

It's a bird! It's a plane! No, it's an Organoid

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The Neurogenomics Research Centre at Human Technopole (HT), investigates the pathogenetic mechanisms of neurodevelopmental and neurodegenerative disorders, combining basic and translational research through different experimental systems and in silico approaches. A key asset is the the Automated Stem Cell and Organoid Facility (ASCOF) at HT, the first-in-class robotic facility for the generation and maintenance of 2D and 3D human disease models in vitro. ASCOF portfolio includes the generation of pluripotent stem cells, as well as their differentiation as organoids: three-dimensional multicellular structures capable of recapitulating physiological and pathological aspects of human tissue development and architecture.

Today, only a few examples of automated platforms for organoids have been realised, and many challenges must still be overcome in the field. Among those, a major issue remains the automatic live imaging of floating organoids and the unmet desire of combining throughput with quality.