BostonGene performs AI-based analysis to identify distinct characteristics of the tumor and its microenvironment with improved sensitivity and precision.

BostonGene IHC assays

Immunohistochemistry testing for PD-L1 and dMMR can be added to any report at your request. Additional marker analysis can be performed upon your demand.

BostonGene Tumor Portrait™ test

Clinical test includes somatic and germline alterations, fusions, MSI and TMB testing with DNA and RNA analysis.

BostonGene IHC assays

CLIA/CAP Laboratory license

BostonGene Tumor Portrait™ test

CLIA/CAP/NY Laboratory license

BostonGene IHC assays

Next generation spatial disease profiling

Multiplex immunofluorescence (MxIF) assay provides an simultaneous detection of multiple markers with single-cell resolution and advanced analytics of tissue architecture based on cell-to-cell interactions.

AI pathology

BostonGene's comprehensive diagnostic services provide oncologists and pathologists with the accurate information required to make informed treatment decisions.

CLIA/CAP Laboratory license

Multiple x immuno fluor e scence (MxIF) assay pr ovides an s i m u l t a n e o u s  d e t e c t i o n  o f  m u l t i p l e  m a r k e r s  w i t h  s i n g l e - c e l l r e s olution and adv anc ed analytic s o f tis s ue ar chit ectur e bas ed on c ell- t o-c e ll in ter actions .

Immunohistochemistry testing for PD-L1 and dMMR can be added to any report at your request. Additional marker analysis can be performed upon your demand.

CLIA/CAP Laboratory license

CLIA/CAP Laboratory license

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BostonGene Tumor Portrait™ test

The BostonGene Tumor Portrait™ test provides the most accurate and comprehensive view of a patient’s biomarkers, tumor biology, and immune profile by integration of DNA and RNA analysis.

- **Microdissection**
  - High quality dissection for tumor enrichment.
  - Only 4% failed: microdissection technology decreases the number of failed samples from 58% to 4%

- **Diagnostics fusions module**
  - Utilizing RNA sequencing data to specify diagnosis.

  **Case study:**
  - Female, Caucasian, 29 y.o.
  - Left Orbitotomy and Mass Excision.
  - Observed morphology features were in line with a particular diagnosis but are not sufficient for a definitive diagnosis.

  **BostonGene Tumor Portrait™ Test result**
  - Found PAX3-FOXO1 fusion: specific diagnostic and prognostic fusion for alveolar rhabdomyosarcoma

- **Gene expression detection**
  - BostonGene normalized biomarkers expression on the IHC results provides the most accurate data.

  **Case study:**
  - ESR1 + TCGA BRCA cohort
  - Expression ≤4 log2(TPM+1)

- **Unknown primary**
  - Integration of RNA and WES sequencing data to specify diagnosis.

  **Case study:**
  - Female, Caucasian, 79 y.o.
  - Metastatic adenocarcinoma involving supraclavicular lymph node.
  - Primary of cancer was not known.

  **BostonGene Tumor Portrait™ test result**
  - Defined diagnosis: Pancreatic Adenocarcinoma (probability = 83.3%) with KRAS mutation

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BostonGene IHC assays

Automated workflow estimates positive and negative tumor and immune cells.

**PD-L1**

- **22c3**

*Immune-checkpoint activation*

- **TC**
- **TPS**
- **CPS**
- **IC**

**MMR**

- **MLH1 (ES05)**
- **MSH2 (FE11)**
- **MSH6 (EP49)**
- **PMS2 (EP51)**

The NCCN Guidelines® recommend universal MMR testing for colorectal cancer, endometrial, hereditary cancer and Lynch syndrome patients.

**ER**  **PR**  **HER2**  **Ki67**

Contact your BostonGene representative for more information.

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**How to order the BostonGene Tumor Portrait™ test**

01. Order kit through the BostonGene representative or email: clientservices@bostongene.com

02. Complete the Test Requisition Form (TRF). Fax or email the TRF and accompanying documents (progress notes and pathology report) to BostonGene.

03. Collect a normal sample using the BostonGene Saliva or Blood kit and send it, along with the TRF and accompanying documents, to BostonGene.

04. BostonGene will reach out to the pathology lab to request the send-out of tissue and will provide a BostonGene FFPE kit for tumor sample.

05. Get the report via customer portal, fax, secure/encrypted email or FedEx.

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**Tissue requirements**

**BostonGene Tumor Portrait™ test**

- **10 FFPE slides**
- **1 FFPE block**

**BostonGene IHC assays**

- **1 FFPE slide per marker**
- **1 FFPE block**

*5μm sections on positively charged, unbaked slides*
AI-based pathology

BostonGene performs AI-based analysis to identify distinct characteristics of the tumor and microenvironment with improved sensitivity and precision.

**H&E**

Key morphological metrics: Histoporation:

- Tumor purity, % of cells
- Area of tumor stroma, %
- TILs, %
- TLS, number/mm²

- **Tumor**
- **sTIL**
- **TLS**

- TLS, spatial distribution
- Area of tumor necrosis, %
- Area of tumor hemorrhages, %
- Tumor vessels, quantity/mm²

**IHC**

Automated workflow estimates positive and negative tumor and immune cells.

- Cell classification accuracy for positive/negative: f1-score 0.9+ (PDL1, Ki67).
- Tumor segmentation: Accuracy 90%

- Positive cells
- Negative cells

**MxIF**

Spatial tumor imaging profiling using MxIF (Multiplex Immunofluorescence) technology.

Advanced analytics

- Proprietary digital pathology platform
- Machine learning-based MxIF image
- Cellular community and interaction
- Tissue architecture examination

Multi-parameter imaging

- Virtual H&E histology
- Virtual immunohistochemistry

Contact us:

Email: clientservices@bostongene.com
Phone number: +1-781-552-3131