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Computational pathology

TissueMark

Automated tumor markup
and quantification tool

Analyze solid tumor tissue samples fast and enhance the quality and reliability of macrodissection, nucleic acid extraction, and molecular profiling.

TissueMark is a key offering in our computational pathology portfolio and aims to optimize the selection and extraction of tumor cells for further downstream molecular tests.

The product offers automated detection and quantification (tumor nuclei percentage) on H&E stained tissue sections. It employs powerful algorithms for research[1] into:
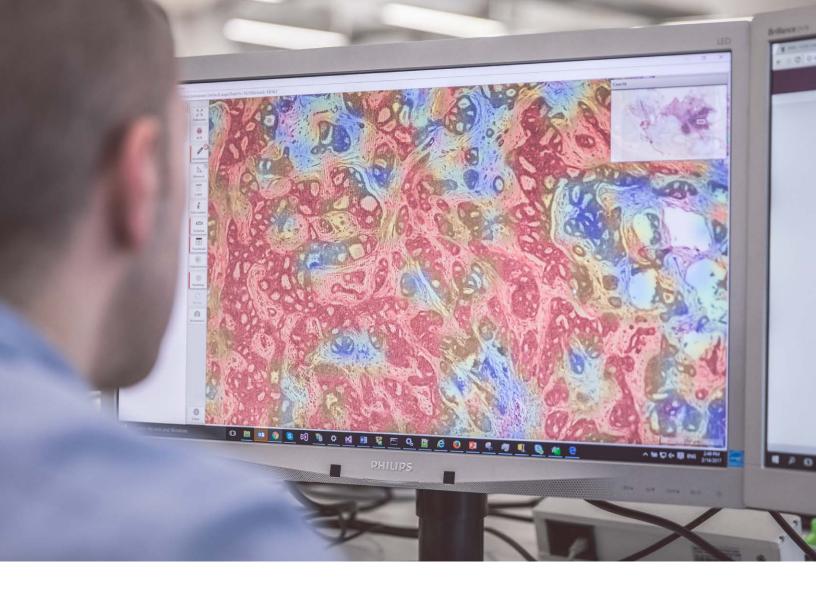- Lung cancer[2]
- Breast cancer

The tool provides macrodissection boundary as well as a quantitative visual heat map of tumor probability. Color-coded, this provides information on tumor location and differentiation from stroma, inflammation and necrosis.

[1] TissueMark is a Research Application

[2] Non-small cell lung cancer

Key advantages

- *Opens the pathway to significantly improve workflow and instill accuracy and consistency in tissue selection for molecular pathology[3]*

- *Empowers the pathologist to focus on high-value tasks by guiding tumor selection. In the medium term, this could render adoption of new molecular tests cost effective*

- *Streamlines bio-marker discovery in solid tumors, thereby significantly speeding up the turnaround time for macro dissection in large cohort studies[3]*

Fast track your ability to
review and analyze

Using machine learning approach and trained classifiers, TissueMark provides unique methods for tumor cell counting, sample quality, sample selection and tumor cell sufficiency, even at high sample volumes.

Streamline your research workflow

TissueMark can be easily embedded within busy molecular research labs to manage digital slides, identify tissue sample markup, and manage workflow. It gives you a clear and traceable record of tumor regions, tumor burden and precise boundaries.

Easy to use and intuitive tool

TissueMark is an easy-to-use and intuitive tool that is well aligned with molecular lab processes today thereby providing a familiar digital environment.

Accurate tumor boundaries for macro-dissection

Tumor boundary algorithms automatically annotate the tissue for you. You're provided with a printout that can be conveniently used for subsequent microdissection from blank sections.

All markups are stored indefinitely with the digital slide. Studies have shown[2] perfect concordance of molecular test results between manual markup and automated TissueMark annotations for macrodissection.

Automated tumor nuclei counting

The system automatically measures the number of tumor nuclei to provide accurate threshold measurements for percentage tumor nuclei and tumor nucleic acid sufficiency.

This helps you ensure the quality and reliability of molecular test results in solid tumor analysis. Detailed studies have shown[3] strong correlation between TissueMark calculations and gold standard, hand counted pathologist benchmark data.

[3]Automated tumor analysis for molecular profiling in lung cancer, Hamilton, et al, Oncotarget (2015); 6: 27938 – 27952

To learn more, please visit:

www.philips.com/computationalpathology

Designed to help you
stay in control

H&E pathology review of solid tumor slides is the first step for any molecular test. It is imperative to ensure high tumor purity and quality to optimally use laboratory resources further for molecular diagnosis. TissueMark's powerful and reliable algorithms remove subjectivity from the test, making it easier for you to establish a consistent tumor boundary annotation across pathology laboratories. In addition TissueMark solution also allows the pathologist to edit or add regions of interest while providing you updated tumor percentage statistics on updated annotations. Thus the tool really gives full control to the pathologist to verify and approve the outcomes of the application.

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