

NEXTPREP™ MAGNAZOL™ cfRNA ISOLATION KIT

DNA-SEQ · RNA-SEQ · BARCODES · METAGENOMICS · AMPLICON PANELS · NUCLEIC ACID ISOLATION · TARGET CAPTURE · EPIGENETICS · SMALL RNA-SEQ

Rapid Isolation of Circulating RNA from Plasma and Serum

The NextPrep™ Magnazol™ cfRNA isolation kit is designed for extracting cell-free RNA (cfRNA) from plasma and serum, using a fast magnetic bead-based format requiring minimal hands-on time. The isolated cfRNA is ideal for next generation sequencing and other downstream applications. Suitability of the RNA for use in NGS library construction has been verified using the NEXTFLEX® small RNA-seq kit v3.

PROTOCOL OVERVIEW

Plasma/Serum + Extraction Reagent + BCP | 5 min

Aqueous Phase + Magnetic Beads | 10 min

Attract to Magnet & Remove Fluid

Quick Washes

Elute | 10 min

Transfer cfRNA

KEY FEATURES

- Ideal for extracting circulating cell-free RNA from plasma or serum
- Magnetic beads for rapid purification of RNA liberated from vesicles/protein complexes via organic extraction
- No loss of pellets due to alcohol precipitation
- Generates quality NGS libraries using few PCR cycles
- Verified compatible with the NEXTFLEX® small RNA-seq kit v3
- High levels of reads mapping to miRBase and high diversity of small RNA groups
- Allows 600 µL volume of biofluids to be processed in a single microfuge tube
- cfRNA recovered in low elution volumes for maximum concentration
- Kit includes BCP, an alternative to chloroform, for separating aqueous and organic phases
- Fast protocol with minimal hands-on time, < 1 hr turnaround time, with all steps carried out at room temperature

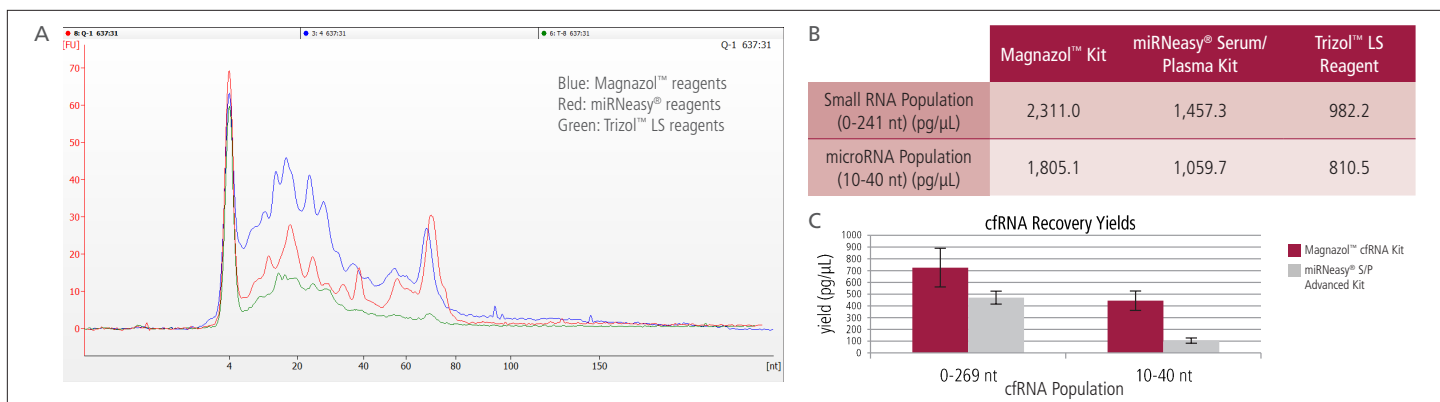


Figure 1: Yield comparison for cfRNA extracted from platelet-rich plasma. Two separate sets of extraction were carried out to compare reagent performance among various commercially available products on market. A), B) Experiment 1: cfRNA was extracted using the NextPrep™ Magnazol™ cfRNA isolation kit, Qiagen® miRNeasy® serum/plasma kit, and Thermo Fisher® Scientific Trizol™-LS reagents. Manufacturer's protocols were used for each, with maximum plasma volumes that could be processed in a 2 mL centrifuge tube, and recommended elution volumes. C) Experiment 2: cfRNA was extracted using the NextPrep™ Magnazol™ cfRNA Isolation Kit and the Qiagen® miRNeasy® serum/plasma advanced kit according to the manufacturer's protocol. Samples from both experiments were analyzed on the Agilent® Bioanalyzer® 2100 small RNA chip. cfRNA concentrations were determined by the Agilent® Bioanalyzer® software.

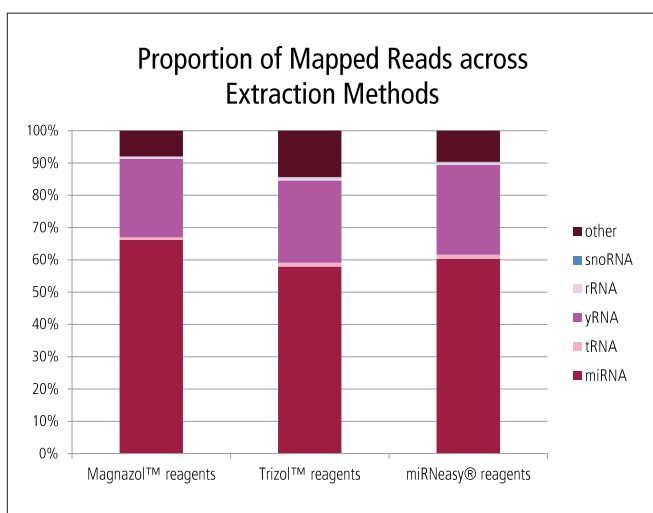
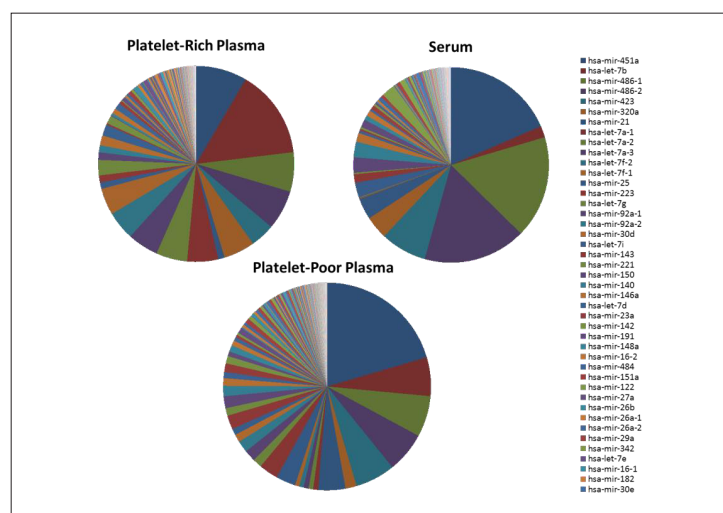


Figure 2: Small-RNA sequencing results from extracted cfRNA using various commercially available methods. The NextPrep™ Magnazol™ cfRNA isolation kit, Qiagen® miRNeasy® serum/plasma kit, and Thermo Fisher® Scientific Trizol™-LS reagents were used to extract cfRNA from platelet-rich plasma of the same donor. Libraries were prepared for Illumina® sequencing using the NEXTFLEX® small RNA-seq kit v3, and sequencing results were generated by sequentially aligning to miRBase, tRNA, yRNA, rRNA, and snoRNA indices using Bowtie 2.



ORDERING INFORMATION

Catalog #	Kit Name	Quantity
NOVA-3830-01	NextPrep™ Magnazol™ cfRNA Isolation Kit	25 isolations
NOVA-5132-XX	NEXTFLEX® Small RNA-Seq Kit v3	8 or 48 reactions
NOVA-3825-XX	NextPrep-Mag™ cDNA Isolation Kit	16 - 50 manual or 240 automated isolations

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