EXOSOME
ISOLATION

EXODUS

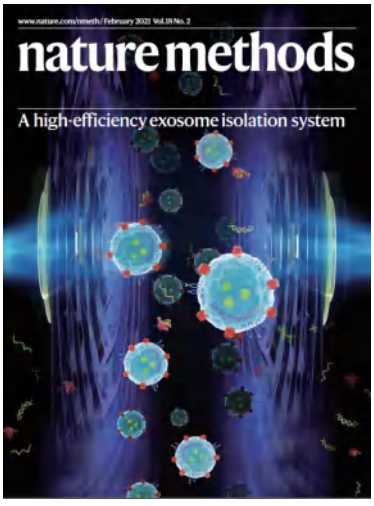
EXODUS T-2800

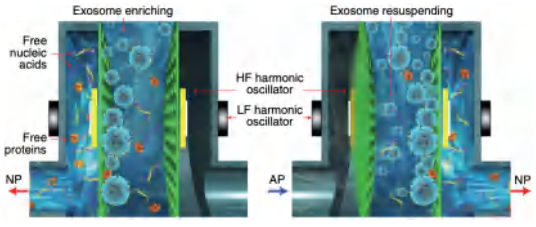
High-efficiency exosome isolation system for large-scale GMP manfacturing

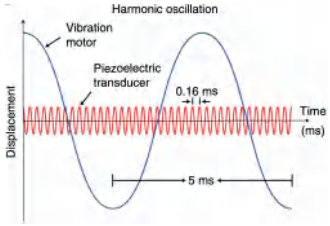
EXODUS T-2800

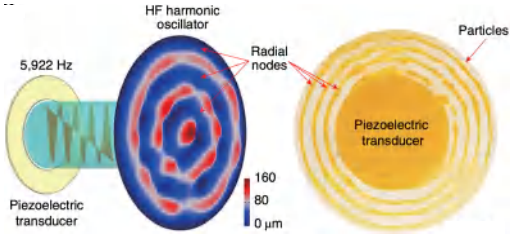
EXODUS T-2800 is a large-scale, fully automatic exosome isolation system that integrates sample pre-processing, exosome isolation, and collection. Based on the advanced EXODUS ultrasonic nano-filtration technology, this system offers a robust solution for users in exosome drug delivery, treatment, and regenerative medicine. It is designed to support the industrial-scale, automated production of high-purity and high-yield exosomes, ensuring stability and compliance with Good Manufacturing Practices (GMP).

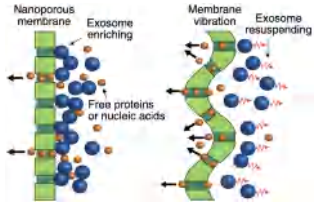
EXODUS Isolation Principle











Nature Methods. 2021, 18(2): 212-218.

A novel exosome isolation technique employing ultrasonic nano-filtration technology presents several advantages over conventional membrane separation methods. This approach utilizes a combination of negative pressure oscillation (NPO) and double-coupled ultrasonic harmonic oscillation (HO). Together, these mechanisms act on the nano-filtration device to efficiently and rapidly eliminate impurities, including free nucleic acids and proteins, resulting in the extraction of ultra-pure exosomes.

EXODUS T-2800 Technical Advantages

Three-in-one

Samplepre-processing, automatic isolation and recovery, all featuring simple and user-friendly operations.

Outstanding purity and yield

> $1x10^{11}$ particles/mL recoverd exosome;
99% protein removal rate;
> $3x10^{8}$ particles/μg protein

Reliable quality

Sterility-free, endotoxin-free
Minimize protein residuals from samples

Stable and controllable

Batch-to-batch stability
Full-process status monitoring
Intelligent handing

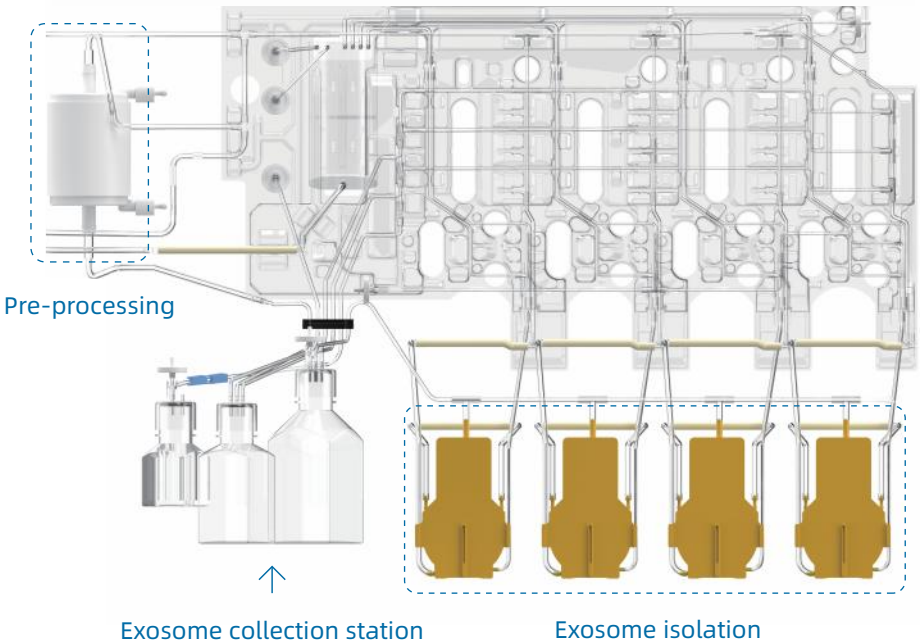
Safe and compliant

Meet pharmacopeial standards and 21 CFR part 11 requirements
Support GMP grade exosome production

Technical Advantages

Three-in-one

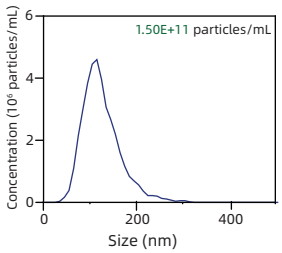
Three functions are integrated: sample pre-processing, isolation, and automatic recovery, all featuring simple and user-friendly operations.



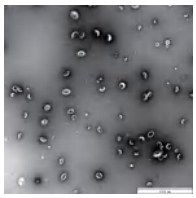
Outstanding purity and yield

Protein removal efficiency >99%, with particle-to-protein ratio >3x10^{8} particles/ug protein; exosome concentration >1x10^{11} particles/mL.

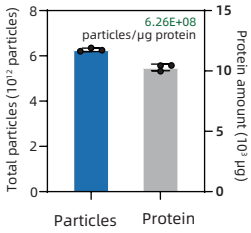
A Nanoparticle tracking analysis



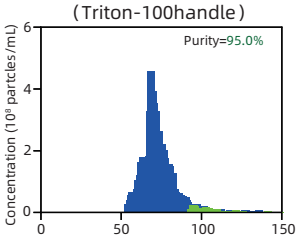
B TEM



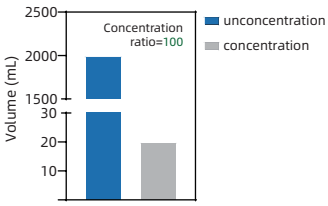
C Particle-to-protein ratio



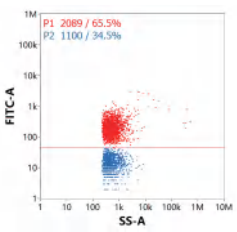
D Vesicle percentage (Triton-100handle)



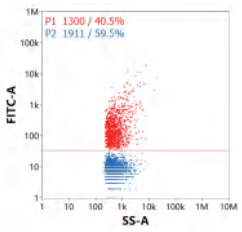
E concentration ratio



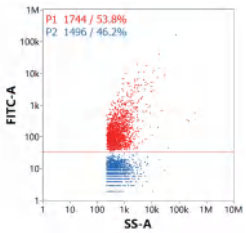
F CD81positive rate



G CD63positive rate



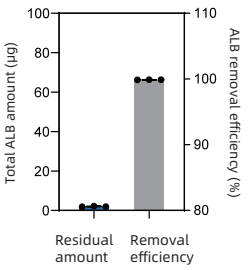
H CD9positive rate



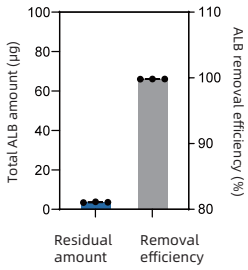
Reliable quality

Sterility-free, endotoxin-free, minimize protein residuals from samples

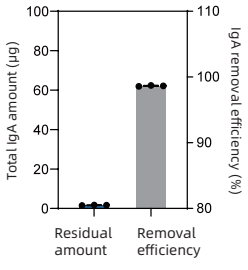
PA-ALB



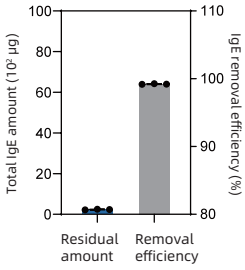
HPL-ALB



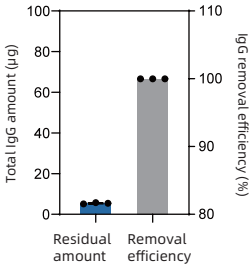
HPL-IgA



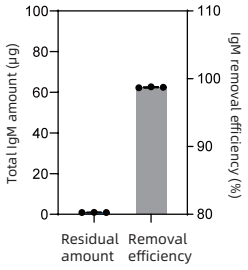
HPL-IgE



HPL-IgG

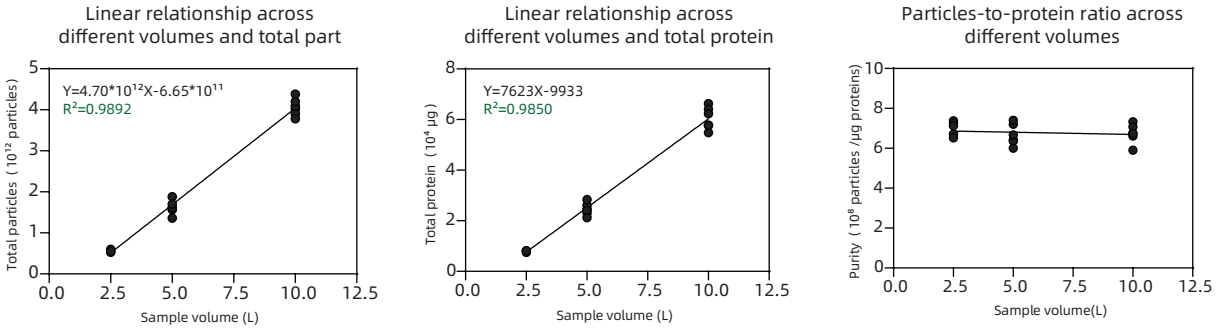


HPL-IgM



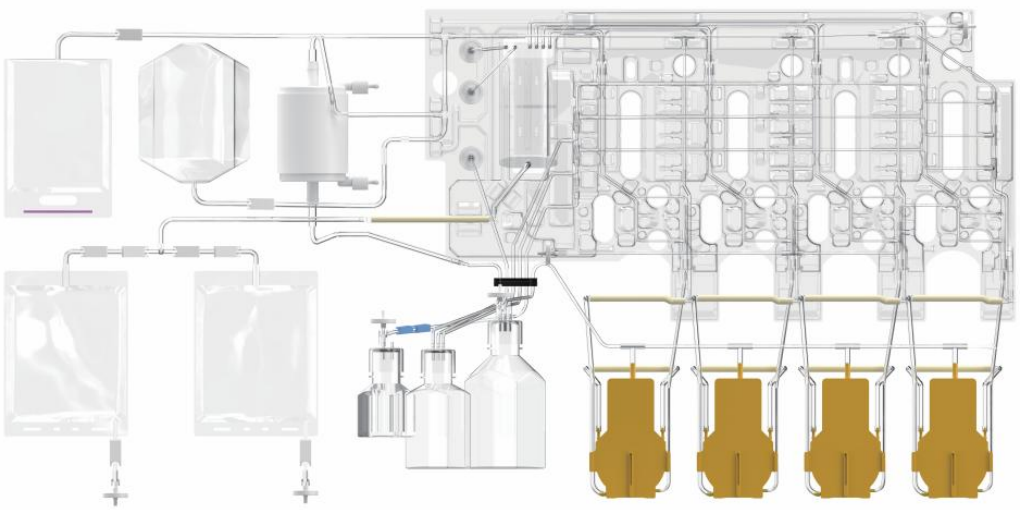
Stable and controllable

Fully automatic workflow that ensures batch-to-batch stability, full-process status monitoring, and intelligent handling.



Safe and compliant

Closed, single-use system; the system and software comply with GMP and 21 CFR part 11 requirements, respectively.

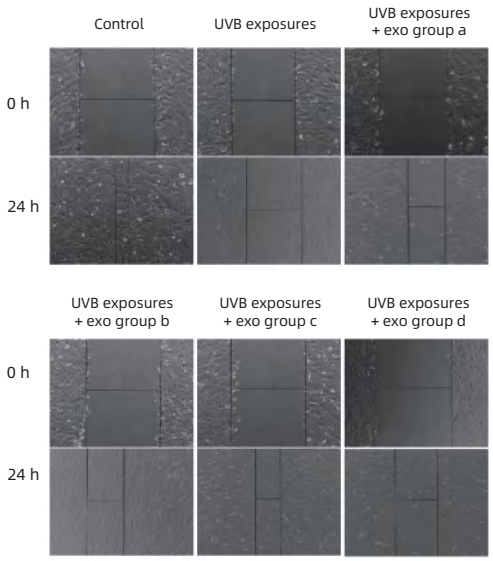


Fully enclosed consumables: Suitable for Class C or Class C+A Environments.

APPLICATION CASES

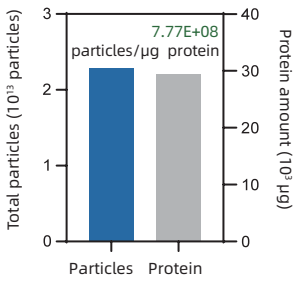
MSCs Culture Medium

Scratch assay

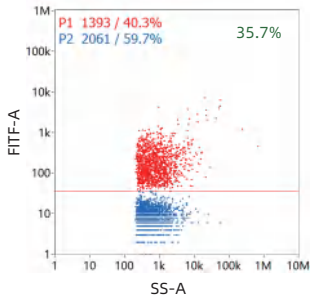


The scratch assay verified the effect of exosomes on cell proliferation, with group C showing the best results

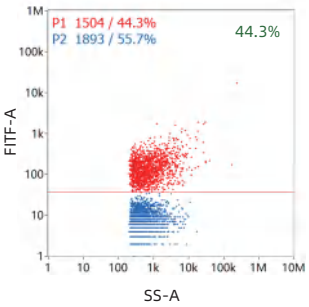
Particle-to-protein ratio



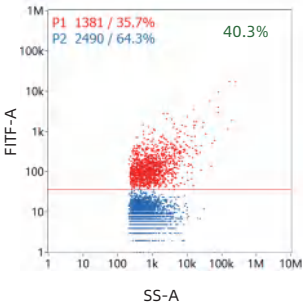
CD9 positive rate



CD81 positive rate

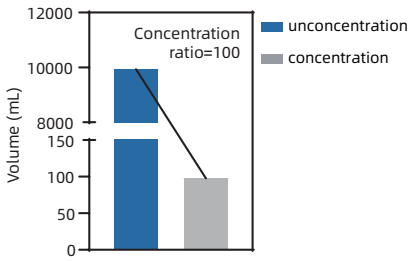


CD63 positive rate



HEK 293F Culture Medium

A Concentration ratio



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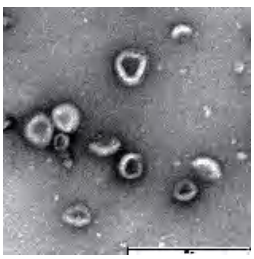
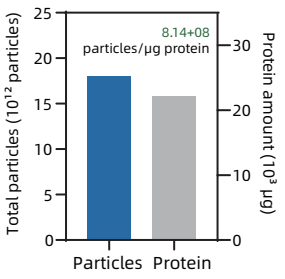
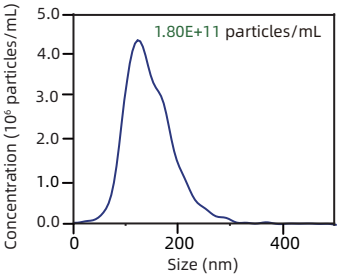


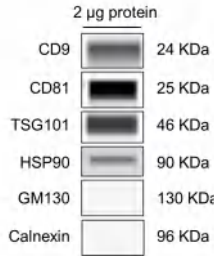
C Particle-to-protein ratio



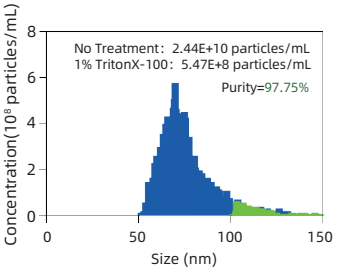
D Nanoparticle tracking analysis



E WB analysis

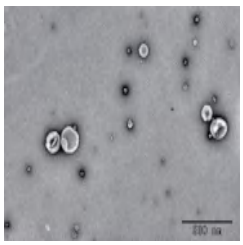


F Vesicle percentage (TritonX-100)

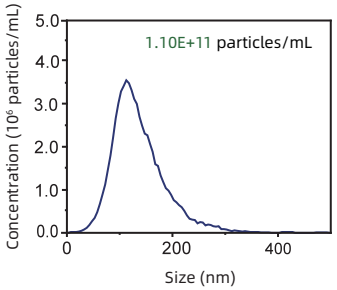


Rose

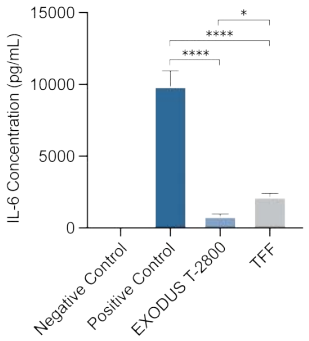
TEM



Nanoparticle tracking analysis



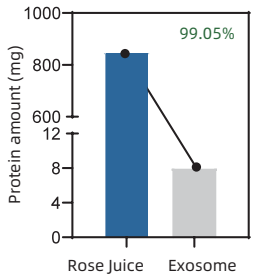
Inhibition of IL-6 inflammatory factor secretion



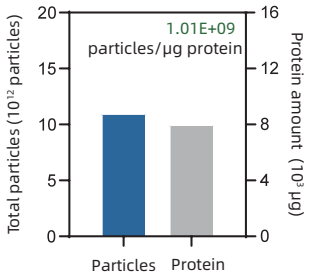
LPS	-	+	+	+
EVs	-	-	+	+

The purified product of EXODUS T-2800 exhibits good anti-inflammatory effects, with efficacy and activity superior to that of the TFF purified product

Protein removal rate

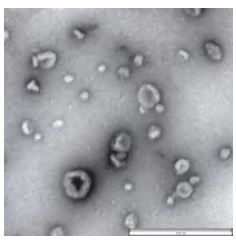


Particle-to-protein ratio

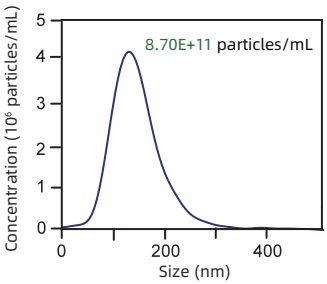


Centella Asiatica

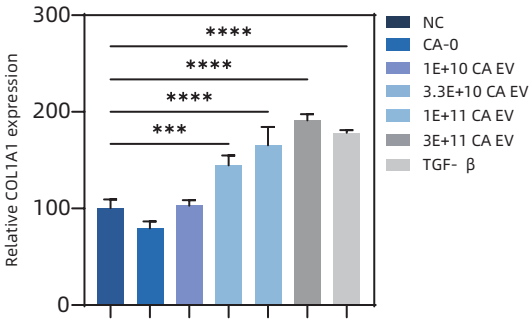
TEM



Nanoparticle tracking analysis

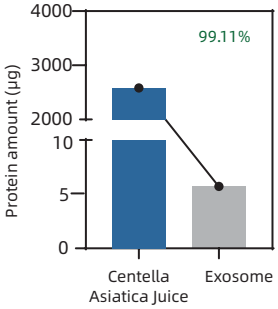


Centella asiatica-COL1A1

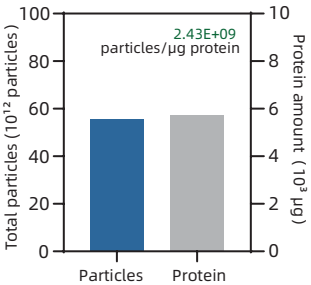


The EVs of Centella asiatica can enhance the expression of collagen (COL1A1), suggesting that the EVs possess anti-aging properties.

Protein removal rate



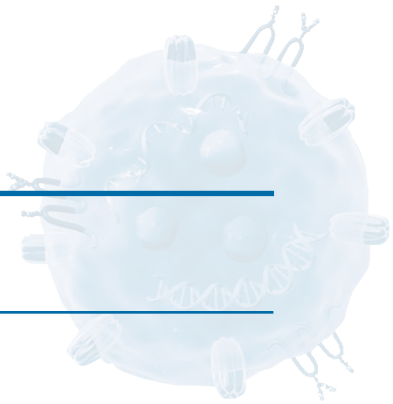
Particle-to-protein ratio



SYSTEM SPECIFICATION >>

10/11/12

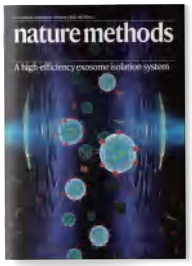
System Specification

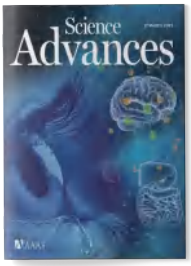


Processing volume	1-10 L
Processing speed	1-2 L/h
Concentration factor	≥100 fold concentration, with adjustable concentration ratio
Recovery volume	Adjustable based on the concentration ratio
Exosome Resuspension System	Exosomes can be resuspended in PBS buffer or saline solution, tailored to meet the requirements of downstream applications
Protein Removal Efficiency	>99%
Particle-to-Protein Ratio	>3×10^{8} pariticles/μg protein
Exosome Particle Concentration	>1×$10^{11\text{-}12}$ particles/mL
Temperature Control	Sample position, buffer position, and exosome recovery station, with a controlled temperature range of 2-8℃
Display Screen	Features a 10.4 inch TFT touch screen that provides real-time updates on sample type, timing, purification progress, and more, facilitating standalone operation without the need of an additional computer
System interface	1 power port, 4 usb ports ,and 1 network port
Dimensions	Host size： 685 mmx820 mmx500 mm （HxWxD） Size of installation plate with filter included：685 mmx1050 mmx500 mm （HxWxD）
Net weight	<200 lbs (90kg)
Operating Environment	Voltage: AC 110 V-240 V, 50/60 Hz Operating Temperature: 10-30℃ Operating Humidity: 30-85%, non-condensing

Publications

NO	Title	Journal	Accepted	Five-year average IF
1	Exosome detection via the ultrafast-isolation system: EXODUS	Nature Methods	Jan-21	45.6
2	Metabolomic analysis of exosomal-markers in esophageal squamous cell carcinoma	Nanoscale	Oct-21	6.1
3	The genetic source tracking of human urinary exosomes	PNAS	Oct-21	10.8
4	Quantitative metabolic analysis of plasma extracellular vesicles for the diagnosis of severe acute pancreatitis	Journal of Nanobiotechnology	Jan-22	11.4
5	Discovering the Secret of Diseases by Integrated Tear Exosomes Analysis via Rapid-isolation System: iTEARS	ACS Nano	Jul-22	16.2
6	Lipidomic identification of urinary extracellular vesicles for non-alcoholic steatohepatitis diagnosis	Journal of Nanobiotechnology	Jul-22	11.4
7	Identification of circulating extracellular vesicle long RNAs as diagnostic biomarkers for patients with severe acute pancreatitis	Clinical and Translational Medicine	Aug-22	8.0
8	Robust Acute Pancreatitis Identification and Diagnosis: RAPIDx	ACS Nano	Mar-23	16.2
9	Interaction network of extracellular vesicles building universal analysis via eye tears: iNEBULA	Science Advances	Mar-23	13.7
10	Identification and detection of plasma extracellular vesicles-derived biomarkers for esophageal squamous cell carcinoma diagnosis	Biosensors & Bioelectronics	Apr-23	9.9
11	Metabolomic investigation of urinary extracellular vesicles for early detection and screening of lung cancer	Journal of Nanobiotechnology	May-23	11.4
12	Audible Acoustic Wave Promotes EV Formation and Secretion from Adherent Cancer Cells via Mechanical Stimulation	ACS Applied Materials & Interfaces	Oct-23	8.7
13	Metabolic signatures of tear extracellular vesicles caused by herpes simplex keratitis	Ocular Surface	Dec-23	5.9
14	Prediction of Response to Chemoradiotherapy by Dynamic Changes of Circulating Exosome Levels in Patients with Esophageal Squamous Cell Carcinoma	International Journal of Nanomedicine	Feb-24	7.5
15	Sensitive small extracellular vesicles associated circRNAs analysis combined with machine learning for precision identification of gastric cancer	Chemical Engineering Journal	May-24	13.2
16	Investigating the proliferative inhibition of HepG2 cells by exosome-like nanovesicles derived from Centella asiatica extract through metabolomics	Biomedicine & Pharmacotherapy	May-24	6.8
17	Gut Subdoligranulum variabile ameliorates rheumatoid arthritis by promoting TSG-6 synthesis from joint cells	Frontiers in Immunology	Jun-24	6.8
18	UPCARE:Urinary Extracellular Vesicles-Derived Prostate Cancer Assessment for Risk Evaluation	Journal of Extracellular Vesicles	Jul-24	19.6
19	Tumor-derivedmiR-9-5p-loaded EVs regulate cholesterol homeostasis to promote breast cancer liver metastasis in mice	Nature Communications	Nov-24	16.1
20	Proteomics of urinary exosomes for discovering novel non-invasive biomarkers of acute myocardial infarction patients	International Journal of Biological Macromolecules	Feb-25	7.7
21	Inhalable liposomal delivery of osimertinib and DNA for treating primary and metastasis lung cancer	Nature Communications	Mar-25	16.1
22	Microneedle-mediated hypoxic extracellular vesicle-encapsulated selenium nanoparticles delivery to treat androgenetic alopecia	Journal of Controlled Release	Mar-25	10.6
23	Artificial Cell-Derived Vesicles: Extracellular Vesicle Mimetics for Chondrocyte Restoration in TMJOA Therapy	International Journal of Nanomedicine	Apr-25	7.7
24	Quercetin-loaded exosomes delivery system prevents myopia progression by targeting endoplasmic reticulum stress and ferroptosis in scleral fibroblasts	Materials Today Bio	May-25	10.2
25	Rapid Identification of Esophageal Squamous Cell Carcinoma Biomarkers by MALDI-TOF MS Fingerprinting of Extracellular Vesicles	Analytical chemistry	May-25	6.6
26	Clinically Accurate Diagnosis of Alzheimer's Disease via Single-Molecule Bioelectronic Label-Free Profiling of Multiple Blood Extracellular Vesicle Biomarkers	ADVANCED MATERIALS	Jun-25	28.9
27	GalNAc-siRNA conjugates mediate the silencing of the parasite-derived lncRNA: A novel therapeutic approach for liver fluke-induced liver fibrosis	International Journal of Biological Macromolecules	Jun-25	8.7






EXODUS

+1-510-377-1762
www.exodusbio.com
service@exodusbio.com
The Engine, 750 Main Street, Cambridge, MA 02139, USA.