Emulate, Inc. and AstraZeneca form strategic agreement to work side-by-side on Organs-on-Chips technology to improve prediction of human safety and efficacy of drug candidates

AstraZeneca is the first pharmaceutical company to work with Emulate to develop and embed its Organs-on-Chips technology in its laboratories

Studies with the technology aim to gain new insights into disease mechanisms

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BOSTON, Mass. – Emulate, Inc. has formed a collaborative partnership with AstraZeneca's Innovative Medicines and Early Development (IMED) Biotech Unit to embed its Organs-on-Chips technology within the laboratories of the IMED Drug Safety organization. As part of the agreement, Emulate plans to co-locate scientists within AstraZeneca's laboratories. The aim of this agreement is to accelerate the development of Organs-on-Chips technology and testing within the context of a pharmaceutical organization.

AstraZeneca began collaborating on Emulate's Organs-on-Chips technology in 2013, and the two companies have successfully published some of their recent work during the Society of Toxicology meeting in March 2018. The Organs-on-Chips technology comprises of the Organ-Chips, instrumentation, and software apps. In the future, the system is also expected to reduce the use of animals in research as well as the cost and time of discovery and development.

"Organs-on-Chips technology has the potential to enhance and accelerate our ability to translate science into innovative medicines for patients," said Dr. Mene Pangalos, Executive Vice-President of AstraZeneca's IMED Biotech Unit and Global Business Development. "Working side by side with Emulate scientists will enable us to better develop the platform and may improve our ability to predict adverse and non-adverse effects in humans. The partnership exemplifies how we are creating permeable research environments where our scientists work together to foster collaborative scientific advancement."

"We have developed momentum for the adoption of our technology in the pharmaceutical industry, and are establishing a model of how the Organ-on-Chips technology can be integrated into the labs and existing workflows of pharma and other industries," said Dr. Geraldine A. Hamilton, President and Chief Scientific Officer of Emulate. "This partnership is an example of how we can progress towards our goal of increasing the success of drug discovery and development by providing a platform that recreates human-relevant biology. The research conducted with AstraZeneca will allow us to further develop and add greater functionality to our technology platform."

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An initial focus will be to use Emulate's Liver-Chip for safety testing of drug candidates across the AstraZeneca pipeline with the goal of submitting Organ-Chip data within the regulatory framework for new drugs. The terms of the agreement also allow for Emulate's technology to be adopted across AstraZeneca's therapeutic areas and will enable the two companies to develop functionality of three other Emulate Organ-Chips – the Lung Tumor-Chip, Lung-Chip, and Glomerulus Kidney-Chip. By delivering new insights into human disease mechanisms, scientists will be more equipped to predict the clinical relevance of candidate drug safety and efficacy.

About the "Human Emulation System" Powered by Organs-On-Chips Technology
Based on Organs-on-Chips technology, Emulate has created a new living Human Emulation System™ that provides a real-time window into the inner workings of human biology and disease – offering researchers a new technology designed to predict human response with greater precision and detail than today's cell culture or animal-based experimental testing. Each of Emulate's proprietary Organ-Chips – including the lung, liver, brain, intestine and kidney – contains tiny hollow channels lined with tens of thousands of living human cells and tissues, and are approximately the size of an AA battery. An Organ-Chip is a living, micro-engineered environment that recreates the natural physiology and mechanical forces that cells experience within the human body.

About Emulate, Inc.
Emulate Inc. is a privately held company that creates living products for understanding how diseases, medicines, chemicals, and foods affect human health. Our Human Emulation System™ sets a new standard for recreating true-to-life human biology, and is being used to advance product innovation, design, and safety across a range of applications including drug development, agriculture, cosmetics, food, and chemical-based consumer products. Emulate continues to develop a wide range of Organ-Chips and disease models through collaborations with industry partners and internal R&D programs. Emulate is also working with clinical partners to produce Organ-Chips personalized with an individual patient's stem cells, for applications in precision

medicine and personalized health. Our founding team pioneered the Organs-on-Chips technology at the Wyss Institute for Biologically Inspired Engineering at Harvard University. Emulate holds the worldwide exclusive license from Harvard University to a robust and broad intellectual property portfolio for the Organs-on-Chips technology and related systems.

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Image 1 caption:
Emulate's Organ-Chip technology