

MGIEasy Small RNA Library Prep Kit V2.0

■ Features

Low RNA input Use as low as 10 ng total RNA per sample

Compatible with various sample types Including human, animal and plants

Flexible workflow Two options of size selection based on either bead or gel purification for specific applications

■ Introduction

Small RNAs are an endogenous non-coding single-stranded RNA with a length of approximately 20-24 nucleotides and includes microRNAs, siRNA and piRNA. They play a variety of important regulatory roles in cells such as inducing gene silencing, including RNA interference (RNAi), translation inhibition, heterochromatin formation and others which regulate various cellular physiological processes.

MGIEasy Small RNA Library Prep Kit provides an efficient workflow for generating libraries suitable for MGI high-throughput sequencing platforms with a broad range of input amounts (10 ng - 1 µg) of total RNA. Libraries prepared using the MGIEasy Small RNA Library Prep Kit can be used to detect known and unknown small RNAs and their target genes from human, animal and plant sample types.

Product Specification

Assay Time	~13 hours
Hands-On Time	~50 min
Input Quantity	10 ng - 1 µg of total RNA
Sample types	Tissues
Species Compatibility	Human, animals, plants, such as mouse, rice and Arabidopsis
Applications	Small RNA Sequencing
Platform Compatibility	BGISEQ-500, MGISEQ-2000, DNBSEQ-G400
Recommended Read Length	SE50
Recommended sequencing data per sample	25 M raw reads

Data Performance

High Reproducibility

MGIEasy Small RNA Library Prep Kit is compatible with a range of total RNA input (10 ng -1 µg) and exhibits excellent quality sequencing data and miRNA detection. The protocol exhibits high reproducibility and correlation across range of sample inputs (Fig. 2a). Sequencing data from samples of two input amounts (500 ng and 1 ug) were highly correlated when compared using Spearman and Pearson correlation coefficients (Fig. 1b).

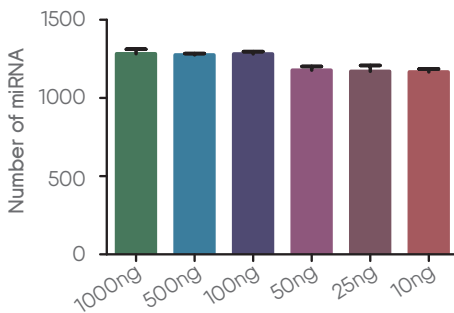


Fig. 1a Total number of detected miRNAs from different RNA inputs.

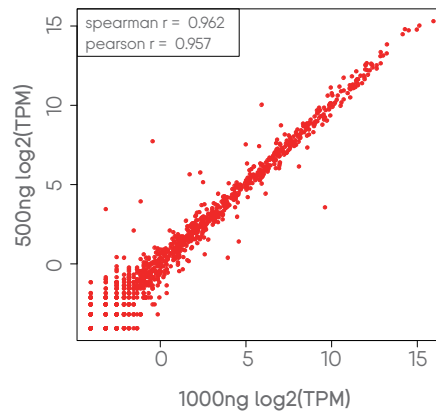


Fig.1b Gene expression level reproducibility in different RNA input.

Fig. 1 Libraries were prepared from Human Brain Total RNA (HBR) using the MGIEasy Small RNA Library Prep Kit, and sequenced on MGI sequencer at SE50 read-length. Approximately 25M raw reads were collected per sample for analysis.

Compatible with various species

MGIEasy Small RNA Library Prep Kit can be widely applied to human, animal, plant and plasma sample. To demonstrate this human, mouse and rice total RNA samples were used to prepare sequencing libraries. The sequenced small RNA library data (Fig. 2) shows that the MGIEasy Small RNA Library Prep Kit is compatible with different species and has high technical reproducibility.

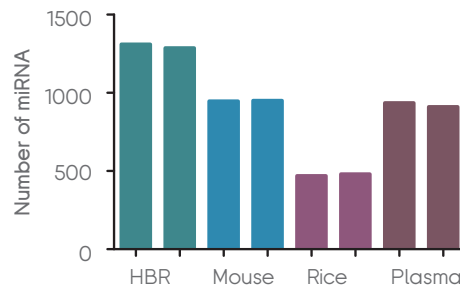


Fig. 2 Total number of detected miRNA of different species

Libraries were prepared from HBR, mouse and rice total RNA using the MGIEasy Small RNA Library Prep Kit, and sequenced on MGI sequencer at SE50 read-length. Approximately 25M raw reads were collected per sample for analysis.

High sensitivity

A comparison was performed between the MGIEasy Small RNA Library Prep Kit sequenced on an MGI sequencer and other comparable Small RNA kits sequenced on a different platform. The results in Fig. 4 demonstrate that the libraries constructed using MGIEasy Small RNA Library Prep Kit detect more miRNA with the same amount of data (Fig. 3).

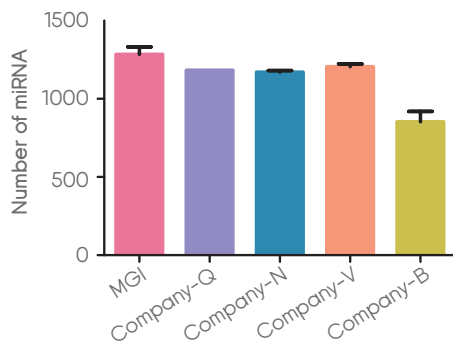


Fig. 3 Number of detected miRNA using different sequencing platforms.

The MGI libraries were generated from Human Brain Total RNA using the MGIEasy Small RNA Library Prep Kit, and sequenced on a MGI sequencer at SE50 read-length. The other libraries were prepared with Human Brain Total RNA using others kits and sequenced on "N" platform at SE50 read-length. Approximately 25M raw reads were collected per sample for analysis.

Summary

MGIEasy Small RNA Library Prep Kit can efficiently prepare Small RNA libraries from human, animal and plant samples with a range (10 ng -1 µg) of total RNA input. This enables excellent quality sequencing data and outstanding sensitivity to detect microRNAs with high technical reproducibility. MGIEasy Small RNA Library Prep Kit provides two options of size selection based either on beads or gel purification to meet the needs of most species types.

Ordering information

Product	Configuration	Catalog No.
MGIEasy Small RNA Library Prep Kit	24 RXN	100005269
MGISEQ-2000RS High-Throughput Sequencing Set (Small RNA)	SE 50	100006138



■ Contact Us

MGI Tech Co., Ltd
Add : Building11, Beishan Industrial Zone,
Yantian District, Shenzhen, CHINA 518083
Email: MGI-service@mgi-tech.com
Website: en.mgi-tech.com
Tel: 4000-966-988
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