Pherecydes Pharma announces its intention to list on the Euronext Growth® market in Paris

- **Pherecydes is at the forefront of the fight against bacterial infections in humans and has already enabled the compassionate treatment of 22 French patients suffering from serious infections**

- **Pherecydes uses natural bacteria-killing viruses (bacteriophages) for a targeted treatment of antimicrobial-resistant (AMR) and/or complicated-to-treat infections**

- **Pherecydes is developing a portfolio of products targeting 3 of the most resistant and dangerous bacteria according to the WHO, including *Staphylococcus aureus***

Nantes, France, January 5, 2021 – 8:30 am CET – **Pherecydes Pharma ("Pherecydes"** or **"company")**, a biotechnology company specializing in precision phage therapy to treat resistant and/or complicated bacterial infections, today announced its intention to list on the Euronext Growth® market in Paris.

Antimicrobial resistance is a critical global public health issue responsible for at least 700,000 deaths per year[1] that could, according to the World Health Organization (WHO), cause 10 million deaths per year by 2050[2]. Pherecydes Pharma is developing a portfolio of phages, natural bacteria-killing viruses, targeting 3 of the most resistant and dangerous bacteria, including *Staphylococcus aureus*. The Company has already obtained promising results in humans with its phages as part of compassionate use in France, particularly for bone-joint infections.

Guy-Charles Fanneau de la Horie, Chairman of the Executive Board of Pherecydes Pharma, says: *"Our innovative approach represents a promising solution in the alarming health context caused by antimicrobial-resistant bacteria. The precision phage therapy approach that we have developed has been validated by very encouraging results obtained during compassionate treatments carried out in a medical setting approved by the French health authority (ANSM). These clinical results, which are structuring for Pherecydes, combined with our production capacity in compliance with GMP (Good Manufacturing Practices) standards, allow us to envisage the initiation of an intense development program in parallel with the availability of our drug candidates in the form of Early Access Program from the 2nd half of 2021. Pherecydes is planning an extensive clinical program that, in the long term, could enable it to treat, on a large scale, 3 of the most resistant and dangerous bacteria according to the WHO. Given these achievements in a rapidly growing therapeutic field, Pherecydes is today in a unique competitive position and our IPO project on Euronext Growth® represents a major opportunity to establish our leadership in phage therapy."*

Antimicrobial resistance, a critical global public health issue

With at least 700,000 deaths each year worldwide from resistant bacterial infections[1], the fight against antimicrobial resistance is one of the WHO's major priorities. In the absence of an effective therapeutic solution, antimicrobial resistance could be responsible for 10 million deaths per year by 2050[2].

Antimicrobial resistance also represents an extremely heavy and growing societal cost to health systems, estimated at between $20,000 and $80,000 per patient in OECD countries according to the ECDC[3]. In the United States, infections related to antimicrobial resistance cost approximately $20 billion annually (plus a $35 billion loss in productivity).

Given this alarming situation, the development of alternative treatments, such as phage therapy, has become a top priority, especially since no new class of antibiotics has been approved since 1982[4].

Phage therapy: a promising solution to treat resistant infections

Phage therapy, the treatment of resistant bacterial infections by phages, is emerging as a promising solution to the problem of antimicrobial resistance. Phages are natural viruses that exclusively target bacteria and are completely harmless to humans. Each phage targets a specific bacterial species to inject its DNA, reproduce itself, then destroy the bacteria and replicate this operation to the last existing bacteria.

Pherecydes' precision phage therapy: an innovative approach to personalized healthcare

Pherecydes' innovative approach allows the screening and characterization of large quantities of phages to select only the most efficient ones on bacterial strains of interest. The most efficient phages are then isolated, characterized, tested and produced under controlled conditions. When a bacterial strain responsible for a serious resistant and/or complicated infection is sent to Pherecydes, the activity of the phages is evaluated according to a "phagogram", with reference to the antibiogram, to select the most active ones and thus propose an individualized treatment plan.

In order to meet the pharmaceutical quality criteria, Pherecydes has set up industrial partnerships to produce its phages according to GMP (Good Manufacturing Practices) standards, allowing it to combine efficacy, purity and reproducibility.

A diversified product portfolio protected by international patents

Pherecydes Pharma has selected as priority targets for its phages three bacteria considered by the WHO as the most dangerous and in particular responsible for serious infections:

- ***Staphylococcus aureus***, initially targeted by Pherecydes in two indications, bone and joint infections on prostheses and diabetic foot ulcers;
- ***Pseudomonas aeruginosa,*** initially in ventilation-associated pneumonia and cystic fibrosis-associated pneumonia;
- ***Escherichia coli***, primarily in complicated urinary tract infections before other indications.

[1] https://amr-review.org/
[2] Report by Jim O'Neill, 2016
[3] https://www.ecdc.europa.eu/sites/default/files/documents/surveillance-antimicrobial-resistance-Europe-2019.pdf
[4] Carb-X https://carb-x.org/about/global-threat

These three bacteria alone are responsible for more than two-thirds of hospital-acquired resistant infections in industrialized countries[5] and represent a cost of $5 billion in Europe and the United States[6].

Pherecydes is currently developing a portfolio of 2 anti-*Staphylococcus aureus* phages, 4 anti-*Pseudomonas aeruginosa* phages and 5 anti-*Escherichia coli* phages, ensuring a very broad coverage of the targeted bacterial species.

To protect its discoveries, Pherecydes has a proactive intellectual property policy that covers phages, their variants and all associations including at least one of its phages. Today, the Company owns 4 patents, including some already granted in the United States, Europe and other important countries such as Israel, Australia, Hong Kong and Japan.

Pherecydes benefits from excellent results observed in humans in the context of compassionate use

Pherecydes has successfully applied its precision phage therapy in compassionate use under the supervision of the French National Agency for the Safety of Medicines (ANSM). To date, 22 patients have received treatments with Pherecydes' phages in prominent French hospitals. More than 7 different indications have been treated with the anti-*Staphylococcus aureus* and anti-*Pseudomonas aeruginosa* phages, including a majority of bone and joint infections on hip or knee prostheses. The excellent results observed in patients treated in this context have been the subject of several scientific publications and/or presentations at international congresses, the most recent publication being in the scientific journal Frontiers in Medicine last November[7].

A highly de-risked development strategy based on the choice of priority indications, the success of compassionate treatments and the Phagogram

Pherecydes Pharma is planning to deploy its strategy around three priorities:

1. Clinical development of its phages in the most critical indications

- ***Staphylococcus aureus*: high global priority according to the WHO (level 2 out of 3)[8]**

Pherecydes is planning to conduct two Phase I/II clinical trials, in bone and joint infections on prostheses and in diabetic foot ulcer infection, respectively. The study protocol in bone and joint infections was conducted according to the recommendations of the European Medicines Agency (EMA). The main objective is to evaluate the efficacy and tolerance of phages in association with the DAIR (Debridement, Antibiotics, Implant Retention) procedure. The start of the study is planned for mid-2021 and the first results are expected at the end of 2022. The study in diabetic foot ulcer infection is expected to start at the end of 2022.

[5] Opatowski M - Hospitalisations with infections related to antimicrobial-resistant bacteria from the French nationwide hospital discharge database, 2016
[6] Hôpital et ville - CDC (Centers for disease Control and Prevention) – Antibiotic Resistance Threats in the US; https://www.ecdc.europa.eu/sites/default/files/documents/surveillance-antimicrobial-resistance-Europe-2019.pdf
[7] https://www.frontiersin.org/articles/10.3389/fmed.2020.570572/full
[8] https://www.who.int/fr/news/item/27-02-2017-who-publishes-list-of-bacteria-for-which-new-antibiotics-are-urgently-needed

Two other studies, funded by public programs (PHRC[9]), will be launched in 2021 in these indications with Pherecydes phages, one at the initiative of the Bordeaux University Hospital (bone and joint infections), the other at the initiative of the Nîmes University Hospital (diabetic foot ulcer).

- ***Pseudomonas aeruginosa*: global critical priority according to the WHO (level 1 out of 3)[9]**

Pherecydes has already conducted several preclinical studies with anti-*Pseudomonas aeruginosa* phages in respiratory tract infection models. The results obtained have been positive, comparable to the efficacy of reference antibiotics with much simpler administration schemes: nebulization or nasal instillations in a few administrations. Pherecydes intends to initiate phase I/II clinical development in these indications in early 2023.

- ***Escherichia coli*: global critical priority according to the WHO (level 1 out of 3)[10]**

Pherecydes will conduct a Phase I/II study to demonstrate that its anti-*Escherichia coli* phages have antimicrobial activity in complicated urinary tract infections. It is expected to start early 2023.

2. Availability of phages within the framework of Early Access Programs

Early Access Programs are issued by the ANSM to allow certain categories of patients in France to use drugs that have not yet received Marketing Authorizations (MA).

Given the substantial medical need and the encouraging results obtained with Pherecydes phages in compassionate treatments, in March 2019 an ANSM Temporary Specialized Scientific Committee (CSST) gave a favorable opinion for the granting of Early Access Programs for the anti-*Pseudomonas aeruginosa* and anti-*Staphylococcus aureus* phages, if the latter are produced in a GMP environment.

In November 2020, Pherecydes began the production of phages according to GMP industrial standards for the needs of its clinical studies and plans to make them available in France within the framework of Early Access Programs starting from the second half of 2021. These Early Access Programs would address an urgent medical need in the very short term, as more than 23,500 patients suffer from resistant infections linked to these two bacteria in France. This availability may be subject to invoicing and therefore generate revenue.

3. Development of Phagogram 2.0

The Company has developed a technique called "Phagogram", which tests the sensitivity of a patient's bacterial strain to several phages. Over the past three years, Pherecydes has performed more than 80 phagograms on clinical strains and hundreds of experiments to refine and standardize the techniques used.

The Company is currently working on a new Phagogram methodology to increase the speed, reliability, reproducibility and sensitivity of the tests performed. In the short term, the new version of this test could be CE marked.

The long-term objective is to make precision phage therapy easily accessible to all, through a large-scale deployment of the solution to other players closer to patients, such as private analysis laboratories, hospitals, etc.

[9] PHRC: *Programme hospitalier de recherche clinique* (hospital clinical research program)
[10] https://www.who.int/fr/news/item/27-02-2017-who-publishes-list-of-bacteria-for-which-new-antibiotics-are-urgently-needed

Information on Pherecydes Pharma's IPO on Euronext Growth® in Paris

Copies of the *Document d'Information* is available free of charge from Pherecydes Pharma, and on the websites of Pherecydes Pharma (www.pherecydes-pharma.com) and Euronext (www.euronext.com).

For a description of the risks and uncertainties that could affect the results, financial position, performance and achievements of Pherecydes Pharma, please see the "Risk Factors" section of the *Document d'Information*, which is available on the websites of Pherecydes Pharma (pherecydes-pharma.com) and Euronext (www.euronext.com).

The subscription price and the terms and conditions of the offer will be announced when the Offering period opens, which is expected to take place in the coming weeks.

You can find all relevant information about Pherecydes Pharma's IPO project at

www.pherecydes-finance.com

About Pherecydes Pharma

Founded in 2006, Pherecydes Pharma is a biotechnology company that develops treatments against resistant bacterial infections, responsible for many serious infections. The Company has developed an innovative approach, precision phage therapy, based on the use of phages, natural bacteria-killing viruses. Pherecydes Pharma is developing a portfolio of phages targeting 3 of the most resistant and dangerous bacteria, which alone account for more than two thirds of hospital-acquired resistant infections: *Staphylococcus aureus, Escherichia coli* and *Pseudomonas aeruginosa*. The concept of precision phage therapy has been successfully applied in 22 patients in the context of compassionate use, under the supervision of the French National Agency for the Safety of Medicines (ANSM). Headquartered in Nantes, Pherecydes Pharma has a team of 21 experts from the pharmaceutical industry, biotechnology sector and academic research.

For more information, www.pherecydes-pharma.com

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