# Cephla

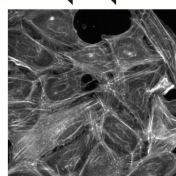**Open** and **scalable** microscopes **tailored to your applications** that will **grow with your needs**

- Widefield and Confocal options
- 5 to 7 epi-fluorescence excitation channels, LED or Laser
- 850 nm laser autofocus (optional)
- Motorized objective changer
- Motorized filter wheel (optional)
- Stage-top incubator available for live cell imaging
- Integration with our fluidics system, liquid handling robots and plate hotels readily supported
- **Open source, python-based software for total control, easy customization and smart microscopy**
- **Applications**: Live cell imaging (including calcium and voltage imaging), High Content Screening, Optical Pooled Screens, Spatial Omics, Expansion Microscopy and more
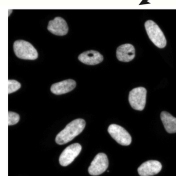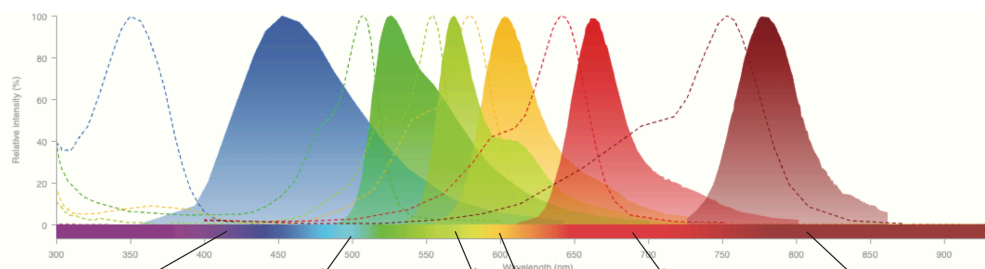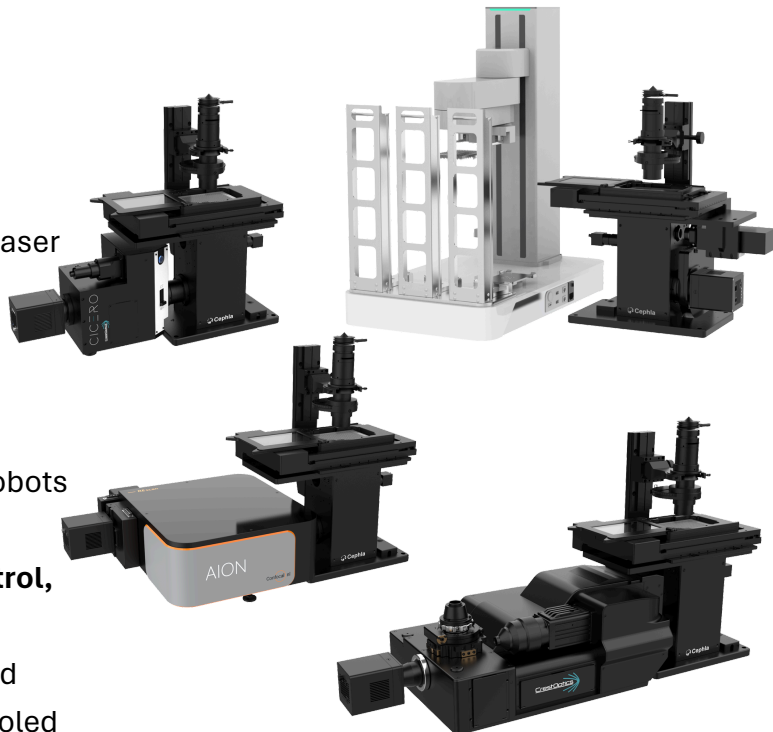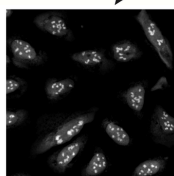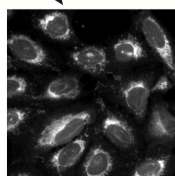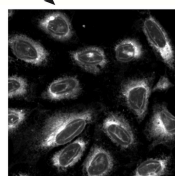

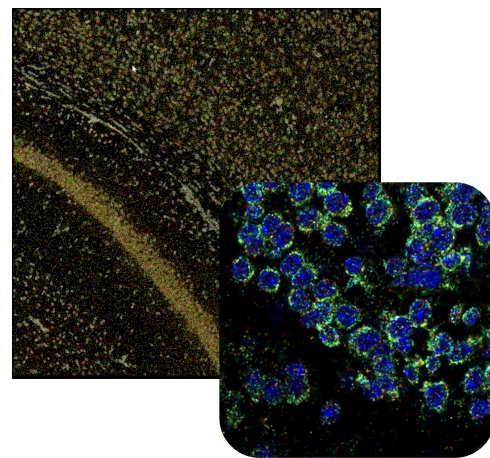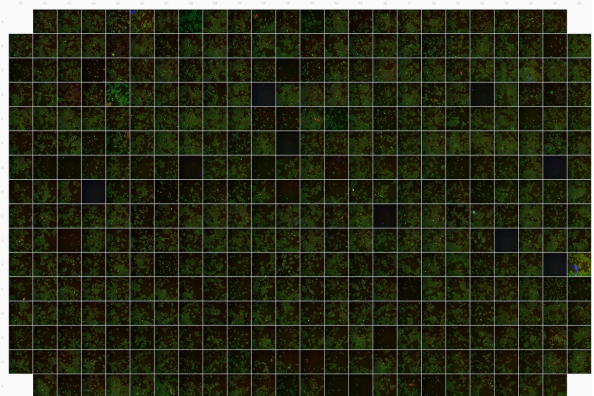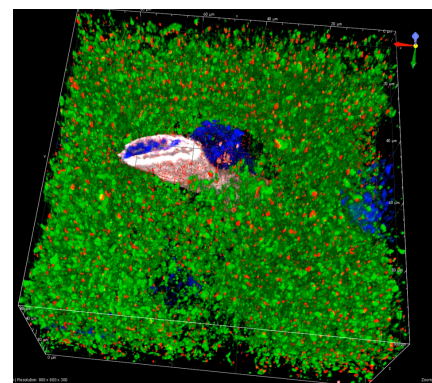Nucleus   Nucleoli + cytoplasmic RNA   F-actin + Golgi apparatus   Mitochondria   ER

Spatial transcriptomics, 60x/1.2 water image courtesy of Shi Lab at Emory

Images courtesy of Pharmaceutical Bioinformatics group, Department of Pharmaceutical Biosciences, Uppsala university, Sweden, and Phenaros Pharmaceuticals AB, Uppsala, Sweden.
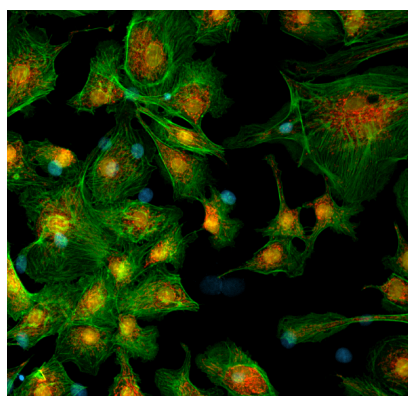
Mouse brain, 4x expansion with *Magnify* 25 x 25 x 12 μm³ 60x/1.2 water

Recent publications

- Hickey, John W. *et al.* "Fluid-Squid: DIY Multiplexed Imaging of Cells and Tissues." bioRxiv (2025).
- Zhang, Qing, *et al.* "Ice gliding diatoms establish record-low temperature limits for motility in a eukaryotic cell." *PNAS* 122.37 (2025).
- Johansson, Camilla, *et al.* "Integrating Cell Painting and Thermal Proteome Profiling for Inference of Targets and Mechanism of Action." bioRxiv (2025).
- Hall, R. Nelson, et al. "A genetic and microscopy toolkit for manipulating and monitoring regeneration in Macrostomum lignano." *Cell Reports* 43.11 (2024).

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Cephla

Accelerating discoveries and solutions with **open** and **scalable bespoke microscopes**

Specifications

Optics	Olympus, Nikon, Zeiss, Leica or custom infinity corrected objectives
FN	Up to 26.5 for standard objectives
XY stage	Leadscrew stepper motor (default), 120 mm x 80 mm, compatible with robotic plate loading
Z stage	Stepper linear actuator (cross roller bearing) + piezo (optional) or brushless linear motor stage
Epi illumination	LED or laser (laser for spinning disk confocal) up to 5 channels (e.g. 405/470/555/640/730) for standard models
Laser autofocus	850 nm (optional)
Camera	Camera(s) of your choice (Examples: 26 MP Sony CMOS with 3.76 um pixel, Hamamatsu Fusion BT, Tucsen or Photometric 10.2 MP sCMOS with 6.5 um pixel size and 29.4 mm diagonal FOV, 95% peak QE and read noise down to 0.7 e-)
Confocal options	spinning disk confocal line scanning confocal point scanning confocal (coming soon)
Controller	6 camera triggers, 8 general purpose digital I/O, 8 16 bit DAC
Software	Squid open-source, python-based graphical user interface with Napari viewer Headless mode for scripting / automation integration coming soon
Add-ons	Motorized emission filter wheel Multi-camera simultaneous imaging Patterned illumination Automated water dispenser Squid fluidics system for multi-round imaging/reagent delivery Plate hotel and robotic rm for automated plate loading, liquid handling robot integration and more to come

Customers and collaborators

Massachusetts Institute of Technology · Caltech · Uppsala Universitet · UC San Diego · Cal · Duke University · Stanford University · novo nordisk · KTH Vetenskap och Konst · Genentech A Member of the Roche Group · u^b Universität Bern · Harvard University · UCLA · Emory University · Arc · UC | Chile · Georgia Tech · phenaros

About us and contact info

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As a spinout from Stanford University founded in 2022, Cephla designs and manufactures open and scalable automated microscopes for healthcare and life science research. By understanding the applications and optimizing hardware and software around them, our goal is to offer performance systems that users love. Working closely with our customers and through collaboration with our partners, we strive to make the latest technologies accessible and contribute to accelerating discoveries and solutions.