

HCS Pharma, IEMN and SMiLL-E (LIMMS) have founded the joint laboratory Bio-PharMEMS in Lille (France)

Lille, France - 20/02/2020: **The Bio-PharMEMS Joint Laboratory (LabCom, for *Common Laboratory*) combines the skills of the three entities to develop new tests in 3D *in vitro* pharmacology and integrate microfluidic vascularization. The objective is to bring the "in vitro" conditions as close as possible to those of "in vivo" to considerably accelerate the development time of new drugs. The LabCom is funded by the Hauts-de-France Region as part of the 2014-2020 FEDER program.**

Today, the models used in the search for anti-cancer drugs suffer from many deficiencies. They are often based on two-dimensional cell culture and therefore do not represent the reality of the human body. At the moment, 3D models generally remain simple and are neglecting the physiological realities of the tumour, in particular its modified extracellular matrix, its vascularization and its ability to create new vessels through angiogenesis. These limitations reduce the effectiveness of the *in vitro* testing phase in the search for anti-cancer drugs and contribute to longer development times.

To propose a more relevant and more robust model, the three partners of this joint laboratory will bring complementary skills. HCS Pharma, with its exclusive extracellular matrix technology BIOMIMESYS®, will provide a 3D cell culture matrix as close as possible to the real tumor environment, in an organ-specific manner. One of the main objectives will be to create a dynamic vascularized environment and allow angiogenesis. Thanks to its expertise in high throughput and automation, the company will also be able to offer screening tests for molecules of therapeutic interest that would be profitable for the pharmaceutical industry. The SMiLL-E team (LIMMS) and IEMN bring to this collaboration their skills in angiogenesis, microfluidics and the use of sensors on biochips. They also master the stages of industrialization of the processes, a mandatory step for the use of the fruits of this research on a large scale.

Ultimately, the joint Bio-PharMEMS laboratory will be able to propose biochips for *in vitro* screening of therapeutics, with environments physiologically similar to *in vivo* tumour conditions. These biochips will be directly adapted to process automation to drastically shorten development times.

HCS Pharma

HCS Pharma is a biotech start-up located in Lille that offers research and development services to the pharmaceutical, dermo-cosmetic and food industries. Its expertise: the development of new 3D *in vitro* tests (thanks to its exclusive BIOMIMESYS® technology) and their use in medium/high throughput screening of molecules using the innovative high throughput cellular imaging technology called High Content Screening (HCS).

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