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Oncomine Immune Response Research Assay

Analyze the immune pathway and low-expressing genes from your clinical research samples with as little as 10 ng FFPE RNA

This next-generation sequencing (NGS) gene expression assay offers:

- **Comprehensive coverage of targets** associated with key genes in immune response biomarker research (Table 1)
- **Low sample input required**, helping you generate results from as little as 10 ng input RNA from formalin-fixed, paraffin-embedded (FFPE) research samples
- **Ion Torrent™ Oncomine™ informatics workflow** enables hierarchical clustering of research samples, qualification of data, and differential expression analysis using quality control metrics and normalization through housekeeping genes
- **Superior performance** in the detection of low-expressing genes
- **Multiplexed runs** from 4, 8, or 32 samples per run, enabling flexibility for small-to-large retrospective profiling studies
- **A sample-to-data comprehensive solution** including automation with the Ion Chef™ System and Ion S5™ System

Table 1. Oncomine Immune Response Research Assay content includes 395 genes across 36 functional annotation groups. These groups are comprised of genes associated with lymphocyte regulation, cytokine signaling, lymphocyte markers, checkpoint pathways, and tumor characterization.

Functional annotation group	No. of genes
Adhesion, migration	14
Antigen presentation	3
Antigen processing	19
Apoptosis	4
B cell marker	11
B cell receptor signaling	3
Checkpoint pathway	30
Chemokine signaling	10
Cytokine signaling	15
Dendritic cell	7
Dendritic cell, macrophage	6
Drug target	21
Helper T cells	8
Housekeeping	11
Innate immune response	11
Interferon signaling	8
Leukocyte inhibition	2
Leukocyte migration	5
Lymphocyte activation	2
Lymphocyte development	3
Lymphocyte infiltrate	46
Macrophage	5
Myeloid marker	7
Neutrophil	5
NK activation	8
NK cell marker	4
PD-1 signaling	9
Proliferation	10
T cell differentiation	2
T cell receptor signaling	6
T cell regulation	9
TCR coexpression	19
Tumor antigen	17
Tumor marker	27
Type I interferon signaling	8
Type II interferon signaling	23

"Analyzing results from the Oncomine Immune Response Research Assay, we found some interesting results with fold changes comparing research samples with up- and down-regulated genes. The targeted NGS assay approach proved informative for our team."

Wissam Hamou, PhD
Staff Scientist
Department of Genetics
and Genomic Sciences
Icahn School of Medicine at Mount Sinai

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Measure the expression of genes involved in tumor-immune interactions

The Ion Torrent™ Oncomine™ Immune Response Research Assay is a targeted NGS gene expression assay that enables immunotherapy research from the quantitative evaluation of the expression of markers associated with different leukocyte subsets, antigen presentation, checkpoint pathways, and tumor progression. The assay helps researchers measure the expression of genes involved in tumor-immune interactions including the low-expressing genes involved in inflammatory signaling.

The assay achieves superior performance over competitor assay N (Figure 1) by leveraging the power of Ion AmpliSeq™ technology to amplify targets of interest extracted from RNA, coupled with the convenience of Ion Torrent™ automation and optimized informatics (Figure 2).

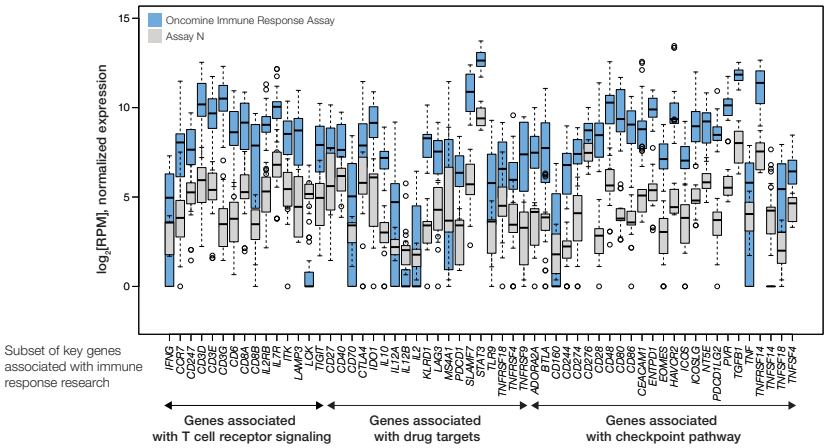

Figure 1. A targeted 395-gene NGS assay offers higher sensitivity in genes of interest than competitor assay N. The figure depicts a range of expression for genes associated with immune response research across 10 pancancer samples. These genes consistently show that higher sensitivity with higher dynamic ranges is observed for the Oncomine Immune Response Research Assay.

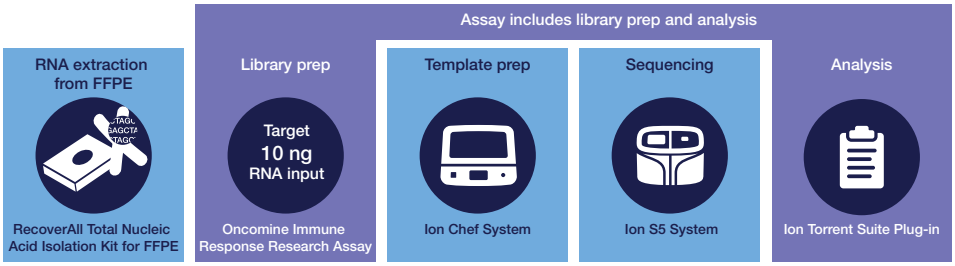

Figure 2. The Oncomine workflow enables NGS results from low sample input in less than 48 hours. The Oncomine Immune Response Research Assay is verified on the Ion Chef System and Ion S5 System, and is enabled on the Ion OneTouch™ 2 System with Ion PGM™ System.

Using highly curated content to assess the tumor microenvironment and identify predictive markers for drug response, the Oncomine Immune Response Research Assay achieves high sensitivity to low-expressing genes from minimal required FFPE RNA.

Ordering information

Product		Cat. No.
Oncomine Immune Response Research Assay	Manual library prep	A32881
	Chef automated library prep	A32928
Ion S5 System		A27212
Ion Chef Instrument		4484177
Ion 530™ Chip Kit		A27764
Ion 520™ and Ion 530™ Kit-Chef		A30010
Ion Library™ TaqMan® Quantitation Kit		4468802
Ion Xpress™ Barcode Adapters 1-16 Kit		4471250
Invitrogen™ SuperScript™ VILO™ cDNA Synthesis Kit		11754050
Invitrogen™ RecoverAll™ Total Nucleic Acid Isolation Kit for FFPE		AM1975

For more information, go to
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