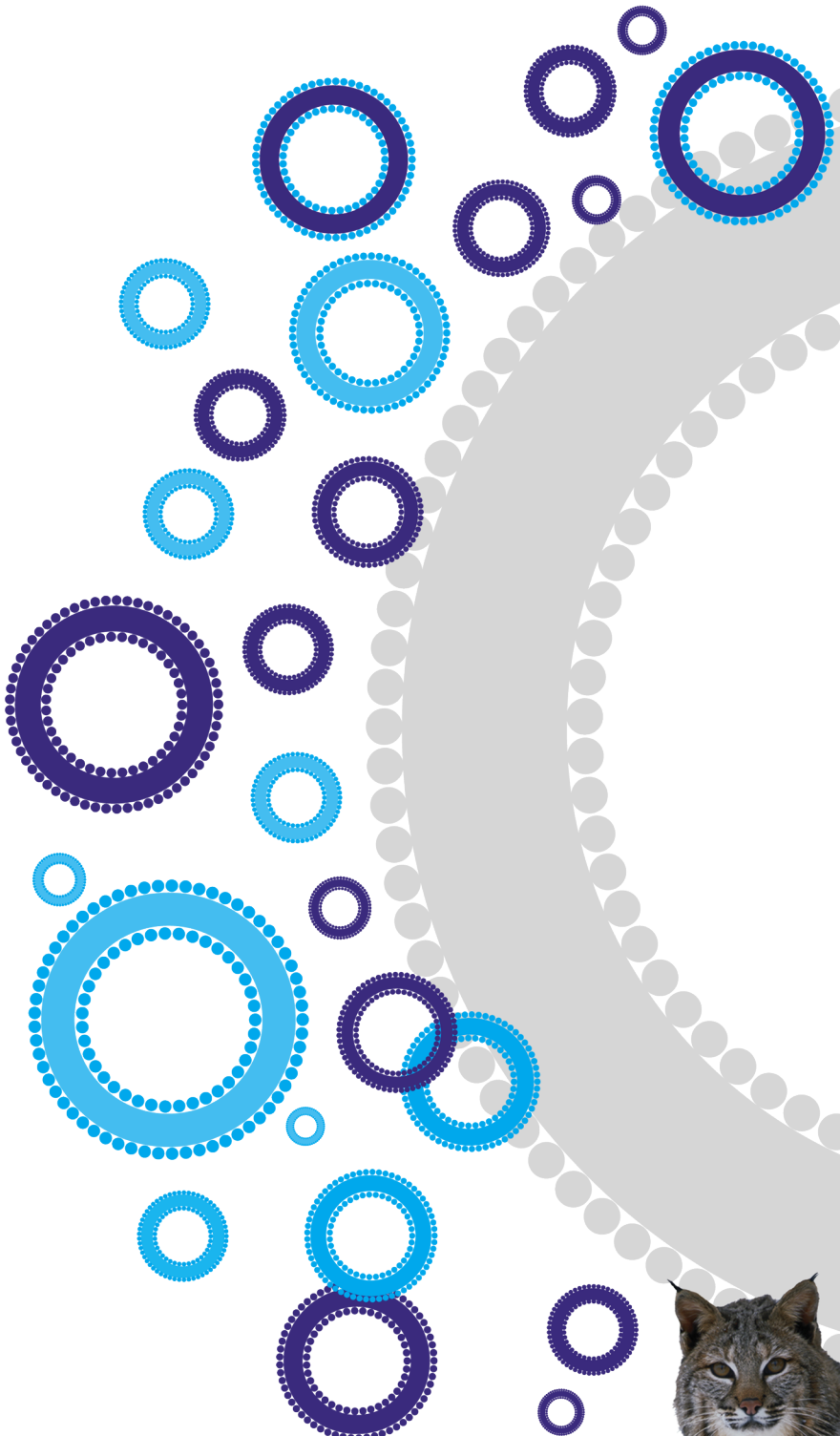
CELL guidance systems

Exosomes

Purification | Detection
Tracking | NTA Service



Exosome Experts

Available in Canada from...

MJS BioLynx INC.

1-888-593-5969 • www.biolynx.ca • tech@biolynx.ca

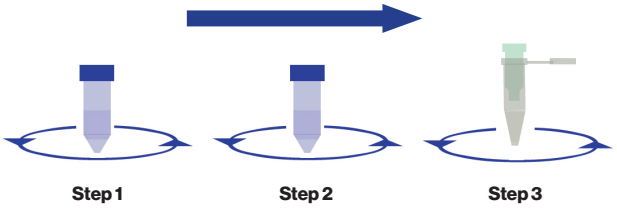
Purification

Exo-spin™ Exosome Purification Kit

An independently validated, flexible system for isolation 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 Protocol



Step 1: Remove cells and cellular debris.

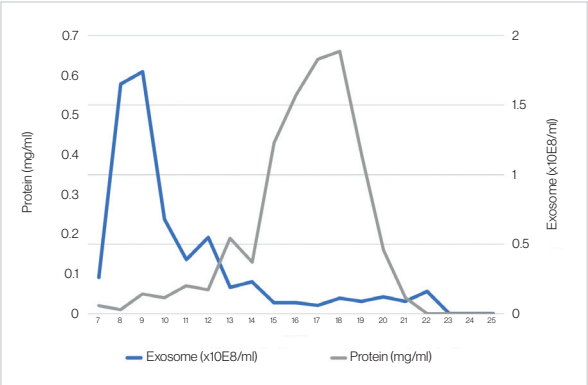
Step 2: Use Exo-spin™ Exosome Precipitation Buffer to precipitate exosomes.

Step 3: Add the exosome-containing pellet to the Exo-spin™ columns for Size Exclusion Chromatography (SEC) purification.

	Exo-spin™	Precipitation	Ultracentrifugation
Yield	High	Medium	Medium
Purity	High	Low	Medium
Speed	Quick	Quick	Slow
Cost	Low	Medium	Medium

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.

Cat code	Product name
EX01	Exo-spin™
EX02	Exo-spin™ blood
EX03	Exo-spin™ mini columns
EX04	Exo-spin™ midi columns

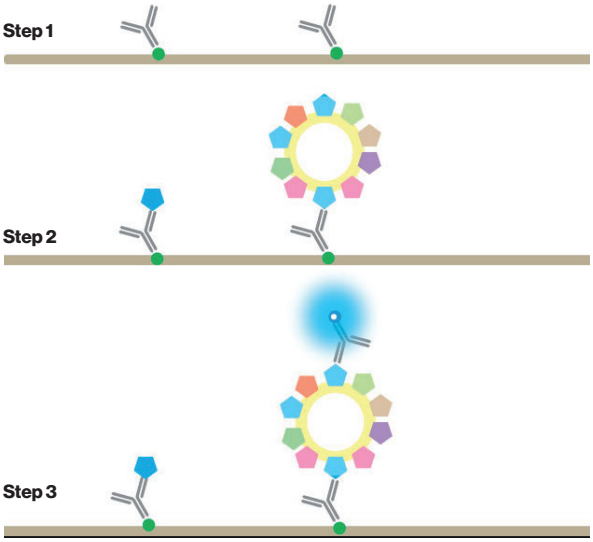
Detection

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



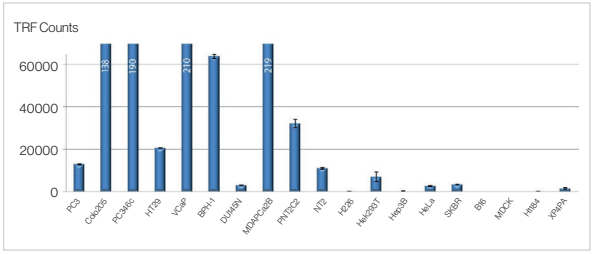
Step 1: Biotinylated antibody is bound to streptavidin coated assay plates.

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

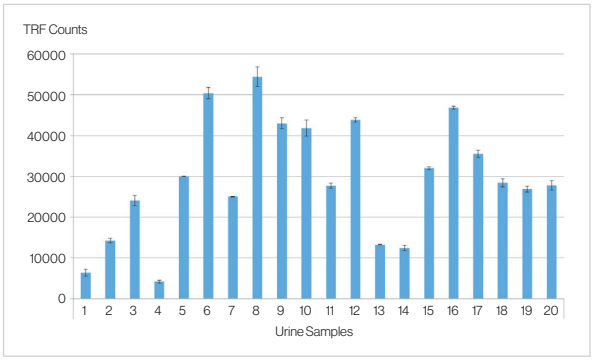
Step 3: Europium-labeled antibody of the same clone as the one used in Step 1 is added and binds specifically to exosome antigen. The epitopes of bound monomers are already occupied and not detected. Samples are read on a time-resolved fluorescence plate reader.

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

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.

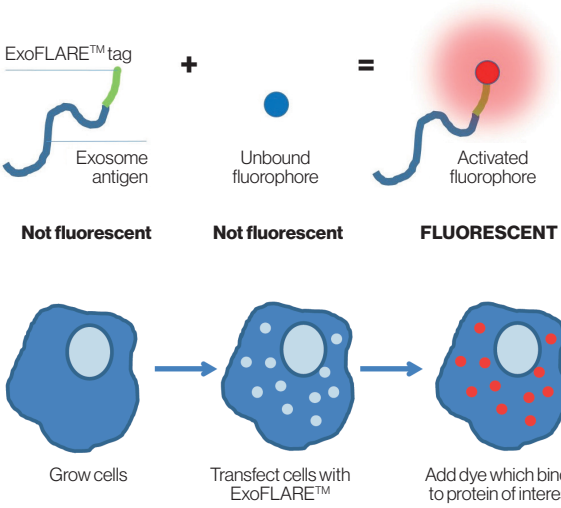
Tracking

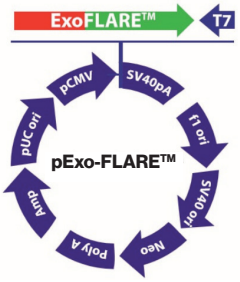
ExoFLARE™ Exosome Tracking Kit

An exosome tracking system using protein tags that modulate the fluorescence of pro-fluorophores

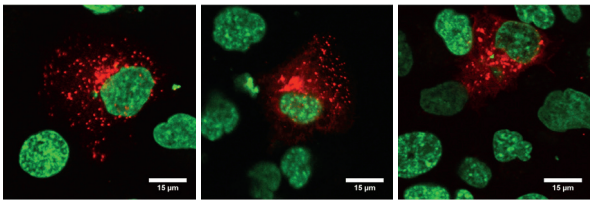
- **High signal intensity**
  The signal is brighter and longer than for standard fluorescent proteins.
- **Low background fluorescence**
  The rapid turnover of the dye allows for very low photobleaching.
- **Non-cytotoxic**
  Further experiments can be performed with same exosomes.

ExoFLARE™ Exosome Tracking System





In vitro exosome imaging



ExoFLARE™ constructs were transiently transfected into DU145N cells. ExoFLARE™ cell permeable dye was added to the media and cells were imaged using a confocal fluorescence microscope.

Red = ExoFLARE™ tagged protein;
Green = Hoechst.

Cat code	Product name
EX301	ExoFLARE™ CD9 (impermeable dye)
EX302	ExoFLARE™ CD63 (impermeable dye)
EX303	ExoFLARE™ CD81 (impermeable dye)
EX304	ExoFLARE™ CD9 (permeable dye)
EX305	ExoFLARE™ CD63 (permeable dye)
EX306	ExoFLARE™ CD81 (permeable dye)
EX401	EF Red xc cell impermeable dye
EX402	EF Red s cell permeable dye

NTA Profiling

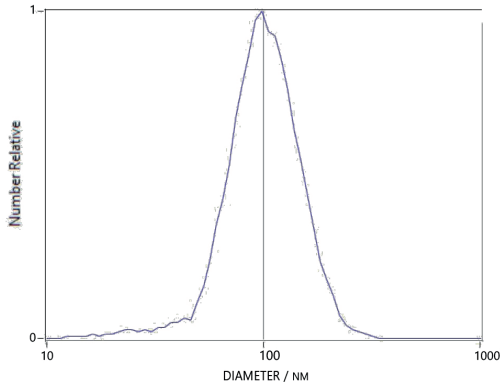
Nanoparticle Tracking Analysis service provided using ZetaView® Instrument

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®.

Measurement Mode: Size Distribution 2 Cycles
11 Positions



Result

Concentration:	1.2E+7 Particles / mL
Dilution Factor:	2000
Original Concentration:	2.4E+10 Particles / cm³

Quality
Average Counted Particles per Frame: 40
Number of Traced Particles: 368

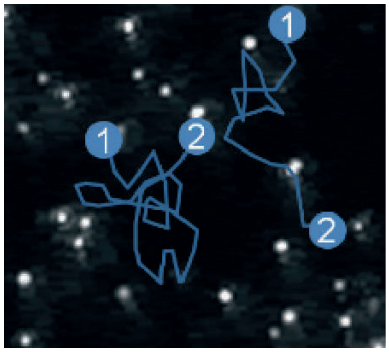
Peak Analysis (Number Absolute)

Diameter / nm	Number Absolute	FWHM / nm	Percentage
101.2	28.1	85.6	100.0

X Values

	Number	Volume
X10	61.0	89.6
X50	97.0	138.7
X90	150.5	211.6
Mean	106.0	151.2
StdDev	39.3	50.0

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

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

Matrix Proteins

Exosomes
- Purification
- Detection
- Tracking
- NTA Service

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

Small Molecules

Gene Knock-Up System

Cell Counting Reagent

Cytogenetics Analysis

CELL guidance systems

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