UNLOOC PROJECT: Unlocking the data content of Organ-on-Chips

SYNC BIOSYSTEMS
Part of the Demcon group

DEMCON | CURONIX

DEMCON

About the project

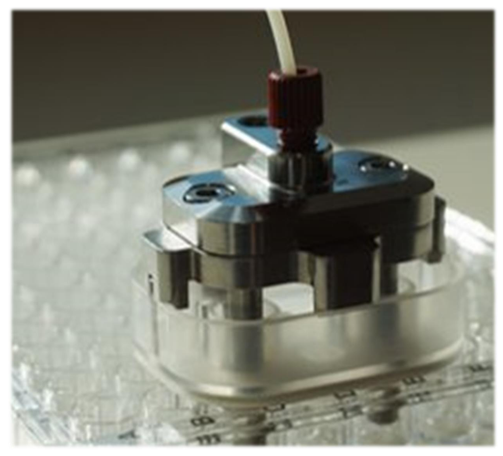
UNLOOC is a 3-year project tackling the challenge inherent in animal testing of drugs. It brings together 51 organizations from 10 European countries. The consortium aims to demonstrate through its five novel use cases how the groundbreaking methods using Organ-on-a-Chip (OOC) technology enable the development of more effective treatments, leaving animal subjects out of the equation. The OOC technology to be developed in the UNLOOC project will not only enable controlled drug testing, but also the modelling of disease pathophysiology.

www.unlooc.eu

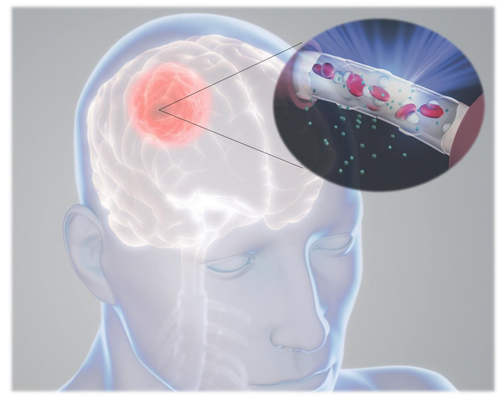
The use cases of DEMCON

Within the UNLOOC consortium, DEMCON contributes through three entities: Sync Biosystems, DEMCON curonix and DEMCON Life Sciences & Health Enschede

- **Sync Biosystems** has developed a plug-and-play microfluidic adaptor (see **figure**) that converts static cell cultures into dynamic microphysiological systems.
- In **use case 2b**, Sync Biosystems will refine its technology to ensure compatibility with the consortium's plate format and models. This adaptation will also enable sampling from the top compartment, allowing for improved sample-based readouts.



- **DEMCON curonix** focuses on groundbreaking technology to treat neurological diseases such as Alzheimer's and brain tumors by enabling precise drug delivery, in combination with Focused Ultrasound (FUS), across the blood-brain barrier (BBB).
- For **use case 4**, DEMCON curonix is developing a microbubble injector system to interface with a BBB-on-chip model. This system uses FUS to temporarily open the BBB, helping to optimize protocols for FUS-mediated drug delivery in the brain.



Both companies are supported by **DEMCON Life Sciences & Health Enschede**, providing critical engineering expertise required to realize these developments.

51 partners

10 countries

5 use cases

€68 M total project budget

Chips JU

Co-funded by the European Union

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