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3D cellularitX

A streamlined software platform that transforms raw imaging
data from 3D cancer model assays into clear, quantitative
insights with minimal user input

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Intellectual property information
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Proposed Uses

3DcX is designed to support researchers working with organoid, spheroid, and cell-therapy assays by automating the analysis of time-lapse imaging data.

It enables rapid interpretation of treatment effects, supports screening workflows, and reduces the time and manual effort typically required for 3D assay analysis.

Problem addressed

Analysis of 3D cancer models is often slow, subjective, and fragmented across multiple tools.

Existing software often fails when faced with low-contrast imaging, late-stage degradation, or substantial object movement in time-lapse datasets, and many systems are restricted to proprietary microscope ecosystems.

3DcX overcomes these challenges by replacing manual, bias-prone steps, ensuring stable tracking under poor imaging conditions, and generating reproducible, time-resolved metrics across diverse imaging systems.

Technology Overview

3DcX provides an integrated environment for processing and analysing time-lapse datasets from 3D cancer assays. The platform ingests standard image and video formats, identifies relevant structures, assesses their viability, and tracks their behaviour throughout the experiment to generate clear, quantitative and visual outputs.

Designed to cope with movement, low contrast, and structural collapse, it smooths and stabilises lower-quality inputs to ensure reliable performance. Its microscope-agnostic design supports a wide range of imaging setups, and the fully automated workflow delivers consistent, experiment-ready results with minimal user intervention.

Inventor information

Professor Hugh JM Brady
Hugh Brady is a Professor Immunology in the Department of Life Sciences at Imperial. His research group has worked on NK cell biology and its application to immunotherapy since 2008. He founded biotech spinout NK:IO in 2020.

Hafsa Kaja Moinudeen
Hafsa is a PhD researchers in Systems Immunology at Imperial, specializing in computational analysis of high-dimensional biological data.

Joanna Burr
Joanna Burr is a biomedical scientist with research experience in immuno-oncology. Her work spans academia and industry, with a focus on cell therapy drug development and imaging-based functional assay development.
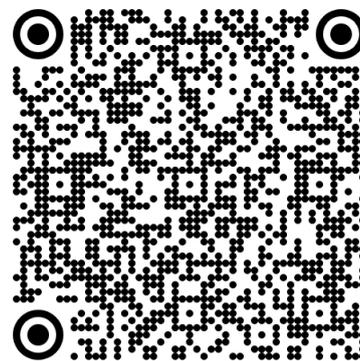
Benefits

- Automated, unbiased analysis of 3D assay data

- Compatible with images from any microscope

- Performs reliably across different imaging conditions

- Supports time-based assessment of growth viability, and treatment effects.

- Delivers clear, quantitative metrics and visual outputs

- Suitable for both exploratory and higher throughput workflows