

EXOBX® Magnetic EV/Tissue/Plasma miRNA Kit

Cat. no. R1309

Address: SHT technology GmbH, Niederhöchstädter Str. 64, 61476 Kronberg im
Taunus, Germany

Tel.: +49 176 34989414

Website: <https://sht-medino.de/>

EXOBX® Magnetic EV/Tissue/Plasma miRNA Kit

Cat. no. R1309

Product Information

Cat. No.	Product name	Pack size
R1309	EXOBX® Magnetic EV/Tissue/Plasma miRNA Kit	24 preps
		96 preps

Please state the required pack size when ordering.

Kit Contents

Contents	24 preps	96 preps
Buffer GHA	1.5 mL	6 mL
Buffer GHH-A	5.5 mL	22 mL
Buffer ZP	1.5 mL	5 mL
Buffer RDH	15 mL	60 mL
Buffer RWA	8 mL	32 mL
Proteinase K	500 µL	2×1 mL
Buffer ST	750 µL	3×1 mL
MagAttract Suspension BEJ	500 µL	2×1 mL
RNase-Free ddH ₂ O	15 mL	15 mL

Storage

All components of the kit can be stored for up to 15 months at room temperature (15–30 °C) under dry conditions.

Applicable Instruments

This kit is compatible with automated nucleic acid extractors, including Kingfisher Flex96, TGuide S32 Pro, and TGuide S16. A manual (bench-top) procedure is also provided for laboratories without automated extraction equipment.

Applicable Samples

Tissue; Serum/Plasma; Exosome samples.

Introduction

EXOBX® Magnetic EV/Tissue/Plasma miRNA Kit uses magnetic beads with unique separation properties, together with a dedicated buffer system, to isolate and purify high-quality miRNA from tissue, serum/plasma, and exosome samples. The specially encapsulated magnetic beads have a strong affinity for nucleic acids under certain buffer conditions, and release the adsorbed nucleic acids again once the conditions change, enabling rapid separation and purification.

The kit is compatible with automated nucleic acid extractors such as Kingfisher Flex96, TGuide S32 Pro, and TGuide S16. These platforms use specially designed magnetic rods to adsorb, transfer, and release the magnetic beads, streamlining the workflow and increasing the level of automation. The entire procedure is safe and convenient, delivering high-purity miRNA while avoiding contamination by proteins and other impurities. An integrated high-throughput automated extraction solution is available on request.

Features

1. Meets both manual extraction requirements and batch extraction needs on a variety of high-throughput automated platforms.
2. Recovers high-purity miRNA suitable for a broad range of downstream assays and NGS analysis.
3. Applicable across multiple sample types — tissue, serum/plasma, and exosome samples — with a single buffer system.
4. Fast, low-contamination workflow based on magnetic-bead separation, avoiding organic-solvent extraction steps.

Notes Please be sure to read this precaution before using the kit.

1. This product is for scientific research use only. Not for use in diagnostic or clinical procedures.
2. Customers need to provide the following reagents and instruments themselves: absolute ethanol, an automated nucleic acid extractor, or a magnetic stand.
3. Before use, add absolute ethanol to Buffer RDH and Buffer RWA, using the volume indicated on the bottle label.

Protocol

A. Manual Procedure

I. Sample pre-treatment

1. Tissue samples
 - a. Take fresh or -80°C frozen tissue, grind it into a powder in liquid nitrogen, weigh 15 mg into a tube containing 100 μL Buffer GHA, 125 μL Buffer GHH-A, and 30 μL Buffer ST, and mix immediately to a homogenate. Alternatively, take 15 mg of fresh or -80°C frozen tissue, add the above buffers, and homogenize using an electric homogenizer. Afterwards, add 20 μL of Proteinase K, vortex immediately, and incubate at room temperature for 3 min.
 - b. Add 40 μL of Buffer ZP, invert to mix for 20 sec, and incubate at room temperature for 3 min. Centrifuge at 12,000 rpm ($\sim 13,400\times g$) for 3 min, and carefully transfer the supernatant into a new centrifuge tube. Note: avoid touching the pellet when aspirating the supernatant.
 - c. To the supernatant from step b, add an appropriate amount of external control, 220 μL of absolute ethanol (customer-provided), and 15 μL of MagAttract Suspension BEJ; vortex-mix at room temperature ($15\text{--}30^{\circ}\text{C}$) for 5 min to allow the magnetic beads to adsorb miRNA. Proceed immediately to "II. Magnetic Bead Purification and Elution Steps".
2. Serum/Plasma, Exosome samples
 - a. Take 100–200 μL of serum/plasma or exosome sample into a centrifuge tube, add 50 μL of Buffer GHA, 200 μL of Buffer GHH-A, 20 μL of Proteinase K, and 30 μL of Buffer ST; vortex-mix and incubate at room temperature for 3 min.
 - b. Add 40 μL of Buffer ZP, invert to mix for 20 sec, incubate at room temperature ($15\text{--}30^{\circ}\text{C}$) for 3 min, centrifuge at 12,000 rpm ($\sim 13,400\times g$) for 3 min, and carefully transfer the supernatant to a new centrifuge tube.

- c. To the supernatant from step b, add an appropriate amount of external control, 380 μL of absolute ethanol, and 15 μL of MagAttract Suspension BEJ; vortex-mix at room temperature (15–30 $^{\circ}\text{C}$) for 5 min to allow the magnetic beads to adsorb miRNA. Proceed immediately to "II. Magnetic Bead Purification and Elution Steps".

3. Magnetic bead purification and elution steps

- Briefly centrifuge to collect residual liquid at the bottom of the tube, place the tube on the magnetic stand for 30 sec, and carefully aspirate the liquid away once the magnetic beads are fully adsorbed.
- Remove the tube from the magnetic stand, add 900 μL of Buffer RDH (confirm that absolute ethanol has been added before use), and vortex-mix for 1 min.
- Briefly centrifuge to collect residual liquid at the bottom of the tube, place the tube on the magnetic stand for 30 sec, and carefully aspirate the liquid away once the magnetic beads are fully adsorbed.
- Repeat steps b and c once.
- Remove the tube from the magnetic stand, add 750 μL of Buffer RWA (confirm that absolute ethanol has been added before use), and vortex-mix for 1 min.
- Briefly centrifuge to collect residual liquid at the bottom of the tube, place the tube on the magnetic stand for 30 sec, and carefully aspirate the liquid away once the magnetic beads are fully adsorbed.
- Repeat steps e and f once.
- Briefly centrifuge to collect residual liquid at the bottom of the tube, place the tube on the magnetic stand, aspirate all liquid away, and air-dry at room temperature (15–30 $^{\circ}\text{C}$) for 5 min. Note: when drying the beads with the lid open, avoid over-drying, which causes bead cracking and reduces elution efficiency.
- Remove the tube from the magnetic stand, add 50–100 μL of RNase-Free ddH₂O (the elution volume should not be less than 50 μL), mix at 56 $^{\circ}\text{C}$ for 5 min, gently flicking the tube 4–5 times during this period to ensure complete elution of miRNA (or elute using a heated shaker).
- Place the tube on the magnetic stand for 1 min; once the beads are fully adsorbed, carefully transfer the miRNA solution to a clean tube for further use or storage at -80°C .

Scale-up example (800 μL sample volume)

Reagent (μL)	Buffer GHA	Buffer GHH-A	Proteinase K	Buffer ST	Buffer ZP	Absolute ethanol	MagAttract BEJ	Buffer RDH	Buffer RWA	RNase-Free ddH ₂ O
200 μL sample	50	200	20	30	40	380	15	900	750	50–100
800 μL sample	200	800	80	120	160	1520	50	3600	3000	50–100

B. Automated Procedure (example: TGuide S16 Automated Nucleic Acid Extractor)

- After manual pre-treatment (section A.I above), distribute the reagents according to the table below and add the pre-treated sample to columns 1/7.

Column 1/7	Column 2/8	Column 3/9	Column 4/10	Column 5/11	Column 6/12
380 μL absolute ethanol + 15 μL MagAttract Suspension BEJ (sample added here)	900 μL Buffer RDH	900 μL Buffer RDH	750 μL Buffer RWA	750 μL Buffer RWA	50–100 μL RNase-Free ddH ₂ O

- Run the automated protocol using the parameters below.

Step	Slot	Name	Mixing time (min)	Mix speed	Drying time (min)	Volume (µL)	Temp. (°C)
1	1	Lysis	1	7	–	850	–
2	2	Pipette beads	0.5	5	–	915	–
3	1	Binding	5	5	–	865	–
4	2	Wash 1	3	6	–	915	–
5	3	Wash 2	3	6	–	915	–
6	4	Wash 3	3	6	–	765	–
7	6	Wash 4	3	6	5	765	–
8	5	Elution	5	7	–	100	56
9	6	Discard beads	1	7	–	765	–

Step	Segments	Collection time per segment (s)	Magnetic attraction time (s)	Cycle	Magnet level speed (mm/s)
1	1	–	–	1	2.5
2	5	4	–	2	2.5
3	3	30	10	2	2.5
4	2	20	–	3	2.5
5	2	20	–	3	2.5
6	2	20	–	3	2.5
7	2	20	–	3	2.5
8	3	30	10	2	2.5
9	1	–	–	1	2.5

3. After extraction, aspirate the miRNA solution from columns 5/11 and store at –80 °C.