



# CYTOGENETICS SUITE



## **Revolutionize your lab with BioView's automated Cytogenetics imaging and analysis platforms.**

Introducing streamlined, reliable, and technologically advanced Karyotype and FISH applications that ensure unparalleled precision and ease of use, tailored to your laboratory workflow.

Offering cutting-edge AI-based analysis, innovative features, and tools specifically designed to simplify and expedite case review and reporting.

With various solutions fitted to the laboratory sample volume, desired automation level, and integrated web application for both local and remote use, BioView's Cytogenetics Suite is the ideal solution for your laboratory needs.

## Productivity

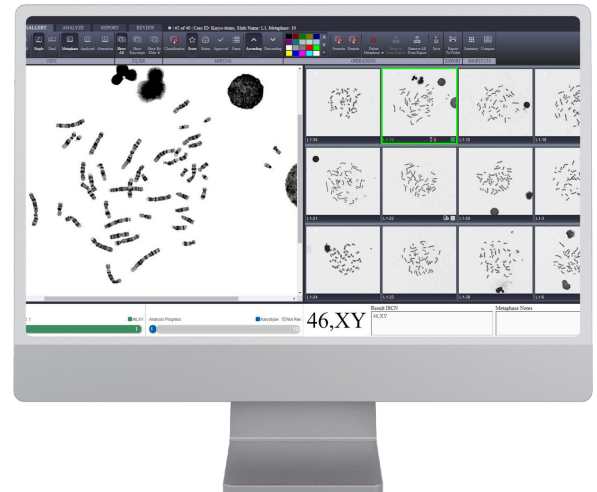
BioView's platforms afford walk-away operation with minimal user intervention, thus maximizing scan throughput and reducing turn-around time. BioView systems allow Karyotype and FISH samples to be scanned in one batch by automatic recognition of the required scanning program imprinted on each slide's barcode label.

## Versatility

BioView line of imaging platforms ranges from manual capture microscope workstations, through various fully automated loader systems. BioView's solutions can handle different sample types and preparations. Review and analysis can be performed using laboratory computers, dedicated workstations deployed across the laboratory or from any location using standard web browsers. Automated imaging and analysis can be performed for both FISH and Karyotype samples in the same scan batch .

## Functionality

- Multiple workflow support, customized for sample types (BL, BM, AM, CV), quality and banding (G,R,C,Q)
- AI algorithms for automated metaphase detection, segmentation, and classification. Optional training of AI algorithms based on user's sample classification
- Powerful band enhancement tools
- Interactive Ideogram for different resolutions with the latest ISCN guidelines
- Fully featured web application for secure remote analysis and reporting from any location
- Ideogram editor with automatic ISCN formula generation
- Import, analyze and report karyotype cases captured by third-party imaging systems
- Support automated imaging and analysis of all commercially available FISH probes

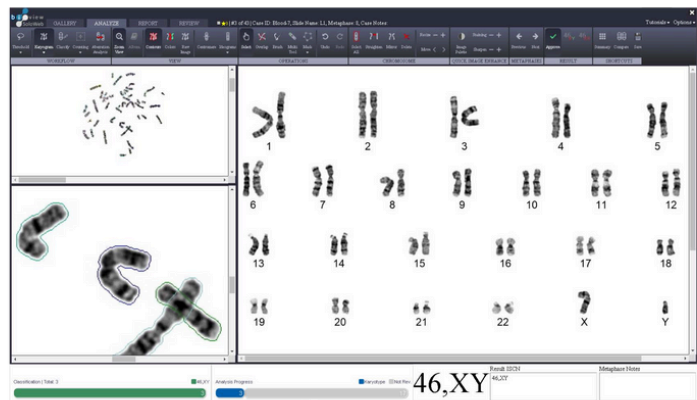


## Ease of Use

The user interface of BioView's cytogenetics desktop and web application is designed with a focus on human ergonomics, both physical and cognitive. This outstanding user interface minimizes the need for mouse and keyboard operations and reduces the need to switch between different software views during case analysis and report.

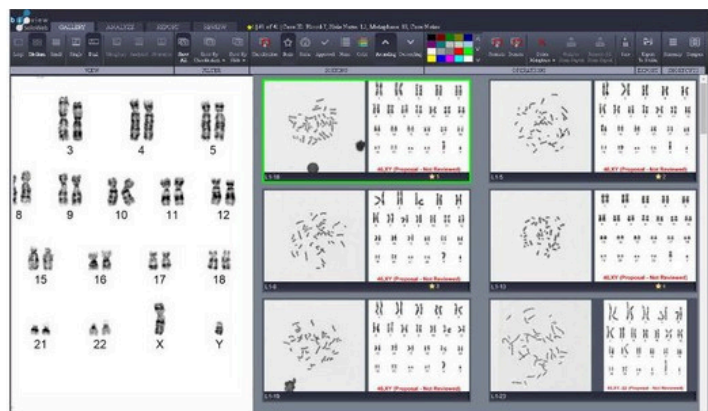
## Ribbon Graphic Control

Ribbon tabs expose different sets of controls relevant to the analysis progress, eliminating the need for manually switching between sets of controls.



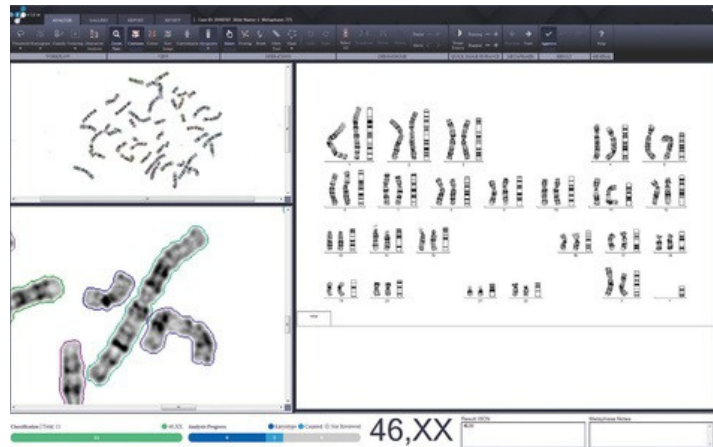
## Metaphase Gallery

Quick overview of automatically captured and karyotyped metaphases facilitates rapid selection of appropriate metaphases to report



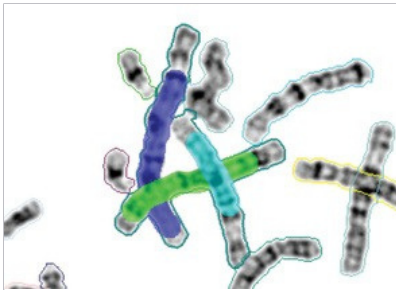
## Multi-View Analysis Screen

Analysis screen is separated into 3 active working regions, each displayed at optimal size, and designed to ease and facilitate the chromosome / metaphase analysis process.

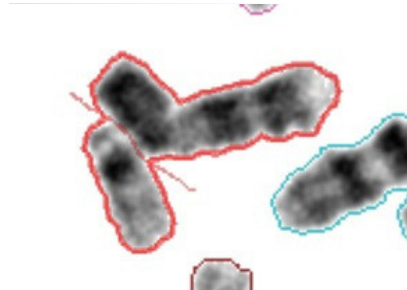


## Multi-tool

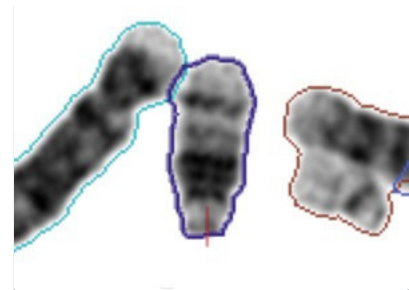
Various advanced chromosome editing tools can be invoked with simple mouse gestures, and are available in all active working regions for both bright field and fluorescent stained metaphases.



Complex overlap resolution.



Free hand line draw or double click to separate touching chromosomes.



Line draw to extend chromosome boundaries to include lightly stained telomeres.

## Automated ISCN Interpretation

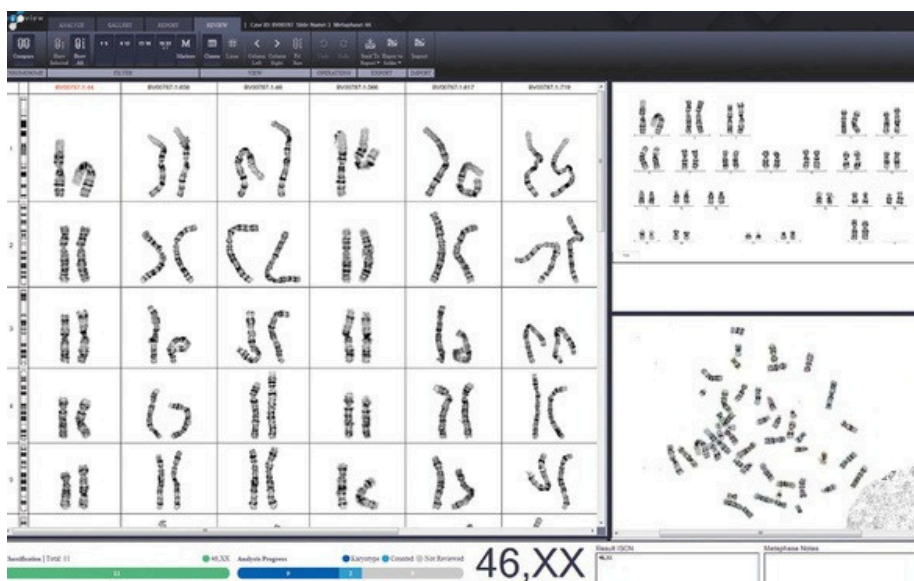
Ideograms can be edited to reflect chromosomal aberrations, including deletions, inversions, and translocations with different chromosomes, as well as to model varying levels of ploidy (e.g., triploid / tetraploid). ISCN interpretation is automatically added based on the edited ideogram.

## Integrated Cytogenetics Database

An embedded decision support system powered by advanced algorithms and online Cytogenetics databases provides real-time guidance to assist in the interpretation and reporting of Karyotype cases.

## Advanced Chromosome Comparison Tools

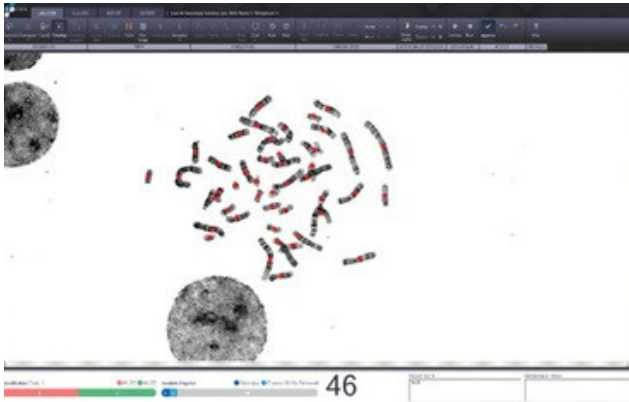
Side-by-side chromosome presentation of multiple analyzed metaphases from the same or different cases. AI comparison tool allows the presentation of chromosomes from metaphases that have not been analyzed.



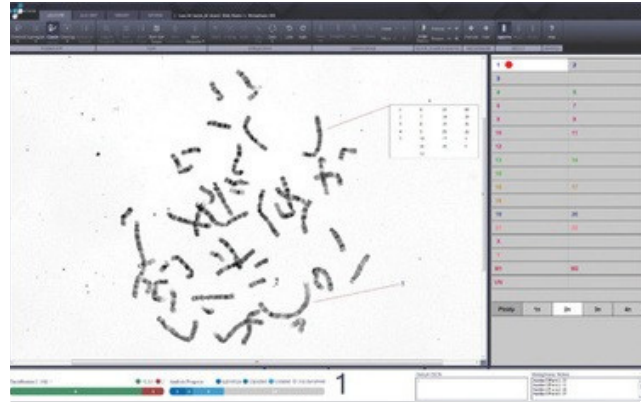
The chromosome comparison tool presents a full metaphase image and karyogram of the selected metaphase. Metaphase chromosomes can be further edited without the need to switch to the analysis window.

## Fast Chromosome Count and Classification

Automated as well as interactive count of chromosomes with easy to use graphical annotation for chromosome classification.



Software automatically counts chromosomes.

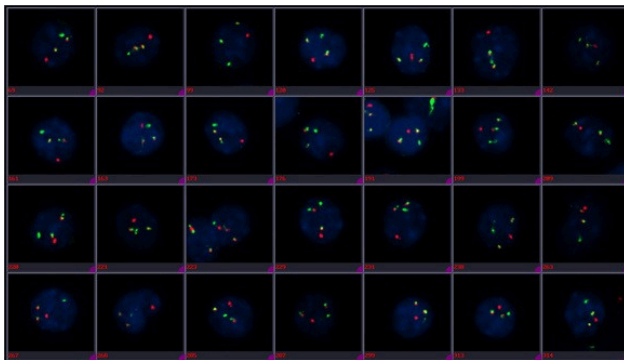


Optional classification of chromosomes with easy to use floating analysis menu.

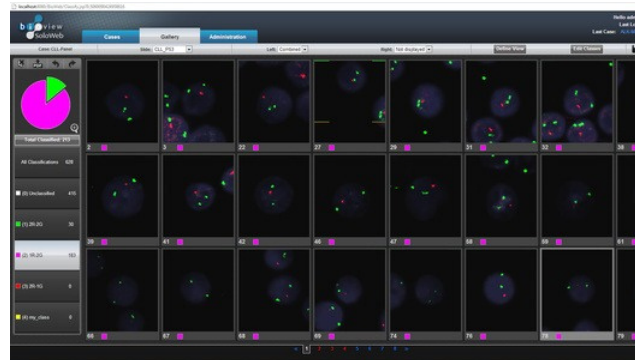
## FISH Automated Imaging and Analysis

Rapid automated imaging and analysis of FISH samples:

- Bone marrow
- blood
- Sperm
- Amniotic cells
- Lymphatic tissue sections



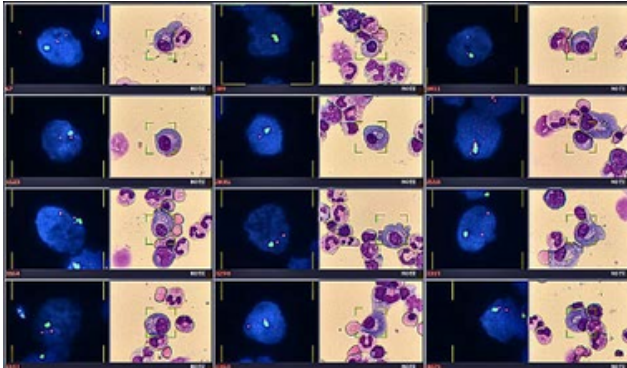
Gallery of cells captured and analyzed using BioView systems.



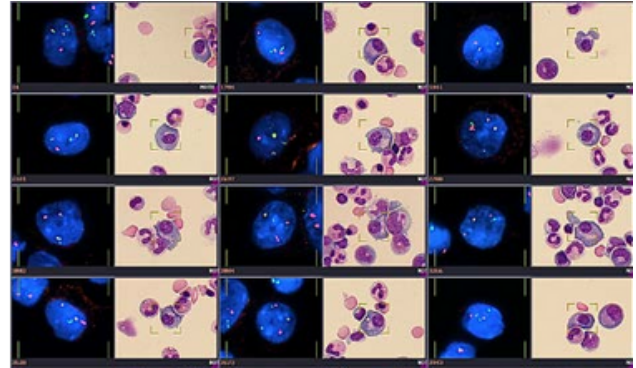
Web application allowing review, analysis and report of FISH cases using standard web browsers.

## Target FISH

Analysis of multiple stains/markers of the same cell such as Giemsa + FISH, IHC + FISH, IFL + FISH. The Target FISH applications allow focusing the FISH analysis to a preselected subset of target cells, this increases test sensitivity and specificity.



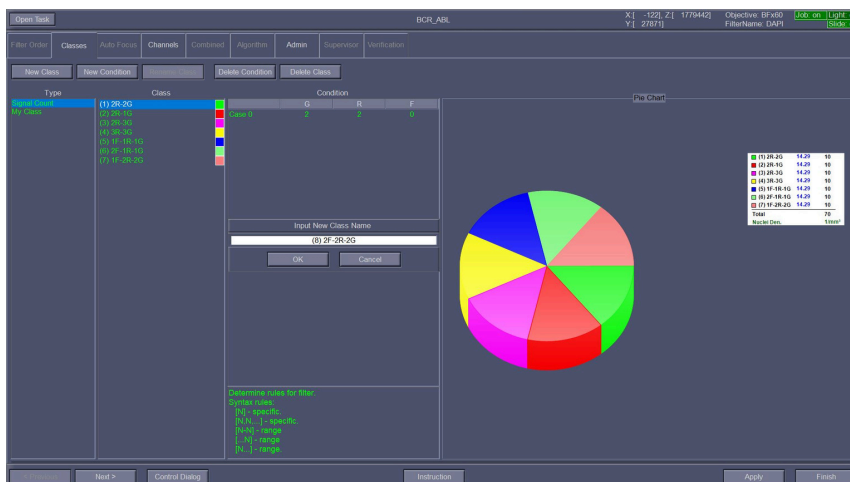
Plasma cells identified based on Giemsa stain, targeted for automated imaging and analysis of the ATM p53 probe FISH.



Plasma cells identified based on Giemsa stain, targeted or automated imaging and analysis of the IGH/CCND1 Dual Fusion probe FISH.

## Design & Customize Automated FISH Scanning Tasks

BioView's user-friendly Task Editor enables laboratories to effortlessly design and implement automated scanning programs tailored for new FISH assays. With its intuitive interface, users can create customized classifiers and train the system's automated exposure algorithms, ensuring optimal image quality for each sample type and probe.

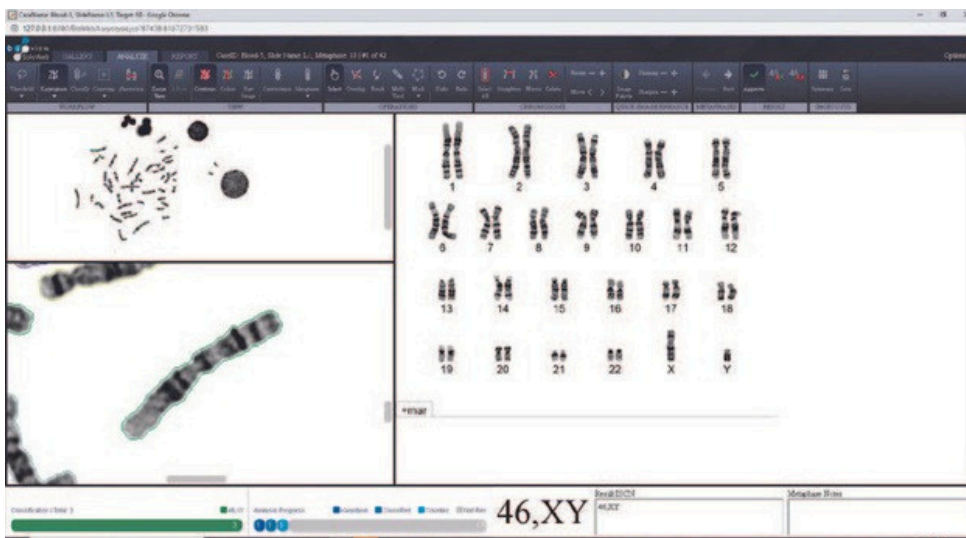


## Web-based Review, Analysis and Reporting Software

BioView's SoloWeb provides scalable, web-based review, analysis and reporting capabilities, enabling streamlining of the laboratory reporting steps for tissue and cell suspension samples scanned with BioView's imaging and analysis systems, from any location across the globe via internet access. SoloWeb is designed to optimize the workflow for laboratory technicians, supervisors, and pathologists, centralizing user management and providing an integrated view of patient demographics and clinical data. SoloWeb is based on BioView's experience working with industry leaders, hospitals and laboratories, to provide optimized solutions for connectivity between the lab and the healthcare provider, as well as to increase productivity and efficiency of the laboratory.

## Fully Featured Karyotype Web Application

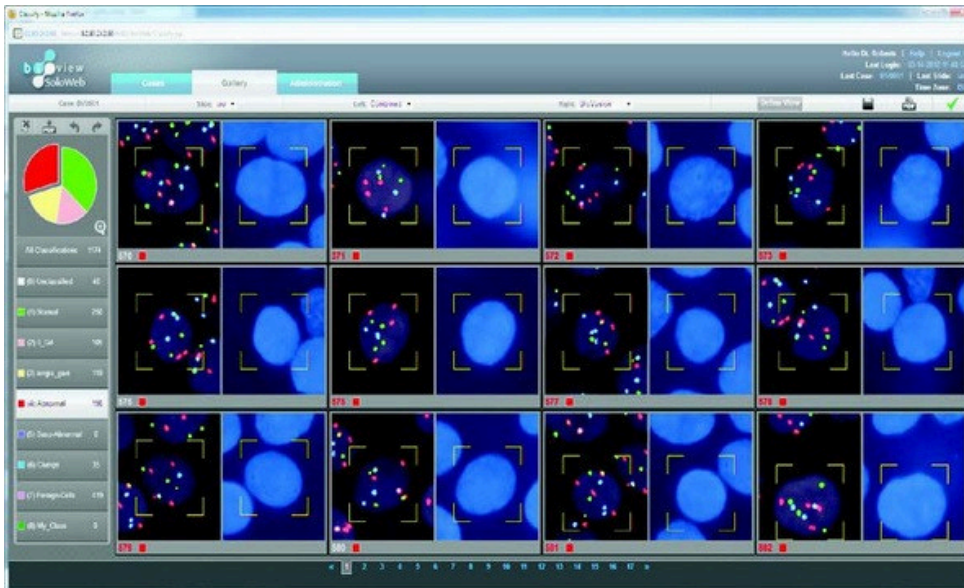
- Karyotype, Fast Chromosome, Count and Classification of Metaphases
- Automated chromosome analysis utilizing deep learning AI algorithms
- Advanced automated and interactive chromosome separation tools
- Automated ISCN formula creation



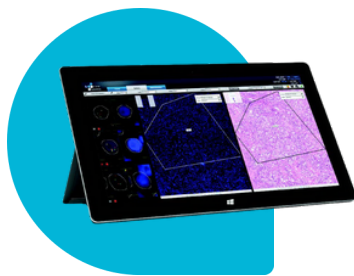
Software automatically counts chromosomes.

# Fully Featured FISH Web Application

Gallery presentation of classified cells Drag and drop cell re-classification interface



Review analyze and report of FISH cases using Solo Web



## Simple to Integrate

- No software/plugin installation required Citrix
- free - no need for expensive server setup
- Minimal setup use of local IT resources No local
- IT management and maintenance

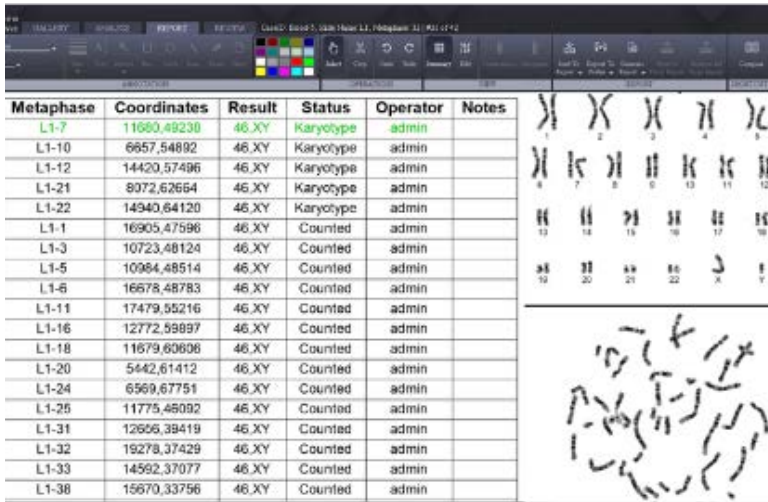


## Streamlined Workflow

- Role-based account privileges Real-time
- sync with desktop app users Assignment of
- cases with status indicators to specific
- users or groups Email notification upon
- case assignment Workflow and
- performance reports Seamless integration
- of results with lab information system

# Supervisor and Workflow Control Tools

BioView's case review dashboard dramatically improves the supervisor's ability to effectively overview cases analysis progress. Dashboard overview of all scored metaphases, with ability to quickly access and modify specific metaphase analysis facilitates quality oversight.



Metaphase	Coordinates	Result	Status	Operator	Notes
L1-7	11660,49230	46,XY	Karyotype	admin	
L1-10	6657,54802	46,XY	Karyotype	admin	
L1-12	14420,57496	46,XY	Karyotype	admin	
L1-21	8072,62664	46,XY	Karyotype	admin	
L1-22	14940,64120	46,XY	Karyotype	admin	
L1-1	16905,47596	46,XY	Counted	admin	
L1-3	10723,48124	46,XY	Counted	admin	
L1-5	10984,48514	46,XY	Counted	admin	
L1-6	16678,48783	46,XY	Counted	admin	
L1-11	17479,55216	46,XY	Counted	admin	
L1-16	12772,59897	46,XY	Counted	admin	
L1-18	11679,60606	46,XY	Counted	admin	
L1-20	5442,61412	46,XY	Counted	admin	
L1-24	6569,67751	46,XY	Counted	admin	
L1-25	11775,46092	46,XY	Counted	admin	
L1-31	12606,39419	46,XY	Counted	admin	
L1-32	19278,37429	46,XY	Counted	admin	
L1-33	14592,37077	46,XY	Counted	admin	
L1-38	15670,33756	46,XY	Counted	admin	

The case summary page displays all analyzed metaphases along with the type of analysis performed and the analysis operator.

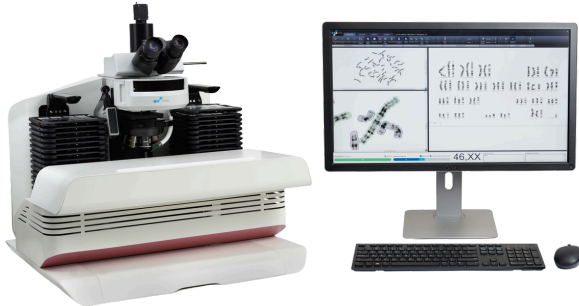
A summary of FISH and Karyotype case workflow progress and status can be viewed from any computer using a standard web browser.



Cases status presented on BioView's SoloWeb.

# Cytogenetics Imaging and Analysis Platforms

BioView offers various solutions based on laboratory test menu and volume.



Fully automated imaging and analysis systems with various loading capacities ranging from 8, 50, 60 and 120 samples



Manual capture workstation with Karyotype and FISH software equipped with motorized stage for easy metaphase location



Manual capture with workstation with Karyotype and FISH analysis software

- Software automatically adjusts the camera exposure during manual and automated capture to ensure optimal image quality
- Contrast and Exposure can be set during the manual capture process
- Automated focus and z-stacking are available using fully motorized microscope models
- Manual capture of z-stacks and automated instant formation of a full color combined image using manual microscope models

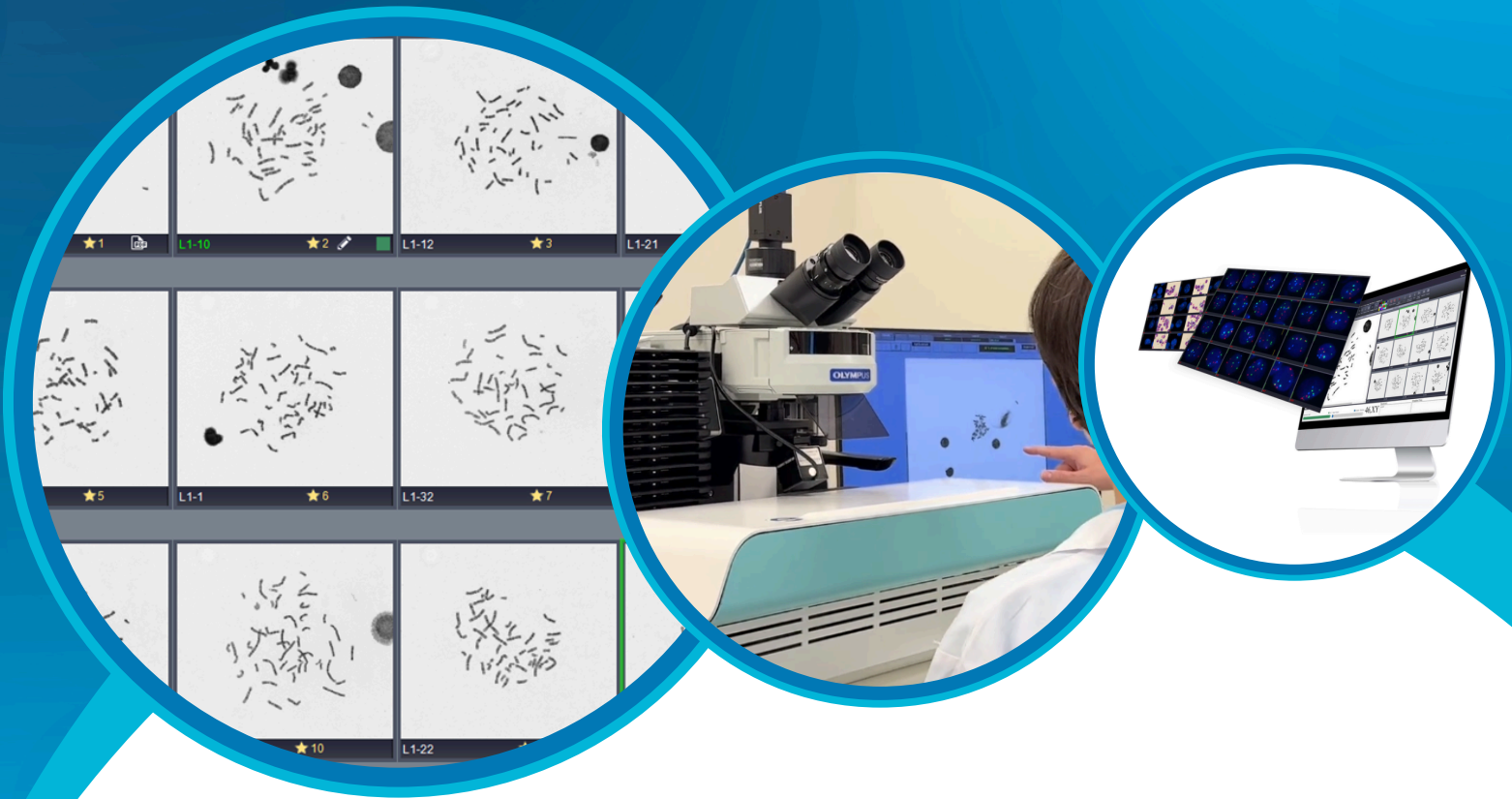


Virtual Server workstation allows up to 10 concurrent users to analyzed Karyotype and FISH cases using laboratory computers or web browsers



Satellite review and analysis workstation

In the USA, the Duet™ system is intended for in-vitro diagnostic use as an aid to the pathologist in the analysis of Hematopoietic, Amnio, UroVysion, ALK, and HER2/neu FISH. In the EU and Canada, the Duet™ system is intended for in-vitro diagnostic use as an aiding tool to the pathologist in the detection, classification, and counting of cells of interest based on color, intensity, size, pattern, and shape. It is the end user's responsibility to validate the use of the Duet system in combination with commercial reagents and materials for a specific clinical application. The Duet system is for professional use only.



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