QUICK START GUIDE

qEV MAGNETIC CONCENTRATION KIT

This quick start guide provides general operation instructions. Fore more detailed information, refer to the qEV Magnetic Concentration Kit User Manual support.izon.com/qev-magnetic-concentration-kit-user-manual and other resources at support.izon.com

Safety Data Sheets are available at support.izon.com/safety-data-sheets

OVERVIEW

The qEV Magnetic Concentration Kit is an all-in-one system for concentrating intact EVs isolated using qEV Columns.

To enable EV concentration, the kit employs Magnetic Nanotrap® Extracellular Vesicle Particles from Ceres Nanosciences. Nanotrap® Particles are composed of hydrogel polymers that have been functionalised with chemical affinity baits.

Note that particle binding is irrerversible – this is an important factor when considering which downstream applications may be suitable.

The qEV Magnetic Concentration Kit can be used with the qEV RNA Extraction Kit.

Box Contents = 5 mL of Magnetic Nanotrap® EV Capture Particles.

This kit requires the use of a magnet or magnetic tube rack, which must be supplied by the user.

STORAGE

Store the Magnetic Nanotrap® EV Capture Particles in the container provided at 4 °C. The recommended usage date is on the label located on the outside of the packaging box.

DO NOT FREEZE.

PRODUCT USE LIMITATIONS

The qEV Magnetic Concentration Kit is NOT suitable for use in conjunction with RNA extraction kits that use alcohols in the lysis buffer, as it decreases the lysis efficiency of EVs bound to Nanotrap® EV Capture Particles. Please ensure any RNA extraction kit used downstream is compatible with this kit before use.

This kit is suitable for use with the qEV RNA Extraction Kit. Once the Magnetic Nanotrap® EV Capture Particles have been separated, the lysate can then be removed and used for RNA extraction and analysis. Alternative RNA extraction kits can be used if the lysis buffer is substituted for one that does not contain alcohols, such as Microbiome Lysis Solution.

PROTOCOL

Perform all steps at room temperature. In the the interest of brevity, Magnetic Nanotrap® EV Capture Particles will be referred to as Nanotrap® Particles in this section.

It is possible that a lower volume of Nanotrap® Particles (Step 3) may improve the extent of concentration, and that an even shorter incubation time (Step 4) could be sufficient. Therefore, further protocol optimisation is encouraged.

1. Pool purified collection volume of interest.
2. Mix the stock Nanotrap® Particles well until there are no residual particles on the base of the stock vial. This can be achieved with gentle agitation, swirling, or using a vortex.
3. The volume of Nanotrap® Particles required to concentrate EV-containing samples will depend on the volume of sample (Table 1). Add the appropriate volume to the purified collection volume.
4. Incubate the mixture with rotation (using a tube roller or inverter) for 10 minutes at room temperature for efficient binding of EVs to Nanotrap® Particles.
5. Apply a strong magnet to the side of the vial or place your sample vial into a magnetic rack to pellet the EVs bound to Nanotrap® Particles for 2 minutes.
6. With the magnet still applied, remove the supernatant, being careful not to disturb the pellet containing EVs bound to Nanotrap® Particles.

7. The EV pellet is now ready for downstream applications. The pellet can be resuspended in a desired buffer volume or used directly with method-appropriate lysis buffer, to avoid further dilution of concentrated EVs.

TABLE 1: VOLUME OF MAGNETIC NANOTRAP® EV CAPTURE PARTICLES ADDED TO SPECIFIC VOLUMES OF EV-CONTAINING SAMPLES

qEV COLUMN USED FOR PURIFICATION	PURIFIED COLLECTION VOLUME (mL)	VOLUME OF NANOTRAP® EV CAPTURE PARTICLES (µL)
qEVsingle Gen 2	0.51-0.85 mL	20 µL
qEVoriginal Gen 2	1.2-2.0 mL	40 µL
qEV1 (Gen 2 only)	2.1-3.5 mL	70 µL
qEVsingle Legacy	0.60-0.80 mL	20 µL
qEVoriginal Legacy	1.5-2.0 mL	40 µL

TROUBLESHOOTING

If you disturb the pellet, the magnetic extraction steps (Step 5 and Step 6) may need to be repeated.

If there are still EVs present in the supernatant that have not bound to the Magnetic Nanotrap® EV Capture Particles, add a fresh aliquot of Magnetic Nanotrap® EV Capture Particles (the same volume as specified in Table 1) to the supernatant and repeat the incubation and magnetic extraction steps.


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