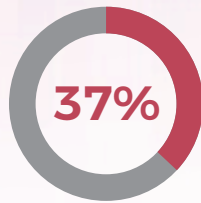


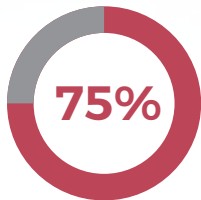
# NEXT GENERATION CYTOLOGY

**ICC25 EXCLUSIVE**

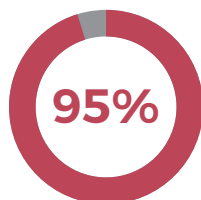
**NEW CRYOPHORE™ PANEL  
RANGE CONFIRMED**



**LESS MANUAL HANDLING²**



**FEWER TOUCH POINTS**



**LESS SAMPLE PREPARATION TIME**

<sup>1</sup>Depending on preparation method.

<sup>2</sup>Compared to traditional immunohistochemistry.

**A new way of thinking about cytopathology.**  
**No more labour-intensive sample preparation.**  
**No more sequential immunostaining. No more risk of cell loss. Just actionable data without the complexity.**



X-ZELL Next-generation Cytology (NGC) is the first immunostaining solution specifically designed to streamline cytopathological analyses of serous fluid and fine-needle aspirates.

Challenging conventional immunohisto- and cytochemistry, it fuses X-ZELL's powerful Cryoimmunostaining™ technology with a novel digital imaging solution to make cytopathology more efficient than ever before:

By standardizing the preparation and fixation of cytological samples, NGC reduces preanalytical variables to ensure consistent results every time. By accommodating up to eight fluorescent antibodies on the same microscope slide, NGC maximizes diagnostic yield per sample and reduces the risk of cell- or material loss.

By visualizing antigen reactions and cell morphology in a digital format without crosstalk or background, NGC enables fast and convenient diagnoses anywhere, anytime.

The result? Maximum diagnostic yield in 3:00-4:00 hours, depending on the preparation method. Up to 96 percent less preparation time, 50 percent less manual handling, and 700 percent more data per slide without compromising on morphology\*. IVDR- and US FDA registered and compatible with existing reimbursement codes for IHC.

**NEW IN 2025**

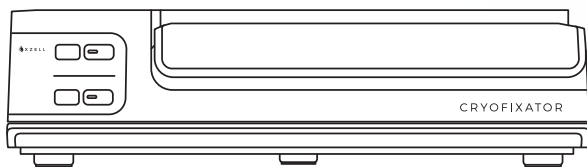
X-ZELL is proud to announce the world's first standardized and US FDA/IVDR-registered range of multiplex antibody panels for use on the NGC platform. Developed in collaboration with leading cytopathology experts, the new Cryophore™ range marks a breakthrough in diagnostic cytology – bringing multiplexed immunostaining into routine use for the first time and paving the way for minimally invasive diagnostics at scale. More on page 9.

\*Real-life performance data from X-ZELL reference laboratories compared to industry-leading immunohistochemical staining systems.

# PRODUCT

The X-ZELL NGC platform is a combination of the patented X-ZELL Cryoimmunostaining™ Suite for laboratory processing and the X-ZELL Hybrid Microscope for fast and efficient downstream analytics.

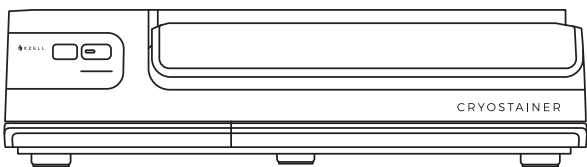
The Cryoimmunostaining™ Suite is comprised of two benchtop instruments that operate at sub-zero temperatures to protect sample integrity and use patented buffers and reagents developed by X-ZELL. The Hybrid Microscope is a proprietary workstation allowing you to view and compare all eight fluorescence channels instantaneously in any lab or office, even in normal daylight. Both systems and accessories are EU IVDR and US FDA registered.



58 x 42 x 16 cm · 18 kg · via X-ZELL

## X-ZELL CRYOFIXATOR™

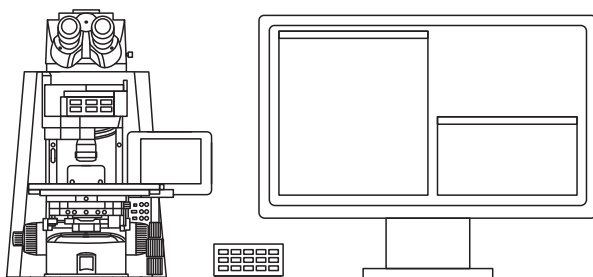
The Cryofixator™ introduces a revolutionary, standardized direct-to-slide fixation method to optimize and standardize sample preparation and preserve important secondary data such as cell morphology, DNA and RNA content.



58 x 42 x 16 cm · 18 kg · via X-ZELL

## X-ZELL CRYOSTAINER™

The Cryostainer™ is a fast and efficient immunostaining system accommodating up to eight fluorophore-conjugated primary antibodies (or seven plus additional nuclear counterstain) on a single microscope slide.



based on Zeiss Axio Imager Z2 or equivalent · via X-ZELL

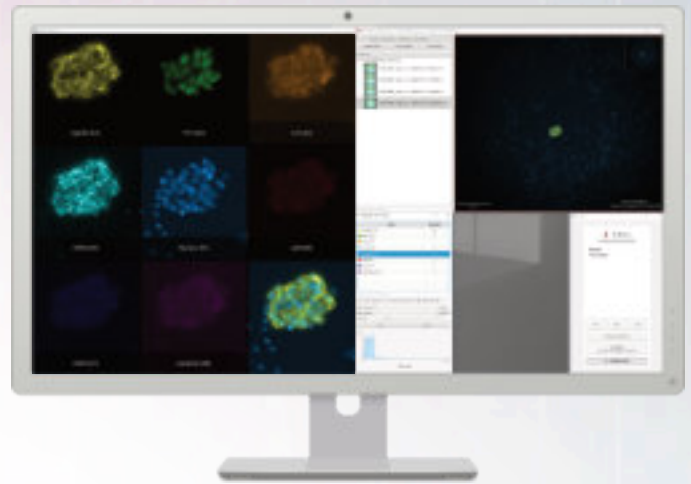
## X-ZELL HYBRID MICROSCOPE

The Hybrid Microscope and Software enable the digitization of multiplexed microscope slides in as little as 30 sec. and allow you to evaluate antigen reactions and morphology of individual cells and cell clusters side-by-side.\*

\*Cell morphology on screen is identical to conventional IHC stained samples viewed under a bright-field microscope.

# MULTI-CHANNEL IMAGE

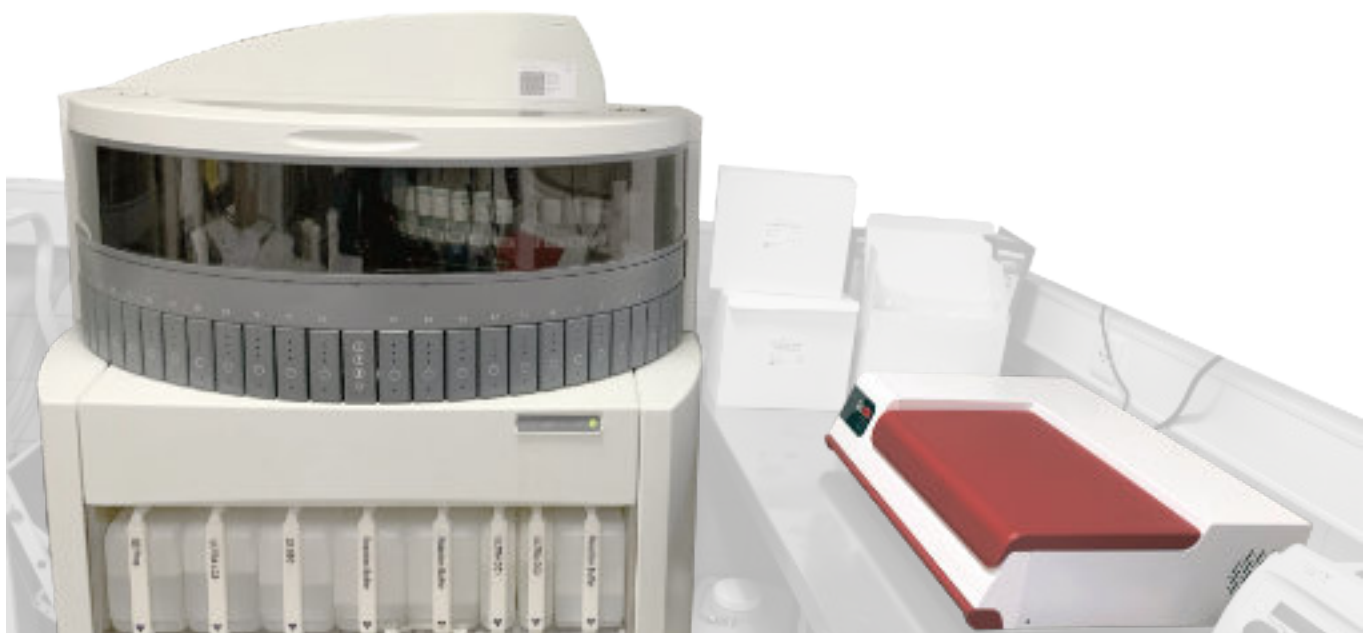
The Hybrid Microscope Software has been designed to fast-track image analysis. Simply place the slide on the stage, pre-select an area of interest and get started. In only 30 seconds, the digitized area of interest is available to browse on screen, alongside a series of separate windows dedicated to each antibody channel. By hovering the mouse over a cell or region of interest, you can compare all antibody signals for the same cell or region side-by-side. All images are saved on a local hard drive and amenable for AI-based support algorithms if required.



# BENCHMARKING

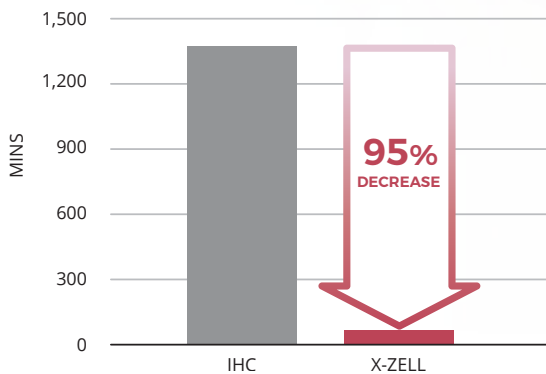
COMPETITOR	
Dimensions	112 x 84 x 158 cm
Weight	295 kg
Multiplexing	N
Slides/run	30
Antibodies/slide	1

X-ZELL (2X INSTRUMENTS)	
Dimensions	58 x 42 x 16 cm
Weight	18 kg (2x)
Multiplexing	Y
Slides/run	8
Antibodies/slide	8



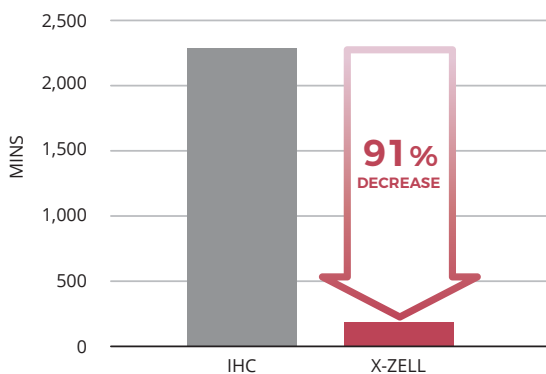
# PERFORMANCE

X-ZELL NGC performance compared to cell-block based immunohistochemistry (IHC). Data based on a 2023 time-motion study performed at the Institute of Pathology Main-Taunus, Frankfurt, Germany. X-ZELL White Paper available upon request.



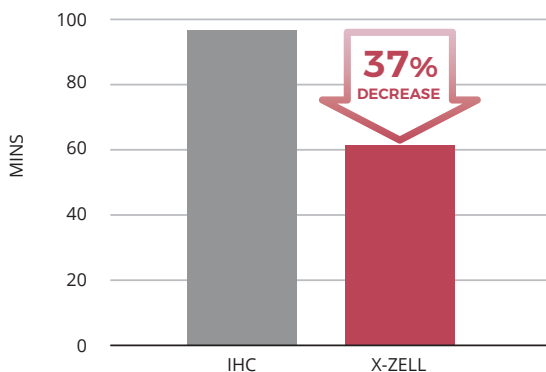
## SAMPLE PREPARATION

Pre-staining preparation time decreased by 11:55:00 hrs, or 94.6%, after switching from standard IHC to X-ZELL. Adjusted for laboratory-specific variables such as batching and overnight processing, pre-staining preparation required 85.4% more time for IHC compared to X-ZELL.



## TURNAROUND TIME

Compared to traditional cell-blocking and IHC staining, the total time from sample arrival to diagnosis was reduced by more than 91 per cent using the X-ZELL Next-Generation Cytology system, from an average 38:46:00 to 03:23:00 hrs (see next page for more).



## LABOUR

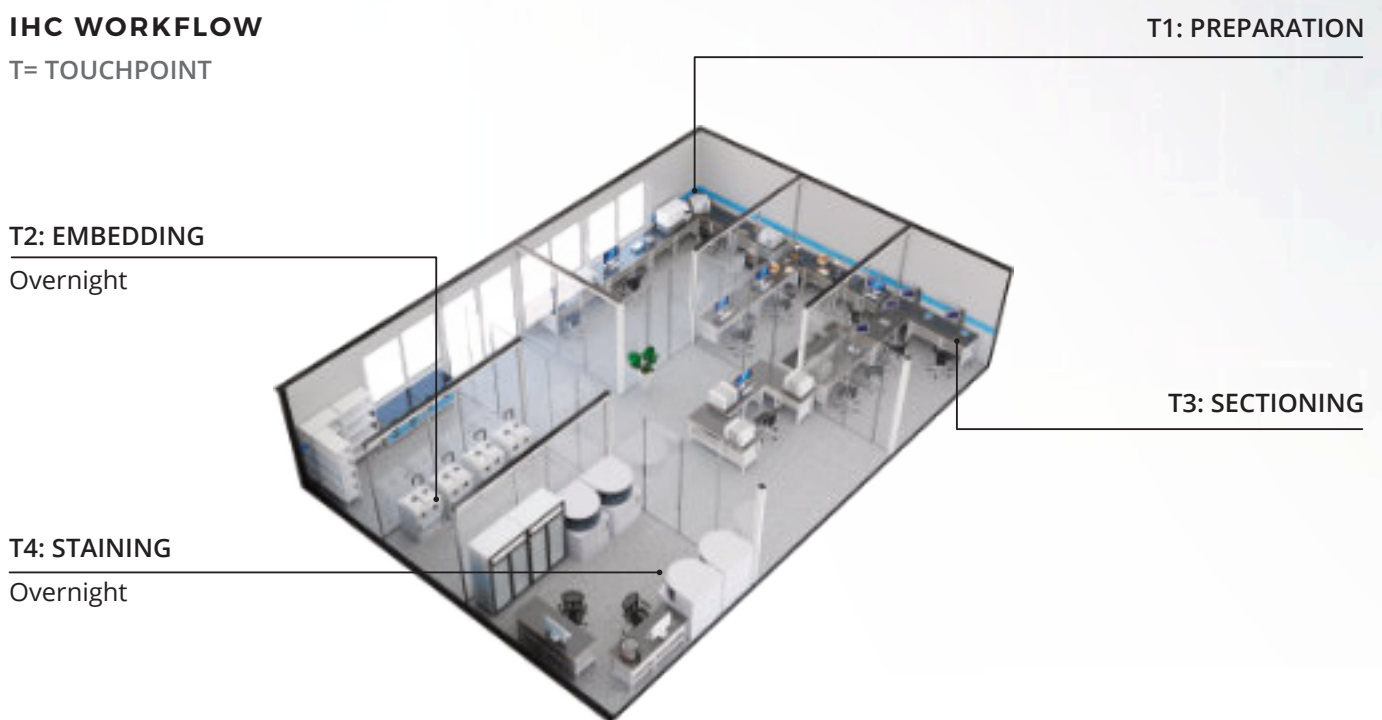
Manual handling decreased by 36.5% using X-ZELL over conventional IHC, from 01:36:00 to 01:01:00 hrs. Total process steps between sample arrival and diagnosis decreased from 21 to 15. A single technician can carry out the entire process from start to finish at the same work station, without sample movement.

# LAB EFFICIENCY

Traditional immunohisto- or cytochemical (IHC/ICC) staining of cytological samples may require the involvement of multiple technicians across multiple process steps and work stations, contributing to an average of 96 min of hands-on time. X-ZELL NGC can be performed by a single technician, with a total of 61 min hands-on time – 37% less compared to IHC.\*

## IHC WORKFLOW

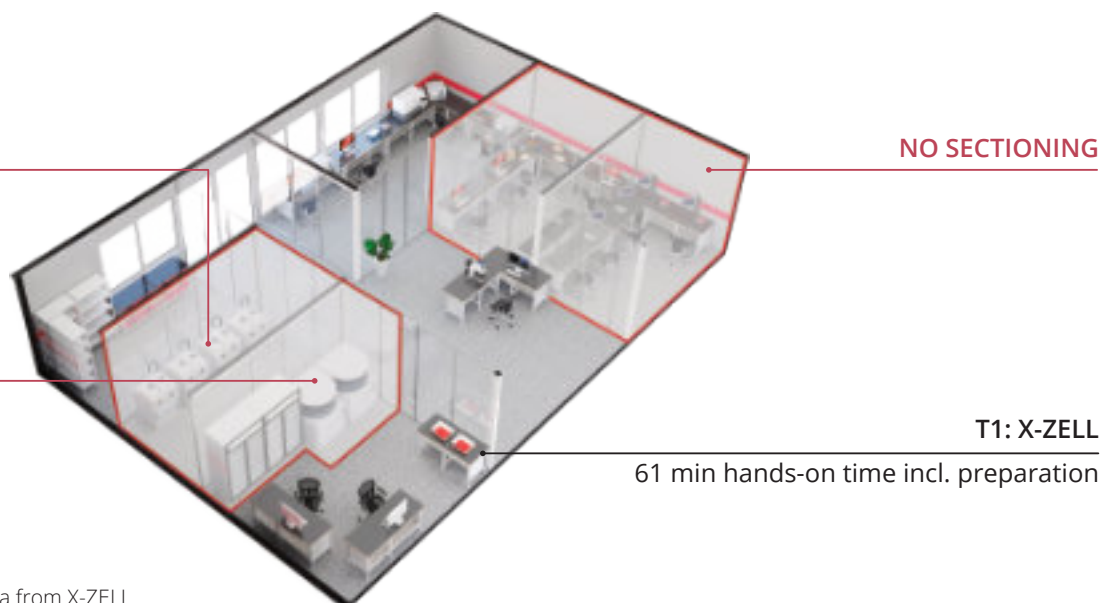
T= TOUCHPOINT



## X-ZELL

NO CYTOBLOCKING

NO IHC

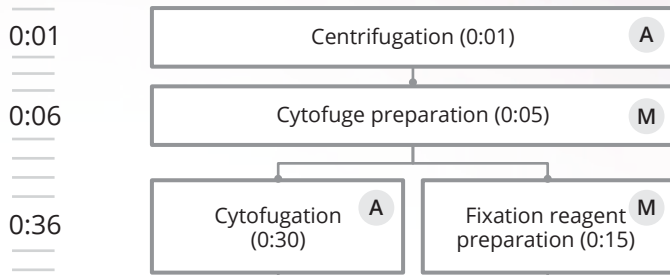


\*Real-life performance data from X-ZELL reference laboratory, see previous page.

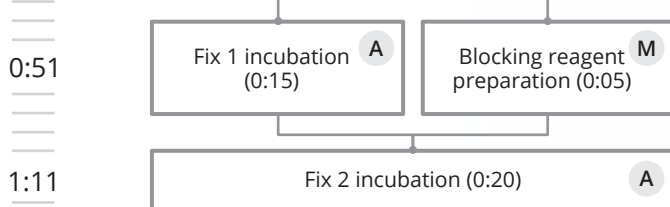
# WORKFLOW

LEGEND: **M** Manual **A** Auto/waiting *kursive* parallel action

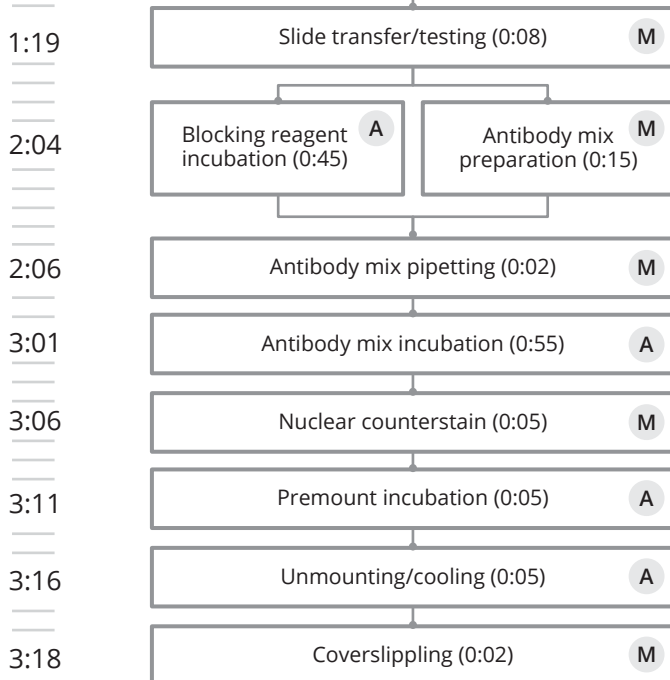
## CYTOCENTRIFUGATION



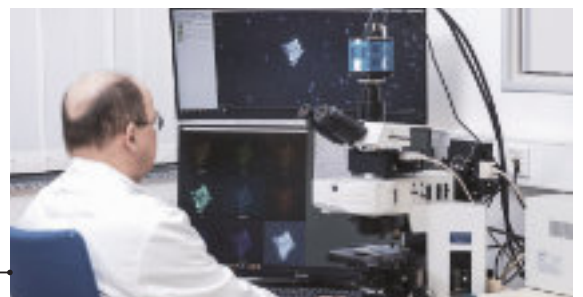
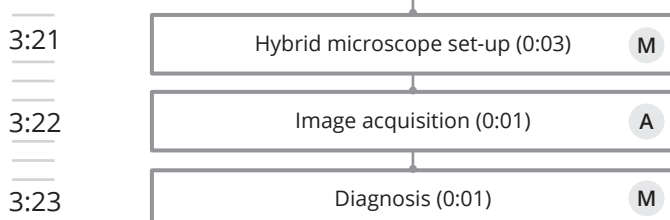
## CRYOFIXATION



## CRYOSTAINING



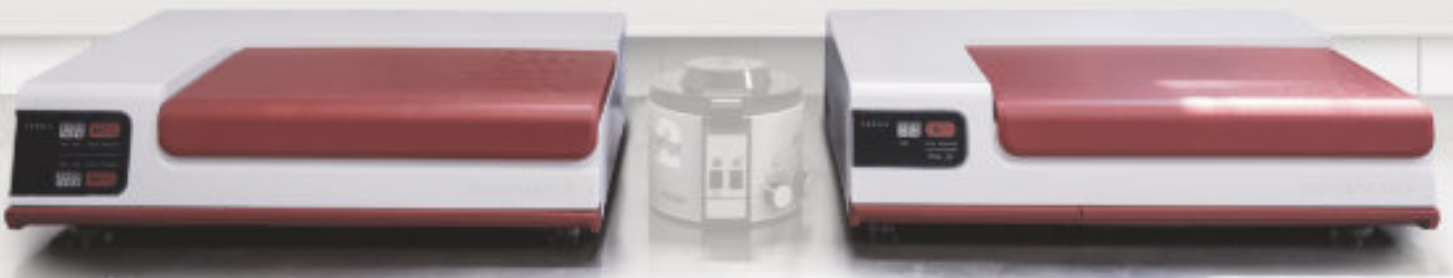
## EVALUATION



NEW

# CRYOPHORE™ RANGE

At the core of our NGC platform, X-ZELL Cryoimmunostaining™ is a patented multi-signal immunostaining method capable of detecting up to eight antibodies on a single microscope slide. In 2025, the system is receiving a historic upgrade.



X-ZELL Cryoimmunostaining™ is an award-winning multiplex immunostaining method designed to detect up to eight fluorophore-conjugated antibodies on a single slide – delivering unmatched efficiency, reproducibility and diagnostic depth.

In 2025, the technology enters a new era: With the launch of the new Cryophore™ range of standardized antibody panels, X-ZELL is introducing the world's first expert-vetted, off-the-shelf multiplexing solution for routine cytopathology.

Expect a curated portfolio of multi-channel antibody panels addressing the most common diagnostic challenges in clinical cytology – developed in

collaboration with leading experts and WHO guideline authors from Europe and the United States.

Their shared mission: to standardize upstream sample handling and eliminate common error sources such as paraffinization and cell blocking – creating a fast, reliable and reproducible alternative for staining minimally invasive sample material. The result is a technology built for a new laboratory reality, where more insight must be extracted from less and less material.

The first Cryophore™ multiplex panels will launch in late 2025, beginning with select institutions participating in the X-ZELL Technology Trial Program.

## EXCLUSIVE PREVIEW:

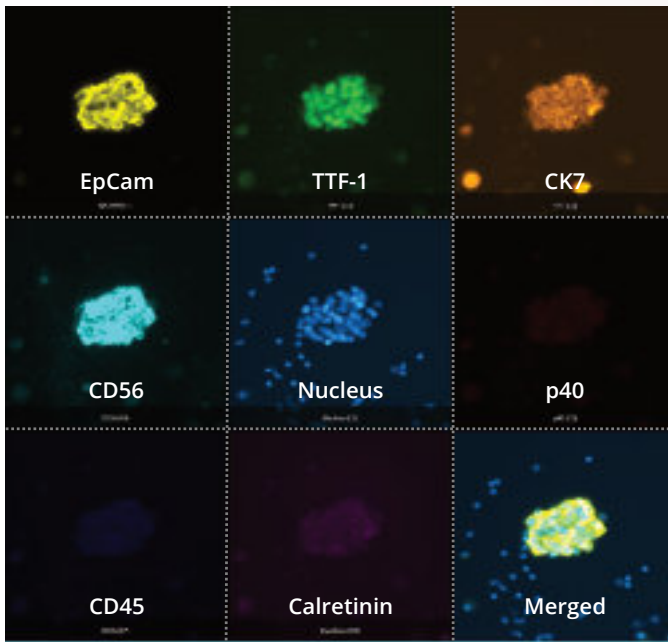
Pleural Effusion	Ascitic Fluid	Mes. Proliferation	FNA Undifferentiated	FNA Carcinoma	FNA Lung
Effusion	Effusion	Effusion	FNA	FNA	EBUS
Nucleus	Nucleus	Nucleus	Nucleus	Nucleus	Nucleus
EpCAM	EpCAM	EpCAM	CD138	GATA3	PD-L1
INSM1 & SYP.	SATB2 & CDX2	BAP1	INSM1 & SYP.	SATB2 & CDX2	INSM1 & SYP.
TTF1	CK7	TTF1	MC <sup>1</sup>	TTF1	TTF1
GATA3*	PAX8	HEG1	Sox10	PAX8	ALK
CD45	CD45	Claudin4	CD45	CK20	NapsinA
p40	CK19	MTAP	p40	p40	p40
Calretinin	Calretinin	Calretinin	Pan-CK	CK7	CK7

\*Swap channel, also available with TPRS1 or Nkx3.1. SYP = Synaptophysin. MC = Melanoma Cocktail. Information subject to change.

# EXAMPLES

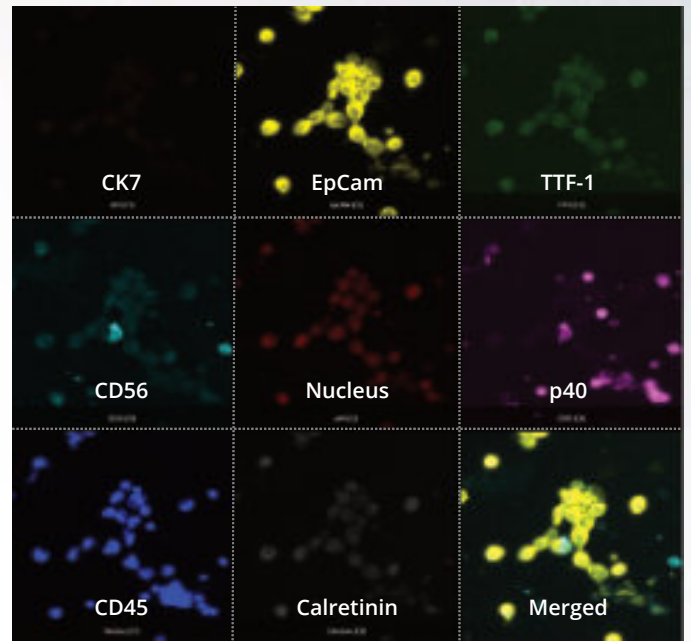
## EXAMPLE 1

SCLC, pleural effusion.



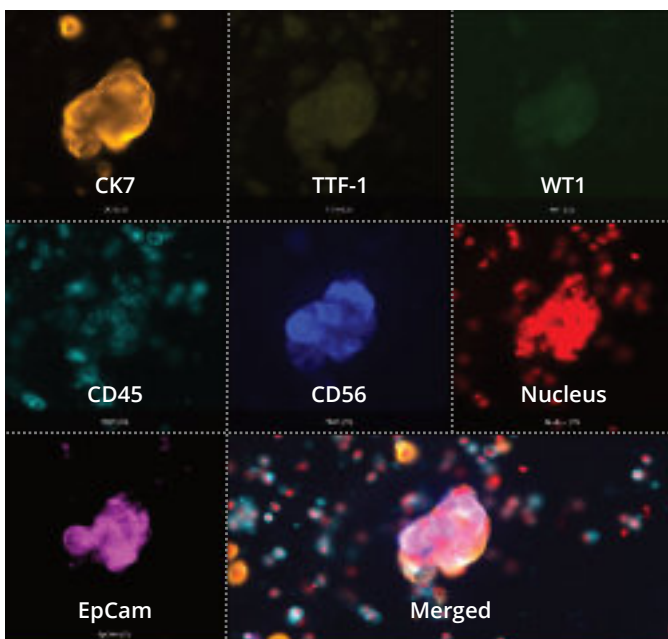
## EXAMPLE 2

PCa, pleural effusion.



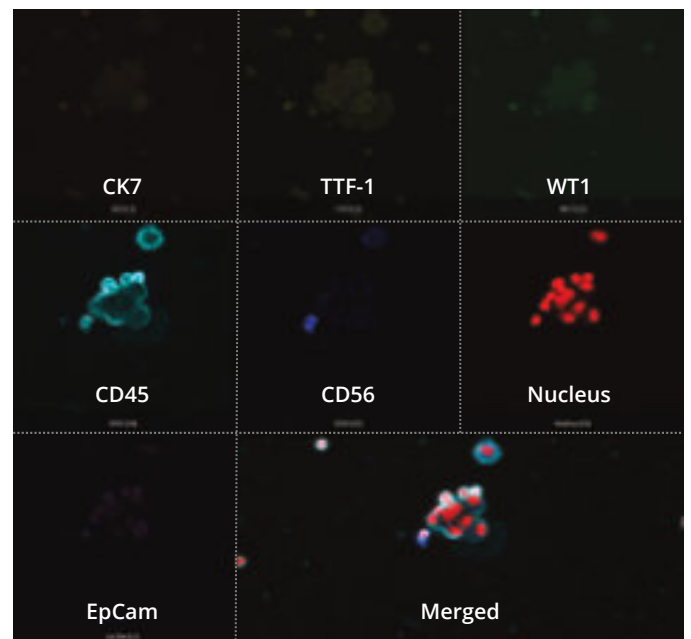
## EXAMPLE 3

OvCa, ascites. Panel customized by user.



## EXAMPLE 4

Reactive WBC, pleural effusion. Panel customized by user.



# X-ZELL NEXT-GENERATION CYTOLOGY



END-TO-END SOLUTION FOR ROUTINE USE



OPTIMIZED AND STANDARDIZED SAMPLE PREPARATION



MAXIMUM DIAGNOSTIC YIELD PER SAMPLE



AVG. TURNAROUND TIME UNDER 4H



CONSISTENT CELL MORPHOLOGY



EU-IVDR AND US-FDA REGISTERED

**NEW**

**X-ZELL CRYOPHORES™—BRINGING STANDARDIZATION AND  
SCALE TO MULTIPLEX IMMUNOSTAINING**



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