SamanTree
Medical SA

Histolog®
Scanner

Cancer cells
at your fingertips

The Clinical Need

When surgically excising a tumor, the challenge for the surgeon is to remove all the cancerous tissue while preserving as much healthy surrounding tissue as possible. Intraoperative margin assessment (IOMA) constitutes a crucial part in the decision-making process of surgeons.

In breast conserving surgery, there is no consensual IOMA technique. All current methods present particular benefits and disadvantages, mostly regarding accuracy and time required. Overall, approximately 20% of the patients need to undergo an additional surgery.

Unmet medical need :

- Quick & Accurate IOMA
- Minimal tissue removal
- Avoid re-operations

2022

Our mission

SamanTree Medical aims to be a game changer in the era of clinical workflow digitalization. We are committed to improving the journey of patients suffering from cancer by enabling fresh tissue analysis in real time to drastically reduce delays in establishing and executing the treatment plan.

	1	**2**	**3**
	REDUCE RE-OPERATION RATE	**SAVE PRECIOUS TIME AND RESOURCES**	**ENABLE CLINICAL WORKFLOW DIGITALIZATION**
	Current standard-of-care, such as specimen radiography or ultrasound, lack accuracy to detect microscopic lesions, resulting in a re-operation rate of 15-40%[1-2].	Intraoperative margin assessment often requires ressources from different departments, leading to a complex logistic and lengthy procedures.	Specimens are often sent to other departments for intraoperative assessment, or specialists have to come to the operating room. The need for collaboration with specialists from faraway health centers is quite common.
PROBLEM	Absence of relevant tools providing high resolution information in the OR to detect remaining cancer cells.	Current tools not adapted to OR pace and requiring multiple resources	Specimens or specialists required to travel between departments/ hospitals
SOLUTION	The gold standard information: tissue morphology. With the Histolog Scanner, the clinician sees the tissue cellular achitecture and can immediately visualize cancer lesions (DCIS, IDC, ILC).	Whole specimen imaging in minutes. The Histolog Scanner enables fresh tissue assessment, with minimal preparation and 50s imaging time.	An easy-to-use approach providing digital information. With the Histolog Scanner, images travel, not specimens or specialists.

[1]Baliski C. et al., 2021
[2]Sandor. F et al., 2022

**Our solution
The Histolog® Scanner**

Global mapping of the breast immediately during surgery

The Histolog® Scanner is a breakthrough medical imaging modality based on a novel ultra-fast confocal microscopy technology invented in 2010.

Its innovative design makes it highly practical for quick assessment during surgery, bringing the clinician one touch-on-the-screen away from visualizing cancerous cells immediately on a surgical specimen.

In BCS, a recent prospective study revealed the potential of the Histolog Scanner, with up to 75% re-operation rate reduction. The device was easily inserted in the clinical workflow and surgeons with no prior experience on morphology information could detect Ductal Carcinoma in situ (DCIS) lesions. More experienced users detected also invasive lobular carcinoma (ILC) and had extrapolated sensitivity up to 70%, while keeping specificity above 80%.

A cost-efficient technique that provides real time mor-phology information

Easy-to-use platform: Plug and play device with quick learning, usable by clinicians or OR staff

Digital images enabling remote workflows

Result in minutes : 15s for speci-men preparation (10s fluorescent dye + 2s rinsing in saline solution) and ~50s for full-resolution image (large field of view 4.8cm x 3.6cm)

A dedicated team and network to support you in the implementation

Intuitive and user-friendly touch screen

Open top architecture

Easy to handle

Histolog
Scanner

CE

QUICK & CLEAN

4-steps procedure for accurate margin assessment immediately in the OR

1 Excision

Excise the tumor from the patient.

2 Preparation

Immerse the excision in Histolog Dip and rinse it.
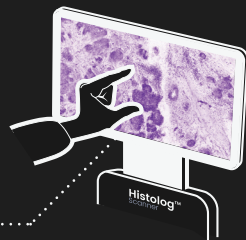
10 sec

Histolog Dip
Histological stain
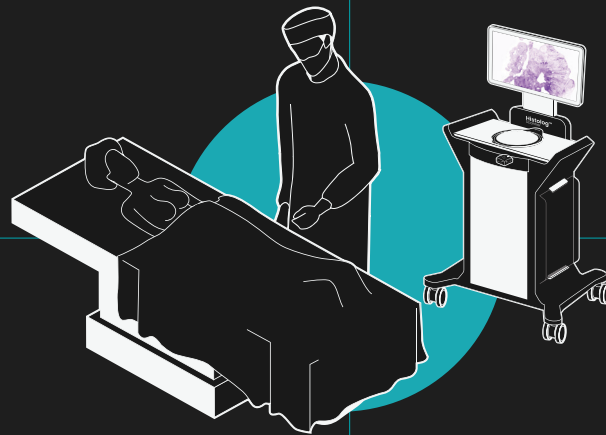
4 Evaluation

With this additional information, return to patient in confidence.

Excision is sent for standard post-surgical pathology assessment.

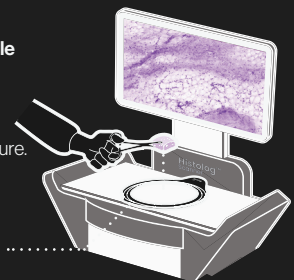**Touchscreen interface**
Instant access to special features such as reporting & annoting tools

3 Imaging

Map in minutes the whole excision surface.

Excision remains visible and accessible during the entire imaging procedure.

Histolog Dish
Single use receptacle

Our partners

Clinical partners

In 2019, SamanTree Medical launched an ambitious study with Gustave Roussy Institute and including >180 patients to build a comprehensive atlas of image and evaluate the learning curve of clinicians (surgeons and pathologists) on Histolog® images. The study unraveled the potential of the Histolog Scanner for intraoperative assessment of lumpectomies and showed the universality of the approach with surgeons and pathologists reaching high detection performance .

Built on these promising results, multiple studies were launched to evaluate the performances of the Histolog Scanner for its intraoperative usage. The studies showed a seamless integration in multiple clinical workflows with potential reduction of re-operation rate up to 75%.

The Histolog® digital solution is now used in multiple centers throughout Europe.

Reference centers

University Hospital rechts der Isar, Germany
Dr. Stefan Paepke

Hopital Cantonal du Valais, Switzerland
Dr. Colin Simonson

Leeds Teaching Hospitals

King's College Hospital

Imperial College
Hospital

University College
London Hospital

Erasmus Hospital

Canisius Wilhelmina Hospital

St. Vincenz Hospital

Heidelberg University Hospital

University Hospital rechts der Isar

Gustave Roussy Institute

Institut Cancer de Lorraine

Valais Hospital

Brust Centrum Zürich

Institut Bergonié

Reggio Emilia Hospital

Clinical evidences

St. Vincenz
Krankenhaus
Paderborn

BREAST CONSERVING SURGERY

Imaging of lumpectomy surface with large field-of-view confocal laser microscope for intraoperative margin assessment - POLARHIS study

M.-F. Sandor, B. Schwalbach, V. Hofmann, S.-E. Istrate, Z. Schuller, E. Ionescu, S. Heimann, M. Ragazzi, M. P. Lux

Evaluation of the Histolog Scanner for the margin assessment of 40 lumpectomy specimens

- Potential re-operation reduction of 75%
- Detection of invasive cancer & DCIS in lumpectomy margins
- Histolog Scanner easily inserted into surgical workflow

Learn to use Histolog images in no-time

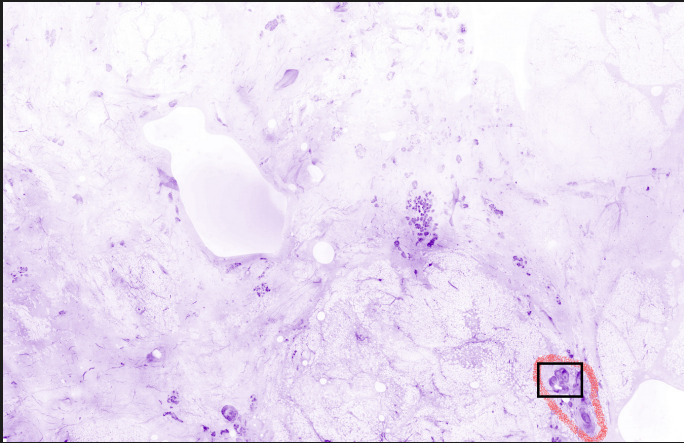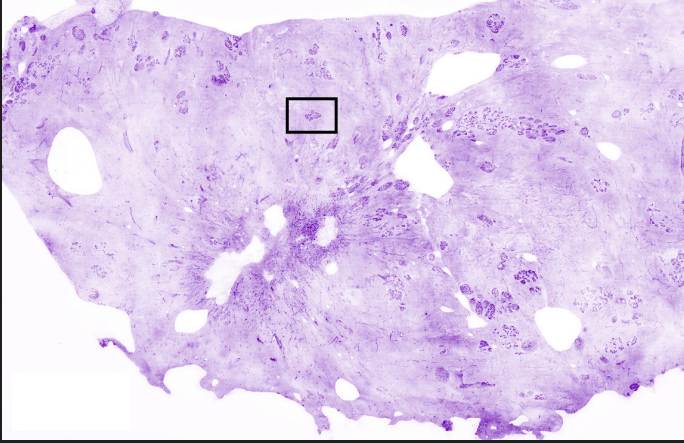# Histolog Image Training program (HIT)

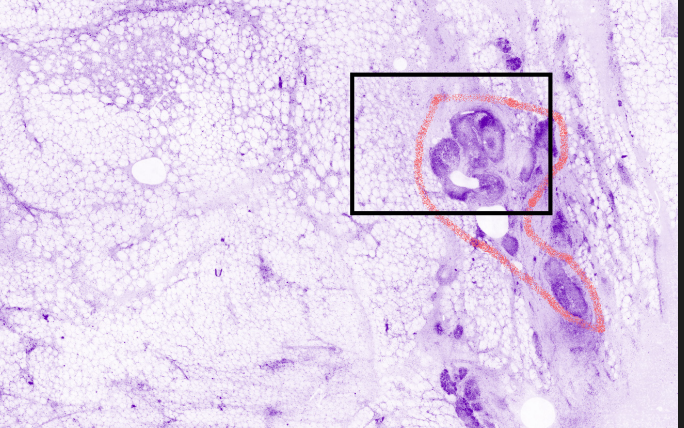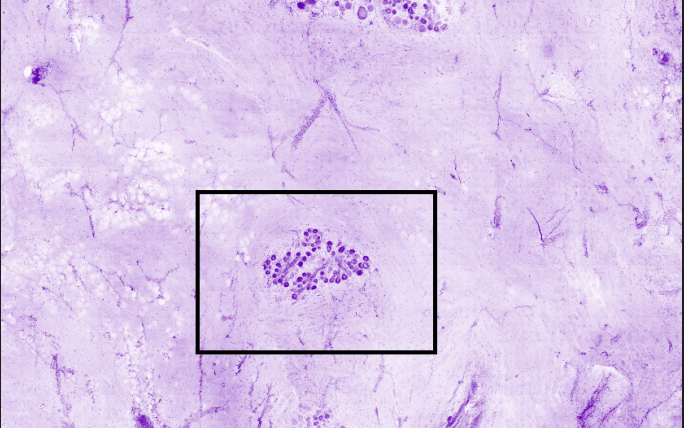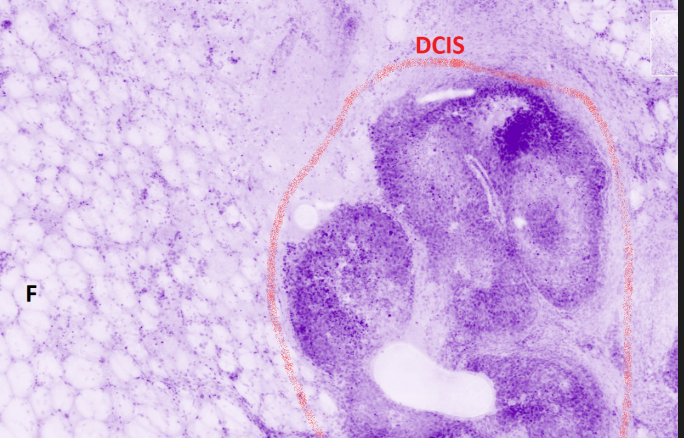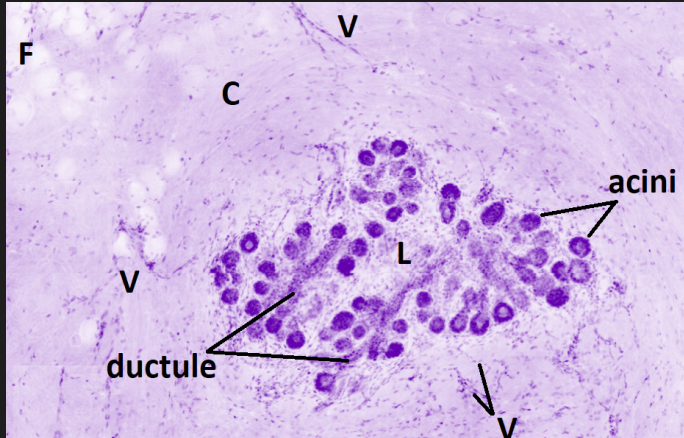**Short. Flexible. Simple.**
A learning program designed for clinicians.

The Histolog Image Training (HIT) was developed with our community of pathologists and experts to provide a simple and efficient way of getting familiar with Histolog image. Designed for both beginners and experienced morphology content readers, the HIT is accessible to all and allows for flexible learning. In and out of the operating theatre, you set the pace and we keep it.
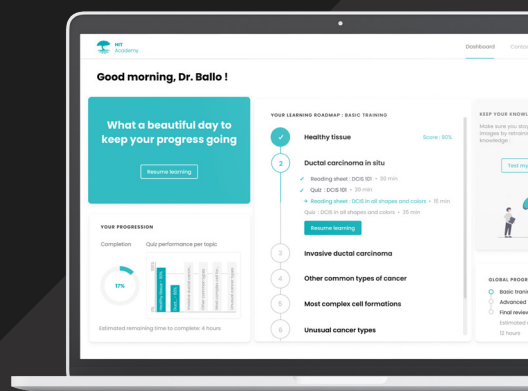
The gold standard in the OR

Once resected, the full excision is simply dipped in a contrast agent and placed on a disposable dish over the imaging window. Within 1 minute, the specimen is ready for imaging. There is no need for fixing, nor embedding, nor glass mounting of the excision. Then, within a few seconds, a digital image of the excision surface is displayed on a touch screen which allows to zoom and move around in the image. Surgeon can visualize suspicious lesion at a glance. Importantly, the excision remains intact for later final assessment.

A lumpectomy section with a suspicious area at the bottom right is seen. The present lumpectomy is mainly composed of lobules, fatty and connective tissue.

The present tissue is notably composed of a large part of connective tissue and normal lobules. Lobules are usually presenting a strong purple coloration. A typical normal lobules is seen inside the selected black frame.

Within the black frame is seen a roundish pattern that is typical of DCIS. At this magnification, sections of these ducts invaded by DCIS are seen as circular patterns presenting a well-defined border and containing high density of cells strongly colored.

Normal lobules can be recognized with their shape recalling a bunch of grapes. This structures are usually more colored than connective tissue or fatty tissue. In the black frame, a normal lobule can be seen in the center surrounded by normal connective tissue.

One large DCIS lesion is seen. It presents a roundish pattern with a well-defined border and a content composed of cancer cells. Here the invaded duct can be figured out as a convoluted duct filled with cancer cells. Some inflammatory cells can also be seen in the DCIS as tiny dots strongly colored. This DCIS is surrounded by fatty tissue (F) that also contains few inflammatory cells.

Lobules are composed of circular structures that may appear empty with purple circular wall. They are the Acini from which the milk is secreted. These beads are organized like a bunch of grapes. All the beads of a lobule are connected together with a branching structure of small pipes called ductules (smaller ducts). Acini (lobules) and ducts are composed of epithelial cells that have generally a strong purple color. The present lobule is surrounded by normal connective tissue (C) with few fatty cells (F). Lobule is closely surrounded with thin linear structures, tiny vessels (V).

Distributed by:

Axlab

www.axlab.dk
axlab@axlab.dk
+45 35 43 00 73

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