

Rapid, Label-free, and Efficient Isolation of Extracellular Vesicles (EVs).



**ExoDiscovery™**



**LabSpinner**  
ExoDiscovery

# ExoDiscovery™ System

ExoDiscovery™ system is ideal for rapid, label-free, and efficient isolation of intact extracellular vesicles (EVs) from biological samples.

The enriched EVs with high yield and purity are then readily processed for downstream analysis such as NTA, SEM, TEM, western blotting, ELISA, PCR, or NGS for the application of precision science to precision medicine.



## ExoDiscovery™ & ExoDisc™



- Small volume
- Efficient size based filtration by FAST

## ExoPRISM™



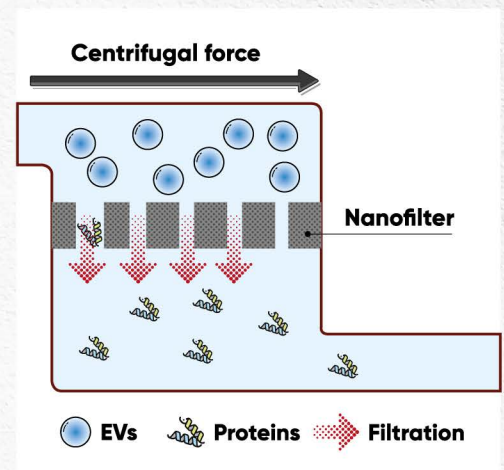
- Large volume
- Precipitation by coagulation of EV colloid

# Core Technology

## ExoDisc™

Tangential flow nanofiltration on centrifugal microfluidic device

The patented FAST (Fluid-Assisted Separation Technology) allows gentle (<500 x g) but efficient filtration under greatly reduced filtration pressure over the nanofilter.

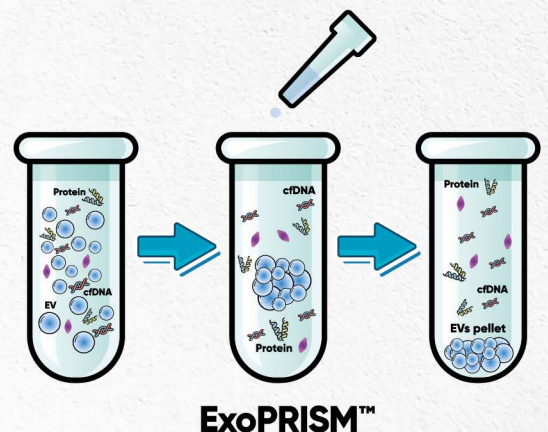


## ExoPRISM™

Precipitation by coagulation of EV colloid in low-speed spin

ExoPRISM™ Precipitation by coagulation of EV colloid in low-speed spin EV particles are dispersed in the biofluid made by the balance with surface charge and polymers like many colloids.

Reagent B (for CCS/Urine) and Reagent P (for Plasma/Serum) of ExoPRISM™ shifts the balance by changing the ionic strength of solution to rapidly form precipitates at low-speed centrifugation.

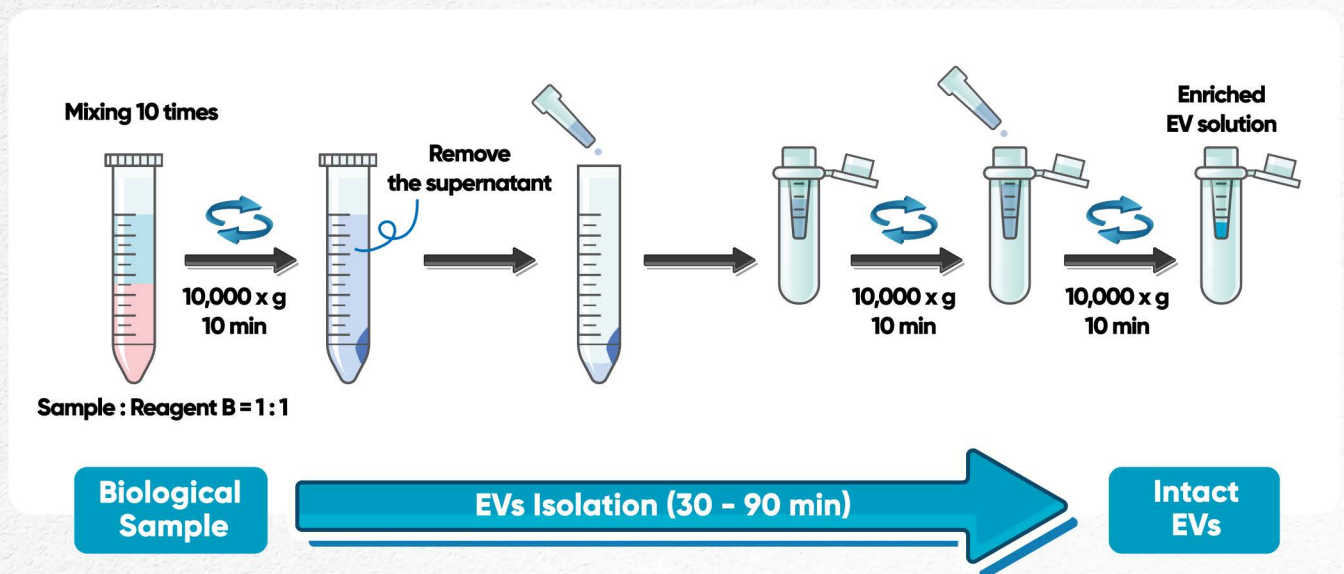


# Simple Workflow

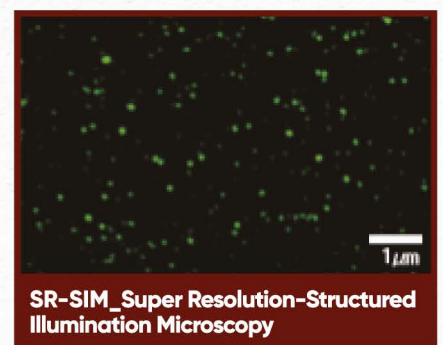
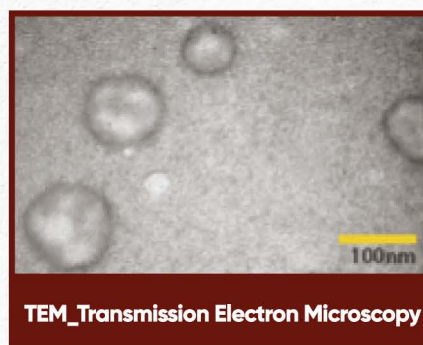
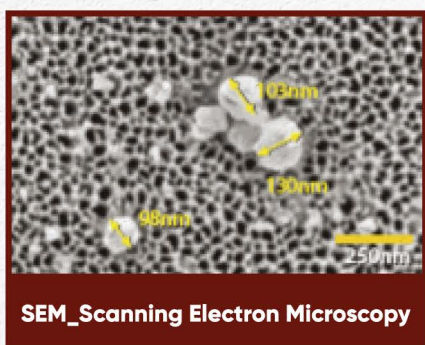
## ExoDisc™



## ExoPRISM™



# Intact EVs



# ExoDisc™

 **LabSpinner**  
ExoDiscovery

 **LabSpinner**  
ExoDiscovery

ExoDiscovery

# ExoDiscovery™

**Cat No. EX-R1001**

## **Semi-automatic rotor machine**

- Protocols for ExoDisc™-D20, D-100
- Rapid operation by simple steps
- Compact form-factor
- Dimensions (W x D x H) : 25 x 40 x 15 (cm)  
9.8 x 15.7 x 5.9 (in)
- Weight : 6 kg (13 lb)
- Power : 30 W (100~240V, 50~60Hz)

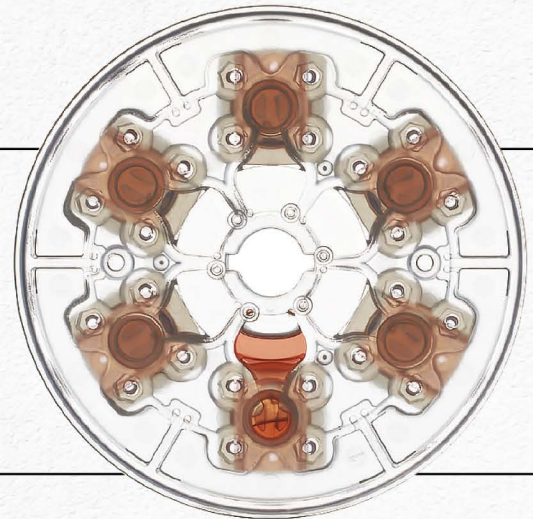


# ExoDisc™ - D20

**Cat No. EX-D0020**

## **EVs isolation from CCS, Urine, CSF, BW**

- Suitable for cell culture supernatant, urine, Cerebrospinal Fluid, Bronchial Washing Fluid, etc
- Up to 6 samples (6 units, 1 mL/unit)
- No special pre-treatment for sample
- Minimal damage on isolated EVs

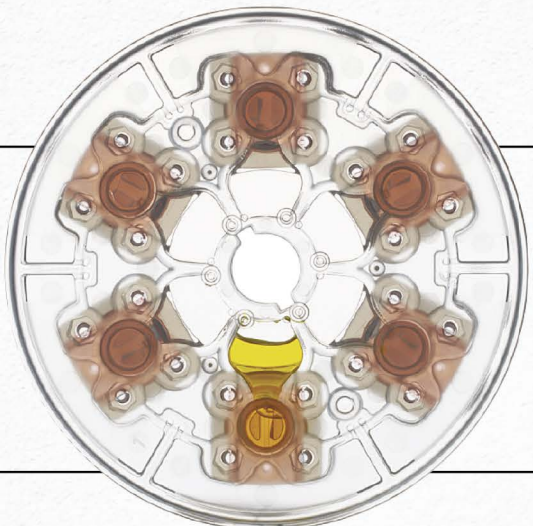


# ExoDisc™ - D100

**Cat No. EX-D0100**

## **EVs isolation from Plasma, Serum**

- Suitable for plasma, serum, etc
- Enrichment of hairy crowned EVs (>100 nm) from biofluids
- Up to 6 samples (6 units, 1 mL/unit)
- No special pre-treatment for sample
- Minimal damage on isolated EVs



# ExoPRISM™

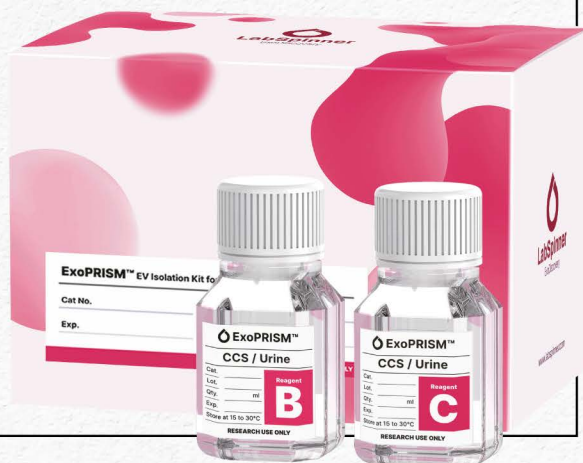


# ExoPRISM™ for CCS and Urine

Cat No. EP-CU020

## EVs isolation from CCS, Urine, CSF, BW

- Optimized for cell culture supernatant, urine, cerebrospinal fluid, bronchial washing fluid, etc
- Scalable sample volume (1 ~ 100 mL/kit)
- Rapid EV isolation
- Easy removal of precipitating reagent
- High yield and high purity
- Wide applications for downstream analysis (NTA, qPCR, ELISA, etc)



# ExoPRISM™ for Plasma and Serum

Cat No. EP-PS020

## EVs isolation from Plasma, Serum

- Optimized for plasma, serum, etc
- Scalable sample volume (0.1 ~ 20 mL/kit)
- Albumin, Lipoprotein almost removed
- Rapid EV isolation
- Easy removal of precipitating reagent
- High yield and high purity
- Wide applications for downstream analysis (NTA, qPCR, ELISA, etc)



# Comparison with other EV isolation methods

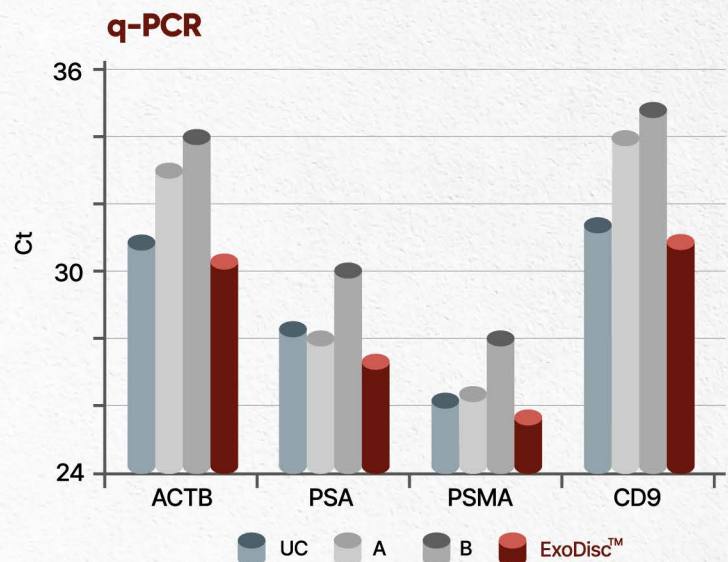
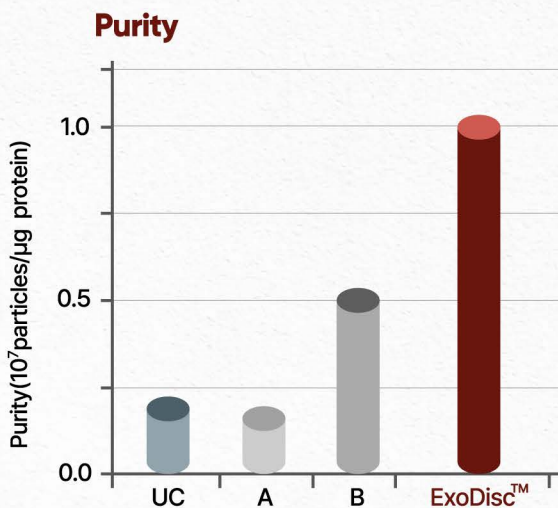
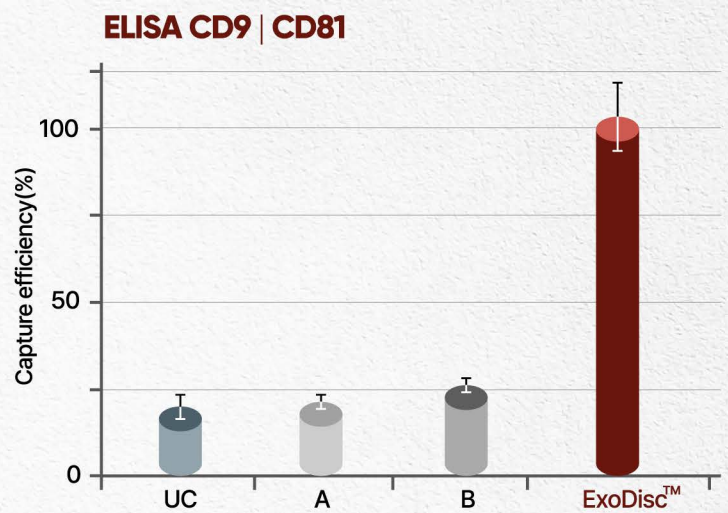
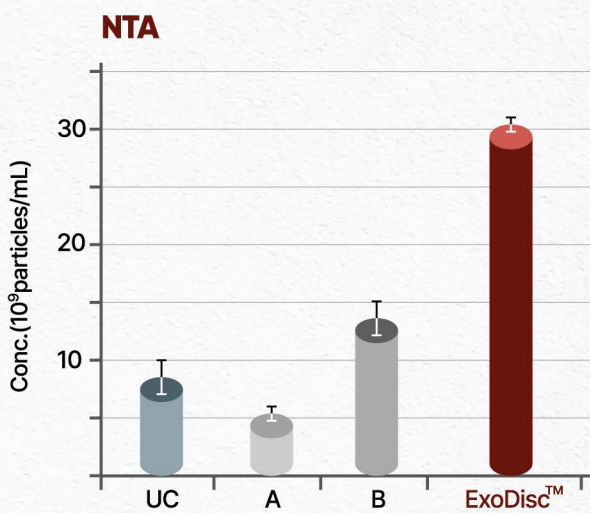
## ExoDisc™

The performance of ExoDisc™ was compared with other commonly used EV-isolation methods. EVs isolated from PC3 cells (ATCC CRL-1435) transfected with AR-FL and AR-V7 were spiked to 4 mL of urine.

Isolated EVs were characterized by nanoparticle-tracking analysis (NTA), enzyme-linked immunosorbent assay (ELISA), and polymerase chain reaction (PCR).

**ExoDisc™ provides > 95% recovery of EVs, 3~17 times higher yield, and >5 times higher purity as compared with UC method.**

## High Yield & High Purity



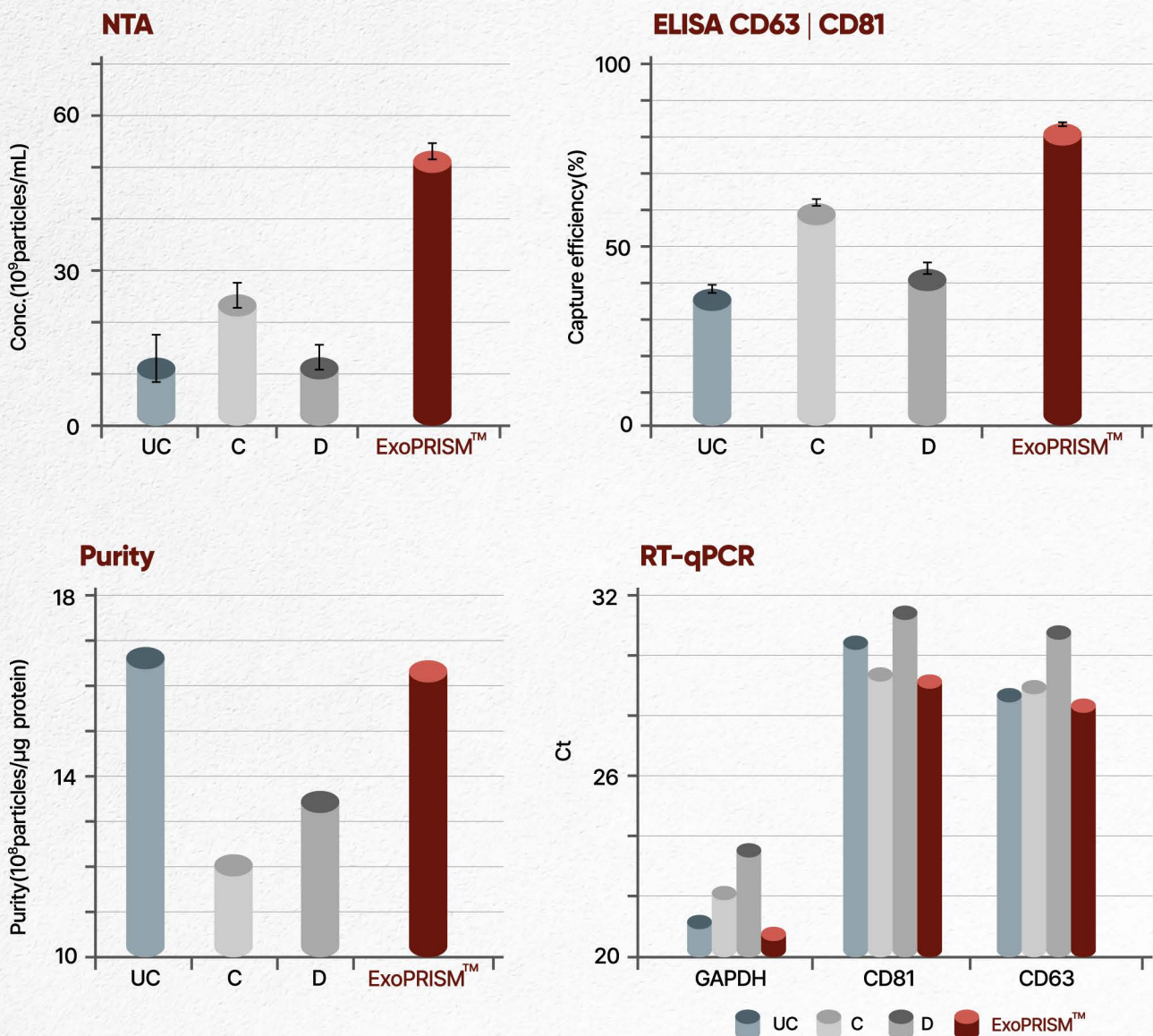
## ExoPRISM™

The performance of ExoPRISM™ was compared with other commonly used EV-isolation methods: Ultracentrifugation (UC), C, and D (which use high molecular weight polymer, PEG). EVs were isolated from 5 mL of CCS of DLD-1 cells (KCLB-10221).

Isolated EVs were characterized by nanoparticle-tracking analysis (NTA), enzyme-linked immunosorbent assay (ELISA), and polymerase chain reaction (PCR).

**ExoPRISM™ provides > 85% recovery of EVs and higher mRNA yield compared to the other precipitation and UC methods.**

## High Yield & High Purity



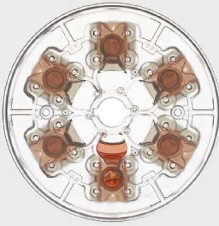

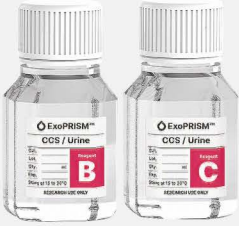







## Comparison table with other EV isolation methods

	ExoDisc™	ExoPRISM™	Ultracentrifuge	Precipitation (PEGs)
Cost	★★	★★★	★	★★★
Time	★★★	★★★	★	★★
Sample Volume	★	★★★	★★	★★★
Yield	★★★	★★★	★★	★★★
Purity	★★★	★★	★★★	★

## References

- "Comprehensive evaluation of methods for small extracellular vesicles separation from human plasma, urine and cell culture medium", **Journal of Extracellular Vesicles** 2020 Dec;10(2):e12044
- "Three-Dimensional Human Liver-Chip Emulating Premetastatic Niche Formation by Breast Cancer-Derived Extracellular Vesicles", **ACS Nano** 2020 Nov 24;14(11):14971-14988
- "Detection of EGFR Mutations Using Bronchial Washing-Derived Extracellular Vesicles in Patients with Non-Small-Cell Lung Carcinoma", **Cancers** 2020 Sep 30;12(10):2822
- "EV-Ident: Identifying Tumor-Specific Extracellular Vesicles by Size Fractionation and Single-Vesicle Analysis", **Analytical Chemistry** 2020 Apr 21;92(8):6010-6018
- "Fully automated, label-free isolation of extracellular vesicles from whole blood for cancer diagnosis and monitoring", **Theranostics** 2019 Mar 7;9(7):1851-1863
- "Urine-based Liquid Biopsy: Non-invasive and Sensitive AR-V7 Detection in Urinary EVs from Patients with Prostate Cancer", **Lab Chip** 2018 Dec 18;19(1):87-97
- "Exodisc for Rapid, Size-Selective, and Efficient Isolation and Analysis of Nanoscale Extracellular Vesicles from Biological Samples", **ACS Nano** 2017 Feb 28;11(2):1360-1370

# User Scenario

	ExoDisc™-D20	ExoDisc™-D100	ExoPRISM™ for CCS/Urine	ExoPRISM™ for Plasma/Serum
Product				
Sample Type	CCS Urine	Plasma Serum	CCS Urine	Plasma Serum
Sample Volume	 ≤ 4 mL per unit	 ≤ 0.1 mL per unit	 ≤ 100 mL per bottle	 ≤ 20 mL per bottle
Time*1	30 min	1 hr	1 hr	1.5 hr
Platform	<b>ExoDiscovery™</b> 		<b>Centrifuge</b> 	

\*1 The operation time depends on the EV concentration in the sample.



# LabSpinner

ExoDiscovery

Skontaktuj się z nami:

*Joanna Zimniak*

*Przedstawiciel handlowy*

**[jzimniak@perlan.com.pl](mailto:jzimniak@perlan.com.pl)**

**+48 880 337 895**

#### **| Customer Support |**

📍 A2114~2115, 27, Dongtancheomdansaneop 1-ro, Hwaseong-si, Gyeonggi-do, Korea 18469

☎ Tel +82-31-8043-6970 / Fax +82-303-3440-9700 @ E-mail [sales@labspinner.co.kr](mailto:sales@labspinner.co.kr) (Ordering information)

#### **| Head Quarter |**

📍 801-7, Bldg 114, 50, UNIST-gil, Eonyang-eup, Ulju-gun, Ulsan, Korea 44919

☎ Tel +82-52-970-9700 / Fax +82-303-3440-9700 @ E-mail [tech@labspinner.co.kr](mailto:tech@labspinner.co.kr) (Technical support)