

# Exosomes

Purification | Detection  
NTA Service



Exosome Experts

# Purification

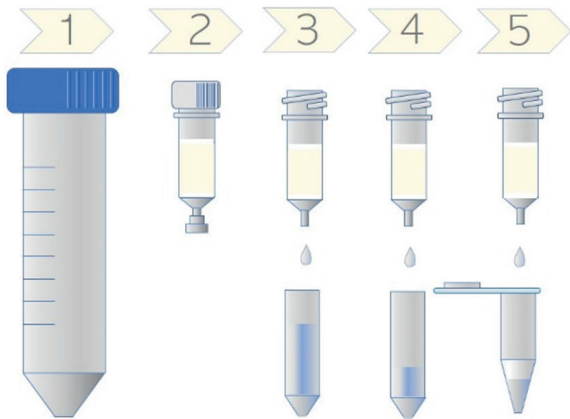
## Exo-spin™ Exosome Purification: Overview



### A flexible range of bench-top products for quick and easy purification of exosomes from a variety of sources

- Excellent yields and high levels of purity**  
 Exosomes with ultra-low protein and rRNA contamination.
- No ultracentrifugation required**  
 Protocol provides consistent results every time.
- Simple and reliable**  
 Isolate intact whole exosomes for functional studies.

### Exo-spin™ Exosome Isolation Workflow



**Step 1:** Remove cells and cellular debris

**Step 2:** If required, use Exo-spin™ Exosome Precipitation Buffer to precipitate exosomes

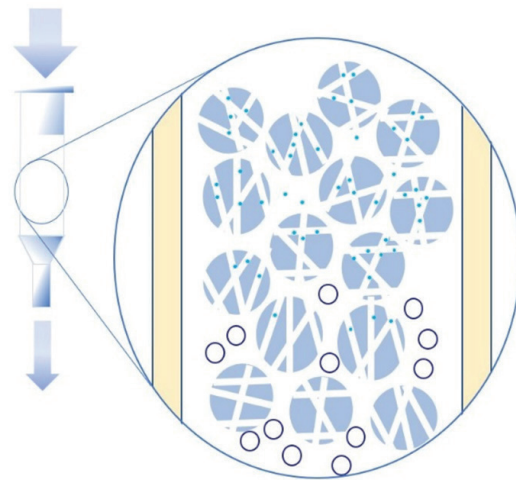
**Step 3:** Prepare the column by equilibrating with PBS

**Step 4:** Add the pre-cleared sample or the precipitated exosome pellet resuspended in PBS to the Exo-spin™ column, elute and discard the flow-through

**Step 5:** Add PBS to the Exo-spin™ column and elute your purified exosomes.

Cat code	Product name
EX01	Exo-spin™
EX02	Exo-spin™ blood
EX03	Exo-spin™ mini columns
EX04	Exo-spin™ midi columns
EX05	Exo-spin™ miniHD
EX06	Exo-spin™ buffer
EX07	Exo-spin™ 96
EX10	Exo-rack

### Size exclusion chromatography (SEC) Technology



**Principles of size exclusion chromatography**



**Exosomes run outside the beads, so elute first**



**Small particles and free proteins are trapped in beads**

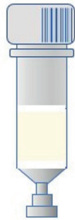
# Purification

Exo-spin™ Exosome Purification: Product Range



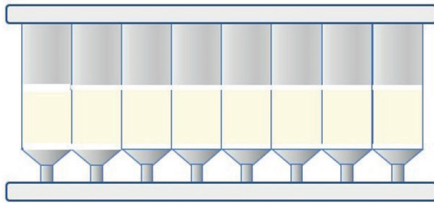
## A comprehensive range of products for isolation of exosomes from various sample types and volumes

### Exo-spin™ mini columns



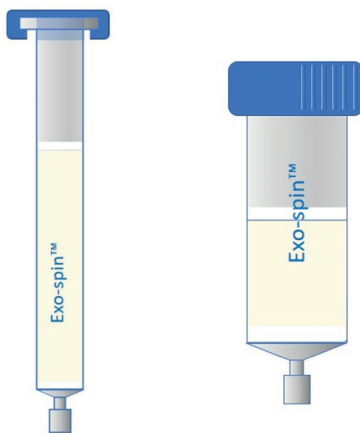
- A simple, two-step protocol**  
 Allows consistent and reliable purification of samples in under 2 hours.
- Purify from blood**  
 Isolate directly from both sera and plasma samples.
- Process up to 50 ml per column**  
 Combine with Exo-spin™ Exosome Precipitation Buffer to isolate from up to 50 ml of low protein biofluids.

### Exo-spin™ 96



- 96-well format**  
 Incorporates the technology of Exo-spin™ mini columns into a high-throughput system.
- Process 8-96 samples at once**  
 Detachable strips of 8 columns gives flexibility to your isolations.
- Gravity protocol**  
 Purification achieved without the need for specialist instrumentation.

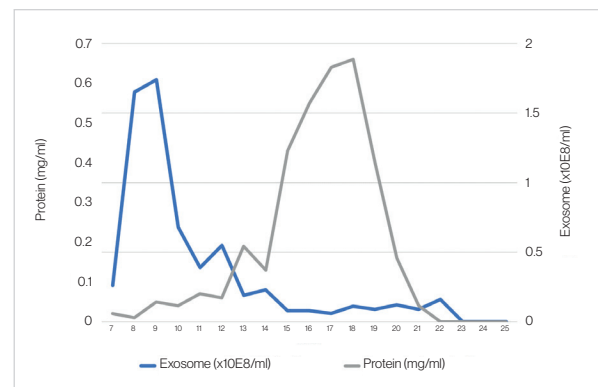
### Exo-spin™ mini-HD and midi columns



- High-resolution protocol**  
 Optimizes yield and purity and enables finer fraction collections.
- Process large and intermediate volumes**  
 Isolate from up to 500 ml of low protein biofluids and 1 ml of blood.

### Exosome Extraction Profiles

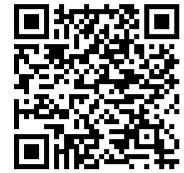
Exo-spin™ Midi Columns allow for gravity assisted fractionation, where exosomes are separated from the vast majority of proteins.



Exosomes were isolated using Exo-spin™ Midi Columns (Cat Code EX04) from 60 ml of conditioned medium generated by a human breast carcinoma cell line. Fractions (each of 500 µl) were collected and analysed to (1) evaluate particle numbers and (2) measure absorbance at 280 nm to evaluate protein concentration.

# Detection

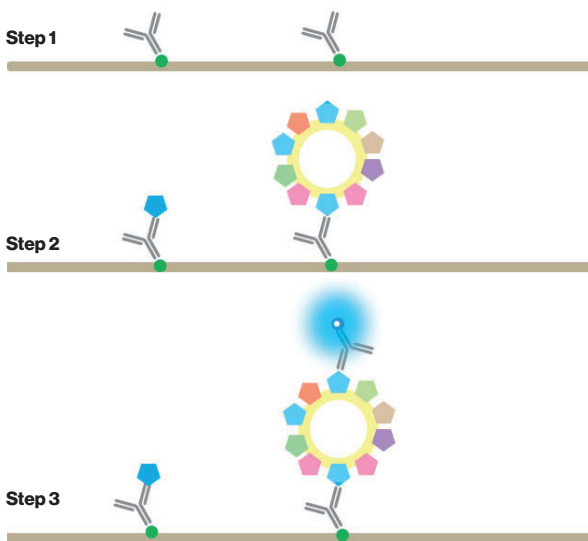
## TRIFic™ Exosome Detection Kit



### An exquisitely sensitive Europium Time-Resolved Immunofluorescence assay for exosome markers

- Simplicity**  
 Assay is clear and simple allowing for high reproducibility.
- Sensitivity**  
 Europium-labeled antibodies are used for detection enabling the use of TRF.
- Specificity**  
 Only antigens displayed in multiple copies are detected.

#### TRIFic™ Exosome Assay

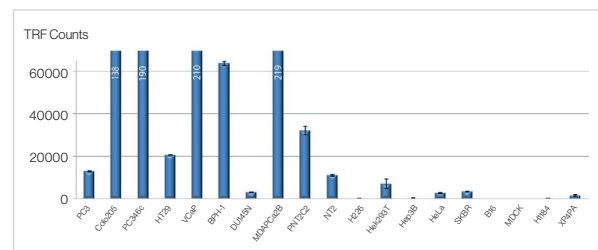


**Step 1:** Biotinylated antibody is bound to streptavidin coated assay plates.

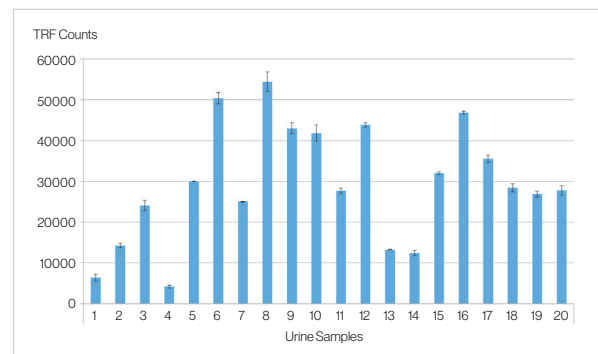
**Step 2:** Biological samples are added. Exosomes and any free antigen are captured by the antibody.

**Step 3:** Europium-labeled antibody of the same clone as the one used in Step 1 is added and binds specifically to exosome antigen. The epitopes of bound monomers are already occupied and not detected. Samples are read on a time-resolved fluorescence plate reader.

#### Sample profiling



CD9 TRIFic™ exosome assay performed for 19 different cell lines. Off the scale readings indicated (x1000) on individual bars. Samples generating vastly different signal intensities can be measured due to the broad signal range covered by the assay.



TRIFic™ exosome assay analysis of 20 urine samples shows great variation in CD9 content between samples.

Cat code	Product name
EX101	TRIFic™ CD9 Exosome Assay, 96 wells
EX102	TRIFic™ CD63 Exosome Assay, 96 wells
EX103	TRIFic™ CD81 Exosome Assay, 96 wells
EX-P31	Wash Buffer (Concentrate 25x), 20 ml

# NTA Profiling

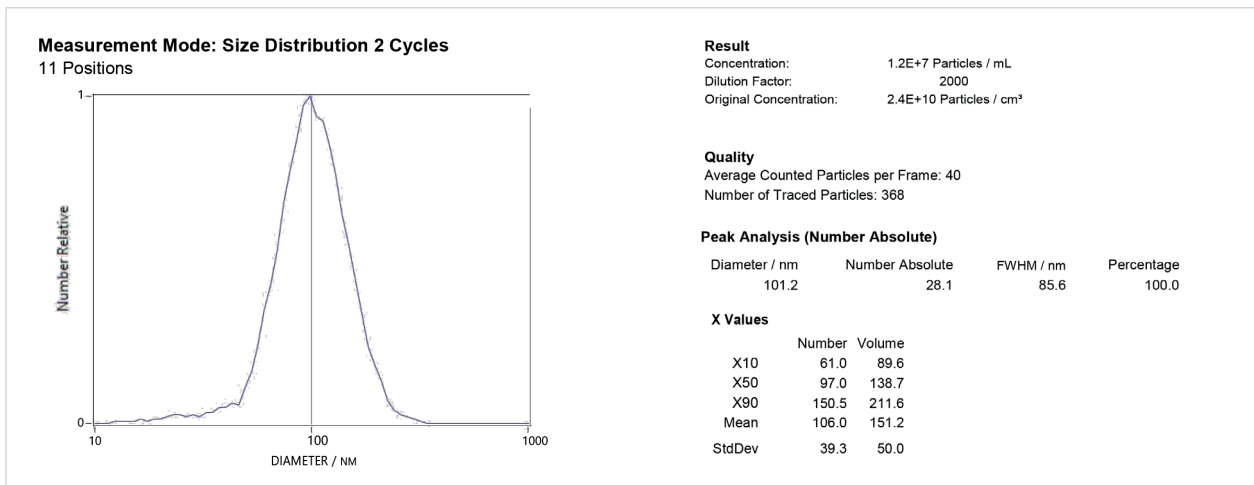
Nanoparticle Tracking Analysis service provided using ZetaView® Instrument



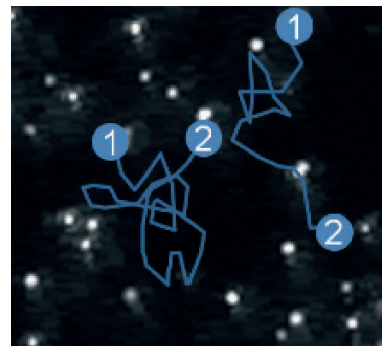
## Exosome characterization service for analysis of particle size and particle concentration

- High quality**  
 The service is performed in our labs by highly qualified scientists.
- Quick turnaround times**  
 Full reports are e-mailed within 5 to 10 business days.
- Competitive price**  
 Very low price per sample without the need of purchasing the equipment.

Example of an NTA report generated with the Zetaview®.



Zetaview®  
Instrument.



Individual particle movement is tracked and recorded for characterization of exosome samples.

Image provided by Particle Matrix GmbH.

Cat code	Product name
ZV-1	Analysis service set up (purchase one per order)
ZV-12	NTA analysis of a single sample

Cell Guidance Systems' reagents and services enable control, manipulation and monitoring of the cell, both *in vitro* and *in vivo*

#### **Growth Factors**

- Recombinant
- Sustained Release

#### **Exosomes**

- Purification
- Detection
- NTA Service

#### **Small Molecules**

#### **Cell Counting Reagent**

#### **Matrix Proteins**

#### **Cell Culture Media**

- Pluripotent Stem Cells
- Photostable
- *In Vitro* Blastocyst Culture
- ETS-embryo Culture
- Custom Manufacturing Service

#### **Gene Knock-Up System**

#### **Cytogenetics Analysis**



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