3DSecret

3D spheroids derived from single cells for discovering stochastic patterns behind metastasis



OBJECTIVES

- To develop the 3DSecret-Chip, based on microfluidics, to achieve controlled and reproducible formation of 3D cancer models originating from tumour single cells.
- To develop and exploit on-chip surface-enhanced Raman spectroscopy for continuous monitoring of cell growth and metabolomics.
- To establish methods for genomic and transcriptomic analyses of 3D cancer models avoiding whole-genome amplification.
- To unravel stochastic patterns of metastasis from the 3D cancer models data multi-omics using artificial intelligence algorithms.



This work is funded by the EU through the 3DSecret project under the HORIZON-EIC-2022-PATHFINDER-OPEN-01-01 programme (grant no. 101099066), and by the UK Research and Innovation (UKRI) council under the UK government Horizon Europe funding guarantee (grant no. 10063360).



