

# PrecisionPak for RNA Extraction from Small Organisms

## Summary

The Next Advance PrecisionPak™ is a complete set of kits and reagents that simplifies the homogenization and extraction workflow, while also enabling excellent results. Several different packs are available, with protocols tailored for the specific organism and type of biomolecule extraction. These Small Organism RNA extraction packs also contain reagents typically not included in extraction kits: Proteinase K and DNase I to remove DNA molecules. They also contain an optimized protocol for your specific organism.

### Key Benefits

- Superior Yield and Quality
- Simplified Workflow
- No Organic Solvents
- Saves Time
- High Value

## Step 1. Homogenization

The bead lysis kits in the PrecisionPak have been used and cited by researchers worldwide for over a dozen years. They contain a combination of bead sizes for thorough tissue homogenization without degradation of the nucleic acids. Whole drosophila flies floating in the buffer above the pre-filled beads in the bead lysis tubes (Figure 1A) were homogenized using the recommended settings to achieve thorough homogenization of the sample tissues (Figure 1B).

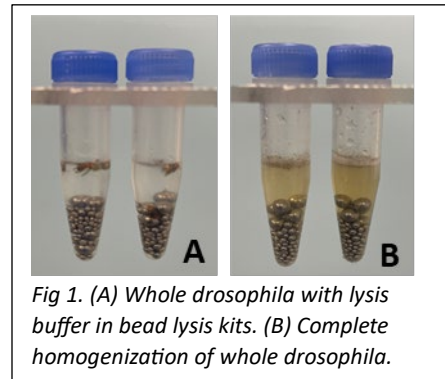


Fig 1. (A) Whole drosophila with lysis buffer in bead lysis kits. (B) Complete homogenization of whole drosophila.

## Step 2. Extraction of RNA

These RNA extraction kits use state-of-the-art magnetic bead technology rather than spin columns to provide optimum results. Mixing magnetic beads with the homogenate offers more contact time for interaction between the RNA and the active surface. This also avoids high shear stresses on the RNA, which would occur during centrifugation with the spin columns, and cuts the processing time and effort in half. Additionally, no organic solvents are used. Figure 2 compares our extraction kits with those from the leading Qompetitor and the Trizol method. The quality of extracted RNA is suitable for RT-qPCR amplification, RNA-Seq, Micro-array analysis, northern blotting and cloning.

## Ordering Information

We have PrecisionPak kits tailored to extract RNA from your specific sample organism. We currently have protocols for most of the common small organisms used in research. To order, select the part number based upon the toughness of your sample organism and desired sample tube from the table below. If you are unsure of the toughness of your small organism, refer to our webpage, <https://www.nextadvance.com/precisionpak/small-organism/>. If you

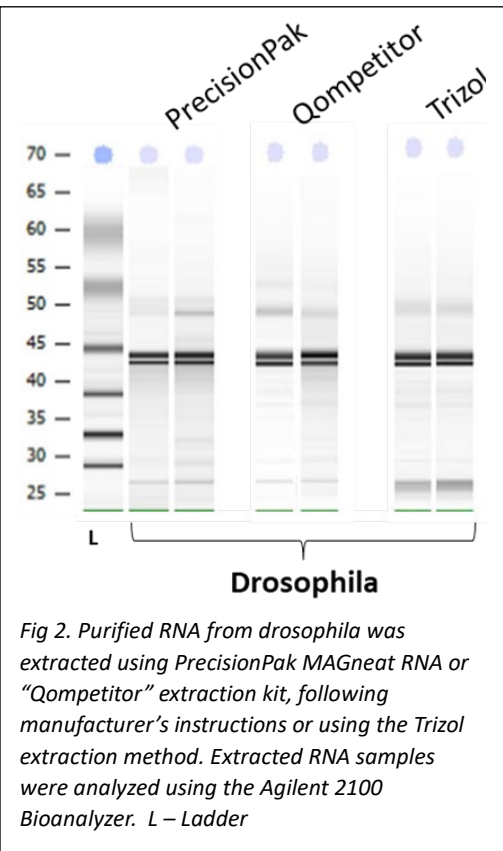


Fig 2. Purified RNA from drosophila was extracted using PrecisionPak MAGneat RNA or "Qompetitor" extraction kit, following manufacturer's instructions or using the Trizol extraction method. Extracted RNA samples were analyzed using the Agilent 2100 Bioanalyzer. L – Ladder

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do not see the specific organism you are working with, we can work with you to provide a protocol in a day or two, at no charge.

cat. no.:	Homogenization lysis kit specifics
PP-SRGS	1.5 mL snap cap tubes used in Bullet Blenders – for soft tissues
PP-SRGT	1.5 mL snap cap tubes used in Bullet Blenders – for tough tissues
PP-SRRS	1.5 mL screw cap tubes used in Bullet Blenders – for soft tissues
PP-SRRT	1.5 mL screw cap tubes used in Bullet Blenders – for tough tissues
PP-SR2S	2 mL screw cap tubes for all other homogenizers – for soft tissues
PP-SR2T	2 mL screw cap tubes for all other homogenizers – for tough tissues

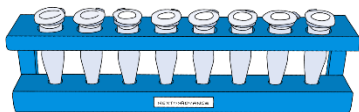
## Magnetic Rack Assembly (MAGRACK)

Designed for the PrecisionPak, our Magnetic Rack Assembly allows easy processing of up to eight sample at a time for nucleic acid extraction. The assembly is optimized for the three types of steps in the magnetic bead extraction protocols: sample handling, magnetic separation, and mixing. The assembly consists of 3 parts: a tube rack, a magnetic stand, and a mixing base.

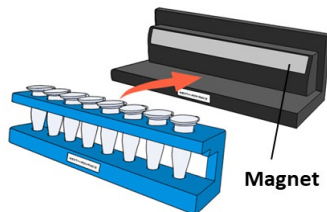


*Video on using the magnetic rack assembly.*

**Tube Rack:** Holds up to eight 1.5 mL or 2 mL tubes.



**Magnetic Stand:** To separate magnetic beads.



**Mixing Base:** To mix tube contents.

