

Ion AmpliSeq Transcriptome Human Gene Expression Kit



Easy gene-level transcriptome sequencing

The Ion AmpliSeq™ Transcriptome Human Gene Expression Kit with the Ion S5™ System enables fast and affordable gene expression analysis from limited or degraded samples, such as formalin-fixed, paraffin-embedded (FFPE) tissues (Figure 1). With simultaneous amplification of more than 20,000 RefSeq genes in a single tube starting from as little as 10 ng of total RNA, the Ion AmpliSeq Transcriptome Human Gene Expression Kit transforms cancer and translational research in tumor profiling and biomarker discovery.

Leveraging the speed and simplicity of Ion AmpliSeq™ technology, this ultrahigh-multiplex PCR enrichment approach enables rapid gene expression profiling with minimal hands-on time, allowing you to go from RNA to quantitated gene expression in less than 2 days. This research method provides a wider quantitative dynamic range and improved transcript detection compared to conventional microarray analysis. The Ion AmpliSeq Transcriptome Human Gene Expression Kit completes the continuum of Ion Torrent™ RNA sequencing solutions, from targeted RNA research panels to global unbiased whole-transcriptome profiling.

Survey precious FFPE samples

Start with as little as 10 ng input RNA from FFPE tissue.

Fast and affordable gene expression profiling in under 2 days

Minimize the cost and complexity of gene expression analysis with 1 hour of hands-on time for library preparation.

Leverage existing microarray or other next-generation sequencing analysis pipelines

Utilize easy analysis tools to obtain unambiguous gene expression data compatible with current downstream analysis packages.

“Ion AmpliSeq transcriptome technology is a very useful tool for any group analyzing low-input or FFPE samples using RNA-Seq. Our highly degraded, low-yield, or microdissected samples that could not be successfully processed in the past now have a dependable and efficient conduit for library preparation.”

Brad Hancock

Laboratory of Milan Radovich
Department of Surgery
Indiana University School of Medicine, USA

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Sample name	Mapped reads	Valid reads	Targets detected
Fresh frozen #1	11.6 M	88.0%	73.9%
Fresh frozen #2	11.6 M	88.0%	73.9%
FFPE #1	9.2 M	77.8%	67.3%
FFPE #2	9.8 M	77.7%	67.9%

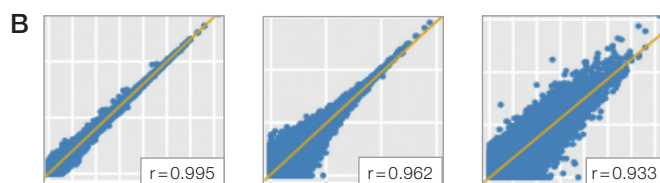


Figure 1. 10 ng of total RNA was used in sample preparation, and 8 resulting libraries were barcoded and run on a single chip. Shown are (A) sequencing results for fresh frozen and FFPE tissue samples and (B) correlations between fresh frozen replicates, FFPE replicates, and fresh frozen tissue vs. FFPE samples.

Automated data analysis

Point-and-click data analysis with Torrent Suite™ Software provides run metrics on technical reproducibility, read alignment, and detection of on-target transcripts automatically. A list of differentially expressed genes (DEGs) is then easily generated using the Ion AmpliSeq™ RNA plug-in and is highly correlated with MAQC array, qPCR, and whole-transcriptome data (Figure 2). The resulting data files are compatible with existing offline analysis tools.

The simplicity and speed of PCR-based library preparation enable a rapid method for gene expression profiling with a less than 2-day workflow from sample to analysis (Figure 3).

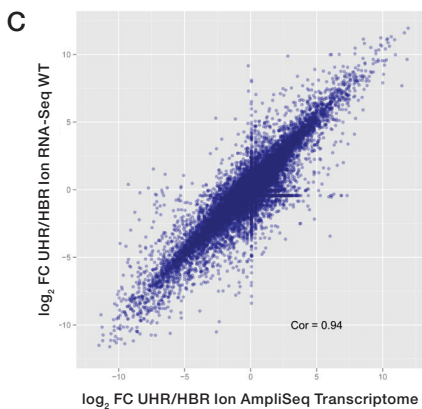
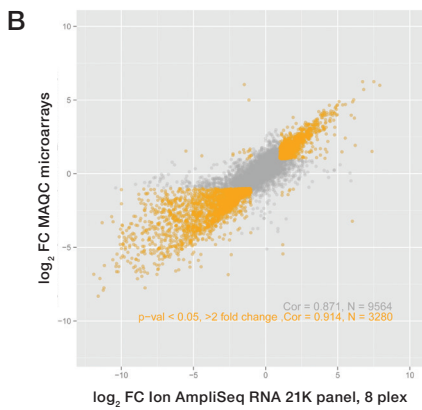
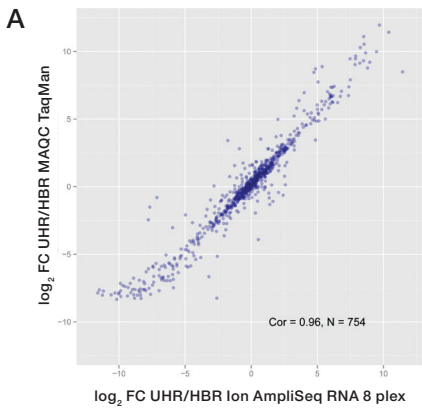


Figure 2. Correlation of DEGs between Ion AmpliSeq Transcriptome Human Gene Expression Kit data and (A) qPCR, (B) MAQC array, and (C) whole-transcriptome data. FC = fold change.

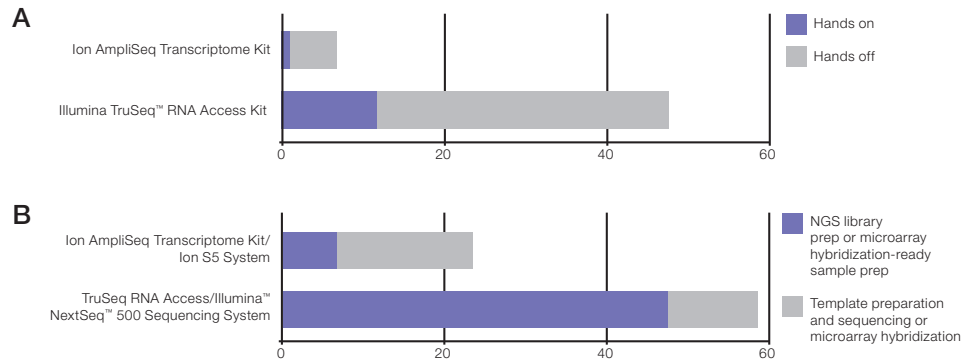


Figure 3. Comparison of hands-on and total turnaround time (in hours). (A) NGS library prep or microarray hybridization-ready sample step only. (B) Entire workflow, from sample to data files.

Ion AmpliSeq Transcriptome Human Gene Expression Panel	
Targets	>95% representation of human RefSeq genes
No. of genes designed	20,802
Input total RNA required per sample	10 ng
Recommended sample multiplexing	8 samples per Ion 540™ Chip

Ordering information

Product	Quantity	Cat. No.
Ion AmpliSeq Transcriptome Human Gene Expression Kit*	24 rxns	A26325
Ion AmpliSeq Transcriptome Human Gene Expression Kit*	96 rxns	A26326
Ion AmpliSeq Transcriptome Human Gene Expression Kit*	384 rxns	A26327
Ion Xpress Barcode Adapters 1–16 Kit	1 kit	4471250

* Includes Ion AmpliSeq™ Transcriptome Human Gene Expression Core Panel, Ion AmpliSeq™ Library Plus Kit, and Invitrogen™ SuperScript™ VILO™ cDNA Synthesis Kit.

Get fast and affordable gene expression analysis from your most precious samples at thermofisher.com/ampliseqtranscriptome

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