

Communication: OoC INSERM WORKSHOP (OCTOBER 2018)

An Inserm workshop dedicated to Organ-on-Chip (OoC) and entitled “*OoC : understanding and mimicking living organisms for better treatment*”, was organized in October 2018, in France. This high-level training session, consisting of both theoretical and practical phases, aimed to educate, transfer knowledge and experiences to a public having a direct interest in OoC. Around 70 people from Europe and the USA were present, including scientists, researchers, technicians and medical doctors working in academic government-funded bodies, teaching hospitals and companies in health-related industries.

The **theoretical phase** took place on a residential basis during two days and a half, in Bordeaux. It was organized in 4 sessions to cover the main aspects of the OoC field and to give a logical teaching progression. Following a broad state-of-the art presentation, a serie of specific conferences were given to illustrate how to recapitulate the structure and function of an organ for a given application. The synergistic convergence of microfabrication technologies and tissue engineering was then illustrated in two sessions focused on microfluidics and advanced integrated biosensors to study barrier functions. Last, some complementary aspects including regulation, ethics and industry perspective were given. In the middle of the session, a round table was organized to stimulate interactions and debate between the 15 world-renown experts present and the audience. The main topics of this round table included the positioning of OoC in the drug development pipeline, the current challenges and key missing organs, the technical hurdles such as sustainable cell sources, vascularization, adaptive immunity, the key players, the funding initiatives in Europe and USA and how to coordinate international efforts. The required steps for validation/monitoring of OoCs were also discussed in the frame of building confidence. Last, the need to carefully disseminate and communicate on OoC with media and the public in order to manage expectations and get over the hype was raised and debated. In conclusion, this theoretical phase was characterized by fruitful discussions in a friendly atmosphere. People actively participated to address “*what they always wanted to know about OoC but were too afraid to ask!*”. The human

dimension of this workshop (less than 100 attendees) was highly appreciated and considered as a key point for interacting with the experts who were present throughout the workshop and for triggering new partnership. The “philosophy” of Inserm workshop was shared by all with pedagogical and didactic talks that facilitated the transfer of knowledge and know-how. In this context, by contrast to congresses or conferences, the presentation and discussion of scientific results were only of illustrative value.

The purpose of the **practical phase** was to allow 7 selected trainees to master some practical aspects on OoC. This 4 days-training was organized between 3 laboratories in Lyon and Grenoble, who focused the training on (i) Skin models on chip, organoids microencapsulation and integrated microfluidic-based OoC (CEA, Grenoble), (ii) 3D bioprinting, CAO design and bioinks (ICBMS, Lyon) and (iii) biopolymer coatings to supporting materials and their characterization (TIMC, Grenoble). Trainees have demonstrated enthusiasm in learning the latest developments on specific areas and finding answers to their technical problems.

The outcome of this Inserm Workshop & the round table will be used for shaping the roadmap of OoC and for adding new information and insights to the Orchid website. Participating to this Inserm workshop was a great opportunity of joining the growing community in the field of OoC! Many participants have already expressed their enthusiasm in becoming member of the digital platform in development within the Orchid consortium and key actors for the newly created OoC community in Europe.