Celigo® Solutions for Cancer Research

Background

Compound screening to assess cytotoxicity and to identify cancer targets is commonly performed using a high-content imager, which is expensive, is overly complicated, and provides poor brightfield images making label-free assays difficult. In addition the limited well coverage offered by these systems prevents their use in colony based assays.

Synopsis

The Celigo Imaging Cytometer enables rapid, high quality, in situ, whole-well brightfield imaging for accurate label-free cell and colony analysis. In addition, three channel fluorescence can be combined with brightfield for quantitative analysis of multiplexed assays. The Celigo is easy to use and offers a flow cytometry-like gating interface for optimal analysis of many different cell and colony types in multi-well plates (1536-well to 6-well) and T-flasks (T-25, T75).

Cancer Research Benefits

Tumor Sphere Analysis
- Non-destructive quantification of live spheres for correlation with malignant cell behavior
- Rapid whole-well imaging and analysis of suspension spheres (analyze entire 12-well plates in <15 min)
- Analysis of sphere number, size, shape, and growth kinetics over time

Proliferation Assay
- Accurate, whole-well brightfield imaging and segmentation provides counts of every cell in every well
- Label-free cell counting allows multiple reads of the same sample and requires no reagents
- Accurate normalization of wells using the actual number of cells in each well

Cell Cycle Analysis
- Cell cycle analysis of adherent cells using assays developed for flow
- Scatter plot representation of DNA content/synthesis to identify each phase of cell cycle
- Easy-to-use interface that streamlines the application from image acquisition to data reporting

Label Free Growth Tracking
- Determine growth characteristics of cells *in situ*, directly where they are grown
- Report growth curves, cell counts, confluency, doubling time, and doubling rate for each well
- Quickly analyze cells growing in T-flasks (T-75 flasks can be analyzed in <15 min)
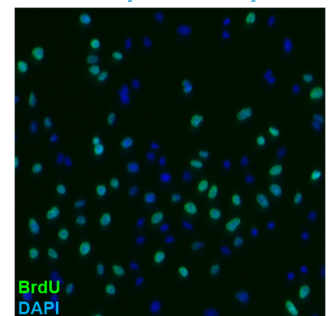
Morphology Based Screening
- Development of cell-based assays relying on cell shape and morphology
- Rapid and label-free brightfield image acquisition and analysis (384-well plates can be analyzed in <5 min)
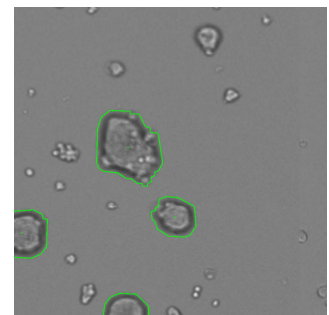
Multiparameter Gating
- Interactive, real-time classification of cell populations
- Unlimited number of histogram and scatter plots
- Combination of gates using a full set of boolean operators

Cell Cycle Analysis

BrdU
DAPI

Tumor Sphere Analysis

Multiparameter Gating

YFP
FP602
turboGFP

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