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RNS Reach – Non-Regulatory

Hemogenyx Pharmaceuticals plc

("Hemogenyx Pharmaceuticals" or the "Company")

Single CBR Can Treat Multiple Viruses

Hemogenyx Pharmaceuticals plc (LSE: HEMO) announces that it has made significant progress towards the practical use of its Chimeric Bait Receptor ("CBR") platform technology, designed to program immune cells to eliminate viral infections by destroying the viruses that cause them. The Company's scientists have identified a target protein that can be incorporated into a single multipurpose CBR-based therapeutic capable of treating multiple viruses that belong to different viral families, instead of having to make a separate CBR construct for every virus. Among them are Dengue, Ebola, Marburg, Zika and Chikungunya. These viruses are among the most dangerous to humans, causing serious and often fatal diseases, and for which few effective treatment options exist.

Shareholders will recall that the Company has been working on cell therapies which have shown great promise in the treatment of cancers. Using the Company's expertise in developing cell therapies for cancer, it developed an approach that can be used to bring cell therapy approaches to another unmet need, the treatment of major existing and emerging viral infections, including SARS-CoV-2. Called Chimeric Bait Receptor, the approach is a platform technology that can be used to program the immune cells that are responsible for innate immunity (e.g., macrophages) to eliminate viruses.

The Directors believe that this significant discovery of a single target protein for use against multiple dangerous viruses is further evidence of the potential power of the Company's CBR technology, and demonstrates the possibility of accelerating the development of antiviral therapeutics as well as preventing epidemics and pandemics that could be caused by a multitude of pathogens.

Background and description of technology

Responding to the huge unmet need of pandemics, the Company realized that its technology and skills developed in fighting cancer could be used for the development of novel therapies for life-threatening existing and emerging viral diseases. It has developed a new proprietary platform technology that is based on harnessing the power of the immune system and has derived potential treatments from it, starting with one that targets SARS-CoV-2, the virus that causes COVID-19.

The immune system has many components, some of which, like antibodies in the blood, are well known to lay audiences. Other aspects like T cells are less well known, but like antibodies are very specific and, as they develop many days or weeks after infection or vaccination, are known as "adaptive immunity". But there are other aspects of immune protection that pre-exist before infection, called "innate immunity". This comprises a series of protective cells and molecules including macrophages and interferon, for example. Hemogenyx Pharmaceuticals has found a way to activate these macrophages to kill virus infected cells and protect against the virus by programming them with a set of novel CBRs. Additionally, we have developed another simpler technology, Bait-Macrophage Engagers ("BMEs"), that act like antibodies and scavenge virus particles in the blood and neutralize them. The Company's technology utilizes synthetic biology and artificial intelligence ("AI") approaches to advance medicine to protect society from future pandemics that may challenge the global economy, health, and national defense.

While the Company's first CBR-based treatment attacks one virus, SARS-CoV2, further research has now revealed that it is possible to develop a single treatment for several viruses that belong to different viral families, including those listed in the opening paragraph.

Clinical need and how Hemogenyx Pharmaceuticals is addressing it

The need for proactive new solutions to future infectious agents which might cause major epidemics has become clear in the wake of the COVID-19 pandemic and especially so in the face of global threats of biological warfare. To address this imminent threat, the Company has developed an immunotherapy approach using cutting edge technology that could be utilized to prevent and combat infection by any known or emerging virus, by being able to create front-line treatments that may prevent the development of the next pandemic. Moreover, these new therapeutic tools can be used to protect against bio-terrorism, potentially rendering a universe of viral bio-weapons ineffective.

CBR allows the development of:

(1) off-the-shelf cell therapies against infectious disease.

(2) biopharmaceuticals to eliminate any potential virus in the course of infection or to be used as a preventive treatment.

Current treatments, including vaccines, neutralizing monoclonal antibodies, and specific anti-viral drugs, are not rapidly available at the onset of an outbreak. Additionally, both neutralizing antibodies and vaccines lack adaptability to new variants of infectious viruses, losing their efficacy

when viruses mutate and "evade" the immune system. Indeed, these forms of therapy increase the risk of immune evasion, in the same way that overuse of antibiotics has led to antibiotic resistance. To overcome both the lag in response time and major shortcomings of antibody-based treatments including vaccines we are developing "off-the-shelf" (non-patient-specific) CBR- and BME-based products that may be directed against any viral pathogen rapidly after its discovery.

Major advantages of our CBRs and BMEs for combatting viral infections include:

(1) the use of a "bait" makes CBRs and BMEs insensitive to mutations of the targeted virus, preventing the development of resistance (unlike antibodies); as long as the virus is infective and uses the same "door" to enter a cell, it will be eliminated by CBR-based treatments. The bait resembles a handle of the door that the virus uses to enter a cell.

(2) CBRs and BMEs are assembled from parts of naturally occurring cellular receptors and/or engagers that are responsible for the function of immune cells and endow the host's own immune system with the ability to destroy invading pathogens.

(3) CBRs and BMEs are modular synthetic receptors and/or immune cell engagers that can be reconfigured rapidly to attack almost any virus. It is important to stress that this new technology also works in cancer, on malignant cells. This work thus strengthens the Company's anti-cancer work, and importantly opens up many opportunities to work with public bodies, such as the military, the National Institutes of Health, the Biomedical Advanced Research and Development Authority ("BARDA"), as well as other leading public health-focused foundations.

Ongoing development

It is important to emphasise that, although our work to date has been focused on certain viruses, in particular SARS-CoV-2, as well as on particular types of cancer, it is in principle applicable to almost any form of virus. The Directors believe it is likely to be of particular value in combatting emerging or rare forms of viral infection, treating sufferers of such viruses where effective vaccines or anti-viral drugs have not yet been developed or in cases where they have failed to be effective. The significance and broad applicability of this proprietary technology led the Company to file a seminal provisional patent application for it in 2022.

Meanwhile, the Company is conducting *in vivo* tests to demonstrate that CBR could be used against infectious replicating SARS-CoV-2 virus, including its recent dangerous variants. These tests are being conducted using a biosafety level 3 ("BSL3") facility that belongs to a government-owned institution. BSL3 facilities are used to work with live pathogens that can cause harm to people. It is important to note that this work has not detracted us from our primary focus, and our CAR-T and CDX projects continue to make good progress.

Dr Vladislav Sandler, CEO & Co-Founder of Hemogenyx Pharmaceuticals, commented: *"We are pleased now to be announcing further exciting developments in our CBR platform. CBR is a ground-breaking new approach to treat existing and emerging viral infections as well as potentially becoming an effective new form of cancer treatment. On the viral front, its potential ability to treat a very wide range of viruses give it the potential to revolutionise the treatment of viral diseases and even to become the means of counteracting biological warfare."*

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About Hemogenyx Pharmaceuticals plc

Hemogenyx Pharmaceuticals is a publicly traded company (LSE: HEMO) headquartered in London, with its US operating subsidiaries, Hemogenyx Pharmaceuticals LLC and Immugenyx LLC, located in New York City at its state-of-the-art research facility.

The Company is a pre-clinical stage biopharmaceutical group developing new medicines and treatments to treat blood and autoimmune disease and to bring the curative power of bone marrow transplantation to a greater number of patients suffering from otherwise incurable life-threatening diseases. Hemogenyx Pharmaceuticals is developing several distinct and complementary product candidates, as well as platform technologies that it uses as engines for novel product development.