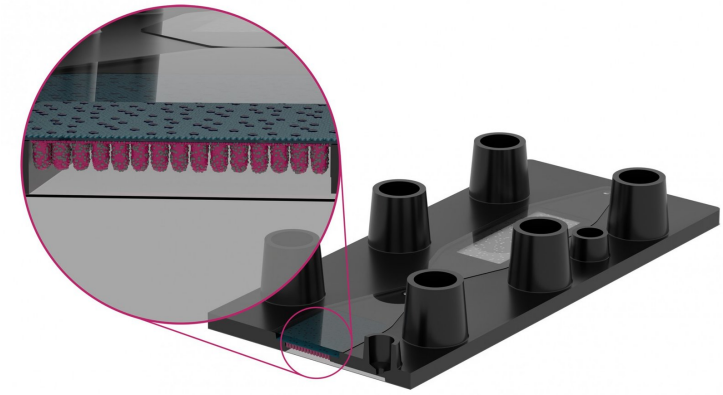
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Bayer develops a organ-on-chip platform to reduce animal testing in healthcare

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Bayer, the global health care and nutrition expert is developing a platform to reduce or replace animal testing with a alternative model of â??organ-on-chipâ?• (OoC) technology and interactive computational software. The pilot project, supported by esqLABS, Dynamic42, Placenta Lab of Jena University Hospital, and Bayerâ??s Consumer Health Division aims to generate clinically relevant data, a key step in evaluating new drug candidates in preclinical research. The effort is first-of-its-kind collaboration in the consumer health industry.

The one-year pilot will focus on evaluating whether small molecules can cross the blood-placenta-barrier in pregnant women, an understudied population due to challenges in conducting clinical research. The platform will consist of a microphysiological system (MPS, so called â??organ-on-chipâ?•) representing the main human tissues involved in drug disposition (liver, intestine, placenta) as well as a pumping system to circulate cell culture media among the tissues. The platform will be digitalized to simulate the distribution of compounds and translate the data to human situations.

While animal tests are often required by regulation in the preclinical phase of new drug development, there can be challenges in translating outcomes from animals to humans in some cases. If successful, the platform could help reduce animal testing while improving development outcomes, reducing costs, and last but not least improving patient safety.

Under the terms of the agreement, the companies will bring together esqLABSâ?? unique expertise in computational modelling of biomedical systems, Dynamic42â??s expertise in in-depth tissue and hardware engineering as well as Bayerâ??s leading expertise in human pharmacokinetic predictions to create the integrated biological and computational platform. The Placenta Lab provides unique experience in developing and building a placenta-on-chip, which is the key element in this study. esqLABS will develop the computational software tool, and Dynamic42 will develop a multi-organ-on-

chip platform including the placental barrier. Bayer will provide industry guidance for real-world usage, as well as drug and data sets to help validate the platformâ??s predictions.