



汇芯生物  
HUIXIN LIFETECH

# EXODUS T-2800

## 大规模全自动外泌体提取系统



# EXODUS T-2800

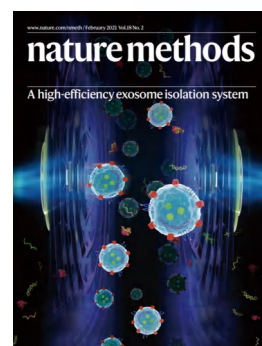
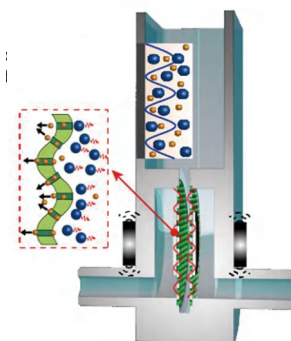
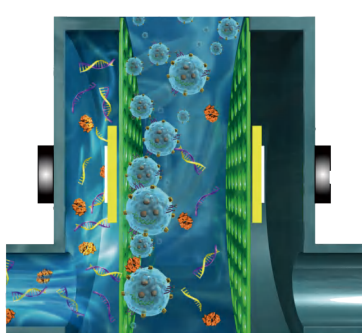
## 大规模全自动外泌体提取系统



EXODUS T-2800 是一款集样本预处理、外泌体纯化、浓缩、收集于一体的大规模全自动外泌体提取系统。基于超声纳滤 (EXODUS) 技术为外泌体载药、治疗、再生医学领域的用户提供规模化、自动化、高纯高产、稳定可靠且符合 GMP 级外泌体生产的解决方案。

## 纯化原理

基于超声纳滤的新型外泌体分离方法，突破传统膜分离技术瓶颈，将负压振荡和双耦合超声振荡系统作用于纳米超滤芯片上，样本中的游离核酸与蛋白等杂质通过纳米孔快速去除并截留外泌体，实现外泌体的富集和纯化。



## EXODUS T-2800 技术优势



以一抵三

一台仪器可实现样本预处理、外泌体浓缩、纯化和自动回收；操作步骤简单、轻易上手



纯产兼得

蛋白去除效率 >99%，颗粒蛋白比 >5×10<sup>8</sup> particles/μg protein；外泌体浓度 >1×10<sup>11-12</sup> particles/mL



质量可靠

终产品无菌、内毒素等检测合格；可去除 >99% 培养基来源的蛋白质，下游应用更安全



稳定可控

全自动工艺流程，保证批间稳定性；全流程状态监控，智能化异常处理



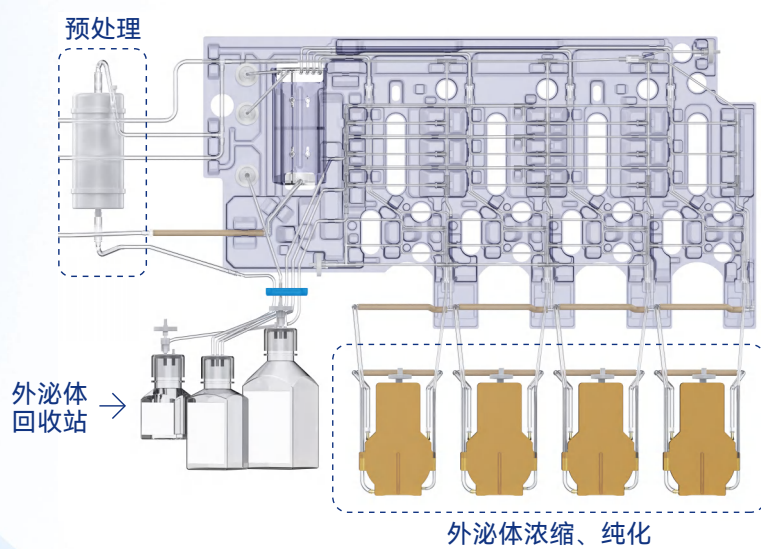
安全合规

采用一次性全封闭耗材，无菌、内毒素满足药典标准；符合 GMP 和 21 CFR part 11

# EXODUS T-2800技术优势举例

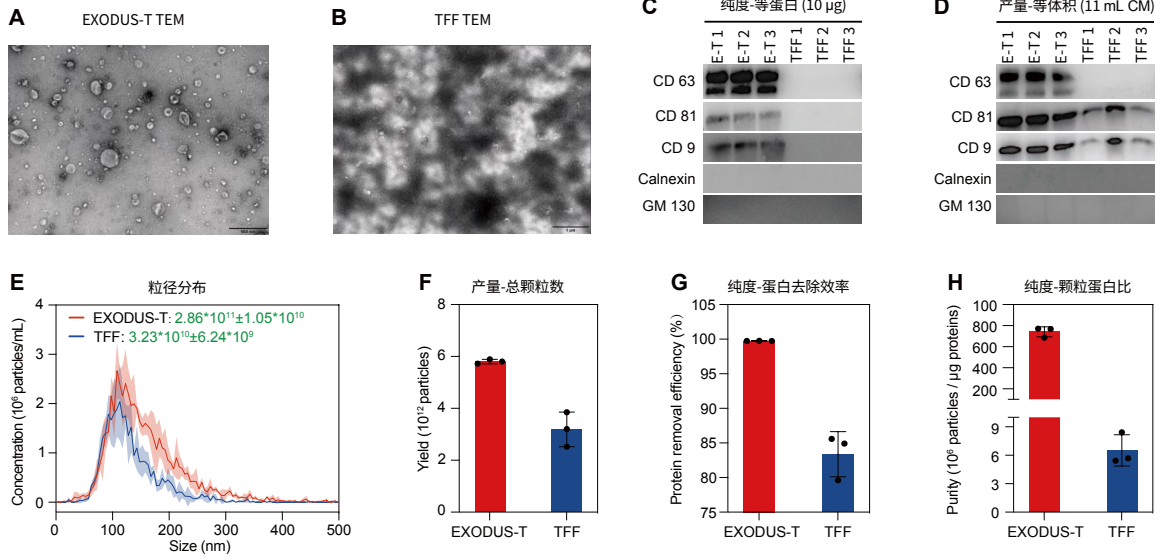
## 以一抵三

一台仪器可实现样本预处理、外泌体浓缩、纯化和自动回收；操作步骤简单、轻易上手



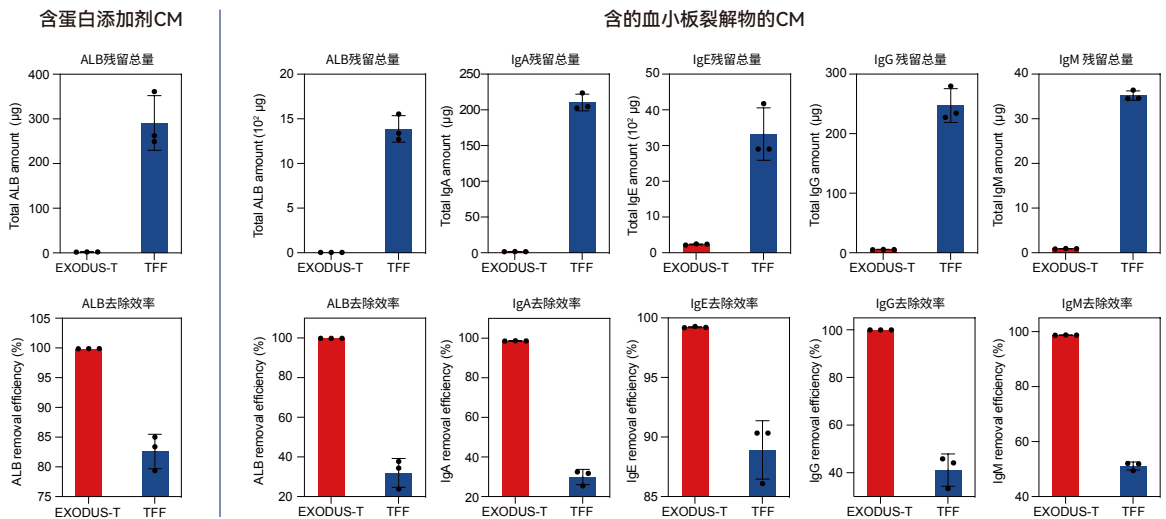
## ⊕ 纯产兼得

蛋白去除效率 >99%，颗粒蛋白比 >3×10<sup>8</sup> particles/μg protein；外泌体浓度 >1×10<sup>11-12</sup> particles/mL



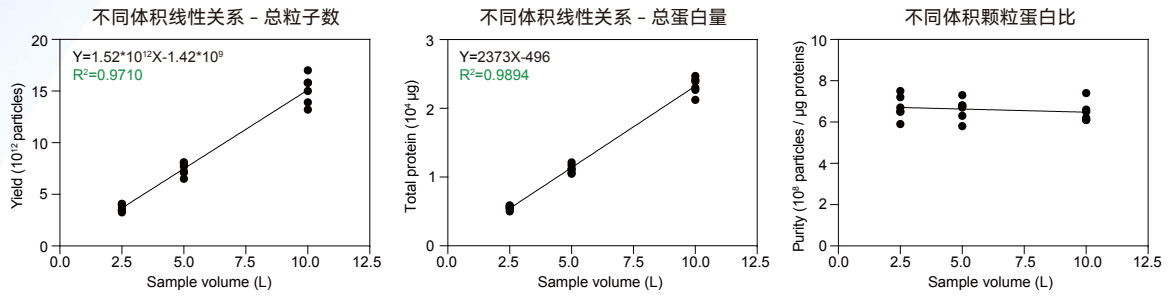
## 🛡️ 质量可靠

终产品无菌、内毒素等检测合格；可去除>99%培养基来源的蛋白质，下游应用更安全



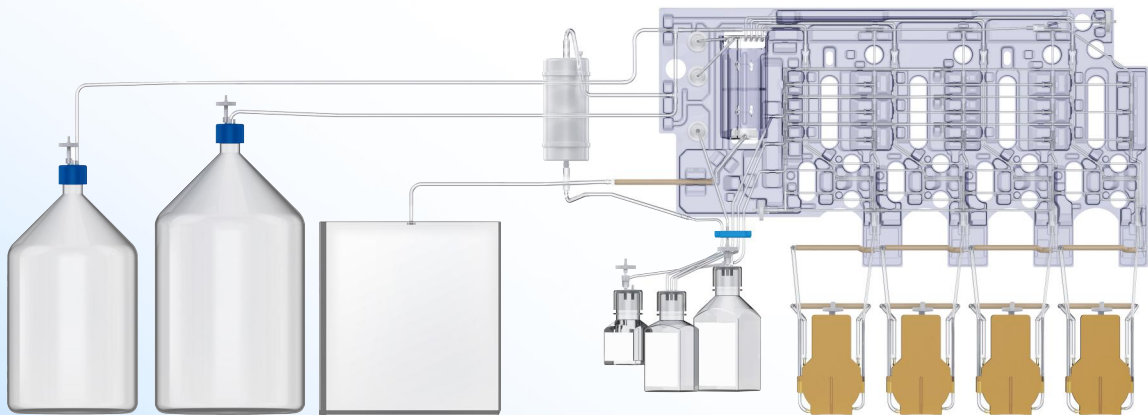
## 稳定可控

全自动工艺流程，保证批间稳定性；全流程状态监控，智能化异常处理



## 安全合规

采用一次性全封闭耗材，无菌、内毒素满足药典标准；符合GMP和21 CFR part 11



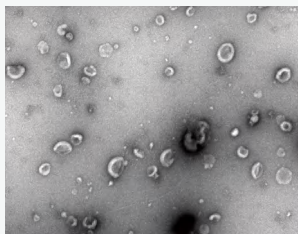
全封闭耗材：使用环境C级或C+A级

# EXODUS T-2800客户案例分享

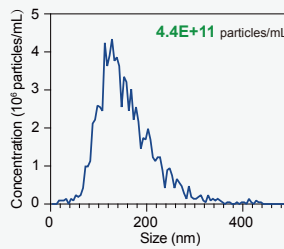
## 间充质干细胞上清 (10 L)

### 外泌体鉴定

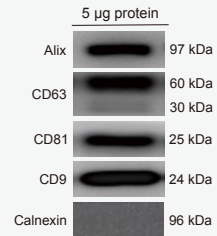
电镜下呈现杯托状结构



粒径分布范围

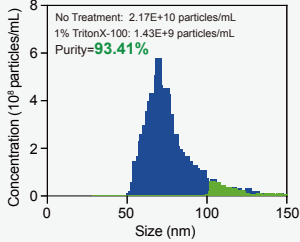


标志蛋白鉴定

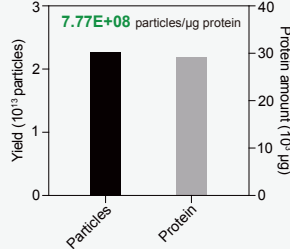


### 高纯度外泌体性能展示

囊泡占比=93.41%  
(TritonX-100处理)



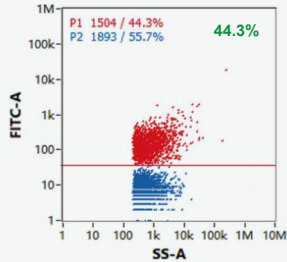
颗粒蛋白比  
(Particles/µg protein)



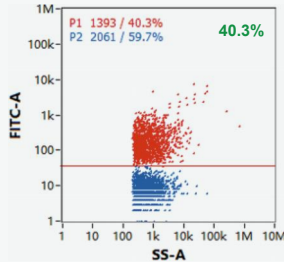
蛋白去除效率=99.8%



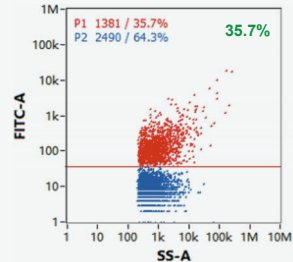
CD81蛋白阳性率=44.3%



CD63蛋白阳性率=40.3%

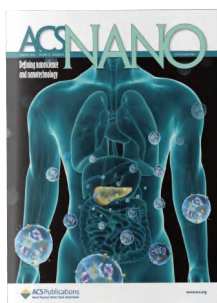
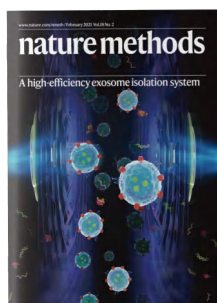


CD9蛋白阳性率=35.7%



# EXODUS技术应用文献合集

NO.	Title	Journal	IF	梗概
01	Exosome detection via the ultrafast-isolation system: EXODUS	Nature Methods	47.990	EXODUS方法学全面介绍
02	Discovering the Secret of Diseases by Integrated Tear Exosomes Analysis via Rapid-isolation System: ITEARS	ACS Nano	18.027	EXODUS应用-泪液外泌体蛋白和转录组学 (干眼/糖网)
03	Robust Acute Pancreatitis Identification and Diagnosis: RAPIDx	ACS Nano	18.027	EXODUS应用-血浆外泌体蛋白标记物诊断急性胰腺炎
04	Interaction network of extracellular vesicles building universal analysis via eye tears: INEBULA	Science Advances	14.980	EXODUS应用-泪液外泌体亚型分离
05	The genetic source tracking of human urinary exosomes	PNAS	12.779	EXODUS应用-尿液外泌体溯源 (膀胱癌、肾癌)
06	Identification and detection of plasma extracellular vesicles-derived biomarkers for esophageal squamous cell carcinoma diagnosis	Biosensors & Bioelectronics	12.545	EXODUS应用-血浆外泌体诊断食管鳞状细胞癌
07	Identification of circulating extracellular vesicle long RNAs as diagnostic biomarkers for patients with severe acute pancreatitis	Clinical and Translational Medicine	10.600	EXODUS应用-血浆外泌体lncRNA 诊断重症急性胰腺炎
08	Isolation of small extracellular vesicles from a drop of plasma via EXODUS and their fingerprint proteomics profiling by MALDI-TOF MS	Biosensors & Bioelectronics: X	/	EXODUS应用-分离血浆外泌体及MALDI-TOF MS指纹图谱分析
09	Audible Acoustic Wave Promotes EV Formation and Secretion from Adherent Cancer Cells via Mechanical Stimulation	ACS Applied Materials & Interfaces	10.383	EXODUS应用-分离细胞上清 (可听声波刺激细胞产生更多外泌体)
10	Quantitative metabolic analysis of plasma extracellular vesicles for the diagnosis of severe acute pancreatitis	Journal of Nanobiotechnology	10.200	EXODUS应用-血浆代谢组学 (急性重症胰腺炎)
11	Lipidomic identification of urinary extracellular vesicles for non-alcoholic	Journal of Nanobiotechnology	10.200	EXODUS应用-尿液外泌体筛选非酒精性脂肪肝标志物
12	Metabolomic investigation of urinary extracellular vesicles for early detection and screening of lung cancer	Journal of Nanobiotechnology	10.200	EXODUS应用-尿液外泌体代谢组学 (肺癌)
13	Metabolomic analysis of exosomal-markers in esophageal squamous cell carcinoma	Nanoscale	8.307	EXODUS应用-血浆代谢组学 (食管癌)
14	Metabolic signatures of tear extracellular vesicles caused by herpes simplex keratitis	The Ocular Surface	6.268	EXODUS应用-泪液EV代谢物用于诊断单纯疱疹性角膜炎
15	Isolation of Exosome Nanoparticles from Human Cerebrospinal Fluid for Proteomic Analysis	ACS Applied Nano Materials	5.900	EXODUS应用-脑脊液蛋白质组学
16	Human umbilical cord mesenchymal stem cells inhibit liver fibrosis via the microRNA-148a-5p/SLIT3 axis	International Immunopharmacology	5.714	EXODUS应用-人脐带间充质干细胞通过microRNA-148a-5p/SLIT3轴抑制肝纤维化
17	Efficient preparation of high-purity and intact mesenchymal stem cell-derived extracellular vesicles	Analytical and Bioanalytical Chemistry	4.478	EXODUS应用-间充质干细胞来源的EV分离方法建立
18	Liquid Biopsy Proteomics in Ophthalmology	Journal of proteome research	5.370	眼科液体活检蛋白质组学综述, 含EXODUS方法学介绍
19	Recent technical advances to study metabolomics of extracellular vesicles	Microchemical Journal	5.304	外泌体代谢组学综述, 含EXODUS方法学介绍
20	Mesenchymal stem cell-derived extracellular vesicles for cell-free therapy of ocular diseases	Extracellular Vesicles and Circulating Nucleic Acids	/	干细胞外泌体应用综述, 含EXODUS方法学介绍





# EXODUS T-2800技术参数

样本体积范围	0.5-10 L
处理速度	1-2 L/h
浓缩比	≥100倍浓缩，浓缩比可调
外泌体回收体积	根据浓缩比可调
外泌体重悬体系	外泌体重悬于PBS缓冲液/生理盐水中，根据下游应用可选
蛋白去除效率	>99%
颗粒蛋白比	>5×10 <sup>8</sup> particles/μg protein
外泌体粒子浓度	>1×10 <sup>11-12</sup> particles/mL（根据样本类型和分离程序而定）
温度控制	样本位、缓冲液位、外泌体回收位，具备温控功能，温度范围2-8°C
屏幕显示	10.4英寸TFT触摸屏，实时显示样本类型、时间、提纯进程等信息 可独立使用，无需配备电脑
接口	1个电源接口，4个USB端口，1个网络端口
尺寸重量	主机尺寸（820 mm×500 mm×685 mm）； 含过滤器卡夹尺寸（1050 mm×500 mm×685 mm）；重量 ≤90 kg
使用环境	工作电压：AC 110 V-240 V，50/60 Hz 工作温度：10-30°C 工作湿度：30-85%，无凝露



## 深圳汇芯生物医疗科技有限公司

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产品规格如有变化，恕不另行通知，谨以最新技术资料及检验结果为准

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📍 深圳市龙华区观湖街道松元厦社区虎地排85号锦绣三期A栋1101-1114