

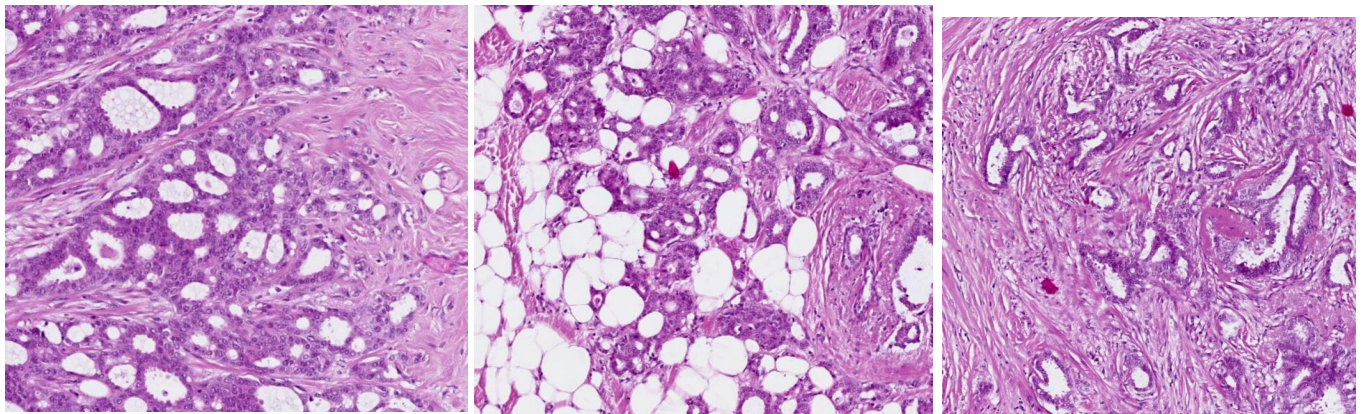
Second opinion pathology report for breast tumor resection

| | |
|---|-----------------------------------|
| Patient first name, last name: [REDACTED] | Date of birth: [REDACTED], female |
| Patient identifiers: [REDACTED] | |
| Laboratory number: [REDACTED] | Date of request: [REDACTED] |

DISCLAIMER: This second opinion report is intended to support clinical decisions concerning patient management and should be considered as a part of diagnostic workup prior to treatment. If the second opinion is discordant in some aspects with primary histopathology report, as it may happen concerning subjective nature of many histopathological assessments, discordances should ideally be discussed with pathologists issuing primary report to provide clear information for treating physician before any treatment decisions are made. This second opinion is not intended for legal purposes and must not be used after the introduction of treatment at a given stage.

Summary diagnosis

Invasive cribriform carcinoma G1



Intratumor histological heterogeneity: Tumor is fairly homogenous both in terms of histological pattern and nuclear grade, infiltrating mainly with relatively large cribriform islands and nests. Focally single-tubule pattern is observed.

Maximum tumor diameter: invasive **6.6 mm**, invasive + DCIS **13 mm**

Margin status: Invasive – distance to closest margin: **10.4 mm**, DCIS - distance to closest margin: **11.2 mm**

| | |
|--|--|
| Ductal Carcinoma in Situ (DCIS) | DCIS present, positive for Extensive Intraductal Component (EIC) NG 2 (intermediate), cribriform (70%), clinging (20%), micropapillary (10%) |
|--|--|

| | |
|--------------------------------|----------------|
| Lymphovascular invasion | Not identified |
|--------------------------------|----------------|

| | |
|----------------------------|---------------------------|
| Microcalcifications | Present in benign changes |
|----------------------------|---------------------------|

| | |
|---------------------------------------|---|
| Tumor infiltrating lymphocytes | Average percentage of TILs in tumor stroma: 5% |
|---------------------------------------|---|

| | |
|-------------------------------|----------------------------------|
| Estrogen Receptor (ER) | assessed in core biopsy material |
|-------------------------------|----------------------------------|

| | |
|----------------------------------|----------------------------------|
| Progesteron Receptor (PR) | assessed in core biopsy material |
|----------------------------------|----------------------------------|

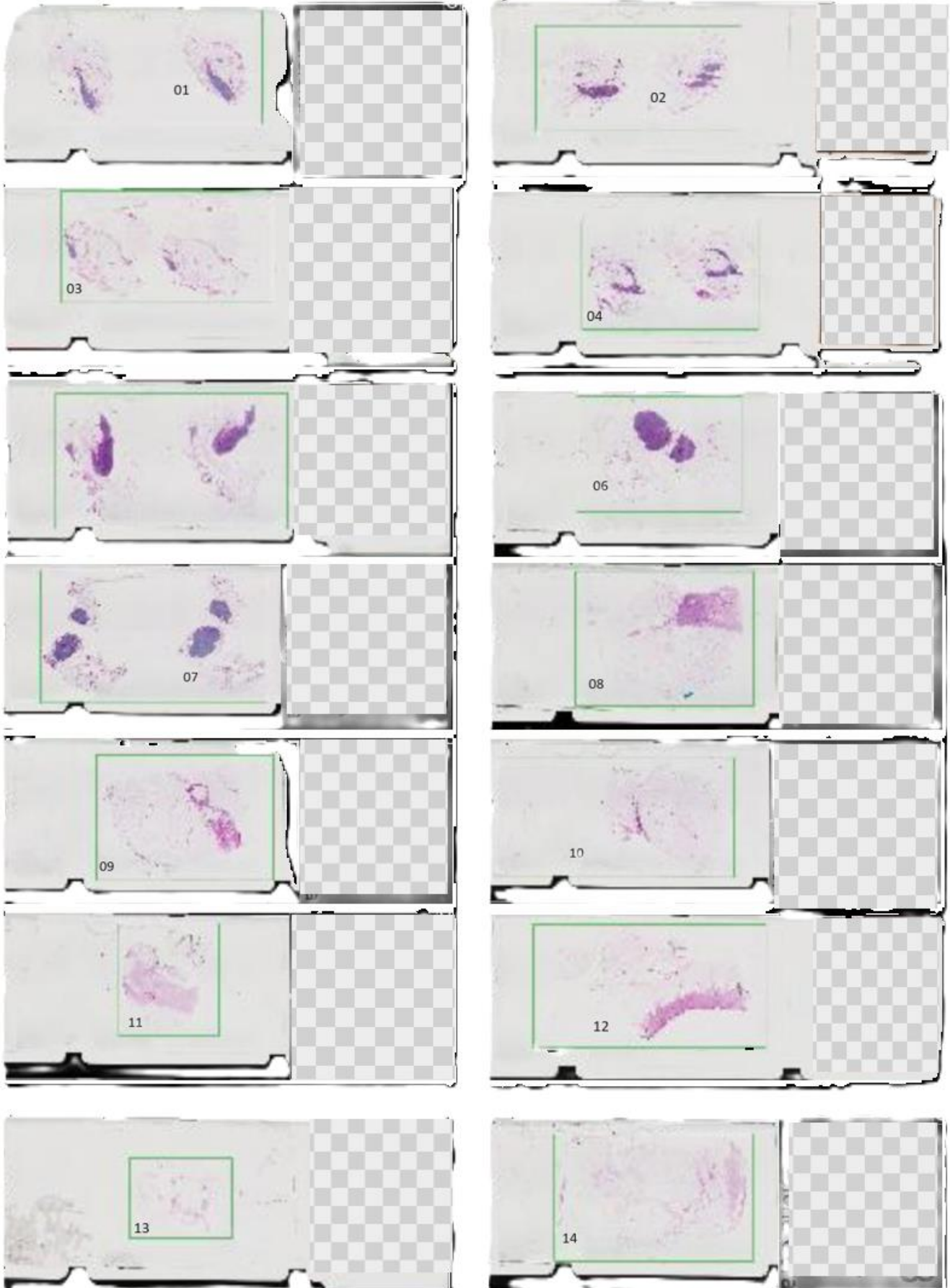
| | |
|-------------|-------------------------|
| HER2 | 2+ (unequivocal) |
|-------------|-------------------------|

| | |
|--------------|---|
| Ki-67 | 1. Weighted score – 13.2% , 2. Hotspot score – 27% , 3. Global score – 15% |
|--------------|---|

| | |
|--------------------------|---|
| Lymph node status | No metastases identified in 2 sentinel lymph nodes (0/2). |
|--------------------------|---|

Detailed diagnosis

Slides submitted for second opinion assessment



Information for surgically removed lymph nodes

(slides 01-07)

OPERATIVE PROCEDURE: Sentinel lymph node biopsy

SPECIMEN LATERALITY: Right

| Type of lymph nodes | Number of lymph nodes | Status post-neoadjuvant treatment | Total lymph nodes with metastatic carcinoma (size >0.2 mm) | Size of largest metastasis (mm) | Only ITCs present (Yes/No) | Total lymph nodes with ITCs when ONLY ITC involvement is present | pN status (UICC TNM8) | Extranodal extension (ENE) |
|----------------------|-----------------------|-----------------------------------|--|---------------------------------|----------------------------|--|-----------------------|----------------------------|
| Sentinel lymph nodes | 2 | Not specified | 0 | Not applicable | No | Not applicable | NO | Not applicable |

Table reproduced from ICCR Surgically Removed Lymph Nodes for Breast Tumours Histopathology Reporting Guide Version 1.2 Published May 2021

ANCILLARY STUDIES: CK(AE1/AE3) – negative

Information for Invasive Carcinoma of the Breast

(slides 08-14)

CLINICAL INFORMATION

Diagnosis of breast carcinoma based on breast needle core biopsy report issued on 05 January 2023

Presentation mode: information not provided

Current clinical findings for which this surgery is performed: information not provided

Prior presurgical therapy for this diagnosis of invasive breast carcinoma: information not provided

Prior history of breast cancer: information not provided

Imaging modality: information not provided

Radiological findings: information not provided

Known genetic predispositions: information not provided

OPERATIVE PROCEDURE: Excision (Therapeutic wide local excision)

SPECIMEN LATERALITY: Right

TUMOR SITE: Not specified

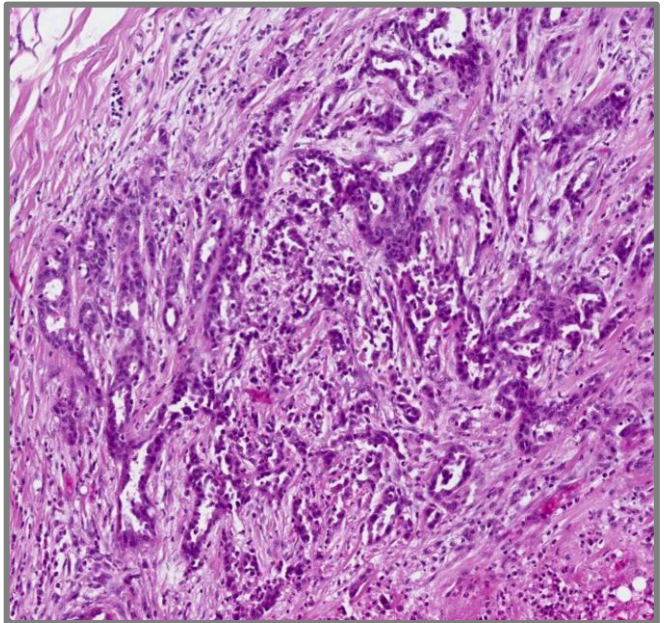
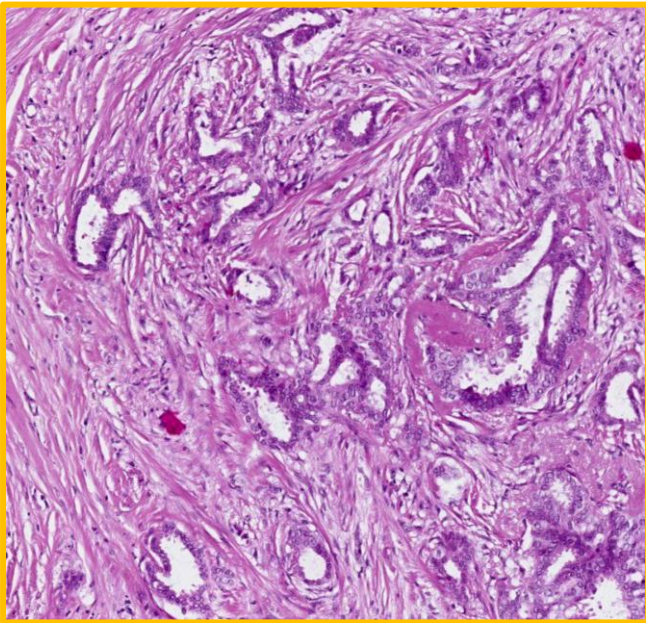
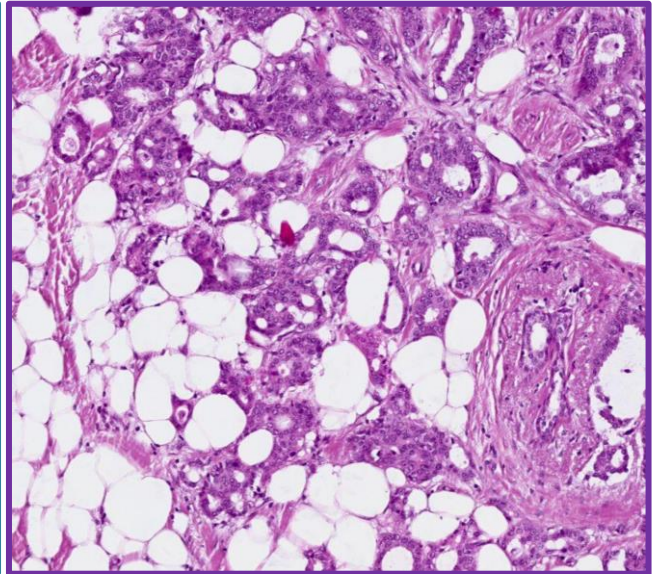
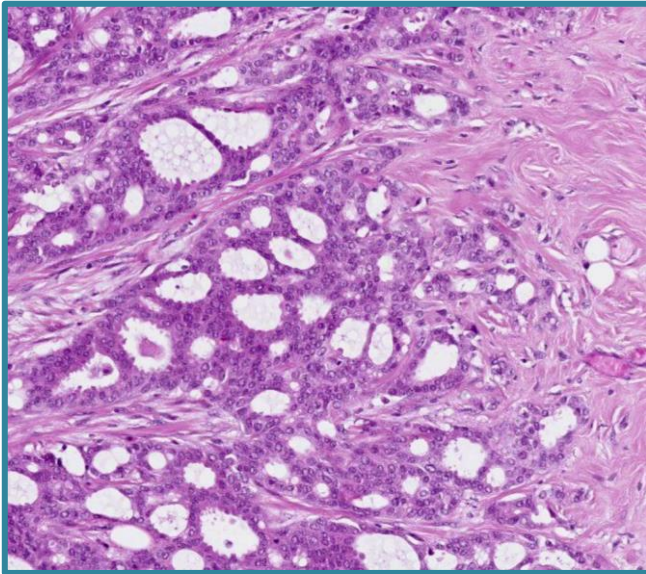
TUMOR FOCALITY: Single focus of invasive carcinoma

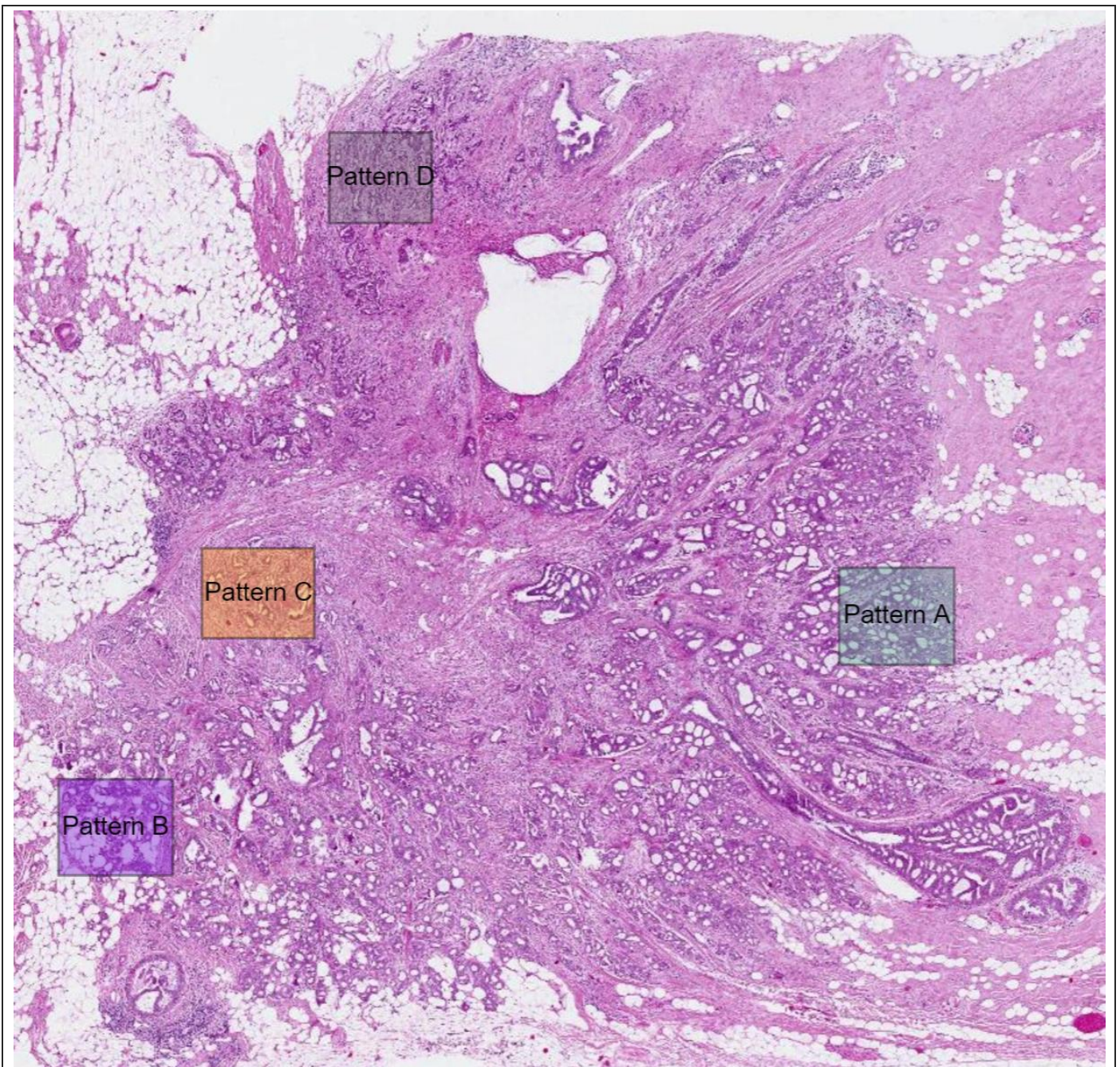
TUMOR DIMENSIONS: Not specified

Histologic type

(WHO Classification of Invasive Carcinoma of the Breast 2019)

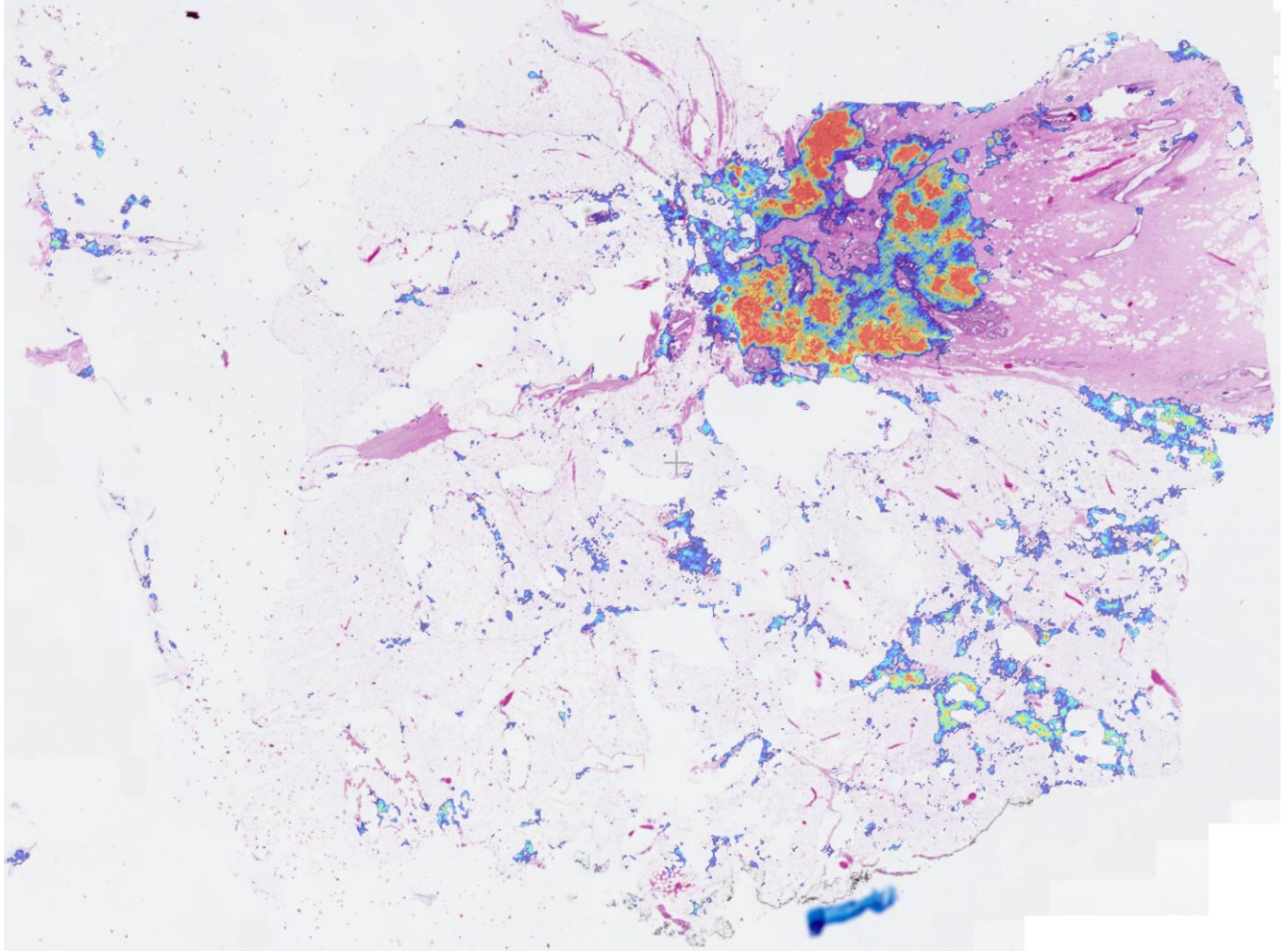
Invasive cribriform carcinoma





Intratumor histological heterogeneity: Tumor is fairly homogenous both in terms of histological pattern and nuclear grade, infiltrating mainly with relatively large cribriform islands and nests. Focally single-tubule pattern is observed.

AI-supported invasive cancer detection heatmap



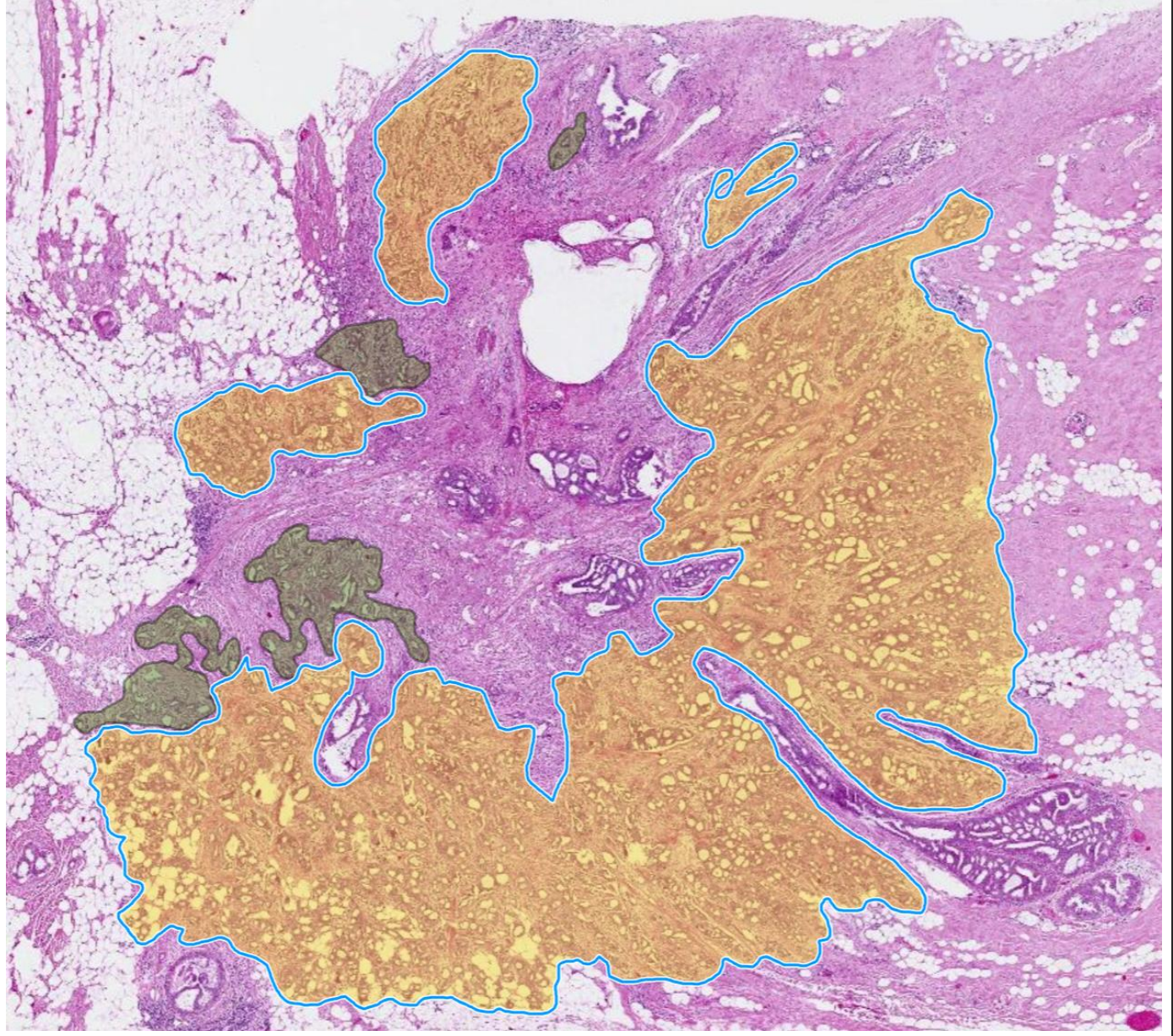
Active Heatmap: **Invasive Cancer** Low Probability  High Probability 

NGS histologic grade - G1 (1+2+2)

(according to Elston–Ellis modification of the Bloom and Richardson grading classification - Nottingham Grading System - NGS)

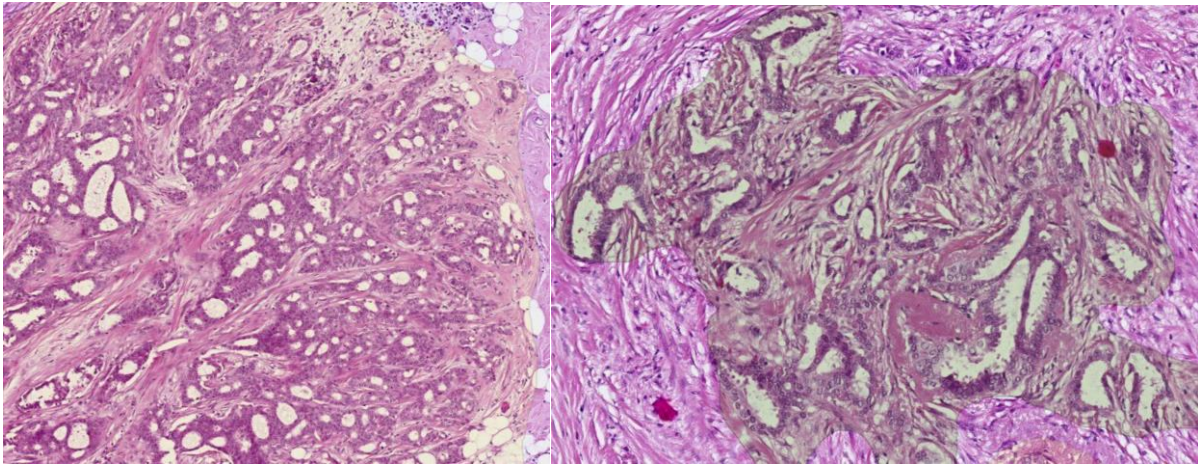
Glandular (Acinar)/Tubular Differentiation Score - 1

Weighted score for tubular/glandular (acinar) structures percentage: **81%**



| | Area (microns ²) | Area (mm ²) | Share % | Tubular/glandular % |
|----------------------------------|------------------------------|-------------------------|---------------|---------------------|
| Tubular differentiation region 1 | 13482614 | 13.48 | 93.5% | 80% |
| Tubular differentiation region 2 | 940460 | 0.94 | 6.5% | 95% |
| Tumor area | 14 423 074.00 | 14.42 | 100.0% | 81% |

Estimated percentages of glandular/tubular structures in a given area



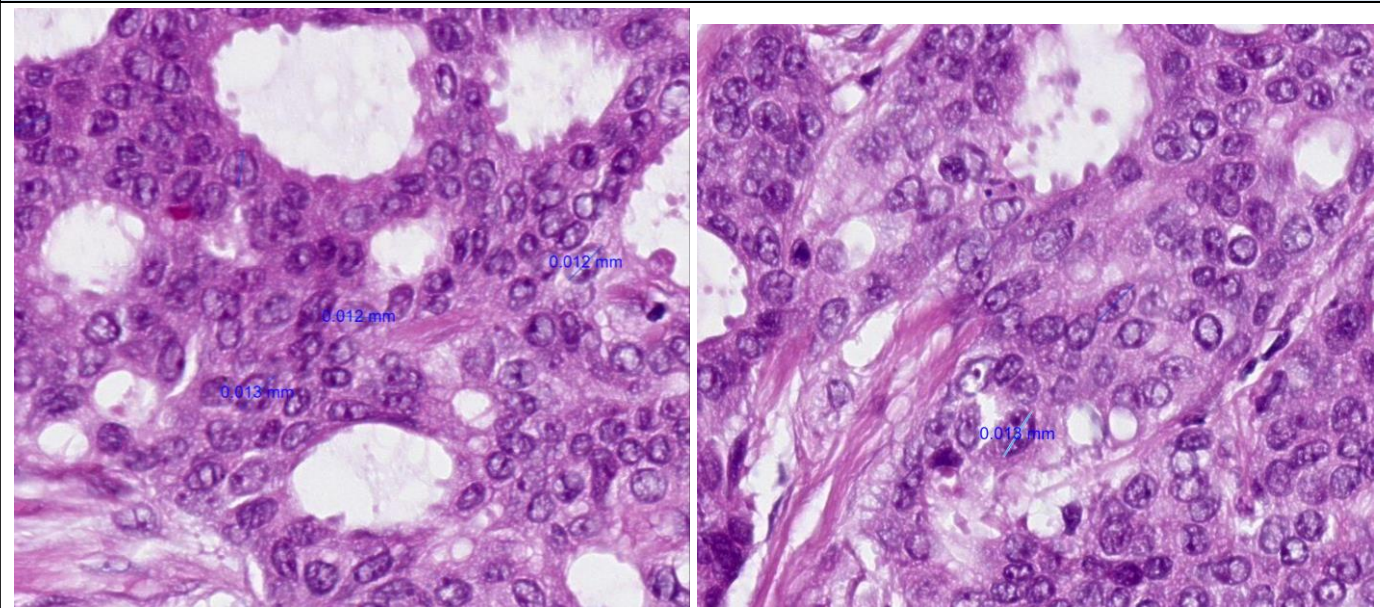
80%

95%

Nuclear pleomorphism

Score – 2

Nuclear pleomorphism scored in the least differentiated area of the tumor. Tumor cells with nuclei that are 1.5–2 × larger than epithelial cells and with moderate pleomorphism and still inconspicuous nucleoli.

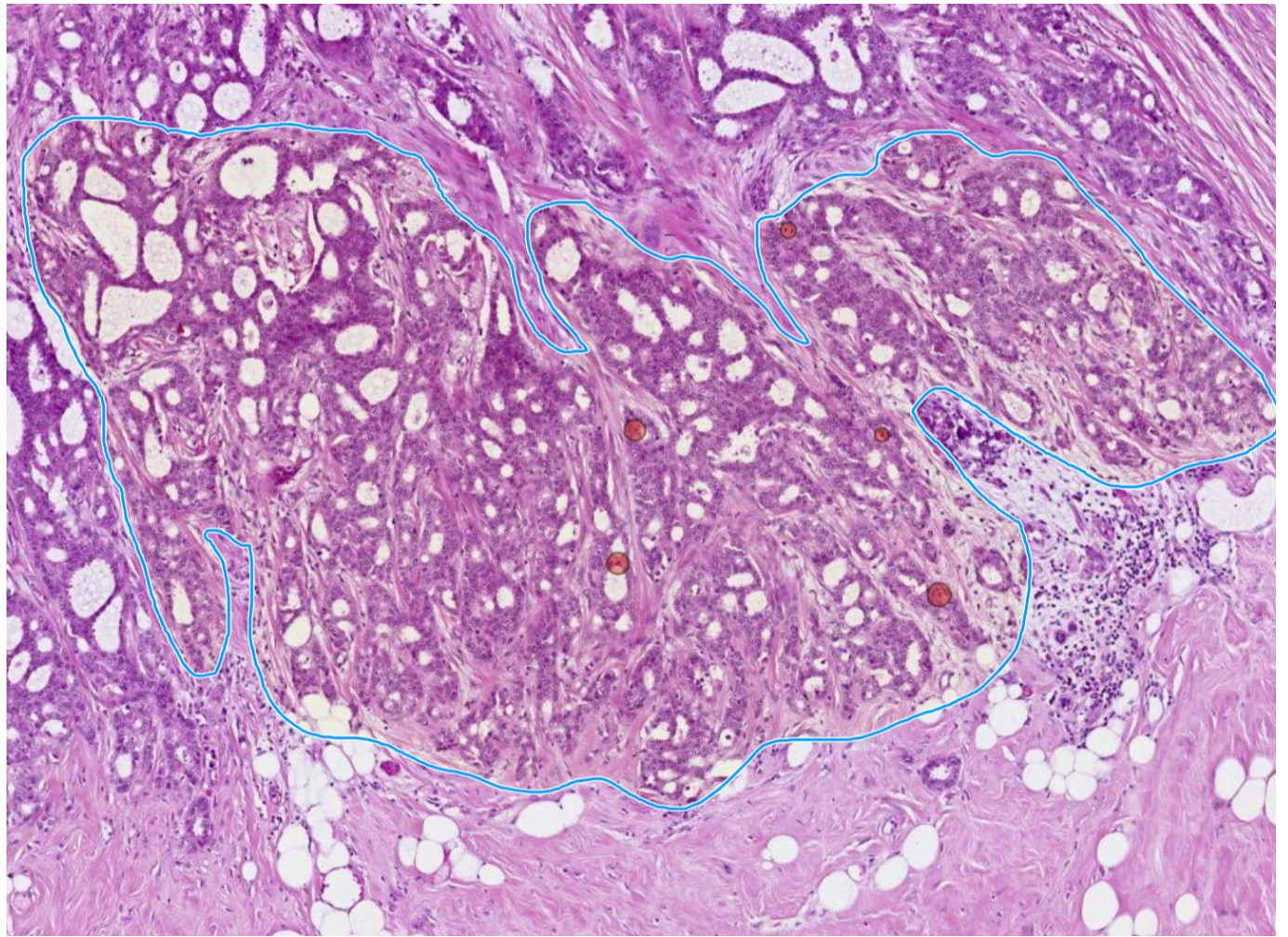


Mitotic rate

Score - 2

The mitotic score is determined by the number of mitotic figures found in a predefined area of **1.25-1.32 mm²**, which corresponds to 10 consecutive high-power fields (measuring 0.125-0.132 mm²) in the most mitotically active part of the tumor.

| Area (mm ²) | Number of mitoses per 10 fields corresponding to: | | |
|-------------------------|---|---------|---------|
| | Score 1 | Score 2 | Score 3 |
| 0.125-0.132 | ≤ 4 | 5-9 | ≥10 |

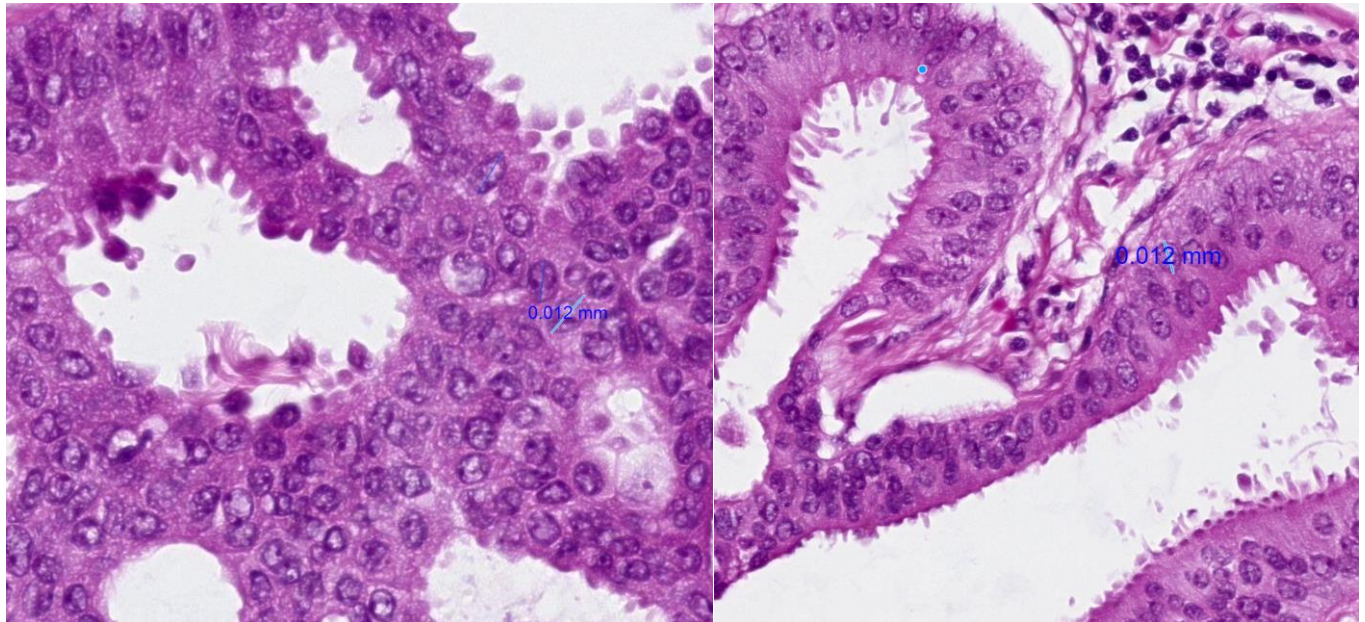


5 mitoses found in an area of 1.27 mm²

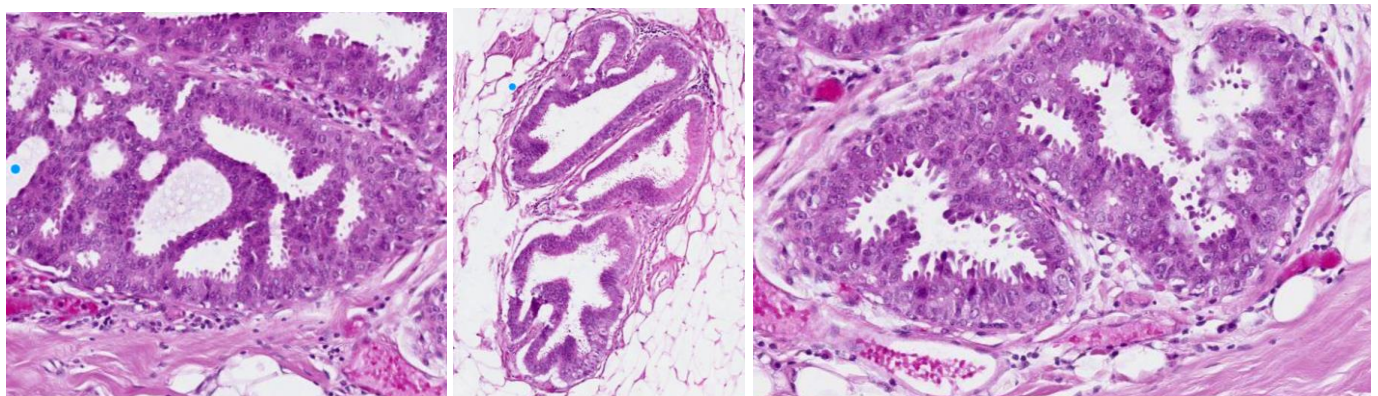
Carcinoma in Situ

Ductal carcinoma in situ (DCIS), positive for Extensive Intraductal Component (EIC)

Nuclear grade: 2 (intermediate)

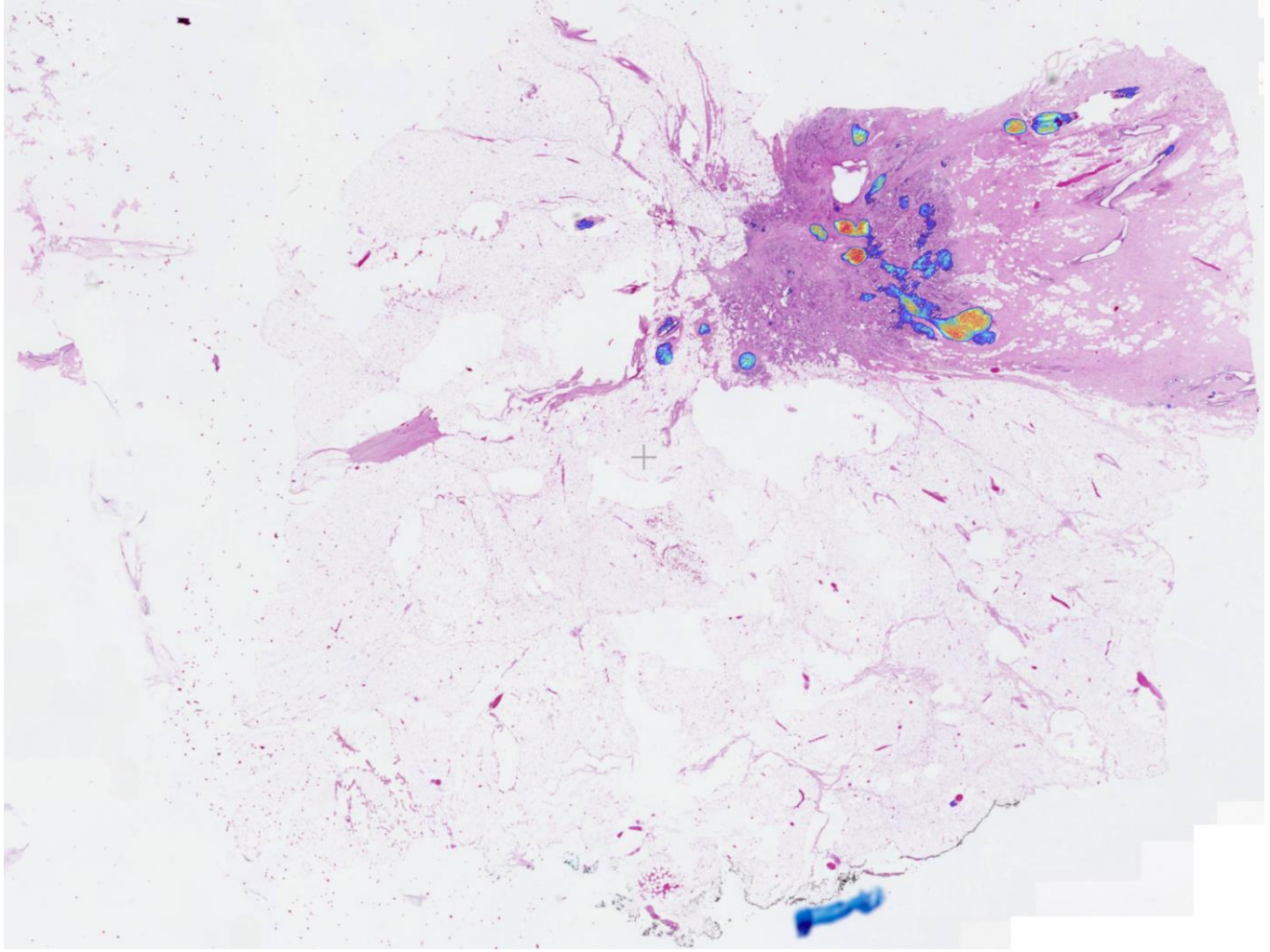


Histological architectural pattern: cribriform (70%), clinging (20%), micropapillary (10%)



Necrosis: Not identified

AI-supported ADH/DCIS detection heatmap



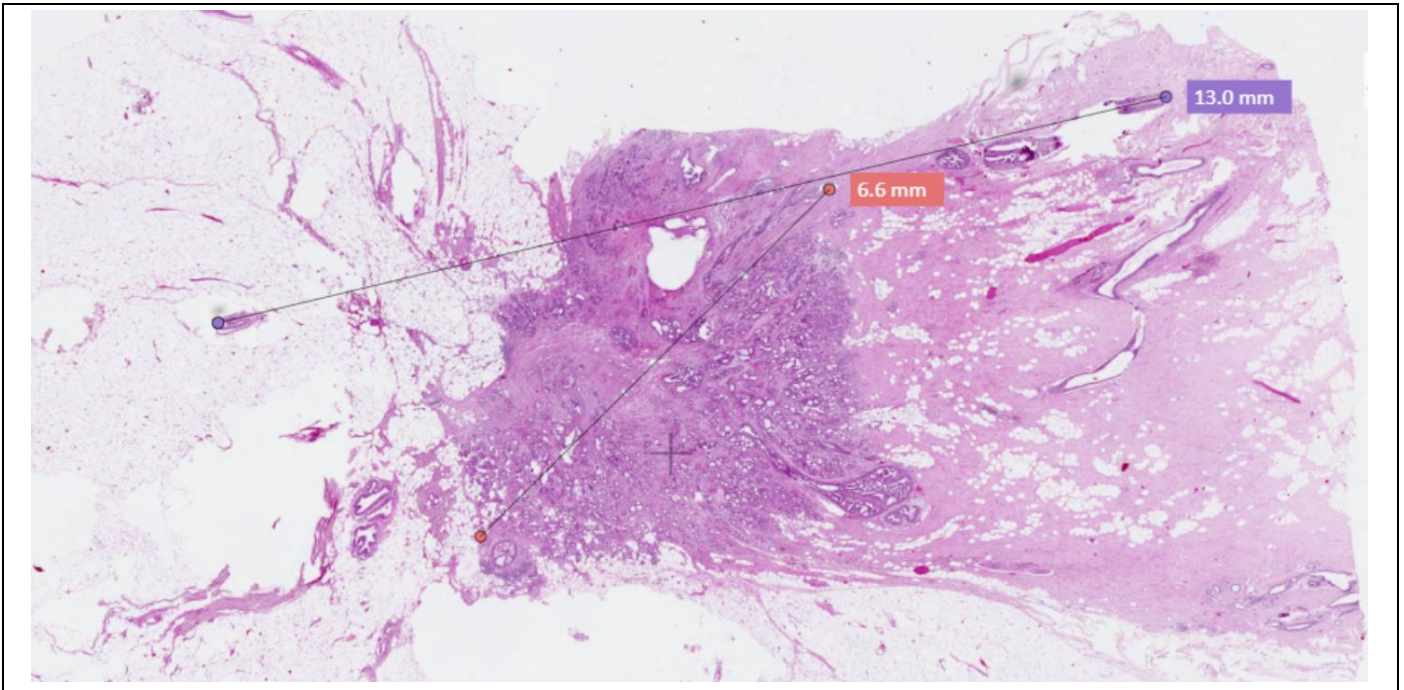
Active Heatmap: **ADH/DCIS** Low Probability High Probability 

Tumor focality

Single focus of invasive carcinoma.

Tumor size

Maximum dimension of largest invasive focus: 6.6 mm
 Maximum dimension of whole tumor field (invasive +DCIS): 13 mm

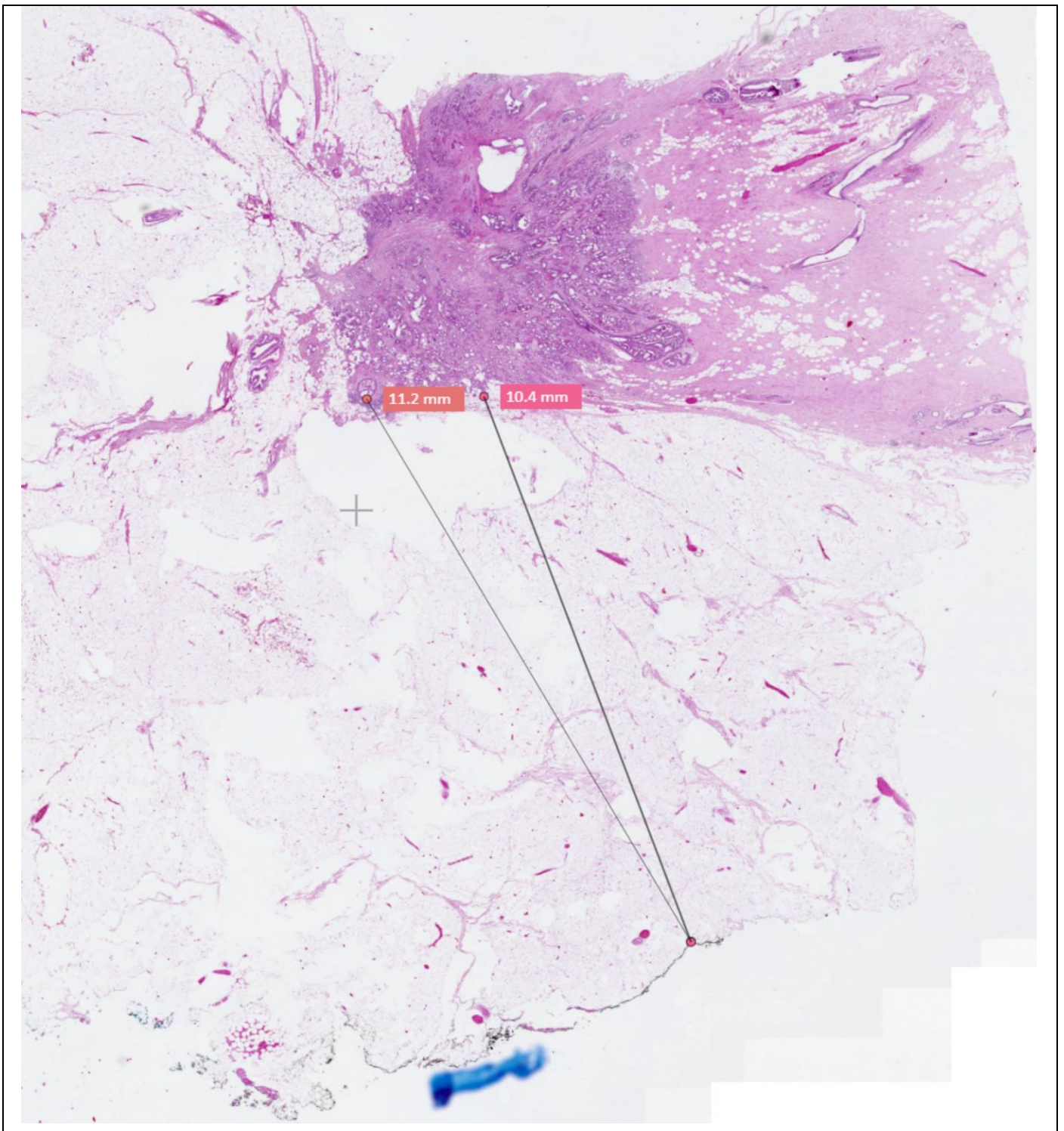


Tumor extension

Skin is present and not involved
Nipple tissue is not present
Skeletal muscle is not present

Margin status

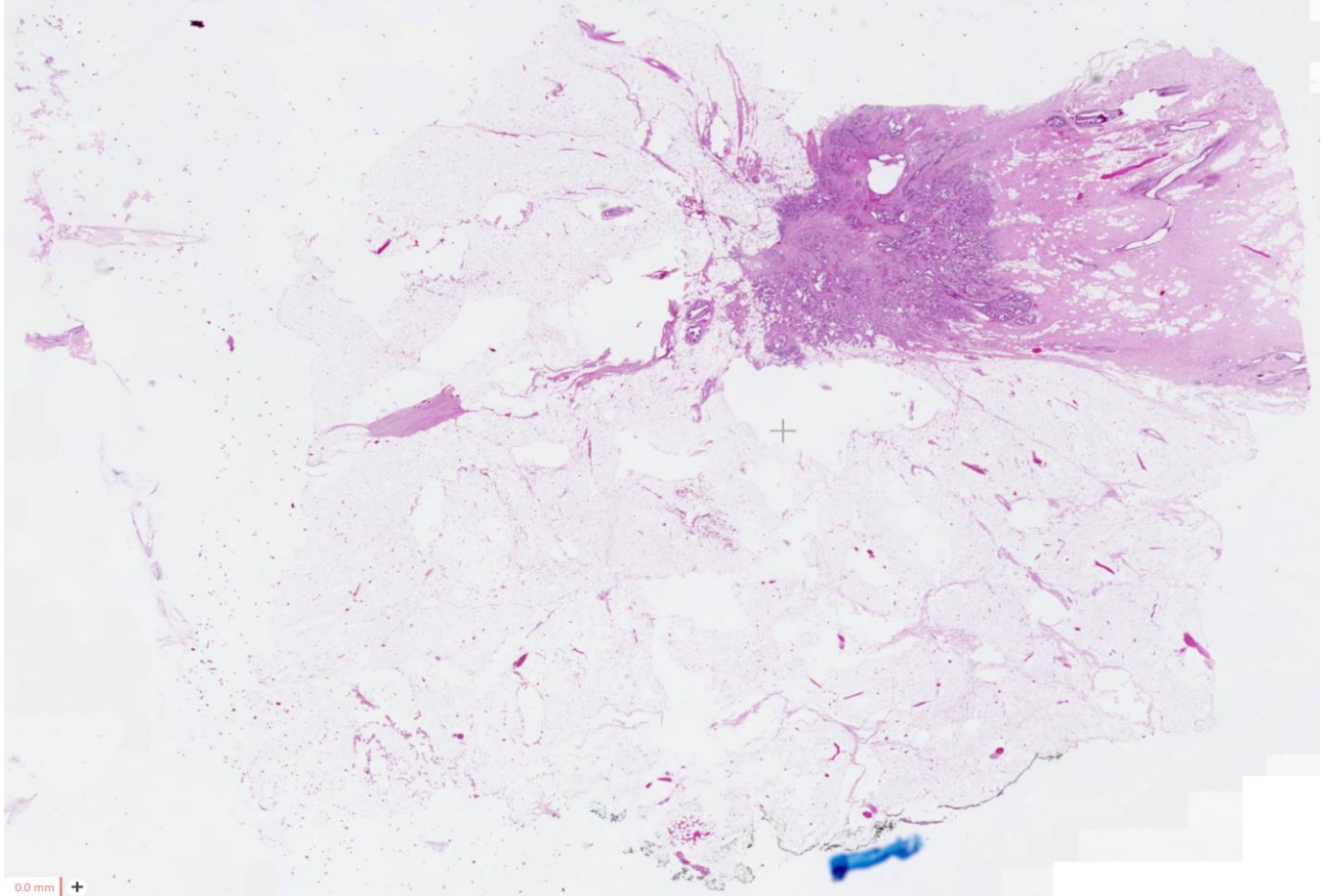
Invasive carcinoma: Distance to closest margin: 10.4 mm
DCIS: Distance to closest margin: 11.2 mm



Lymphovascular invasion

Not identified

AI-supported lymphovascular invasion detection heatmap

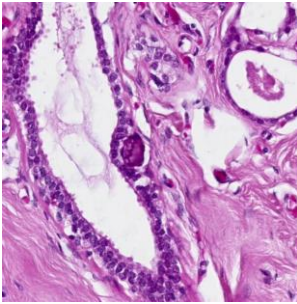


Active Heatmap: **ALI/LVI** Low Probability High Probability

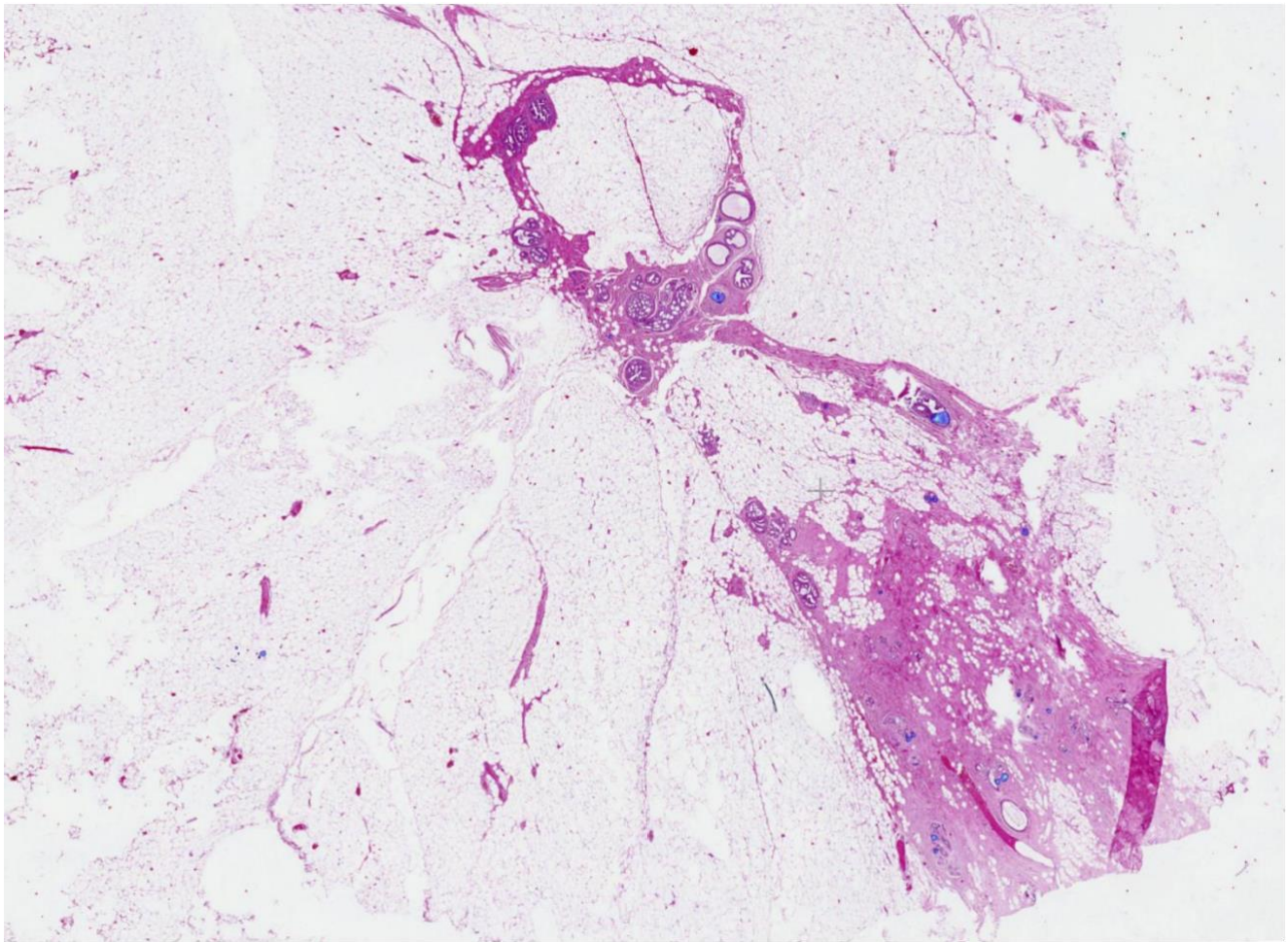


Microcalcifications

Present in non-neoplastic tissue



AI-supported microcalcifications detection heatmap

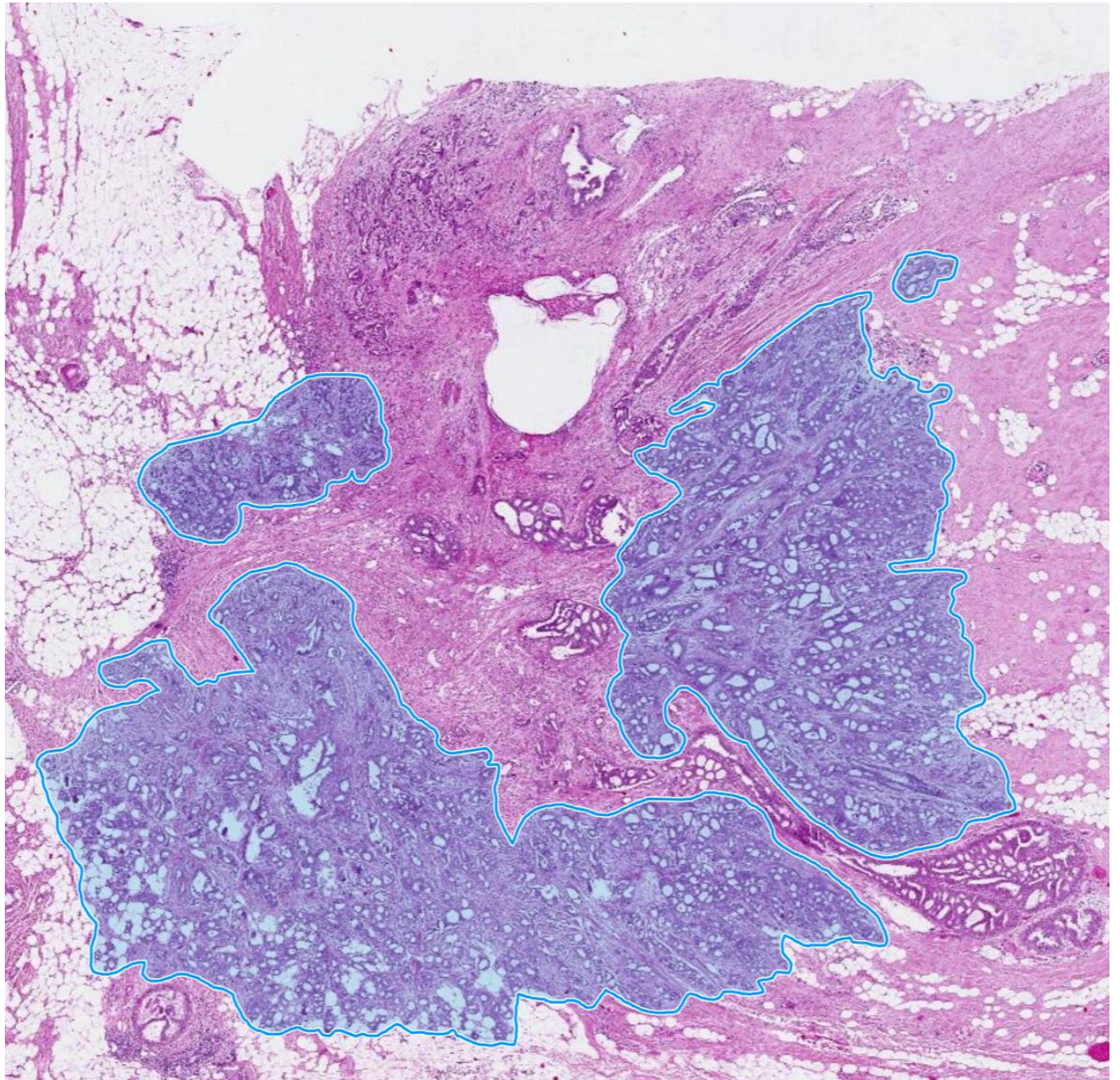


Active Heatmap: **Microcalcifications** Low Probability  High Probability 

Tumor infiltrating lymphocytes

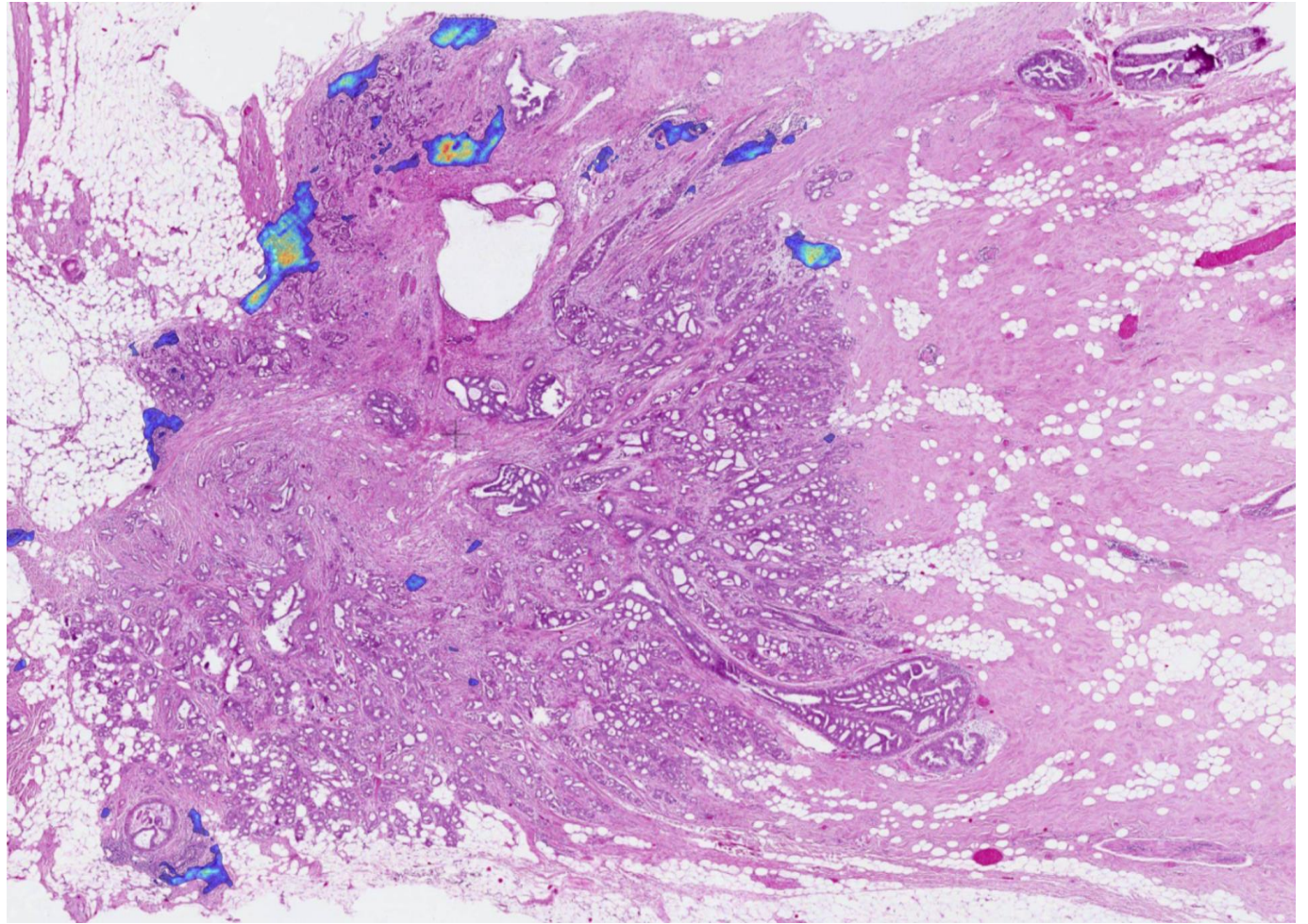
Average percentage of TILs in tumor stroma: 5%

(Assessment according to guidelines from International TILs Working Group 2014)



TILs assessment area. Areas of core biopsy site as well as around DCIS were excluded from assessment area.

AI-supported tumor infiltrating lymphocytes (TILs) cancer detection heatmap



Active Heatmap: TILs Low Probability High Probability




Estrogen Receptor (ER) Status

Assessed in previous examination.

Progesteron Receptor (PR) Status

Assessed in previous examination.

HER2



Staining: **Breast HER2 (WSI)**

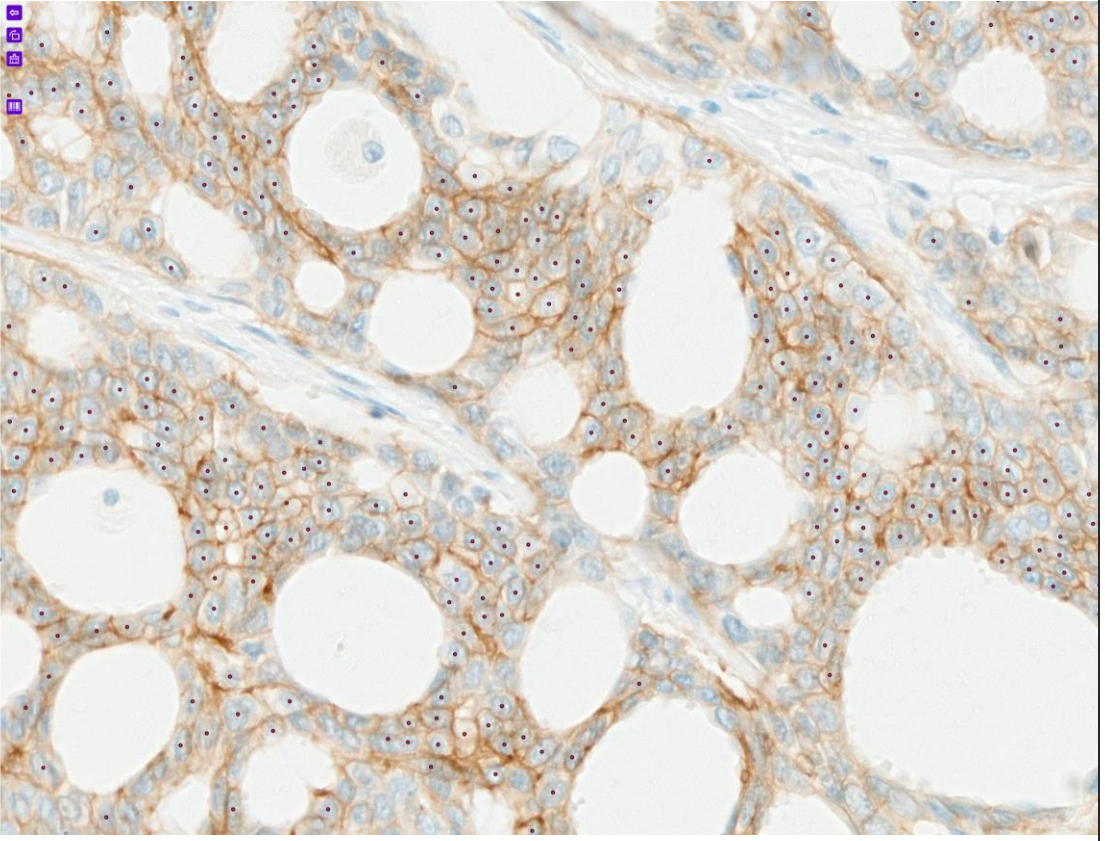
2+
HER2 Score

- Negative tumor: 9648
- Partial tumor: 5846
- Complete weak tumor: 7427
- Complete strong tumor: 91
- Unspecific tumor: 1

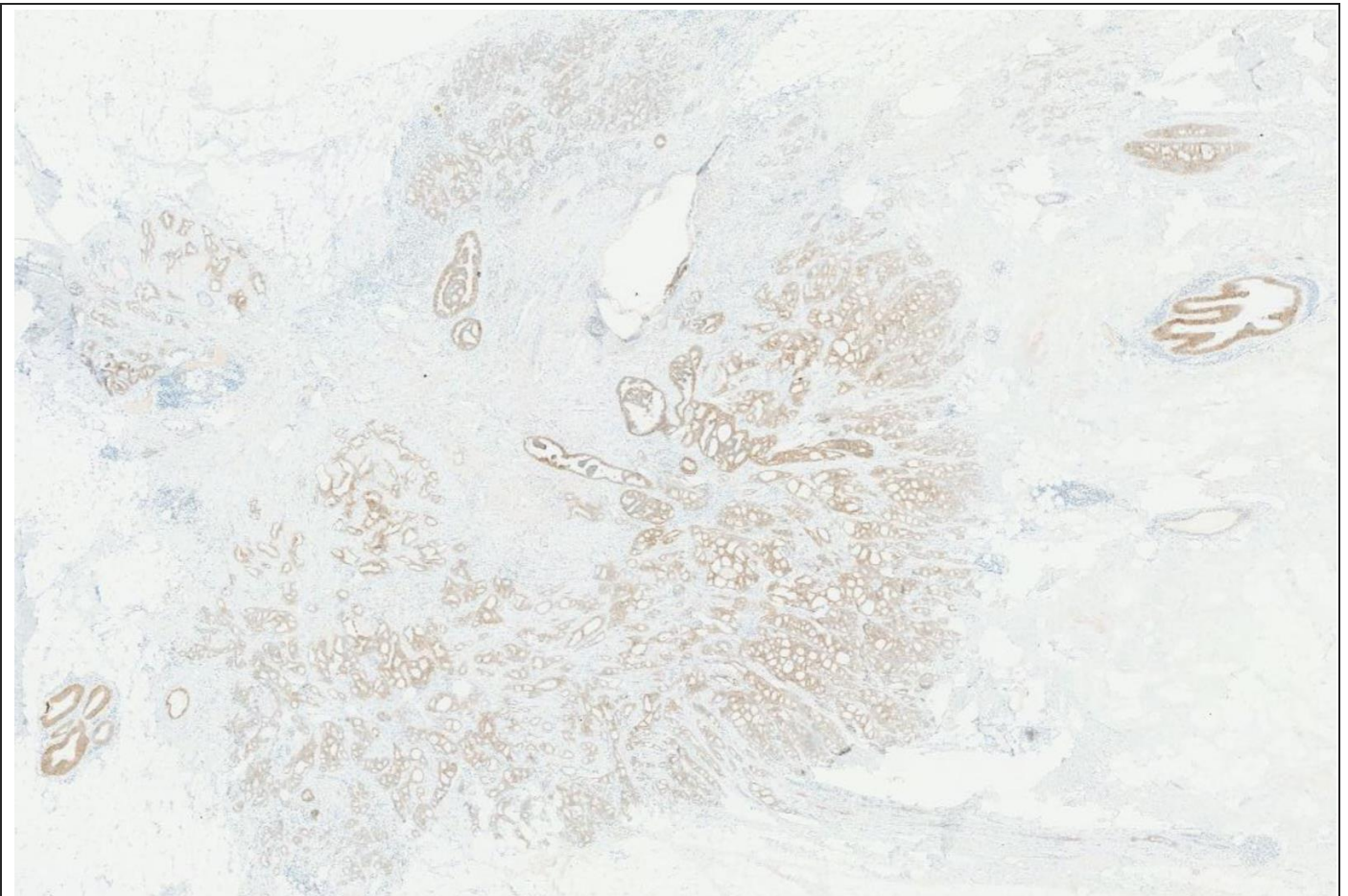
Reset Results

[Download Analysis Results](#)

Show/Hide Analysis Results:



| HER2 score | 2+ |
|--|----------------------------|
| Percentage of cells with intense complete membrane staining | <1% (single cells visible) |
| Percentage of cells with complete weak to moderate membrane staining | ca. 15% |



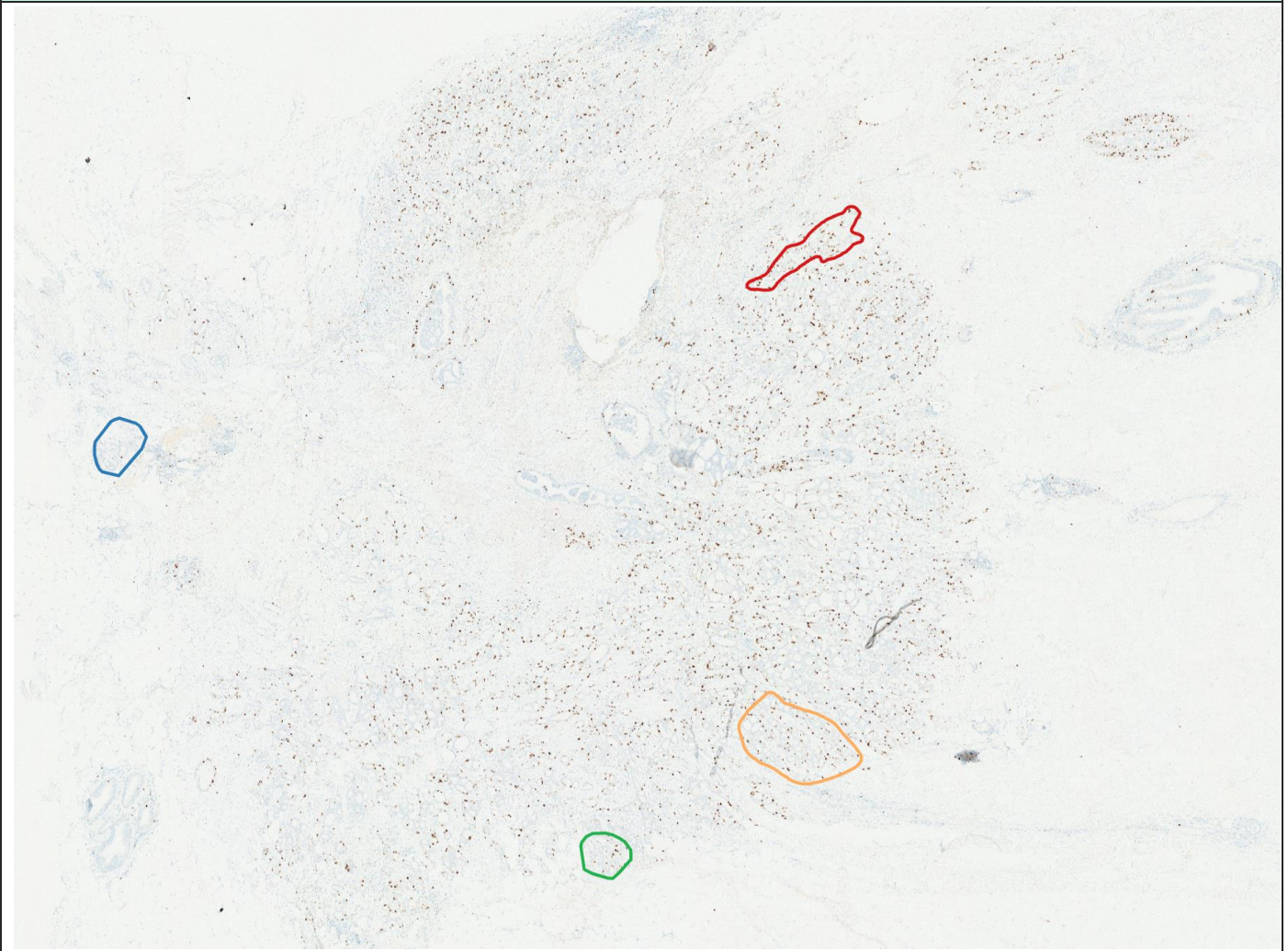
HER2 expression is fairly homogenous across invasive tumor with somewhat stronger expression in large cribriform islands of tumor and slightly diminished in smaller cribriform groups, especially at the periphery of the tumor.

External controls: Not identified

Ki-67

1. Weighted 4-region method (according to International Ki-67 in Breast Cancer Working Group), **score: 13.2%**
2. Hotspot method, **score: 27%**
3. Global method (average in the whole invasive tumor), **score: 15%**

AI-supported assesment of Ki67 stain with detection of regions with distinctive expression



Four regions representative for **negligible**, **low**, **intermediate** and **high** Ki-67 expression in the examined sample.



Staining: **Breast Ki-67 (4 Region)**



CE-IVD marked

13.2%

Global Score (weighted)

13.8%

Global Score (unweighted)

Positivity threshold:



Reset threshold

27.0%



Tumor positive 125 Tumor negative 338



Weight 15%

13.9%



Tumor positive 182 Tumor negative 1124



Weight 45%

10.4%



Tumor positive 42 Tumor negative 363

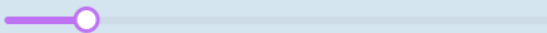


Weight 25%

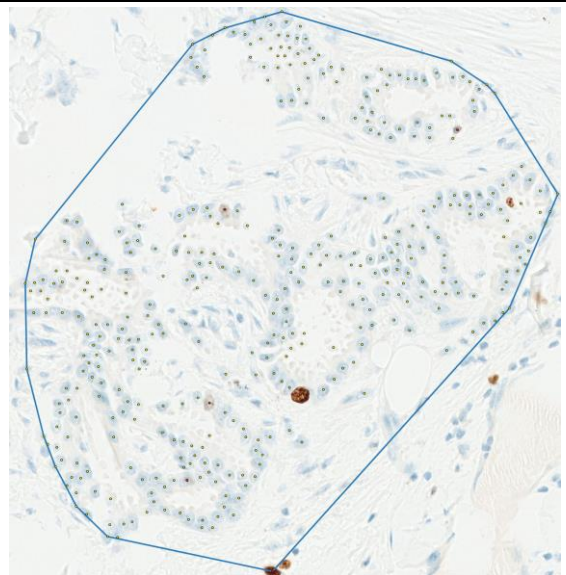
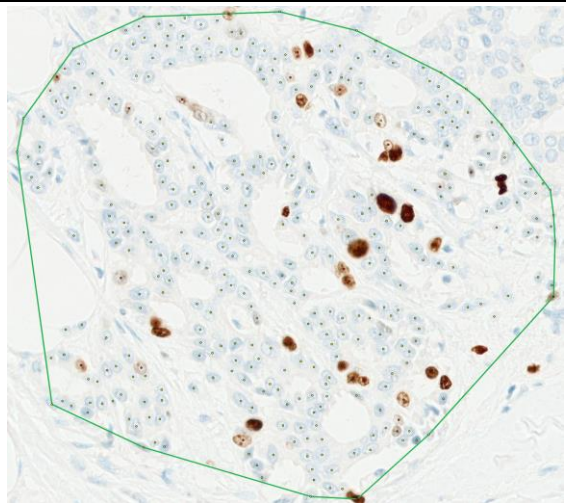
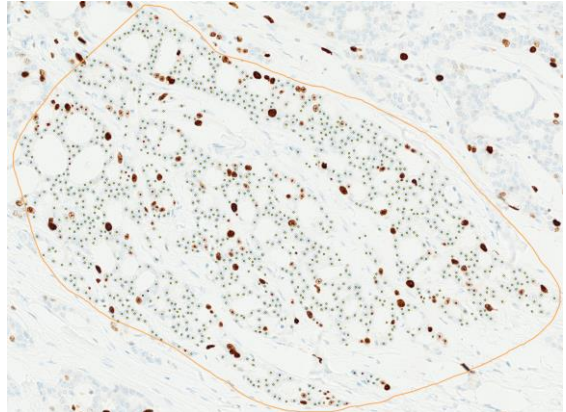
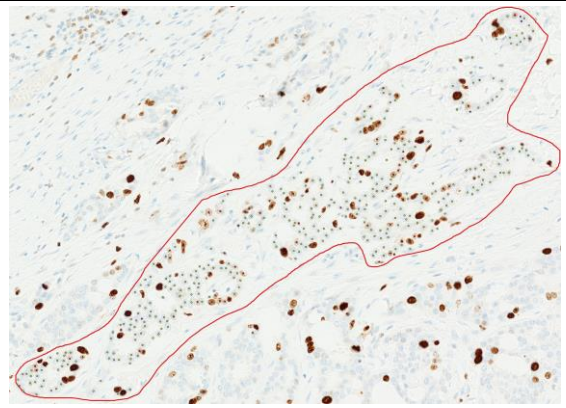
1.8%



Tumor positive 7 Tumor negative 393



Weight 15%



Report details

Second opinion report issuing date:

Examination number:

| | |
|--------------------------------|-------------------------|
| Report prepared and signed by: | Reviewed and signed by: |
| | |

Contact

TwiceView second opinion service is provided by:

DIGITAL PATHOLOGY TEAM WITOLD REZNER sp. k.
Karczówkowska 45
25-713 Kielce
Poland
contact@twiceview.com

Electronic medical records

This document is an electronic medical record, signed and verified, in accordance with the rules set out in the Act of 28 April 2011 on the health care information system (Journal of Laws No. 113, item 657, as amended).