



More rapid, more pure, less hazard, less hands-on

mirPremier™ microRNA Isolation Kit

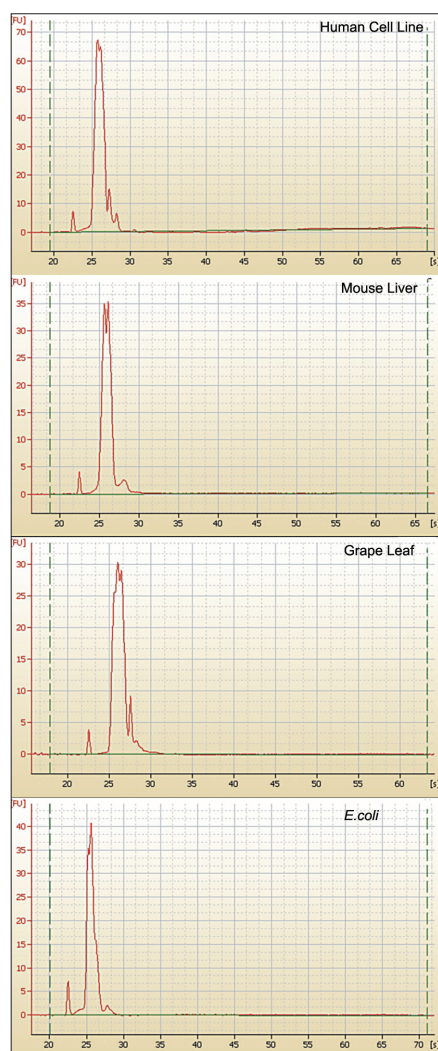


Figure 1
miRNA samples purified with mirPremier microRNA Isolation Kit from diverse biological materials. Each sample was analyzed on an Agilent Bioanalyzer using an RNA Nano Kit.

MicroRNA (miRNA) are a class of small RNA molecules, about 21 nucleotides in length that regulate gene expression in a variety of ways, including translational repression, mRNA cleavage and deadenylation. Developed by Sigma, the mirPremier microRNA Isolation Kit is a new member of the MISSION® RNAi product family that provides a rapid and efficient method for purifying and enriching miRNA along with other small RNAs, allowing researchers to obtain high-quality miRNA directly from cells or tissues as rapidly and simply as a total RNA prep.

- Optimized for purification of microRNA and other small RNA directly from diverse biological sources
- Rapidly purifying and enriching miRNA in 30 minutes for downstream applications
- High-purity miRNA with no detectable large RNA
- No hazardous organic extractions

Purification of miRNA from diverse biological sources

Using mirPremier microRNA Isolation Kit, researchers can purify miRNA/small RNA from diverse biological sources, including mammalian cell cultures, animal tissues, microbial cultures and plant tissues (**Figure 1**). mirPremier microRNA Isolation Kit also allows researchers to purify miRNA/small RNA with high yield from “difficult-to-extract” tissues, such as grape leaf (**Figure 2**). In addition, the kit can be used to isolate total RNA if messenger RNA or other large RNAs are of interest.

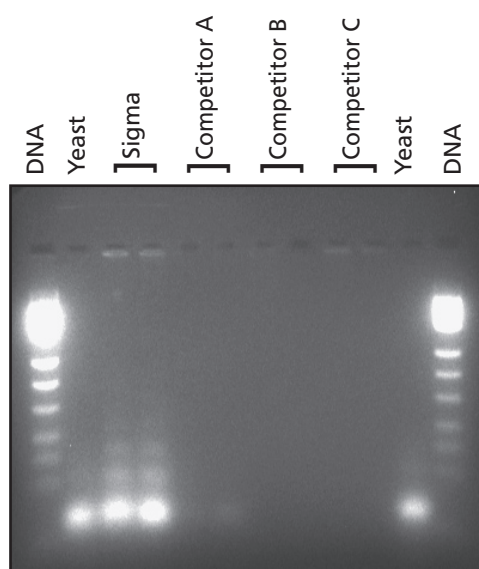


Figure 2
Isolation of small RNA from a difficult-to-extract plant tissue – grape leaf - using different microRNA isolation kits. Grape leaf tissues were first ground into a fine powder in liquid nitrogen and then 100 mg was extracted with different microRNA isolation kits. Each purified sample was analyzed with 5% of the total recovered volume on 4% agarose gel containing ethidium bromide. The DNA marker is an MspI digest of puc18 (mw- 67, 89, 110, 147, 190, 242, 353, 404, 49, and 501 bases). Yeast tRNA was loaded with 250 ng per lane.



Rapid purification and enrichment of miRNA within 30 minutes

Timely extraction of miRNA from cells or tissues is critical for downstream applications. mirPremie™ microRNA Isolation Kit provides a robust protocol that enables scientists to purify miRNA within 30 minutes, making it an ideal solution for rapid preparation of miRNA (Figures 3 and 4).

Superior quality of miRNA/ small RNA without any detectable large RNA

Unlike other miRNA purification methods, mirPremier microRNA Isolation Kit yields high-purity miRNA/small RNA, containing no detectable large RNA (Figure 5).

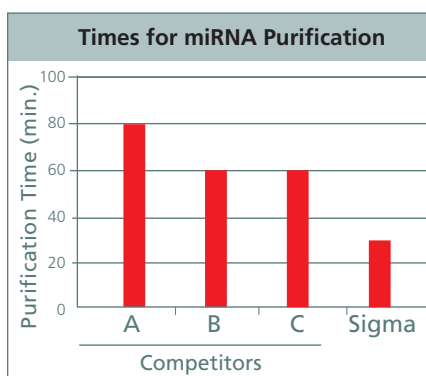


Figure 3. Comparison of times for miRNA purification.

Contains no hazardous organic extractions

The mirPremier microRNA Isolation Kit employs a novel purification chemistry to isolate miRNA and other small RNAs in a simplified and streamlined manner, without using hazardous organic extractions such as phenol and chloroform.

Quality and Service with each and every lot

Like other Sigma life science products, the mirPremier microRNA Isolation Kit is backed by the quality production standards, customer service, technical support, and other extensive offerings that make Sigma the most trusted name in life science technology.

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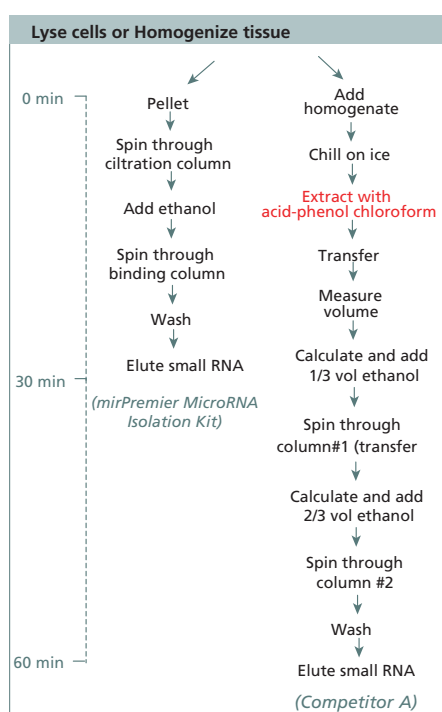


Figure 4. Comparison of small RNA purification workflow

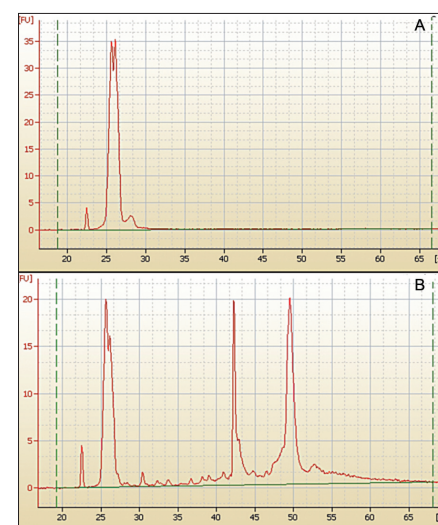


Figure 5. miRNA quality comparison between Sigma mirPremier microRNA Isolation Kit (A) and competitor A miRNA purification kit (B). Two peaks on the right of Fig. 5B are contaminating rRNA. Each sample was purified from 40 mg mouse liver tissues and analyzed with 1% of the total recovery by Agilent Bioanalyzer using an RNA Nano kit.

References

1. Ausubel, F.M. et al., *Current Protocols in Molecular Biology*, John Wiley & Sons, NY, sections 4.1-4.10 (1995).
2. Farrell, Robert E., Jr. *RNA Methodologies*, 2nd Edition, Academic Press, NY, pp. 37-53 (1998).
3. Sambrook, J. et al. *Molecular Cloning: A Laboratory Manual*, 2nd ed., Cold Spring Harbor Laboratory Press, Plainview, NY, pp. 7.3-7.5 (1989).

Ordering Information

Cat. No.	Product Name	Package Size
SNC10	mirPremier microRNA Isolation Kit	1 Kit sufficient for 10 preparations
SNC50	mirPremier microRNA Isolation Kit	1 Kit sufficient for 50 preparations