



# EUROIMMUN system solutions for full IIFT automation



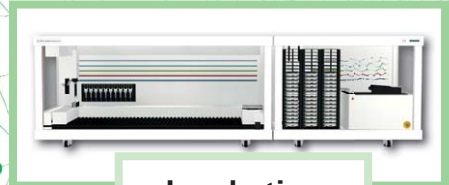
**BIOCHIPs**



**Laboratory management**



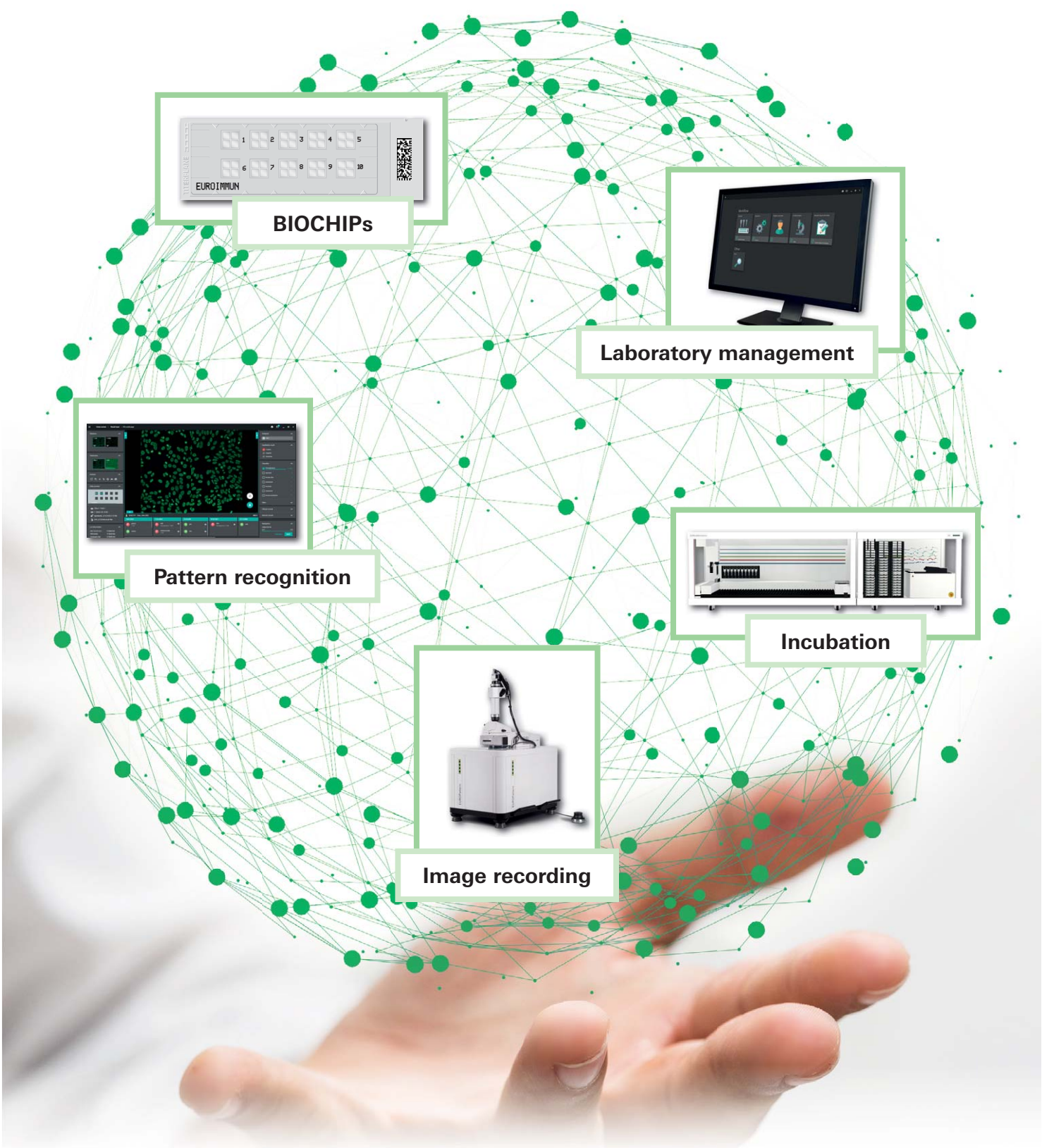
**Pattern recognition**



**Incubation**



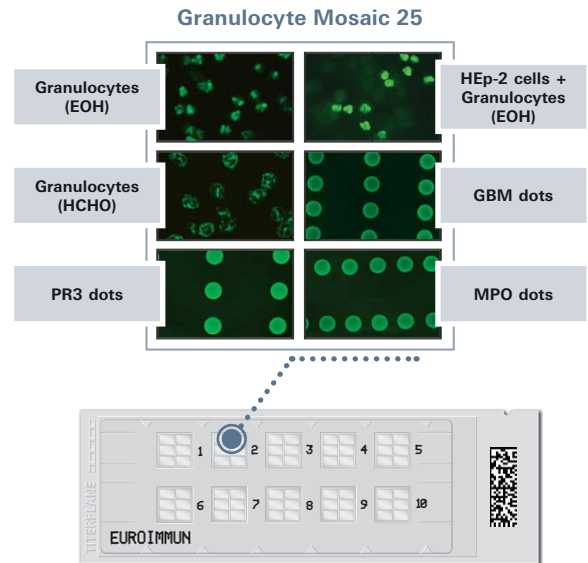
**Image recording**





## Multiparameter analyses in IIFT

- The BIOCHIP technology enables the combination of different substrates in BIOCHIP Mosaics for parallel analyses in only one test field
- Matrix-coded slides with up to 50 test fields for maximum security and traceability in laboratory diagnostics
- Example "Granulocyte Mosaic 25": the perfect combination for your ANCA diagnostics
  - Ethanol (EOH)- and formalin (HCHO)-fixed granulocytes for differentiation of vasculitis from chronic inflammatory bowel diseases (CIBD)
  - Combination of HEp-2 cells and granulocytes on one BIOCHIP allows differentiation between ANA and ANCA
  - Monospecific confirmation of results by means of PR3-MPO antigen dots (EUROPLUS) and detection of anti-GBM antibodies by means of GBM antigen dots (EUROPLUS)



## EUROLabOffice 4.0 – the control centre for your laboratory



- Integrity of data and results due to an entirely paperless work process (quick, simple and reliable)
- Automated data processing and communication without transmission errors
- Automatic creation of electronic worklists
- Reporting support: day's results for a patient, patient history, search function, documentation and archiving
- Optimisation of existing laboratory processes, various expansion modules available
- Interface to laboratory management system (LIS) for bidirectional data exchange and optimal connection to EUROIMMUN devices



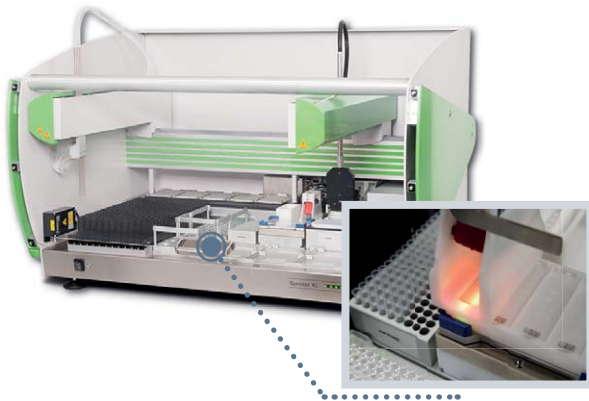
## EUROLabPolaris – intelligently connected IIFT diagnostics worldwide

- Digital connection of your laboratory sites and IIFT specialists on a local to global scale
- Secure and flexible access to your IIFT data quickly and clearly presented via web browser
- Maximal standardisation of the entire evaluation process thanks to centralised classification and evaluation of IIFT results
- Significant reduction in sample logistics and reporting times





## Fully automated incubation for medium to high throughput



### Sprinter XL

- Up to 240 samples and 30 slides per run
- Matrix code identification of samples and slides
- Simultaneous washing of all reaction fields by flooding of the slides
- Four washable needles
- Processing IFT and ELISA on one instrument

## Fully automated incubation for high throughput



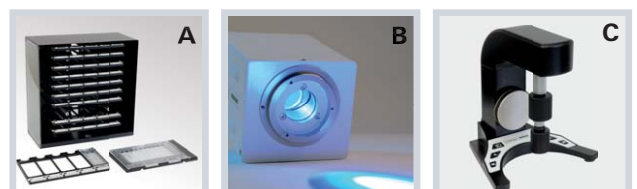
### EUROLabWorkstation IFA

- Over 700 samples and 750 reaction fields per run
- Barcode and matrix code identification of samples, reagents, labware and slides
- High throughput of over 200 analyses per hour
- Standardised washing of 50 reaction fields by means of the novel MERGITE! washing technology
- 10 washable needles
- Automatic mounting

## Fully automated microscopy

### EUROPattern Microscope

- Fully automated image recording for on-screen diagnostics for a variety of substrates
- Extremely fast system: up to 500 reaction fields in less than 2 hours (13 seconds per image)
- Magazine for 500 fields (A) with automatic supply of slides allows long walk-away periods
- Automated registration of slides by DataMatrix codes for error-free traceability
- cLED (B) for fluorescence microscopy with constant light intensity and documented quality control
- Comparable IIFT images on all EUROPattern Microscopes due to unique calibration with the integrated fluorescence normal
- Different autofocus objectives (20x; optional 10x, 40x) for optimal image recording characteristics
- Optional RealDrive hand control (C) for manual microscopy, as convenient as with a normal microscope
- Eye-pieces available on request







## Computer-assisted IIFT evaluation with deep learning technology

### Pattern recognition based on deep convolutional neural networks

The EUROPattern Classifier, which can be integrated into EUROLabOffice 4.0, automatically generates a result proposal (including titer calculation) for a constantly growing number of substrates.

This involves classification of the detected fluorescence patterns by means of deep convolutional neural networks, an artificial intelligence method. All the individual findings obtained with the substrates and dilutions are then consolidated into one result proposal for each patient.

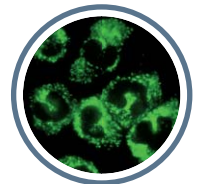
#### ANA diagnostics

- **HEp-2/HEp-20-10 cells:** Automatically generated pattern and titer proposals with confidence values for nine fluorescence patterns according to the ICAP\* (homogeneous, speckled, dense fine-speckled, nucleolar, nuclear dots, centromeres, nuclear membrane, AMA and cytoplasmic) and any combinations thereof  
\*ICAP: International Consensus on Antinuclear Antibody (ANA) Patterns
- **Crithidia luciliae:** Automated positive/negative classification and titer proposals based on the specific kinetoplast fluorescence for the detection of anti-dsDNA antibodies



#### ANCA diagnostics

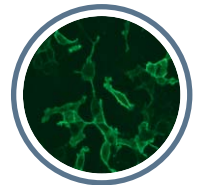
- **Granulocytes:** Automatically generated pattern and titer proposals with confidence values for the fluorescence patterns pANCA, cANCA and atypical ANCA
- **HEp-2 cells + granulocytes (EOH):** The combination BIOCHIP is used for the targeted differentiation of ANA and cytoplasmic antibodies (result is issued as ANA interference)
- **EUROPLUS antigen dots:** Automated positive/negative classification of the monospecific antigen fluorescence for confirmation and differentiation of specific diseases from the AAV range (GPA and MPA)



NEW

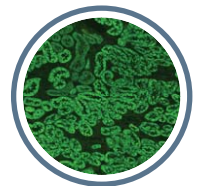
#### Diagnostics based on antigen-expressing cells

- **Neurology:** Automated positive/negative classification and titer proposal with confidence values for different antigens, e.g. AMPA 1/2, NMDAR, GABAR B1/B2, LGI1, CASPR2, DPPX, aquaporin-4 and MOG
- **Nephrology:** Automated positive/negative classification and titer proposal with confidence values for the antigen PLA2R
- **Infection diagnostics:** Automated positive/negative classification and titer proposal with confidence values for the antigens EBV-CA, EBV-EA and EBNA



#### Diagnostics of autoimmune liver diseases

- **Liver (rat):** Automated positive/negative classification for relevant ANA and identification of anti-LKM-like patterns ("LKM-like", is given as "anti-LKM" pattern after a confirmatory result on kidney tissue) to support the diagnosis of autoimmune hepatitis types 1 and 2
- **Kidney (rat):** Automated positive/negative classification for AMA, specific for primary biliary cholangitis, and identification of anti-LKM-like patterns ("LKM-like", is given as "anti-LKM" pattern after a confirmatory result on liver tissue; suspected autoimmune hepatitis type 2)
- **Stomach (rat):** Automated positive/negative classification for ASMA



NEW

#### Diagnostics of autoimmune gluten-sensitive enteropathy (celiac disease)

NEW

**Liver (monkey) IgA:** Automated positive/negative classification for antibodies against endomysium (filamentous linings of the intralobular sinusoids) to support the diagnosis of gluten-sensitive enteropathy

NEW

**Oesophagus (monkey) IgA:** Automated positive/negative classification for antibodies against endomysium (lamina muscularis) to support the diagnosis of gluten-sensitive enteropathy

