Cell viability and proliferation assays

The in vitro evaluation of cell viability and cell proliferation is a key step in the assessment of the biological activity of a new pharmacological compound or a natural product.

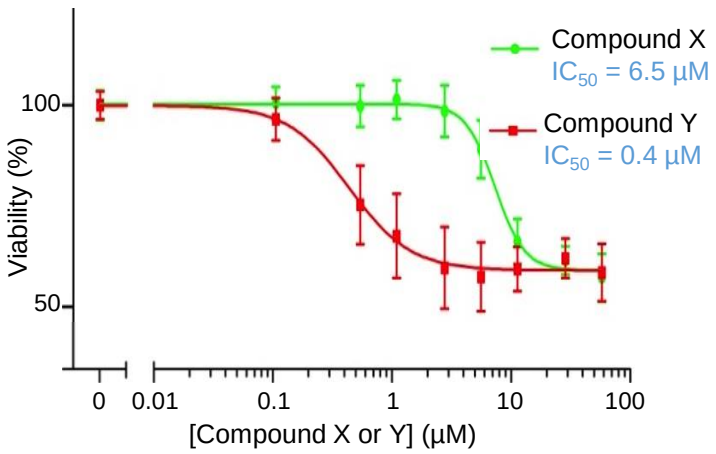
Imactiv-3D offers its expertise in cell culture, cancer cell biology and pharmacology to test your compounds using 2D and 3D cell culture systems.

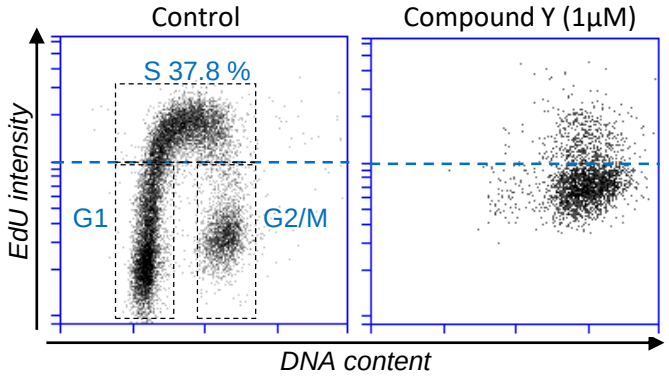
We test your compounds in 2D cell culture models

- Benefit from our 2D cell culture expertise
- Large panel of available cell lines or custom service using your selected cell line
- We culture cells and carry out experimental protocols according to your requirements
- Multi-parametric analysis to address your specific needs
- Available assays include quantification of cell viability, cell proliferation (WST® assay), cell cycle distribution, BrdU or EdU incorporation, apoptosis,…
- Tests can be customized on request

Application example: IC_{50} determination and effect of compounds on cell proliferation in 2D cell cultures

Analysis of HCT116 cells after incubation with compounds X and Y at the indicated concentrations for 72 hours.
Right panel – Cell viability determination using the WST® assay (Roche). The calculated IC_{50} (PRISM software) are indicated.
Lower panels – Flow cytometry analysis of the cell cycle distribution after EdU incorporation/detection and staining with the DRAQ5 fluorescent probe.

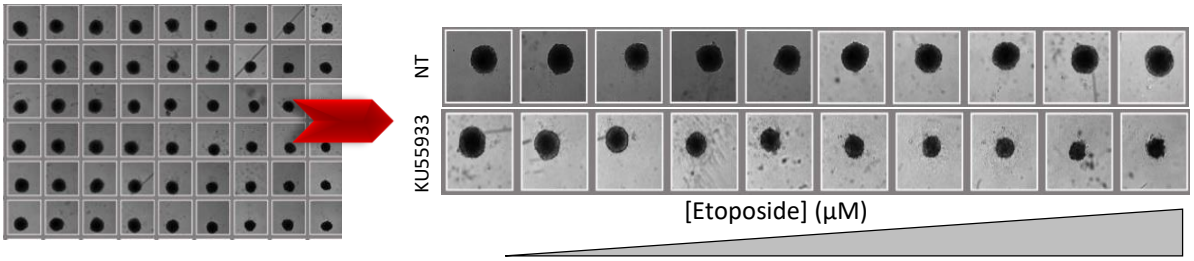




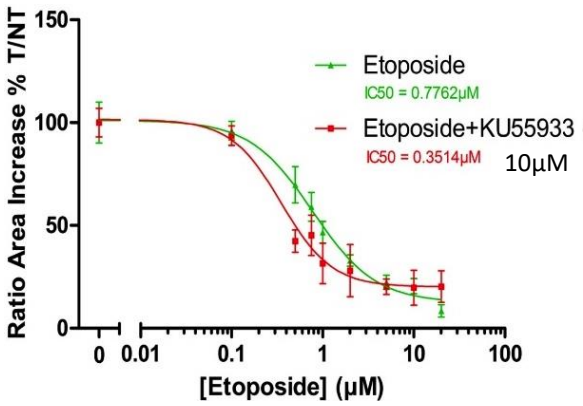
We test your compounds in 3D spheroids

- Benefit from our 3D cell culture expertise
- Spheroid production in low-attachment 96-well plates
- Large panel of available cell lines or custom service using your selected cell line
- Multi-parametric analysis to address your specific needs (size, fluorescent reporter, …)
- Assays can be customized on request

Application example: IC_{50} determination using 3D spheroids

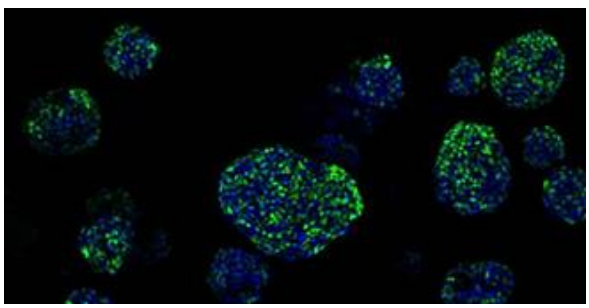


Evaluation of the effects of incubation with different concentrations of etoposide (topoisomerase inhibitor) with or without KU559333 (ATM kinase inhibitor) on the proliferation of HCT116 cell-derived spheroids. The micrographs on top were acquired with an Arrayscan®. From these images, the ratio between the area of spheroids exposed to etoposide with or without KU55933 (T) and that of control spheroids (solvent alone; NT) was calculated (graph on the right). The calculated IC_{50} are indicated.



Personalized applications

Imactiv-3D can help you to develop cell culture models for IC_{50} determination in any type of matrix. Please, see our specific application note “3D Quantification of multicell spheroid growth in various scaffolds”.



IMACTIV-3D

Please contact us to discuss your project.

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