miRNA Purification Kit (tRNA Depletion)

Catalog No.	40057S	40057L
Runs*	24 runs	96 runs

*Based on 50 µl of sample volume

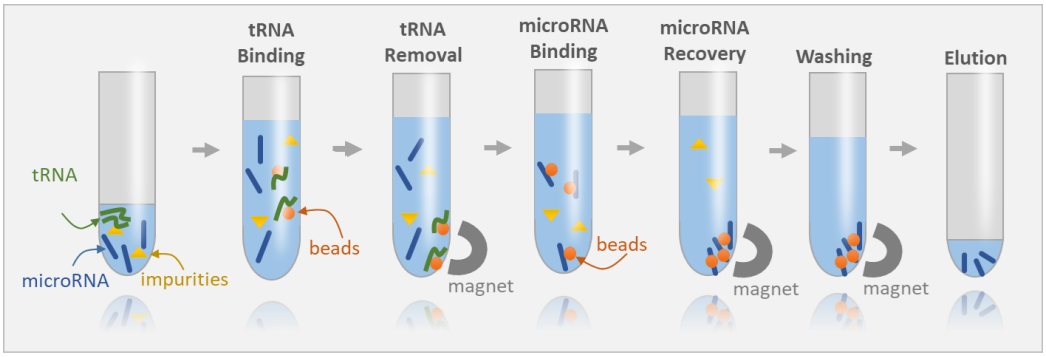
Description

The **miRNA Purification Kit (tRNA Depletion)** is developed for microRNA (miRNA) purification by removal of tRNA, 5S RNA, and other larger RNA contaminations.

microRNAs are typically around 22 nucleotides long and can be used in various downstream applications relating to gene expression regulation, miRNA profiling, and functional analysis. However, miRNA isolated from commercial microRNA extraction kits usually contain contaminations of tRNA, 5S RNA, and other larger RNA molecules. The contamination may result in decreased sensitivity or inconsistent data for applications such as PCR, RT-PCR, next-generation sequencing (NGS), microarray, etc.

We have developed a Solid Phase Reversible Immobilization (SPRI) beads-based technology to solve the problem. SPRI beads are well used for nucleic acid purification. The paramagnetic beads coated with carboxyl groups can reversibly bind to nucleic acid that are 100 base pairs or longer. However, with traditional SPRI beads, nucleic acids shorter than 100 bp are poorly recovered.

Our proprietary magnetic bead technology not only overcomes the short nucleic acid recovery hurdle, but also enables effective separation of miRNA from large RNA molecules. With this technology, the kit selectively purifies miRNA and removes tRNA, 5S RNA, and other larger RNA molecules. The magnetic beads can also remove impurities and unwanted components such as salts, proteins, dNTPs, and detergents.



Features

- Purification of miRNA by removing tRNA, 5S RNA, and larger RNA contaminations
- Removal of impurities and unwanted components

Component

Catalog No.	40057S	40057L
S1 Beads	1.2 mL	4.8 mL
EM Buffer	1.8 mL	7.2 mL
S2 Beads	0.24 mL	0.96 mL

Storage Condition

- Store at 4°C, stable up to 6 months.

Reagent & Equipment Needed (not provided in this reagent)

- Magnetic particle concentrator
- 96-well PCR plate or microcentrifuge tubes
- 80% ethanol (prepare before use)

Protocol

Note: Invert or shake the beads to thoroughly resuspend the beads.

1) Transfer samples (up to 50 µl) to a 96-well plate.
2) Add 1X volumes of the S1 Beads to the wells containing samples (see Reagent volume calculation table below). Slow pipetting of the viscous beads is needed for precise aliquot. Mix by pipetting gently and thoroughly. Incubate for 3 min.
3) Load the sample plate on a magnet, incubate for 3 min, and transfer the supernatant to a new plate.
4) Add 1.5X volumes of EM Buffer to the supernatant and mix by pipetting (see Reagent volume calculation table below).
5) Add 10 µl of S2 Beads and mix by pipetting, incubate 10 min.
6) Load the sample plate on a magnet, incubate for 10 min, and discard the supernatant carefully.
7) Add 180 µl of 80% ethanol without disturbing the beads. Incubate for 1 minute and discard the supernatant carefully. Remove all residual ethanol without disturbing the beads.
8) Air-dry the beads on the magnet for 3 min.
9) Remove the plate from the magnet and resuspend the beads in water or Tris-HCl (10 mM). **Note**: Resuspending the beads in less than 20 µl may reduce the yield.
10) Load the plate on the magnet, incubate for 1 min, and transfer supernatant (containing microRNA) to a new tube without disturbing the beads.

Reagent volume calculation table

Sample volume	S1 Beads volume (1X of sample volume)	EM Buffer volume (1.5X of sample volume)
30 µl	30 µl	45 µl
40 µl	40 µl	60 µl
50 µl	50 µl	75 µl

Quality Control

Magnetic beads components passed stringent functional quality test.

Product Use Limitation

This product is developed and sold for research purposes and *in vitro* use only. Please refer to BioDynami.com for Material Safety Data Sheet of the product.

Limited Label License

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