

miRVEL Discovery Small RNA-Seq Library Prep

Cutting-edge technology for
sRNA discovery and biomarker studies

Unlock the full potential of biofluids for sRNA biomarkers studies

The miRVEL Discovery Small RNA-Seq Library Prep Kit provides an advanced solution for sRNA-Seq, optimized for low-input biofluids like blood and plasma samples, making it the ideal solution for studies focused on circulating biomarkers.

The miRVEL Discovery Small RNA-Seq Library Prep Kit features a **streamlined workflow** (Fig. 1) that allows the entire library preparation process to be completed in **under 7 hours**. The methodology utilizes modified oligonucleotides that effectively **prevent adapter dimer formation**, eliminating the need for time-consuming gel-size selection. The input RNA is first subject to 3' adapter ligation followed by the ligation of 5' adapter. The RNA, flanked by both adapters, is converted into cDNA with the incorporation of UMIs. During the PCR amplification step, 10 nt UDIs are introduced, utilizing a fixed combination of two unique index barcodes per sample. The bead-based purification facilitates protocol compatibility with automation.

Outstanding Reproducibility and Correlation Across Different Concentrations

The miRVEL Discovery Small RNA-Seq Library Prep Kit generates excellent gene count correlation between replicates (Fig. 2A, 2B) even with low inputs (1 ng plasma RNA, Fig. 2A). Moreover, the performance remains consistent across a range of inputs (Fig. 2C), which highlights the robustness of the miRVEL Discovery protocol.

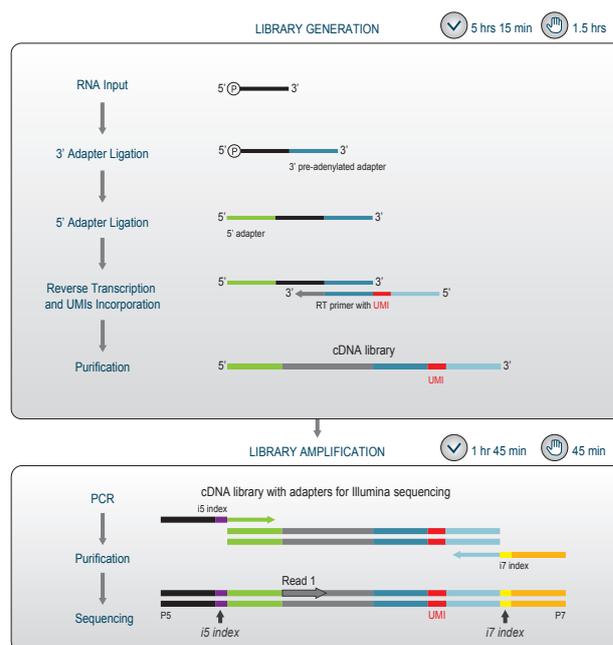


Figure 1 | miRVEL Discovery Small RNA-Seq Library Prep Kit Workflow.

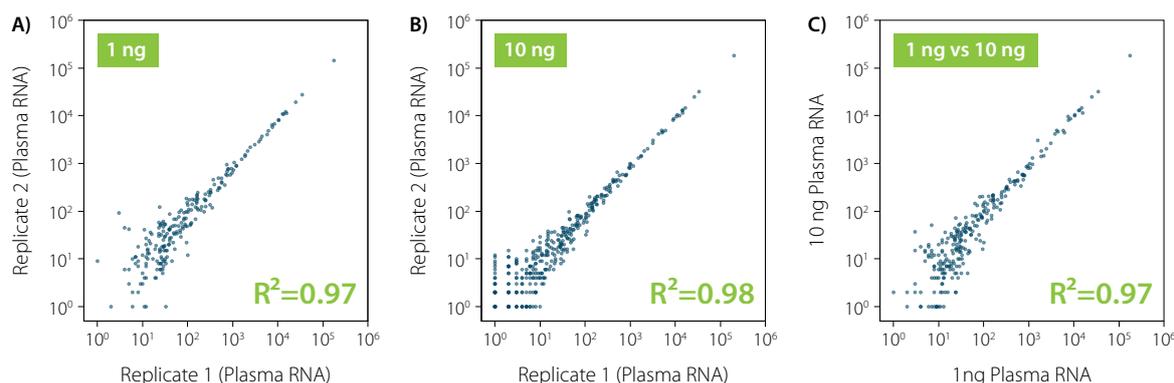


Figure 2 | Correlation analyses of gene counts obtained from miRVEL Discovery Small RNA-Seq Library preps generated from 1 ng and 10 ng human plasma RNA. A) and B) Correlation between replicates. C) Correlation between 1 ng and 10 ng input RNA amount.

Exceptional Rate of Reads Mapping in miRNAs for Biofluid Samples

miRVEL Discovery Small RNA-Seq exhibits an exceptional rate of reads mapping to miRNA for libraries generated from 10 ng of human plasma RNA and 1 ng of human blood RNA (Fig. 3).

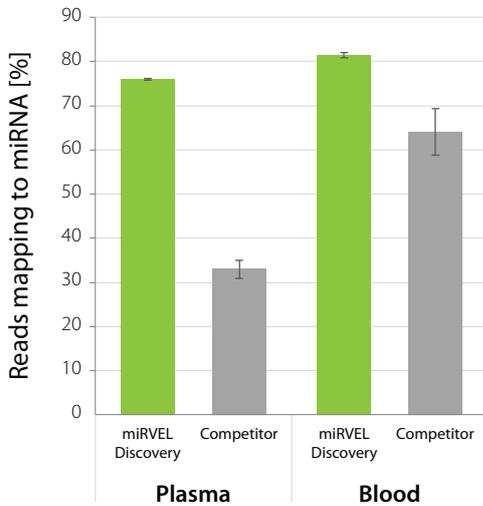


Figure 3 | Percentage of reads mapping to miRNAs. Libraries were prepared from 10 ng of human plasma RNA and 1 ng of human blood RNA with miRVEL Discovery Small RNA-Seq Library Prep and Competitor kit in duplicates.

Excellent miRNA Detection in Low-input Biofluid Samples

Small RNA-Seq with miRVEL Discovery demonstrates a high detection of miRNAs in low-input plasma samples (Fig. 4), making it an outstanding solution for biomarker research.

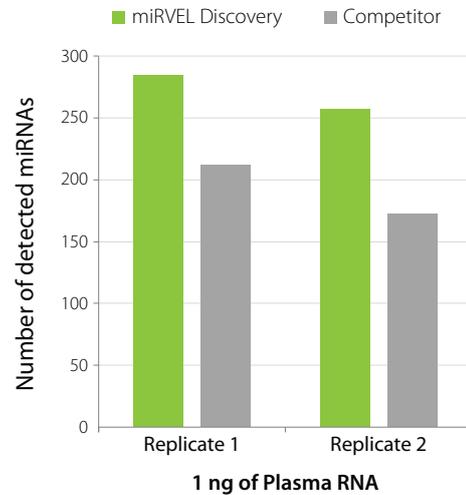


Figure 4 | Number of detected miRNAs in low-input plasma sample. Libraries were prepared from 1 ng of human plasma RNA with miRVEL Discovery Small RNA-Seq Library Prep Kit and Competitor kit.

Key Benefits for Small RNA-Seq with miRVEL



Tailored for biofluids: miRVEL Discovery prevents incorporation of hY4Y RNA from serum and plasma freeing up sequencing space.



Precise quantification: Unique Molecular Identifiers (UMIs) enable the removal of PCR duplicates for precise and unbiased quantification of sRNAs.



Reliable multiplexing with 10 nt Unique Dual Indices (UDIs): accurate read assignment, multiplexing of up to 120 samples.

NGS Services Available!



Lexogen NGS Services ensure the best-fitting sRNA-Seq solution for your project, including data analysis. Simply send your samples and let our experts extract the best data possible for you! Contact us today at services@lexogen.com.

- **End-to-end workflows** with Lexogen's RNA Extraction solutions.
- Cutting-edge technology with **gel-free miRVEL Discovery Small RNA-Seq Library Prep Kit**.
- Small RNA-Seq data analysis with Lexogen **Bioinformatics Services** for powerful insights.



End-to-end Workflow Solutions for Small RNA-Seq and Biomarker Discovery

	RNA Extraction	RNA Preparation	NGS Library Prep	NGS Data Analysis
Small RNA-Seq	SPLIT RNA Extraction	<i>not needed!</i>	Small RNA-Seq	Bioinformatics Services
Small RNA Enrichment	TraPR sRNA Isolation	<i>not needed!</i>	Small RNA-Seq	Bioinformatics Services
Small RNA-Seq Service	Lexogen NGS Services			

Cat. №	Product Name
242	miRVEL Discovery Small RNA-Seq Library Prep Kit, 24 or 96 reactions
Associated Products	
008	SPLIT RNA Extraction Kit, 48 reactions
128	TraPR Small RNA Isolation Kit, 8 or 24 reactions

For more information and additional resources, please visit our [website](https://www.lexogen.com).

