

Scarlet Therapeutics Secures DARPA Agreement to Develop Adaptive Smart Red Blood Cells

Agreement, worth up to \$14 million, validates the potential of pioneering red blood cell technology platform

Bristol, United Kingdom, 23 September — Scarlet Therapeutics Ltd ('Scarlet'), a biotech company developing red blood cell-based therapeutics, today announced that it has entered into an agreement with the Defense Advanced Research Projects Agency (DARPA) to advance the development of smart red blood cells (SRBCs). Scarlet will lead a multidisciplinary consortium to develop these SRBCs, in a programme worth up to USD \$14 million.

The agreement provides significant external validation of Scarlet's red blood cell technology platform and builds on the company's ability to engineer red blood cells to contain multiple therapeutic proteins. The program will explore the addition of sensing and control mechanisms designed to allow engineered cells to detect physiological changes and adjust their activity in response, thereby enabling the development of improved therapies for patients.

Scarlet Therapeutics will coordinate a multidisciplinary, international consortium bringing together expertise in red blood cell biology, synthetic biology, computational design and automated cell manufacturing. Partners include the University of Bristol, where Scarlet's foundational technology originated, Northwestern University and Unicorn Biotechnologies.

"This agreement represents an important endorsement of Scarlet's technology and, together with our academic, industrial and government partners, gives us the opportunity to address some of the most ambitious challenges in red blood cell engineering," said Dr Alistair Irvine, CEO of Scarlet Therapeutics.

Professor Ash Toye, CSO of Scarlet Therapeutics and the Principal Investigator of the consortium, added, "We are excited to lead this consortium and to explore how engineered red blood cells can sense and respond to changes in human physiology, while also advancing capabilities in protein retention, biological control, safety and automated manufacturing that could support a new generation of long-acting medicines."

This programme is funded by DARPA under Agreement HR0011-26-9-E150. The work is exploratory and intended only to assess feasibility; no clinical use is implied. The views and opinions contained in this release are those of Scarlet Therapeutics and should not be interpreted as representing the official positions of DARPA or the U.S. Government.

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About Scarlet Therapeutics

Scarlet Therapeutics is developing a next generation biologics platform that engineers universal red blood cells (RBCs) into long-acting medicines, initially for metabolic disease. The company's proprietary cell line technology enables scalable manufacturing of lab-grown red blood cells that can carry therapeutic proteins while maintaining the natural safety and circulation properties of RBCs.

Scarlet's platform supports two complementary application areas: "Treat" – long-acting therapeutic RBCs for the treatment of disease and "Enhanced Transfusion" – development of universal "off-the-shelf" transfusion products.

The company's technology builds on pioneering research from the University of Bristol and ongoing clinical research through the RESTORE study, a first-in-human clinical trial comparing the survival of lab-grown RBCs with donated RBCs in human volunteers ('transfuse').

Scarlet Therapeutics is headquartered in Bristol, UK, within the Science Creates ecosystem.

For more information visit our website [here](#) and follow us on LinkedIn [here](#).

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