

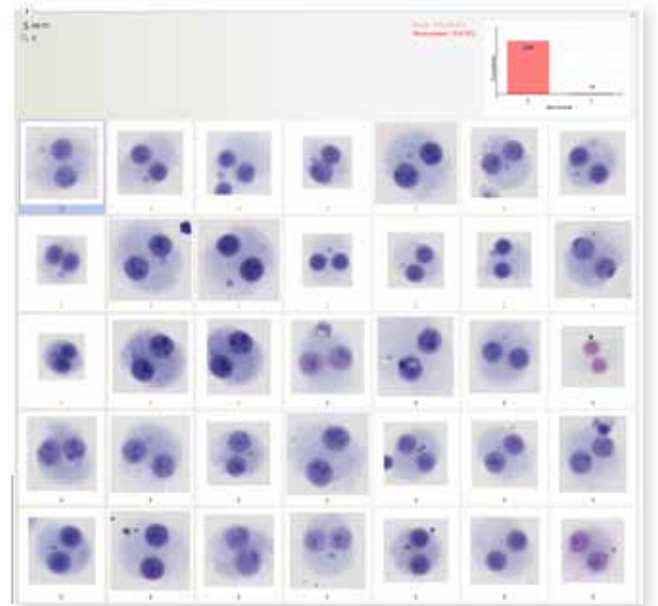


# Automated Scoring of In Vitro Micronucleus Assay

The cytokinesis-block micronucleus assay using isolated human lymphocytes serves as a reliable genotoxicity test for evaluation of DNA damage.

## Workflow

- The system scans each slide using a 20x or 40x objective lens and detects binucleated cells.
- Each such a cell is analyzed for presence of micronuclei.
- Results of the analysis are stored into a database. Each record contains:
  - » Thumbnail image of the cell
  - » Cell score = number of micronuclei
  - » Detection mask for manual scoring as a separate image layer
  - » Position coordinates - an easy tool to locate the cell, check it through eyepiece, or acquire its image with high-magnification objective. The coordinates are transferable between different XY stages in the lab.
- Cell records are grouped by slides in the database. Slide statistics are available.



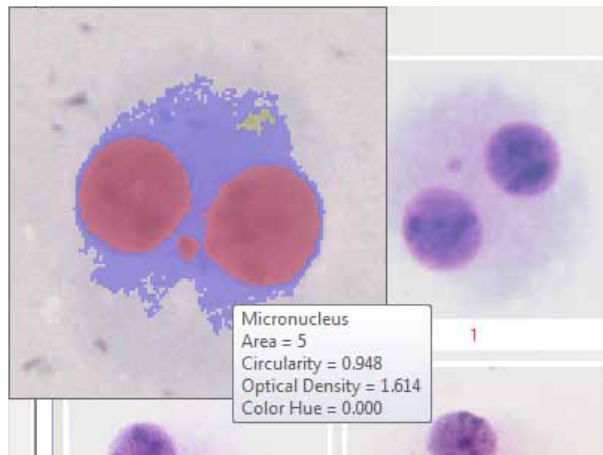
## Automatic Scanning

LUCIA MircoNucleus automatic scanning system is built on the latest motorized Nikon microscope equipped with a scientific grade color camera and a Prior scanning stage. A multi-slide (4-8) scanning stage or a slide loader with the capacity of 200 slides can be used.

Above:  
Detected cells after automatic scoring,  
slide statistics

Left:  
Typical setup using an 8-slide XY stage.

**LUCIA**  
MicroNucleus



Manual scoring, removing mis-detected objects from statistics

## Integration with LUCIA Cytogenetics

LUCIA Micronucleus can be integrated with other products and features of LUCIA Cytogenetics product line:

- LUCIA Metaphase Finder
- High performance SQL database module
- Visual report tool with the possibility to report scanning results
- Barcode functions usable for automation of printing, scanning and searching
- Other LUCIA applications