

# MGIEasy rRNA Depletion V1.3

## ■ Introduction

MGIEasy rRNA Depletion Kit V1.3 can efficiently remove rRNA from total RNA and keep mRNA and non-coding RNA to increase the proportion of useful data. It depletes rRNA from human, mouse and rat total RNA with an input of total RNA ranging from 10 ng–1 µg. This kit is compatible with both intact and degraded RNA (e.g. FFPE RNA). The library prepared by using this kit with RNA Library Prep Kit (e.g. MGIEasy Fast RNA Library Prep Set) is suitable for transcriptome or non-coding RNA research applications.

## ■ Highlights

### ✔ Efficient elimination of rRNA

High efficiency on rRNA depletion and keep mRNA and non-coding RNA.

### ✔ Compatible with degraded sample

Compatible with degraded sample, such as FFPE RNA with different quality.

### ✔ Efficient automatable workflow

Adapt to MGISP-100 and MGISP-960.

### ✔ Flexible solutions

Compatible with various RNA sequencing library preparation kits.

## Specification

Assay Time	~ 2 hours
Hands-On Time	~12 min
Input Quantity	10 ng – 1 µg total RNA
Sample types	blood, fresh tissue, FFPE RNA
Species Compatibility	Human, Mouse, Rat
Applications	Whole-Transcriptome Sequencing, Long non-coding RNA Sequencing
Adaptation automation platform	MGISP-100 (16RXN) , MGISP-960 (96RXN)
Removed rRNA types	cytoplasmic 5 S rRNA, 5.8 S rRNA, 18 S rRNA, 28 S rRNA, mitochondrial ribosomal RNA 12 S rRNA, 16 S rRNA and 45 S pre-ribosomal RNA

## Product performance

### Higher efficiency on rRNA depletion and compatible with 10 ng -1 µg total RNA

MGIEasy rRNA Depletion Kit V1.3 can efficiently deplete rRNA, while keeping mRNA and non-coding RNA, ensuring rich gene detection and high qPCR correlation. MGIEasy rRNA Depletion Kit V1.3 is compatible with a range of 10 ng -1 µg total RNA. The libraries prepared from MGIEasy rRNA Depletion Kit V1.3 exhibit excellent quality on sequencing data, rRNA depletion efficiency and gene detection, even the input total RNA be as low as 10 ng.

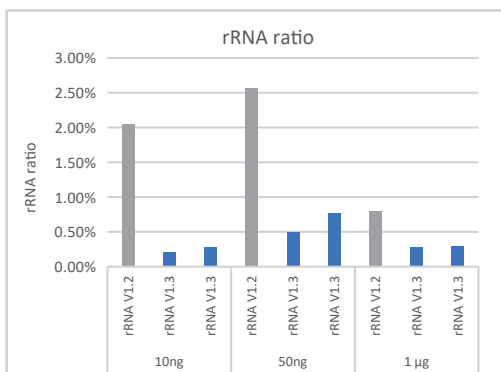


Fig.1a The rRNA residual ratio under different amount of input RNA

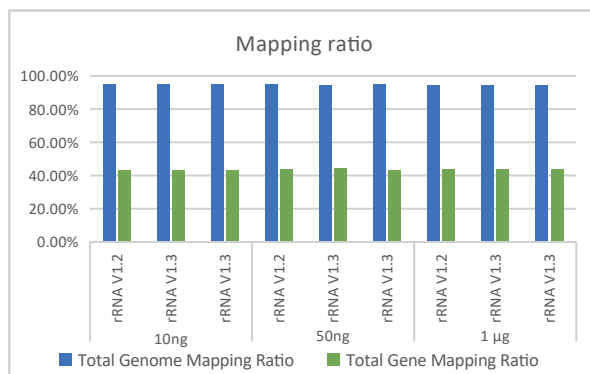


Fig.1b The mapping ratio under different input amounts of total RNA

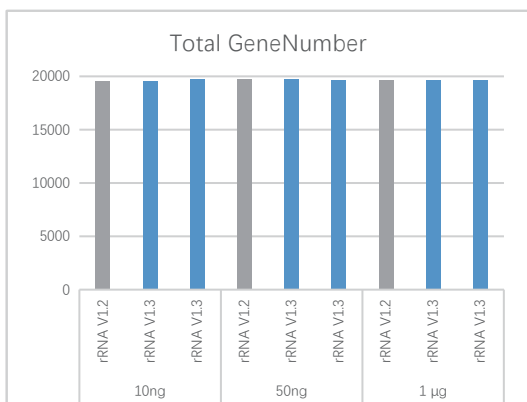


Fig.1c Detected genes under different input amounts of total RNA

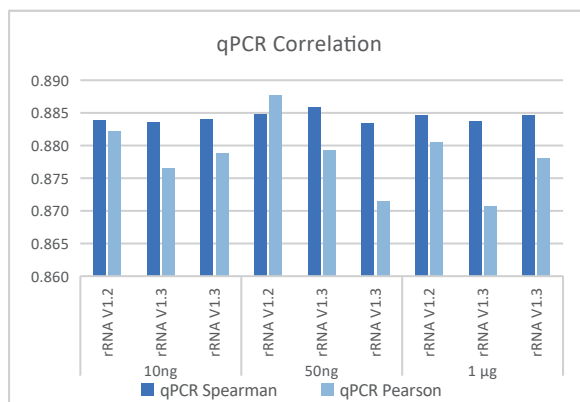


Fig.1d The qPCR correlation under different input amounts of total RNA

Fig.1 Libraries were prepared from 1µg, 50ng, 10ng input total RNA of Universal Human Reference RNA using the MGIEasy rRNA Depletion Kit V1.3 / V1.2 and the MGIEasy Fast RNA Library Prep Set (MGI, Cat. No. 940-000890-00, 940-000889-00, 940-000961-00), and sequenced on DNBSEQ-G400.

### Efficient Removal of rRNA from Degraded RNA sample

FFPE RNA samples with different with different quality (degradation) were used to prepare libraries with the MGIEasy rRNA Depletion Kit V1.3 and the MGIEasy Fast RNA Library Prep Set. The sequencing result showed that the MGIEasy rRNA Depletion Kit V1.3 is compatible with different quality FFPE samples and has a better rRNA depletion efficiency. Better quality samples have better rRNA depletion ratio and gene detection.

### FFPE RNA samples:

Sample	DV200	RIN	Input amount
FFPE-1	66%	4.7	200ng
FFPE-2	62%	2.5	200ng
FFPE-3	48%	2.4	500ng

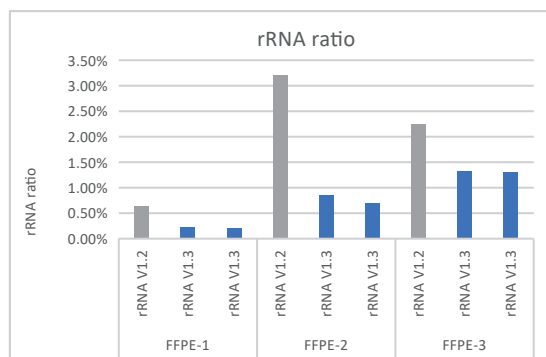


Fig.2a rRNA residual ratio in different FFPE RNA Samples

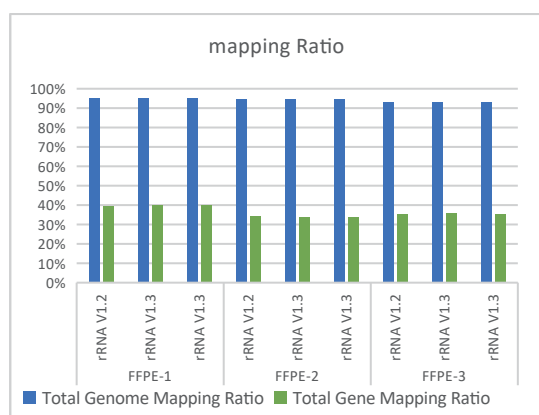


Fig.2b The ratios of alignment in different FFPE RNA Samples

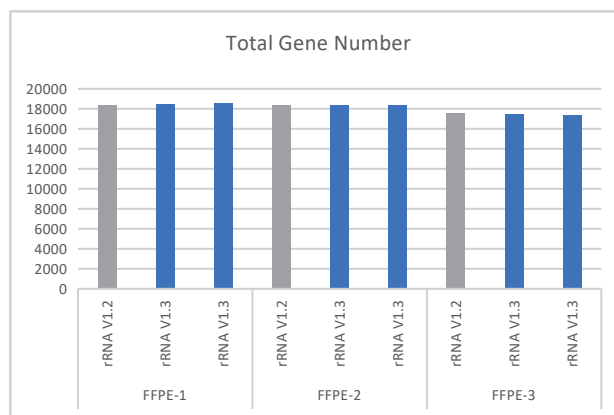


Fig.2c Detected genes in different FFPE RNA Samples

Fig.2 Libraries were prepared from different FFPE RNA using the MGIEasy rRNA Depletion Kit V1.3 / V1.2 and the MGIEasy Fast RNA Library Prep Set (MGI, Cat. No. 940-000890-00, 940-000889-00, 940-000961-00), and sequenced on DNBSEQ-G50.

### Stable performance on Automated Sample Preparation System

The MGIEasy rRNA Depletion Kit V1.3 is suitable for MGI High-throughput Automated Sample Preparation System. It has stable performance even in low input amount on Automated Sample Preparation System, with high rRNA depletion efficiency and rich gene detection.

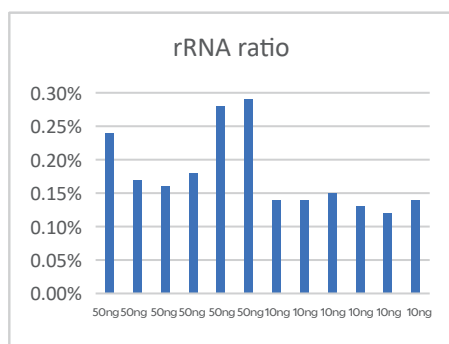


Fig.3a The rRNA residual ratio on MGISP-960

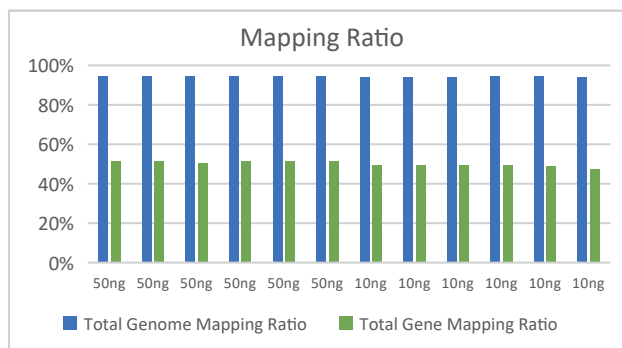


Fig.3b The ratios of alignment on MGISP-960

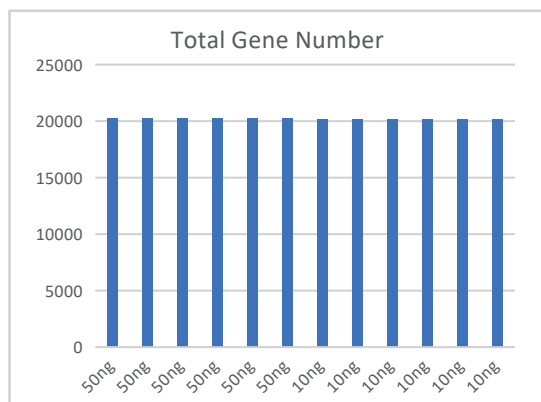


Fig.3c Detected genes on MGISP-960

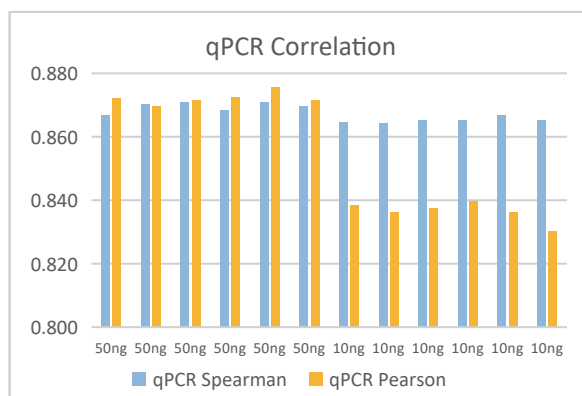


Fig.3d The qPCR correlation on MGISP-960

**Fig.3** Libraries were prepared from 10ng and 50ng input total RNA of Universal Human Reference RNA using the MGIEasy rRNA Depletion Kit V1.3 and the MGIEasy Fast RNA Library Prep Set (MGI, Cat. No. 940-000890-00, 940-000889-00, 940-000961-00) on MGISP-960, and sequenced on DNBSEQ-G50.

### Flexible Solutions

The MGIEasy rRNA Depletion Kit V1.3 is compatible with various RNA sequencing library preparation kits, such as MGIEasy Fast RNA Library Prep Set. The libraries prepared by using the MGIEasy rRNA Depletion Kit V1.3 and RNA Library preparation kits are suitable for RNA quantitation, transcriptome or non-coding RNA research applications.

Table 1 Recommended RNA sequencing applications

Sample types	Applications	Recommended RNA library products	Read length
Total RNA with high integrity (human, mouse and rat)	Whole transcriptome sequencing (mRNA+lncRNA)	MGIEasy rRNA Depletion Kit V1.3 +MGIEasy Fast RNA Library Prep Set	PE100 / PE150
Degraded RNA, FFPE RNA (human, mouse and rat)	RNA quantification and transcript structure analysis	MGIEasy rRNA Depletion Kit V1.3 +MGIEasy Fast RNA Library Prep Set	SE50 / PE100

### Summary

MGIEasy rRNA Depletion Kit V1.3 provides an efficient solution for removing rRNA from total RNA of human, mouse and rat, enabling efficient elimination of rRNA and keep both mRNA and non-coding RNA. MGIEasy rRNA Depletion Kit V1.3 provide flexible solutions compatible with various RNA library preparation kit and a wide range of sample types, including FFPE.

### Ordering Information

Product	Configuration	Cat No.
MGIEasy rRNA Depletion Kit V1.3	16 RXN	940-001751-00
	96 RXN	940-001752-00
MGIEasy Fast RNA Library Prep Set	16 RXN	940-000890-00
	96 RXN	940-000889-00
	192 RXN	940-000961-00

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