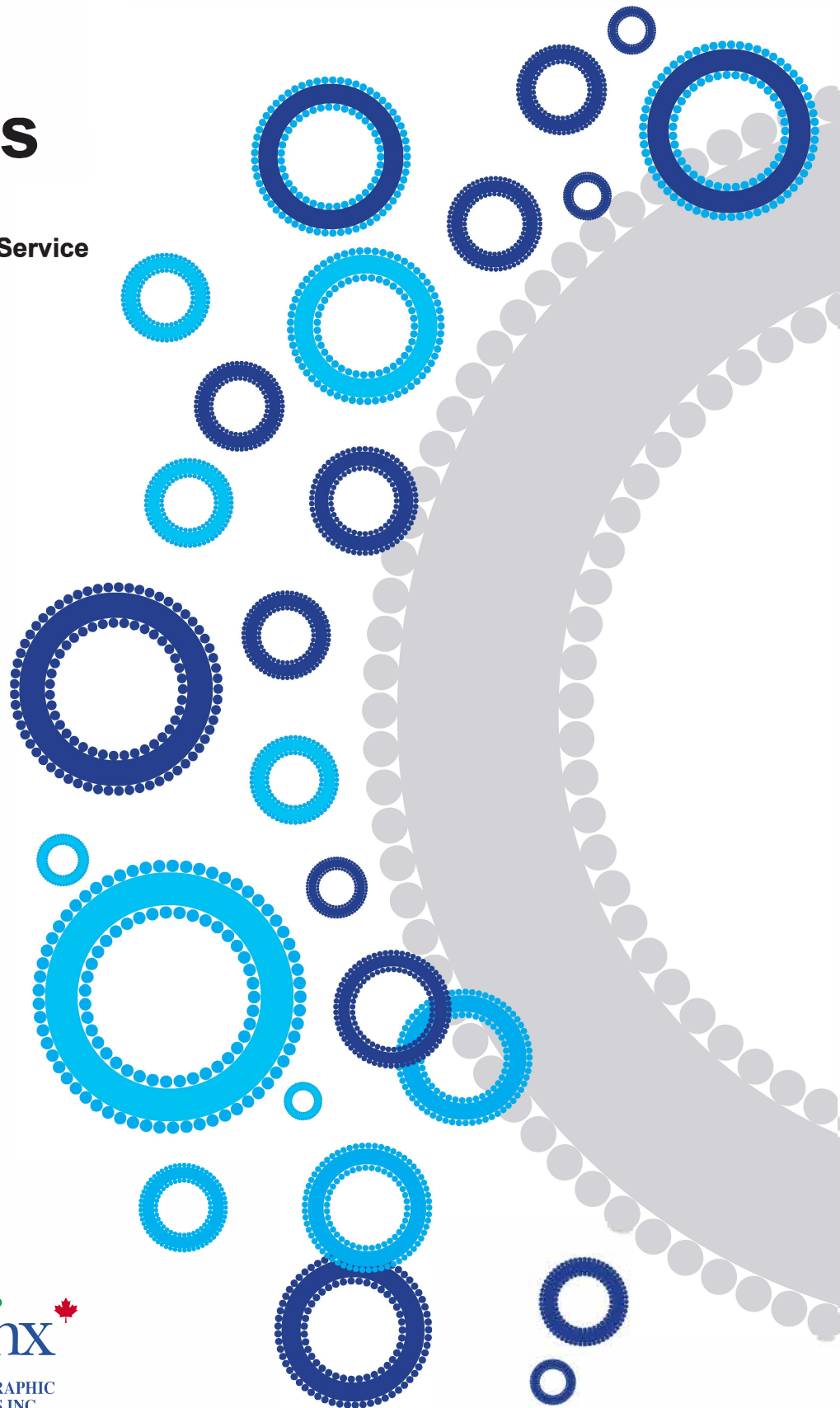


Exosomes

Purification | Detection
Purified Exosomes | NTA Service

Exosome Experts



Purification

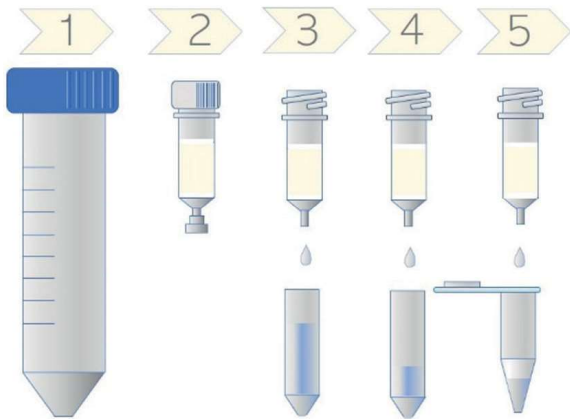
Exo-spin™ Exosome Purification: Overview



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.

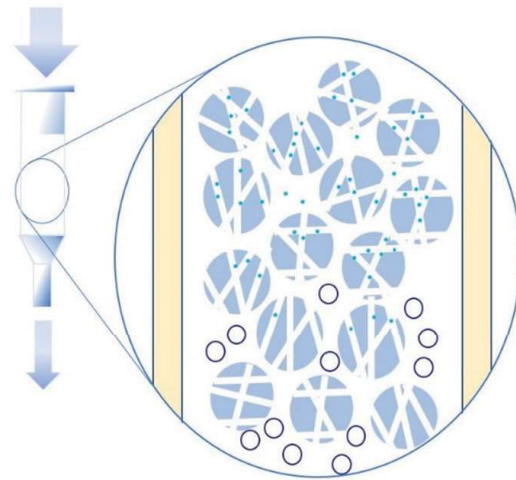
Step 3: Prepare the column by equilibrating with PBS.

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

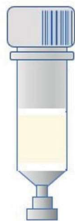
Purification

Exo-spin™ Exosome Purification: Product Range



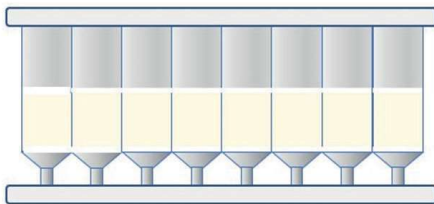
A comprehensive range of products for isolation of exosomes from various sample types and volumes

Exo-spin™ mini columns



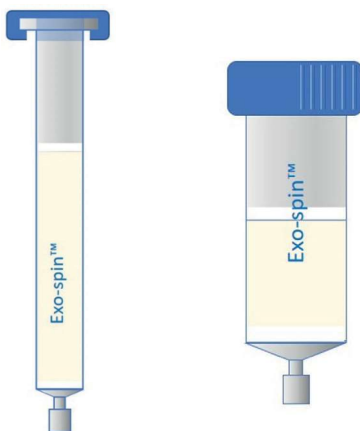
- **A simple, two-step protocol**
Allows consistent and reliable purification of samples in under 2 hours.
- **Purify from blood**
Isolate directly from both sera and plasma samples.
- **Process up to 50 ml per column**
Combine with Exo-spin™ Exosome Precipitation Buffer to isolate from up to 50 ml of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

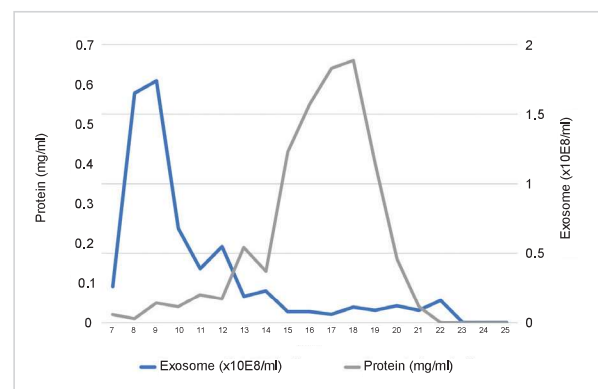
Exo-spin™ mini-HD and midi columns



- **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 μ l) were collected and analysed to (1) evaluate particle numbers and (2) measure absorbance at 280 nm to evaluate protein concentration.

Detection

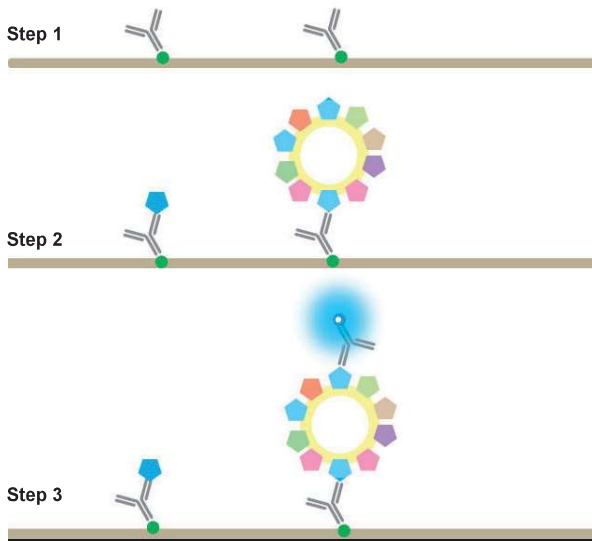
ExoLISA™ Exosome Detection Assay



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

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

ExoLISA™ Exosome Detection Assay

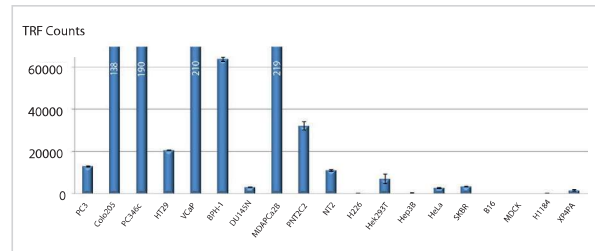


Step 1: Biotinylated antibody is bound to streptavidin coated assay plates.

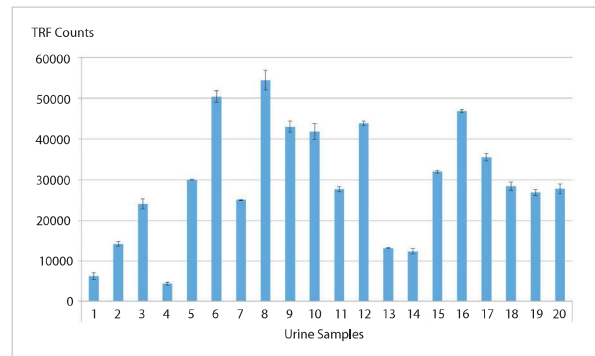
Step 2: Biological samples are added. Exosomes and any free antigen are captured by the antibody.

Step 3: Europium-labelled 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 ExoLISA™ 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.



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

Cat code	Product name
EX501	ExoLISA™ CD9 Exosome Assay, 96 wells
EX502	ExoLISA™ CD63 Exosome Assay, 96 wells
EX503	ExoLISA™ CD81 Exosome Assay, 96 wells
EX-P31	Wash Buffer (Concentrate 25x), 20ml

Purified Exosomes

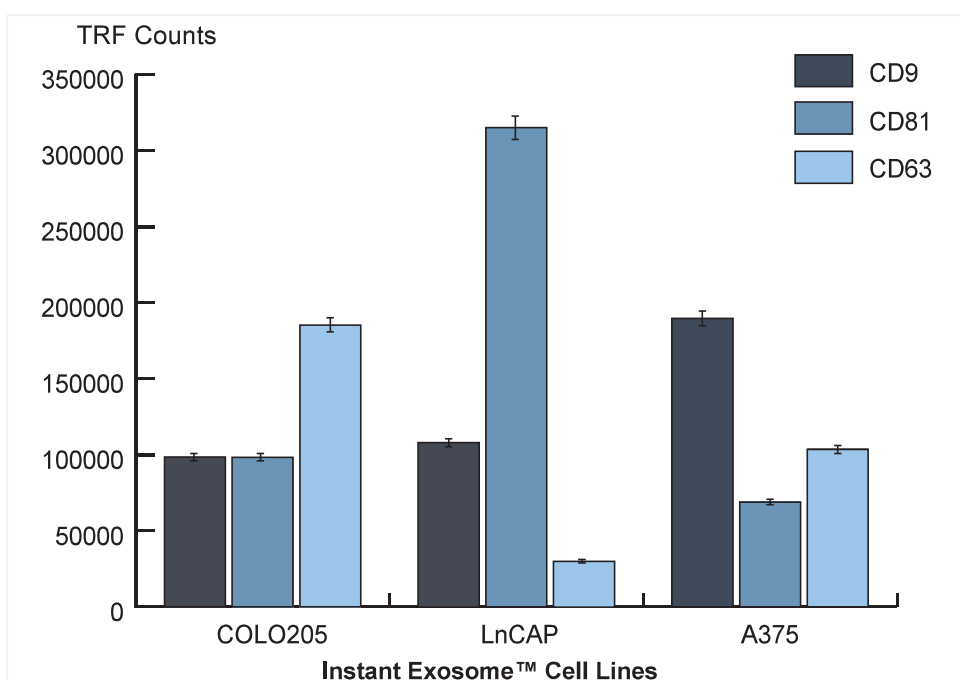
Instant Exosomes™ to accelerate your research



A range of freeze-dried, characterized exosomes

- High quality**
 Exosomes are isolated using a combination of size exclusion chromatography (SEC) and precipitation.
- Stable**
 Instant Exosomes™ are stable for long-term storage.
- Characterized**
 Each lot is characterized by ExoLISA™ exosome detection assay, nanoparticle tracking analysis (NTA) and bicinchoninic acid (BCA) assay.

Each sample is characterized by tetraspanin markers.



Commonly expressed exosomal markers assessed using the ExoLISA™ assay are shown to be differentially expressed across the Instant Exosome™ samples isolated from human cancer cell lines.

Instant Exosomes™ should not be used in a mass spectrometer or other instrumentation that may be sensitive to precipitants.

Cat code	Product name
EX301	Instant Exosomes™ from COLO205 cell line (Human colon carcinoma)
EX302	Instant Exosomes™ from LnCAP cell line (Human prostate adenocarcinoma)
EX303	Instant Exosomes™ from A375 cell line (Human malignant melanoma)

Characteristics of Instant Exosomes™

Protein content per vial	25 µg
Method of isolation	Precipitation + SEC
Characterized by	ExoLISA™, NTA + BCA
Nanoparticles/ml (average)	1 x 10 ⁹
State	Freeze-dried
Storage temperature	-20°C
Shelf life	12 months

NTA Profiling

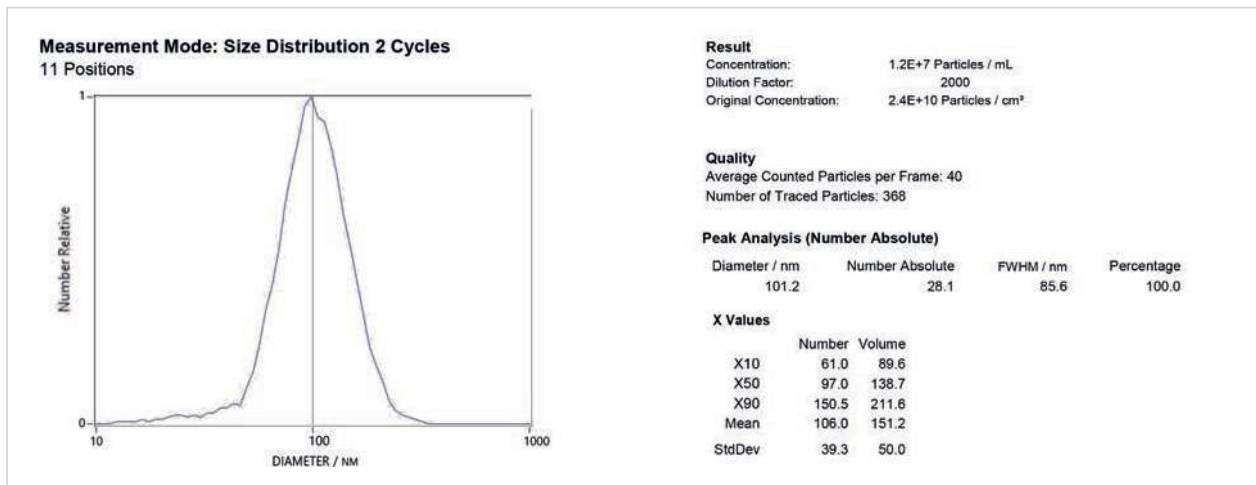
Nanoparticle Tracking Analysis (NTA) service provided using ZetaView® Instrument



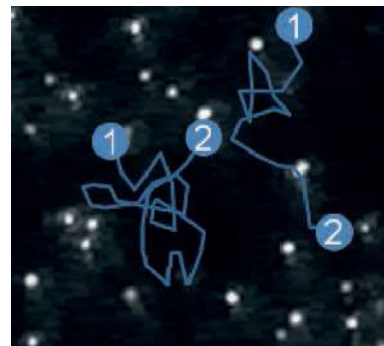
Exosome characterization service for analysis of particle size and particle concentration

- 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 Metrix GmbH.

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

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

Growth Factors

- Conventional (unformulated)
- PODS® - Sustained release

Exosomes

- Exo-spin™ - Purification
- ExoLISA™ - ELISA-like detection
- Instant Exosomes™ - purified and characterized
- NTA Service
- Freeze drying service

PeptiGel®

- Tunable self-assembling peptide hydrogels

Other products and services

- Small Molecules
- Softwell™ - 2D hydrogel (Europe only)
- Orangu™ - Cell counting reagent
- LipoQ™ - Lipid quantification assay
- Primary Hepatocytes

Cytogenetics

- Karyotype Analysis
- Array Hybridization

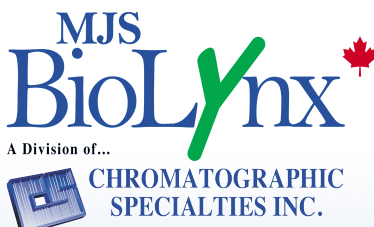
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