

On-site and digital.  
Our training program for you.  
From basic knowledge to expert.



Further information on  
our website [www.vivascope.com](http://www.vivascope.com)



VIVASCOPE

EX VIVO IMAGING

# Instant Digital Pathology

Rapid on-site evaluation workflow.  
In just 5 minutes.



## Introductory training – on-site

The training after device installation conveys the basic knowledge for the daily routine that users need for safe handling of the VivaScope. To support the training, presentations, manuals, guidance on optimal imaging and publications are provided.



## Expert training

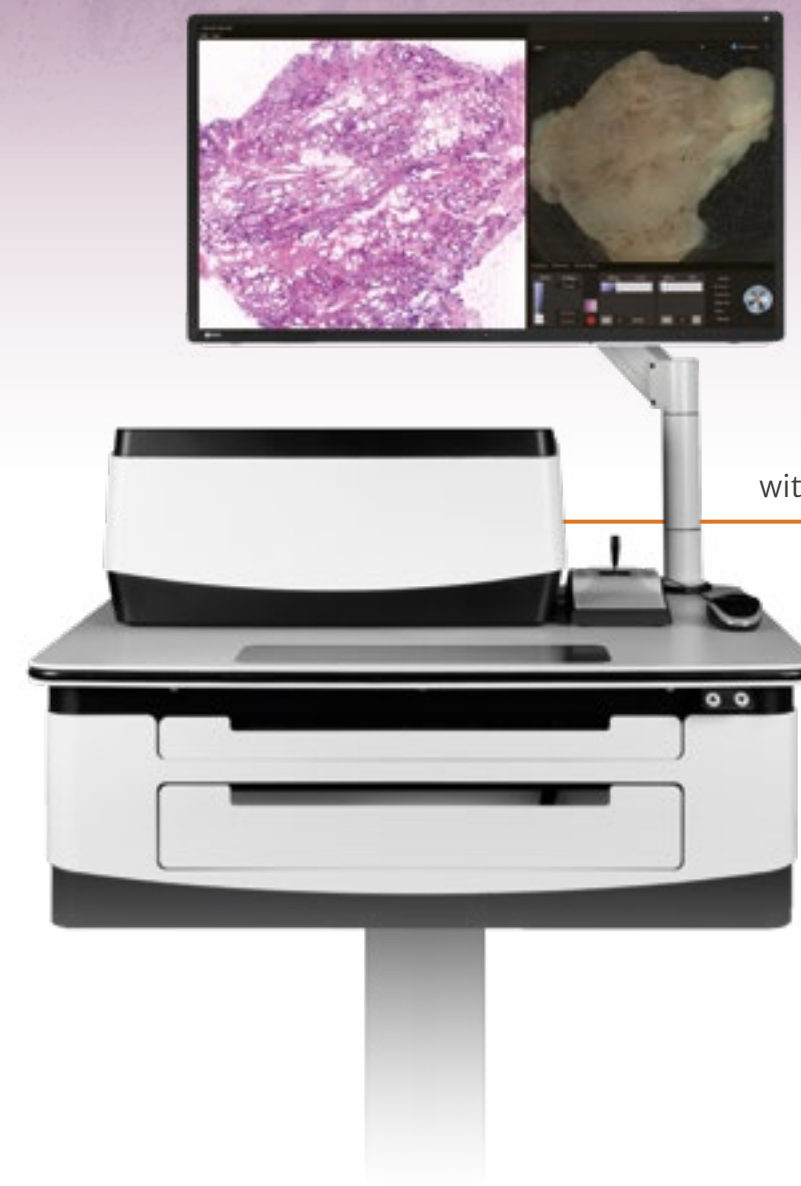
In a clinical setting, users are trained by renowned experts. The course focuses on staining protocols, tissue handling tips, and the rapid and accurate interpretation of the VivaScope images.

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Technical specifications are subject to change without notice. Revision Level: 03/2023

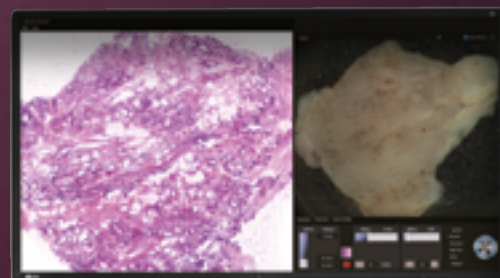


with the VivaScope 2500

[www.vivascope.com](http://www.vivascope.com)



# Speed up your workflow. With the VivaScope 2500.



The VivaScope 2500

## Ready for a change?

### Only 5 minutes

The VivaScope 2500 is a confocal laser scanning microscope specifically designed for the examination of freshly excised tissue.

## Major advantages:



### Minimal preparation

Tissue preparation takes only a few minutes, enabling fast image acquisition.



### Direct assessment

The images show the morphology at subcellular resolution and can be assessed immediately after scanning.



### Remote evaluation / telemedicine

The pathologist can evaluate the images both, on-site and remotely via telemedicine.



### Significant time saving

Compared to conventional frozen or paraffin sections, the evaluation time can be dramatically reduced.



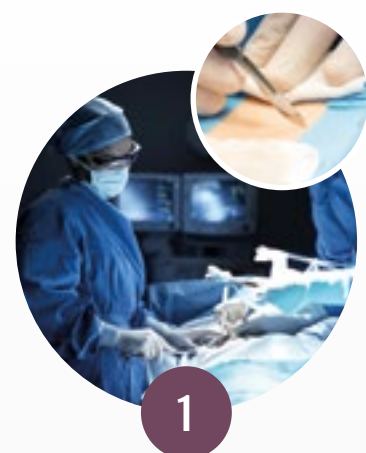
### Tissue integrity

The examined tissue remains unharmed by the procedure and can be preserved for later histopathological analysis.

# Workflow for rapid on-site evaluation of fresh tissue.

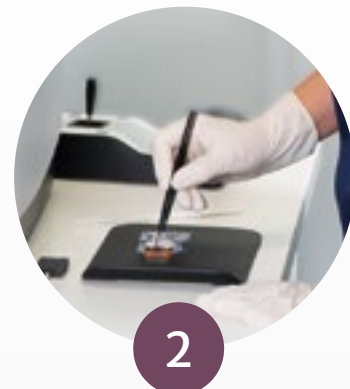
## In only 5 minutes.

Fresh tissue can be examined immediately after an excision without lengthy procedures. This allows for the direct assessment of the specimen in the operating room. Based on the acquired images, decisions concerning the continuation of the surgery or the taking of further biopsies can be made.



1  
Tissue removal

The tissue is processed directly after excision without fixation.



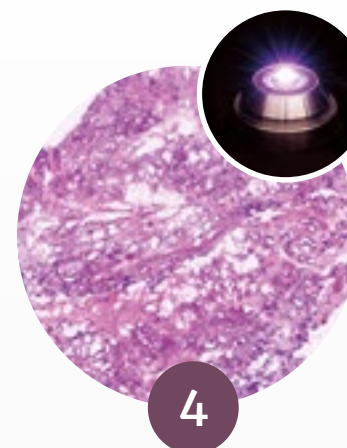
2  
Staining procedure

The specimen is then quickly and easily stained with a fluorescent dye and mounted on a glass slide.



3  
Tissue mounting

The glass slide is subsequently inserted into the VivaScope 2500.



4  
Confocal imaging

The VivaScope 2500 rapidly scans the excised tissue and reveals the cellular morphology.



5  
Evaluation & telemedicine

During the surgical intervention, the specimens can be evaluated microscopically and the procedure adapted accordingly.

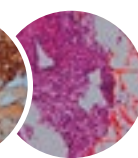
Standard analysis possible  
after using the VivaScope 2500:



molecular analysis



IHC



H&E staining



formalin fixation

### Full preservation

The examined tissue remains unharmed by the procedure and can be processed for histopathological and integrative analysis later on.

**Just 5 minutes** between **tissue removal** and **completed image acquisition**.

LEARN MORE:

Workflow for  
Instant Digital  
Pathology





# Medical imaging

High resolution images  
of unfixed tissue **without sectioning**

**VivaScope technology** is based on confocal microscopy and acquires images of superb optical resolution and contrast. VivaScope images allow for direct pathological analysis during surgery. Like H&E staining, VivaScope images are generated from two components. **Two lasers** of different wavelengths create two distinct images, a fluorescence image and a reflectance image. Both signals are scanned simultaneously and are used to create pseudo-colored images. The device's software uses an algorithm to translate the acquired image information into colors that resemble H&E.

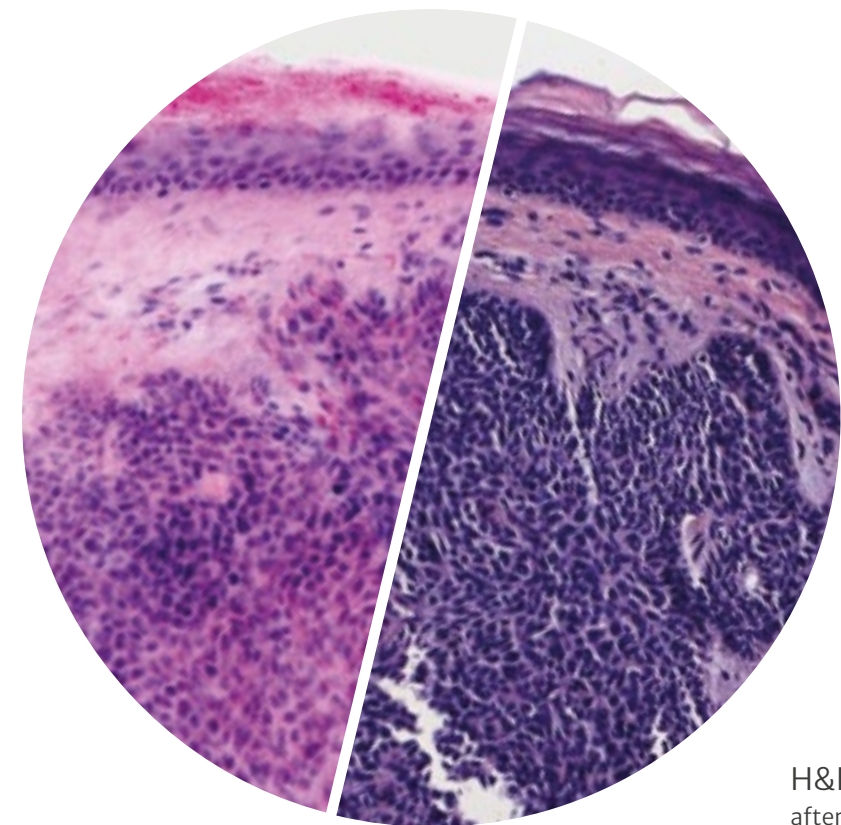


LEARN MORE:

**Instant Digital  
Pathology**

## Comparison

VivaScope  
2500



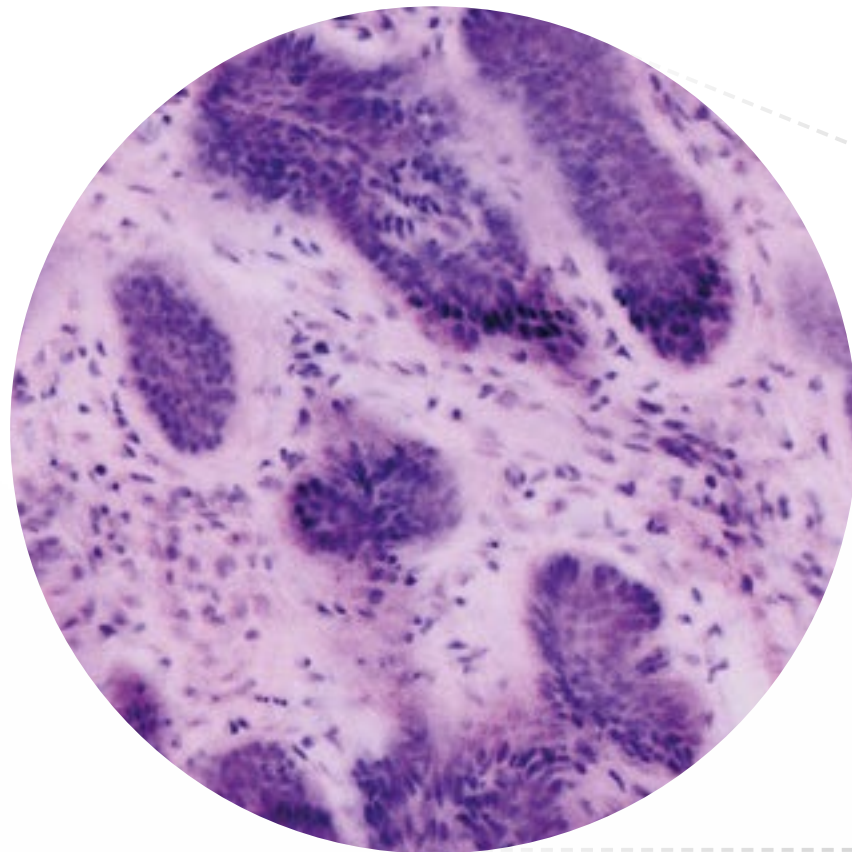
H&E  
after FFPE

Images courtesy of Dr Javier Pérez-Anker.  
Basal cell carcinoma; imaged with the VivaScope 2500 (left) and after H&E staining (right).



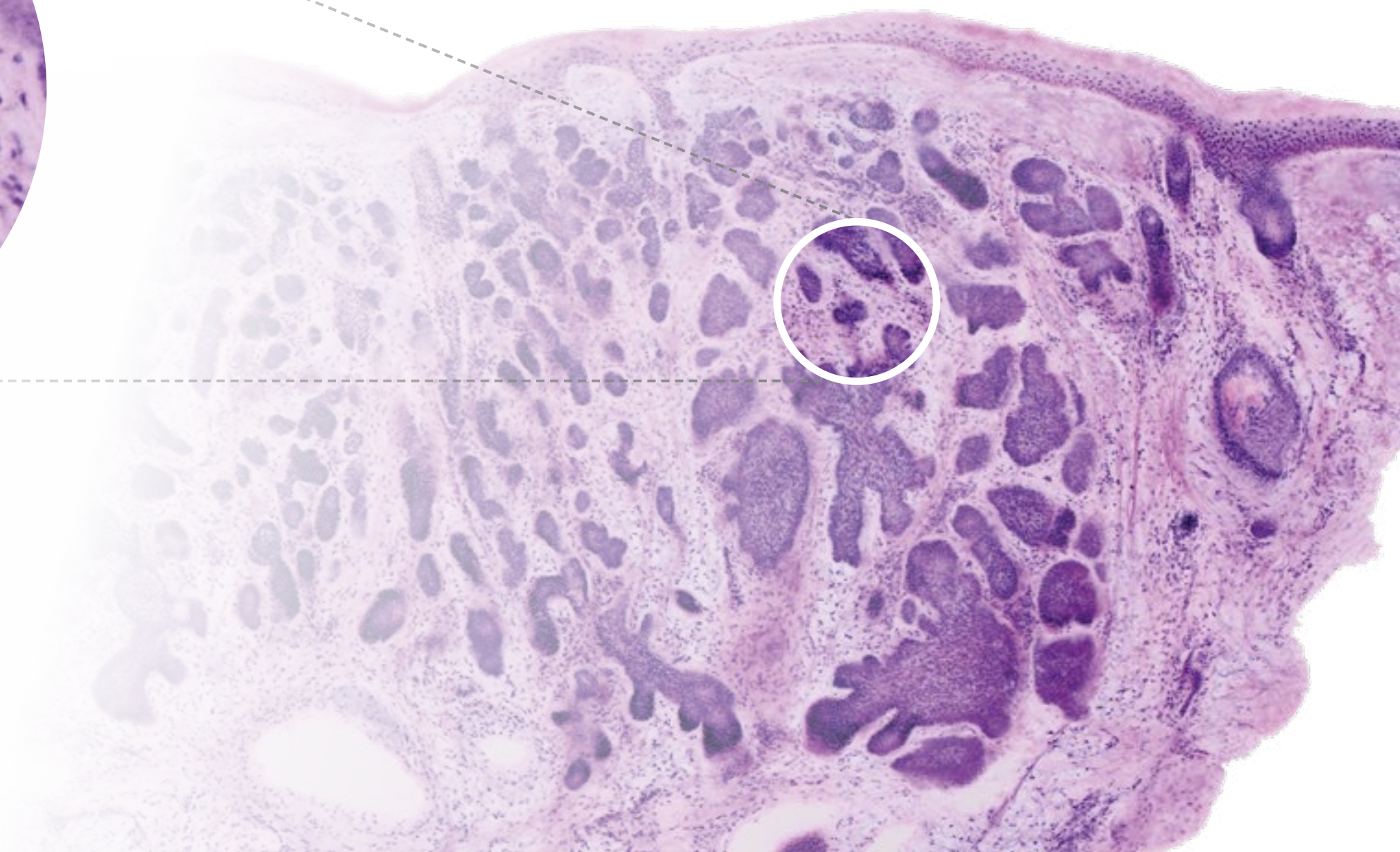
**great sample size**  
up to 32 mm x 24 mm

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**seamless zoom**

subcellular resolution with up to 550x magnification





# Multiple applications

The **VivaScope 2500** enables intraoperative assessment of tumor margins as well as immediate examination of biopsies. Surgical workflows and patient management can thus be significantly improved. The acquired images show subcellular details of the examined tissue and provide information **similar to H&E staining**.



LEARN MORE:

**Multiple applications**

1. FNA/FNB and small tissue fragments
2. Intraoperative margin control
3. Core biopsies

# 1. FNA / FNB and small tissue fragments

CytoMatrix is a novel, patented technology for the collection and preservation of FNA/FNB samples and small tissue fragments. In combination with the VivaScope 2500, it revolutionizes the handling and analysis of cytological and microhistological specimens. The diagnostic and adequacy assessment of these samples can be rapidly performed while maintaining the integrity of the specimen for subsequent histological, immunohistochemical and molecular analysis.



## Advantages:

### 1. Minimal preparation

no need for an on-site pathologist or specialized cytotechnician

### 2. Remote evaluation

in real-time, possible via telemedicine

### 3. Full tissue preservation

for further postoperative analyses, without damage or loss

### 4. Advanced patient care

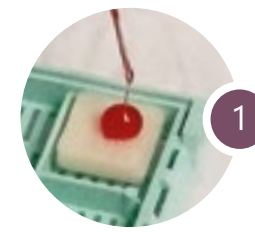
by reducing the number of needle passes and associated risk of adverse events

### 5. Optimized resource allocation

by minimizing the necessity of re-biopsy

### 6. Efficient patient management

by immediately initiating the treatment schedule



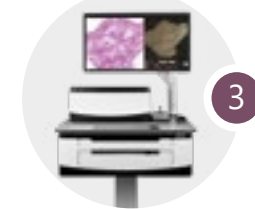
#### Biopsy

Deposit the (EUS-) FNA/FNB specimen in the center of the CytoMatrix.



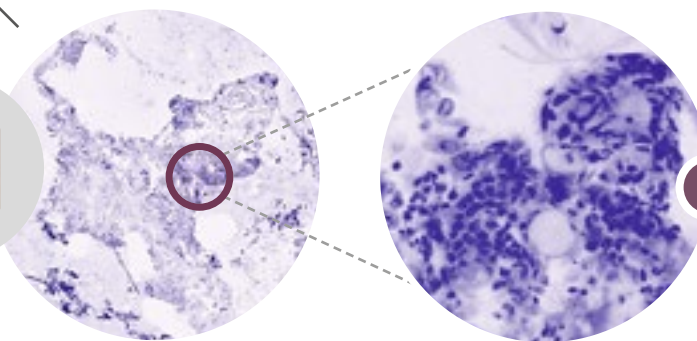
#### Staining

Then stain the sample directly on the CytoMatrix.



#### Imaging

Start imaging with the VivaScope 2500 microscope.



#### Your result:

High-contrast images in subcellular resolution.

Image courtesy of Dr Anna Crescenzi, Unit University Hospital Campus Bio-Medico, Rome



Standard analysis possible after using the VivaScope 2500:

#### + Preservation

Continue with the preserved specimens for the conventional histopathological procedures (H&E staining, IHC and molecular analysis).



formalin fixation paraffin embedding



H&E staining IHC molecular analysis

## Watch the workflow



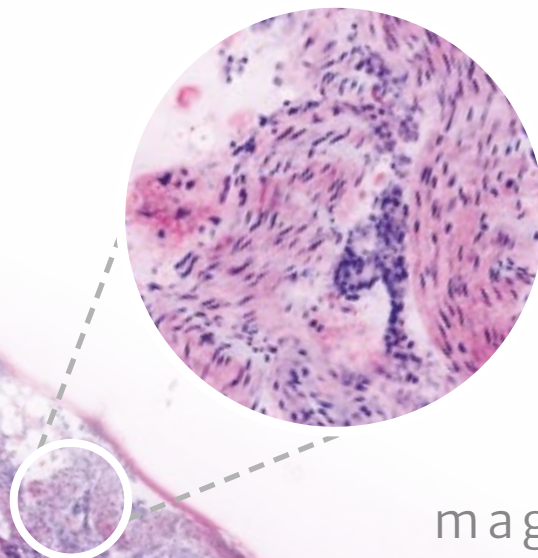
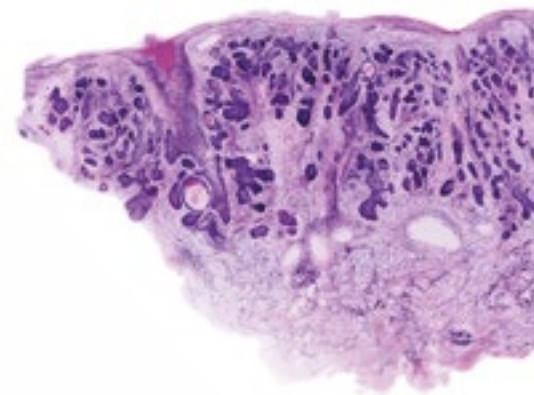


## 2. Intraoperative margin control

The VivaScope 2500 technology offers many advantages over frozen section analysis for microscopically controlled surgery. The time needed to complete a surgery can be reduced significantly. Integrated into a surgical workflow, VivaScope scans provide information comparable to H&E images derived from FFPE or frozen sections. The examination can be performed without a laboratory.

### Advantages:

1. No laboratory required
2. Remote evaluation  
by telemedicine and reduction of organizational problems
3. Advanced patient care  
by optimizing surgical strategy and reducing surgery duration
4. Improved patient turnaround time



550x  
magnification

## 3. Core biopsies

The processing and imaging of core biopsies takes less than 5 minutes and the results can be evaluated instantly. The conclusions drawn from the examination can have a direct impact on the patient's treatment, e.g. enabling therapy to be scheduled immediately, thus within a single hospital stay.



seamless  
zoom

### Advantages:

1. Rapid evaluation at the bedside
2. Optimize biopsy acquisition
3. Reduce biopsies or avoid re-biopsies
4. Immediately initiate the therapy

Image courtesy of Dr Anna Crescenzi, Unit University Hospital Campus Bio-Medico, Rome (left)

Image courtesy of Dr Javiera Pérez-Anker, Hospital Clinic of Barcelona. (left)

Image courtesy of Dr Stefano Puliatti, Dr Laura Bertoni, Dr Paola Azzoni, University of Modena and Reggio Emilia (right)



# Application fields & publications

1. Dermatology
2. Urology
3. EUS / EBUS – FNA / FNB
4. Organ Transplantation
5. Gastroenterology
6. Interventional Radiology
7. Senology / Gynaecology

**+ Further application fields are constantly being developed.**



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# The VivaScope 2500 and the **technology** behind:

488nm  
& 638nm  
operating wavelengths

32 mm  
x 24 mm  
max. sample size

up to  
550x  
magnification

The core



## Scan times

8 x 8 mm 0:50 min

16 x 12 mm 2:10 min

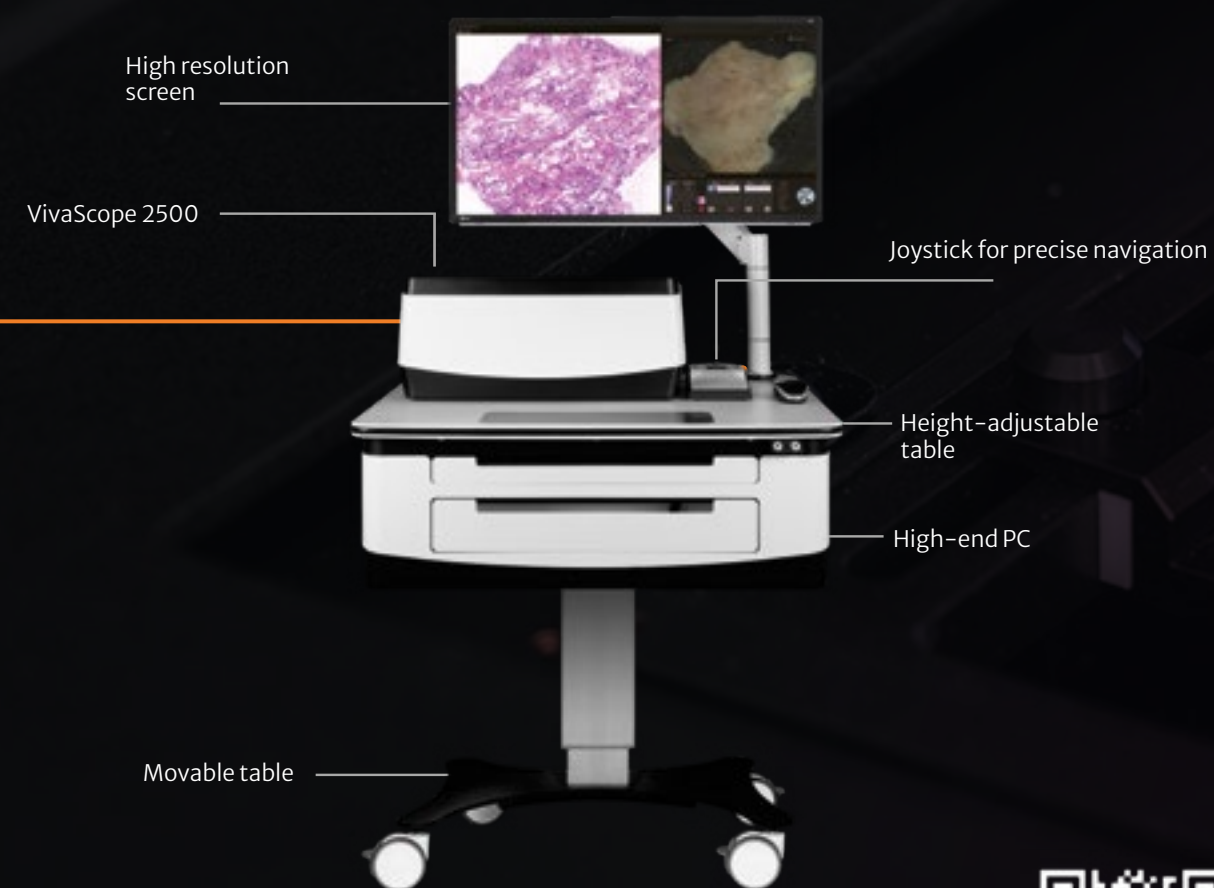
20 x 20 mm 4:25 min

## DICOM + HL7

The device is capable of working within a hospital's DICOM environment to enable storage, search, viewing, scheduling and backup of acquired images. It also provides an optional HL7 communication with HIS (hospital information system) allowing for an even smoother integration into the hospital's environment.

## The VivaScope 2500

Samples can be examined directly after excision, without time-consuming procedures. Preparation and staining of the tissue takes only a few minutes. For easy portability, the VivaScope 2500 can be installed on a movable table and thus be used in different locations.

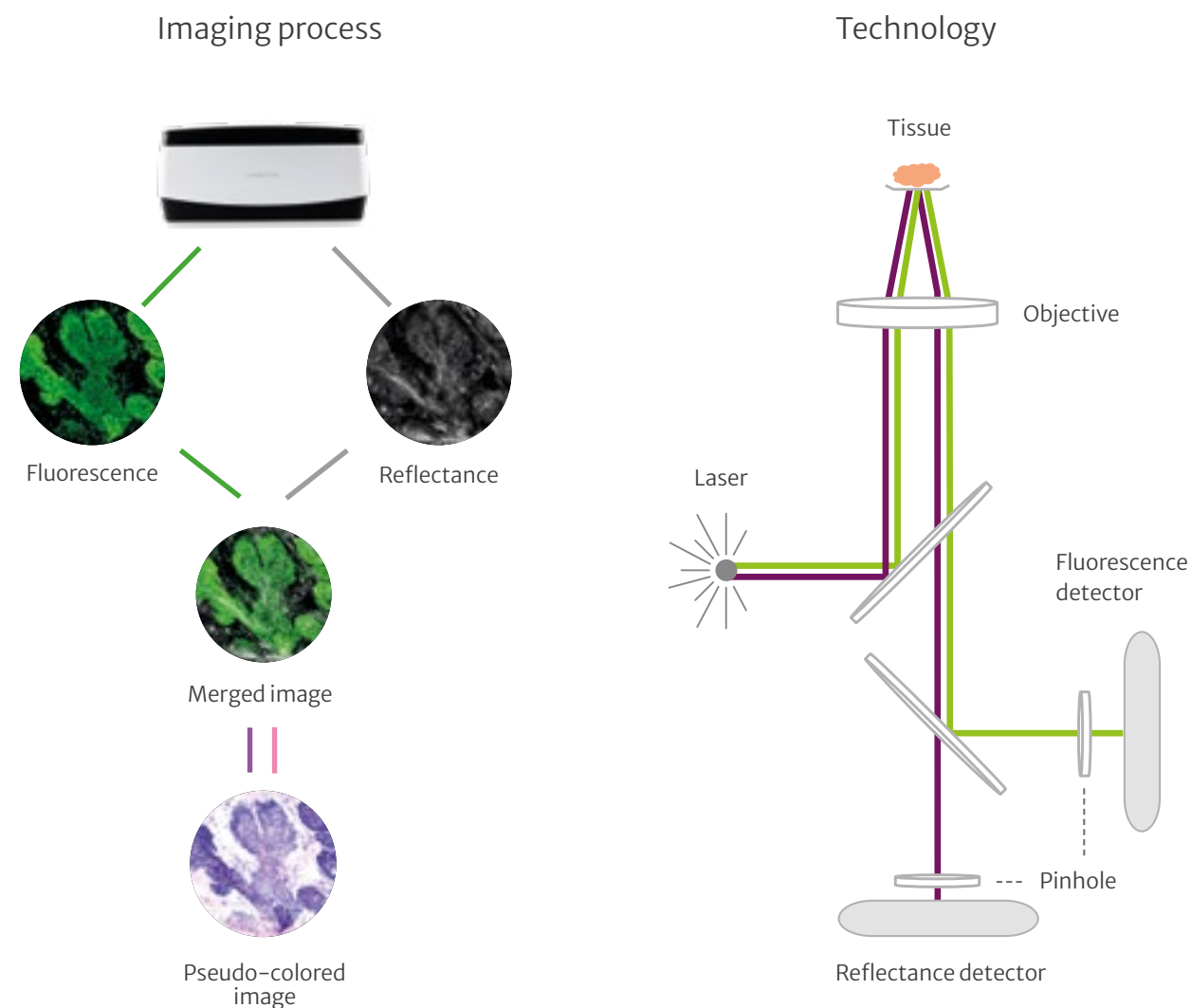


DATA SHEET



## The technology behind:

The technology of the VivaScope 2500 is based on confocal microscopy and acquires images with excellent optical resolution and high contrast. Images obtained with the VivaScope allow pathological examination to be made while surgery is still in progress.



## The **unique** VivaScope **advantages**:

1.

### Two lasers with different wavelengths

Like H&E staining, VivaScope images are generated from two components. A 488 nm laser (blue, fluorescence signal) and a 638 nm laser (red, reflection signal) are used in parallel. Both signals are detected simultaneously and combined in real-time.

2.

### Easy sample handling

A patented sample handling solution simplifies assessing excised tissue, regardless of its shape. Customized solutions depending on the application and specimen properties are provided.

3.

### Pseudo-colored images

A built-in algorithm translates the reflectance and fluorescence signals into H&E-like pseudo-colored images. The resulting images contain similar information to conventional histology.

5.

### Advantages over cryosections

Unlike cryosections, VivaScope technology enables a fast and easy handling and imaging of adipose tissue. Furthermore, freezing artifacts are no longer an issue. The excised tissue is not damaged by the imaging process and can be used for further analysis.

4.

### Macro images

The digital camera provides a color image of the specimen. This macro image correlates precisely with the confocal image and thus allows for easy tissue navigation, visualization of tissue marking dye and simplified selection of regions of interest.

6.

### FNA/FNB with CytoMatrix

In combination with the CytoMatrix, fragile cytological samples can be easily handled and their adequacy rapidly assessed. At the same time, the sample's integrity is fully preserved for subsequent histological, immunohistochemical and molecular analyses.



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