



Shedding New Light On **CELLS**

Cell Observation Systems and Image Analysis Software

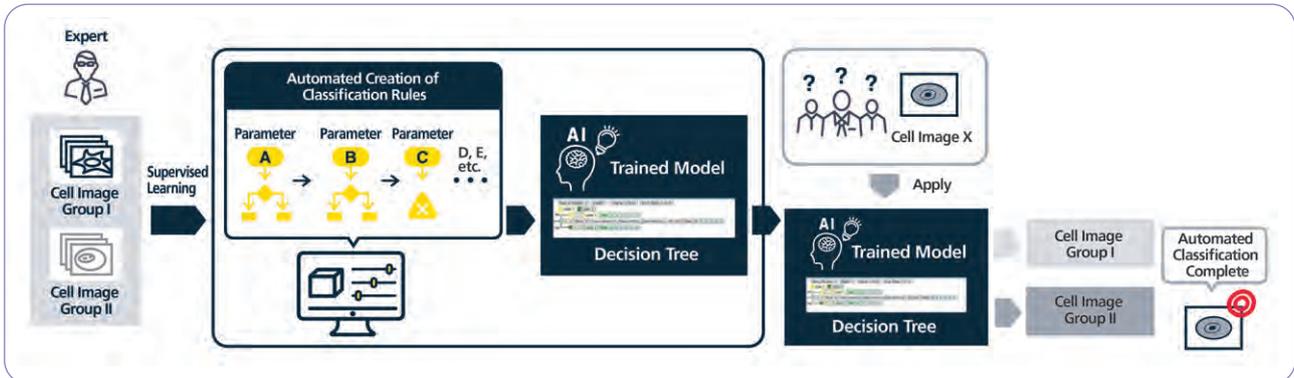


For Cell Quality Evaluation

1

MLS30401

Artificial Intelligence **PC-IC01**



Learns texture information of entire images from training data sets for judgment, and creates a decision tree for image classification. Can objectively classify cell images based on texture features that are difficult to evaluate with the human eye.

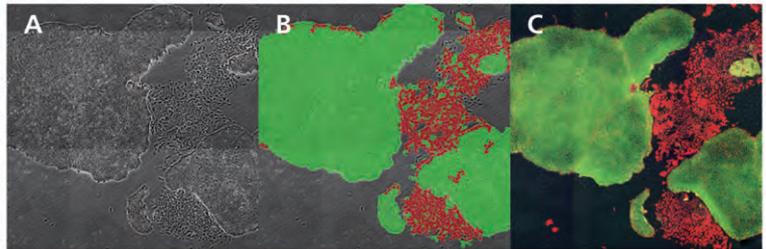
Human pluripotent stem cells (hPSCs)

2

MLS30501

hPSC Colony Differentiation Classification **PC-QE02**

- Measures the differentiated/undifferentiated regions and coverage ratios in all hPSC colonies and individual hPSC colonies by detecting differentiated cell regions.
- Measures hPSC colony count **1**, area (all colonies **2**, individual colonies **3** and averages **4**) and colony coverage ratio **5** within the entire FOV.
- Measures all time-lapse image frames at once.



Identifying undifferentiated regions in iPSC colonies by phase contrast imaging and analysis: A: Phase contrast image, B: identifying undifferentiated region by the Add-on Module, C: immunofluorescence image of markers (green: undifferentiated, red: differentiated regions).

Add-on Modules which conduct specific measurements for a given image are also available.

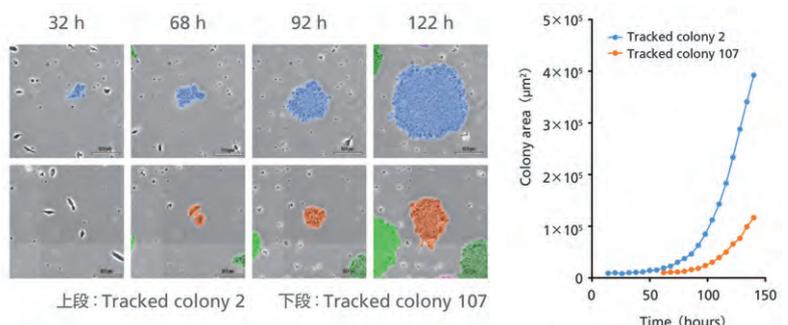
- MLS30101 hPSC Colony Count MA-PC-4x-CO01 4 **1**
- MLS30203 hPSC Colony Area Package MA-PC-4X-ARO3 1234 **1 2 3 4**
- MLS30202 hPSC Colony Coverage Ratio MA-PC-4X-ARO2 5 **5**

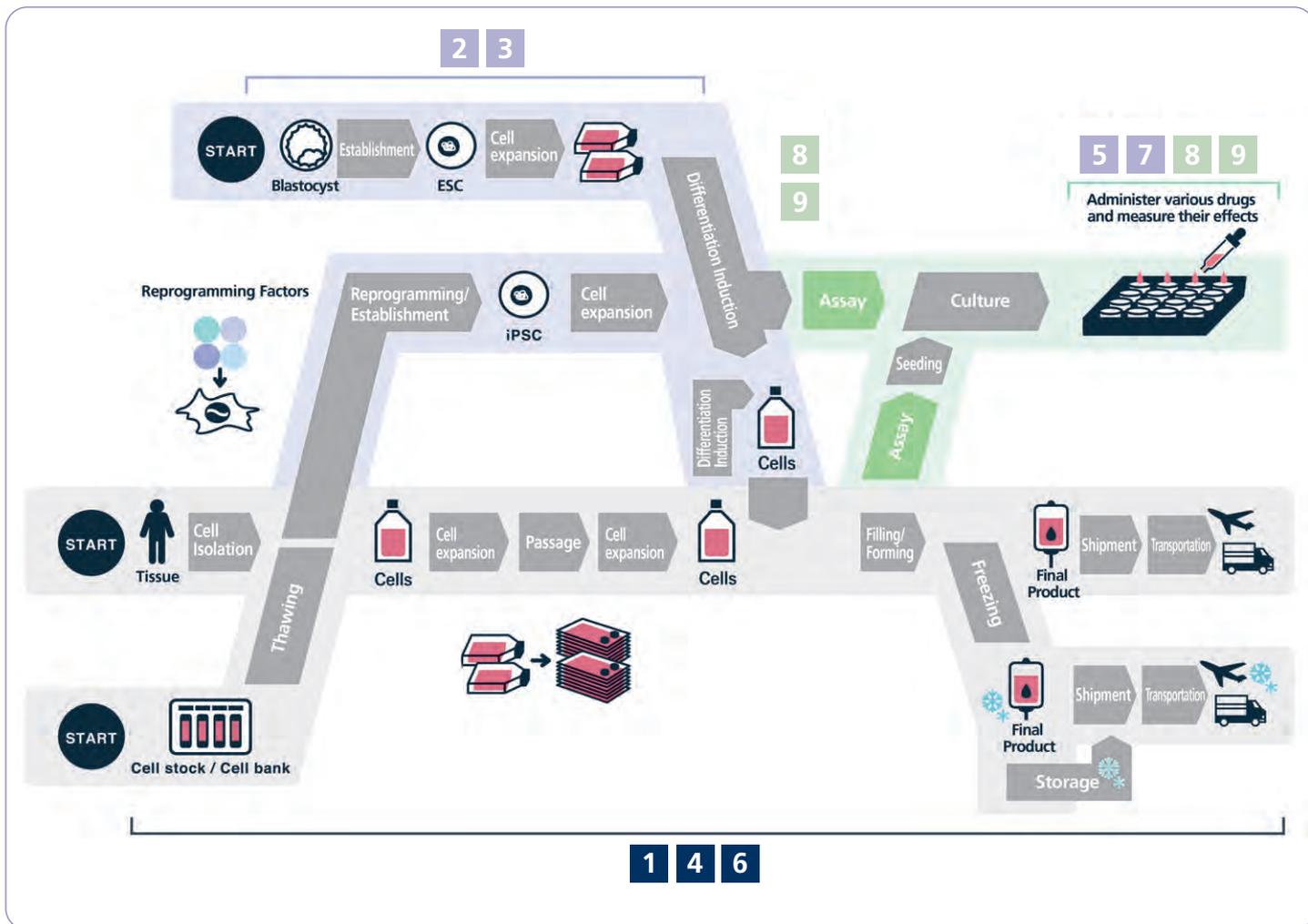
3

MLS30501

hPSC Colony Tracking **PC-QE01**

Automatically tracks individual hPSC colonies based on time-lapse phase-contrast images, and measures the area of the colony at each time point in order to generate growth curves.

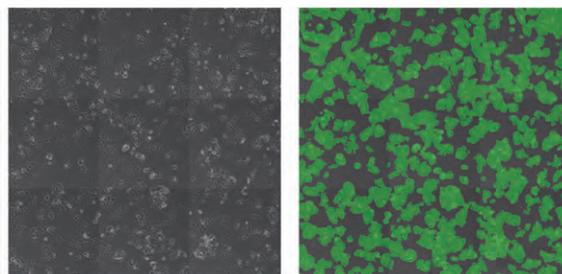




Adherent Cell / General cells

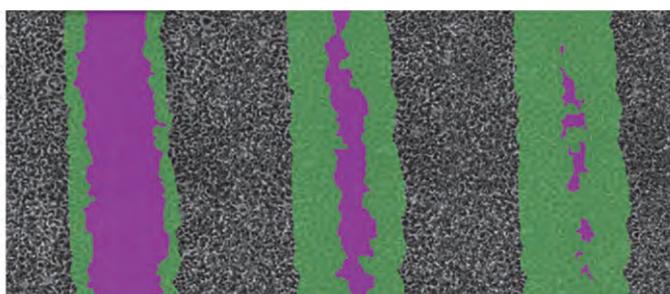
4 MLS30201 Cell Confluency MA-PC-UR-AR01

Automatically measures cell confluency based on phase-contrast images.



5 MLS30204 Scratch Assay PC-AR04

Measures cell migration into a wound by scratch assay using phase-contrast images. Automatically calculates wound closure rate by measuring the area of the scratched gap and the area of cells migrating into the gap.



For Assay

Mesenchymal stem cells

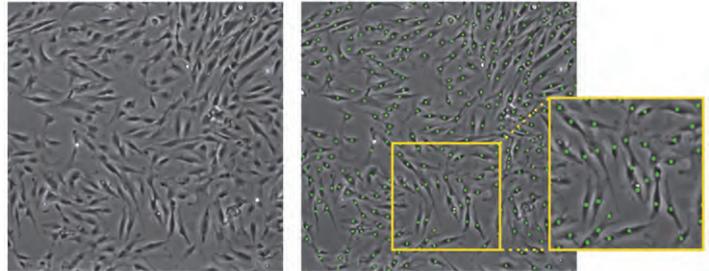
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MLS30104

MSC Count

PC-CO04

Counts mesenchymal stem cells (MSCs) based on phase-contrast images. Requires no cell staining for measurements, enabling non-invasive analysis of cell proliferation.



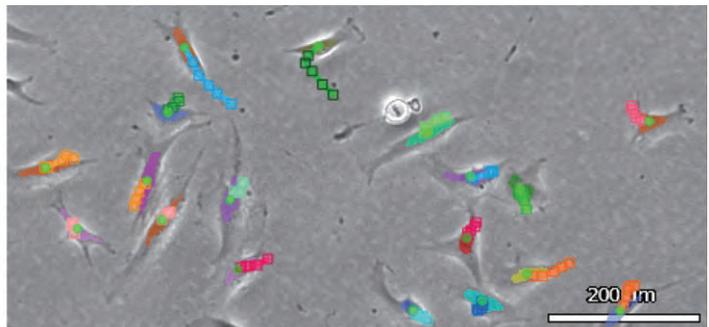
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MLS30601

MSC Migration

PC-MO01

Displays courses of MSC migration, and measures the migration speed, distance, linear distance and tracking time of each cell.



Neuronal cells

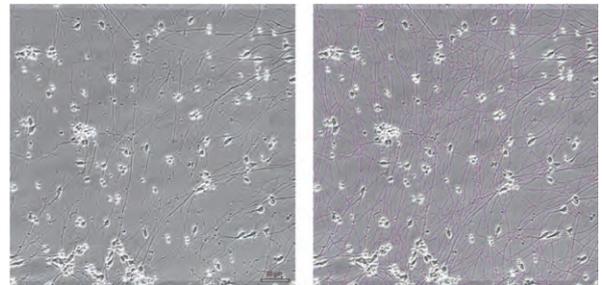
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MLS30301

Neurite Length

MA-PC-10X-LE01

Automatically measures the total neurite length based on phase-contrast images with no staining of neuronal cells.



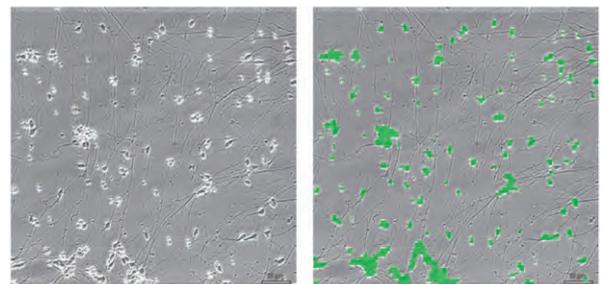
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MLS30102

Neuronal Cell/Cluster Count

MA-PC-10X-CO02

Automatically counts neuronal cells or neuronal clusters based on phase-contrast images with no staining of neuronal cells.



Custom orders

Nikon supports the development of evaluation systems customized for specific cell culture systems and applications using its unique optical and image analysis technologies. Nikon is also available to provide cell culture consultations.

BioStudio-T



- Moving objective acquires images of entire well plates without moving the sample
 - vibration-free time laps observation
 - large image stitching
- Waterproof and resistance to various decontamination/sterilization methods (H₂O₂, UV and formalin)
 - perfect for installation in incubators and biosafety cabinets

BioStudio-mini

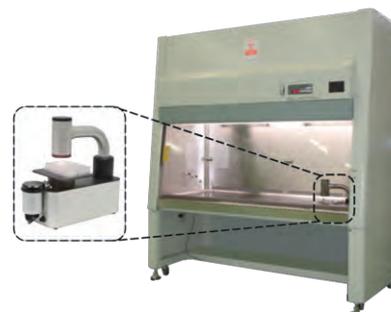
- Compact and lightweight
- Waterproof and resistance to various decontamination/sterilization methods (H₂O₂, UV and formalin)
 - perfect for installation in incubators and safety cabinets
- Easy to operate



BioStudio-T easily fits into standard incubators



BioStudio-mini's small footprint makes it ideal for use in biosafety cabinets



BioStudio-T

Operating environment	Observation method	Light source	Objective lens	Magnification	Field of view size	
Temperature: 0 to 40°C Relative humidity: less than 95%	Phase-contrast observation	Red LED, 627 nm wavelength	CFI Plan Fluor DL4X (Nikon)	1.6X and 4X	1.6x: 4.24 x 3.39 mm 4x: 1.69 x 1.35 mm	
PC operation	Camera	XY stage	Focus adjustment range	Containers holder	Dimension and weight	Decontamination/ Sterilization
Focus adjustment, magnification selection, XY stage, light quantity adjustment	High-sensitivity 1.31-megapixel monochrome camera No. of effective pixels: 1280 x 1024 pixels	X: ± 124 mm, Y: ± 100mm from observation window center	Z: 5 mm	For well plates and 100 mm dish	300 (W) x 345 (H) x 345 (D) Approx. 12 Kg	Using H ₂ O ₂ , formalin and UV

BioStudio-mini

Operating environment	Observation method	Light source	Objective lens	Field of view size
Temperature: 0 to 40°C Relative humidity: less than 95% Decontamination possible using H ₂ O ₂	Phase-contrast observation	Red LED, 627 nm wavelength	CFI Plan Fluor DL4X (Nikon) or CFI Plan Fluor DI10X (Nikon)	4X: 1.69 x 1.35 10X: 0.68 x 0.54
Camera	Focus adjustment range	Containers holder	Dimension and weight	Decontamination/ Sterilization
High-sensitivity 1.31-megapixel monochrome camera No. of effective pixels: 1280 x 1024 pixels	Z: 5 mm	Various multi-plates, dishes and flask (50 mm max height)	160 (W) x 335 (H) x 295 (D) Approx. 5 Kg	Using H ₂ O ₂ , formalin and UV

