Showcasing research from Assoc. Professor Caroline Beck Adiel's laboratory, Department of Physics, University of Gothenburg, Sweden in collaboration with Professor Katriina Aalto-Setälä's laboratory, Tampere University, Finland.

An *in vivo* mimetic liver-lobule-chip (LLoC) for stem cell maturation, and zonation of hepatocyte-like cells on chip

Recreating in vivo-like conditions in vitro is key for drug discovery and disease modeling. We developed a liver-lobule-chip (LLoC) with 21 artificial lobules mimicking liver microarchitecture. Its PDMS design supports diffusion-based perfusion, shear stress, and nutrient gradients. The LLoC enables iPSC-derived hepatic maturation and spatially organized, zonated function in 3D. It offers a reproducible, scalable alternative to donor-dependent primary hepatocyte cultures, ideal for disease studies and drug screening.

As featured in:

See Caroline B. Adiels *et al.*, *Lab Chip*, 2025, **25**, 4328.

ROYAL SOCIETY OF CHEMISTRY

rsc.li/loc

Registered charity number: 207890