Abrio LS

Imaging System for the Life Sciences

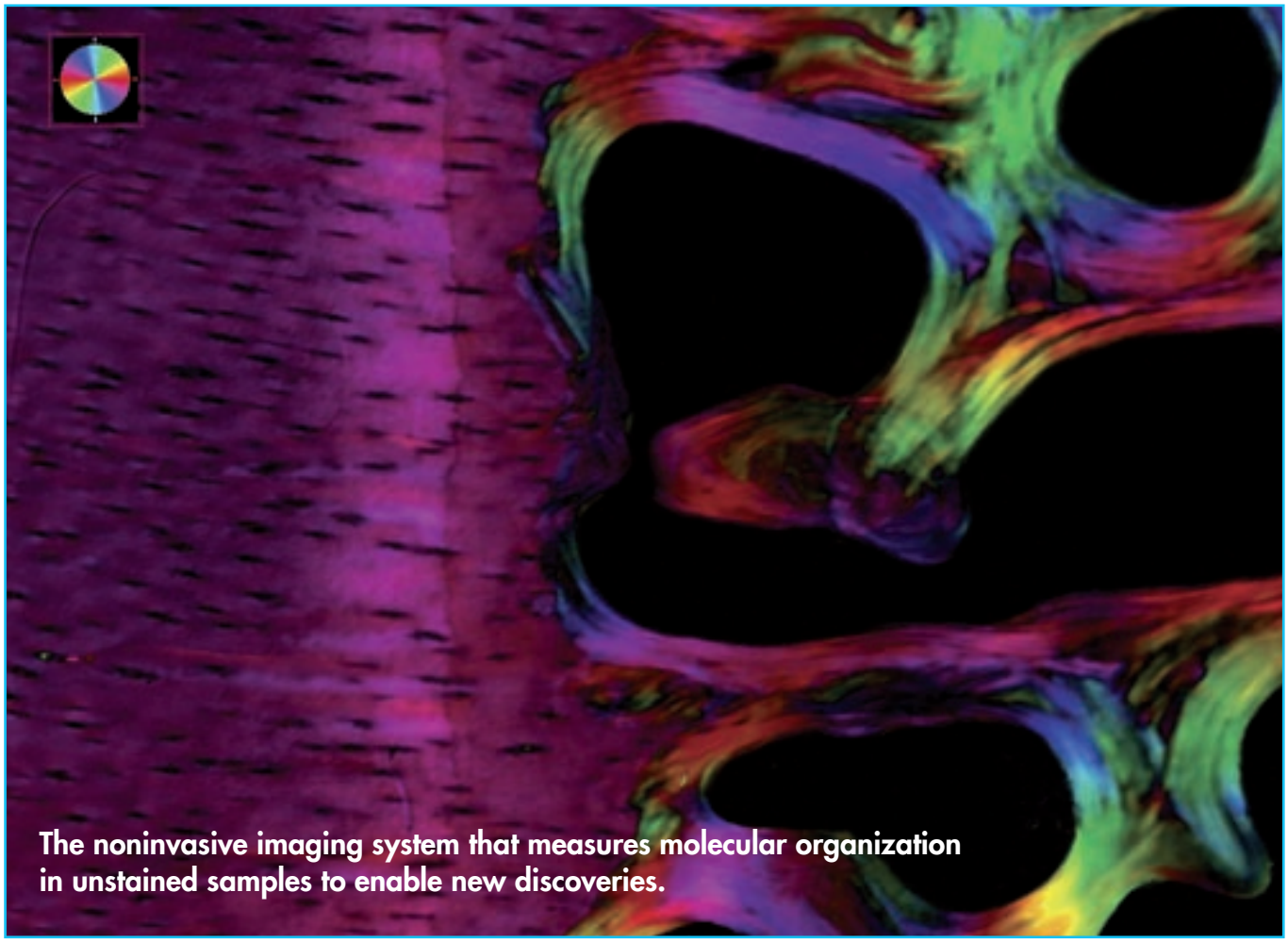

Image of osteoarthritis in bone cartilage in retardance orientation mode courtesy Dr. Xia, Oakland University.

Abrio™ Imaging System

Adding Abrio™ to your lab means enabling new discoveries by observing and measuring the molecular organization of ordered structures in unstained samples.

Because the Abrio™ system does not require the use of any labels or stains, the biology of the structures being studied is unaltered yet the detail provided in the images is on par with fluorescence imagery. Track cell behavior over time using the movie capture capability, and rely on the automatically recorded data points of molecular density and orientation to accurately detect subtle changes in molecular organization.

The system has been validated for use in imaging and measuring collagen in unstained tissue sections, cartilage in bone, muscle organization in various physiological conditions, spindle dynamics in dividing cells and even mapping the intricate details in microsocpic organisms such as C. elegans, plant root stems, paramecium and embryos.

Microscope not included.

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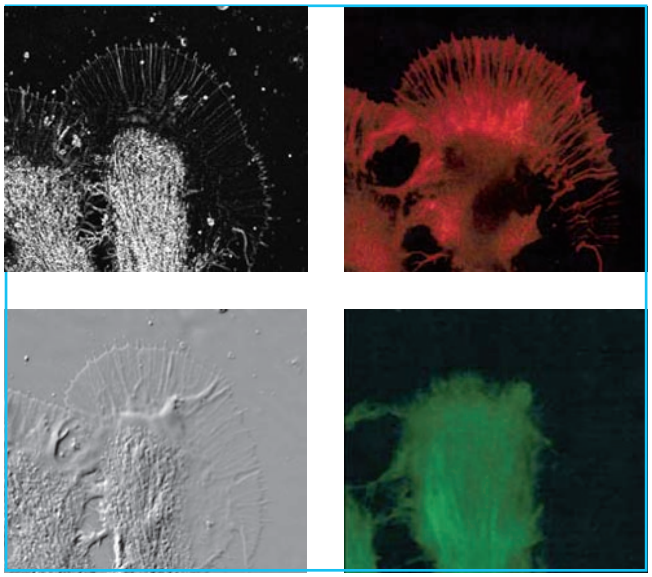
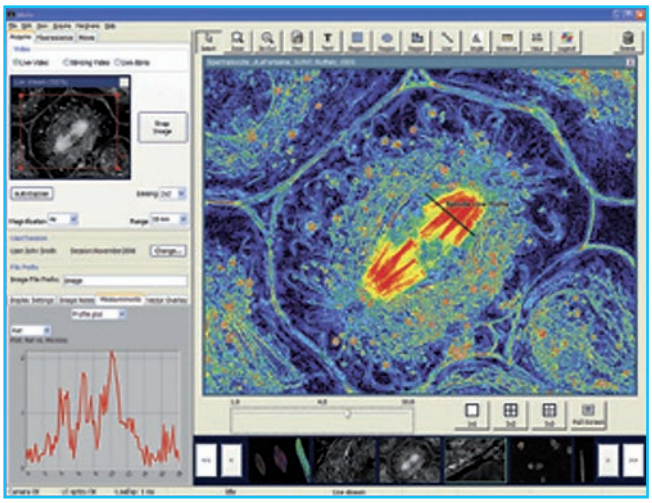
Combine Abrio™ with other imaging modes.



Clockwise from upper left:
Live Abrio, Fixed Rhodamine- Phalloidin, Fixed Fluorescein, Live DIC. Images of an Aplysia neural growth cone courtesy Karou Katoh, AIST, Ibaraki.

Learn more about the sample using Abrio's integrated multimodal capabilities. Make Abrio a part of your multiuse microscope to gain a better understanding of how the sample behaves functionally and structurally. Rely on the computed retardance of a structure to better understand whether a noticeable increase in fluorescence is actually due to an increase in ordered molecules or if it is an aggregation of unordered protein.

Image living cells in real time



See and record birefringent structure in the cell in real time. Quantitatively measure detail using the included tools and export images as industrystandard TIFF or JPEG files.

Live cell dynamics are captured in real-time using Abrio's new retardance streaming mode. Birefringent structures in the cell can be visualized and recorded over time to better understand how the cell behaves under various conditions. Unlike other contrast methods, Abrio uniquely images and measures detail in the cytoskeleton, spindle apparatus, membranes and other filamentous structures as they move and/or respond to various stimuli.

Measure molecular order and alignment

Abrio automatically measures molecular order and alignment at every pixel in the acquired image, given as retardance and orientation, respectively. Software tools are available to analyze the data, including vector plots that show the orientation, pseudocolor maps for quantitation, region-of-interest tools, reporting options, and distance measurements.

System features

- No sample preparation required
- Quantitative retardance and orientation data per pixel
- Easy-to-use interface
- Exceptional retardance resolution
- Real-time imaging
- Compatible with most microscopes

Software features

- Movie processing and analysis tools
- Live retardance streaming mode
- Reporting tools
- Fluorescence mode
- Pseudocolor overlays
- Orientation vector map overlays

Microscope-based system components

- LC universal compensator in microscope-specific
- housing
- Circular polarizer in microscope-specific housing
- 546 nm interference filter in microscope-specific housing
- CCD camera module with:
  - USB 2.0 interface
  - C-mount compatible
  - 12-bit cooled 2/3-inch optical format CCD sensor
  - 0.65x relay lens built-in
  - Electronics board to drive the universal compensator
  - 1024 x 1392 pixels
  - 6.45 x 6.45 ìm pixel size
  - Binning capability
- 1x C-mount adapter
- Desktop computer with LCD monitor

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