Pioneering EV Therapeutics — Creating the Future of Medicine

EXORPHIA

A Novel Therapeutic for Lung Injury Using Mesenchymal Stem Cell–Derived Extracellular Vesicles (EXP01)

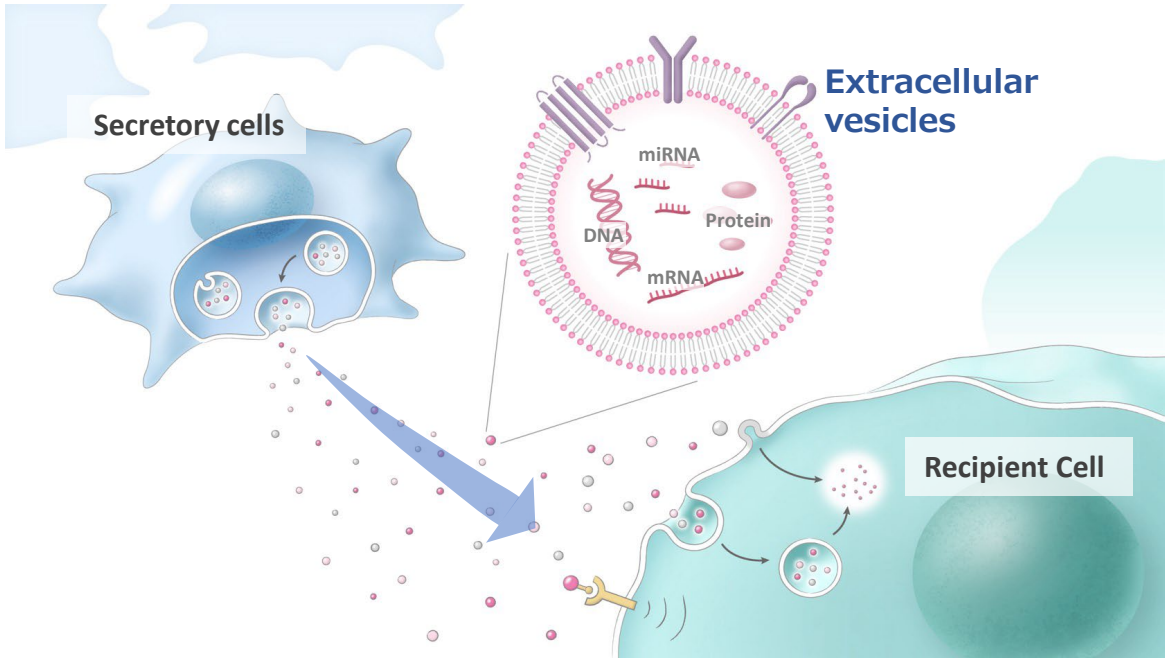
EXORPHIA, INC.

1. Company Overview

Japan's pioneer in EV drug discovery, advancing safe, high-quality biopharmaceuticals.

Mission: Create the future of medicine with advanced EV technologies.

EVs are natural carriers that deliver cellular components.

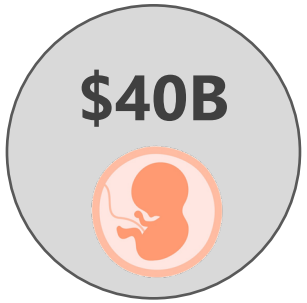


Founded	2019
HQ	Tokyo to date
Capital Raised	$12M
Major Shareholders	KII, D3 LLC Discovery Development Deployment, CORAL, ROHTO, 共立ホールディングス
Team	20 (R&D-centric)
University Partners	東京大学 THE UNIVERSITY OF TOKYO, Institute of SCIENCE TOKYO, 三重大学 MIE UNIVERSITY

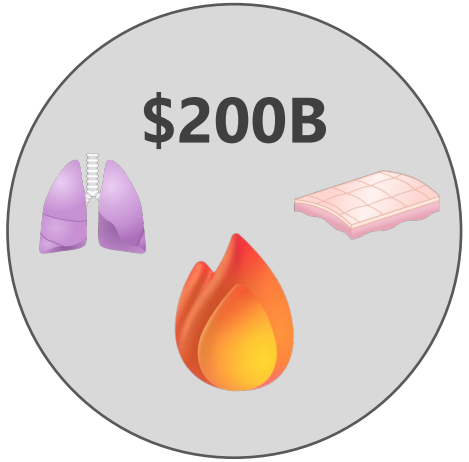
2. Market Opportunities

EVs address sizable needs in **infertility, inflammatory disease, and vaccines/DDS**.

ART (Infertility)*1

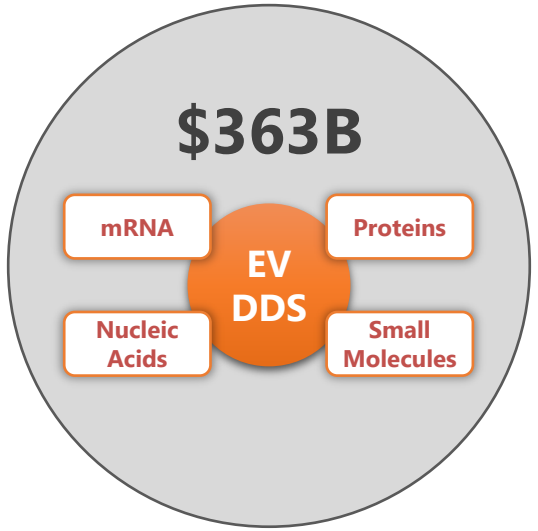


Inflammation /Fibrosis*2



Vaccines*3

Advanced DDS*4

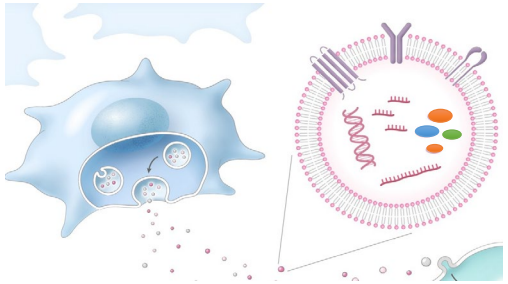


*1 Assisted Reproductive Technology Market Size & Share Analysis - Growth Trends & Forecasts (2025 - 2030), Mordor Intelligence Research & Advisory. (2025 , June).
* 2 Inflammation & fibrosis drugs (combined): Anti-inflammatory, USD 196.81 B by 2031 (Straits Research); PLUS Antifibrotic, USD 7.62 B by 2033 (Verified Market Reports)
* 3 Vaccine market: projected to reach approx. USD 100 B by 2030 (WHO estimate)
* 4 Advanced DDS: USD 362.77 B by 2030 (Mordor Intelligence, "Advanced Drug Delivery Systems Market Size & Share," June 2025)

3. Two Core EV-Based Technologies

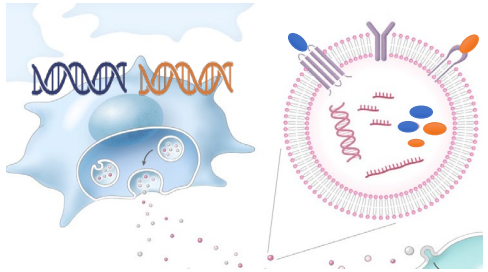
Prime-EV™

- ✓ **Highly purified** components derived from MSCs.
- ✓ Therapeutic **efficacy enhanced** by cell pre-conditioning technology.
- ✓ **Key components are established as QC markers.***[1]



Engineered EV

- ✓ **Cargo-loading technology** enabling efficient protein loading.*[2]
- ✓ Broad applicability to vaccines and DDS
- ✓ **Strong exclusivity** vs competitors, supported by granted patents in Japan and the U.S.*[3]



Advanced CMC

- ✓ High-accuracy potency prediction/consistency from >1,000 lots.
- ✓ ISO standardization contribution for medical EVs as a working-group member.

Enabling Development Across Multiple Applications

*1: WO/2024/242132、 *2: J Immunol (2017) 198 (12): 4707–4715.
*3: US12,209,115B2, US12,319,727B2, JP6786074

4. Pipeline Overview

Balanced portfolio: **Near-term revenue** (EXP02), clinical-ready **Prime-EV** (EXP01), and **first-in-class engineered EV** vaccine (EXP03).

Asset	Target Disease	Research	Preclinical	Clinical	Marketing	Note
Naïve **EXP02**: IVF Additive	Infertility			2026 Japan	**2028 Japan** 2029 Global	• Improves **high-grade blastocyst yield**; • **Japan-first**→global.
Naïve **EXP01**: Anti-inflammatory /Antifibrotic	Pulmonary (IPF/ARDS)					• Balanced efficacy and safety to overcome current therapy gaps.
	Dermatology (AD)					• Topical—**inflammation control + barrier rebuild**.
Engineered **EXP03**: Engineered EV Vaccine	Respiratory Infectious Diseases					• **Intranasal multivalent vaccine.** • Engineered EV Lead Program.
Engineered **Indication Expansion**	①EV-based cancer vaccine. ②Nucleic-acid delivery EVs with enhanced CNS penetration. ③Immune-tolerance–inducing EVs for autoimmune diseases (preliminary data in hand).					

5. EXP01-Pulmonary (ARDS/IPF)

Naïve

疾患修飾薬としての高付加価値を狙う**抗炎症・抗線維化**EV薬。ARDSは**FDA Pre-INDクリア**

製　品：活性強化型MSC-EV。抗炎症・抗線維化・免疫調節の複合作用を有する

ポジショニング：既存薬の課題である有効性と安全性のバランスを兼ね備えた薬剤。

非臨床PoC：

- ✓ IPF: 治療的投与で線維化を有意に改善。**承認用量20倍ニンテダニブを凌駕。**
- ✓ ARDS: 単回投与でBALF白血球数を半減。**承認用量30倍ステロイドと同等。**

安全性：反復投与毒性試験で安全性を確認。

MoA：miR-4516による肺線維症抑制メカニズムを解明し、論文掲載。

知財・差別化：細胞プレコンディショニングで**活性Cargo強化。抗線維化miRNAを**

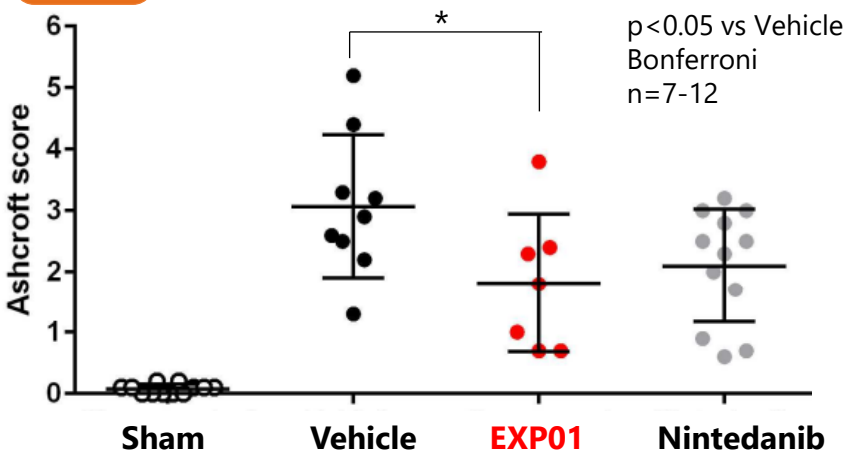
QCマーカー化（物質特許出願済*1）。

開発計画：　Pre-INDで**前臨床計画の妥当性を確認済(ARDS)。**

2027 P1/2a、PoC取得

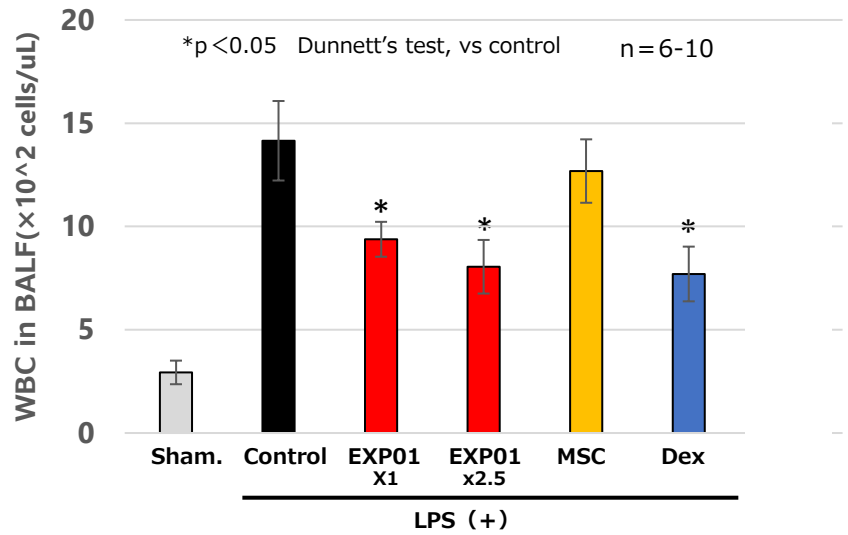
IPF

Fibrosis score (Ashcroft score)



ARDS

WBC counts in BALF 24 h after LPS stimulation



*1: WO/2024/242132

5. EXP01-Pulmonary (ARDS/IPF)

Naïve

Disease-Modifying MSC-EV Therapy with Dual Anti-Inflammatory / Anti-Fibrotic Action

Prime-EV candidate positioned for first-in-class potential

Modality : MSC-derived EVs; immunomodulatory, disease-modifying intent.

PoC (in vivo) :

- ✓ IPF: ↓ fibrosis (Ashcroft); > Nintedanib at 20× approved dose.
- ✓ ARDS: single dose ~50% ↓ BALF leukocytes; ≈ steroid at 30× approved dose.

Safety : Repeat-dose tox to date **favorable**.

MoA : miR-4516–driven anti-fibrotic pathway **(published).**

IP & Differentiation : Preconditioning enriches active cargo; **miR-4516 as QC marker**; **composition patent filed***1

Development Plan : FDA pre-IND supports ARDS nonclinical plan; **Ph1/2a PoC target: 2027.**

*1: WO/2024/242132

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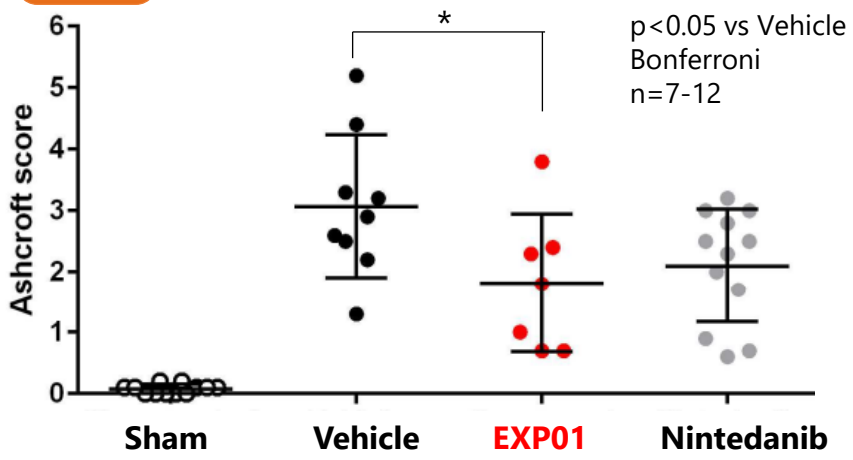

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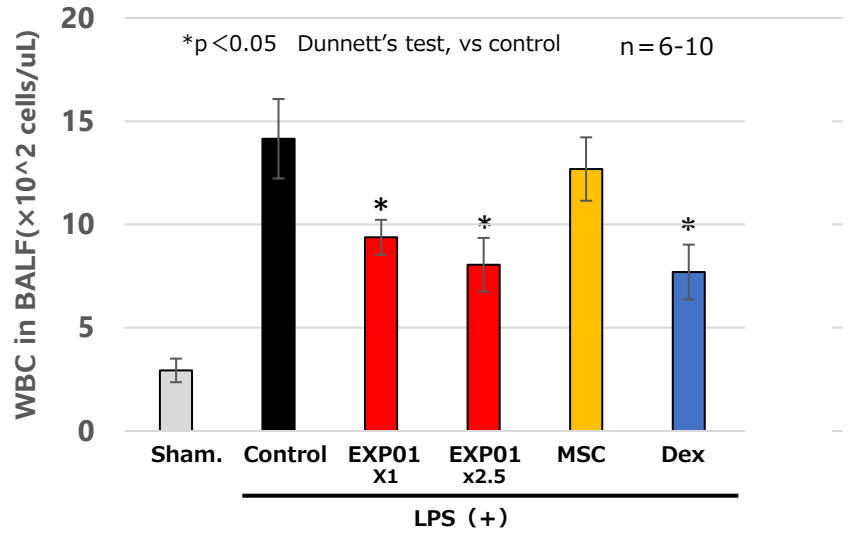

6. Our team with diverse expertise essential for drug discovery

CEO, Founder
Koji Kuchiishi

"extensive bio-venture management experience and global contacts"

McKinsey & Company · CYFUSE · REPROCELL

Head of Drug Discovery, Cofounder
Izumi Kaneko, PhD

"extensive experience in drug discovery"

FUJIFILM · MSD · janssen

Head of Business Development
Junichi IMOTO, PhD MBA

"strengths in business development leveraging drug discovery research experience"

FUJIFILM

Head of CMC Development
Kenichi TAMURA, MBA

"an expert in stem cell and designer cell development with 10+ years in R&D and regulatory development."

REPROCELL · 国立研究開発法人 国立成育医療研究センター National Center for Child Health and Development

Head of Clinical Development
Chikako YAMAUCHI, PhD

"with over 15 years of experience in clinical development at a global pharma company"

parexel · genzyme A SANOFI COMPANY

EV engineering, Pharmacology
T. Yonekura Ph.D.

"strengths in molecular biology and drug discovery research."

TAIHO 大鵬薬品 · janssen

Closing

- **EVs** to tackle **infertility, inflammatory disease, and infectious disease.**
- **Near-term revenue:** consumables (EXP02).

  Long-term growth: out-licensing & DDS tech licensing.