SatSightDX

Powered by PAICON

AI-POWERED DIGITAL PATHOLOGY

Smarter MSS Detection. Streamlined Pathology Workflows.

SatSightDx helps pathologists identify microsatellite stable colorectal cancer cases from routine H&E slides to prioritize molecular testing with confidence and without delay.

For Research Use · Validated Across 5 Independent International Cohorts

>97% Sensitivity	Up to 78 %	Less than 2%	100x Models
Across all independent test cohorts	Coverage for triage	MSS cases incorrectly flagged as MSI	Ensemble for robust confidence scoring

THE CHALLENGE

MSS Testing Is Essential, But Resource-Intensive

Determining microsatellite status is a critical step in colorectal cancer management, directly informing treatment decisions. Yet molecular testing remains time-consuming, expensive, and not always immediately available, creating bottlenecks that slow down the diagnostic pathway.

Molecular Testing Burden

Every colorectal resection specimen requires MSI/MMR evaluation, placing significant demand on laboratory resources and molecular assay capacity.

Workflow Bottlenecks

Delays in testing can slow downstream clinical decisions, affecting turnaround times and patient pathways in busy pathology departments.

Prioritization Uncertainty

Without pre-screening intelligence, laboratories cannot easily triage which cases most urgently require full molecular workup.

Underutilized Slide Data

Routine H&E slides already contain rich morphological information, but extracting actionable insights from them has historically required expert manual review.

RESULT CLASSIFICATION

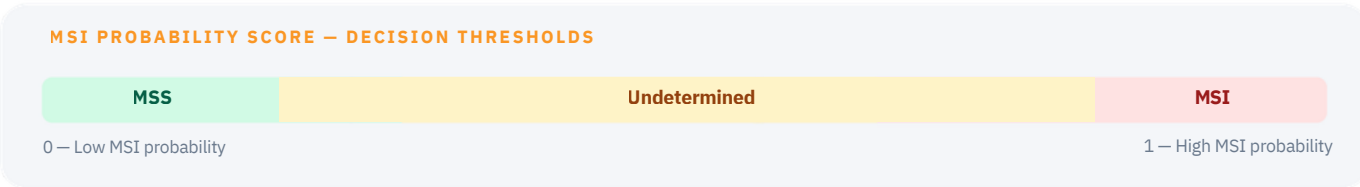
How SatSightDx Determines Its Results

Each slide receives an MSI probability score (0–1) from an ensemble of 100 AI models. The mean score and confidence interval determine one of three result categories:

MSS
Score with CI below lower threshold. <3% of MSI cases misclassified as MSS.

Undetermined
CI spans a threshold. Safety buffer; no low-confidence result is forced into MSS or MSI.

MSI
Score with CI above upper threshold. <2% of MSS cases misclassified as MSI.



HOW IT WORKS

Three Steps from Slide to Insight

SatSightDx fits directly into your existing digital pathology infrastructure. No new staining protocols, no workflow disruption.

01

Upload Your H&E Slide

Submit digitized whole-slide images through the SatSightDx platform or via your connected imaging system. Compatible with Roche Digital Pathology and Morphle Lab environments.

02

AI Ensemble Analysis

100 AI models each generate an MSI probability score. The system calculates a mean score and confidence interval, flagging cases as MSS, MSI, or Undetermined.

03

Actionable Report Delivered

A structured case report presents the classification, visual attention maps, tissue segmentation, and a clear recommended next step, all interpretable at a glance without statistical expertise required.

VALIDATED PERFORMANCE

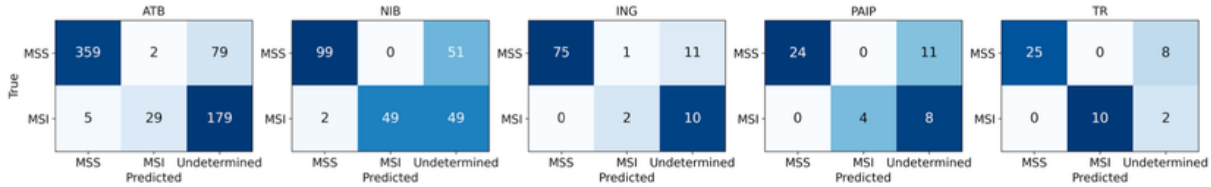
Numbers You Can Trust

Benchmarked against five independent international cohorts, none used in model development, spanning diverse laboratory conditions, staining protocols, and patient populations.

>97%	59-78 %	<2%	>95%
Sensitivity on all validation cohorts	Triage coverage	MSS cases incorrectly flagged as MSI	AUC across all validation cohorts

Figure 1: Confusion Matrices Across External Cohorts

Ground truth on y-axis (rows), predictions on x-axis (columns).



SCIENTIFIC PUBLICATION

Uncertainty-Aware Triage of Microsatellite Instability Status in Colorectal Cancer from H&E-Stained Whole-Slide Images

PAICON GmbH · medRxiv, 2025 · Scan to read the full paper

COHORT VALIDATION DATA

Classification Performance Across Independent Test Cohorts

Coverage indicates the proportion of slides with a definitive prediction. Sensitivity and specificity correspond to correctly identifying MSI and MSS cases respectively.

Cohort	MSS (n)	MSI (n)	Coverage	Sensitivity	NPV
ATB	440	213	59% (56-62)	97.7% (95.3-99.5)	98.6% (97.3-99.7)
NIB	150	100	59% (54-65)	98.0% (95.0-100)	98.0% (95.0-100)
ING	87	12	78% (71-85)	100% (100-100)	100% (100-100)
PAIP	35	12	60% (47-73)	100% (100-100)	100% (100-100)
TR	33	12	78% (64-89)	100% (100-100)	100% (100-100)

Uncertainty-aware classification performance of SatSightDx for triage across independent test cohorts.
Coverage: proportion of slides that were classified as MSS.
Sensitivity: proportion of MSI slides that were not classified as MSS.
NPV (Negative Predictive Value): probability that a slide predicted as MSS is truly MSS.

MODEL OUTPUT

Reports Built for Pathologists

Every analysis produces a structured, visually guided case report that communicates findings clearly, with full transparency into the algorithm's reasoning.

Clear Classification and Next Steps
MSS, MSI, or Undetermined, each result comes with a concrete recommended action so the pathologist always knows exactly what to do next.

Visual Confidence Scoring
The MSI score and its confidence interval are displayed graphically against decision thresholds, making the model's certainty immediately legible.

Attention Maps
Heatmap overlays highlight the tissue regions important for the classification, giving pathologists a visual audit trail and building interpretive confidence.

Tissue Segmentation Overlay
Structural regions including tumor, stroma, mucus, lymphocytes and normal epithelium are automatically delineated alongside the classification result.

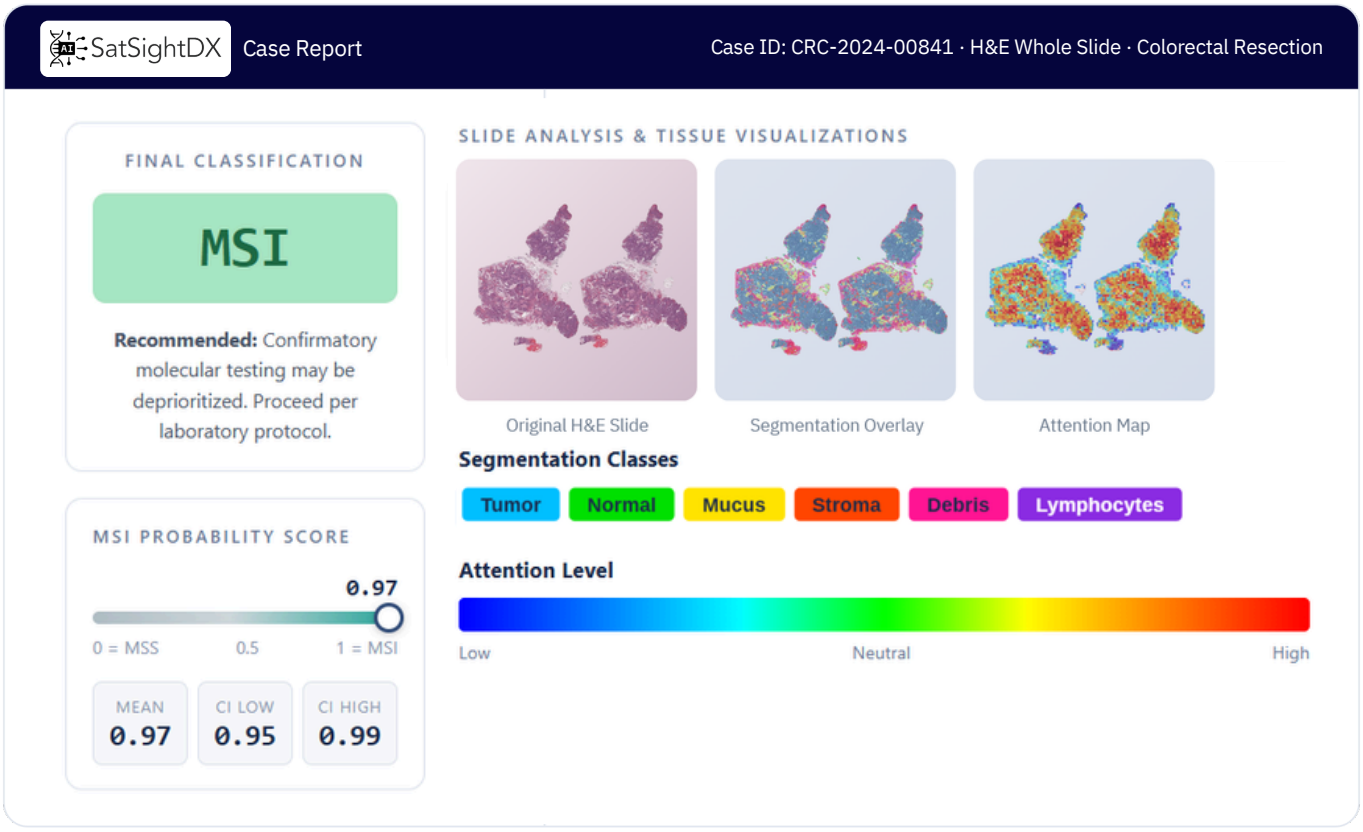
KEY TAKEAWAY

SatSightDx doesn't replace the pathologist. It gives them a validated, AI-powered first filter so their expertise is spent where it matters most.

SAMPLE ANALYSIS REPORT

What a SatSightDx Report Looks Like

Every analysis delivers a structured, visually guided case report; combining a clear classification,quantitative confidence scoring, tissue segmentation, and AI attention maps in a single interpretable view.



Seamless Integration into Your Existing Infrastructure

Available as a stand-alone web platform or natively integrated with leading digital pathology systems.
No additional staining, no new hardware, no disruption to your laboratory workflow.

PLATFORM	PARTNERS	QUALITY	COMPLIANCE	WORKFLOW
Web & native integrations; no installation needed	Morphle Labs & Roche Digital Pathology	ISO 13485 aligned development process	GDPR & HIPAA; no slide data retained	No new hardware, staining, or protocol changes

Ready to See SatSightDx in Action?

Speak with the PAICON team to learn how SatSight Dx can be deployed within your workflow environment and start realizing faster, smarter pathology workflows today.

GET IN TOUCH

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