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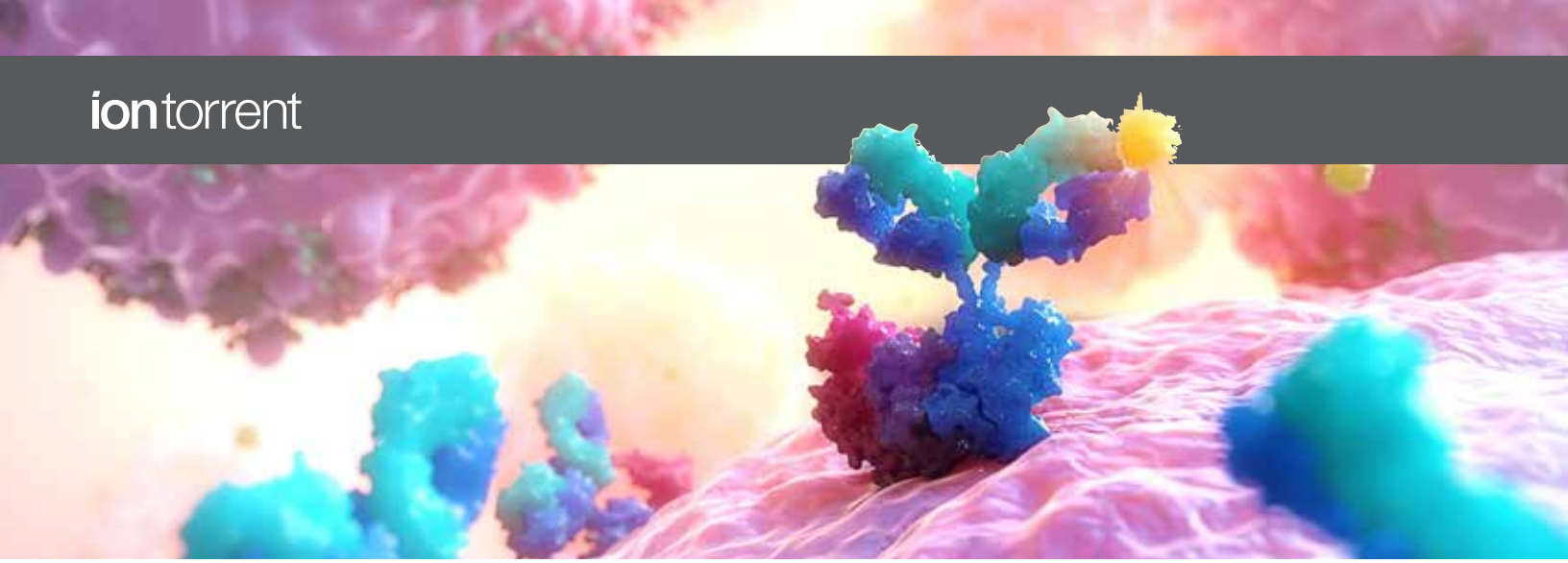

Oncomine BCR IGH assays for hematology-oncology research

Simple clonality assessment, sensitive rare clone detection

B cell leukemias and lymphomas originate from the malignant transformation and clonal proliferation of one or a small number of B cells. Since each B cell expresses distinct B cell receptors (BCRs) on its surface, potential malignant clones of interest can be identified and measured by the unique BCR sequences from the original neoplastic cell.

Today, high-throughput sequencing of the BCR repertoire is increasingly being adopted to advance hematology-oncology research. Next-generation sequencing (NGS) offers significant advantages over other more traditional approaches by offering ultrahigh sensitivity, lower limits of detection (LOD), and greater flexibility to multiplex.

The **Ion Torrent™ Oncomine™ BCR IGH-LR** and **Oncomine™ BCR IGH-SR assays** are a pair of robust and sensitive NGS-based assays that make it easier for hematology-oncology labs to assess B cell clonality, measure somatic hypermutation (SHM), and detect rare B cell clones of interest for measurable residual disease (MRD) research.

Clonality assessment
Confidently identify the dominant malignant clone, measure clonal expansion, and determine its unique CDR3 sequence

SHM analysis
Accurately quantify the frequency of SHM in the *IGHV* genes and determine the SHM status

Rare clone detection for MRD research
Detect rare B cell clones with high sensitivity and ultralow LOD down to 10^{-6}; measure and compare the frequency of potential clones of interest

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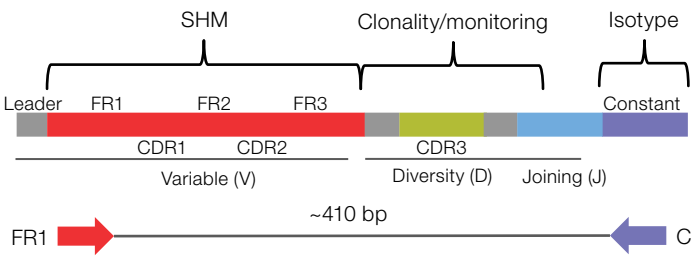
Oncomine BCR IGH-LR Assay

Accurate clonality assessment and SHM analysis

- Confidently identify the malignant clone even in the most challenging samples by partitioning the B cell repertoire by isotype
- Accurately measure the level of SHM in the *IGHV* genes with the ultralow substitution error rate of the Ion Torrent™ platform, with automated reporting built into the informatics software
- Simple and intuitive clonality assessment is supported by the unique interactive visualizations and automated clonal lineage analysis features built into the informatics software
- Accelerate time to answers with a 48-hour sample-to-results turnaround
- Gain efficiency with the flexibility to multiplex with minimal sample input (as low as 25 ng) from a variety of common hematology sample types

BCR IGH chain



Amplification strategy	Framework 1 and isotype-specific primers
Input type	Non-FFPE RNA
Sample type	Whole blood, bone marrow, PBLs*, PBMCs*, fresh-frozen specimens
Chip compatibility	Ion 530™ Chip

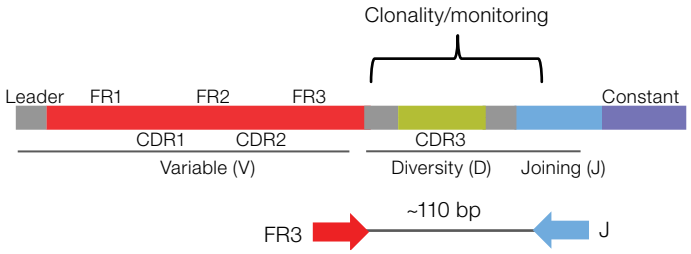
* PBL: peripheral blood leukocyte; PBMC: peripheral blood mononuclear cell.

Oncomine BCR IGH-SR Assay

Sensitive rare-clone detection for MRD research

- Confidently detect rare B cell clones with high sensitivity and ultralow LOD down to 10^{-6}
- Easily measure and compare the frequency of the potential clones of interest for MRD research
- Accelerate time to answers with a 48-hour sample-to-results turnaround
- Choose from multiple chips and sample types to fit your unique sample batching needs, desired LOD, and throughput requirements

BCR IGH chain

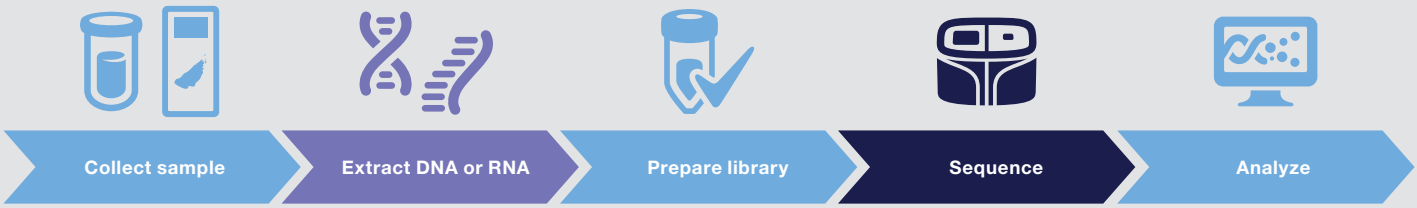


Amplification strategy	Framework 3 and joining gene primers
Input type	gDNA, RNA; FFPE-compatible
Sample type	Whole blood, bone marrow, PBLs, PBMCs, fresh-frozen and FFPE-preserved samples
Chip compatibility	Ion 530, Ion 540™, and Ion 550™ Chips

Powerful and intuitive informatics solution

- Interactive spectratyping plots make it easy to identify the potential malignant clone of interest within the broader context of the repertoire
- For challenging samples with high polyclonal backgrounds, partition the repertoire by isotype with the click of a button to reveal the malignant lineage
- Automated reporting features provide detailed information on each clone, including the CDR3 sequence, SHM level and frequency, clone frequency, and more
- Unique automated clonal lineage analysis enables the identification of subclones based on specific molecular characteristics/signatures
- Measure and compare the frequency of the potential malignant clone of interest (identified by V-gene and CDR3 NT sequence) for MRD research

End-to-end clinical research workflow for hematology-oncology



Compatible with:
- Bone marrow
- Whole blood
- PBMCs
- PBLs
- Fresh-frozen samples
- FFPE samples (SR assay only)

Oncomine BCR IGH-LR assay:
- Requires RNA input

Oncomine BCR IGH-SR assay:
- Compatible with DNA and RNA

Prepare libraries from 25 ng to 2 µg of DNA or RNA input:
- Input requirements are overall higher for rare clone detection and vary depending on desired sensitivity

Sequence samples using an Ion GeneStudio™ S5 System:
- BCR IGH-LR assay—Ion 530 Chip
- BCR IGH-SR assay—Ion 530, Ion 540, or Ion 550 Chip

Perform downstream data analysis with Ion Reporter™ Software v5.12 or higher

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Assay applications

	Oncomine BCR IGH-LR Assay	Oncomine BCR IGH-SR Assay
Clonality assessment	✔	✔
SHM analysis	✔	–
Isotyping	✔	–
Clonal lineage analysis	✔	✔
Rare-clone detection for MRD research	✔ LOD down to 10^{-4}	✔ LOD down to 10^{-6}

Ordering information

Product	Cat. No.
Oncomine BCR IGH-LR Assay, RNA	A45485
Oncomine BCR IGH-SR Assay, DNA	A45483
Oncomine BCR IGH-SR Assay, RNA	A45484

Find out about the Oncomine BCR IGH assays and our NGS technology at **thermofisher.com/bcr**

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