diagenode

Innovating Epigenetics Solutions

True and accurate small RNA-seq: Use the power of UMIs without ligation

D-Plex Small RNA-seq library preparation solution

Diagenode's latest innovation in small RNA-seq, D-Plex, is based on a template-switching technology that delivers a ligation-free method for RNA library preparation, ensuring realistic representation of diverse small RNA species (such as miRNA, piRNA, tRNA, and siRNA) with minimized bias. This solution allows you to produce Illumina®-compatible DNA libraries for NGS from low input amounts of RNA.

The D-Plex Small RNA Small solution was optimized for 10 pg - 10 ng enriched small RNA (or 100 pg - 100 ng total RNA) and contains our latest TSO (Template-Switch Oligonucleotide) technology including UMIs.

Benefits of D-Plex:

- **Truest representation:** UMIs with ligation-free protocol ensures the most representative and unbiased data
- **Enhanced data:** Our new bioinformatics pipeline provided in the manual was optimized and developed specifically for getting the best out of your D-Plex data including UMI processing
- **Easy:** One-tube, one-day protocol
- **Lowest inputs:** Down to 10 pg enriched small RNA or 100 pg total RNA starting amount
- **Clinical sample compatibility:** Tested with RNA from biofluids

D-Plex provides high transcript diversity

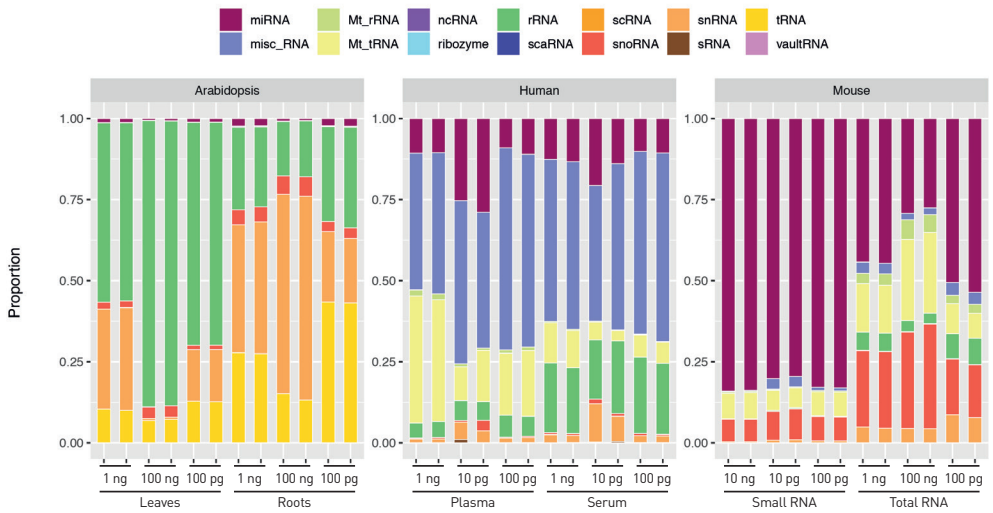

Figure 1. Biotyping : Relative abundance of each small RNA from Arabidopsis, Human and Mouse type captured in the library out of the total amount of RNA. (RNA transcripts annotated in Ensembl).

How D-Plex works

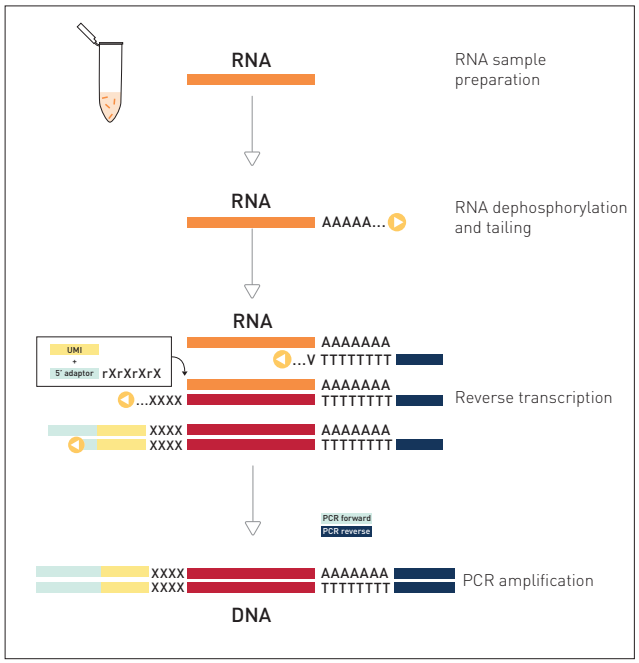

Figure 2. D-Plex one-day workflow.

Robust technology - no matter your input amount

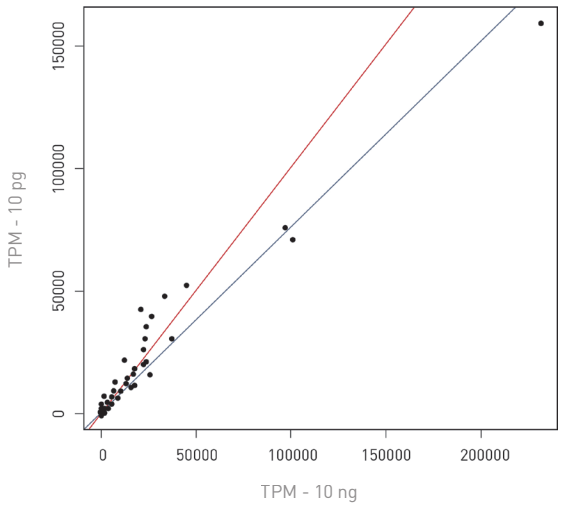

Figure 3. Correlation between 2 different starting amounts using D-Plex Small RNA-seq Kit. 10 ng and 10 pg of small RNA were isolated for ncRNA detection at TPM ≥2. Blue line: ideal correlation; Red line: r = 0.97.

UMIs allow accurate identification of duplicates for low input samples

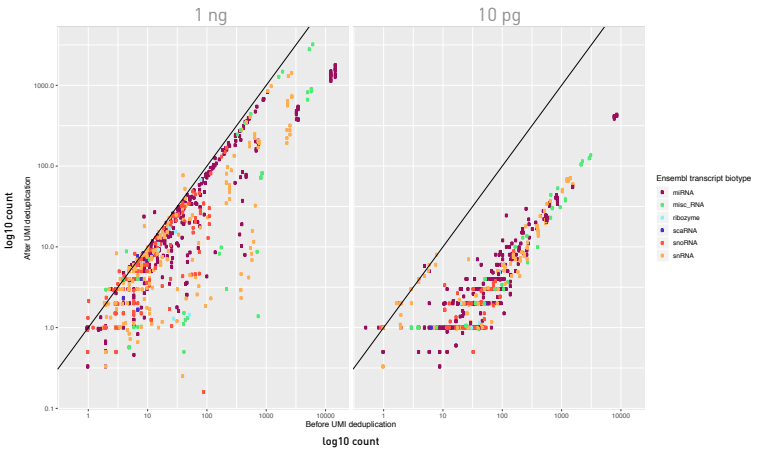

Figure 4. Effect of the UMI deduplication on the sncRNA set detected at TPM ≥ 2 in rat plasma for different inputs: 1 ng and 10 pg. (RNA transcripts annotated in Ensembl).

High read quality with D-Plex Small RNA

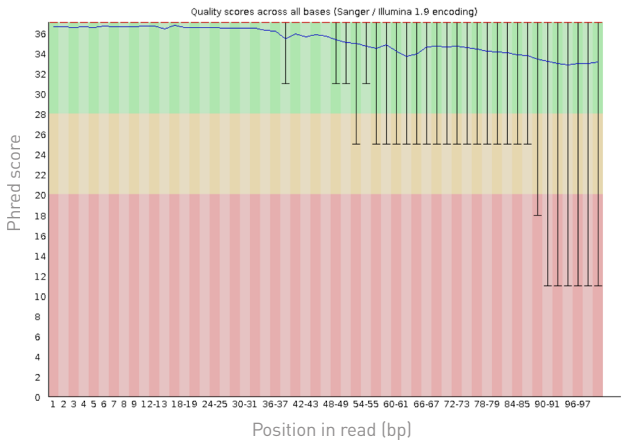

Figure 5. D-Plex validated on NovaSeq 6000 (100 bp SE reads) using 100 pg RNA isolated from human serum (PhiX = 3%).

Description	Cat. No.	Format
D-Plex Small RNA-seq Kit*	C05030001	24 rxns
D-Plex 24 Single Indexes for Illumina - Set #A (1-24)	C05030010	24 rxns
D-Plex 24 Single Indexes for Illumina - Set #B (25-48)	C05030011	24 rxns

*does not contain indexes

www.diagenode.com **Please contact us for more information**

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