, as well as two novel approaches against Gram-negative bacteria including a novel small molecule antibiotic developed by the US-start-up company Prokaryotics Inc. and a new gyrase inhibitor class developed by the Swiss biotech start-up Selmod
- The AiCubator is part of AiCuris’ “PREP” (Pandemic and Resistance Emergency Preparedness) - program, a comprehensive four-pillar program to help prevent future pandemics and combat antimicrobial resistance (AMR)

**Wuppertal, Germany, January 13, 2021** - AiCuris Anti-infective Cures GmbH, a leading company in the discovery and development of drugs against infectious diseases, today announced the winners of the AiCuris AiCubator initiative. Submitted projects in the field of anti-infectives were evaluated by AiCuris experts on various criteria including status of target identification, preliminary efficacy data on hit molecules, addressed indications and potential competitive advantages over existing standards of care. Over a period of up to three years the winning projects will benefit from expert scientific support to grow their underlying ideas and approaches to an advanced level.

“AiCuris strongly believes that there is a need to encourage the development of more early projects based on new scientific principles to fill pipeline gaps, tackle anti-microbial resistances and prevent future pandemics,” said **Dr. Holger Zimmermann, CEO of AiCuris Anti-infective Cures GmbH**. “Therefore, we are constantly searching for novel technologies and creative approaches to develop more effective treatments against infectious diseases with high medical needs.”

### **Project 1: Chimeric artificial interferons with increased efficacy against HBV and other viruses**

**Researchers of the Institute of Virology, University of Duisburg and Essen**, have discovered in preclinical studies that specific forms of interferon are more efficient than the standard treatment. Based on that they engineered chimeric interferons with increased antiviral activity. These interferons could improve the efficacy of future HBV therapy as well as protection from various viruses, including future pandemic ones.

“We are very happy that our project has been selected for the AiCubator program,” said **Kathrin Sutter and Ulf Dittmer from the Institute for Virology at the University of Duisburg and Essen**. “It is a rewarding opportunity to be promoted with the scientific support and business expertise of AiCuris which will help to provide theoretical and experimental evidence for designing new targeted immunotherapeutic strategies for chronic hepatitis B infection.”

### **Project 2: Novel approach modifies proteins essential for biogenesis of outer membranes of bacteria**

Like penicillin and other beta-lactam antibiotics, history tells us that entirely new agents that target novel, druggable, broadly conserved essential enzymes involved in the biogenesis of outer membranes of bacteria could offer a great opportunity in terms of efficacy, safety and treating otherwise resistant bacteria. This is also the basic idea behind the winning project of the US-start-up company **Prokaryotics Inc.**, a spin-out from Merck & Co., Inc. to develop a new antibiotic that targets the fundamentally essential biochemical assembly components of the Gram-negative outer membrane, an intrinsic barrier that naturally restricts antibiotic entry and ultimate efficacy. The most promising target in this regard for drug development is LspA. By modifying LspA (lipoprotein signal peptidase A), an essential component in outer membrane biogenesis, Prokaryotics provides an exciting opportunity to develop next generation antibiotic agents effective on their own or in combination with existing agents to provide effective mono-therapeutic or synergistic efficacy against drug-resistant bacteria.

“We are delighted to participate in the AiCubator program and draw from the deep experience and resolute commitment AiCuris has demonstrated in the field of antibiotic development. With the company’s input, we hope to achieve new milestones in the further development of our project which shows great promise as a resistance breaking antibiotic treatment,” said **Terry Roemer, PhD. President and CSO of Prokaryotics Inc.**

### **Project 3: Novel class of antibacterial resistance breaking compounds**

In prokaryotes, gyrases play a crucial role in the process to supercoil the DNA, a process which both saves space and improves readability of the DNA. By inhibiting gyrase, the DNA loses its compact structure and expands, which ultimately leads to cell death. The inhibition of bacterial DNA gyrase is the principle behind some current effective antibacterial agents such as fluoroquinolones, however, the spectrum of side-effects and emerging bacterial resistance with no new drugs in the antibacterial pipeline has fueled intensive research in this area. **Selmod, a Swiss biotech start-up**, has developed a novel class of gyrase inhibitors addressing the known target but overcoming fluoroquinolones resistance. With a lead candidate and three further candidates with a broad spectrum of activity against Gram-negative bacteria, Selmod’s project promises to be an innovative approach as a resistance breaking antibiotic.

“Selmod and the TU Berlin are very honored to be selected as resident in the AiCuris AiCubator program. We are happily looking forward towards a fruitful collaboration to deliver a drug candidate to fight infections by bacteria resistant to available therapies,” said **Dr. Frank Otto Gombert, CEO of Selmod.**

“It was not easy to choose between all the excellent projects that have been submitted in the past three months, and we are very impressed by the number of outstanding approaches created and developed by highly motivated scientists to combat antimicrobial resistance and infections,” concluded **Dr. Holger Zimmermann.** “We are very much looking forward to working with these innovative researchers and to help them further progress fresh ideas inspiring anti-infective research.”

### **About AiCubator – a new way to collaborate in anti-infectives and support novel approaches**

To promote early ideas that might lead to the next resistant breaking antibiotic or anti-infective, AiCuris started to select promising research projects for the AiCubator, an innovative corporate incubator. The AiCubator initiative is dedicated to academic scientific groups or recently formed biotech start-ups with early stage anti-infectives projects in areas of high priority that are scientifically attractive but too early staged for licensing deals. The program was designed to help scientists and start-ups build their own business and grow their underlying ideas and approaches to an advanced level. Residents of the AiCubator program receive long-term support including scientific and regulatory advice as well as business development support. Additionally, they gain insight into pre-clinical and clinical drug development and the pharmaceutical business.

### **About AiCuris Anti-infective Cures GmbH**

AiCuris was founded in 2006 as a spin-off from Bayer and focuses on the discovery and development of drugs targeting infectious diseases. SANTO Holding is the Company's majority investor. PREVYMIS® (Letermovir), a first-in-class non-nucleoside cytomegalovirus (CMV) inhibitor acting via a novel mechanism of action, was licensed to MSD in 2012 and is approved in the EU, the USA, Japan and other parts of the world for use in bone marrow transplants for the prevention of HCMV infections in adults who receive an allogeneic hematopoietic stem cell transplant. The Company is developing drugs for the treatment of viruses such as human CMV, herpes simplex virus (HSV), hepatitis B virus (HBV), and adenoviruses. In the field of antibacterials, AiCuris seeks to develop innovative treatment options for life-threatening, multidrug-resistant, hospital-treated pathogens.

In 2018 Dr. Holger Zimmermann, CEO of AiCuris, and Prof. Dr. Helga Rübsamen-Schaeff, Founding CEO were awarded the German Future Prize 2018 (German President's Award for Innovation in Science and Technology) for the development of Letermovir and their project, "Protection in the Absence of the Immune System - a Life-Saving Innovation against Dangerous Viruses" (original title: "Schutz bei fehlendem Immunsystem - die lebensrettende Innovation gegen gefährliche Viren").

For more information, please visit [www.aicuris.com](http://www.aicuris.com).

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#### **Contacts:**

##### **Company:**

**AiCuris Anti-infective Cures GmbH**

Igor Orshanskiy  
Phone: +49 202 317 63 0

E-Mail [aicubator@aicuris.com](mailto:aicubator@aicuris.com)

##### **Media relations:**

**MC Services AG**

Dr. Solveigh Mähler  
Phone: +49 211 529 252 19

E-Mail: [aicuris@mc-services.eu](mailto:aicuris@mc-services.eu)