



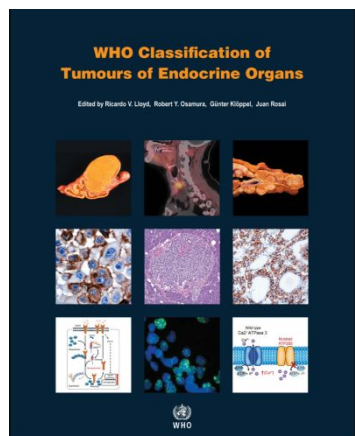
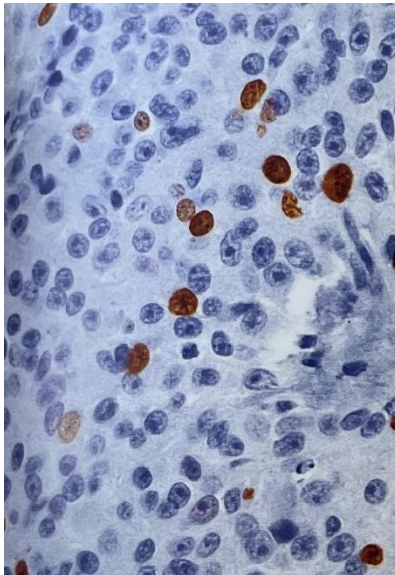
Krajská nemocnice Liberec, a.s.
Liberec Turnov Frýdlant

ALGORITMY AI V HISTOPATOLOGII – ZKUŠENOSTI Z TĚMĚŘ 1,5 ROKU TRVAJÍCÍHO RUTINNÍHO PROVOZU ODD. PATOLOGIE KNL. A.S.

doc. MUDr. Tomáš Jirásek, Ph.D.
oddělení patologie, Centrum PATOS
KNL, Liberec

„ITAPA Health & Care“ 26. – 27.3.2025 Horný Smokovec

umíme pomáhat



57) u

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Ventana DP200

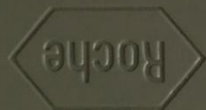
- scanner DP200 + obslužný software (Navify)
- co vše „to“ umí?
- scannovat preparáty (standartní velikost i whole mount section „makrobloky“)
 - TIF
 - BIF
 - DICOM



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec - nemocnice Turnov



6

5

4

3

2

1

U43 S100 RED



Anicka

010922 LBC

U11 HMB45 RED



Anicka

010922 LBC

U5 MelanA RED



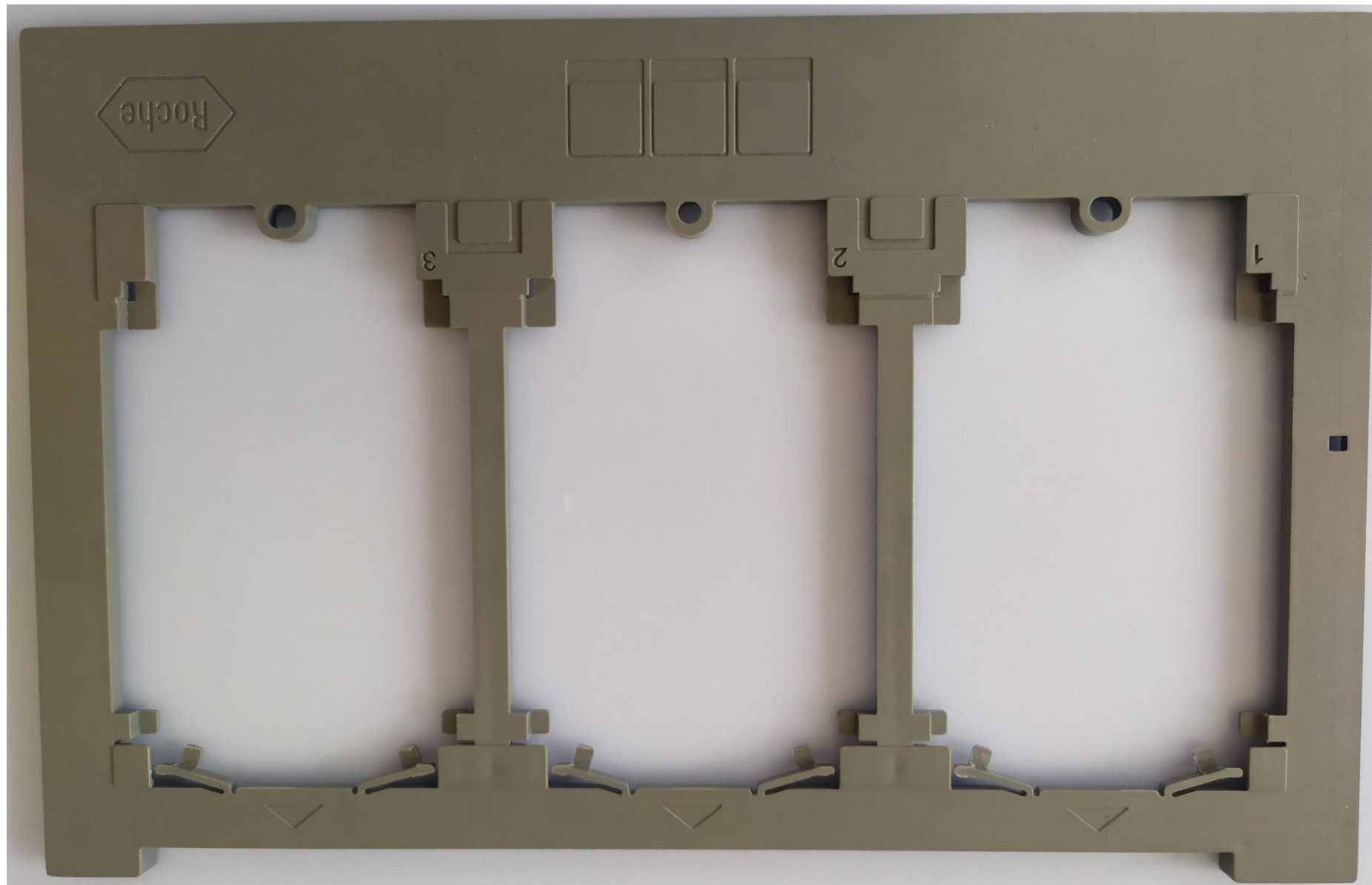
Anicka

010922 LBC

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec - nemocnice Turnov



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify

Rozcestník KNL

login

Přihlásit

intranet

Tel. seznam

Hledej

Dokumenty

Hledej

Dokumenty

Covid-19

Personalistika

Stravování

Zdravotnické aplikace

Obchod

ICT

Krizové řízení

Ostatní

Turnov

Frýdlant

Ukrajina

Telefonní seznam

Je možné vyhledávat podle příjmení, oddělení, tel. čísla...

Hledej

Konziliární telefony

Vyhledání dokumentu

Hledej

Plánování pacientů - Kardio

Plánování pacientů - Operační sály

Plánování pacientů - RDG

Plánování pacientů - Operační sály

AISLP

Jivex

Poslání lék. zprávy mimo KNL

MicroMedic

NAVIFY Patologie

Covid - Lékaři - Výpomoc

Informace pro primáře a lékaře, musíte být přihlášení.

Přehled volných kapacit vybavení

Informace pro lékaře a sestry, musíte být přihlášení.

Zaměstnanci

Vyhledání zaměstnance podle příjmení.

Hledej

Rozvojový program

Informace pro vedoucí, musíte být přihlášení.

Úležitá upozornění

a email

dávka prádla 6.9.2022

22 bude z důvodu na straně dodavatele zpožděná dodávka prádla cca o 2-3h.

pochopení

Jan Beneda

05.09.2022 (14:18:13)

Péče o cévní vstupy.

Kanylační tým pořádá seminář pro všeobecné sestry, porodní asistentky a záchranáře na téma PÉČE O CÉVNÍ VSTUPY.

letáček

05.09.2022 (12:44:54)

Změna objednávání obědů Turnov

Změna objednávání obědů Turnov

Od 5.9.2022 si lze nově objednat oběd do turnovské jídelny na PM-jídlna Mobilní kreditu i Webkreditu do 13.00 hodin předchozího pracovního dne

02.09.2022

UZAVÍRKA JIHLICE ARBESOVA a KOMUNIKACE K OBJEKTU PATOLOGIE

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify



NAVIFY® Digital Pathology

Email address

tomas.jirasek+patho@nemlib.cz

Password

.....

Sign in

[Forgot password](#)

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify

JT

Tomáš Jirásek

ALL

268

URGENT

Share

Bookmark

Re-Assign

2nd Opinion

Re-Open

Cancel Ca...

Retrieve

Keep Imag...

Not Keep I...

CASES

Search

CASES

VIEWER

REPORT

?

Roche

URGENT

You have 10 urgent cases

	Received Date	Case ID	Patient	Age	Gender	Tissue Type	Attach...	Slides	Case Status	Report	Shared	Bookm...	Tags
	21/01/2025	HS2	Liberec, Nemocni...	0	M	Prostate		7	In-Progress				
	16/04/2024	HS2	Liberec, Nemocni...	0	M	Prostate		6	In-Progress				
	05/04/2024	HS	Liberec, Nemocni...	0	F	MOZEK		9	In-Progress				
	11/03/2024	HS2	Liberec, Nemocni...	0	M	Prostate		7	In-Progress				

ASSIGNED

You have 763 cases assigned to you

	Received D...	Case ID	Patient	Age	Gender	Tissue Type	Attach...	Slides	Case Status	Report	Shared	Bookmark	Tags
	Yesterday	HS25	Liberec, Ne...	0	M	Prostate		16	In-Progress				Likely Cancer
	Yesterday	HS25	Mladá Bolesl...	0	F	Breast		2	In-Progress				Likely Benign
	Yesterday	HS25	Liberec, Ne...	0	M	Prostate		15	In-Progress				Likely Cancer
	Yesterday	HS25	Liberec, Ne...	0	M	Prostate		16	In-Progress				Likely Cancer
	Yesterday	HS2f	Liberec, Ne...	0	M	Breast		1	In-Progress				
	Yesterday	HS2f	Liberec, Ne...	0	M	Breast		1	In-Progress				
	2 Days Ago	HS25	Liberec, Ne...	0	M	Prostate		6	In-Progress				
	2 Days Ago	HS2	Liberec, Ne...	0	M	Prostate		6	In-Progress				
	2 Days Ago	HS2	Mladá Bolesl...	0	F	Breast		2	In-Progress				Likely Cancer

FOLDERS

Assigned 773

Bookmark 1

Shared 1

Second Opinion 0

All Unassigned Cases 5

All Active Cases 2015

All Cancelled Cases 3

All Signed Out Cases 0

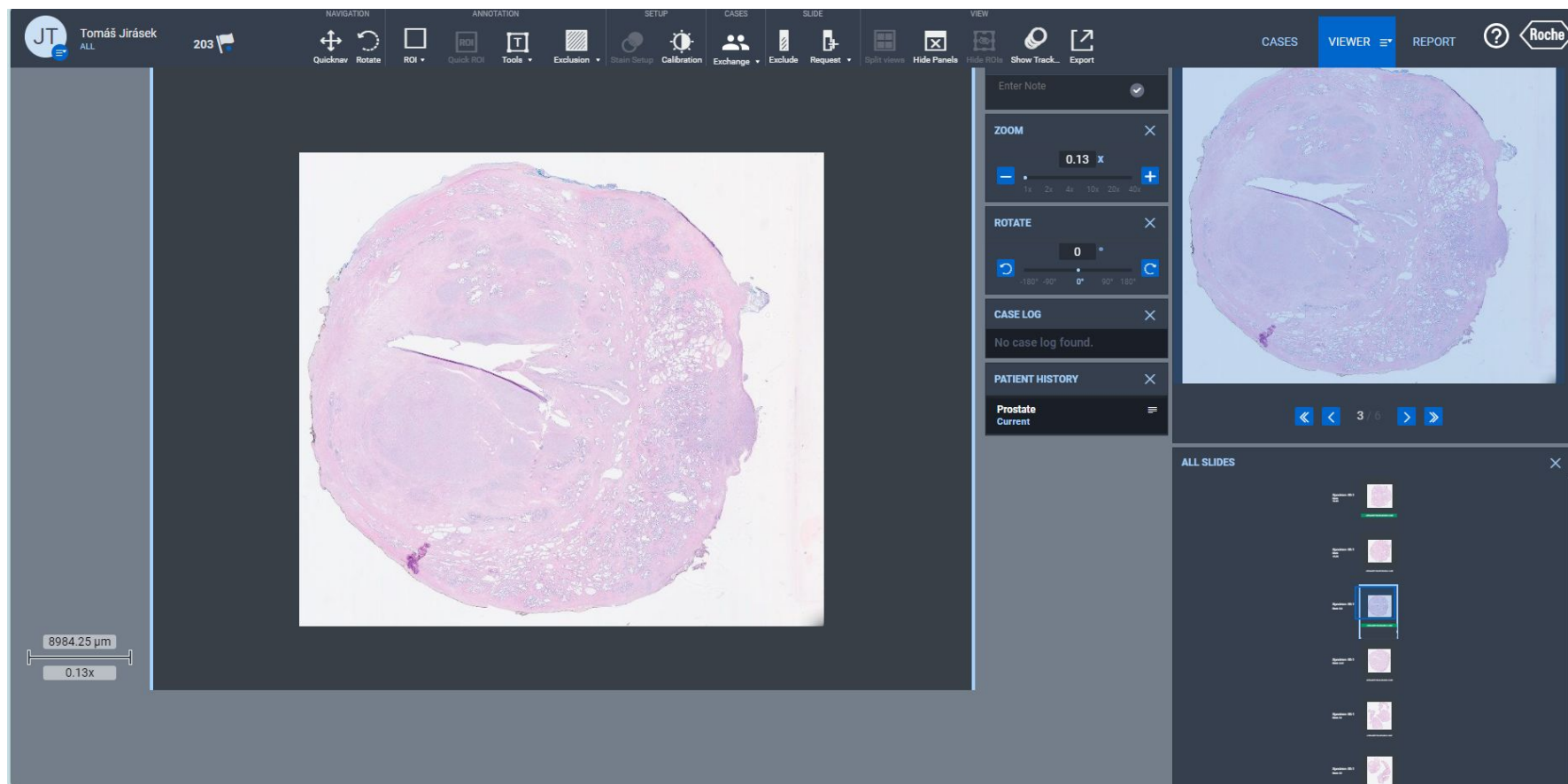
All Archived Cases 0

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify

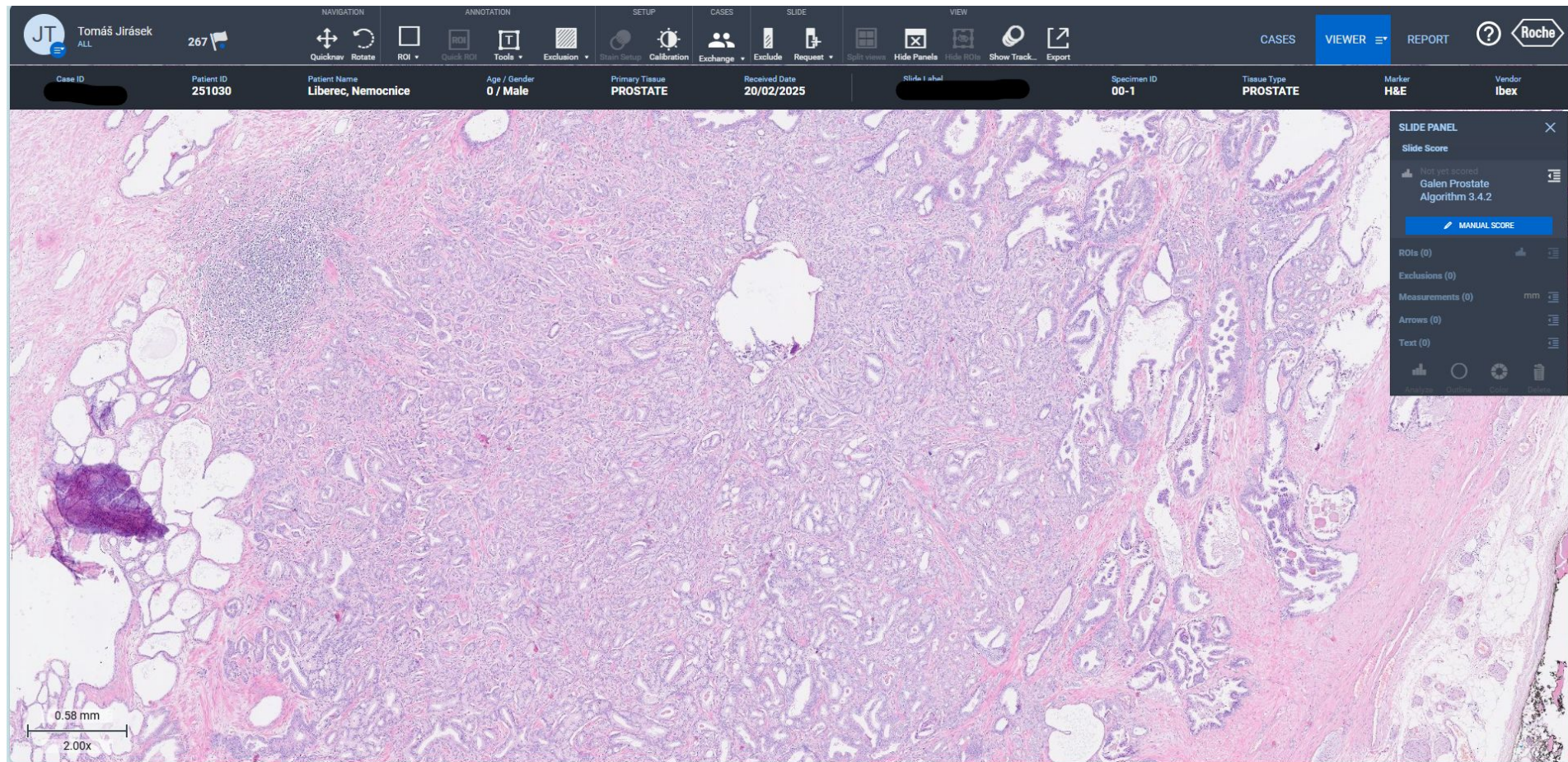


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Navify

Navigation and Annotation Tools: Quickview, Rotate, ROI, Quick ROI, Tools, Exclusion, Setup, Calibration, Exchange, Exclude, Request, Split view, Hide Panels, Hide ROIs, Show Track..., Export.

Case Information: Case ID, Patient ID 251030, Patient Name Liberec, Nemocnice, Age / Gender 0 / Male, Primary Tissue PROSTATE, Received Date 20/02/2025, Specimen ID 00-1, Tissue Type PROSTATE, Marker H&E, Vendor Ibex.

Slide Panel: Slide Score, Not yet scored, Galen Prostate Algorithm 3.4.2, MANUAL SCORE, ROIs (0), Exclusions (0), Measurements (0) mm, Arrows (0), Text (0).

Scale: 0.07 mm, 17.78x

umíme pomáhat



Navify

- **klinické a RDG semináře:**

- RDG punktáty (invazivní radiologie)
- RDG prostaty RAPE (screening ca. prostaty a 3T MRI korelace)
- neurochirurgie a neuroradiologie – v rámci MDT
- gastroenterologie (bioptické odběry pod endosonografickou kontrolou)
- plicní biopsie (bronchoskopie)



Navify

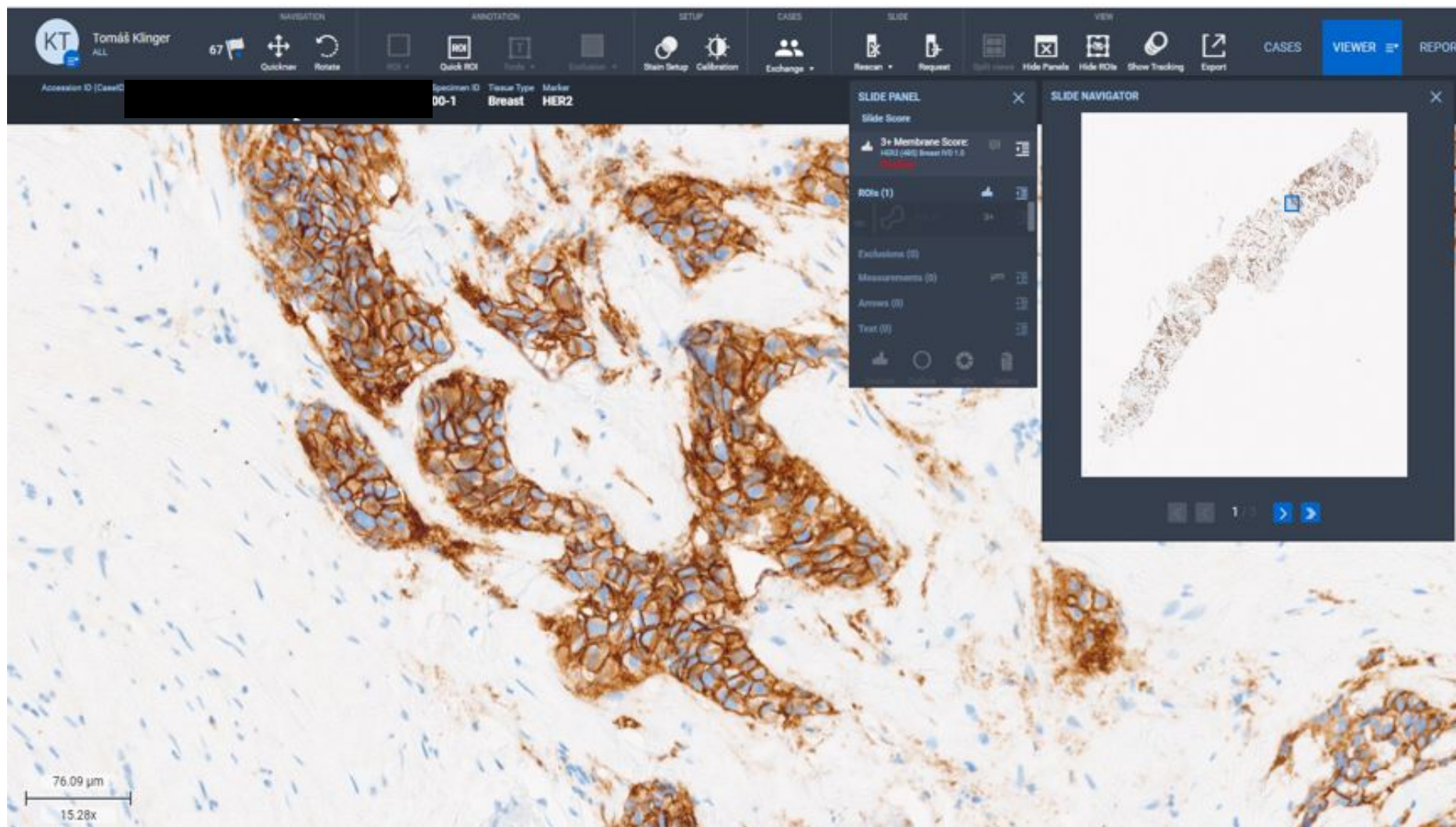
analýza obrazu

- karcinom prsu
 - HER2/neu IHC (HER2 (4B5) Breast IVD)
 - HER2/neu ISH (HER2 DUAL ISH Breast IVD)
 - ER (SP1) Breast RUO
 - PR (1E2) Breast RUO
 - Ki-67 (30-9) Breast RUO
- karcinom plic
 - PD-L1 (SP263) NSCLC IVD



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

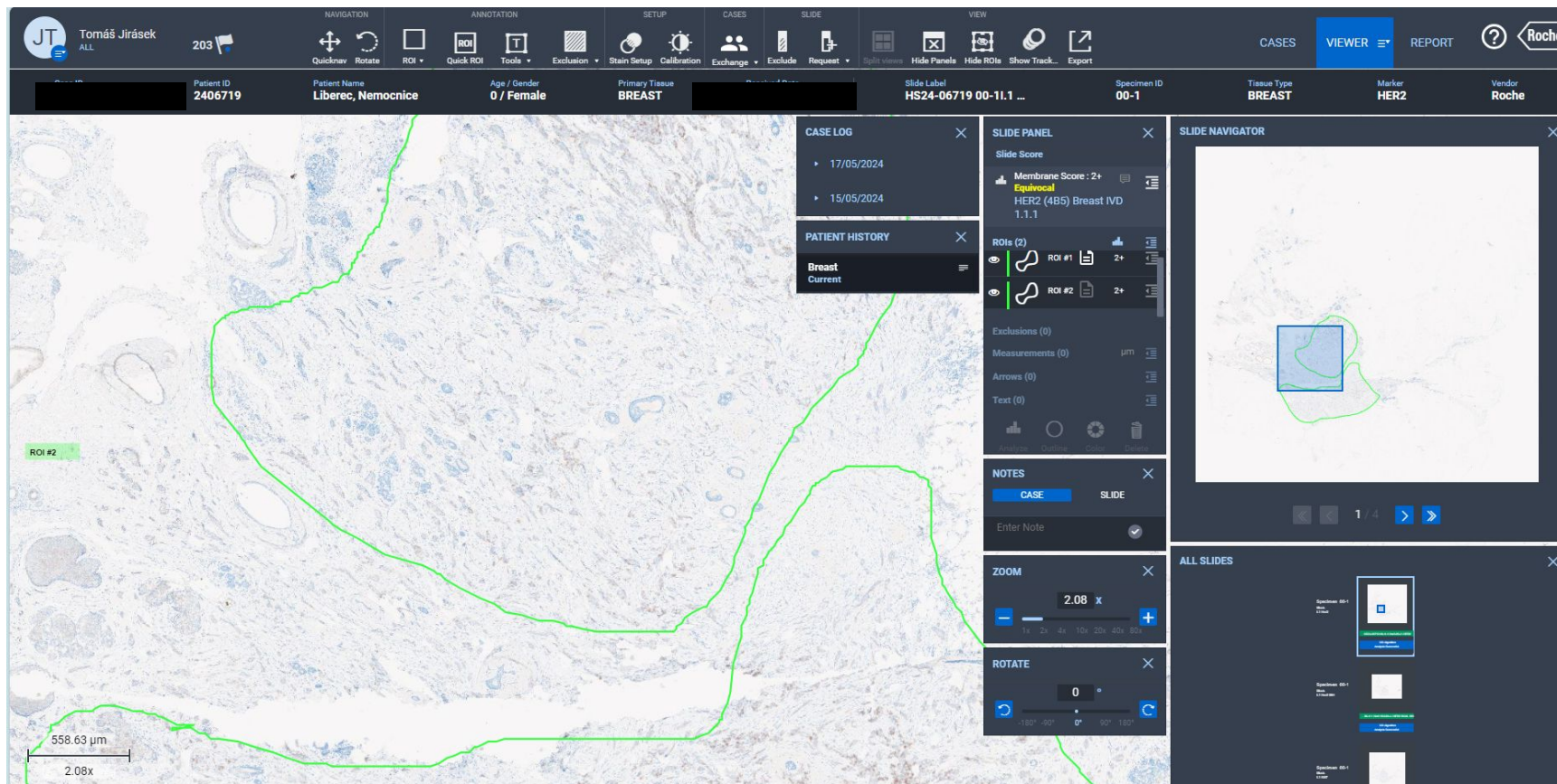


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

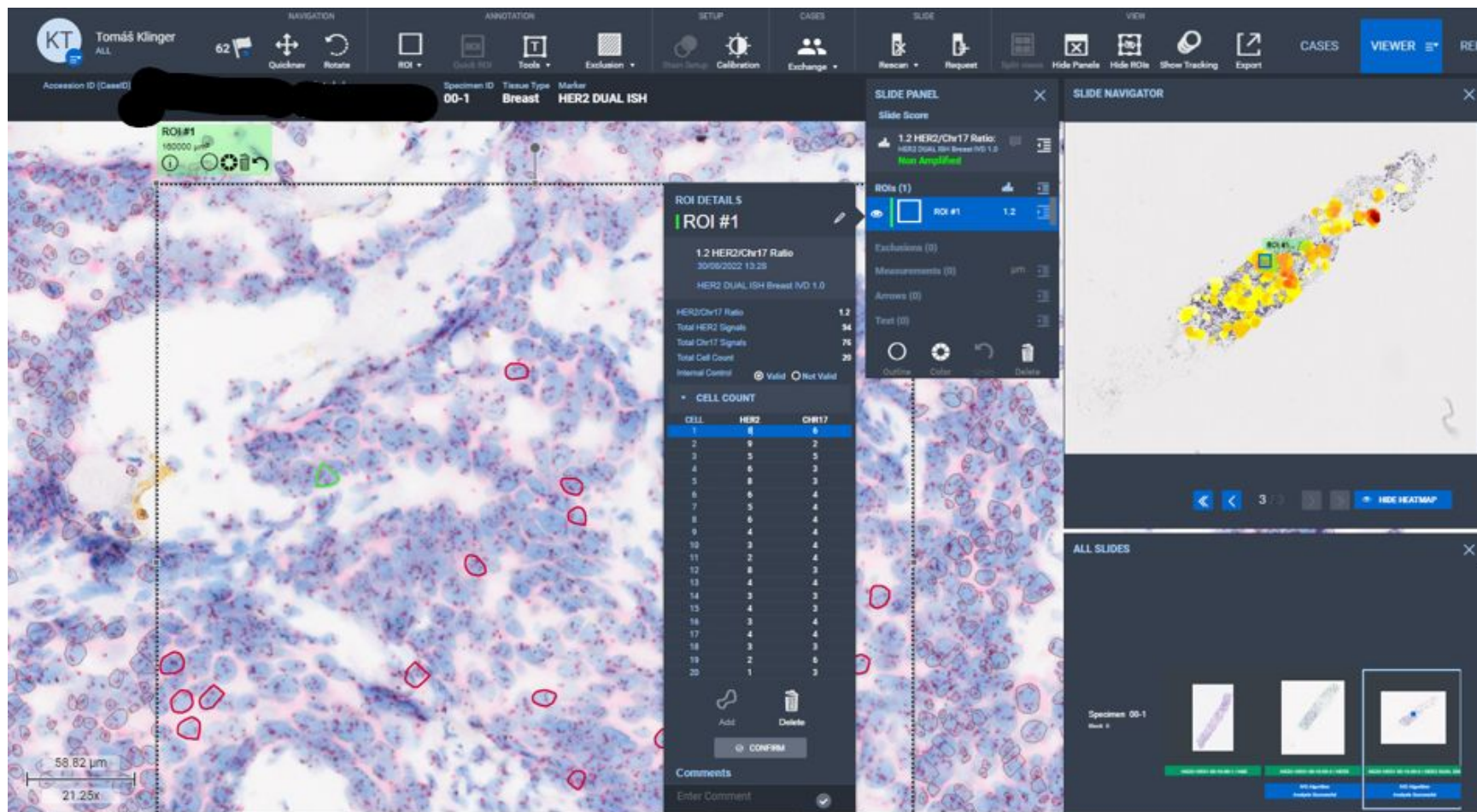


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

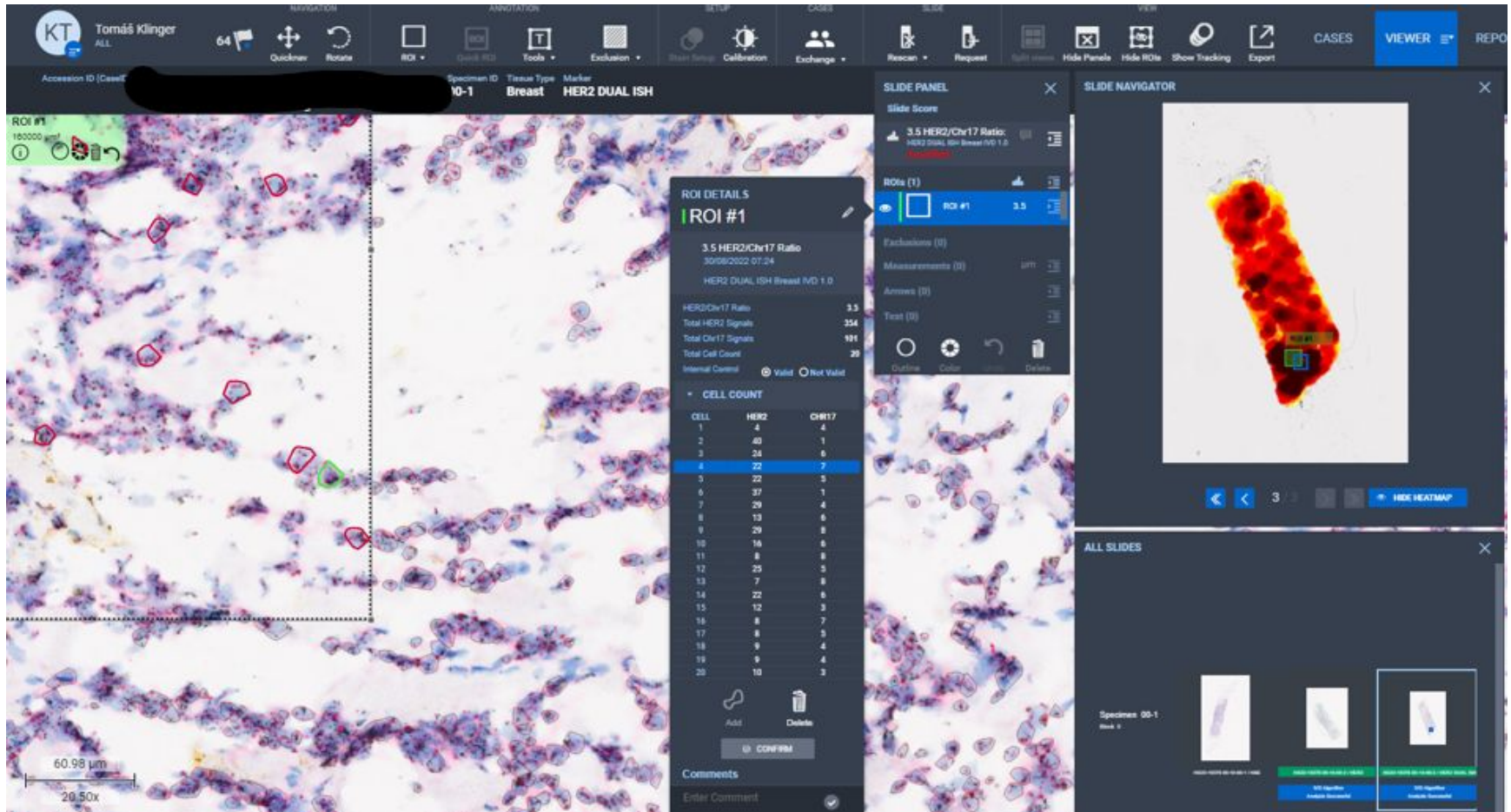


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

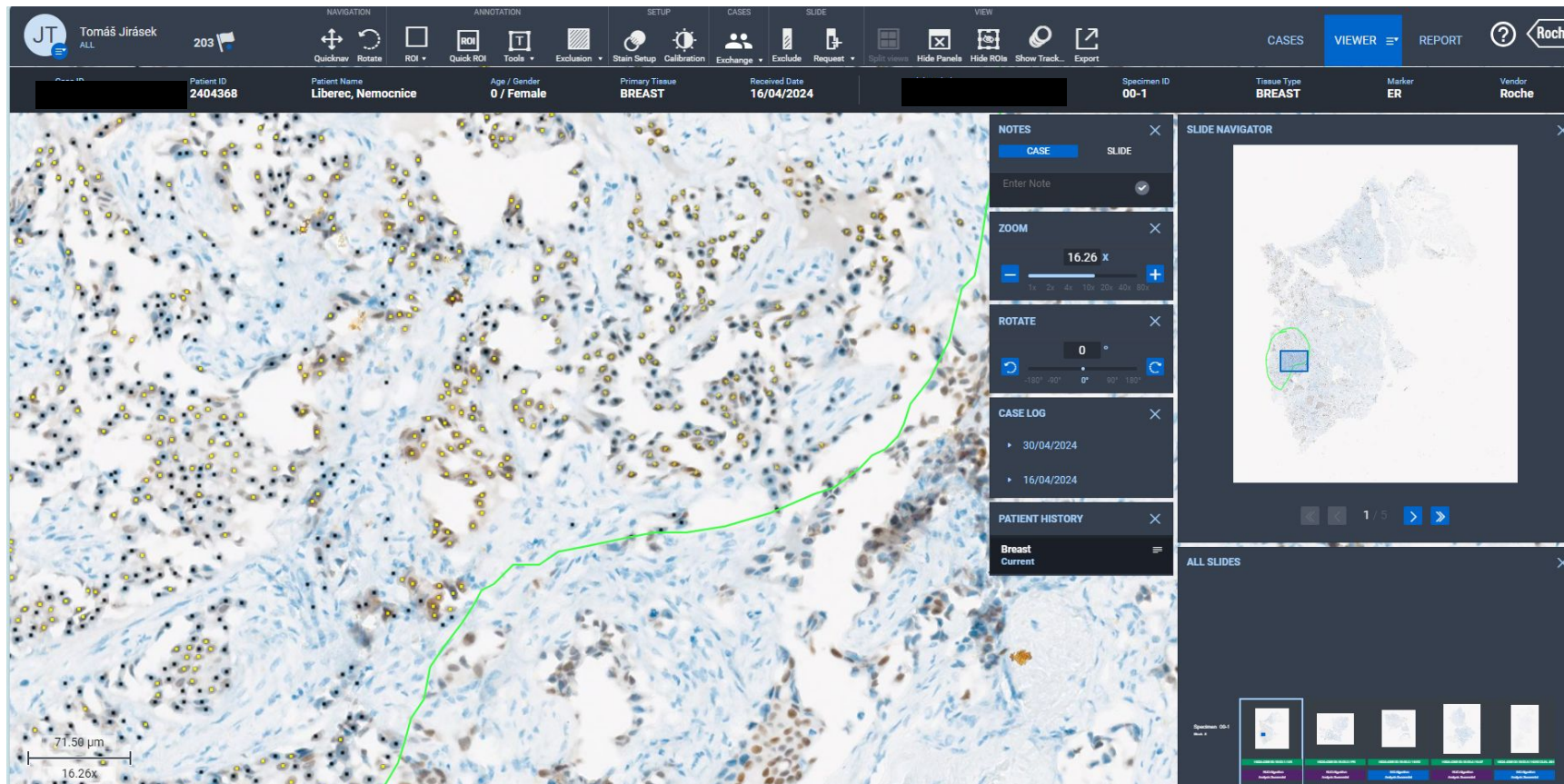


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

Top Bar: JT Tomáš Jirásek ALL 203 | NAVIGATION (Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion) | SETUP (Stain Setup, Calibration) | CASES (Exchange, Exclude, Request) | SLIDE (Slide 1 of 4) | VIEW (Right view, Hide Panels, Hide ROI, Show Track, Export) | CASES | VIEWER | REPORT | ? | Roche

Patient Information: Patient ID: 2406719 | Patient Name: Liberec, Nemocnice | Age / Gender: 0 / Female | Primary Tissue: BREAST | Received Date: 15/05/2024 | Specimen ID: 00-1 | Tissue Type: BREAST | Marker: PR | Vendor: Roche

Slide Panel: Slide Score: Positivity: 0.1% PR (I-E2) Breast RUO 1.1

ROI List:

ROI	Score
ROI #1	0.1%
ROI #2	0.0%
ROI #3	0.0%

Slide Navigator: 4 / 4

Zoom: 10.53 x

Rotate: 0°

Scale: 110.34 μm, 10.53x

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

mammární prediktivní patologie

The screenshot displays a digital pathology software interface. The main window shows a histological slide of breast tissue with a green outline indicating a Region of Interest (ROI #1). The interface includes a top navigation bar with various tools and a patient information bar at the top. The patient information bar contains the following data:

- Patient ID: 2406719
- Patient Name: Liberec, Nemocnice
- Age / Gender: 0 / Female
- Primary Tissue: BREAST
- Received Date: 15/05/2024
- Specimen ID: 00-1
- Tissue Type: BREAST
- Marker: KI-67
- Vendor: Roche

The interface also features several side panels:

- CASE LOG:** Shows a list of cases with dates (17/05/2024, 15/05/2024).
- PATIENT HISTORY:** Shows a list of patient history entries (Breast Current).
- SLIDE PANEL:** Shows slide scores (Positivity: 3.9%, KI-67 (30-9) Breast RUO 1.1.1) and ROIs (ROI #1: 4.4%, ROI #2: 3.2%).
- NOTES:** A section for entering notes.
- ZOOM:** A section for adjusting the zoom level (2.08x).
- ROTATE:** A section for adjusting the rotation angle (0°).
- SLIDE NAVIGATOR:** A section for navigating between slides.
- ALL SLIDES:** A section for viewing all slides.

The main slide shows a histological image of breast tissue with a green outline indicating a Region of Interest (ROI #1). A scale bar at the bottom left indicates 558.63 µm and 2.08x magnification.

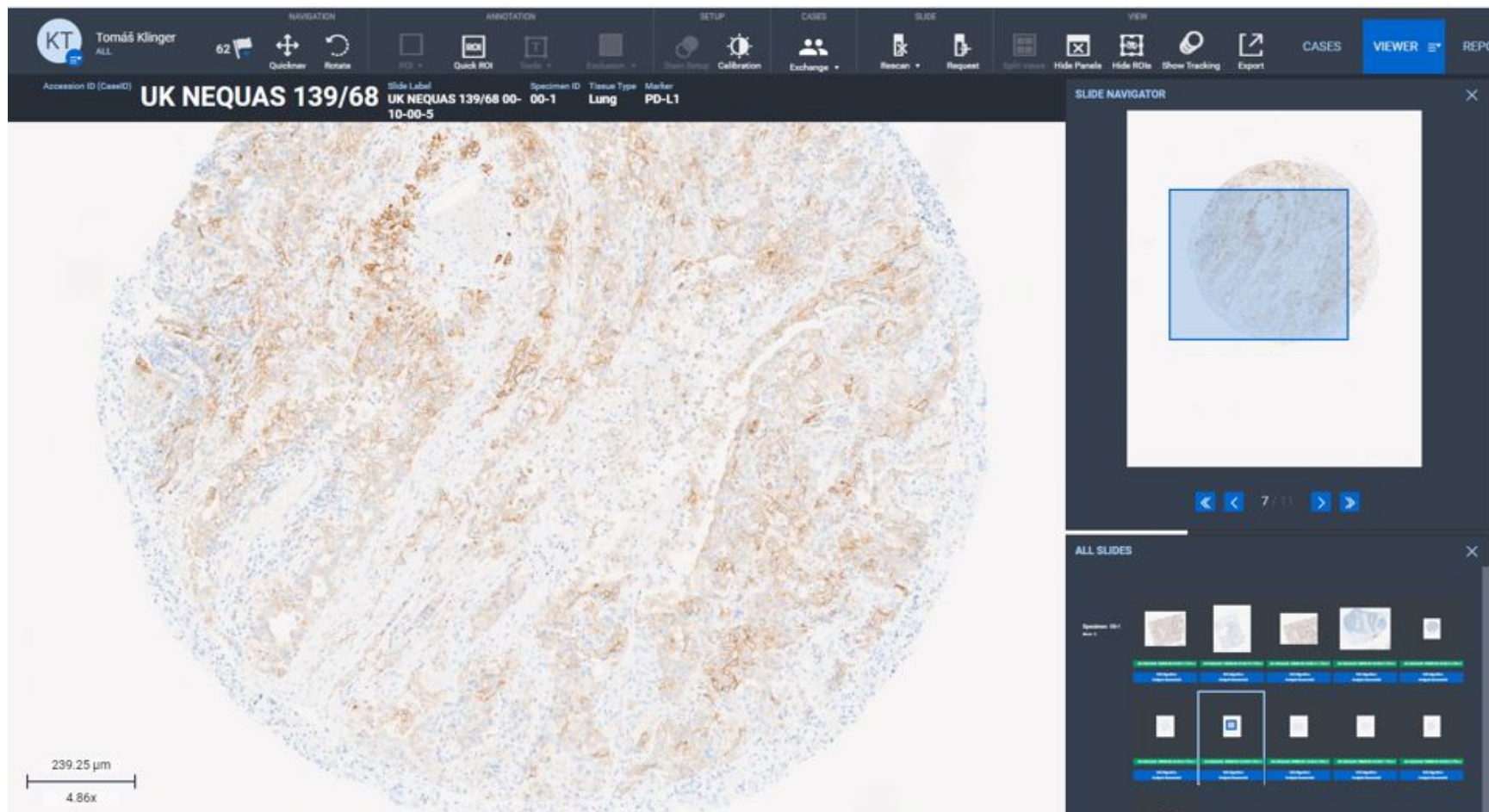
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



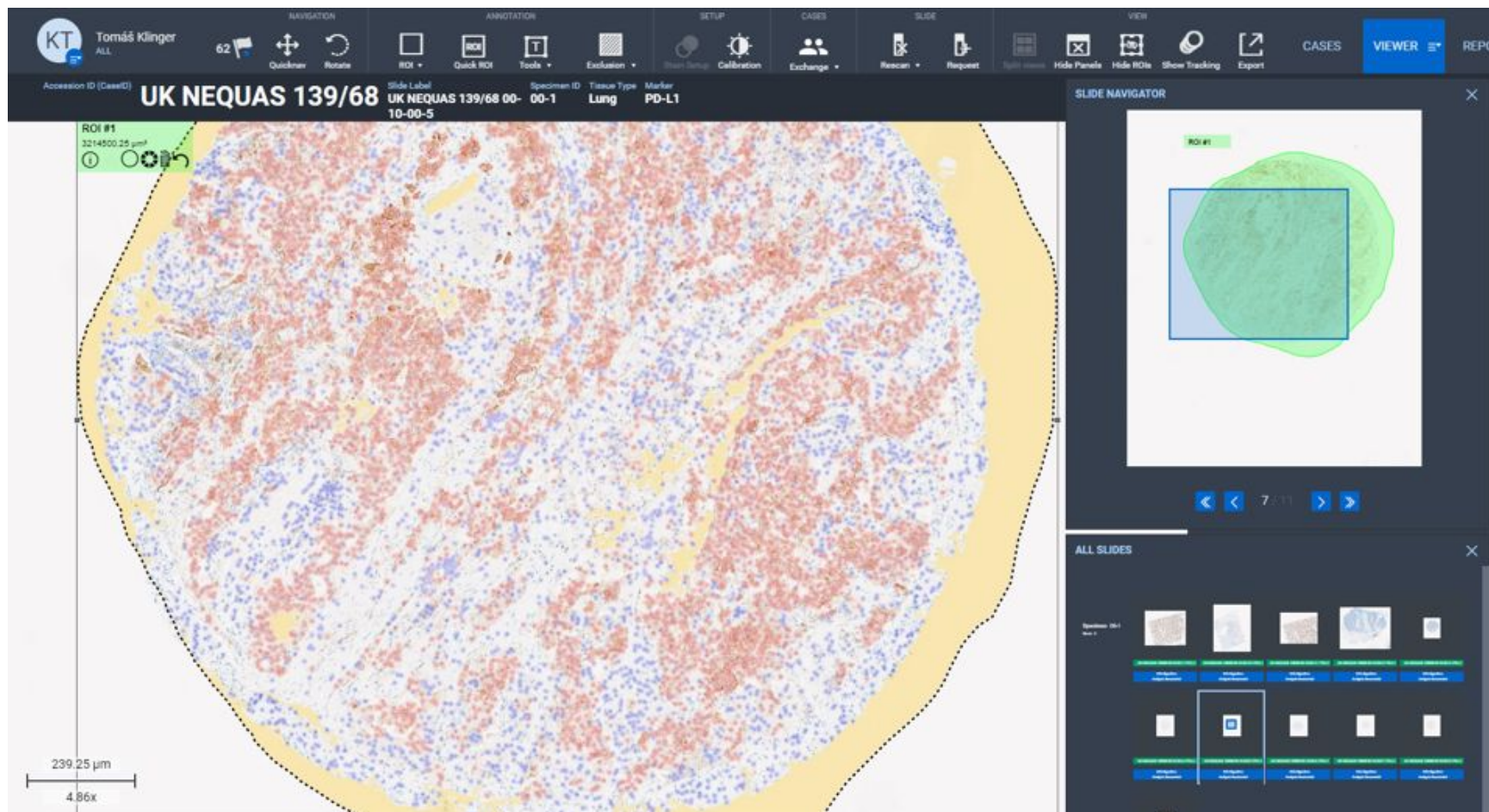
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



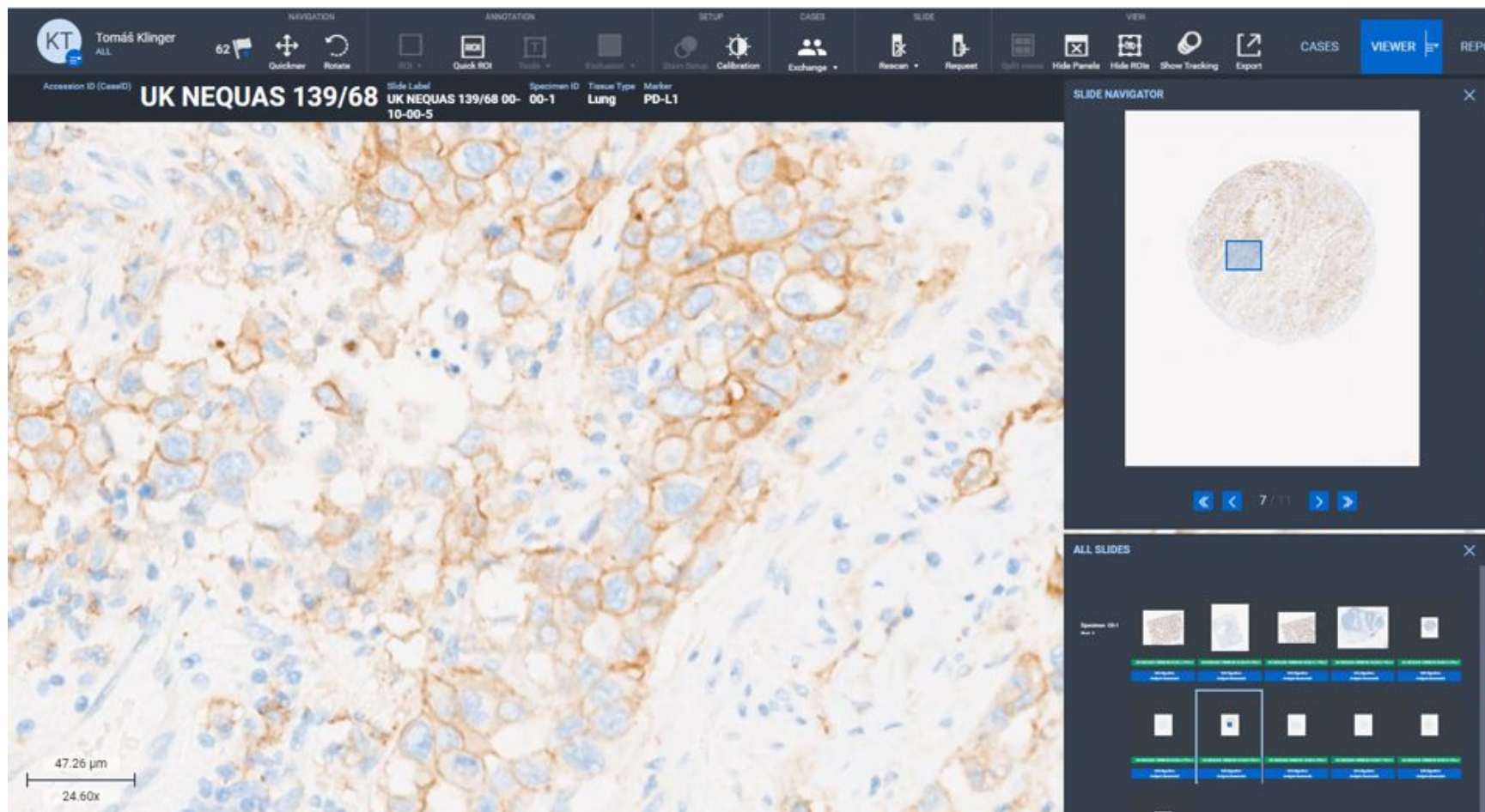
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



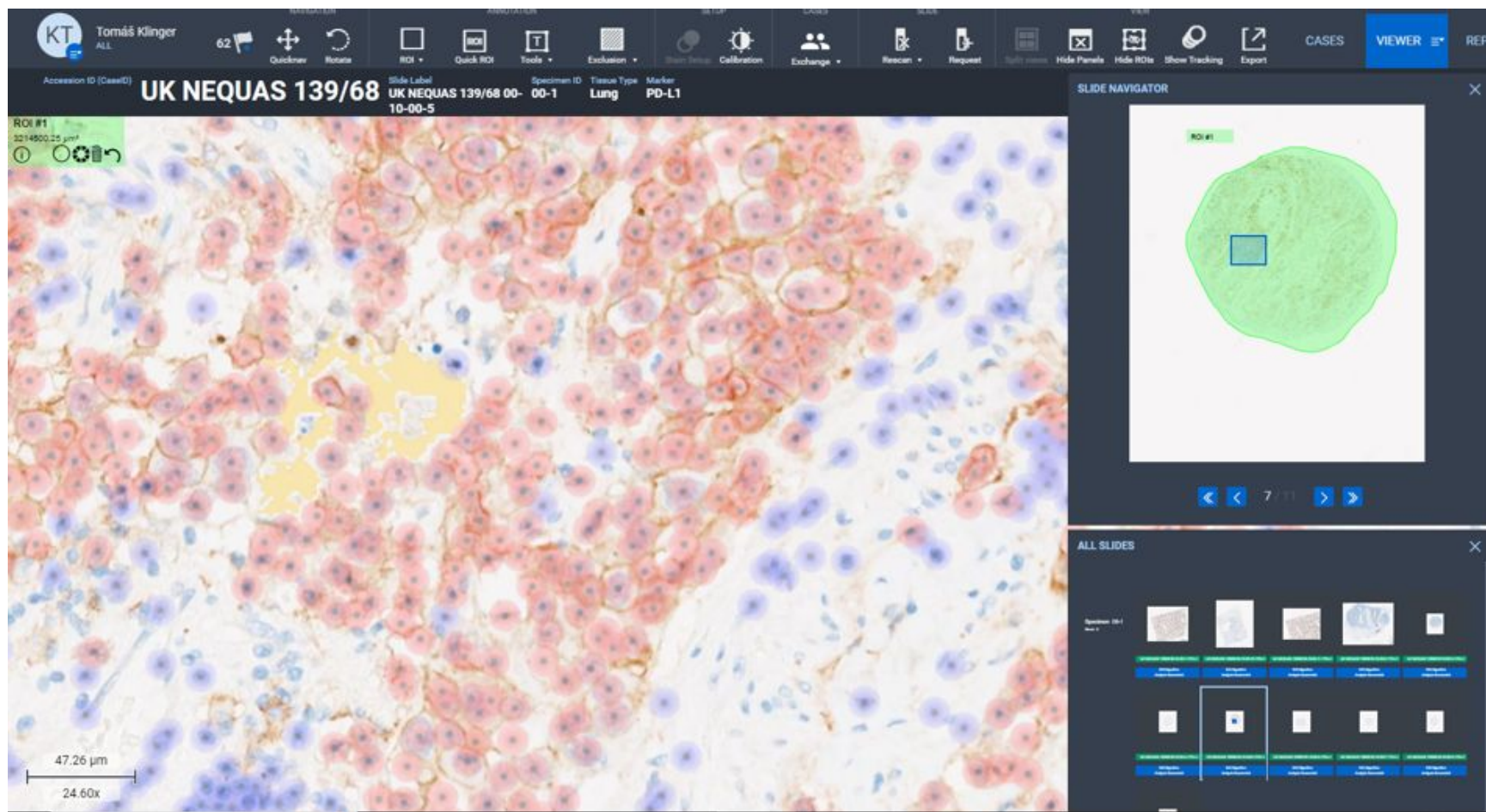
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



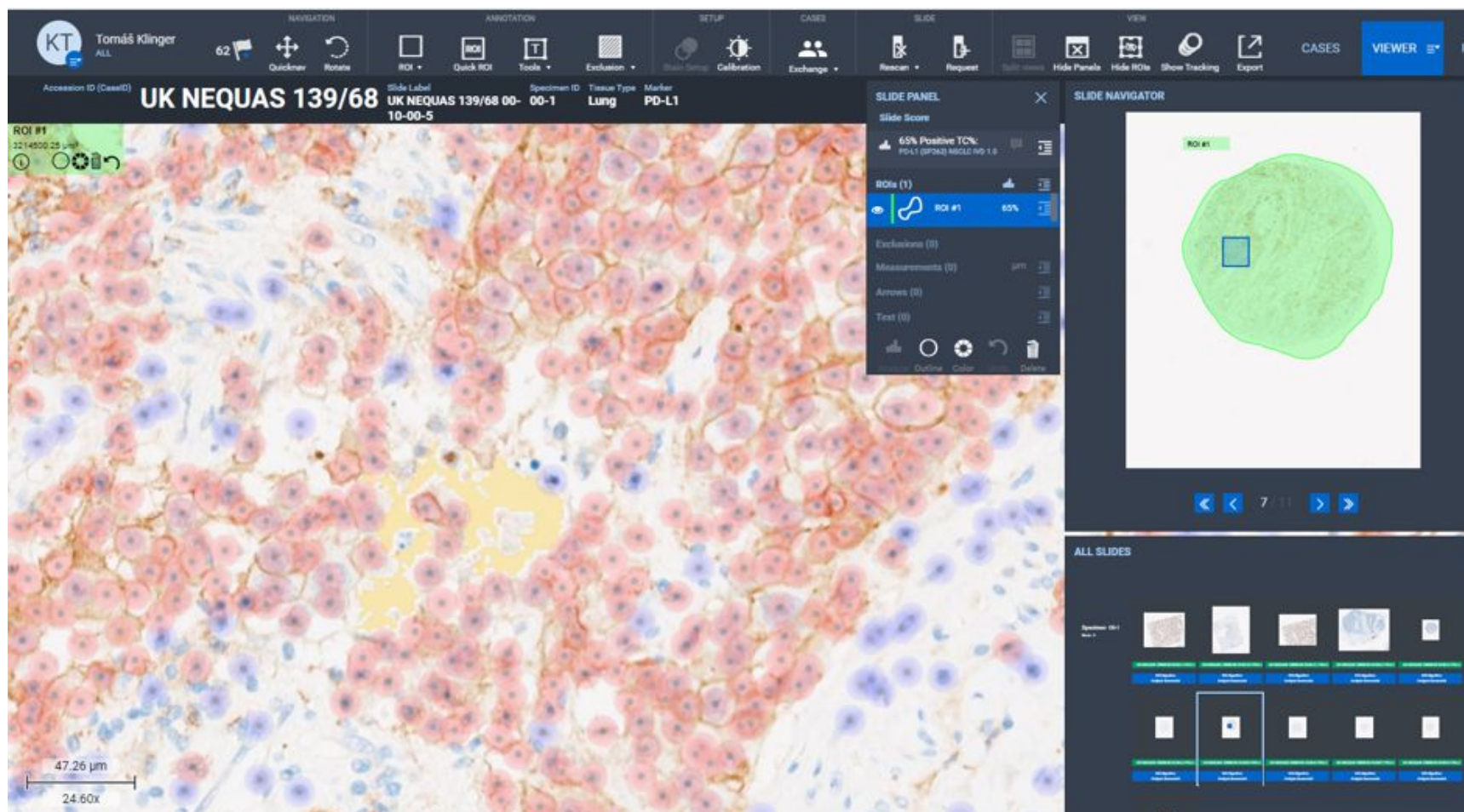
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



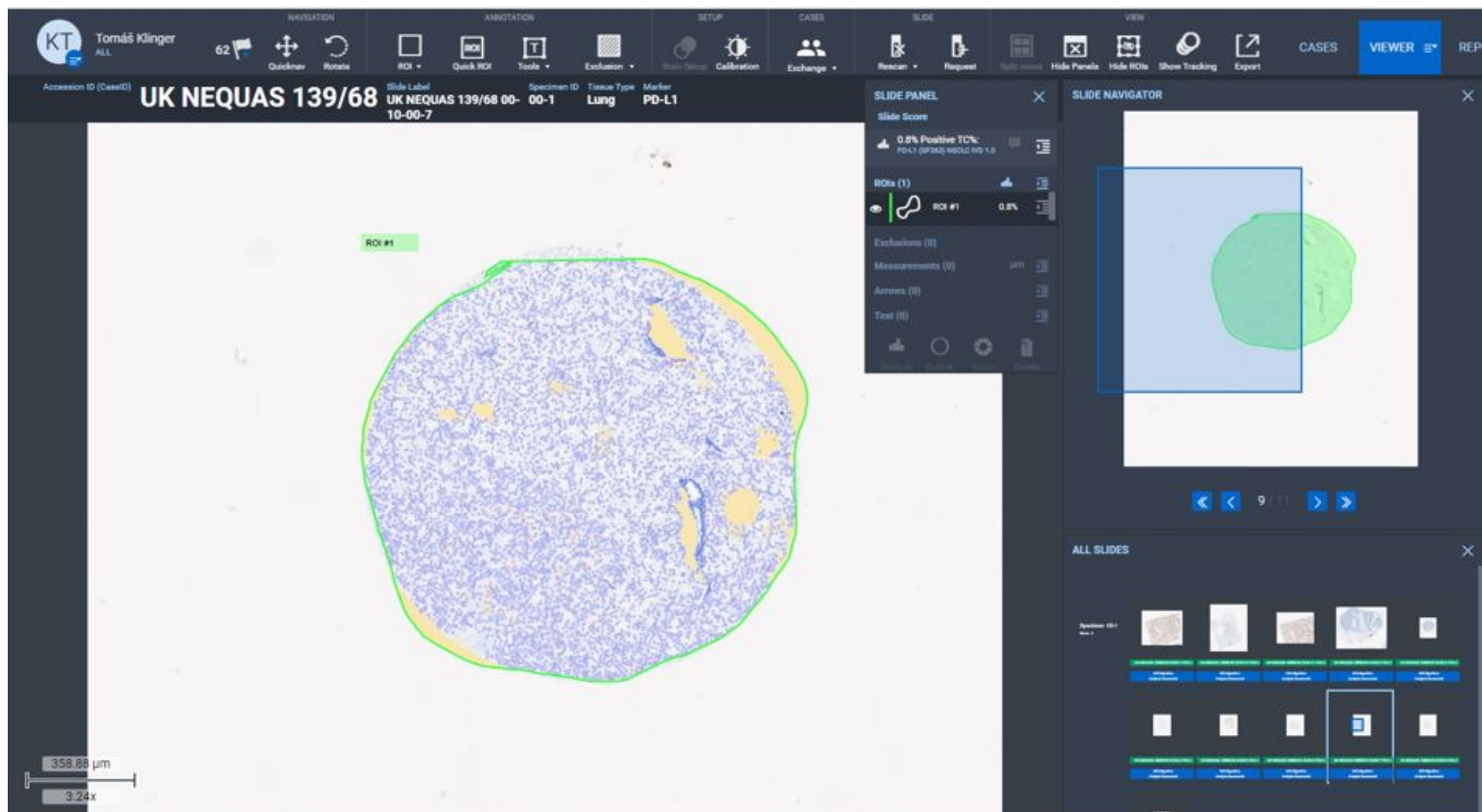
umíme pomáhat



Krajská nemocnice Liberec
nemocnice Liberec

plicní prediktivní patologie

PD-L1 (TPS)



umíme pomáhat



Navify

zbývá dořešit:

- inkorporovat nová doporučení (HER2 low a HER2 ultralow)
- RUO algoritmy změnit na IVD
- Ki-67 stanovovat i v jiných typech nádorů, než jen v ca. prsu
- výrazně upravit tvorbu reportů
- zavést AI hodnocení i na ALK IHC, ROS1 IHC, MMR, SP142 (PD-L1 IC) a další (EBER ISH, Kappa a Lambda dual ISH mRNA)



IBEX v prostředí Navify

analýza obrazu HE

- karcinom prostaty
 - Galen Prostate Algorithm RUO
- karcinom prsu
 - Galen Breast Algorithm RUO



IBEX v prostředí Navify

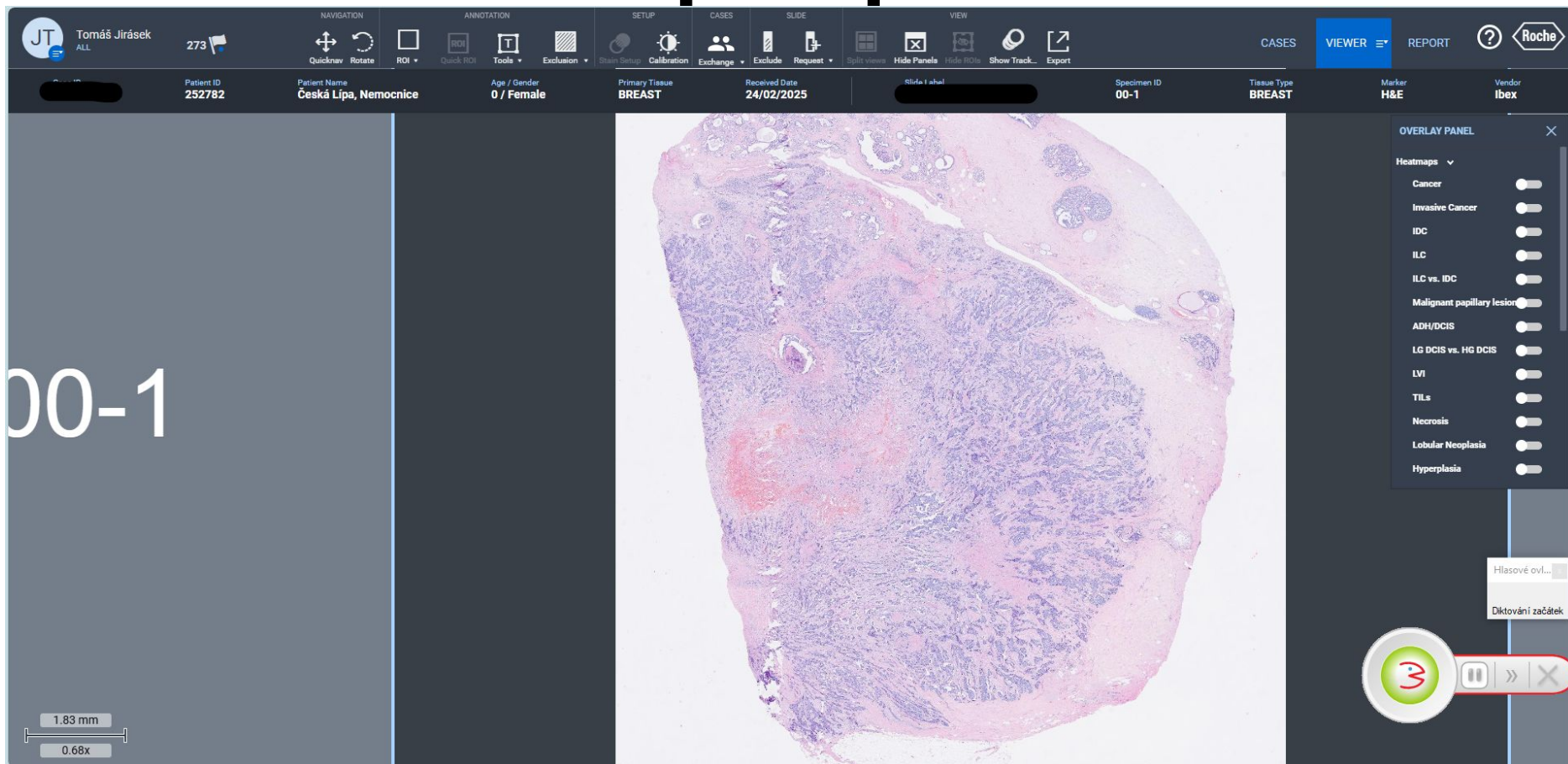
analýza obrazu HE

- karcinom prostaty
 - Galen Prostate Algorithm RUO
- karcinom prsu
 - Galen Breast Algorithm RUO



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

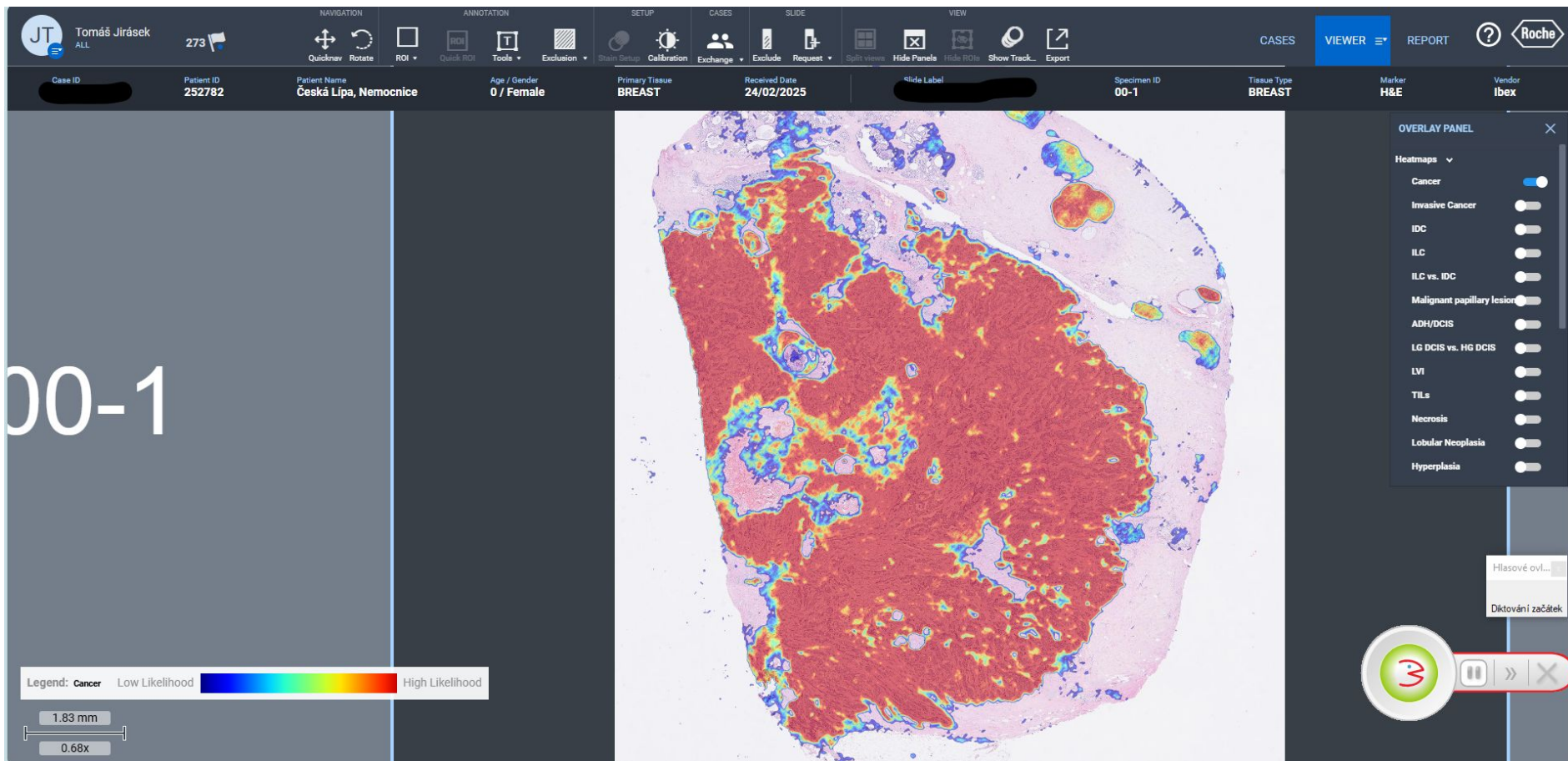


umíme pomáhat



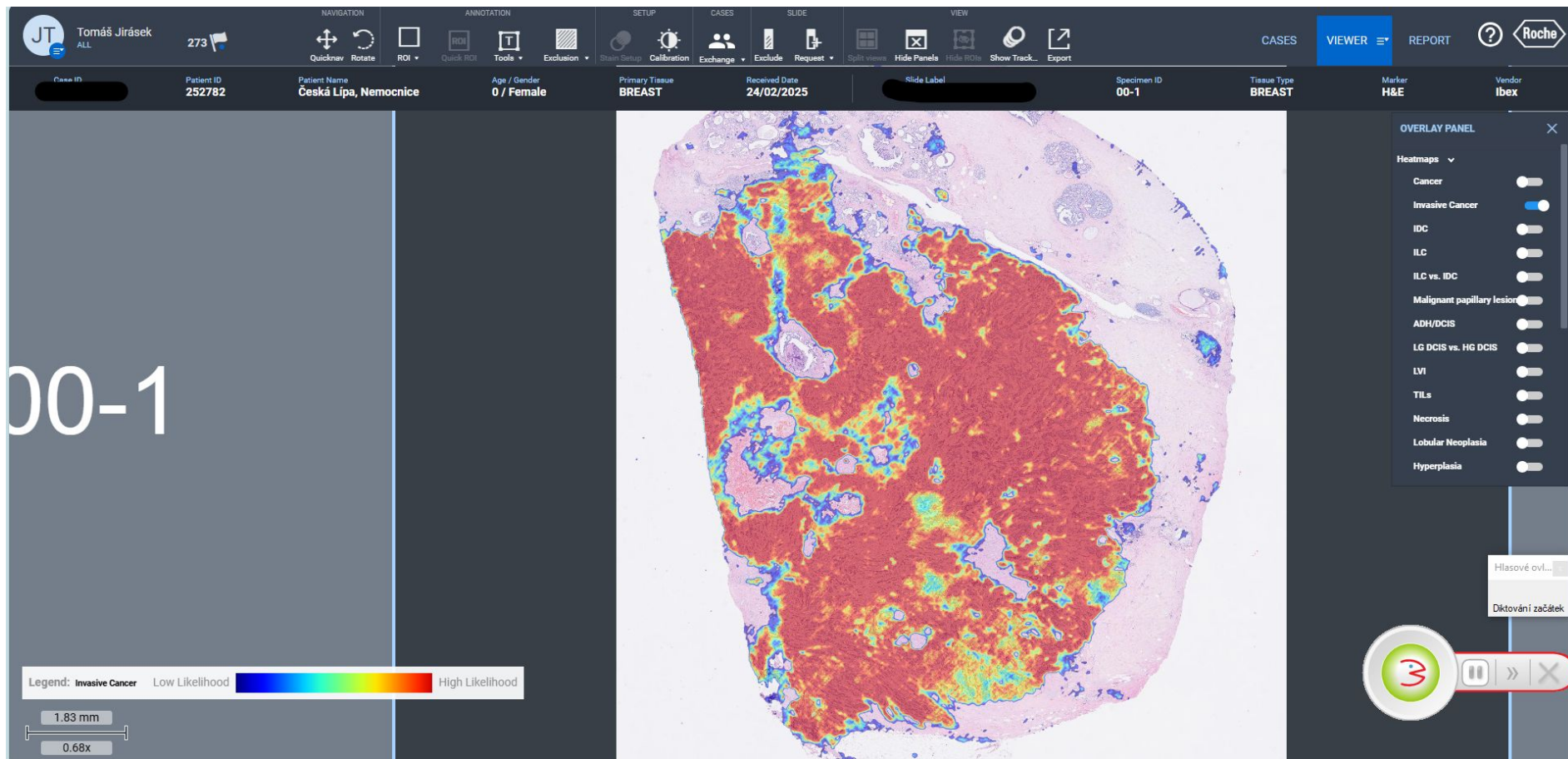
Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu



umíme pomáhat

biopsie prsu

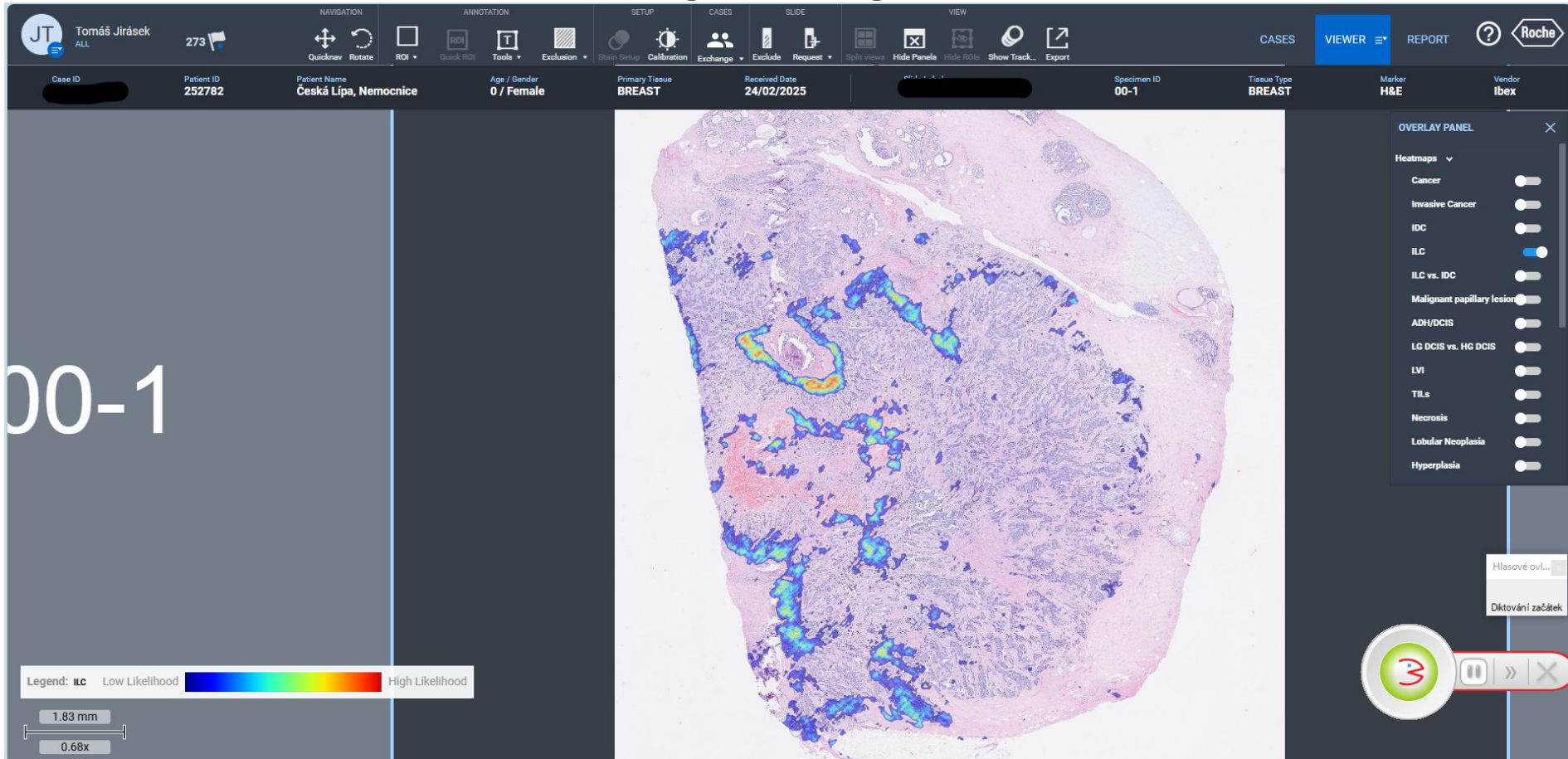


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

00-1

Case ID: [redacted] Patient ID: 252782 Patient Name: Česká Lipa, Nemocnice Age / Gender: 0 / Female Primary Tissue: BREAST Received Date: 24/02/2025 Slide Label: [redacted] Specimen ID: 00-1 Tissue Type: BREAST Marker: H&E Vendor: Ibex

NAVIGATION: Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion, Setup, Calibration, Exchange, Exclude, Request, Split views, Hide Panels, Hide ROIs, Show Track, Export

OVERLAY PANEL

Heatmaps

- Cancer
- Invasive Cancer
- IDC
- ILC
- ILC vs. IDC
- Malignant papillary lesion
- ADH/DCIS
- LG DCIS vs. HG DCIS
- LVI
- TILs
- Necrosis
- Lobular Neoplasia
- Hyperplasia

Legend: ILC vs. IDC ILC IDC

1.83 mm

0.68x

Hlasové ovl...
Diktování začátek

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

00-1

Legend: Malignant papillary lesion Low Likelihood High Likelihood

1.83 mm

0.68x

Case ID: [REDACTED] Patient ID: 252782 Patient Name: Česká Lipa, Nemocnice Age / Gender: 0 / Female Primary Tissue: BREAST Received Date: 24/02/2025 Specimen ID: 00-1 Tissue Type: BREAST Marker: H&E Vendor: Ibex

NAVIGATION: Quicknav Rotate ROI ANNOTATION: Quick ROI Tools Exclusion SETUP: Stain Setup Calibration Exchange Exclude Request SLIDE: Split views Hide Panels Hide ROIs Show Track Export VIEW: [Icons]

OVERLAY PANEL

- Heatmaps
- Cancer
- Invasive Cancer
- IDC
- ILC
- ILC vs. IDC
- Malignant papillary lesion
- ADH/DCIS
- LG DCIS vs. HG DCIS
- LVI
- TILs
- Necrosis
- Lobular Neoplasia
- Hyperplasia

Hlasové ovl...
Diktování začátek

3

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

Software interface for breast biopsy analysis, showing a histological slide with overlaid heatmaps and a legend.

Navigation and Annotation Tools: Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion, Setup, Stain Setup, Calibration, Exchange, Exclude, Request, Split views, Hide Panels, Hide ROIs, Show Track, Export.

Case Information: Case ID, Patient ID 252782, Patient Name Česká Lipa, Nemocnice, Age / Gender 0 / Female, Primary Tissue BREAST, Received Date 24/02/2025, Specimen ID 00-1, Tissue Type BREAST, Marker H&E, Vendor Ibex.

Legend: ADH/DCIS Low Likelihood High Likelihood

Scale: 1.83 mm, 0.68x

Overlay Panel:

- Heatmaps
- Cancer
- Invasive Cancer
- IDC
- ILC
- ILC vs. IDC
- Malignant papillary lesion
- ADH/DCIS
- LG DCIS vs. HG DCIS
- LVI
- TILs
- Necrosis
- Lobular Neoplasia
- Hyperplasia

Buttons: Hlasové ovl..., Diktování začátek

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

Software interface for breast biopsy analysis, showing a histological slide with overlaid heatmaps and a legend.

Navigation and Tools: Includes buttons for Navigation (Quicknav, Rotate), Annotation (ROI, Quick ROI, Tools, Exclusion), Setup (Shave Setup, Calibration), Cases (Exchange, Exclude, Request), Slide (Split views, Hide Panels, Hide ROIs), and View (Show Track, Export).

Case Information: Patient ID 252782, Patient Name Česká Lipa, Nemocnice, Age / Gender 0 / Female, Primary Tissue BREAST, Received Date 24/02/2025, Specimen ID 00-1, Tissue Type BREAST.

Legend: LG DCIS vs. HG DCIS. Color scale from LG (blue) to HG (red).

Overlay Panel: Heatmaps section with toggle switches for various markers: Cancer, Invasive Cancer, IDC, ILC, ILC vs. IDC, Malignant papillary lesion, ADH/DCIS, LG DCIS vs. HG DCIS (checked), LVI, TILs, Necrosis, Lobular Neoplasia, Hyperplasia.

Scale: 1.83 mm, 0.68x magnification.

Roche Logo: Present in the top right corner.

Buttons: Cases, VIEWER (active), REPORT, H&E, Vendor Ibex.

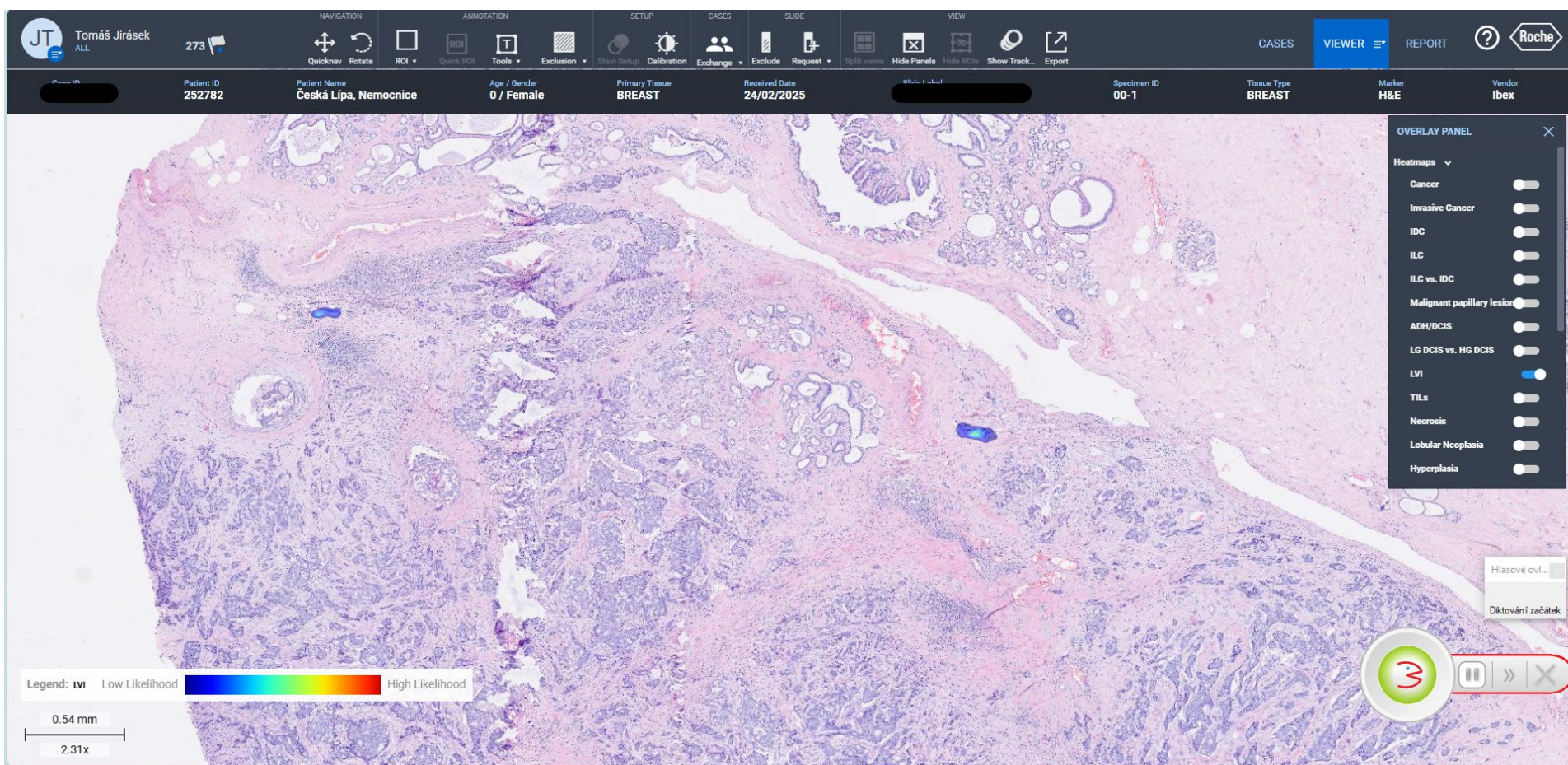
Additional UI Elements: A large '00-1' label on the left, a 'Hlasové ovl...' button, and a 'Diktování začátek' button at the bottom right.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

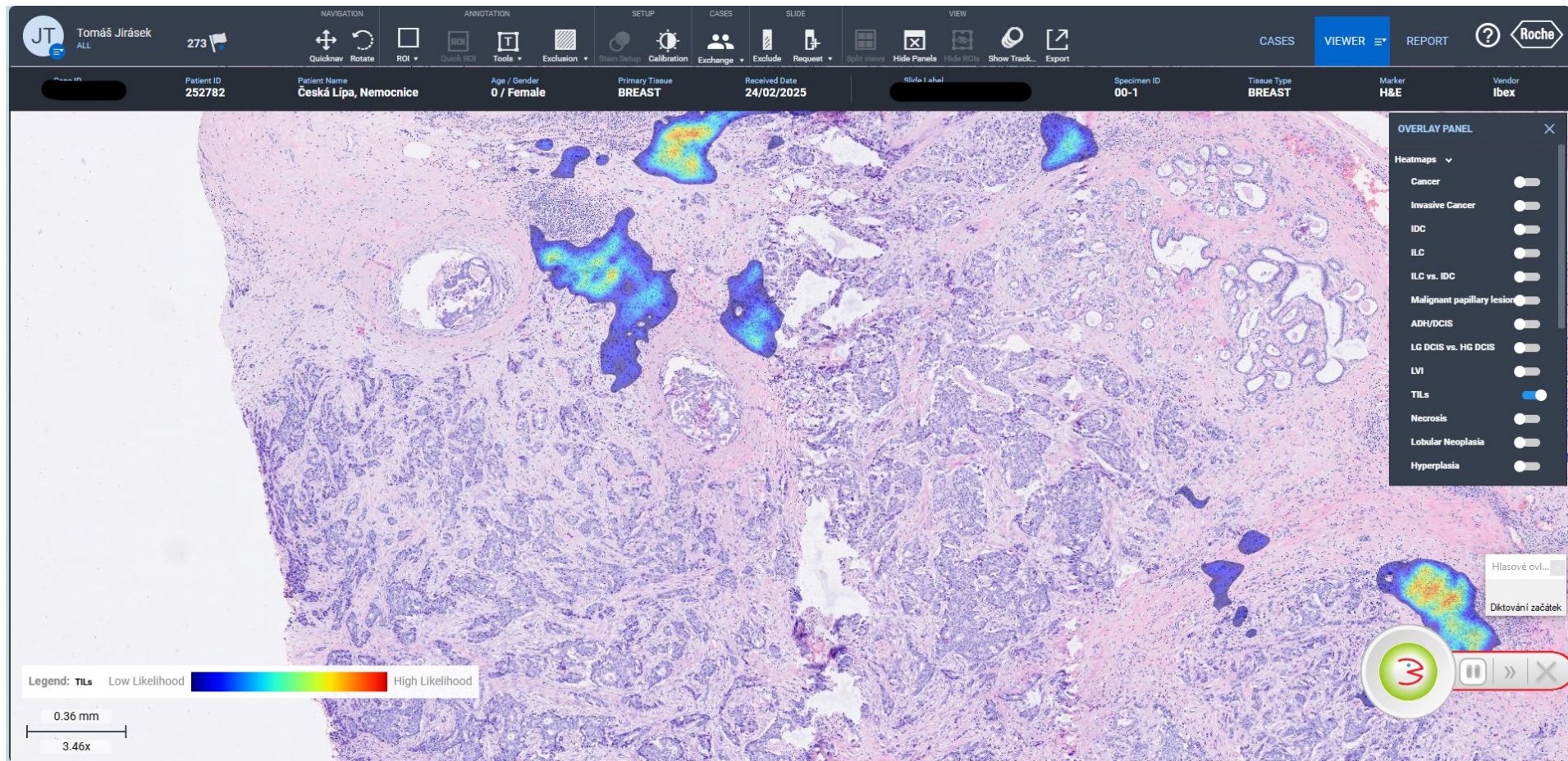


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

Software interface for breast biopsy analysis, showing a histological slide with overlaid heatmaps indicating cancer likelihood.

Navigation Bar: JT, Tomáš Jirásek, 273, Navigation (Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion, Setup, Calibration, Exchange, Exclude, Request, View, Hide Panels, Hide ROI, Show Track, Export), Cases, Viewer, Report, Roche.

Metadata: Case ID, Patient ID 252782, Patient Name Česká Lipa, Nemocnice, Age / Gender 0 / Female, Primary Tissue BREAST, Received Date 24/02/2025, Specimen ID 00-1, Tissue Type BREAST, Marker H&E, Vendor Ibex.

Heatmap Legend: Legend: Necrosis Low Likelihood High Likelihood. Scale: 0.36 mm, 3.46x.

Overlay Panel:

Heatmaps	Toggle
Cancer	☐
Invasive Cancer	☐
IDC	☐
ILC	☐
ILC vs. IDC	☐
Malignant papillary lesion	☐
ADH/DCIS	☐
LG DCIS vs. HG DCIS	☐
LVI	☐
TILs	☐
Necrosis	☒
Lobular Neoplasia	☐
Hyperplasia	☐

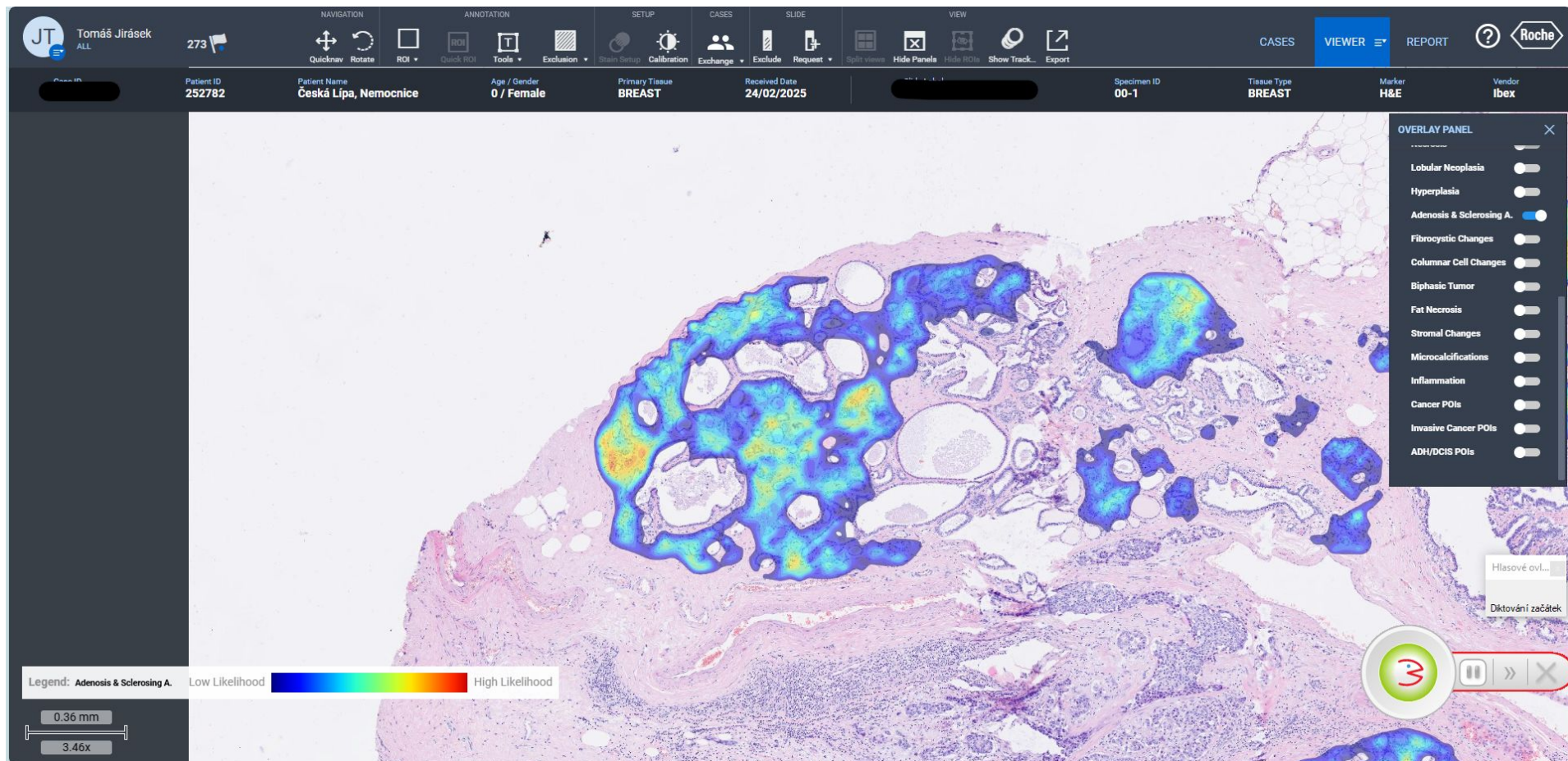
Controls: Hlasové ovl..., Diktování začátek, Playback controls (Play, Stop, Previous, Next).

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

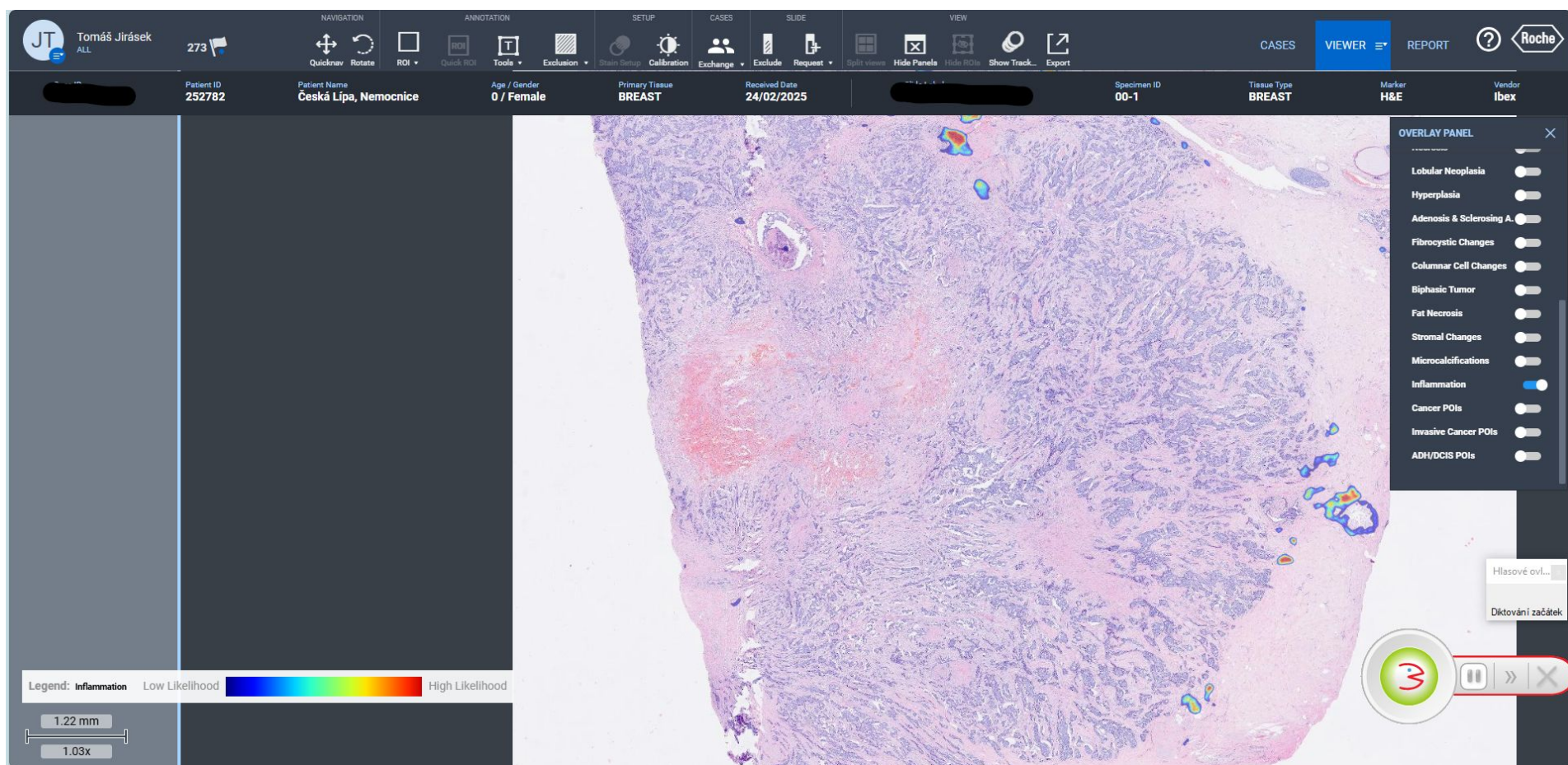


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

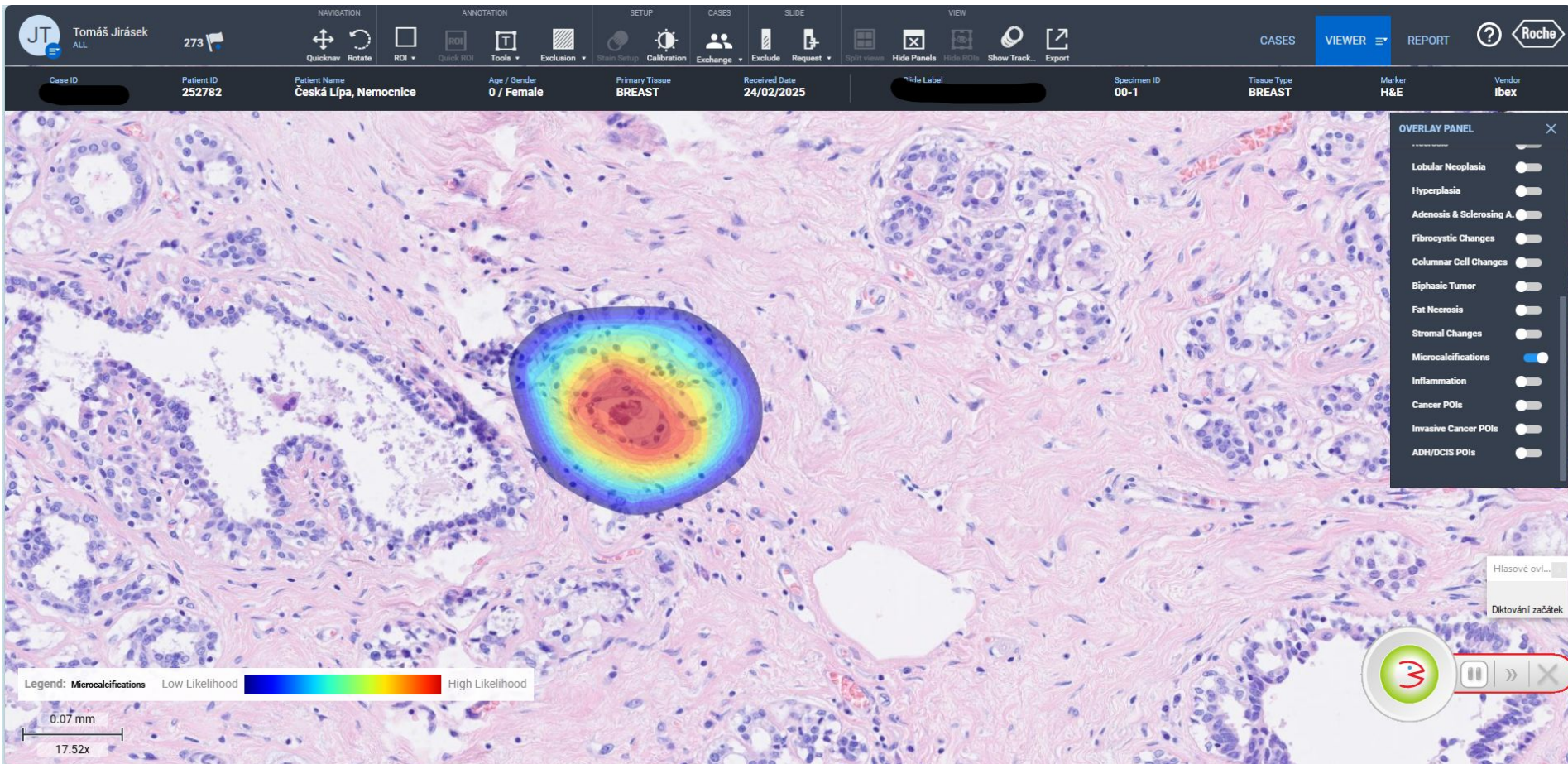


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu

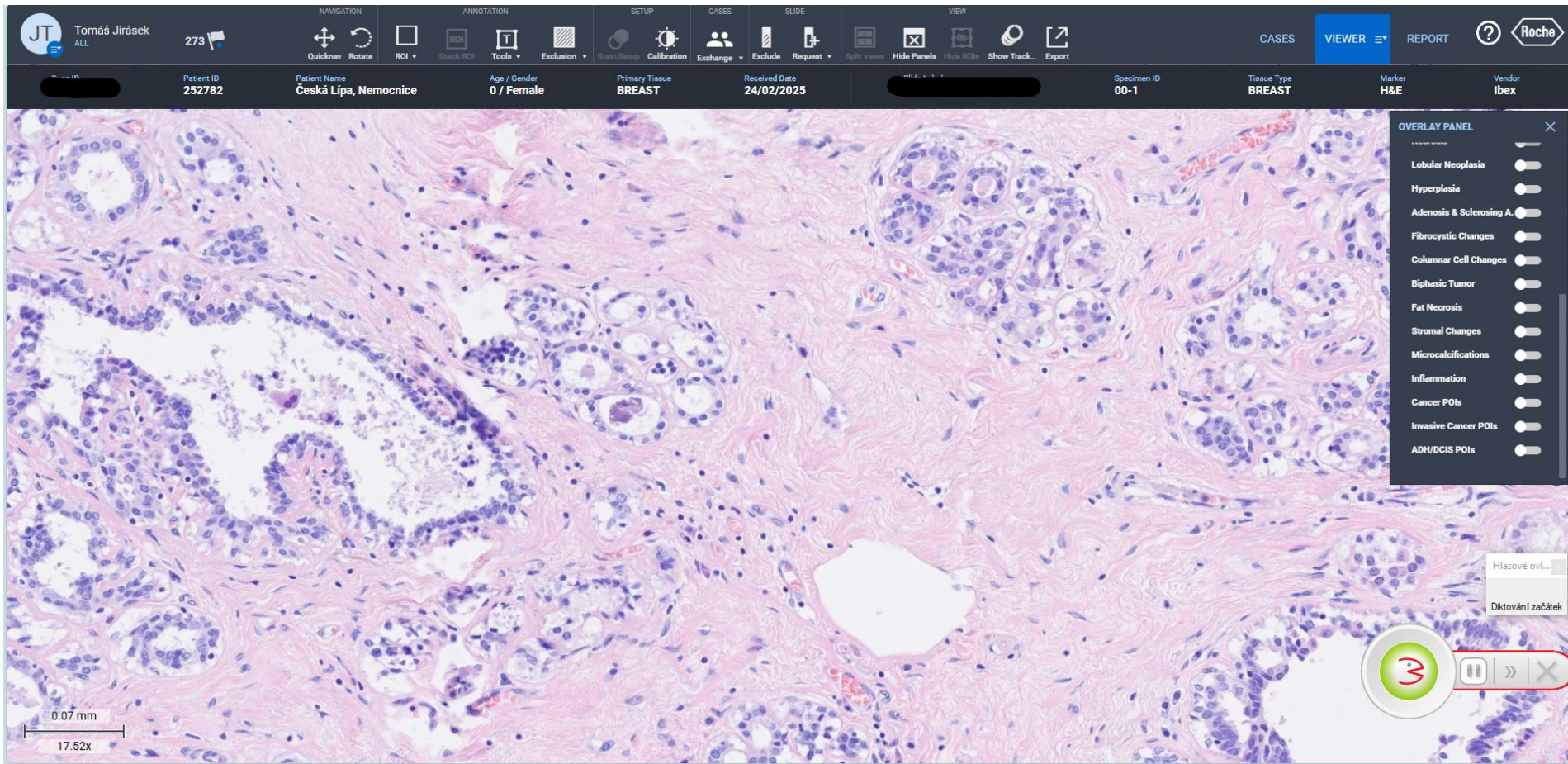


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

biopsie prsu



umíme pomáhat



IBEX v prostředí Navify

prso zbývá dořešit:

- reportování grade
- změna RUO na IVD
- výrazně zpřesnit detekci IDC a ILC
- generování souhrnného reportu za všechny aktuální vzorky od pacienta
- možnost použití na materiálu resekátů mammy



IBEX v prostředí Navify

analýza obrazu HE

- **karcinom prostaty**
 - Galen Prostate Algorithm RUO
- karcinom prsu
 - Galen Breast Algorithm RUO



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing patient information, specimen details, and analysis results.

Navigation Bar: Includes icons for Navigation, Annotation, Setup, Cases, Slide, and View.

Header Information:

- Patient ID: 252183
- Patient Name: Liberec, Nemocnice
- Age / Gender: 0 / Male
- Primary Tissue: PROSTATE
- Received Date: 19/02/2025
- Specimen ID: 00-1
- Tissue Type: PROSTATE
- Marker: H&E
- Vendor: Ibex

Analysis Results:

- RUO Algorithm Analysis Successful** (Top)
- Likely Cancer** (Red banner)
- Specimen 00-1**
Block III.L1
- 00-1III.L1-00-12 / H&E** (Green banner)
- RUO Algorithm Analysis Successful** (Bottom)
- Likely Benign** (Green banner)

Scale Bar: 4.04 mm, 0.31x

Slide Viewer: Shows a histological slide of prostate tissue. The slide is labeled 12 / 17.

ALL SLIDES: A list of all slides, with slide 12 highlighted.

umíme pomáhat

punkční biopsie prostaty

Tomáš Jirásek
ALL

273

NAVIGATION

ANNOTATION

SETUP

CASES

SLIDE

VIEW

CASES

VIEWER

REPORT

Patient ID

2502530

Patient Name

Liberec, Nemocnice

Age / Gender

0 / Male

Primary Tissue

PROSTATE

Received Date

21/02/2025

Specimen ID

00-1

Tissue Type

PROSTATE

Marker

H&E

Vendor

Ibex

ALL(16)
READY(16)
RESCAN(0)
PENDING(0)
EXCLUDED(0)

Specimen 00-1

Block L5

Liberty Cancer

RUO Algorithm

Analysis Successful

Specimen 00-1

Block L6

Undetermined

RUO Algorithm

Analysis Successful

Specimen 00-1

Block L7

Liberty Design

12.64 mm

0.10x

Hlasové ovl...
Diktování začátek

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

The screenshot displays a digital pathology software interface with a dark theme. At the top, a navigation bar includes tabs for 'CASES', 'VIEWER' (selected), and 'REPORT'. Below this, a header section provides patient and specimen information: Patient ID 252183, Patient Name Liberec, Nemocnice, Age / Gender 0 / Male, Primary Tissue PROSTATE, Received Date 19/02/2025, Specimen ID 00-1, Tissue Type PROSTATE, Marker H&E, and Vendor Ibex. A central panel shows a histological slide of a prostate biopsy. A purple overlay at the top of the slide reads 'RUO Algorithm Analysis Successful'. A red box on the left side of the slide is labeled 'Likely Cancer'. A green bar at the bottom of the slide contains the text '00-1III.L1-00-12 / H&E'. Below the slide, another purple overlay reads 'RUO Algorithm Analysis Successful'. A green bar at the bottom of the interface is labeled 'Likely Benign'. On the right side, a 'CASE' tab is active, showing a 'SLIDE' view with a 'Enter Note' field. Below this, a 'ALL SLIDES' panel shows a list of slides, with slide 12 selected. A scale bar at the bottom left indicates 4.04 mm and 0.31x magnification.

Tomáš Jirásek
ALL 275

Patient ID 252183
Patient Name Liberec, Nemocnice
Age / Gender 0 / Male
Primary Tissue PROSTATE
Received Date 19/02/2025
Specimen ID 00-1
Tissue Type PROSTATE
Marker H&E
Vendor Ibex

ALL(17) READY(17) RESCAN(0) PENDING(0) EXCLUDED(0)

Specimen 00-1
Block III.L1

4.04 mm
0.31x

RUO Algorithm Analysis Successful

Likely Cancer

00-1III.L1-00-12 / H&E

RUO Algorithm Analysis Successful

Likely Benign

CASE SLIDE
Enter Note

ALL SLIDES

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide and various analysis panels.

Top Bar: Navigation (Quickmap, Rotate, ROI, Quick ROI, Tools, Exclusion), Setup (Stain Setup, Calibration), Cases (Exchange, Exclude, Request), Slide (Split views, Hide Panels, Hide ROIs, Show Track, Export), and View (Cases, Viewer, Report, Roche logo).

Metadata: Case ID, Patient ID 252183, Patient Name Liberec, Nemocnice, Age / Gender 0 / Male, Primary Tissue PROSTATE, Received Date 19/02/2025, Specimen ID 00-1, Tissue Type PROSTATE, Marker H&E, Vendor Ibex.

Main Slide: Histological image of prostate tissue. Scale bar: 0.43 mm, 2.91x magnification.

Overlay Panel: Heatmaps (Cancer, Prostate Adenocarcinoma, Other Cancer, Gleason, Perineural invasion, Tissue Fragments, AdC + Tumor Fragments, HG PIN, Inflammation, Atrophy, Cancer POIs).

Slide Panel: Slide Score (Screening Class: LIKELY CANCER, Galen Prostate Algorithm 3.4.2), ROIs (0), Exclusions (0), Measurements (0), Arrows (0), Text (0).

Slide Navigator: Navigation controls (Previous, Next, 12 / 17, etc.).

ALL SLIDES: List of slides.

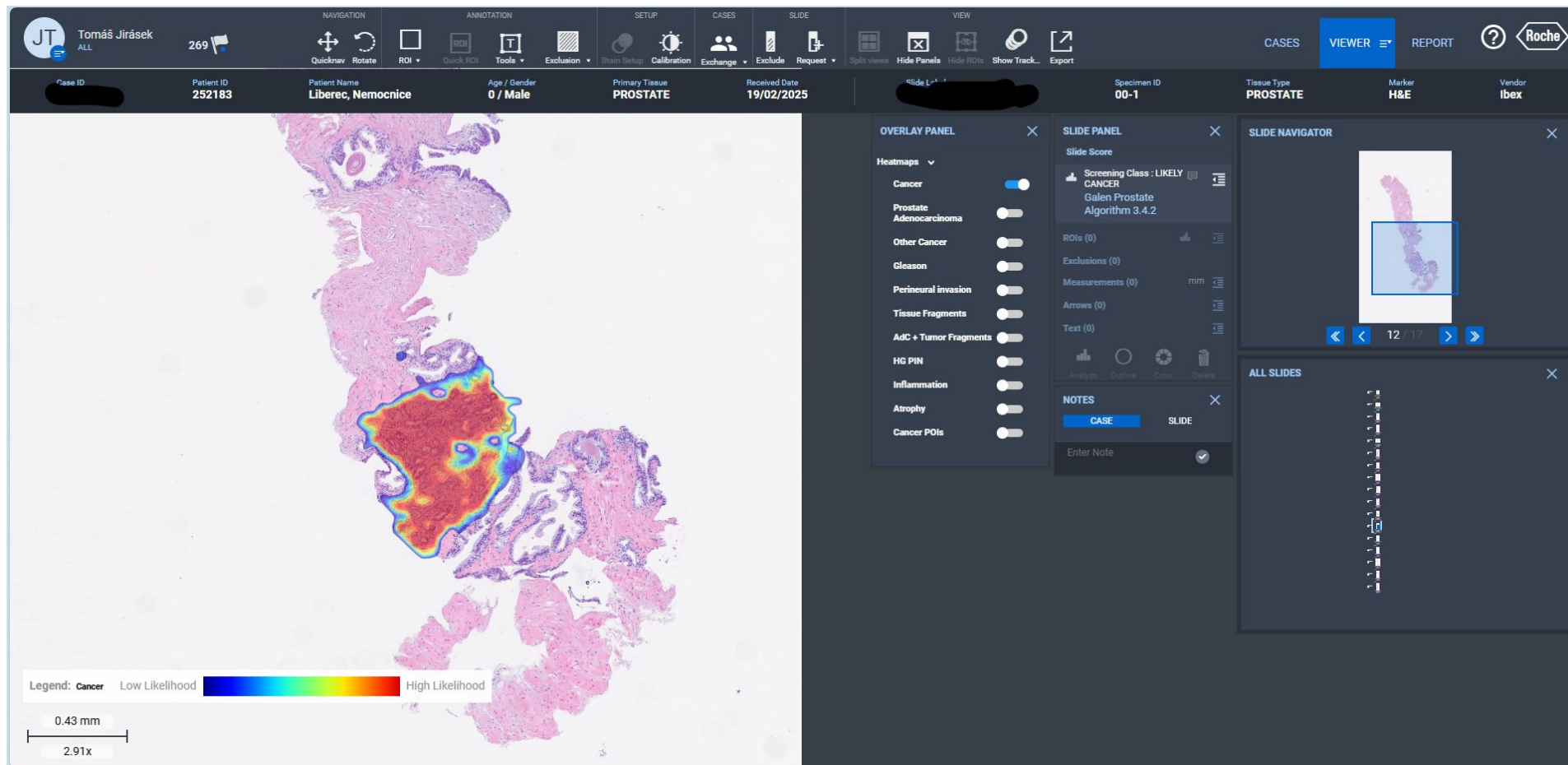
NOTES: Case and Slide notes section.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

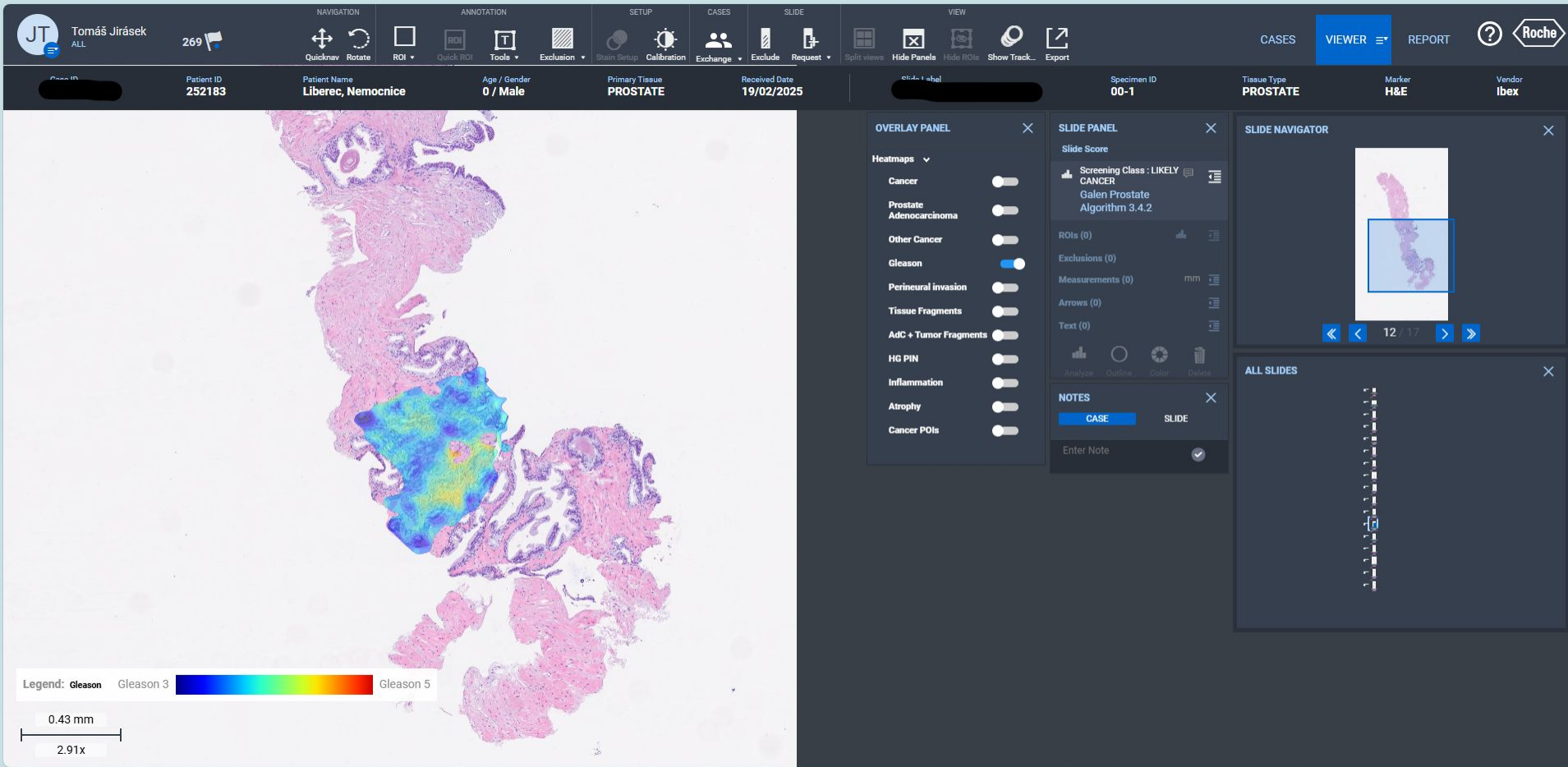


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

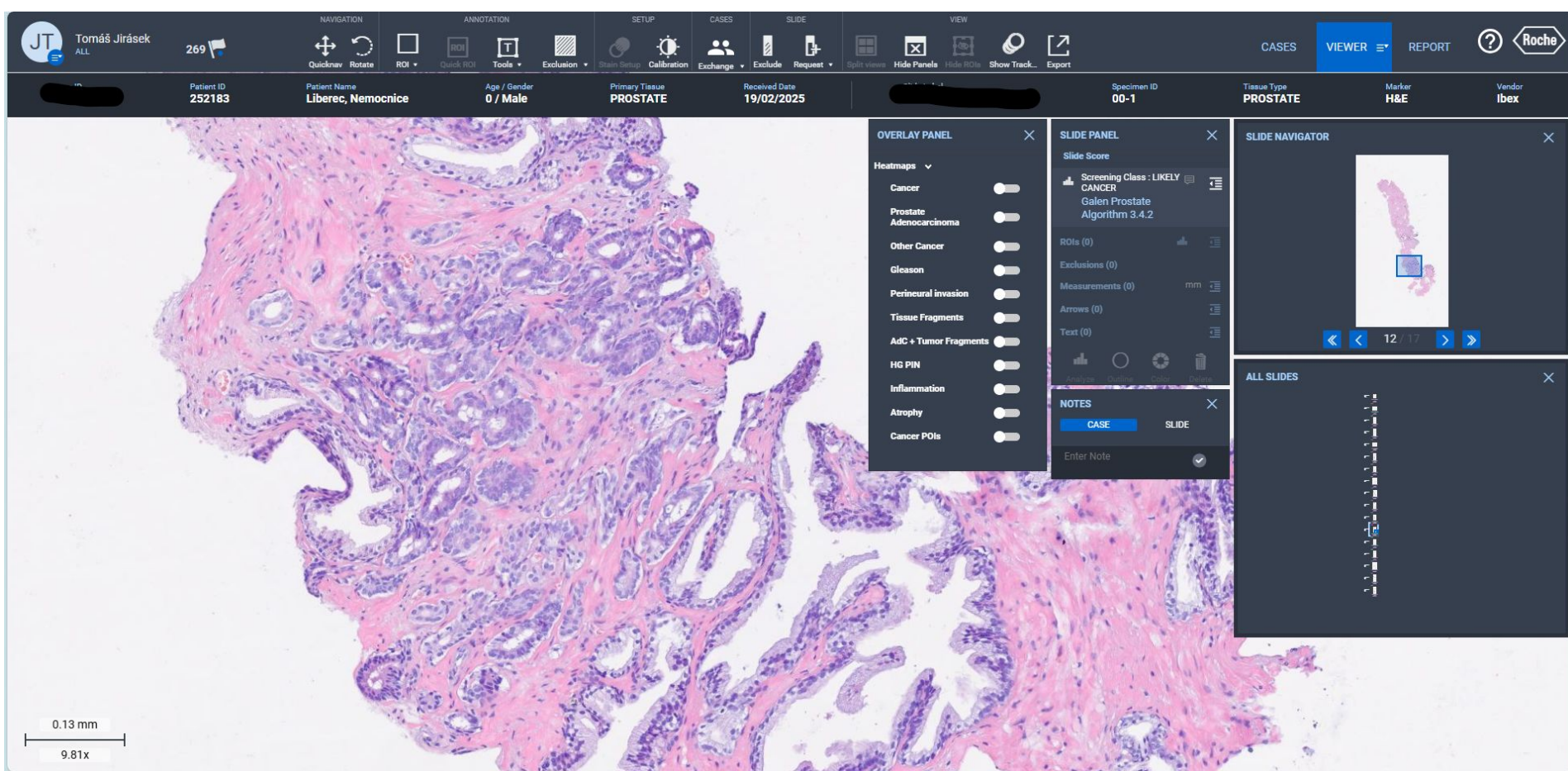


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

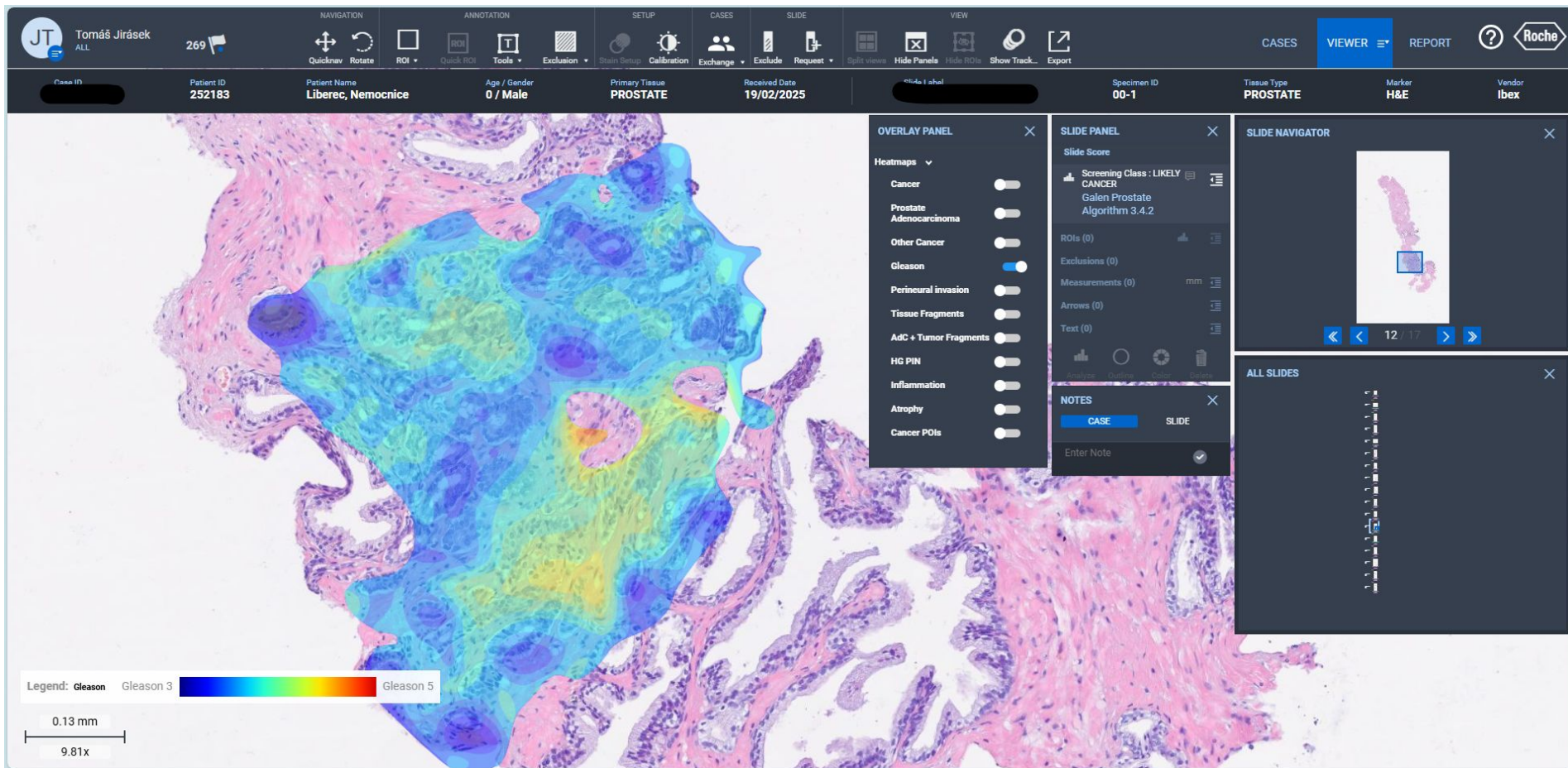


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

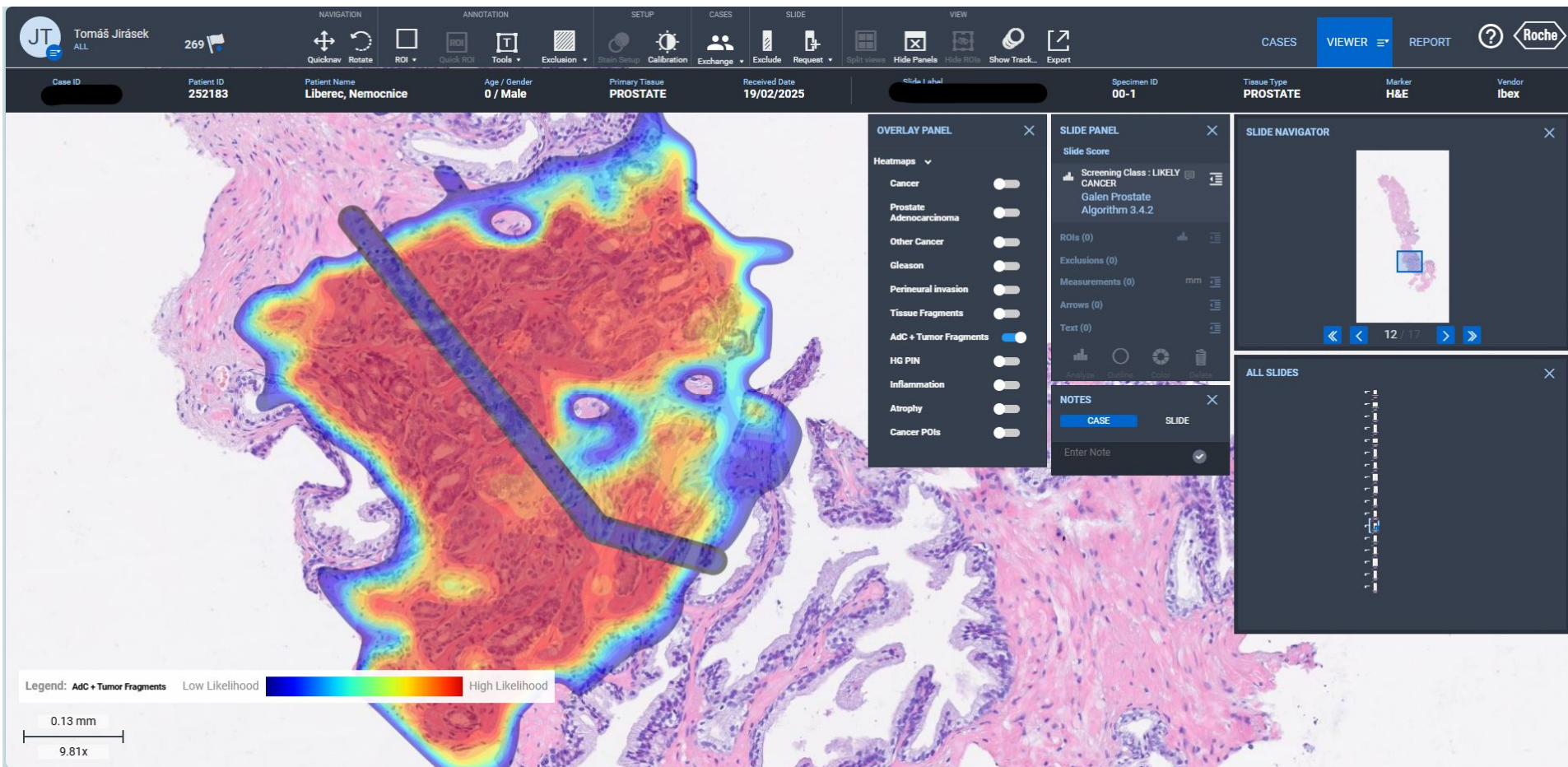


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

The screenshot displays a digital pathology viewer interface. At the top, there is a navigation bar with tabs for NAVIGATION, ANNOTATION, SETUP, CASES, SLIDE, and VIEW. Below this is a patient information bar showing Patient ID 252179, Patient Name Liberec, Nemocnice, Age / Gender 0 / Male, Primary Tissue PROSTATE, Received Date 19/02/2025, Specimen ID 00-1, Tissue Type PROSTATE, Marker H&E, and Vendor Ibex. The main viewing area shows a histological slide of a prostate biopsy. A green banner at the top of the slide reads "Likely Benign". Below the slide, a green banner displays the slide ID "1111.L5-00-16 / H&E". A purple banner at the bottom of the slide reads "RUO Algorithm Analysis Successful". To the right of the main viewing area, there is a sidebar with controls for CASE, SLIDE, ZOOM (0.33x), ROTATE (0°), CASE LOG, PATIENT HISTORY, and a list of ALL SLIDES. The bottom left corner of the interface shows a scale bar for 3.84 mm and a magnification of 0.33x.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide and various tool panels.

Top Bar: JT Tomáš Jirásek ALL 269. Navigation: Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion, Stain Setup, Calibration, Exchange, Exclude, Request. View: Split views, Hide Panels, Hide ROIs, Show Track, Export. Cases: CASES, VIEWER, REPORT. Roche logo.

Metadata: Case ID: [redacted], Patient ID: 252179, Patient Name: Liberec, Nemocnice, Age / Gender: 0 / Male, Primary Tissue: PROSTATE, Received Date: 19/02/2025, Slide Label: [redacted], Specimen ID: 00-1, Tissue Type: PROSTATE, Marker: H&E, Vendor: Ibex.

Main Slide: Histological section of prostate tissue, stained with H&E. Scale bar: 0.22 mm, 5.56x magnification.

Overlay Panel: Heatmaps (Cancer, Prostate Adenocarcinoma, Other Cancer, Gleason, Perineural invasion, Tissue Fragments, HG PIN, Inflammation, Atrophy, Cancer POIs).

Notes: CASE, SLIDE. Enter Note.

Zoom: 5.56x. Range: 1x to 80x.

Rotate: 0°. Range: -180° to 180°.

Case Log: No case log found.

Patient History: Prostate Current.

Slide Navigator: 16 / 17.

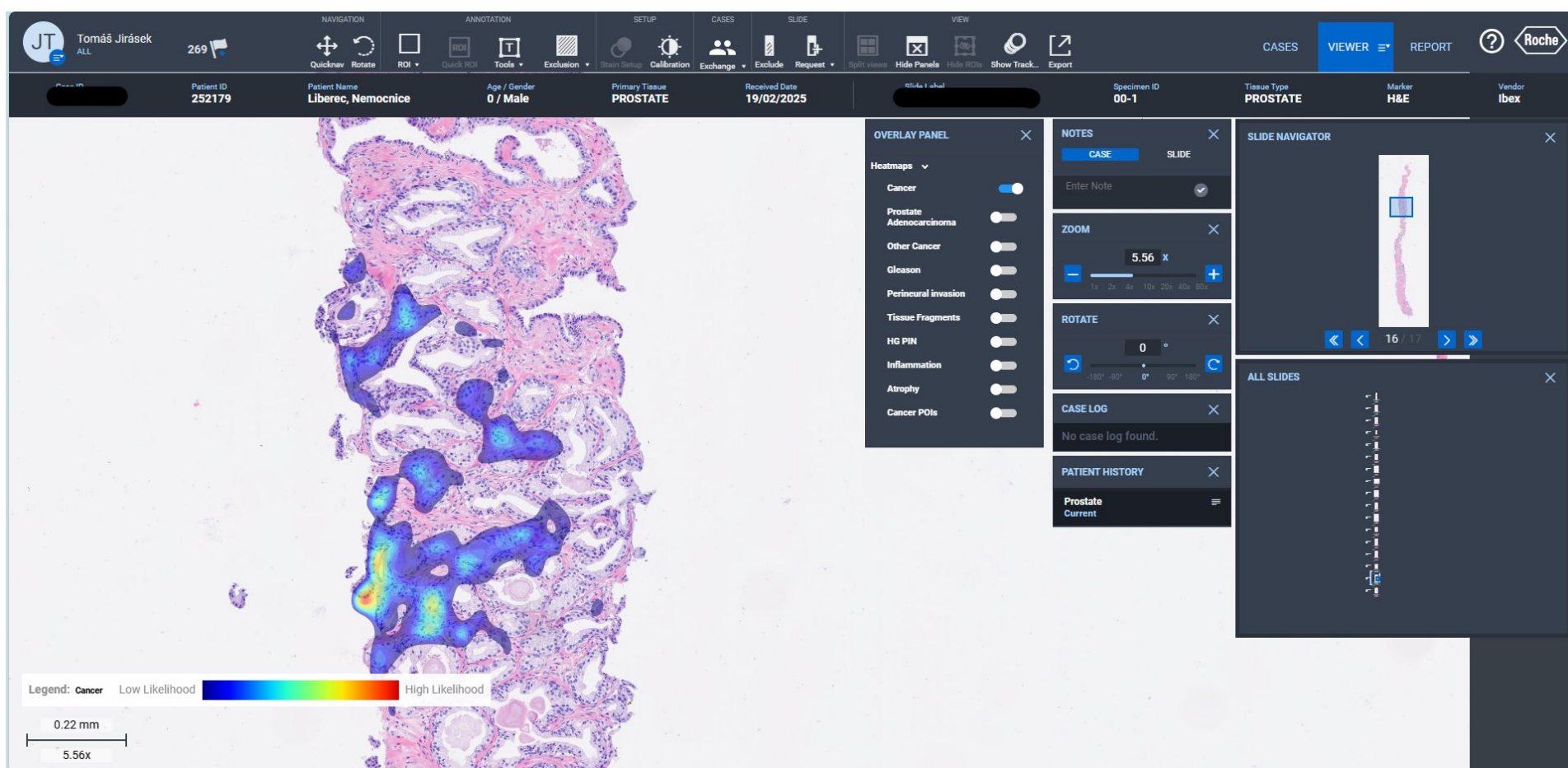
All Slides: List of slides.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

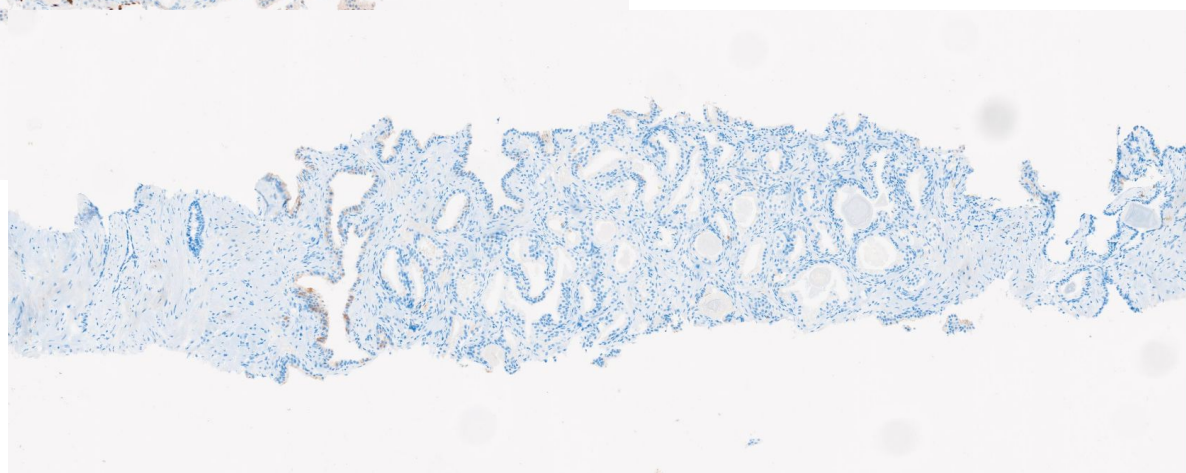
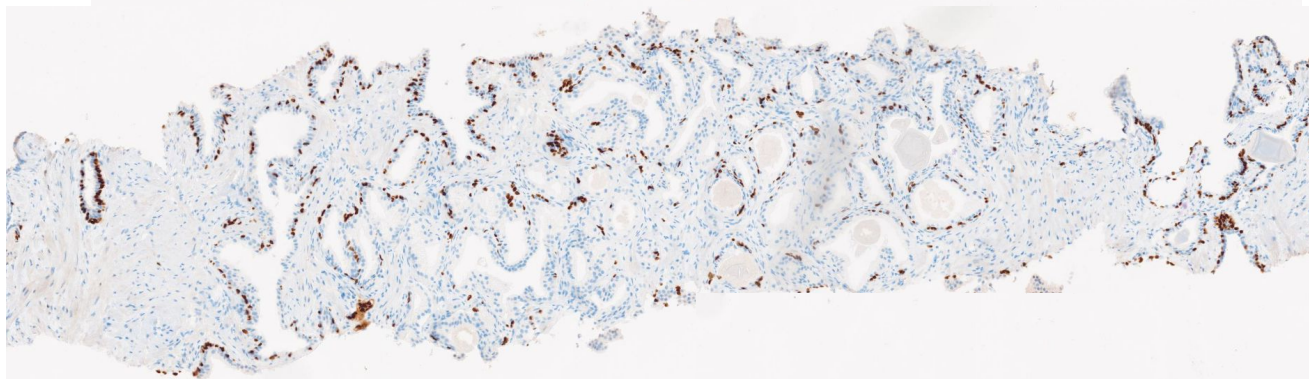
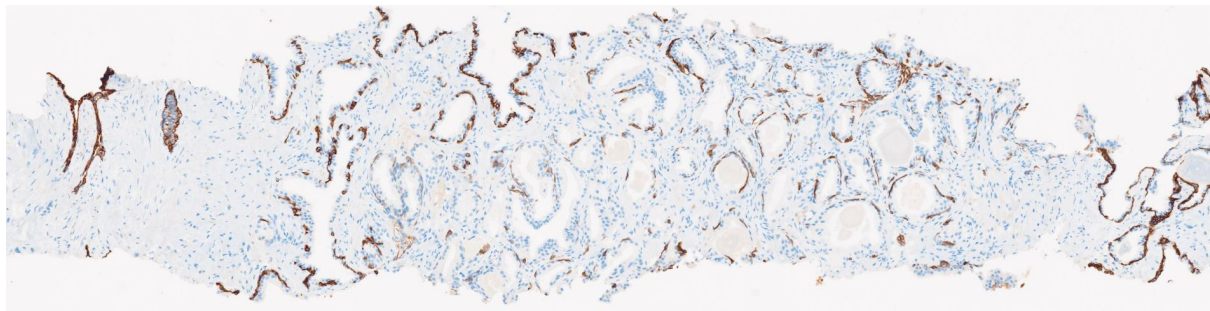


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis. The top bar includes navigation, annotation, setup, cases, slide, and view tabs. The main area displays a histological slide of a prostate biopsy specimen, labeled "Undetermined". The specimen ID is 00-1, and the tissue type is PROSTATE. The analysis was performed using the RUO Algorithm, and the result is "Analysis Successful". The interface also shows patient information (Tomáš Jirásek, 275) and a scale bar (3.95 mm, 0.32x).

specimen 00-1
ock
léze 2

Undetermined

I.Léze 2-00-2 / H&E

RUO Algorithm
Analysis Successful

3.95 mm
0.32x

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide and various tool panels.

Top Bar: Navigation, Annotation, Setup, Cases, Slide, View. Includes user profile (JT, Tomáš Jirásek, ALL), patient ID (252179), and a Roche logo.

Metadata: Patient ID: 252179, Patient Name: Liberec, Nemocnice, Age / Gender: 0 / Male, Primary Tissue: PROSTATE, Received Date: 19/02/2025, Specimen ID: 00-1, Tissue Type: PROSTATE, Marker: H&E, Vendor: Ibex.

Main View: Histological slide showing prostate tissue sections.

Overlay Panel: Heatmaps (Cancer, Prostate Adenocarcinoma, Other Cancer, Gleason, Perineural invasion, Tissue Fragments, AdC + Tumor Fragments, HG PIN, Inflammation, Atrophy, Cancer POIs).

Notes: Case, Slide, Enter Note.

Zoom: 3.71x (1x, 2x, 4x, 10x, 20x, 40x, 80x).

Rotate: 0° (-180°, -90°, 0°, 90°, 180°).

Case Log: No case log found.

Patient History: Prostate Current.

Slide Navigator: 2 / 17.

All Slides: Vertical list of slide thumbnails.

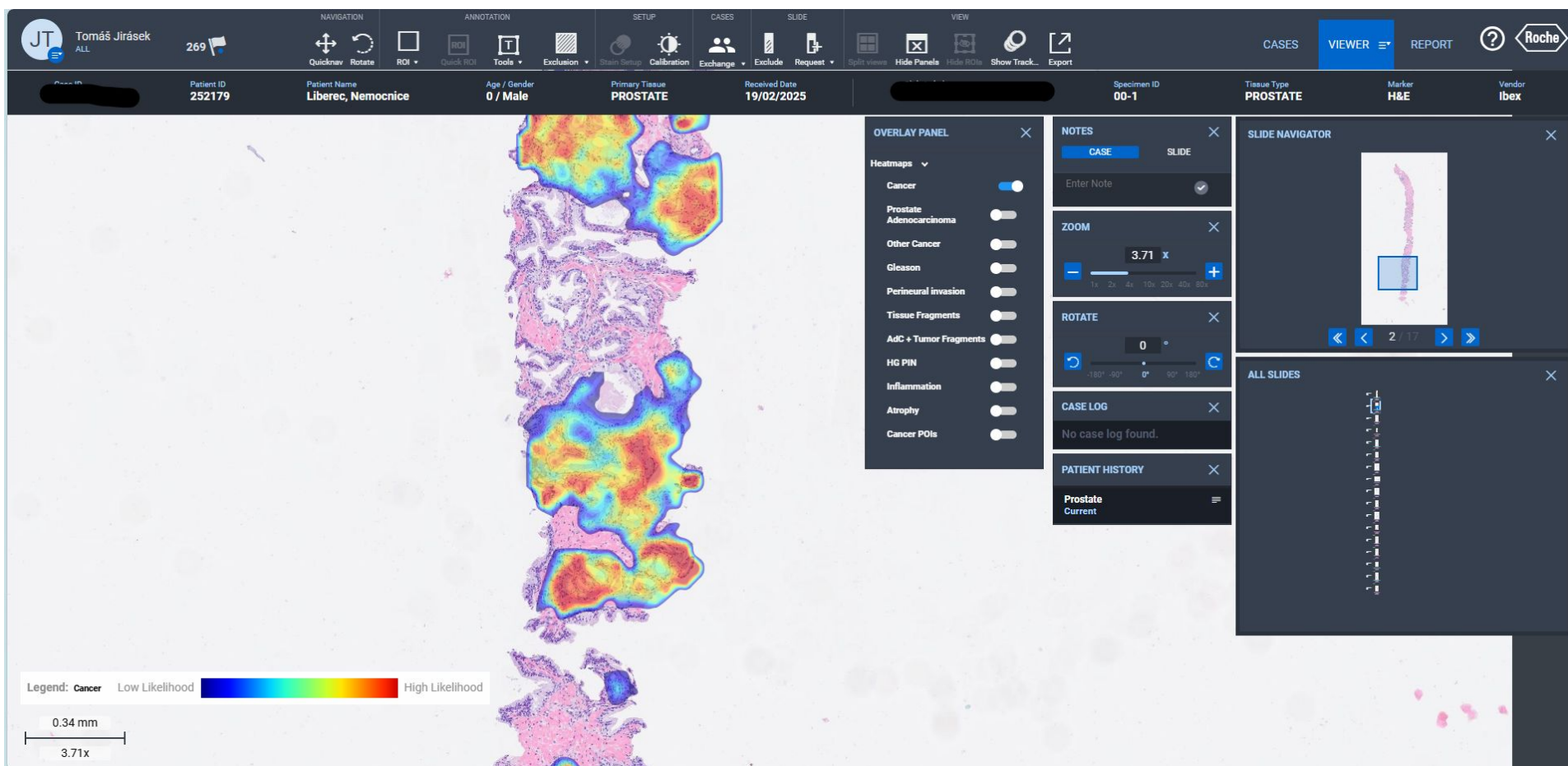
Scale Bar: 0.34 mm, 3.71x.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide with Gleason score overlay.

Header Information:

- Case ID: [Redacted]
- Patient ID: 252179
- Patient Name: Liberec, Nemocnice
- Age / Gender: 0 / Male
- Primary Tissue: PROSTATE
- Received Date: 19/02/2025
- Specimen ID: 00-1
- Tissue Type: PROSTATE
- Marker: H&E
- Vendor: Ibex

Navigation and Tools:

- NAVIGATION: Quicknav, Rotate, ROI, Quick ROI, Tools, Exclusion, Stain Setup, Calibration, Exchange, Exclude, Request
- ANIMATION: [Icons]
- VIEW: Split viewers, Hide Panels, Hide ROIs, Show Track, Export

Overlay Panel (Heatmaps):

- Cancer: [Off]
- Prostate Adenocarcinoma: [Off]
- Other Cancer: [Off]
- Gleason: [On]
- Perineural invasion: [Off]
- Tissue Fragments: [Off]
- AdC + Tumor Fragments: [Off]
- HG PIN: [Off]
- Inflammation: [Off]
- Atrophy: [Off]
- Cancer POIs: [Off]

NOTES:

- CASE: [Enter Note]
- SLIDE: [Enter Note]

ZOOM: 3.71 x (1x, 2x, 4x, 10x, 20x, 40x, 60x)

ROTATE: 0° (-180°, -90°, 0°, 90°, 180°)

CASE LOG: No case log found.

PATIENT HISTORY: Prostate Current

SLIDE NAVIGATOR: 2 / 17

ALL SLIDES: [List of slides]

Legend: Gleason

- Gleason 3: [Blue]
- Gleason 4: [Green]
- Gleason 5: [Red]

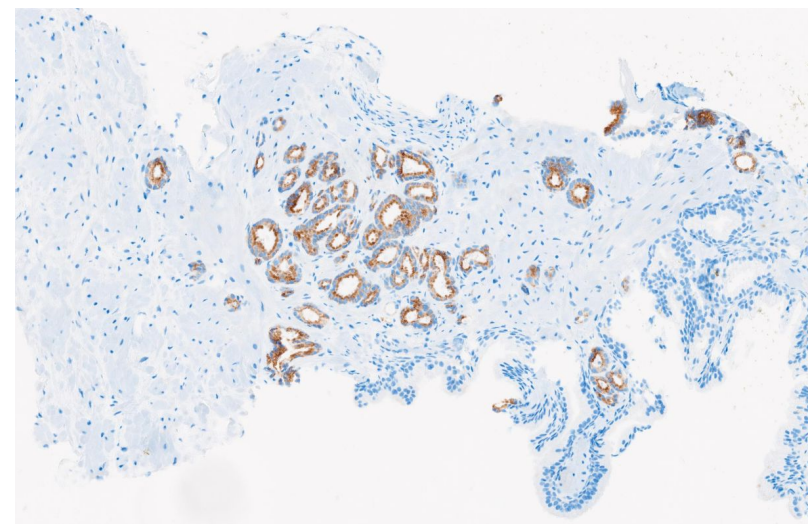
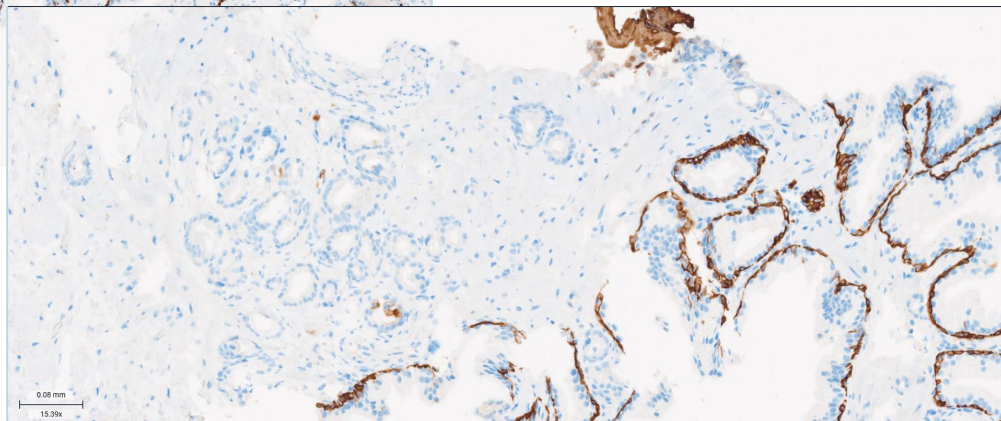
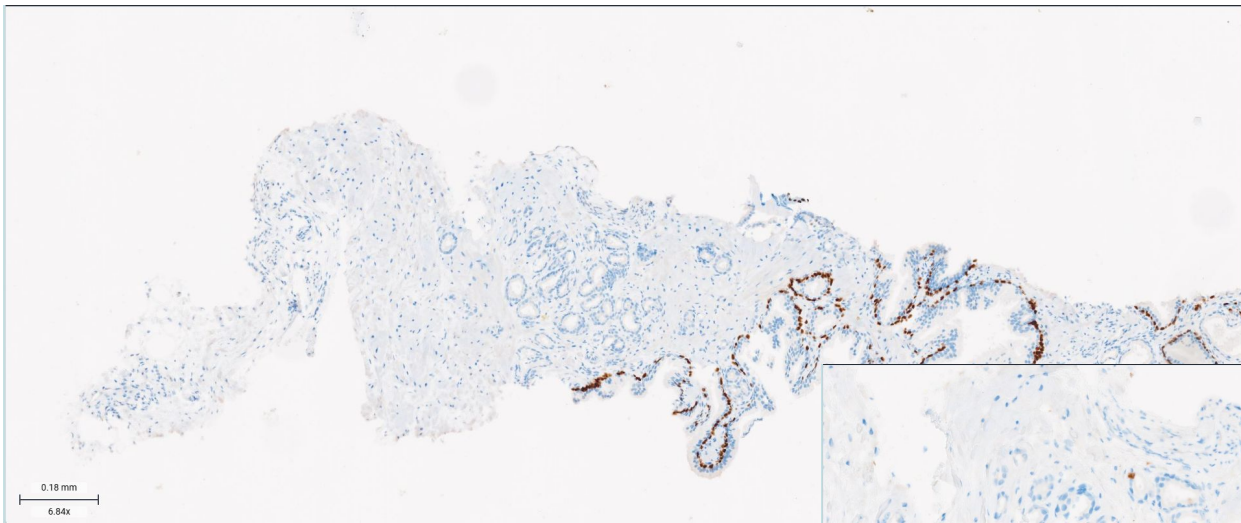
0.34 mm scale bar, 3.71x magnification.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

The screenshot displays the Roche Ibex digital pathology viewer interface. The top navigation bar includes the user profile (Tomáš Jirásek, ALL), patient information (Patient ID 252179, Patient Name Liberec, Nemocnice, Age / Gender 0 / Male, Primary Tissue PROSTATE, Received Date 19/02/2025), and various tool icons for navigation, annotation, setup, cases, slide, and view. The main viewing area shows a histological slide of a prostate biopsy. On the left, text identifies the specimen as 'Specimen 00-1', 'Block', and 'I.Léze 1'. A scale bar indicates '3.84 mm' and '0.33x' magnification. The slide is labeled 'Likely Benign' in a green box. Below the slide, a green box contains the text 'II.Léze 1-00-1 / H&E'. A purple box at the bottom states 'RUO Algorithm Analysis Successful'. On the right, a sidebar contains controls for 'CASE' and 'SLIDE', including 'Enter Note', 'ZOOM' (0.33x), 'ROTATE' (0°), 'CASE LOG' (No case log found), 'PATIENT HISTORY' (Prostate Current), and a list of 'ALL SLIDES'.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide and various tool panels.

Top Bar: Navigation, Annotation, Setup, Cases, Slide, View. User: JT Tomáš Jirásek ALL. 269. Cases: VIEWER, REPORT. Roche logo.

Metadata: Case ID: [redacted], Patient ID: 252179, Patient Name: Liberec, Nemocnice, Age / Gender: 0 / Male, Primary Tissue: PROSTATE, Received Date: 19/02/2025, Specimen ID: 00-1, Tissue Type: PROSTATE, Marker: H&E, Vendor: Ibex.

Main Slide: Histological image of prostate tissue. Scale bar: 0.10 mm, 12.52x magnification.

Overlay Panel: Heatmaps (Cancer, Prostate Adenocarcinoma, Other Cancer, Gleason, Perineural invasion, Tissue Fragments, HG PIN, Inflammation, Atrophy, Cancer POIs).

Notes: CASE, SLIDE. Enter Note.

Zoom: 12.52x. Range: 1x to 80x.

Rotate: 0°. Range: -180° to 180°.

Case Log: No case log found.

Patient History: Prostate Current.

Slide Navigator: 1 / 17.

All Slides: List of slides.

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide with a color-coded overlay indicating cancer likelihood.

Header Information:

- Case ID: 252179
- Patient Name: Liberec, Nemocnice
- Age / Gender: 0 / Male
- Primary Tissue: PROSTATE
- Received Date: 19/02/2025
- Specimen ID: 00-1
- Tissue Type: PROSTATE
- Marker: H&E
- Vendor: Ibex

Overlay Panel (Heatmaps):

- Cancer: ☒
- Prostate Adenocarcinoma: ☐
- Other Cancer: ☐
- Gleason: ☐
- Perineural Invasion: ☐
- Tissue Fragments: ☐
- HG PIN: ☐
- Inflammation: ☐
- Atrophy: ☐
- Cancer POIs: ☐

Legend: Cancer Low Likelihood High Likelihood

Scale: 0.10 mm

Zoom: 12.52x

Slide Navigator: 1 / 17

ALL SLIDES: [Thumbnail strip]

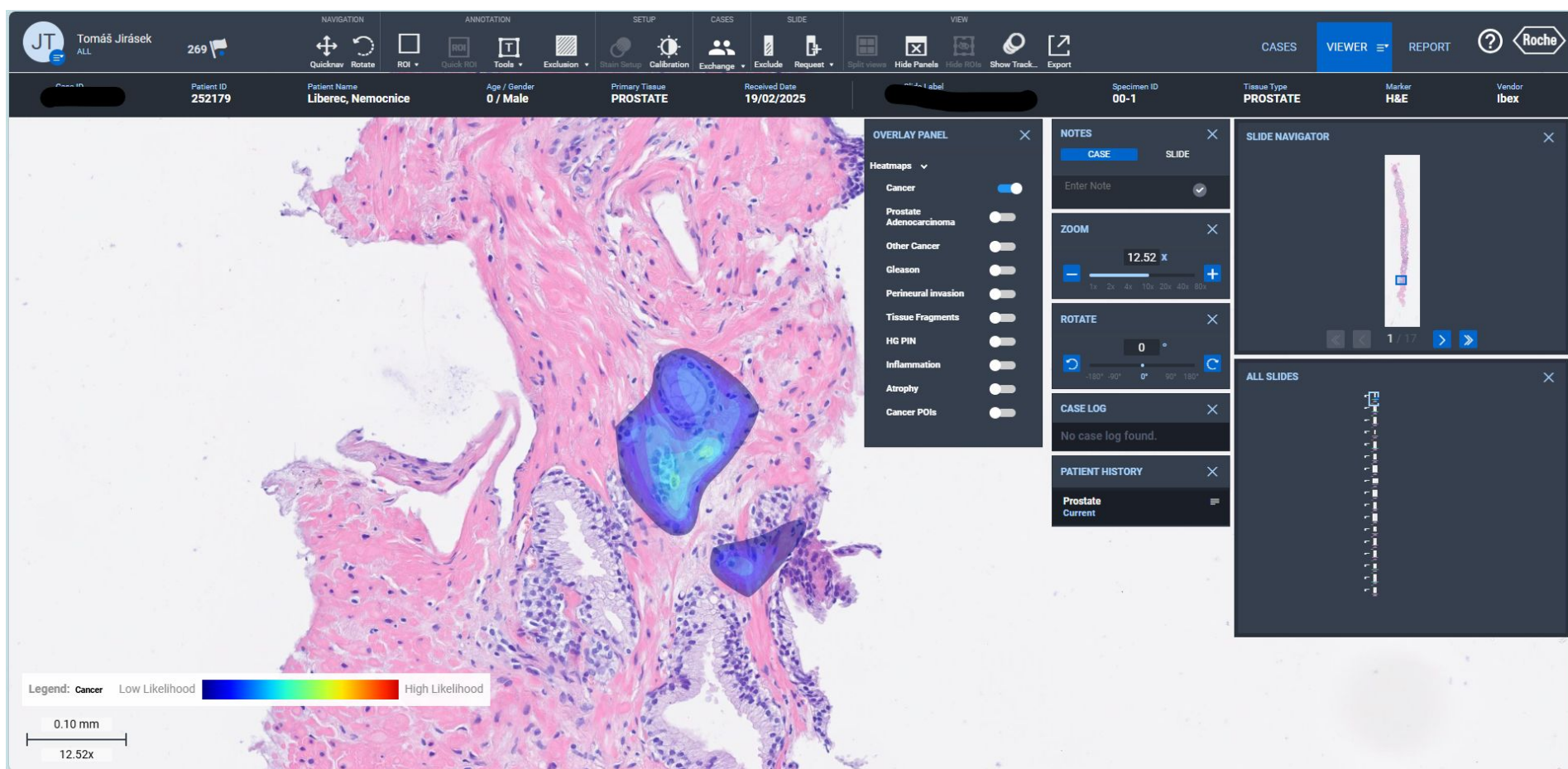
Patient History: Prostate Current

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

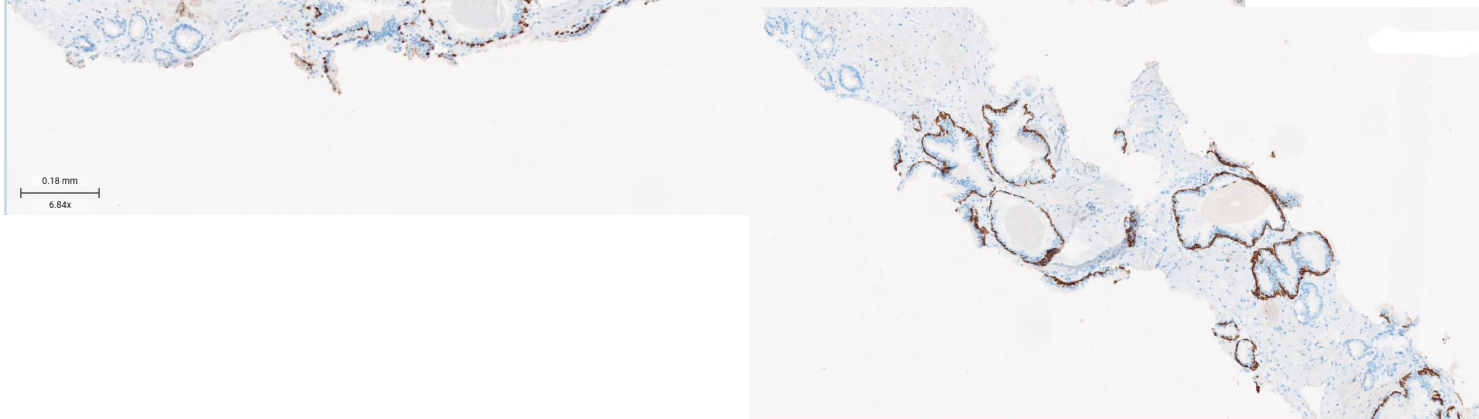
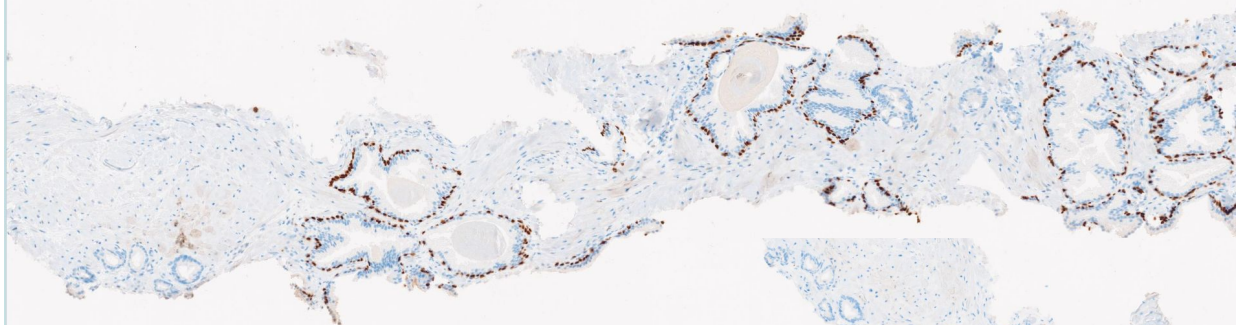
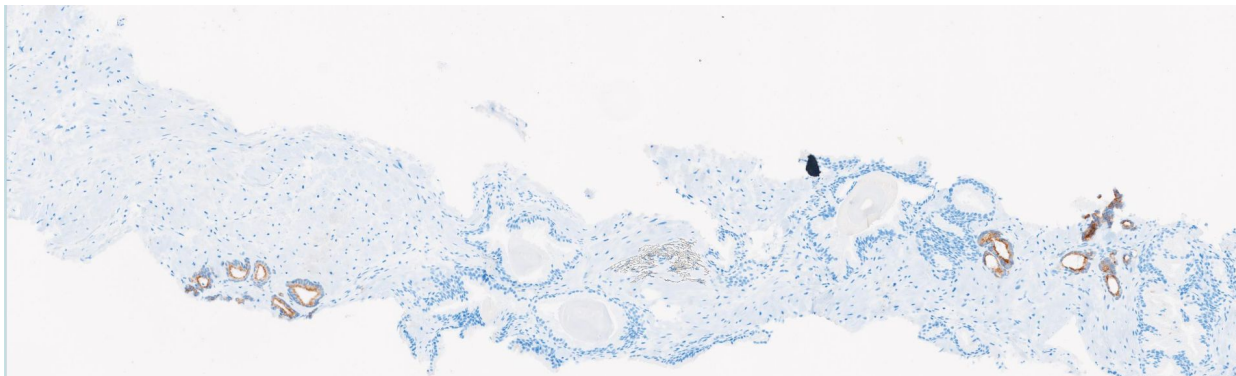


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

Software interface for prostate biopsy analysis, showing a histological slide and various toolbars.

Navigation Bar:

- Navigation: Quicknav, Rotate, ROI
- Annotation: Quick ROI, Tools, Exclusion
- Setup: Stain Setup, Calibration
- Cases: Exchange, Exclude, Request
- Slide: Split views, Hide Panels, Hide ROIs, Show Track, Export
- View: Cases, Viewer, Report

Metadata:

- Case ID: [Redacted]
- Patient ID: 2502529
- Patient Name: Liberec, Nemocnice
- Age / Gender: 0 / Male
- Primary Tissue: PROSTATE
- Received Date: 21/02/2025
- Slide Label: [Redacted]
- Specimen ID: 00-1
- Tissue Type: PROSTATE
- Marker: H&E
- Vendor: Ibex

OVERLAY PANEL:

- Heatmaps:
- Cancer: ☐
- Prostate Adenocarcinoma: ☐
- Other Cancer: ☐
- Gleason: ☐
- Perineural invasion: ☐
- Tissue Fragments: ☐
- AdC + Tumor Fragments: ☐
- HG PIN: ☐
- Inflammation: ☐
- Atrophy: ☐
- Cancer POIs: ☐

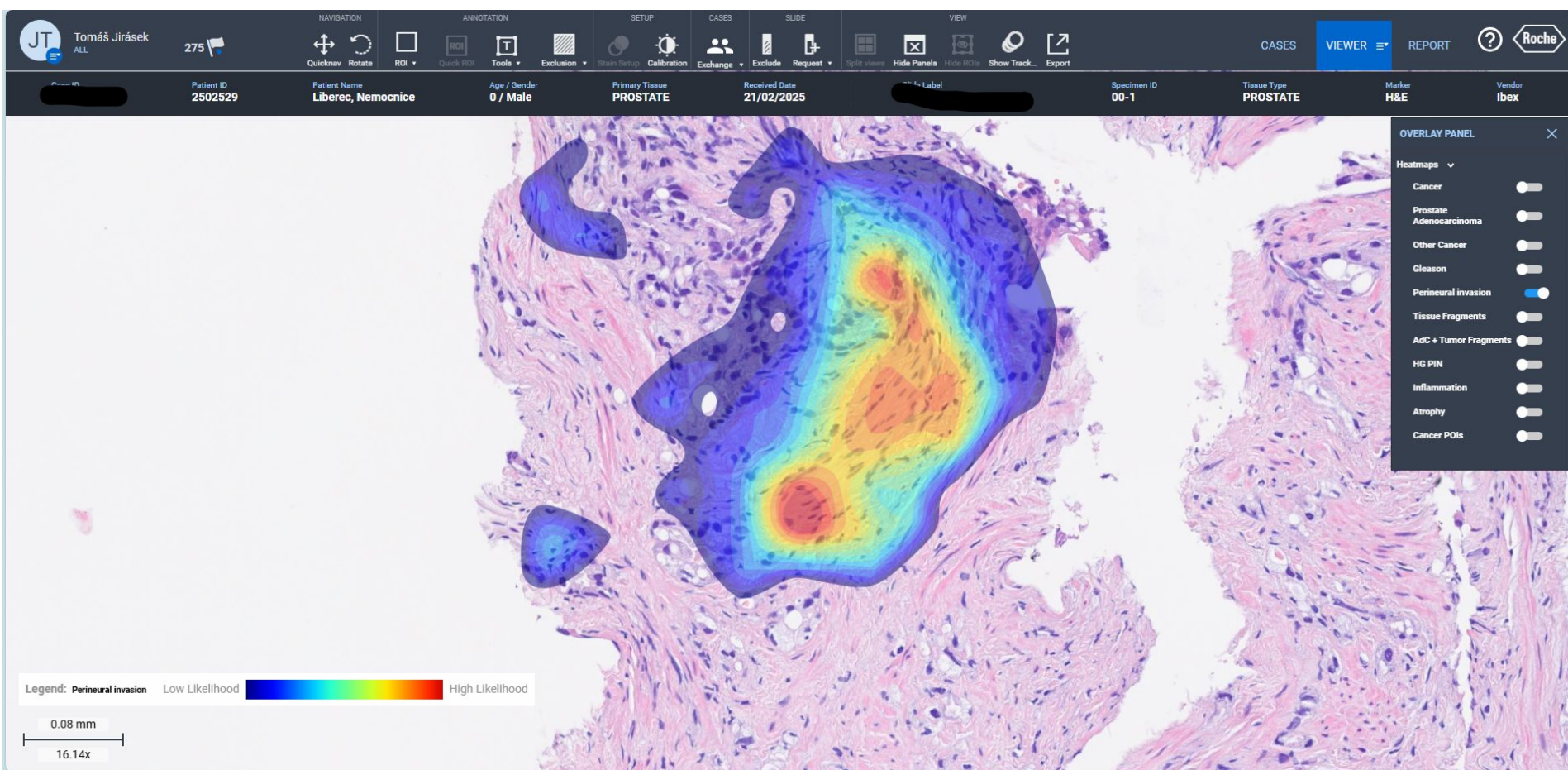
Scale Bar: 0.08 mm, 16.14x

umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

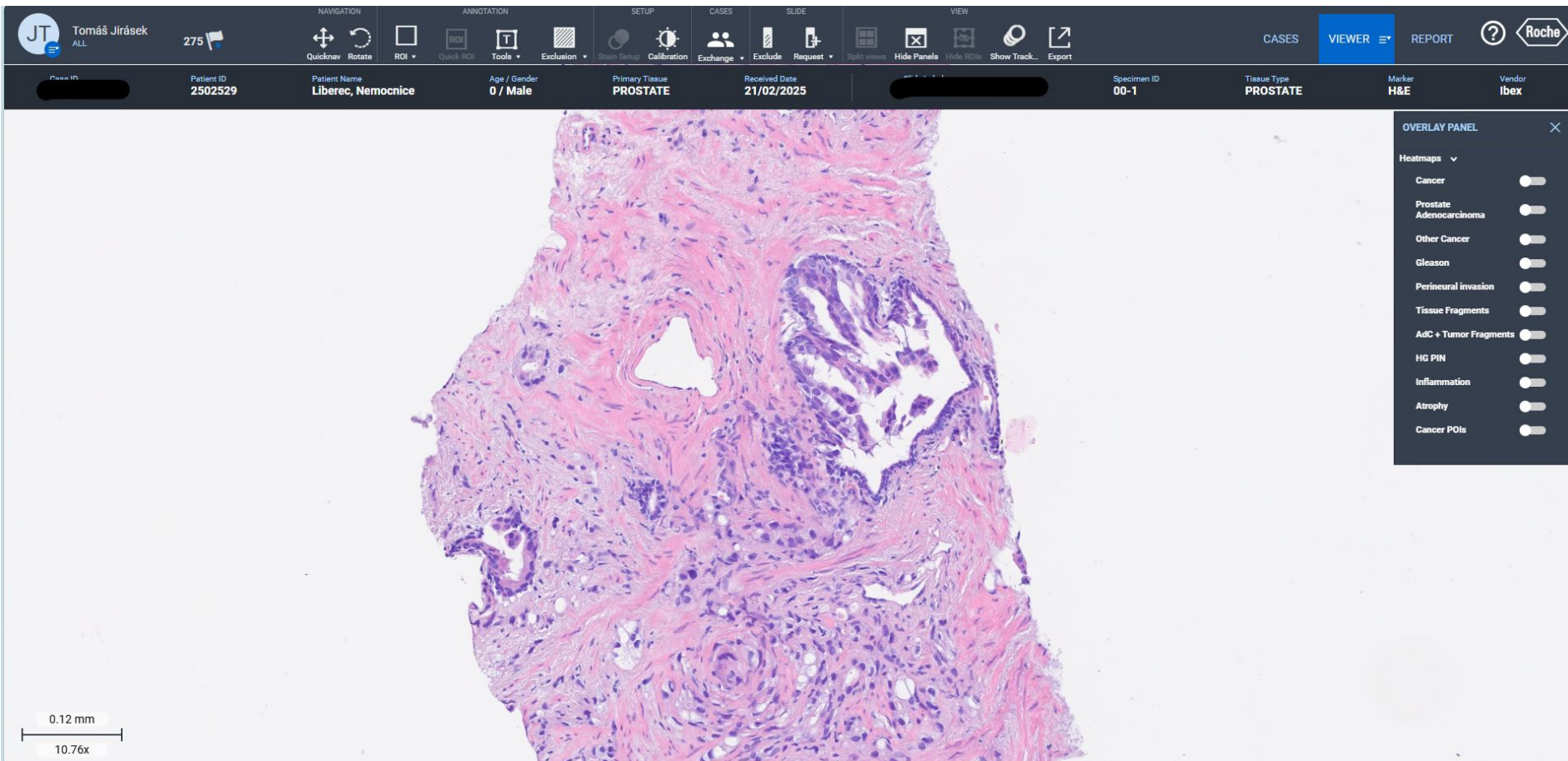


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

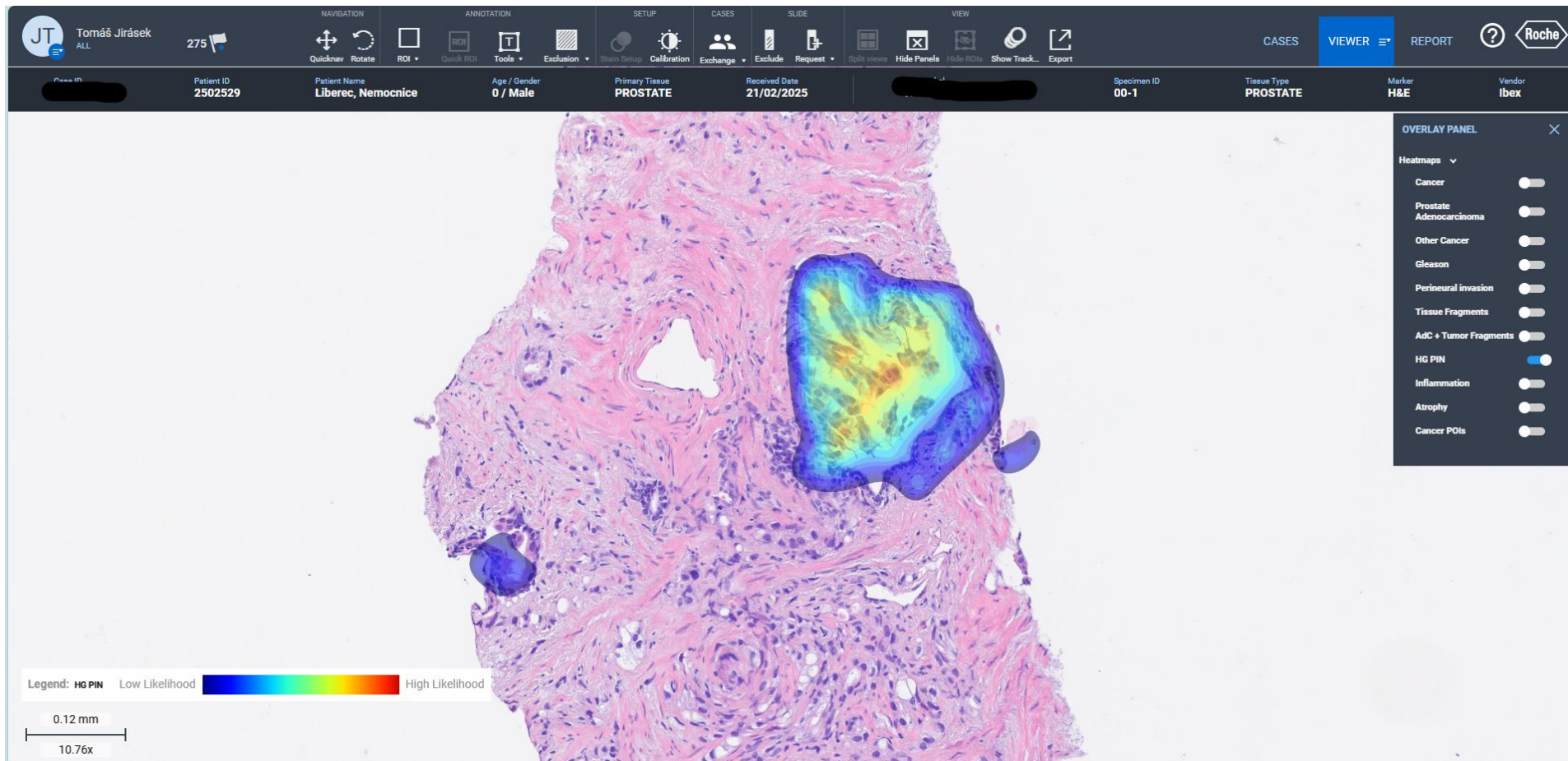


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

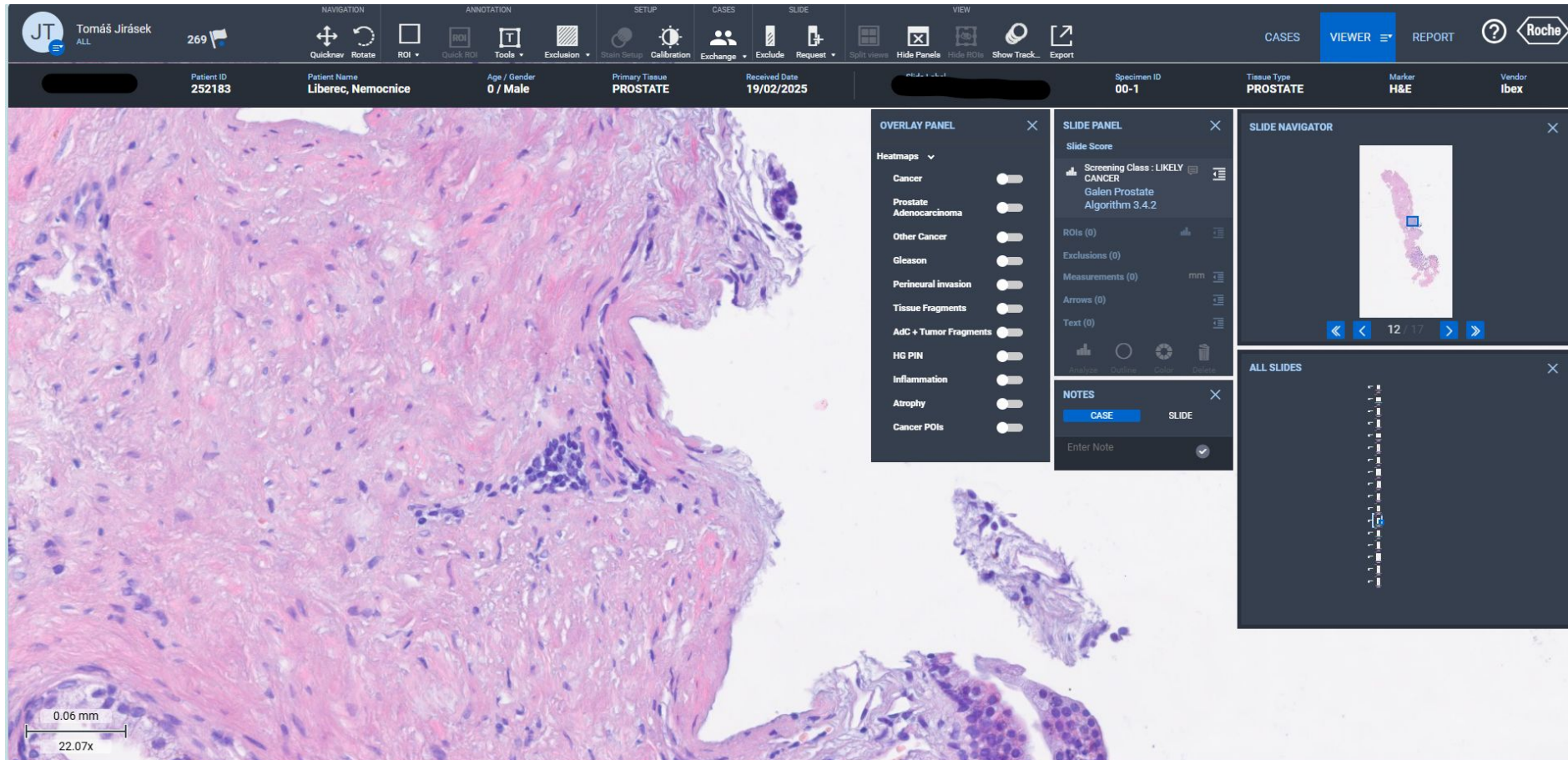


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty

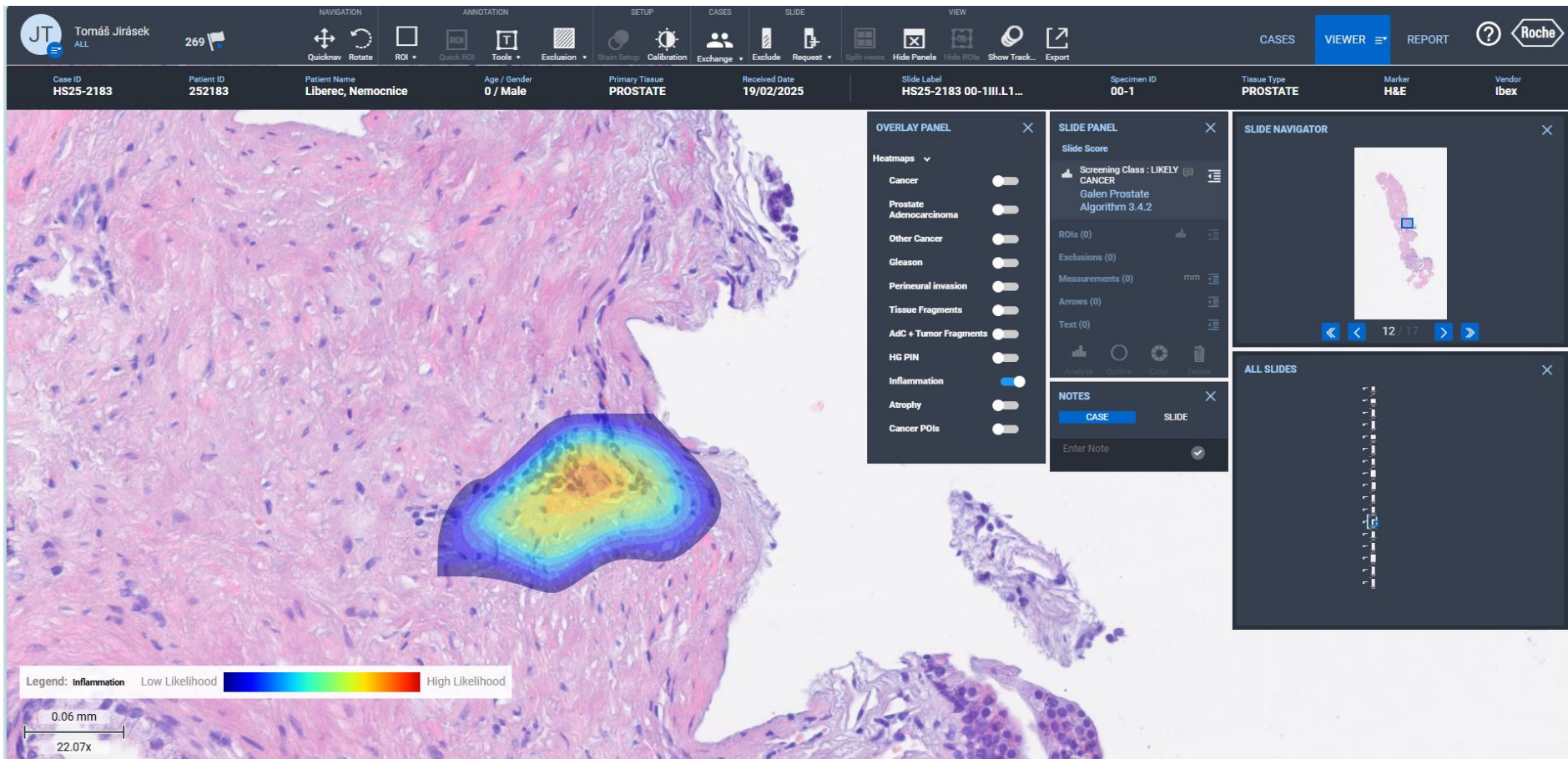


umíme pomáhat



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

punkční biopsie prostaty



umíme pomáhat



IBEX v prostředí Navify

prostata zbývá dořešit:

- reportování kribriformního Gleason patternu 4
- stanovení celkového Gleason skóre pro případ
- generování souhrnného reportu za všechny aktuální vzorky od pacienta
- možnost použití na materiálu transuretrálních resekátů prostaty (vč. určení percentuálního rozsahu nádorem postižené tkáně)
- RAPE
- změnit RUO na IVD



závěr

- AI algoritmy Roche Navify i IBEX fungují a lze je použít jako pomocný nástroj pro patologa, po zacvičení zpřesní a zrychlí hodnocení materiálu
- je ještě nutné pracovat na kultivaci pracovního prostředí a formátu reportů, včetně integrace do NIS/LIS
- AI nenahradí patologa, ale patolog bez AI bude nahrazen patologem, který má AI k dispozici



děkuji za
pozornost!