

ANGIOGENESIS
CHEMOTAXIS
VACUOLE FORMATION
APOPTOSIS
NEURITOGENESIS



Cell-IQ[®]
Intelligent cell analysis

CHEMOKINESIS
CYTOTOXICITY
TOXICITY PROFILING
MITOTIC INDEX
STEM CELL LINEAGE
CELL VIABILITY
PROLIFERATION



Cell-IQ® is a fully integrated continuous live cell imaging and analysis platform for use with cell lines, primary cells, co-cultures and mono-layer tissue models. It is a research tool with a difference, and one that can be trained to see what you see and quantify results automatically.

Cell-IQ has integrated optical and informatics systems that enable cellular changes to be visualised and recorded in real time.

Cell-IQ is a multi-well, multi-plate system utilising a patented perfusion lid ensuring optimum conditions for cell growth.

Cell-IQ can be taught to recognise and quantify changes in cell morphology using intuitive machine vision informatics.

Cell-IQ translates time lapse image data into a user defined graphical or numerical output. It can also export data into standard analysis packages.

Cell-IQ image files can be re-evaluated to gain additional experimental information again and again.



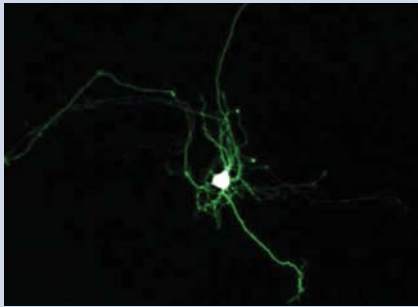
Angiogenesis
 Apoptosis
 Cell viability
 Chemokinesis
 Chemotaxis
 Cytotoxicity
 Mitotic index
 Neuritogenesis
 Proliferation
 Stem cell lineage
 Toxicity profiling
 Vacuole formation

Cell-IQ combines long term cell incubation conditions with phase contrast imaging and machine vision technology to automatically identify, analyse and quantify cell morphological features. While many of these techniques are currently used, Cell-IQ is the first imaging system that combines cell visualisation with machine vision.

Machine vision is a technique used successfully in electronics manufacturing and medical imaging. Until Cell-IQ, machine vision had never been applied to cellular imaging. The system uses intuitive techniques to recognise cell types, phases and cellular features improving analytical efficiency.

Cells are maintained in the proper environment of temperature, humidity and gas that makes long term observation possible. Microplates, or other culture vessels, can be placed in the unit for sequential analysis. Cell-IQ enables the operator to select the region and size of the area within the wells to be measured, how long to measure and how often to cycle through the entire plate or plates. This is accomplished automatically by using accurate plate positioning and automatic "all-in-one" focusing that compensates for any variation in plate flatness.

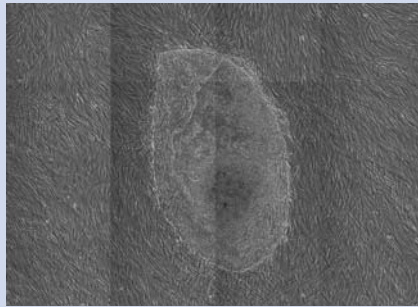
While there are significant advantages to label-free analysis, the use of labels or dyes yields additional information. For this reason, Cell-IQ also has an option for measuring fluorescence output. Overlaying fluorescence and phase contrast images yields even greater information of living cells.



Neurite Outgrowth

The development of neurite outgrowth can be visualised and quantified with ease on Cell-IQ. Phase contrast, fluorescent imaging or a combination of both can be used for detection.

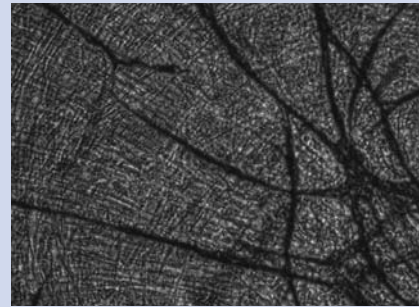
Brain Research Institute, Vienna, Austria.



Stem Cell Colony Growth

Cell-IQ analysis is not limited to single cell populations but can be used for more complex structures composed of groups of cells, for example the growth of an embryonic stem cell colony on a feeder layer. Cells with differing morphology can be recognised and quantified by Cell-IQ.

REGEA, Tampere, Finland.



Angiogenesis

Angiogenesis, the formation of new blood vessels, is an integral part of both normal developmental processes and numerous pathologies ranging from tumor growth and metastases to inflammation and ocular diseases. Cell-IQ can be used to record and quantify blood vessel formation in real time.

University of Tampere, Finland.

Cell-IQ® ...quality images with automatic analysis, the intelligent system for cell biology.

Whatever your cell biology needs, **Cell-IQ** is a laboratory asset that will become an invaluable member of your team. Application examples include:

1 | Basic parameters of the cell population

- Cell number
- Cell proliferation
- Cell death

2 | Dynamic parameters of the cell population

- Migration
- Attachment
- Shape, size, rates of change
- Mitotic index

3 | Morphological features

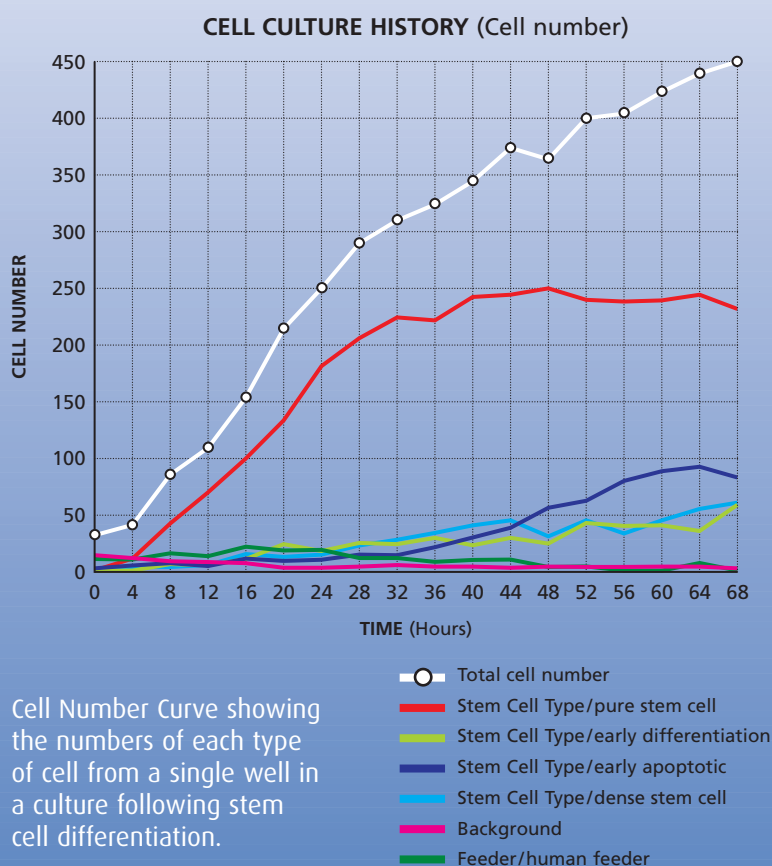
- Quantification of neurite outgrowth
- Cytoplasmic and nuclear changes during toxic insults
- Recognition of vacuole formation
- Blood vessel formation

4 | Morphology recognition of the cell types

- Differentiation of stem cells
- Co-cultures and heterogeneous cell populations
- Analysis of cell types in heterogeneous populations

5 | Phenotypic cellular assays

- siRNA
- cDNA vectors





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