Cellular Imaging Core

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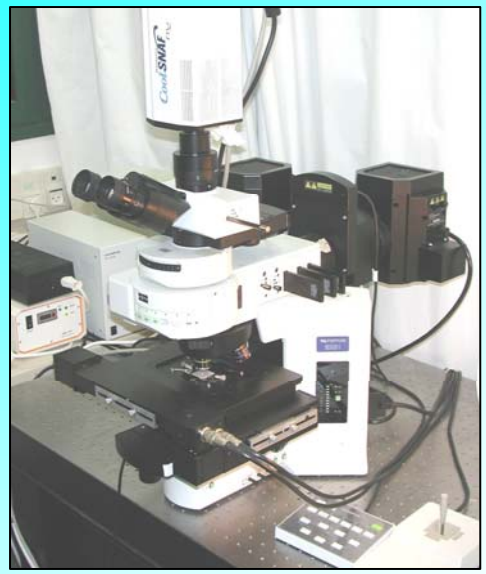
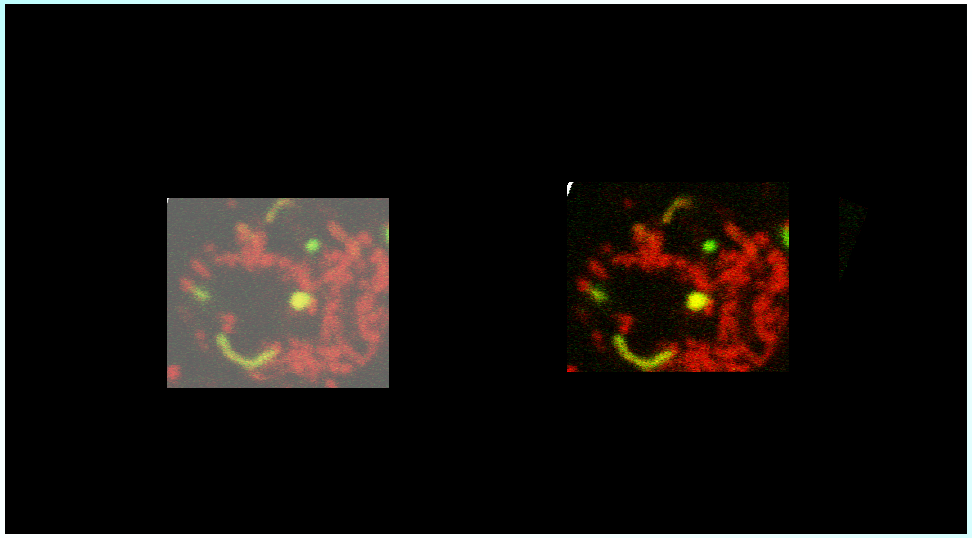
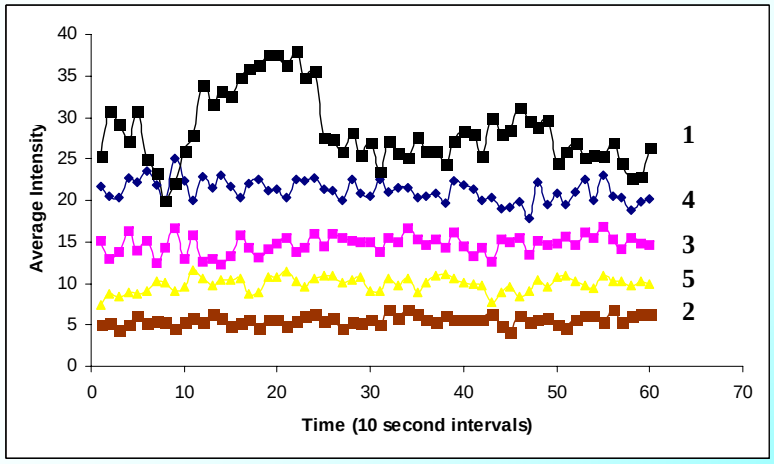


A **Image Acquisition and storage**



B **Image processing**



C **Image analysis**

Additional support for imaging studies

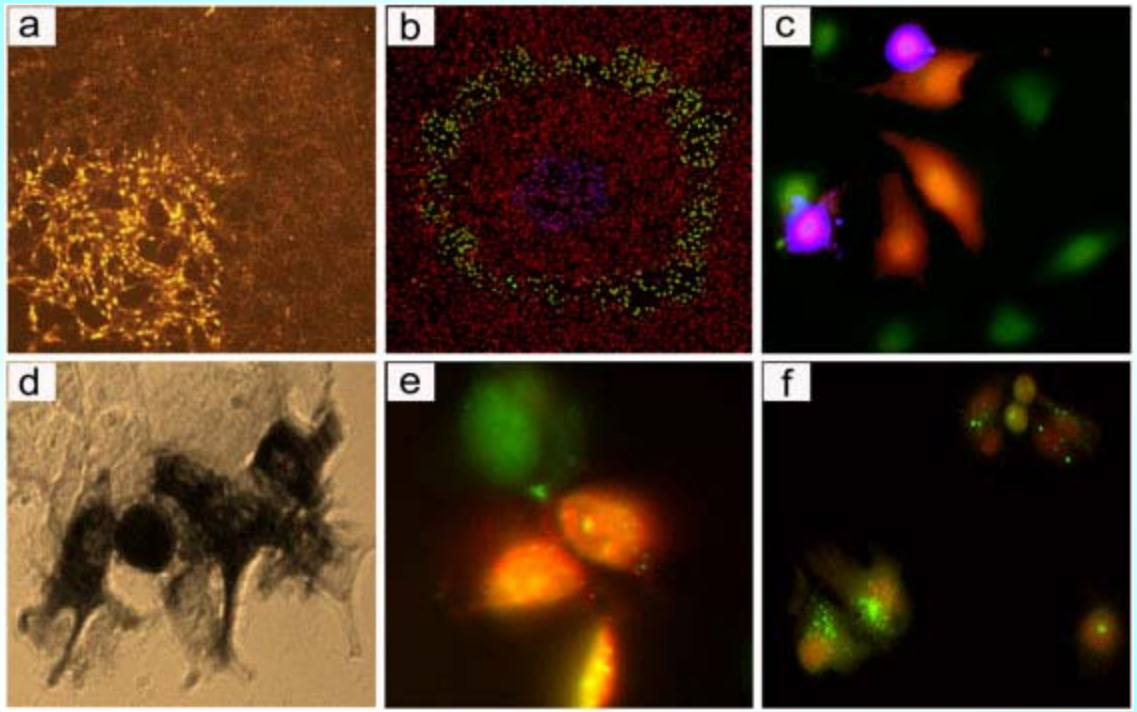
- Incubators, hood, wet lab area for cultures and tissue specimens
- File server for short and medium-term data storage
- Workstations for image processing with high-speed link to server
- Software support for image processing and analysis

Technologies first available at BU/BMC

Cyntellect

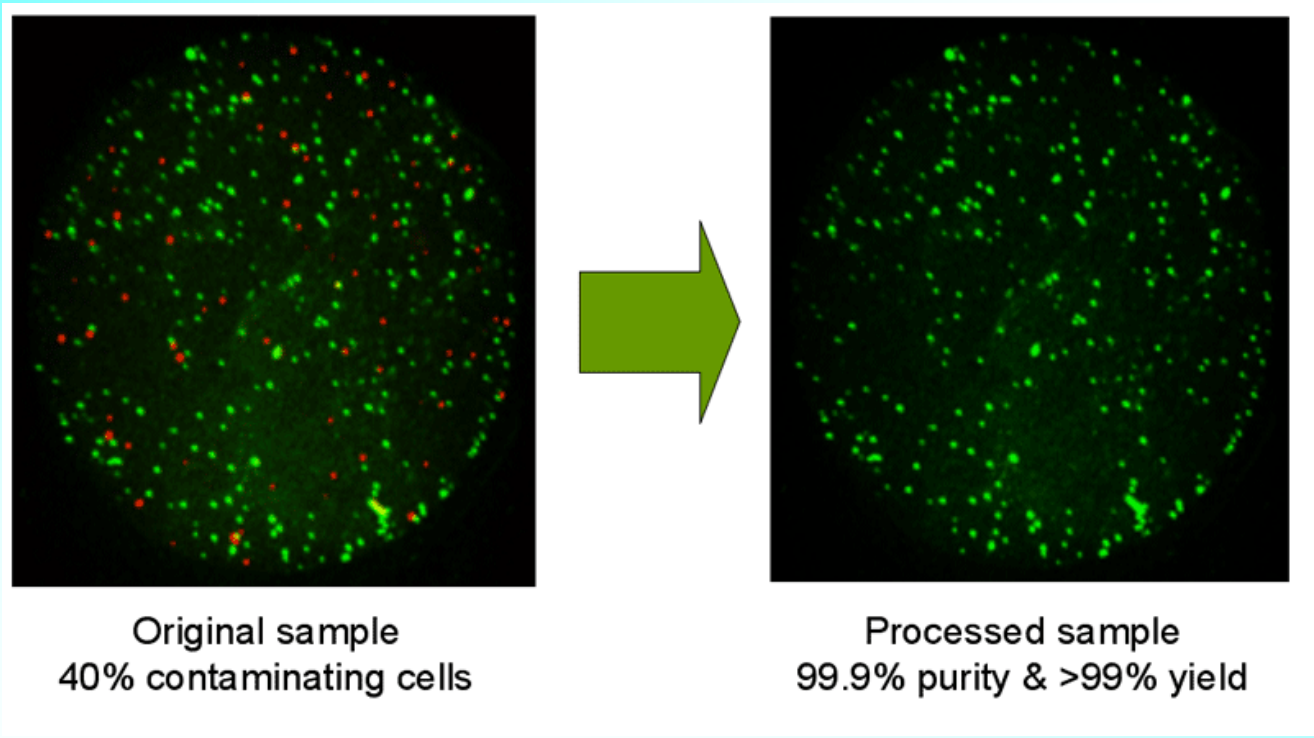
LEAP (Laser-Enabled Analysis and Processing)

Cyntellect: Opto injection



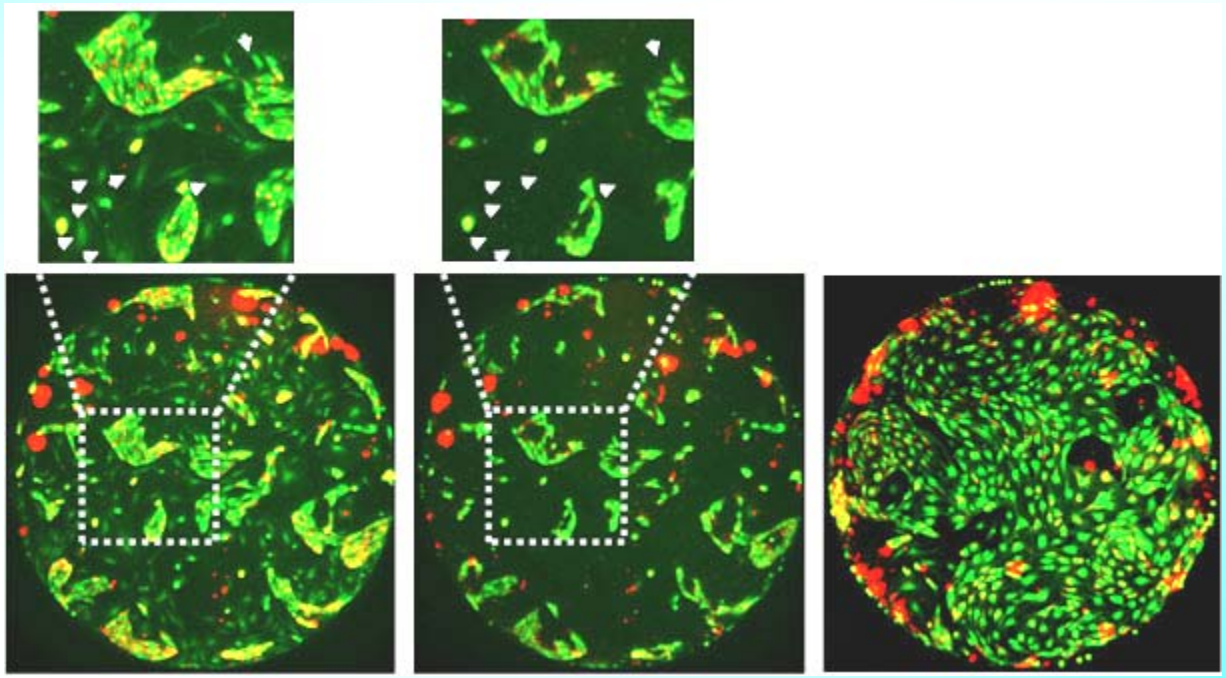
Optoinjection of Living Cells. *LEAP™ employs targeted lasers to transiently permeabilize cells allowing uptake of a wide variety of molecules including certain: (a) ions, (b) small molecules, (c) dextran, (d) proteins, (e) fluorescent biosensors, and (f) QDots™ quantum dots.*

Cyntellect: Cell enrichment by laser based elimination



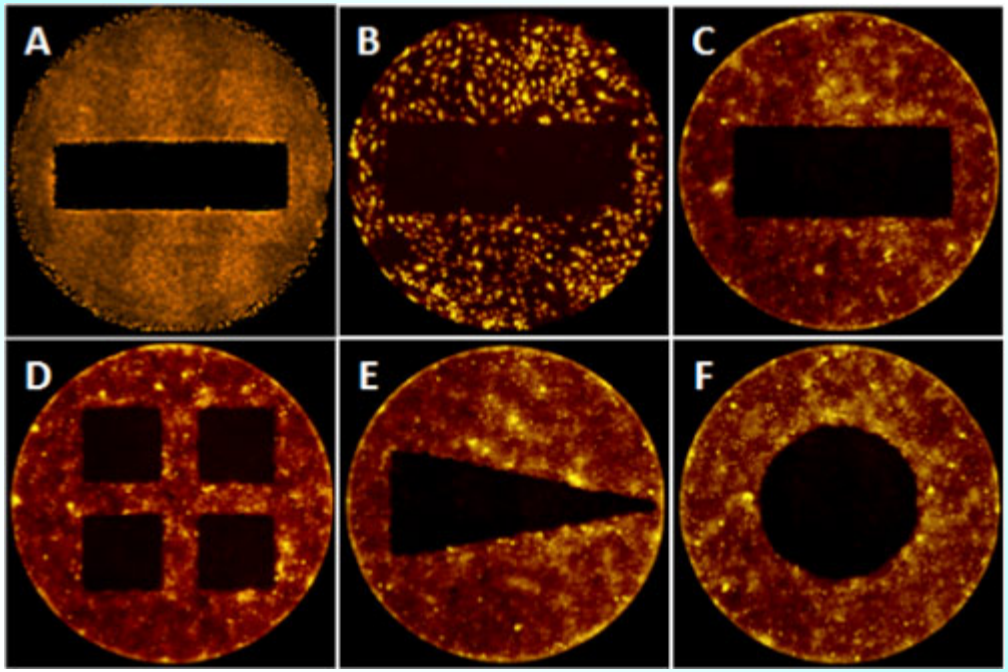
A sample B cell population (green) contaminated with ~40% T cells tagged with a phycoerythrin-tagged T cell specific antibody (red) is imaged and analyzed by ***LEAP™****. Following laser processing of this same sample by* ***LEAP™****, both resulting purity and yield exceeded 99%.*

Automated in situ purification of primary rat brain microvascular endothelial cells



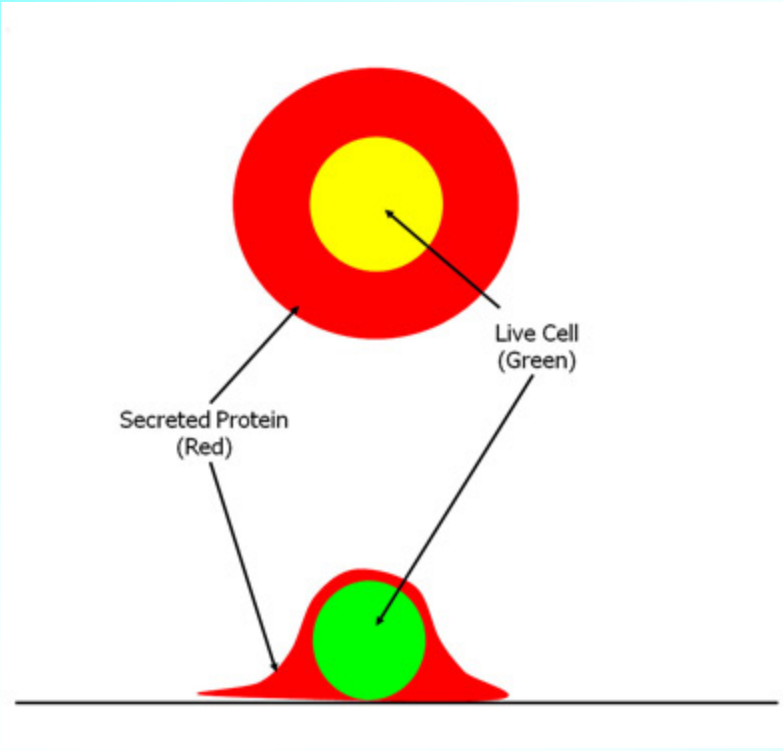
before after

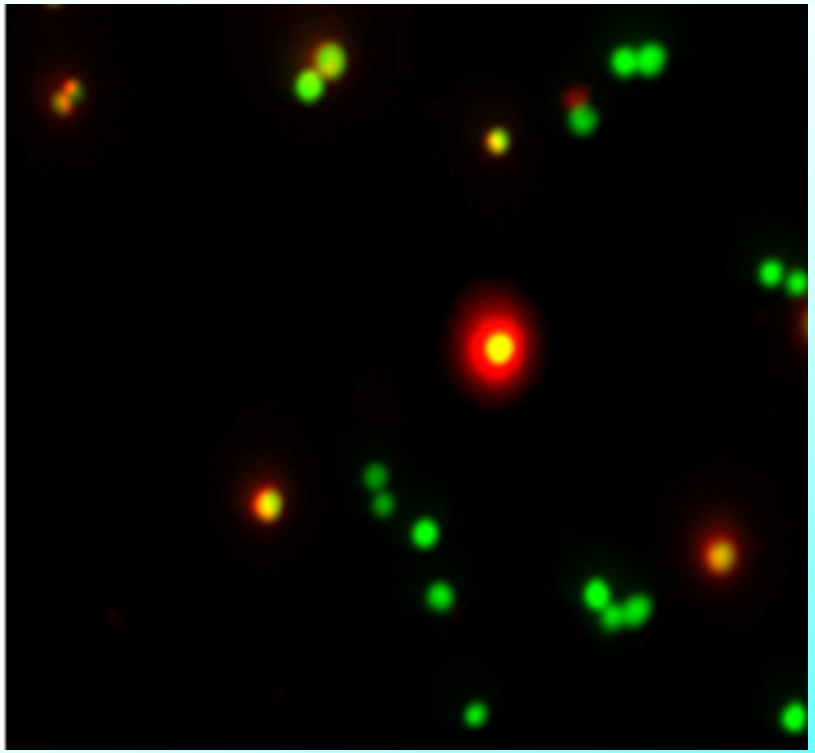
Cell Monolayer Wounds



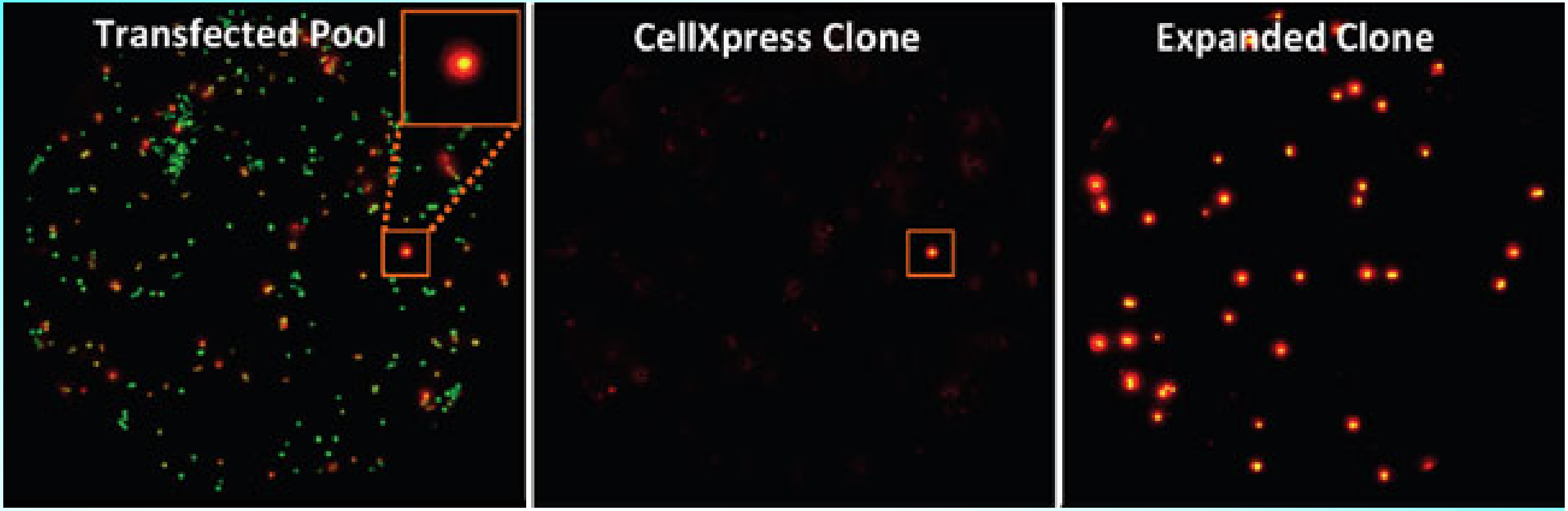
Development of Highly-Secreting Cell Lines

Selection of highly secreting cells for further analysis





Cloning of a hyper-secreting cell



Zeiss LSM 710 NLO LIVE DUO

LSM 710

Carl Zeiss Inc.

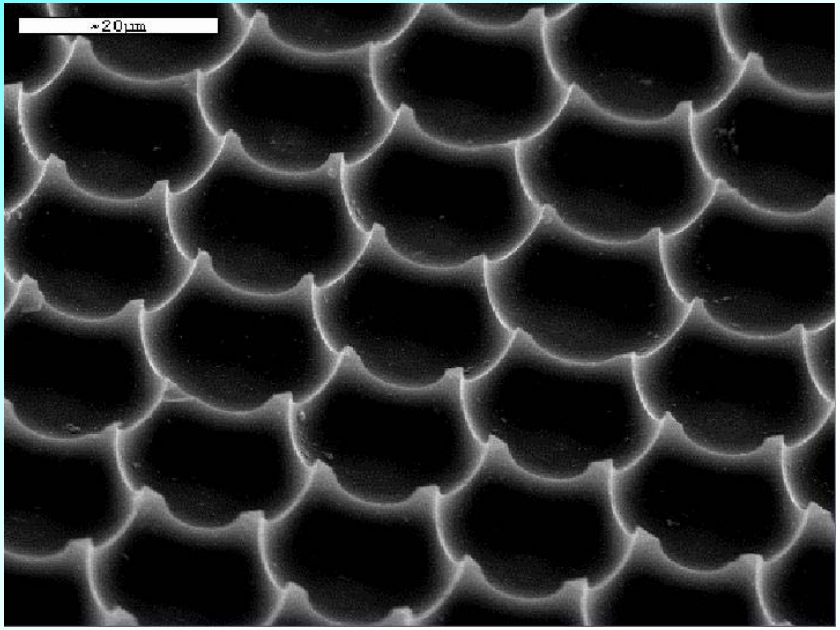
Live5

Carl Zeiss
Inc.

Zeiss LSM 710 –Live5 DUO

- **Laser scanning confocal**
- **Fast scanning by Live 5 (120 frames/sec)**
- **2-Photon guided by the LSM 710 scanner**
- **37C and CO2 control on microscope stage**

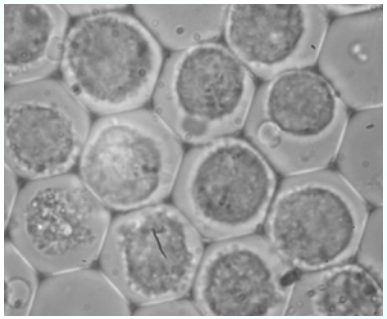
Live Cell Array (Molecular Cytomics)

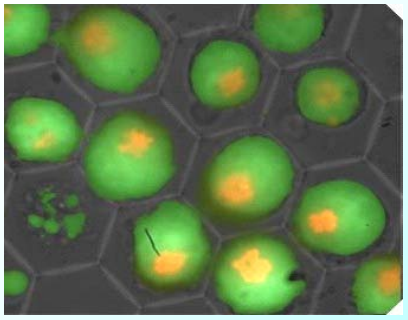


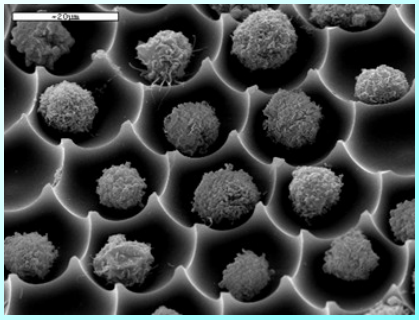
Live Cell Array

• Monitor multiple living cells over days at the resolution of the individual cell

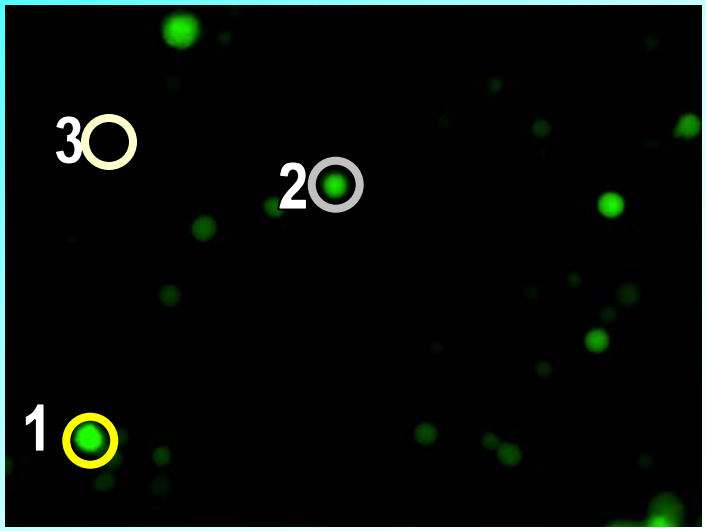
• Fix cells in the array and determine expression of specific proteins

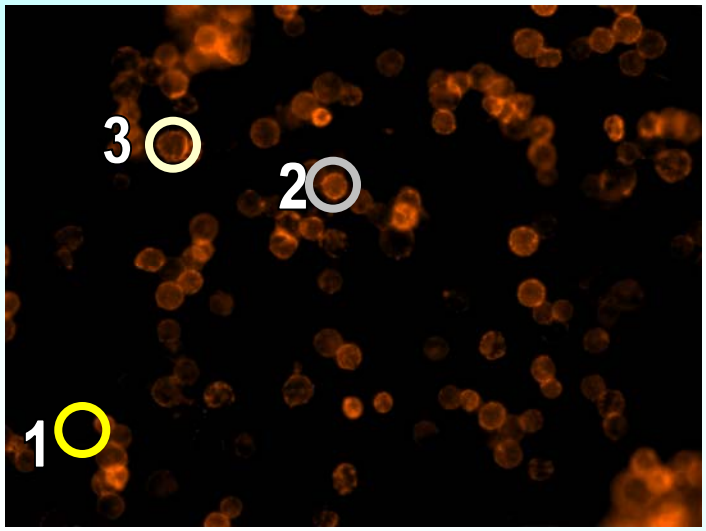






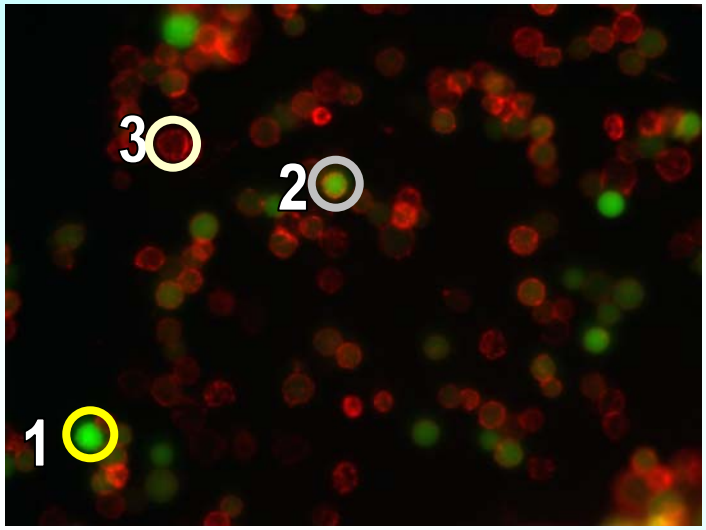
GFP

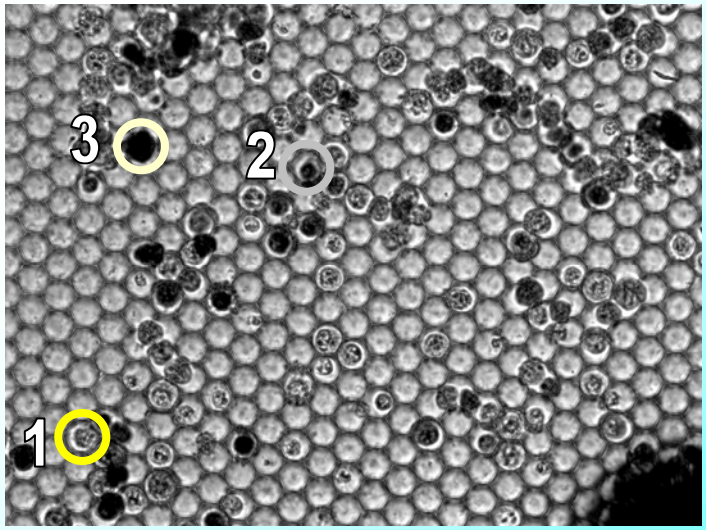




GlyA

Merge





Bright field after benzidine application

1 : GFP positive cell, didn’t differentiate, no benzidine

2: GFP positive cell, did differentiate, benzidine

3: GFP negative cell, did differentiate, benzidine

Administrative

- On Line Scheduling System-coming soon
- Support letters for each core, please contact Maria LoSurdo at maria.losurdo@bmc.org or 617-638-6957
- Any questions pertaining to billing, scheduling, please contact Maria LoSurdo