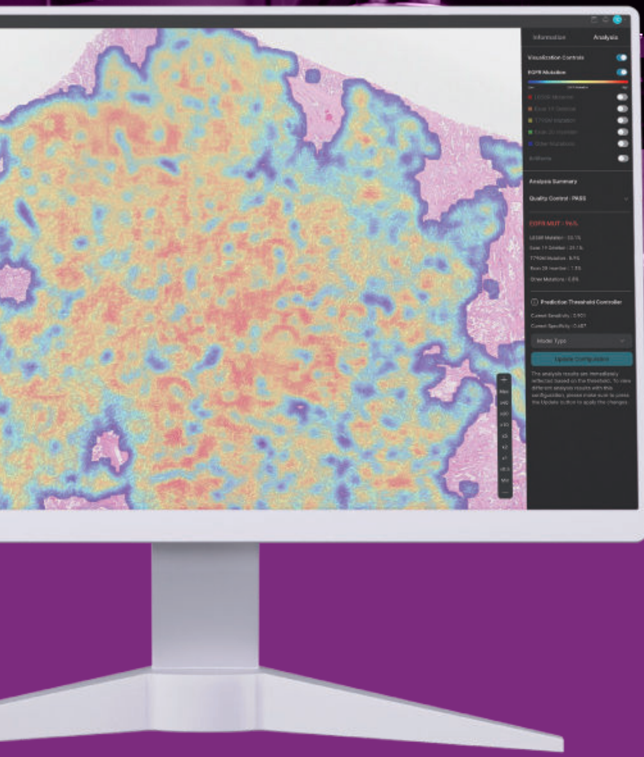


Lunit SCOPE® GP

Genotype Predictor

Rapidly extract AI-powered prediction of tumor genotype from H&E

Applications

Customized development of a pre-screening tool

Co-development of screening tool to identify multiple co-mutations

Advanced genotype prediction analysis for translational research

Description

- Artificial Intelligence (AI)-based digital pathology image analysis software
- Quickly fine-tune models for any genomic mutation or signature
- Apply across multiple cancer types
- Combine self-supervised and supervised learning with an ensemble model to improve predictive power

Features

Genotype prediction probability score

EGFR MUT : NN.N%

L858R Mutation : NN.N%

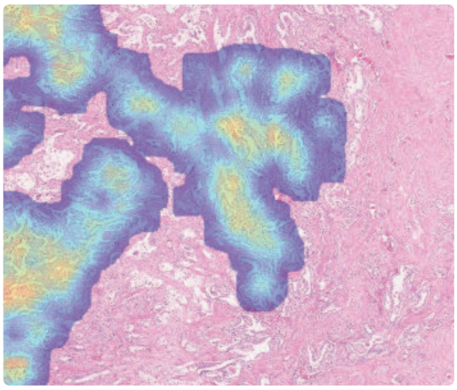
Exon 19 Deletion : NN.N%

T790M Mutation : NN.N%

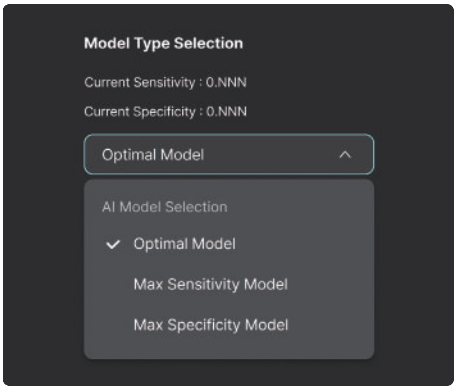
Exon 20 Insertion : NN.N%

Other Mutations : NN.N%

Visualization of genotype predicted area



Flexibility for rule-out or rule-in test



Model Type Selection

Current Sensitivity : 0.NNN

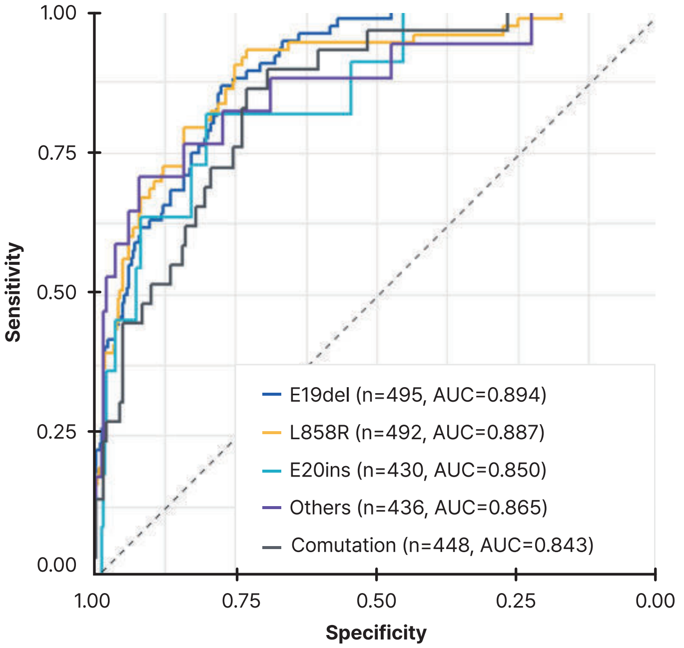
Current Specificity : 0.NNN

Lunit SCOPE GP offers insights into tumor genomics and molecular characteristics

Customized development of a pre-screening tool for biopharma companies

Meets target thresholds for both sensitivity and specificity

AACR 2025 AI-based EGFR-mutation prediction from H&E images in NSCLC: a global multi-cohort validation study



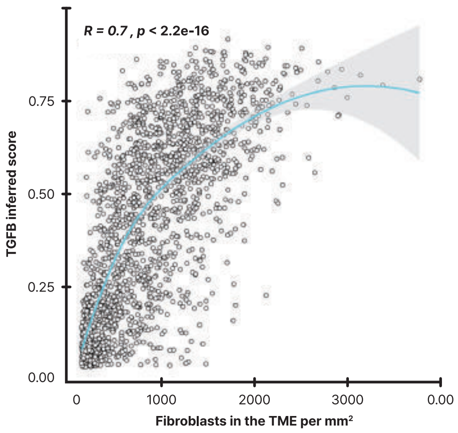
Co-development of screening tool with biopharma companies to identify multiple co-mutations in clinical trials

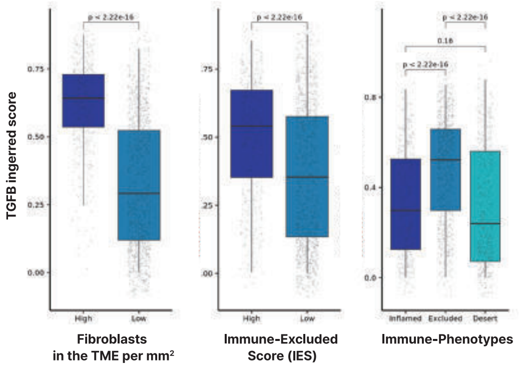
Examples of Lunit SCOPE Genotype Prediction targets

Genomic aberration	Genomic signatures
NSCLC driver mutations (EGFR, ALK, RET, ROS1, etc)	IFN-γ signature
NSCLC: KRAS (incl. G12C)	TGF-β signature
NSCLC: MET mutation (exon14 skipping)	Intratumoral heterogeneity
BRCA1/2 mutation	Copy number aberration
HRD score	CMS subtype
MSI-H, or High TMB (>10mut/Mb)	**+ any genomic aberration**

Advanced genotype prediction analysis for translational research

Leveraging genomic signature to develop novel AI biomarker from H&E





ASCO 2023 Lunit GP model trained to predict TGFβ signature from H&E reveals the resistance mechanisms to immunotherapy as ttumor stroma with fibroblast enrichment and immune cell exclusion.

Versatility and end-to-end capabilities

Pan-tumor application

- Genotype trained, tuned, and validated across broad targets and tissue types

Scanner compatibility

- Compatible file types include Leica (.svs), Philips (.syntax, .tiff), 3D Histech (.mrxs), Hamamatsu (.ndpi) and other scanners at x40 magnification

Regulatory & QMS track record

- 3 Lunit SaMDs registered globally
- ISO 13485, US FDA 21 CFR Part 820, MDSAP

Broad, scalable deployment

- Digital pathology platforms & CRO partners
- Global commercial footprint

Selected Publications List

1. AACR 2025 AI-based EGFR-mutation prediction from haematoxylin and eosin (H&E) images in non-small cell lung cancer (NSCLC): a global multi-cohort validation study
2. ESMO 2023 Pre-test prediction of multiple druggable mutations based on H&E image artificial intelligence (AI) analysis may enable more efficient clinical workflow for treatment decisions in non-small cell lung cancer (NSCLC)
3. AACR 2023 Deep learning-based ensemble model using H&E images for the prediction of KRAS G12C mutations in non-small cell lung cancer
4. AACR 2019 Deep learning-based predictive biomarker for adjuvant chemotherapy in early-stage hormone receptor-positive breast cancer