



LUCIA Cytogenetics™

FISH

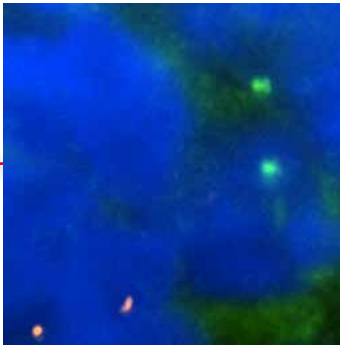




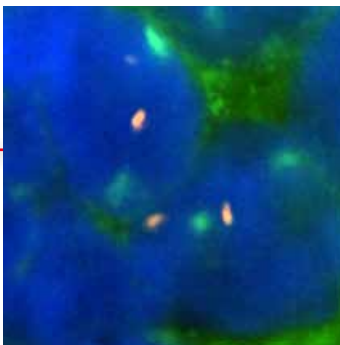
Automated Microscope Control

LUCIA Cytogenetics™ is automation-friendly:

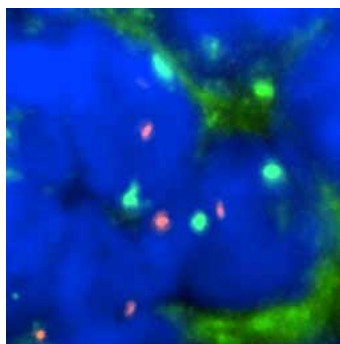
- Control of all motorized parts of a microscope.
- Control of external devices: shutter, filter turret, filter wheels, light path etc.
- Image acquisition settings per fluorescent probe set.
- Observation filter (used for eye piece) per fluorescent probe set.
- Z-axis control.



Z1



Z2



EDF

Flexible FISH Image Acquisition

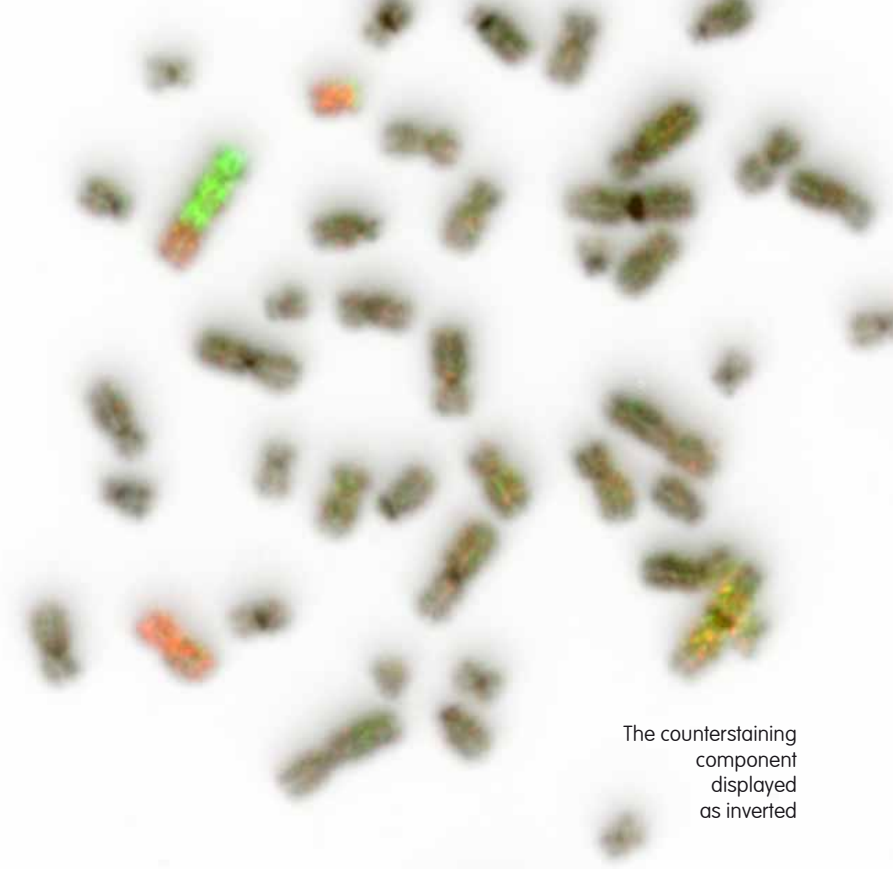
- Image acquisition with different levels of user control, from fully-automatic to fully-manual.
- Separate camera settings are saved for each fluorescent probe.
- Various automatic exposure options:
 - » Continuous or single-push auto exposure.
 - » User defined target values (% of overexposed pixels, target maximum intensity).
 - » Live image speed acceleration.
 - » Reducing image to a region of interest (area probe).
- Usage of a highly sensitive CCD camera (up to 14 bits and 67 dB SNR).
- Maximum-quality or minimum-time image acquisition.
- Extended depth of focus (EDF) acquisition for thick samples such as tissue sections.
- Fully automated EDF.

Thick sample acquisition

- Different objects are visible when focusing through Z axis (Z1, Z2).
- The thick sample acquisition (EDF) tool merges focused areas of the whole Z-stack and creates a single perfectly focused image.

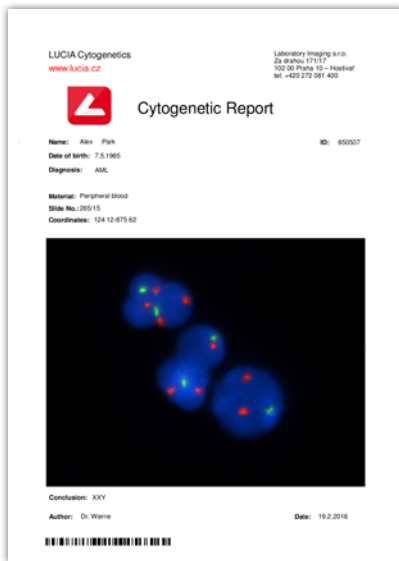
True or False Color Display

- During the acquisition, each image component is associated with a probe and obtains its name and display color.
- The name and color of the components can be changed later, the information is stored with the image.
- True (real) or false (pseudo) color display can be achieved by assigning appropriate colors to each image component.
- One component, usually DAPI, can be marked as counterstaining - this component can be displayed as inverted (black on the white background).
- Any combination of components or a single component alone can be displayed.
- The color display options can differ for on-screen display, reports and exports.

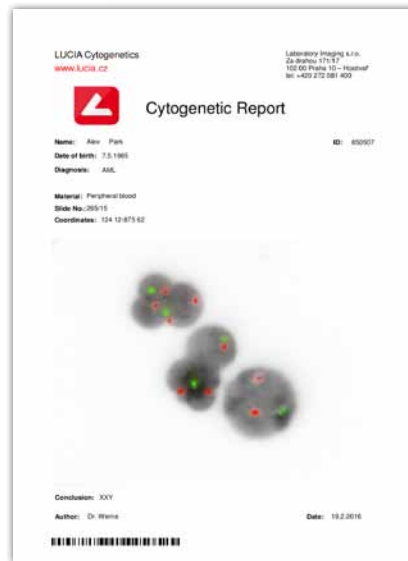


The counterstaining component displayed as inverted

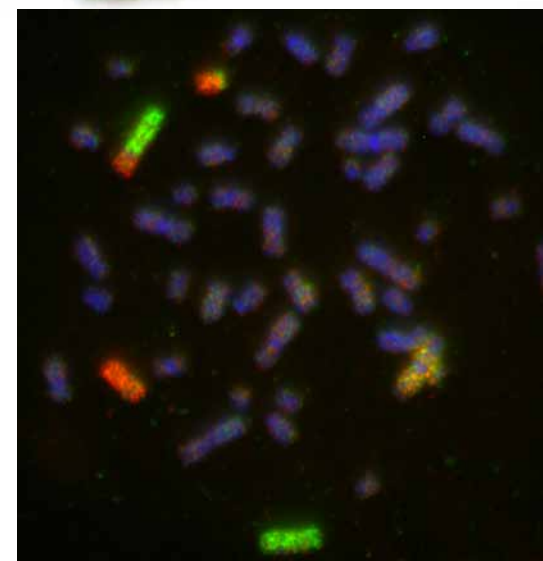
True color report



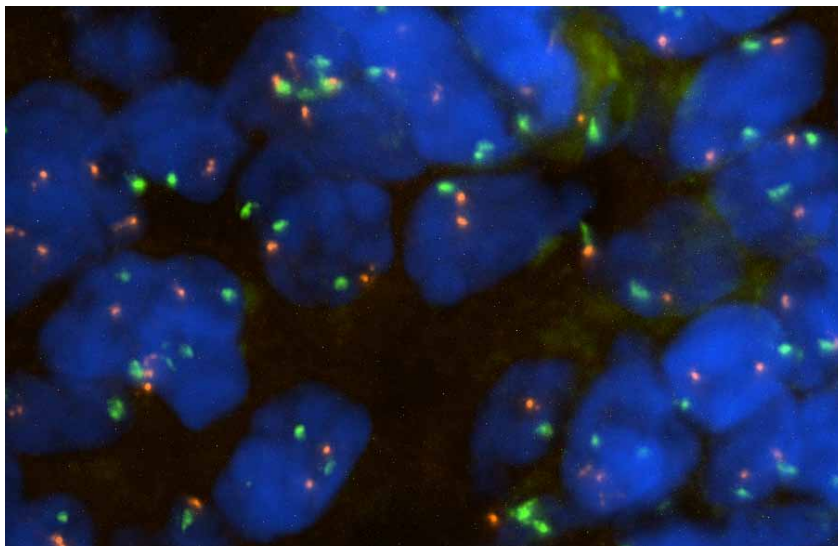
Pseudo color report



True color display



Thick sample captured with LUCIA CytoGenetics™



Blastomere

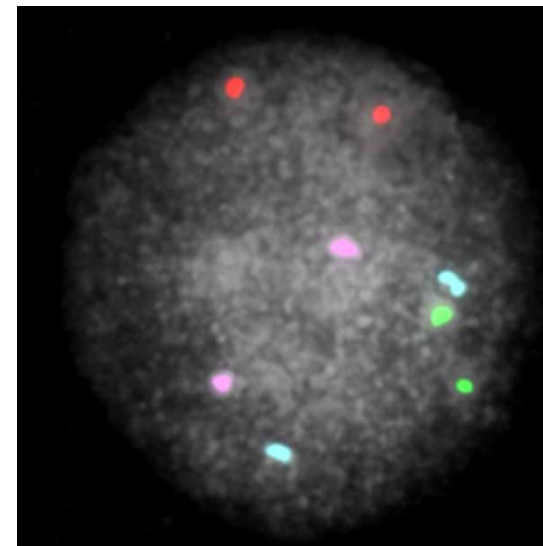
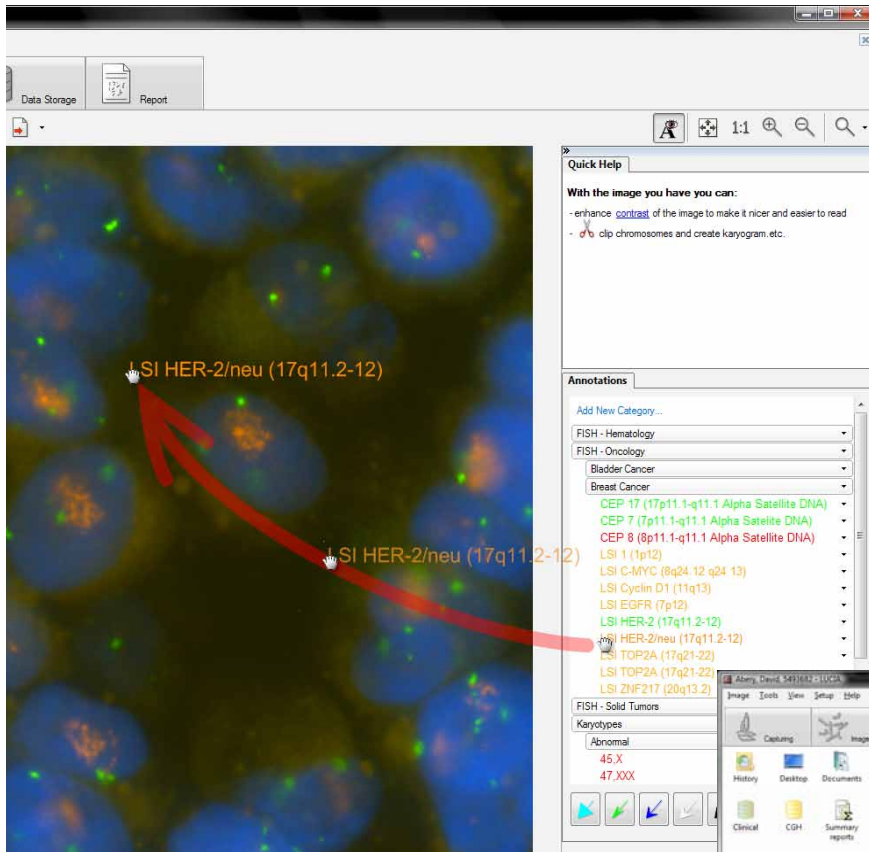


Image Enhancements and Annotations

- Easy per component contrast enhancement can be done by specifying the „background“ area in the image.
- Delete unwanted objects with a simple eraser tool.
- Tune the resulting colors by the signal purification procedure or by color unmixing.
- Align components by pixel-shifting to correct possible inaccuracies caused by misalignment of filter cubes.
- Simply annotate the image using custom predefined phrases and arrows.

Drag-and-drop annotation tool



Print-optimized report, mosaic

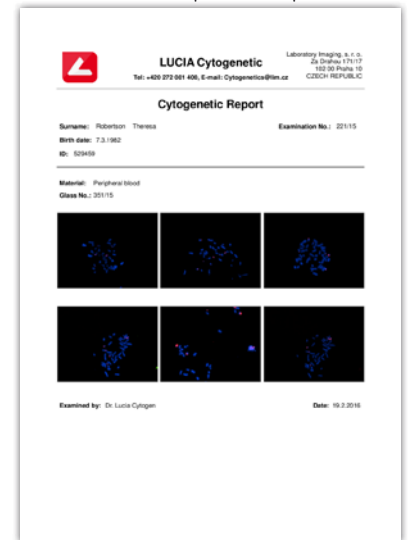
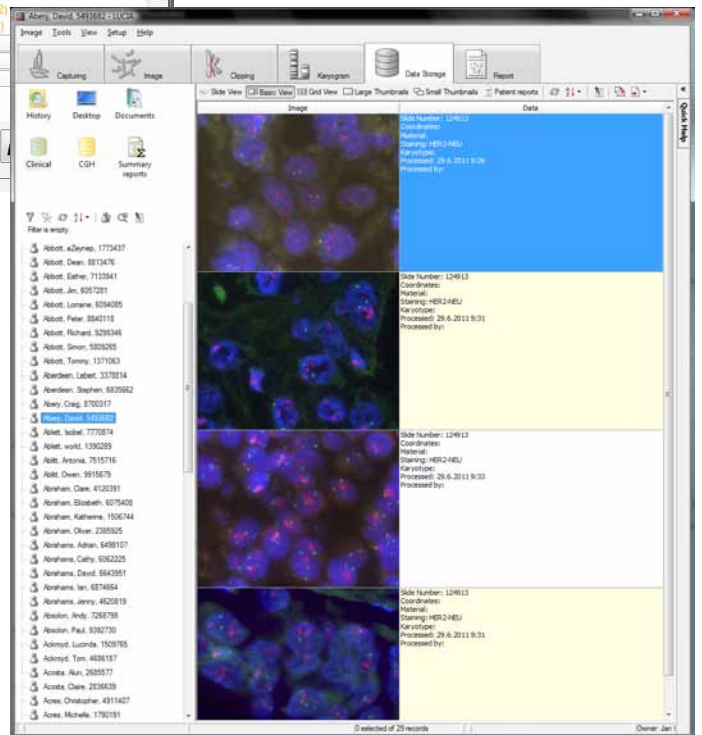


Image / patient database



Database and Report

- Use the powerful Lucia Database™ to store and manage your results.
- Create perfectly looking layouts for reports, presentations or publications.
- Modify the image display specially for report purposes - e.g. a selected component, any component combination, inverted counterstain, thumbnail mosaic, etc.