diagenode
A Hologic Company

D-PLEX RNA-SEQ LIBRARY PREP KIT

Go deeper with your RNA research

The D-Plex technology is the latest innovation in RNA-sequencing. This unique, ultra-sensitive ligation-free method utilizes two innovative mechanisms - poly(A) tailing and template switching - to generate RNA libraries for next generation sequencing.

ADVANTAGES COMPARED TO A LIGASE-BASED APPROACH

- Ultra-low input capability with high reproducibility
- Higher library complexity for novel and diverse transcript detection
- Optimal performance on clinical samples, such as liquid biopsies and FFPE samples
- Improved quantification accuracy through the use of UMIs
- Easy to use with minimal hands-on time: one day, one tube protocol
- Compatible for both Illumina and MGI sequencing platforms

SOLUTIONS

D-Plex technology offers a wide range of library prep solutions. Preparing D-Plex libraries opens the door to discovery through a variety of NGS-based applications, including small RNA profiling, whole transcriptome analysis, gene expression analysis, ribosome profiling or exosome profiling.

WORKFLOW

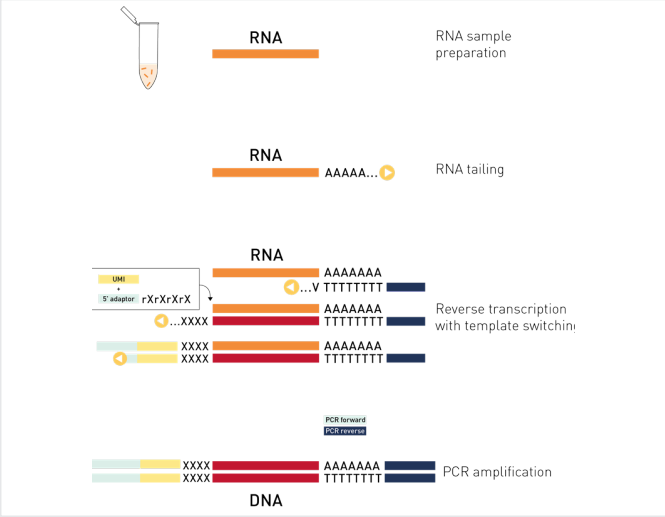

Figure 1: Schematic overview of the D-Plex RNA-seq Library Prep workflow. RNA fragments are polyadenylated at their 3'-end and primed with a poly-dT oligonucleotide containing the terminal 3'-adapter sequence. The addition of a template-switching oligonucleotide enables the elongation of the cDNA synthesis to fuse the terminal 5'-adapter sequence during the reverse transcription reaction.

COMPREHENSIVE TRANSCRIPTOME ANALYSIS

The **D-Plex Total RNA-seq Library Prep Kit** is a powerful tool to gain a complete view of the whole coding and non-coding transcriptome. The high level of library complexity ensures a faithful representation of the wide diversity of RNAs, enabling sensitive expression profiling.

- Ultra-low input capability, down to 50 pg for total RNAs
- Capture the widest possible diversity of RNAs for rich content
- Get high sensitivity data even from difficult samples, such as degraded, FFPE samples
- Obtain precise measurement of strand orientation for antisense transcription detection

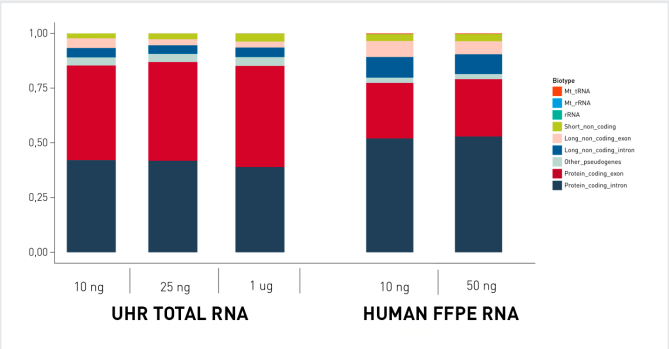

Figure 2: Greater sensitivity to detect diverse and novel transcripts. D-Plex Total RNA-seq Library Prep kit captures efficiently all RNA biotypes present in the sample of interest, both coding and non-coding RNAs or small and long RNAs. This high performance is maintained even when working with low input or degraded, FFPE samples.

SMALL RNA PROFILING AND BIOMARKER DISCOVERY

The **D-Plex Small RNA-seq Library Prep Kit** is optimal for the study of small non-coding RNAs that regulate gene expression at the transcriptional and post-transcriptional levels.

- Ultra-low input capability, down to 10 pg for small RNAs or circulating RNAs
- Get access to high transcript diversity for opening up your biomarker discovery studies
- Obtain high quality data from liquid biopsy samples such as plasma, serum, and urine
- Ensures a trustworthy, unbiased representation of the transcriptome through the use of UMIs

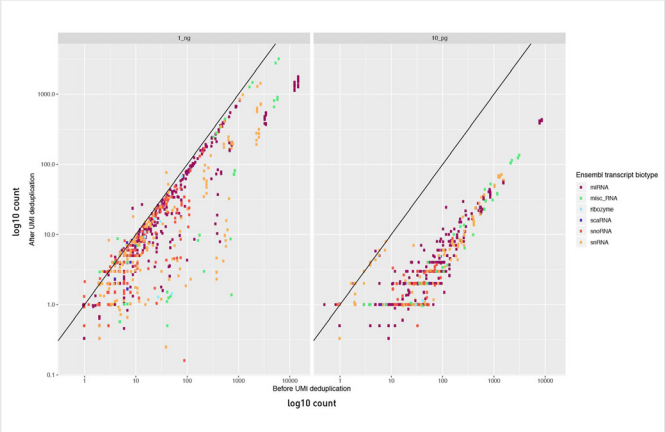

Figure 3: Unbiased representation of your transcriptome. Unique molecular identifiers (UMIs) allow accurate identification of PCR duplicates during sequencing data analysis for low input samples. During UMI processing, PCR duplicates are removed and the corrective effect induces a downward shift of the dot-plots, as the number of counts decrease after UMI deduplication.

EFFICIENT GENE DETECTION AND ANALYSIS

The **D-Plex mRNA-seq Library Prep** Kit is the ideal solution for gene expression analysis and discovery applications in the coding transcriptome.

- Ultra-sensitive methodology with low input capability, down to 10 ng of total RNAs prior to mRNA capture
- High efficiency for greater gene detection and biomarker identification
- Consistent gene expression profiling, optimal for gene signature definition
- Precise measurement of strand orientation for antisense transcription detection

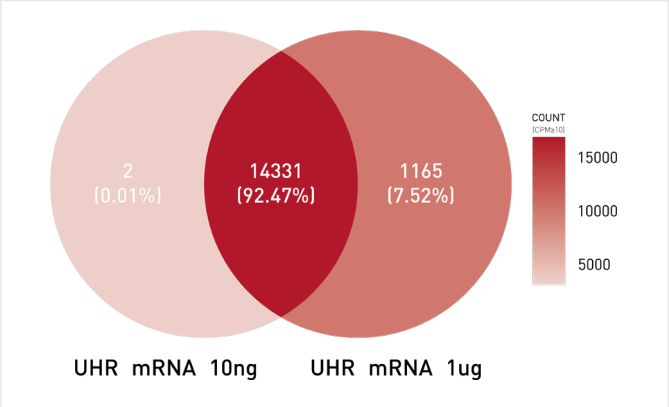

Figure 4: Greater gene discovery efficiency. D-Plex mRNA-seq Libray Prep kit enables the detection of higher numbers of genes even when working with low input samples. Increased number of genes detected at 10x coverage is an indicator of greater sensitivity.

ORDERING INFORMATION

ILLUMINA SEQUENCING PLATFORM		
Library prep		
D-Plex Small RNA-seq Kit	C05030001	24 rxns
D-Plex Total RNA-seq Kit	C05030031	24 rxns
D-Plex mRNA-seq Kit	C05030033	24 rxns
Indexes		
D-Plex UDI Module - Set A	C05030021	24 UDIs, 24 rxns
D-Plex UDI Module - Set B	C05030022	24 UDIs, 24 rxns
MGI SEQUENCING PLATFORM		
Library Prep		
D-Plex Small RNA DNBSEQ Kit	C05030051	24 rxns
Barcodes		
D-Plex DNBSEQ Barcodes Module - Set A	C05030060	24 barcodes, 24 rxns
D-Plex DNBSEQ Barcodes Module - Set B	C05030061	24 barcodes, 24 rxns

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