# High content screening

Delivering multi-parametric results

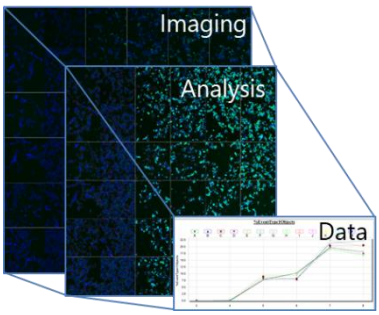
## Principle

High content screening (HCS) allows the measurement of multiple properties and features of individual cells simultaneously. This is achieved with a combination of fluorescent microscopy, chemical probes or dyes and automated image processing to determine cellular phenotypes. HCS can address both cellular level intensity and morphological measurements and can be applied to intact, fixed or live cells.

The full benefits of the technology are achieved when working with primary cells, differentiated stem cells or in 3D culture rather than with cell lines in a traditional 2D culture where many unique aspects of cellular physiology have been lost

**Key advantage** - Multiple simultaneous measurements in physiological systems. Truly phenotypic methodology

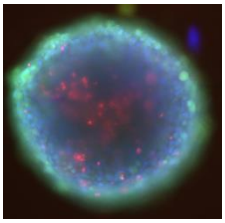
## The technology platform




- Our HCS capability is built on the Cellinsight™ CX5 platform
- The system comprises a white light source for bright-field imaging plus a 5 channel solid state LED source enabling a broad fluorophore choice for easy multiplexing
- Simultaneous image acquisition and data collection allows high-throughput quantitative microscopy
- Scalable from 96 to 1536 well micro plates (or slides)
- Powerful analysis package with applications including cell cycle, proliferation, cell viability, autophagy, apoptosis and target localisation. Custom analysis algorithms can also be established

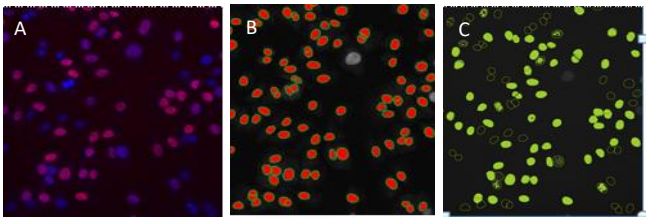
## Applications:

### 3D imaging



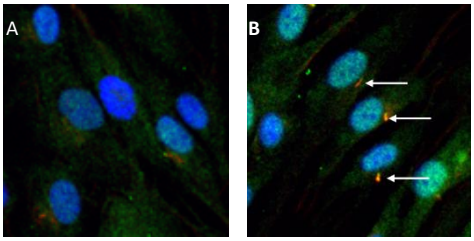
Spheroid of U-87 MG cells stained at day 7 and imaged
Hoechst – Nuclei
Calcein AM – Viability
Propidium Iodide – Dead Cells

### Cell proliferation assay using Click-iT EdU®




A) composite of two channels, B) nuclear mask and C) proliferating cell mask

### Spot detection – target localisation




A) Untreated and B) treated cells showing movement of the target protein close to the nucleus

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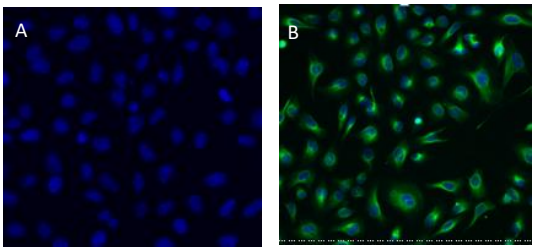


The expression and localisation of a GFP-tagged protein
A) untreated cells no expression B) treated cells showing surface expression of the target protein

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