qEV EXTRACELLULAR VESICLE ISOLATION

IZON

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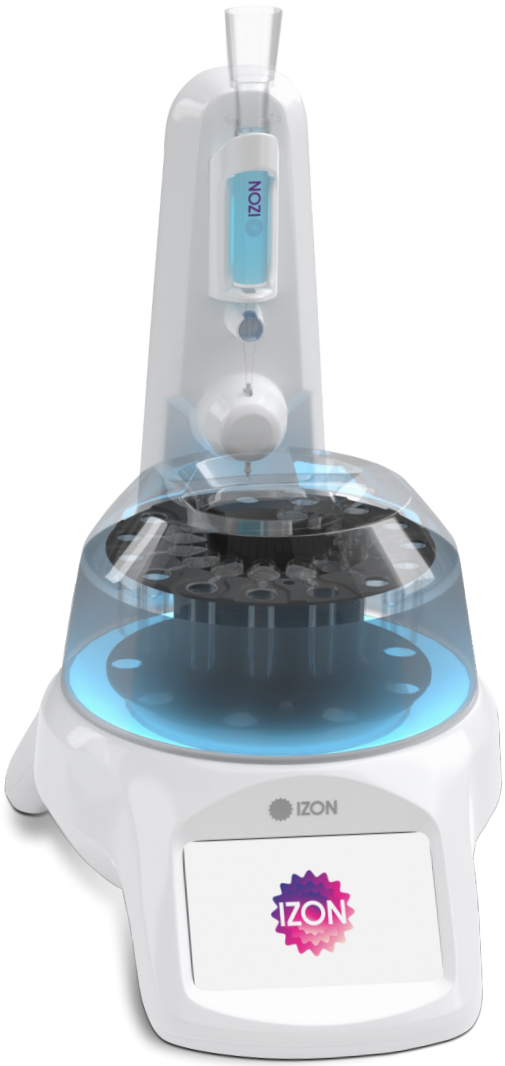
RAPID, HIGH-PRECISION EXTRACELLULAR VESICLE ISOLATION

qEV columns remove over 99% of contaminating soluble proteins and ensure that a high yield of extracellular vesicles (EVs) remain.



Following qEV isolation, EVs can then be studied using a range of techniques such as tunable resistive pulse sensing, electron microscopy, proteome or transcriptome analysis. As the columns in our qEV range are compatible with most physiologically relevant buffers, high yields of EVs can be obtained from a wide range of biological fluids.

Rapid, Simple & Reliable Isolation

qEV columns elute intact EVs within 15 mins and require minimal user intervention.

Standardisable & Reproducible Results

The qEV isolation platform, which consists of the Automatic Fraction Collector and qEV columns, minimises manual error by providing an element of automation.

Pure, Intact & Functional EV Collection

qEV columns provide highly purified samples of intact EVs, which is particularly important for functional studies.

HOW qEV ISOLATION WORKS

qEV isolation is based on principles of size exclusion chromatography, whereby particles are separated by size as they pass through porous resin in a column. Larger particles elute first, as they cannot enter the small pores. In contrast, particles smaller than the isolation range (35 nm+ or 70 nm+) enter pores in the resin and elute later.

qEV GEN 2

Gen 2 qEV Columns With Customised, Proprietary Resin Take Sample Purity to New Heights

The new range of qEV columns are made with a proprietary, agarose resin, which delivers a more purified EV-containing eluate. The release of Gen 2 qEV columns are in line with the need to support the rapidly growing areas of EV research and applications, where sample purity has a huge impact on results downstream.

REMOVE MORE PROTEIN THAN BEFORE

The proprietary resin used in Gen 2 columns enables a greater proportion of protein to be removed from loaded samples, as shown in Figure 1:

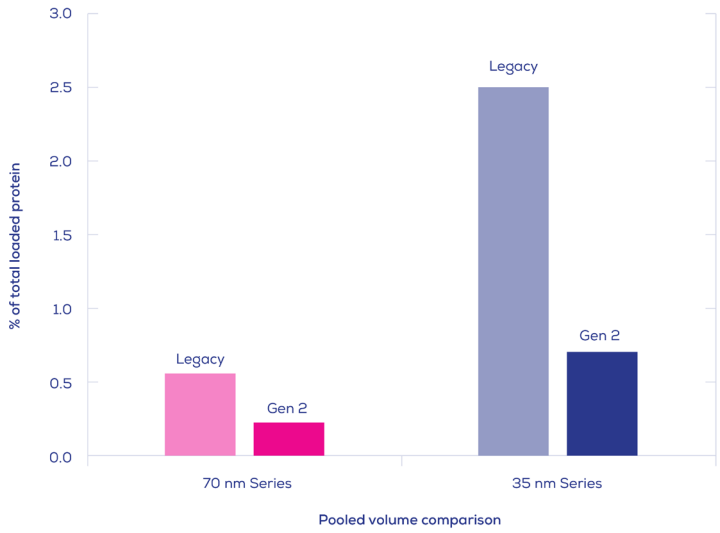


Figure 1. Protein present in pooled volumes (2 mL) of a human plasma sample isolated with Izon's Automatic Fraction Collector, shown as a percentage of the total loaded protein. Protein was measured by bicinchoninic acid (BCA) assay. Data shown for the qEVoriginal Legacy column and the Gen 2 qEVoriginal column in the 70 nm Series and 35 nm Series (0.5 mL loading volume).

qEVoriginal Gen 2 Elution Profile

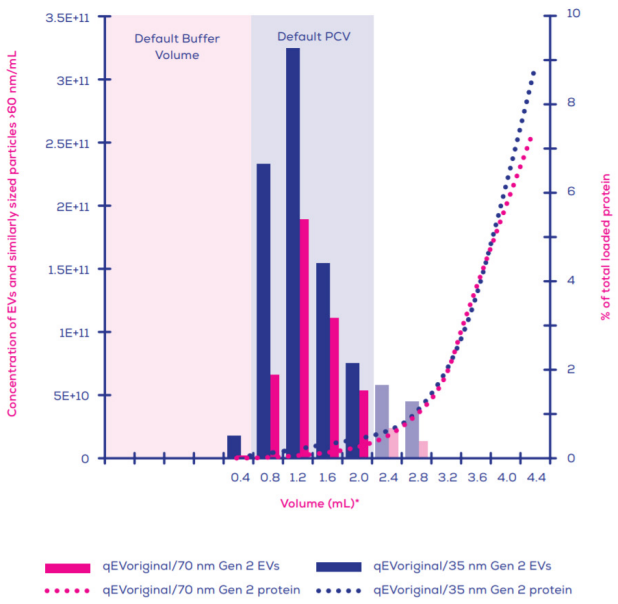


*Figure 2. Eluted protein and extracellular vesicles (EVs) and similarly sized particles >60 nm in human plasma (0.5 mL loading volume) separated on qEVoriginal/35 nm Gen 2 and qEVoriginal/70 nm Gen 2 columns. EV concentration was measured using an Exoid and protein levels by bicinchoninic acid (BCA) assay. Faded bars represent calculated individual concentrations based on pooled sample measurements.*Volumes are labelled as the highest volume in that sample i.e., label '0.4' refers to the volume from 0.0-0.4 mL after the buffer volume, label '0.8' refers to the volume from 0.4-0.8 mL after the buffer volume, etc.*

Consider which Purified Collection Volume (PCV) is most suitable for your research

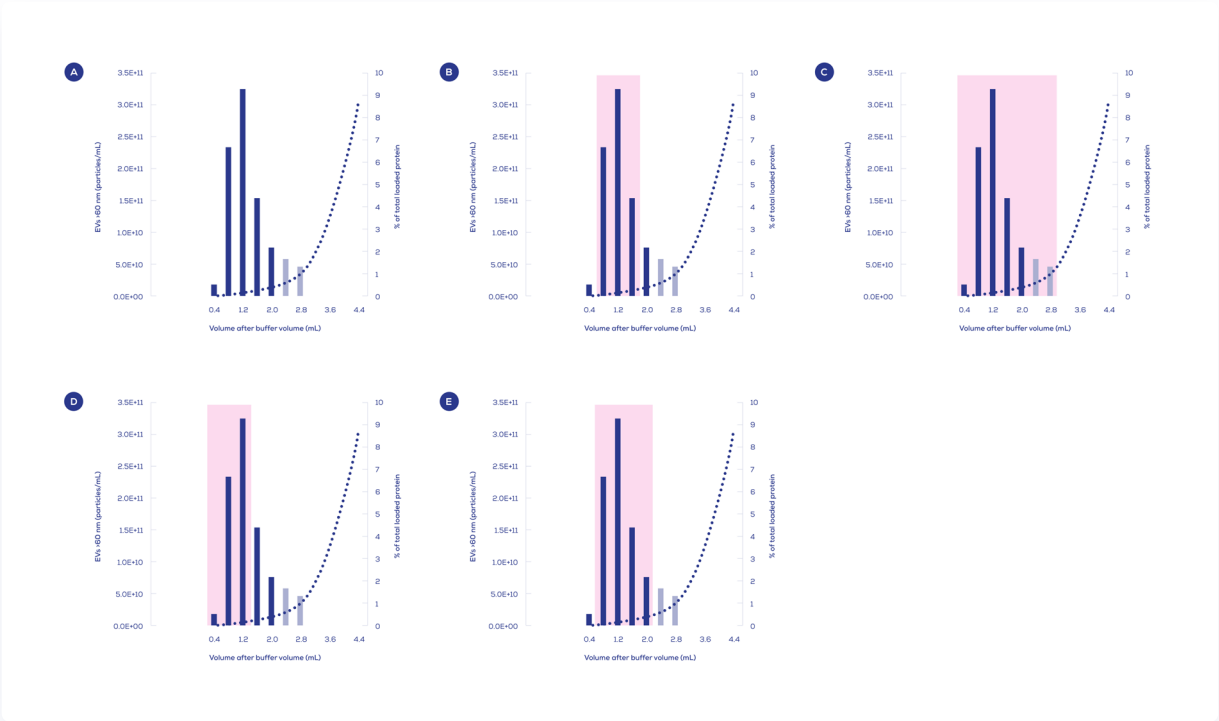


Figure 3. A) Elution profile of a human plasma sample separated using a qEVoriginal/35 nm column Gen 2 and Automatic Fraction Collector (AFC). Particle number was measured on the Exoid, protein was measured via bicinchoninic acid assay. Faded bars represent estimated extracellular vesicle (EV) concentration based on calculations and comparisons from various pooled volumes. Different purified collection volumes (PCVs) can be pooled to optimise the sample, depending on the application or analytical method used downstream. Different PCVs can be pooled to prioritise B) EV concentration, C) EV recovery, or D) EV purity. E) The recommended default setting on the AFC prioritises a balance of EV recovery and purity. The user manual provides guidance on when and how the AFC settings need to be adjusted accordingly.

CHOOSE A qEV ISOLATION COLUMN OPTIMISED FOR YOUR RESEARCH

We have a range of qEV Isolation Columns suited to different size ranges and sample volumes to suit your research needs.

When selecting a qEV column consider the ideal purified collection volume (PCV) you require for downstream analysis, the sample loading volume and how much contaminating protein overlap is acceptable.

To select the right column for your research follow these two steps.

STEP 1 – CHOOSE YOUR COLUMN SIZE

Column size selection is based on the sample loading volume required. Each column has a sample loading volume recommended for highest purity. If you are unsure of which column is right for you, please contact the Izon team at support@izon.com

qEVSINGLE

≤ 150 µL

Sample loading (recommended for highest purity)

- **Ideal for clinical samples, RT-PCR**

  Optimised for small samples. No RNA carryover

- **Single Use**

  Cost efficient

- **Available Resins**

  Legacy only

qEVORIGINAL

≤ 500 µL

Sample loading (recommended for highest purity)

- **Ideal for higher volume research**

  ISO 13485 Certified. The original, and most popular qEV column

- **Reusable**

  Up to 5 times

- **Available Resins**

  Gen 2 & Legacy

qEV1

≤ 1 mL

Sample loading (recommended for highest purity)

- **Ideal for clinical sample and EV-RNA preparation**

  Features the new Gen 2 resin

- **Reusable**

  Up to 5 times

- **Available Resins**

  Gen 2 only

qEV2

≤ 2 mL

Sample loading (recommended for highest purity)

- **Ideal for larger clinical samples & RNA preparation**

  Includes Leur Lock fitting

- **Reusable**

  Up to 5 times

- **Available Resins**

  Legacy only

qEV10

≤ 10 mL

Sample loading (recommended for highest purity)

- **Ideal for large volume cell culture supernatant**

  Includes Leur Lock fitting

- **Reusable**

  Up to 5 times

- **Available Resins**

  Legacy only

qEV100

≤ 100 mL

Sample loading (recommended for highest purity)

- **Ideal for large volume cell culture supernatant**

  Includes Leur Lock fitting

- **Reusable**

  Up to 5 times

- **Available Resins**

  Legacy only

STEP 2 – CHOOSE YOUR ISOLATION RANGE

All column sizes are available in two isolation ranges (35 nm+ and 70 nm+). The popular 70 nm+ qEV columns have an optimum recovery of particles from 70 nm to 1000 nm, while the newer 35 nm+ columns have an optimum recovery range of 35 nm to 350 nm.

qEV / 35 nm

- **35 nm - 200 nm**
  Optimum Recovery Range
- **‹110 nm**
  Higher recovery of EVs smaller than 110 nm
- **More Lipoprotein Overlap**
  When working with blood plasma

qEV / 70 nm

- **70 nm - 1000 nm**
  Optimum Recovery Range
- **›110 nm**
  Higher recovery of EVs larger than 110 nm
- **Less Lipoprotein Overlap**
  When working with blood plasma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