

Cellular Imaging

Research Administration
Seattle, WA • 501(c)(3) Nonprofit



Fred Hutch's Shared Resources are catalysts for lifesaving discoveries. This uniquely centralized program of 15 specialized core facilities and scientific services drives advances by integrating dedicated experts and cutting-edge technologies across the entire research pipeline, from basic science to clinical trial.

IncuCyte S3 and SX5

Automated widefield imaging inside an incubator

Excitation sources

- White light LED
- Color LEDs (see optical module table for specific wavelengths)

Objectives

- 4x/0.2
- 10x/0.3
- 20x/0.45

Cameras

- Basler Ace 1920-155um — CMOS

Capabilities

- Phase contrast, fluorescence: green/red (S3 and SX5) or green/orange/near infrared (SX5 only)
- Time lapse of live cell culture: adherent cells, non-adherent cells, spheroids, and organoids

Recommended uses

- Monitoring cell proliferation
- Monitoring reporter gene expression
- Immune killing assays
- Scratch wound assays
- Trans-well migration assays
- High content assay development
- Apoptosis

General information

An IncuCyte is a microscope system that acquires images of cells as they grow within a standard mammalian cell incubator. The system performs automated acquisition of phase contrast and either two- or three-color fluorescence images (see optical module table below), which can be scheduled for a single time point or at regular intervals over hours, days, or weeks. Samples can be plated in a variety of vessels including standard plastic bottom multi-well plates (flat or round bottoms), flasks, and round tissue culture dishes. Each IncuCyte can hold multiple vessels including up to six multi-well plates. The system images one vessel at a time. Each IncuCyte supports modules for specific experimental workflows (see IncuCyte module table below). Images are stored on the instrument (27-49 TB capacity) which can be viewed and analyzed using the IncuCyte software to remotely connect from anywhere on the campus network.

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IncuCyte Modules	Seahawks S3	Mariners S3	Kraken SX5	Huskies SX5
Standard/Basic Analyzer	X	X	X	X
Whole Well/Dilution Cloning	X	X	X	X
Cell by Cell- cell classification	X	X	X	X
Scratch-wound assays	X	X	X	
Chemotaxis migration assays	X	X	X	
Angiogenesis - Tube Formation	X	X	X	
NeuroTrack - Neurite Outgrowth		X	X	
Spheroid imaging		X	X	
Organoid imaging			X	

Optical Module	Color	Excitation peak (range) in nm	Emission peak (range) in nm
G/R (S3)	Green	460 (440-480)	524 (504-544)
	Red	585 (565-605)	635 (625-705)
G/R (SX5)	Green	461 (441-481)	524 (503-544)
	Red	587 (565-605)	663 (625-705)
G/O/NIR (SX5 only)	Green	470 (453-485)	513 (494-533)
	Orange	556 (546-568)	609 (576-639)
	NearInfraRed	661 (648-674)	727 (685-756)