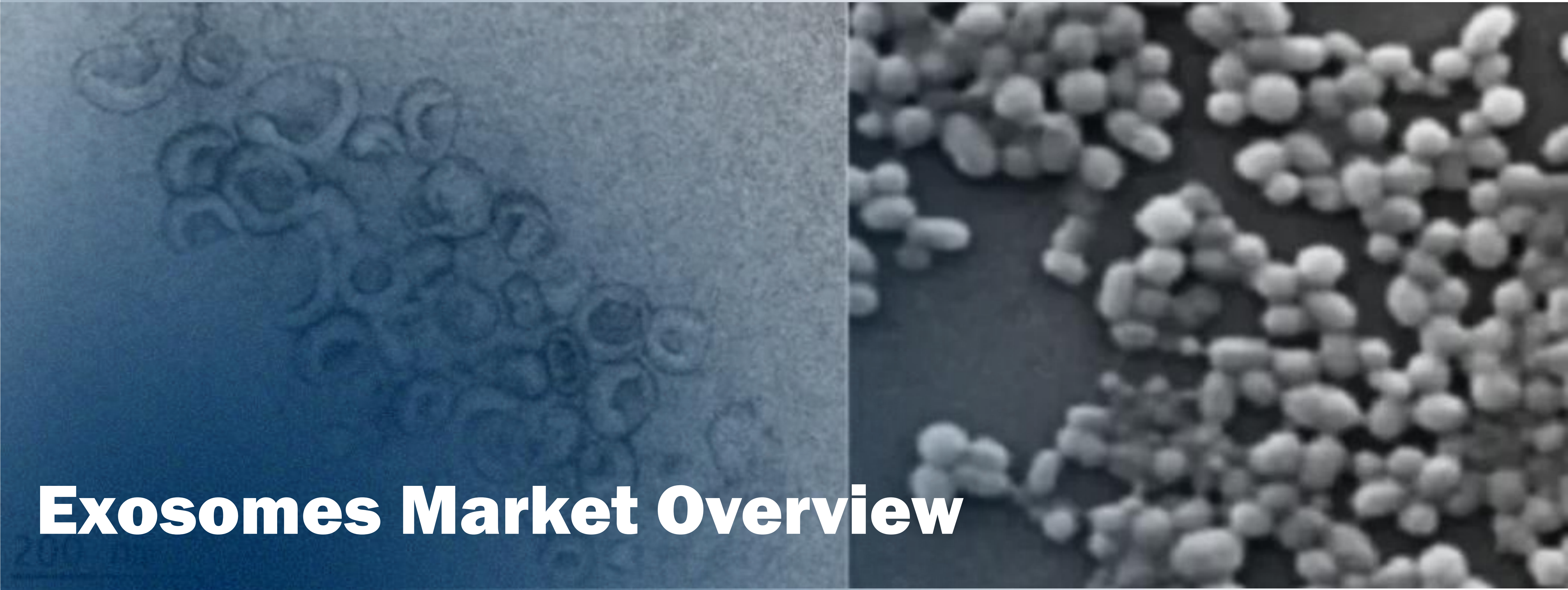


Exosomes Market Overview

Feb 2025

Disclaimer and Scope of Analyzed Sources

This document represents estimates as of March 2024 is based on WINDOME BANKING PARTNERS SAS's intelligence leveraging a number of independent sources:

1/ The Mordor Intelligence Report on the Exosomes market(2022-2030), with information some on the number of fillers and aesthetic procedures, performance and market shares of key players for main regions and aesthetic country markets

2/ The Worldwide Market Report by GlobalData on the exosomes Market by Segment, country and competitors with market share indications

3/ WINDOME BANKING PARTNERS SAS's presentation held at the IMCAS Webinar on Jan 27th, 2023 on the Challenges and Repercussions of COVID-19

4/ DRG QIV 2020 update including revised volume and value projections (2020-24) for HA and non-HA Dermal Filler and Toxin Injectables, Breast Implants and EBD segments and Dermocosmeceuticals, as well as by key regions

5/ Discussions with Leading Sector Executives, IMCAS Academy Webinars and Science Masterclass Teaching Courses, Business Insider Intelligence, Frost & Sullivan and KOLs or advisers of Regulatory Agencies and SmartTrak for the PRP market as well as other online sources;

6/ Updates based on information obtained as part of Mr. Coste's membership in the IMCAS Faculty (International Mastercourse of Anti-Ageing Science)

7/ Pengzhao Application of Exosomes in Medical Field, 2023. DOI: 10.12677/ACM.2023.132185

8/ Kalluri R, LeBleu V S. The biology, function, and biomedical applications of exosomes[J]. Science, 2020, 367(6478).

9/ Xu M, Ji J, Jin D, et al. The biogenesis and secretion of exosomes and multivesicular bodies (MVBs): Intercellular shuttles and implications in human diseases. Genes Dis. 2023;10(5):1894-1907.

10/ Exosomes Market Size, Share & Trends Analysis Report By Product (Kits & Reagents, Services), By Application (Cancer, CVD), By Workflow (Isolation Methods, Downstream Analysis), By End-use, And Segment Forecasts, 2023 - 2030

The situation surrounding COVID-19 is dynamic and rapidly evolving, on a daily basis. Although we have taken great care prior to producing this presentation, it represents WINDOME BANKING PARTNERS SAS 's view at a particular point in time.

We cautiously advise our customers to make their own assessment as to the appropriate course of action to take, use this presentation as guidance. Please carefully consider local regulatory and guidance relevant for your area of operation, particularly the most recent advice issued by your local (and national) health authorities, before making any decision.

Table of contents

The page number as the official version

Section I

Introduction

Glossary Of Selected Key Terminology

- **Multivesicular body (MVB) :** Multivesicular bodies (MVBs) are a special kind of late endosomes, crucial intermediates in the internalization of nutrients, ligands and receptors through the endolysosomal system.
- **MiRNA** : MicroRNA (miRNA) are noncoding RNAs ranging from 18 to 20 nucleotides that regulate diverse cellular processes ranging from apoptosis, proliferation, and differentiation to metastasis.
- **KRAS:** KRAS is one of the oncogenic proteins and best well-known GTPase proteins. Although KRAS serves as regulation of cellular process, abnormal mutated and GTP-bound KRAS is highly expressed in human cancers.
- **miRNA-100:** MicroRNA-100 functions as a tumor suppressor by inhibiting Lgr5 expression in colon cancer cells. miR100 is required to direct cancer stem-like cells (CSC) self-renewal and differentiation.
- **miR-21:** microRNA 21 also known as hsa-mir-21 or miRNA21 is a mammalian microRNA that is encoded by the MIR21 gene. MIRN21 was one of the first mammalian microRNAs identified. The mature miR-21 sequence is strongly conserved throughout evolution.
- **miR-155:** miR-155 is a microRNA that in humans is encoded by the MIR155 host gene or MIR155HG. MiR-155 plays a role in various physiological and pathological processes.
- **The miR-17-92 cluster:** The miR-17-92 cluster participates in the development of diverse diseases by regulating the common target gene, contributing to neurological plasticity, functional recovery, and development of tumors via activation of the PI3K/AKT (protein kinase B)/mTOR (mammalian target of rapamycin) PI3K/AKT/mTOR pathway by downregulation of the phosphatase and tensin homolog (PTEN).
- **miR-34a:** MiR-34a is a significant tumor suppressor that plays a considerable role in inhibiting oncogenesis and tumor progression.
- **cGAS-STING:** The cGAS–STING pathway is a component of the innate immune system that functions to detect the presence of cytosolic DNA and, in response, trigger expression of inflammatory genes that can lead to senescence or to the activation of defense mechanisms.

Purpose of the Report and Methodology

- **Purpose**

This report aims to provide comprehensive insights into the global exosomes market, especially in healthcare and aesthetics, assessing its current status, growth potential, and future trends. Exosomes, a pivotal structural protein found in the connective tissues of animals, has witnessed escalating demand across various industries such as healthcare, pharmaceuticals, cosmetics, and food and beverages. The multifaceted applications of exosomes, ranging from medical products to beauty enhancers, have driven its market to evolve continuously, adapting to varying consumer needs and technological advancements.

The primary purpose of this study is to furnish stakeholders, including industry leaders, investors, and policymakers, with an in-depth analysis of the exosomes market. It seeks to uncover the driving forces behind the market's expansion, understand the challenges and constraints faced by the sector, and identify the opportunities for future growth. By evaluating market dynamics, consumer behavior, and competitive strategies, the report intends to aid in strategic decision-making, external growth strategies and offer forecasts that help in planning long-term growth strategies in the exosomes industry.

- **Methodology**

The methodology of this report encompasses a combination of primary and secondary research to ensure comprehensive and accurate results. The approach is outlined as follows:

- **Primary Databasis:** We have consolidated and analysed 10 years of data collected through diverse market presentations and active contributions to congresses. This also includes interviews carried out with industry experts over the years, including CEOs, marketing managers from leading collagen-producing firms and medical as well as academic KOLs from the industry. Insights from these interactions provided a real-time understanding of market dynamics and expert opinions on future trends.
- **Secondary Research:** An extensive complementary review of existing literature was conducted. This included analyzing industry reports, scholarly articles, company annual reports, and market analysis publications to gather historical data and understand the current trends. Secondary research helped in identifying the market segmentation and key players, forming a solid foundation for the report.
- **Quantitative and Qualitative Analysis:** Both quantitative data (market size, growth rates, and revenue forecasts) and qualitative insights (market trends, growth drivers, and challenges) were analyzed.
- **Market Forecasting:** Using time-series analysis, regression models between various sources of data and market forecasting techniques, the report predicts future market trends. This section provides stakeholders with expected market developments and potential investment opportunities.

The methodology adopted in this study ensures that the report provides a holistic, comprehensive, balanced and consensual view of the global skincare market, supported by reliable data and scientifically substantiated expert opinions, facilitating strategic decision-making for stakeholders involved.

Executive Summary of Key Findings

Total exosomes market size 2022	Total exosomes market size 2030	Total Collagen market CAGR2022-2030	North America 2022 Market share	No of Companies in exosomes
$410M	**$2.9bn**	**27.9%**	[redacted]	**50+**

Market segmentation

- Global **exosomes diagnostics** reaches **$240M** in 2022
- Global **exosomes Therapeutics** reaches **$170M** in 2022

Geographical distribution

- **North America** takes dominant share in 2022 market Revenue share of [redacted]**,** followed by EU, and APAC, with the highest CAGR due to government grant and private and public investment

Key opportunities

- Broadening Applications in Diagnostics and Therapeutics
- Partnerships and Collaborations

Growing trends

- Expanding Applications in Healthcare with a predominant focus on Oncology, Anti-Ageing, Dermatology and Ophthalmology
- The hottest new antiaging skin rejuvenating cosmeceutical to re-activate inactive skin cells to repair, refirm, retexturize, revascularize and rejuvenate skin
- Study of its impact on the dermal-epidermal juncture

Technology development and application

- Harnessing the power of exosomes by developing some new forms of "clean-beauty" exosomes derived from plant extracts
- Scaling up the production of fully sterile exosomes by leveraging synthetic exosome recombinant technologies

Key Challenges

- Uncontrolled acceleration of cell proliferation may expose to carcinogenic or viral side-effects
- High yields of pure exosomes are difficult
- No harmonized normative technical standards

Section II

Global Exosomes Market

MARKET OVERVIEW OF EXOSOMES

Global market of Exosomes

$410M in 2022

$2.9bn in 2030

+27.9%
CAGR 2022-2030

North America
Largest market share by the end of 2022

- The market of Exosomes for diagnostic and therapeutic applications is expected to **grow from $410M in 2022 to $2.9bn in 2030.**
- By product, **the Kits & Reagents segment** generated **the largest revenue share of [redacted] in 2022.**
- By application, the **cancer segment** was dominant in the market, with the largest market revenue share of [redacted] **in 2022.**
- By end-user, **the pharmaceutical & biotechnology companies were the most frequent segments resorting to exosome applications in the market, with the largest market revenue share of [redacted] in 2022.**

[redacted] Articles pertaining to exosomes research in PubMed

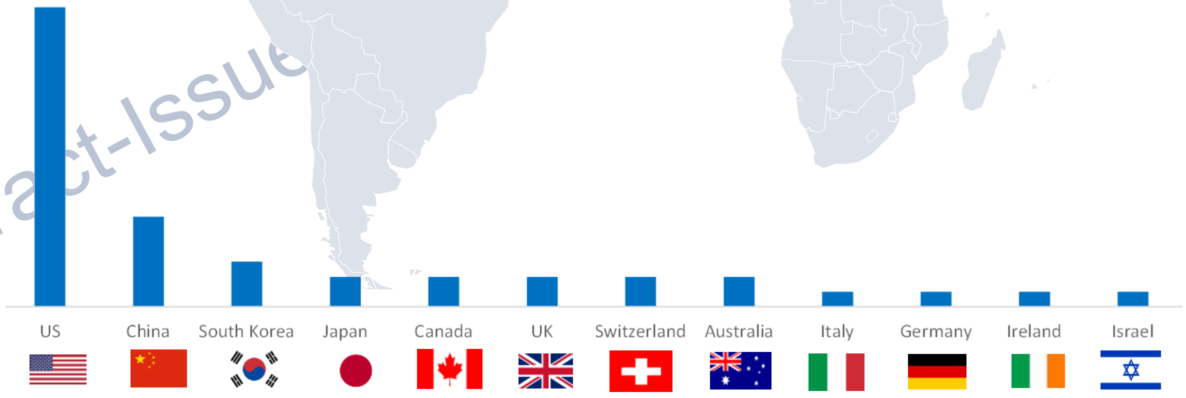
[redacted] Numbers of companies in exosomes

[redacted]

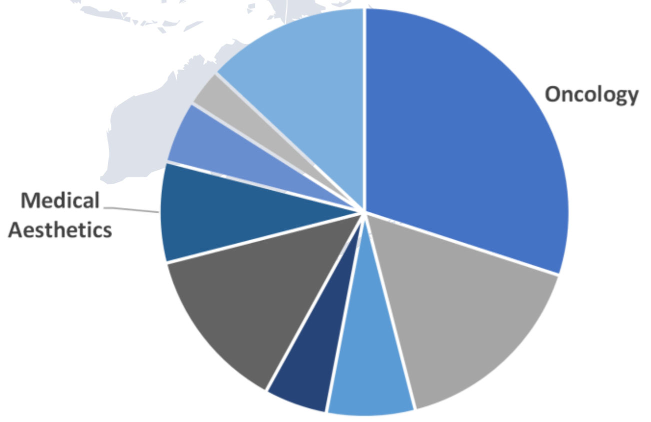
[redacted] Exosomes Therapeutics

58.5% Exosomes Diagnostics

Companies Focusing on Exosomes by Geography by the end of 2023



Breakdown of Exosomes Deployment in Medicine in 2022



Sources: Global newswire: Exosomes research Market

EXOSOMES AT A GLANCE (1/2)

Origins and Discovery

- **Exosomes are membrane-bound extracellular vesicles** (EVs) that are produced in the endosomal compartment of **most eukaryotic cells like lymphocytes, platelets, mast cells, dendritic cells, stem cells, astrocytes**; They are formed through the inward budding of a late endosome, also known as a multivesicular body (MVB)
- Exosomes are naturally found in body fluids, including blood, saliva, urine and breast milk, and exosomes are membranous vesicles secreted by living cells that originate from late intranuclear bodies (also called polycystic vesicles).
- Discovered 30 years ago by research group of Prof. Rose M. Johnstone, Head of McGill University’s Biochemistry Dept at in sheep erythrocyte supernatants cultured in vitro
- Early studies suggested that the exosome performs protein transport functions, specifically targeting receptor cells, exchanging proteins and lipids or triggering downstream signaling events. It was not until 2007 that researchers discovered that the exosome also transports nucleic acids and is involved in intercellular communication. In conclusion, its protein, RNA and lipid components are specific and carry a number of important signaling molecules that are expected to play a role in the early diagnosis of a variety of diseases, making the market for exosomes also expanding rapidly and becoming a popular subject of research. Different tissue cell sources of exosomes are capable of performing different biological functions due to the different proteins they carry. For example, tumor cell-derived exosome can mediate vascular regeneration tumor cell proliferation and immune escape, while dendritic cell-derived exosome can elicit an effective anti-tumor immune response in the body.

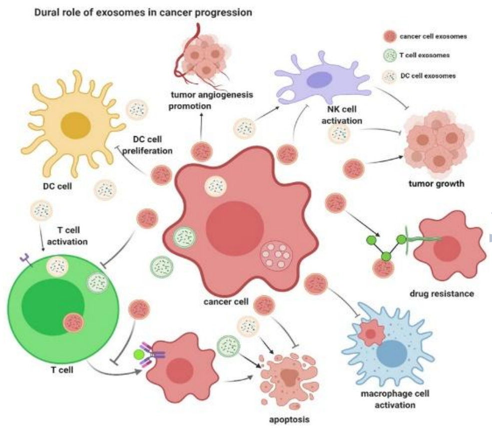


Fig. 1

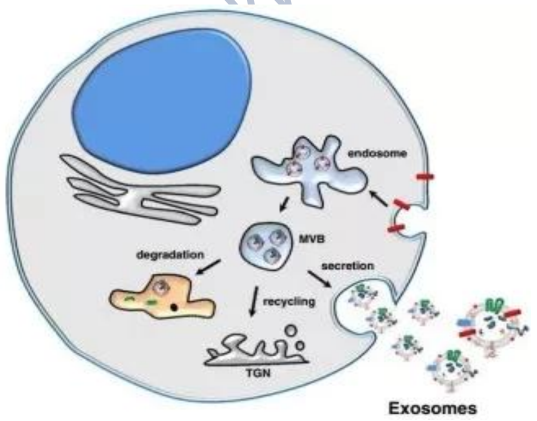


Fig. 2

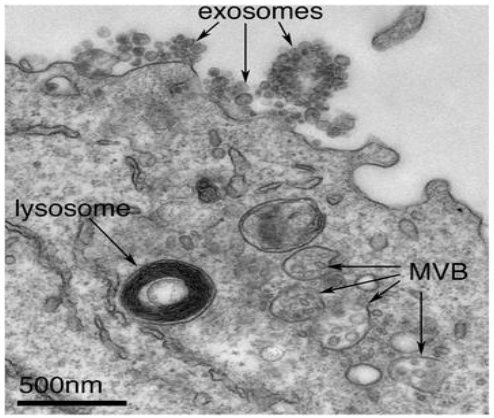


Fig. 3

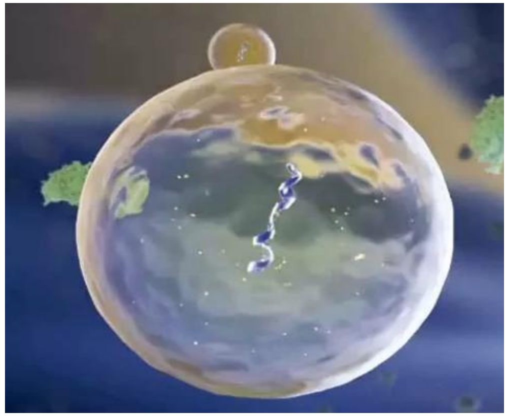


Fig. 4

Notes: CAGR: Compound Annual Growth Rate / average growth rate per year.
Sources: Grand View Research, precedenceresearch, Mordor Intelligence

EXOSOMES AT A GLANCE (2/2)

Exosomes Have More Regenerative Potential Than Platelet Rich Plasma Or Any Other Ingredients

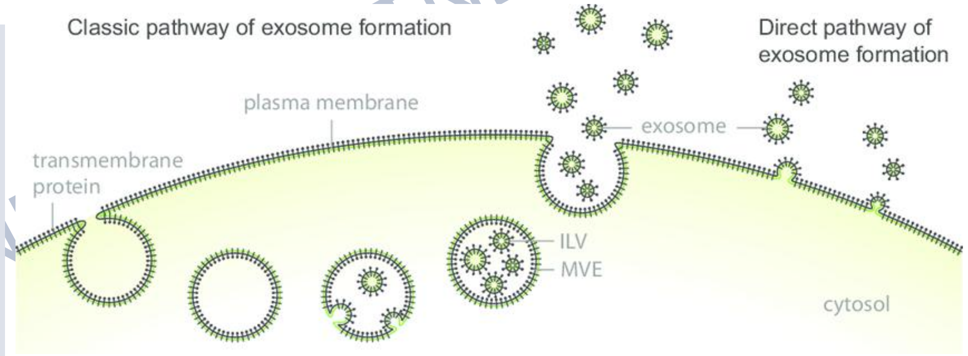
- Exosomes serve as vehicles for transporting and expelling cellular components. Exosomes perform the same functions as their parent cell. In addition, they are used for cellular communication by transferring RNA messengers and microRNAs5 and can for example play a role in cellular immunity, such as for the release of MHC II6

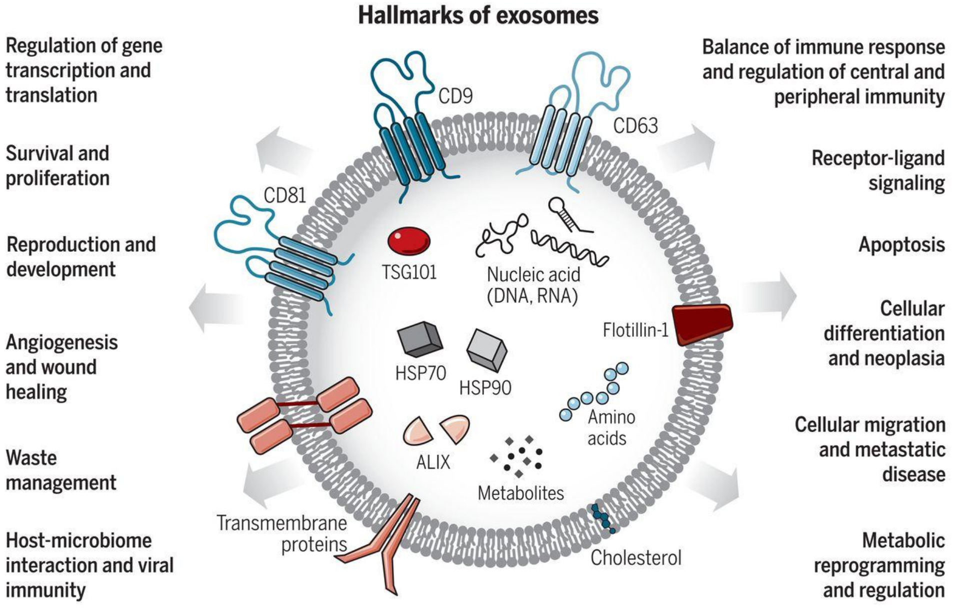
- Exosomes are the latest new antiaging skin rejuvenating cosmeceutical that help re-activate inactive skin cells to repair, strengthen and rejuvenate the skin leading to rehydrated, revascularized, plumper, firmer, brighter and smoother skin. The body's natural ageing process leads to lower exosome production hence lines, wrinkles and sagging skin.

- Exosomes are 30-100mn large bioactive substances known for their functions in intercellular communication. They contain mRNA, miRNA, cytokines, growth factors and lipids. Keratinocytes and fibroblasts secrete exosomes that activate stem cells which migrate to the injury site and rejuvenate the skin.

- Exosomes increase collagen and elastin production, and decrease pigment production while improving wound healing and mitigating cellular inflammation and senescence via reoxygenation of tissues eg promoting tissular regeneration and foster the solidification of the dermal-epidermal junction, eg the deep dermis structural cohesivity . Results take between two-six weeks to become visible and exosomes remain active six-eight weeks after treatment. They can also be used to help reduce symptoms psoriasis and atopic dermatitis.

- Exosomes are typically derived from fat cells, the umbilical cord, placenta and platelets. The latter being the best source for skin rejuvenation because platelets play a critical role in would healing, and collagen creation.





OVERVIEW OF EXOSOME PLAYERS

EXOSOMES DIAGNOSTIC

AVALON GLOBOCARE CORP. · BioFluidica · Exosome Sciences · NanoSomiX · Biological Dynamics · CREATIVE MEDICAL TECHNOLOGY HOLDINGS, INC. · DIRECT BIOLOGICS · 润基生物 RENGEN BIOSCIENCES · exosomics · sienna CANCER DIAGNOSTICS · exosomedx · EXOSOMEplus · CRAIF · CLARA BIOTECH · 贝格尔生物医药 Beagle BioTech · NANOSTICS PRECISION HEALTH · MURSLA bio · NanoView BIOSCIENCES · Theoria Science · Oasis DIAGNOSTICS RESEARCH LAB · INOVIQ · FOx BIOSYSTEMS

EXOSOMES THERAPEUTICS

Oncology

Theoria Science · EVERZOM · BioFluidica

[redacted]

Brain Disease

ReNeuron · ARUNA BIO · NanoSomiX

[redacted]

Respiratory

OmniSpirant THERAPEUTICS

[redacted]

Hepatology

TAVEC PHARMA

[redacted]

Vaccination

Capricor Therapeutics

[redacted]

Medical Aesthetics

ExoCoBio

[redacted]

Dermatology

REGEN SUPPLIERS · kimera EXOSOMES

[redacted]

Gene therapy

OmniSpirant THERAPEUTICS · vivazome

[redacted]

Inflammatory

evora BIOSCIENCES

Sources: Grand View Research, VBDATA

Section III

OVERVIEW OF THE PARENT MARKET OF EXOSOMES: THE SECRETOME

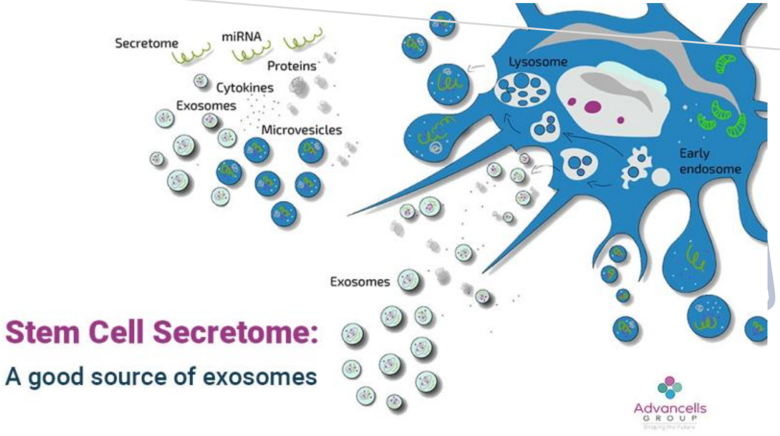
A conservative estimate for the global secretome market in 2025 would be around [redacted], growing to [redacted] by 2033

REGENERATIVE MEDICINE $50BN

SECRETOME

REGENERATIVE MEDICINE MARKET (BROAD SCOPE)

- **2023 Value**: ~$50 billion
- **2030 Projection**: ~$150-200 billion
- Secretome-based products (including exosomes and growth factors) are expected to claim a small but growing share.



MSC

SECRETOME

$3BN

MESENCHYMAL STEM CELLS (MSC) MARKET *(Which Includes Secretome Applications)*

- **2023 Value**: ~[redacted]
- **2032 Projection**: [redacted])
- Secretome-based therapies (exosome-rich MSC therapies) are a growing subset of this.
- **Global Market (Estimated)**: Likely **$500M+** in 2025, reaching [redacted]

SECRETOME

EXOSOME

$2BN

A conservative estimate for the global secretome market in 2025 would be around **$1.5 - 2.5 billion**, growing to **$10 - 15 billion by 2033**, assuming accelerated adoption in regenerative medicine, drug delivery, and immunotherapy.

EXOSOME MARKET (SUBSET OF SECRETOME)

- **U.S. Market (2025)**: [redacted]
- **U.S. Market Projection (2033)**: [redacted]: 11.6%)
- Given that **exosomes are a subset of secretome-based products**, and exosome therapies are expected to reach **$4-5 billion globally by 2033**, the **broader secretome market** should be significantly larger.

Section IV

Competitive Landscape

Section IV-1
Transaction History

EXOSOME MAIN TRANSACTIONS

Announcement date	Deal Size	Target	Bidder	Introduction
April 9, 2024	**n.a.**	ARCHIMED	cellese	Partnering with ARCHIMED provides the strategic resources needed to further accelerate Cellese's science-based cutting-edge in regenerative skincare at the forefront of harnessing the biological intracellular information cascade to accelerate the stimulation of fibroblasts, regeneration of collagen and foster skin-longevity treatments
[redacted]				

Sources: Grand View Research, VBDATA, MergeMarket

Section IV-2

Company Profiles

kimera EXOSOMES

Profile of Kimera Labs

April, 2024

Kimera Labs Inc

Miramar, FL, USA

Company Overview

Public / Private Private
2022 Sales / EBITDA: $8.7m / N.A.
Employees: 34

- Founded in **2012** by **Duncan Ross** (a Ph.D. in Immunology under Professor Robert Levy Laboratory, University of Miami), **Kimera Labs** is a leading exosome biotechnology laboratory specializing in the formulation, fine-tuning, scale-up and production of perinatal mesenchymal stem cell-derived (MSC) exosome products for scientific and clinical research.
- **[Business and products]** Kimera Labs has been the leader in the field of MSC exosome production and isolation. Unlike biologic tissue laboratories that manufacture exosome products by direct processing of donor tissues such as adult bone marrow or placenta, Kimera Labs produces MSC exosomes from isolated mesenchymal stem cells cultures using chemically defined media, which contains no animal or human serum, following regulations laid out by the FDA. Kimera produces the highest-purity MSC exosomes at scale to enable clinical development of novel, exosome-based, therapeutic modalities. By harvesting, isolating and purifying the developmental message contained within exosomes produced by perinatal mesenchymal stem cells, Kimera believes that it is possible to stimulate the proliferation of fibroblasts, neocollagenesis and keratinocytes and tissue regeneration that can benefit patients of any age.
- **[Production Sites]** Purified nanovesicles are produced in a 28,000 sq ft facility in Miami, Florida.
- **[Quality Certifications]** Kimera Laboratories operates in two adjacent state-of-the-art facilities equipped with ISO 5 enclosures and Class 7 clean rooms.
- **[Production Registration]** In May 2023, Kimera® Labs received FDA Phase I/IIa IND Approval For Its MSC Exosomes Human Study.

Company Overview

- **[Business Partner]** In April 2020, Temperature-controlled container solutions provider CSafe Global has agreed to support exosome biotechnology laboratory Kimera Labs.
- **[Management Team] Duncan Ross**, Ph.D, CEO/Founder; **Lisa Ross McMillion**, Co-CEO/CFO; **Analey S.**, Head of Manufacturing
- **[R&D]** Kimera Labs currently utilizes multi-modality exosome characterization technologies such as ELISA protein analysis, high pressure liquid chromatography, RNA sequencing and NanoSight Nano Tracking Analysis, atomic force microscopy, electron microscopy and STORM super resolution fluorescence microscopy. These technologies are now being used to develop the next generation of diagnostic modalities

Recent News

- **May 2023:** Kimera® Labs Inc., **announces the FDA IND (Investigational New Drug) approval of its exosomes in a Phase I/IIa clinical trial.** The trial will assess the safety and efficacy of a single intravenous dose of an isolated, proprietary placental cell line derived, mesenchymal stem extracellular vesicles for the treatment of COVID-19 symptoms in adults with mild to moderate illness.
- **Oct 2022:** Kimera Labs **is opening the 27,000 sq ft lab in Miami** Florida to external exosome characterization.
- **Oct 2022:** The CEO of Kimera Labs, **Duncan Ross, spoke at the 8th annual perinatal stem cell conference** in Fort Lauderdale Florida wherein Duncan will include all of our FDA interactions over the last two years regarding our initial IND for the use of verified exosomes in the treatment of human disease.
- **Aug 2022:** The CEO of Kimera Labs, **Duncan Ross, announces the first research/academic exosome conference**, to occur September 16 and 17h at the Royal Palm Hotel in Miami Beach Florida. Duncan presents the attempt to remedy the situation and advance exosome science

Sources: Company publications, Capital IQ

Kimera Labs Inc

Miramar, FL, USA

Facility, Equipment and Technology

Nano Tracking Analysis (NTA) and Dynamic Light Scattering (DLS) analysis

- NTA and DLS are both techniques utilized in the Research and Development (R&D) and Quality Control (QC) laboratories for the analysis and characterization of nanoparticles in solution. NTA analysis is performed using a Malvern Panalytical NanoSight NS300 instrument, while the DLS analysis is performed using the DynaPro® NanoStar® instrument. Both instruments accurately measure the size distribution and concentration of all types of nanoparticles; however, the DynaPro® NanoStar® can differentiate between particle families, and can also be used for proteins, quantum dots, liposomes, metallic nanoparticles, and other types of particle analysis.

D-Storm Microscope

- This state-of-the-art super-resolution microscope can capture images of a single extracellular vesicle (EV) in solution. Both, MSCs used in the manufacturing process as well as exosomes manufactured at Kimera Labs are characterized by different means, and nothing captures better multi-color 3D images at 100x resolution than our ONI super-resolution microscope.

ImageXpress Pico Automated Cell Imaging System

- The Pico is a cell imaging system used at Kimera Labs for cell characterization, as well as for potency assay testing analysis. Whether running fluorescence imaging or brightfield assays, the automated imager has preconfigured protocols that can be used for the development of cell-based assays, which have proven extremely helpful for R&D studies.

Sources: Company publications, Capital IQ

Kimera Labs Inc

Miramar, FL, USA

Products

- Luxiris a topical solution specially developed for skin care purposes. The product contains proteins, enzymes, growth factors, and exosomes derived from mesenchymal stem cells (MSCs).
- The MSC cell bank utilized in our manufacturing process is meticulously isolated from a single donated pre-COVID human placenta, following strict regulatory guidelines.
- Luxir is unique. Based on its unmatched RNA content, the potency of our formula creates outcomes unseen by others. When combined with complementary treatments, the results are superior.

- Kimera's Equisome HC® is a revolutionary topical treatment that includes stem cell derived exosomes, growth factors, and a variety of other proprietary ingredients, especially used for the treatment of skin sagging and laxity in the sensitive periorbital zone.
- Equisome HC® is best used as soon as the granulation tissue covers any bone or tendons. Equisome HC® should be administered after the wound is sprayed with water for 3 to 5 minutes to remove any dirt or debris and to aid in the removal of dead tissue. Bandaging is not required as long as there is a layer of granulation tissue covering bones and tendons.
- Equine veterinarians throughout the country that have topically treated horses with Kimera's Equisome HC® have found the ease of application and improved tissue appearance.

- Used as a topical solution in conjunction with cosmetic-enhancing technologies, Vive may help by maintaining the skin's vitality. Each vial of Vive (5ml) contains several billion exosomes that may help maintain skin texture and create a glowing look.
- A cell-free topical cosmetic product with the ultimate combination of proteins, enzymes, growth factors, and exosomes derived from mesenchymal stem cells (MSCs), along with Hyaluronic Acid, 16 Amino Acids, Vitamin C, Rose Water, plus Trehalose.

Sources: Company publications, Capital IQ

Section V

Market Dynamics

Section V-1

Transaction Profiles

Section V-1.3

Archimed Acquisition of Cellese (AnteAge MD)

Archimed Acquisition of Cellese (AnteAge MD)

Deal details

- **Announcement date**: 9th of April 2024
- **Closing date**: 9th of April 2024
- **EV/Sales – EV/EBITDA**: Undisclosed

- **Bidder**: Archimed (Lyon, France)
- **Target**: Cellese.(Irvine, California）

- **Deal structure**: Undisclosed
- **Deal type**: Majority Stake Acquisition
- **Premium**: Undisclsoed

Deal Description

- Global private equity healthcare specialist ARCHIMED announces the acquisition of a majority stake in Cellese, a developer of innovative topical dermo cosmetics sold under the AnteAGE brand name.
- Partnering with ARCHIMED provides the strategic resources needed to further accelerate Cellese's science-based cutting-edge in regenerative skincare at the forefront of harnessing the biological intracellular information cascade to accelerate the stimulation of fibroblasts, regeneration of collagen and foster skin-longevity treatments.
- Cellese revenues, based on global sales in 45 countries, have grown 70 percent annually since 2020. Cellese is the sixth investment of ARCHIMED's MED III fund, which closed on €650 million in 2021 and is now one-third invested. Although just a bit more than two years old, MED III is already valued at 1.1 times the value of its paid-in capital. MED III targets small cap healthcare companies, partnering with families, founders and management teams.

- ***"Cellese is at the most advanced stage in terms of commercialization of non-invasive, science-based skincare treatment"***said ean-Yves Desmottes, ARCHIMED partner

- ***"We'll use our financial firepower, our industry knowledge and our global connections to ensure that Cellese significantly wens its pole position in what is already an explosively growing market for exosome-based skin health treatments."*** said Igor Petricca, ARCHIMED partner

- ***"We had numerous parties eager to invest in Cellese, from strategics to private equity firms, but we went with ARCHIMED. ARCHIMED understood the potential of a complex and underexploited market and they were committed to supporting our vision"*** said Ian Sanderson, Cellese CEO and co-founder BELLUS

Sources: *Company publications,*

Archimed Acquisition of Cellese (AnteAge MD)

Target Overview

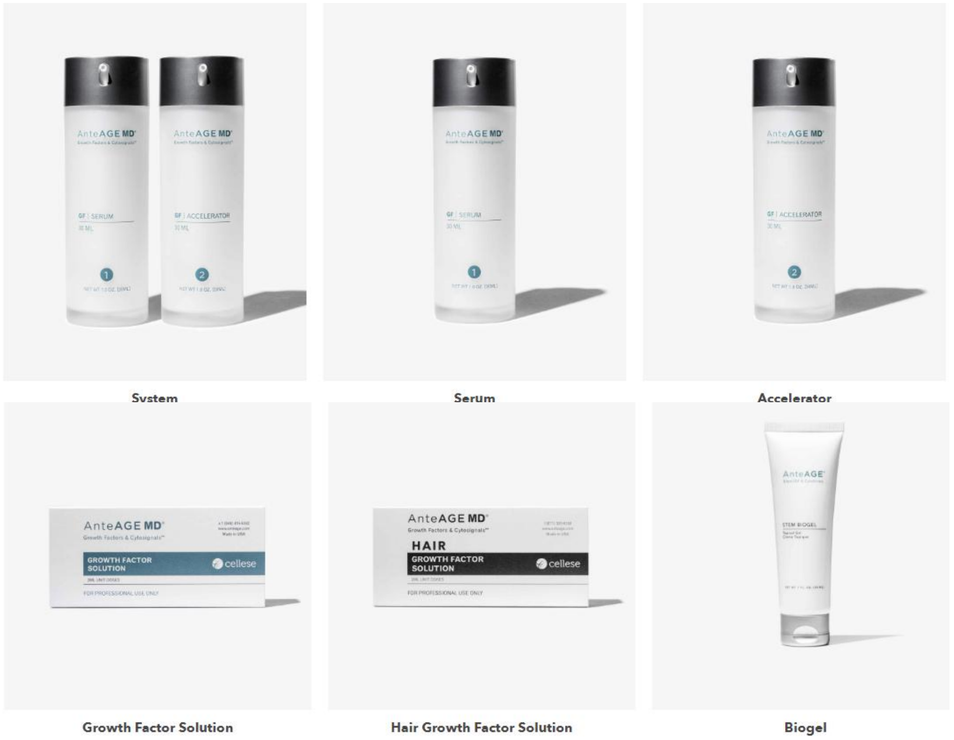
cellese
regenerative therapeutics

AnteAGE MD®
Growth Factors & Cytosignals™

TRUSTED BY
1,500+
PROVIDERS

IN
35
COUNTRIES

- Cellese products are distributed and sold through dermatologists' offices and aesthetic clinics. They are applied when patients receive radio frequency, laser and microneedling treatments, or at home to promote skin longevity. Cellese has recently launched a range of products utilizing exosome technology. Exosomes are natural lipid nanoparticles which can support skin rejuvenation by replacing the biosignals lost with age. Exosomes are effective for all skin types, providing broad global accessibility.
- Its state of the art laboratory operates with meticulous safeguards and quality check standards so that we always deliver an effective and safe product to our customers. All synthetically created Cytosignals used to cultivate our biosignals and growth factors are cultured with scientific diligence. (GMP)
- The AnteAGE® provides powerful regenerative anti-aging products through sound evidence-based technologies. AnteAGE®scientists pioneered the use of Cytosignal cell technology in aesthetics and dermatology fields. AnteAGE® products are always 100% cruelty, cell, paraben, and pathogen free.
- Its recombinant Cytosignals are cultured in a laboratory, within a controlled environment that fosters production of the biosignals that may command skin repair and rejuvenation.
- AnteAGE® also provides products that support in-office skin treatments, such as microneedling, radiofrequency or laser resurfacing. Following in-office treatments, users can minimize healing times and continue to increase rejuvenating benefits using AnteAGE® home skincare system.



Sources: *Company publications*

Archimed Acquisition of Cellese (AnteAge MD)

Acquirer Overview

ARCHIMED

- With offices in Europe, North America and Asia, ARCHIMED is a leading investment firm focused exclusively on healthcare industries.
- Its mix of operational, medical, scientific and financial expertise allows ARCHIMED to serve as both a strategic and financial partner to healthcare businesses.
- ArchiMed SAS is a private equity and venture capital firm specializing investing in small and middle market, growth buyouts, acquisitions, small-cap and mid-cap companies. The firm seeks to invest in healthcare industries with focus on biopharmaceutical products & services, life science tools, biologic services, medical devices & technologies, diagnostics, healthcare IT and consumer health.
- ARCHIMED helps partners internationalize, acquire, innovate and expand their products and services. ARCHIMED manages €8 billion across its various funds, including the largest healthcare-only private equity fund raised by a European-based General Partner. Since inception
- It prefers to invest between €5 million and €1000 million in the companies with sales value between $6.22 million and $124.33 million. It prefers to take majority and minority stake in the companies.
- ArchiMed SAS was founded in 2014 and is based in Lyon, France with additional offices in Paris, France; New York, New York; Singapore, Singapore and Tokyo, Japan.

- The latest fund's predecessor, MED II, is a top decile performer for global buyout funds for its 2018 vintage year, according to Preqin.
- The inaugural MED I, which raised €150 million in 2014, is ranked the best performing buyout fund globally for its vintage year – regardless of sector focus and size – returning in excess of six times invested capital (more than 92 percent already distributed to investors).
- ARCHIMED also invests in the mid-cap space through its MED Platform II fund, which raised €3.5 billion in June, and MED Platform I which raised €1 billion in 2019. MED Platform I is also a top decile performer, according to Preqin data.
- Overall, ARCHIMED is listed as the world's 6th best performing firm in the just-released 2023 HEC-DowJones MidMarket Buyout Performance Ranking (out of 632 midmarket firms globally).

	MED PLATFORM II	MED III	MED PLATFORM I
Vintage Year	2022	2021	2019
Total commitments	€3 500 000 000	€650 000 000	€1 000 000 000
Strategy	Growth Buyout / Mid-cap	Growth Buyout / Small-cap	Growth Buyout / Mid-cap
Article	9	8+	8

Sources: *Company publications*

Section V-2

Market Drivers, Restraints, Opportunities, Risks

ELEVAI

Market Drivers, Restraints, Opportunities, Risks

Drivers

- **Natural nanoparticles with biocompatibility and low immunogenicity:** [redacted]
- **Increasing Investment in R&D:** [redacted]

Restraints

- **High yields of pure exosomes are difficult:** [redacted]
- **No harmonized normative technical standards.** [redacted]

Opportunities

- **Broadening Applications in Diagnostics and Therapeutics:** [redacted]
- **Partnerships and Collaborations:** [redacted]

Risks

- **Stringent Regulatory Requirements:** [redacted]
- **Competition from Alternative Technologies:** [redacted]

Sources: Clinical applications of exosome membrane protein https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7099650/; The biology, function, and biomedical applications of exosomes

Section V- 3

Transaction Multiples

Overview of Regenerative Medicine Trading Multiples

Company	Country	NOSH (m)	Share Currency	Net Debt (EURm)	Loc. curr.	EV (m) Loc. curr.	EV (EURm)	Mkt cap (m) Loc. curr.	Mkt cap (EURm)	EBITDA margin[1]	Sales growth[2]	5 year-Beta	EV/Sales			EV/EBITDA		
													2024E	2025E	2026E	2024E	2025E	2026E
bluebird bio, Inc.	United States	193	USD	122	USD	365	334	235	216	n.m	-60%	85%	2.4x	1.4x	1.2x	n.m.	n.m.	n.a.
Brainstorm Cell Therapeutics Inc.	United States	80	USD	0	USD	34	31	33	31	n.a.	n.a.	36%	n.a.	n.a.	n.a.	n.m.	n.m.	n.m.
Mesoblast Limited	Australia	1,141	AUD	40	AUD	1,395	869	1,330	828	n.m	-53%	245%	n.m.	10.7x	2.5x	n.m.	n.m.	n.a.
Vericel Corporation	United States	49	USD	-17	USD	2,339	2,145	2,357	2,162	1%	15%	170%	9.7x	7.8x	6.2x	47.1x	30.7x	22.5x
Pacira BioSciences, Inc.	United States	47	USD	237	USD	1,269	1,163	1,013	929	25%	25%	88%	1.8x	1.7x	1.5x	6.0x	4.8x	3.9x
MediWound Ltd.	Israel	9	USD	-27	USD	167	153	196	180	n.m	2%	82%	7.0x	5.5x	3.7x	n.a.	n.a.	n.a.
Carmell Corporation	United States	21	USD	1	USD	38	35	38	35	n.a.	n.a.	39%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Vistagen Therapeutics, Inc.	United States	27	USD	-108	USD	-13	-12	104	95	n.m	n.a.	75%	n.m.	n.m.	n.m.	n.a.	n.a.	n.a.
Elevai Labs Inc.	United States	19	USD	-1	USD	9	8	10	9	n.m	n.a.	NA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Integra LifeSciences Holdings Corporation	United States	79	USD	1,267	USD	3,732	3,422	2,365	2,169	24%	7%	111%	2.2x	2.1x	2.0x	10.0x	9.2x	8.4x
CRISPR Therapeutics AG	Switzerland	85	USD	-1,736	USD	3,044	2,791	4,917	4,509	n.m	66%	169%	n.m.	9.2x	3.6x	n.m.	n.m.	17.1x
Celltrion, Inc.	South Korea	206	KRW	869	KRW	40,234,786	26,850	38,833,331	25,914	35%	13%	23%	11.7x	9.5x	8.0x	40.0x	22.4x	17.1x
Bioventus Inc.	United States	64	USD	362	USD	855	784	418	383	8%	28%	84%	1.6x	1.5x	1.4x	8.9x	8.2x	7.9x

Overall

	EV/Sales 2024E	EV/Sales 2025E	EV/Sales 2026E	EV/EBITDA 2024E	EV/EBITDA 2025E	EV/EBITDA 2026E
Average[3]	[redacted]					
Median[3]						
High						
Top Quartile						
Low Quartile						
Low						

***Sources**: Merger Market, Capital IQ, Windome banking Analysis, February 7, 2025*

Overview of Regenerative Medicine Transaction Multiples(1/3)

Announcement Date	Completion Date	Enterprise Value (in m)	Deal Value (in millions)	Equity Value (in millions)	Equity Value (in € millions)	Target	Country	Acquirer	Country	EV/Sales	EV/EBITDA
Apr-24	Apr-24	n.a.	n.a.	n.a.	n.a.	Cellese	US	ARCHIMED	France	n.a.	n.a.
Apr-24	Apr-24	n.a.	US$ 40	n.a.	n.a.	Morphocell Technologies	Canada	Genson Capital	Canada	n.a.	n.a.
Jan-24	Jan-24	n.a.	n.a.	n.a.	n.a.	Propagenix	US	STEMCELL Technologies Canada Inc.	Canada	n.a.	n.a.
Dec-23	Feb-24	n.a.	n.a.	n.a.	n.a.	K18	US	Unilever PLC	UK	n.a.	n.a.
Dec-23	Pending	n.a.	n.a.	n.a.	n.a.	Arktus Therapeutics	Japan	Healios K.K. (TSE:4593)	Japan	n.a.	n.a.
Dec-23	Dec-23	n.a.	n.a.	n.a.	n.a.	Restore Vision Inc.	Japan	JIC Venture Growth Investments	Japan	n.a.	n.a.
Nov-23	Pending	US$ 7	US$ 7	US$ 7	n.a.	Cell Pro Japan Co Ltd	Japan	Waqoo Inc.	Japan	17.4x	n.a.
Jul-23	Jul-23	US$ 140	US$ 140	US$ 140	n.a.	Axolotl Biologix	US	Carmell Therapeutics	US	n.a.	n.a.
Jul-23	Jul-23	n.a.	n.a.	n.a.	n.a.	BENEV	USA	ExoCoBio	South Korea	n.a.	n.a.
Jul-23	Jul-23	US$ 2	US$ 0	US$ 2	n.a.	Lumirise Co Ltd	Japan	Revolution Co Ltd	Japan	n.a.	n.a.
Jun-23	Jun-23	n.a.	US$ 8	n.a.	n.a.	Restore Vision	Japan	SMBC Venture Capital Co Ltd	Japan	n.a.	n.a.
May-23	May-23	n.a.	US$ 14	n.a.	n.a.	Heartseed	Japan	SMBC Venture Capital, Sumitomo Mitsui Trust	Japan	n.a.	n.a.
Feb-23	Feb-23	n.a.	n.a.	n.a.	n.a.	Organ Technologies	Japan	Kobayashi Pharmaceutical Co., Ltd.	Japan	n.a.	n.a.
Jan-23	Jan-23	n.a.	n.a.	n.a.	n.a.	Tella Pharma Inc (Regenerative medical products	Japan	Alfresa Holdings Corporation	Japan	n.a.	n.a.
Jan-23	Feb-23	US$ 275	US$ 275	US$ 275	n.a.	Embody, Inc.	US	Zimmer Biomet Holdings, Inc.	US	n.a.	n.a.
Dec-22	Dec-22	n.a.	n.a.	n.a.	n.a.	S-Biomedic	Belgium	Beiersdorf	Germany	n.a.	n.a.
May-21	May-21	n.a.	n.a.	n.a.	n.a.	Allevi	US	3D Systems	US	n.a.	n.a.
Nov-21	Nov-21	n.a.	n.a.	n.a.	n.a.	SuitX	US	Ottobock HealthCare	US	n.a.	n.a.
Apr-19	Apr-19	n.a.	n.a.	n.a.	n.a.	TAVEC Pharmaceuticals.	US	Therillia Development Company	Canada	n.a.	n.a.
Jan-23	Jul-23	US$ 150	US$ 150	US$ 150	n.a.	Carmell Therapeutics Corporation	US	Alpha Healthcare Acquisition Corp. III	US	n.a.	n.a.
Dec-22	Dec-22	n.a.	US$ 12	n.a.	n.a.	AdipoSeeds	Italy	SMBC Venture Capital Co., Ltd., etc.	Japan	n.a.	n.a.
Dec-22	Dec-22	n.a.	n.a.	n.a.	n.a.	Microphyt	France	L'oreal	France	n.a.	n.a.
Dec-22	Dec-22	US$ 150	US$ 150	n.a.	n.a.	Surgical Innovation Associates	US	Integra LifeSciences	US	n.a.	n.a.
Nov-22	Nov-22	n.a.	US$ 23	n.a.	n.a.	Novadip Biosciences SA	Belgium	Societe Regionale d'Investissement de Wallonie	Belgium	n.a.	n.a.
Oct-22	Oct-22	n.a.	n.a.	n.a.	n.a.	Lynch Biologics LLC	US	Geistlich Pharma AG	Switzerland	n.a.	n.a.
Oct-22	Oct-22	n.a.	US$ 19	n.a.	n.a.	Ubie, Inc.	Japan	Sogo Medical Co., Ltd., etc.	Japan	n.a.	n.a.
Sep-22	Oct-22	n.a.	US$ 14	n.a.	n.a.	3-D Matrix, Ltd. (TSE:7777)	Japan	CVI Investments, Inc.	Cayman Islands	n.a.	n.a.
Sep-22	Pending	n.a.	US$ 100	n.a.	n.a.	Direct Biologics LLC	US	Good Works II Acquisition Corp.	US	n.a.	n.a.
Sep-22	Sep-22	n.a.	US$ 40	n.a.	n.a.	Innervace	US	Deerfield Capital Management LLC, etc.	US	n.a.	n.a.
Sep-22	Sep-22	n.a.	US$ 10	n.a.	n.a.	Organicell Regenerative Medicine, Inc. (OTCPK:OCEL)	US	Tysadco Partners, LLC	US	n.a.	n.a.
Aug-22	Pending	n.a.	US$ 221	n.a.	n.a.	Orna Therapeutics, Inc.	US	MPM Asset Management, L.L.C.; Merck & Co.,	US	n.a.	n.a.
Jul-22	Jul-22	n.a.	n.a.	n.a.	n.a.	Deerfield Capital Management LLC	Japan	Shinsei Corporate Investment Limited, etc.	Japan	n.a.	n.a.
Jul-22	Jul-22	n.a.	US$ 120	n.a.	n.a.	Gossamer Bio, Inc. (NasdaqGS:GOSS)	US	New Enterprise Associates, Inc.	US	n.a.	n.a.
Jul-22	Sep-22	US$ 315	US$ 315	US$ 315	n.a.	ViaCyte, Inc.	US	Vertex Pharmaceuticals Incorporated	US	n.a.	n.a.
May-22	Jul-22	US$ 1,000	US$ 1,500	n.a.	n.a.	Nutraceutical Wellness Inc (Nutrafol)	US	Unilever	UK	8.5x	n.a.
May-22	May-22	n.a.	US$ 12	n.a.	n.a.	K Pharma, Inc.	Japan	ITOCHU Technology Ventures, Inc	JP	n.a.	n.a.
Apr-22	Apr-22	n.a.	US$ 120	n.a.	n.a.	Aurion Biotech, Inc.	US	Deerfield Management Company, L.P	US	n.a.	n.a.
Apr-22	Apr-22	n.a.	n.a.	n.a.	n.a.	Japan Regenerative Medicine	Japan	Metcela	Japan	n.a.	n.a.
Mar-22	Mar-22	n.a.	US$ 16	n.a.	n.a.	Regend Therapeutics Co., Ltd.	CN	Shenzhen Capital Group Co., Ltd	CN	n.a.	n.a.
Mar-22	May-22	n.a.	US$ 148	n.a.	n.a.	Aspen Neuroscience, Inc.	US	Arch Venture Partners	US	n.a.	n.a.
Feb-22	Feb-22	n.a.	US$ 18	n.a.	n.a.	Thyas Co. Ltd.	Japan	Eight Roads Ventures Japan; Impresa	JP US	n.a.	n.a.
Feb-22	Feb-22	n.a.	US$ 16	n.a.	n.a.	CellOrigin Technology (Hangzhou) Co., Ltd.	CN	Efung Capital; Lyfe Capital; Zhejiang Yinxinggu	CN	n.a.	n.a.
Feb-22	Feb-22	n.a.	US$ 23	n.a.	n.a.	Walking Fish Therapeutics, Inc.	US	Terra Magnum Capital Partners; Northpond	US CN	n.a.	n.a.
Jan-22	Mar-22	US$ 450	US$ 450	US$ 450	n.a.	Triad Life Sciences, Inc.	US	ConvaTec Group Plc (LSE:CTEC)	United Kingdom	n.a.	n.a.
Jan-22	Jan-22	n.a.	US$ 16	n.a.	n.a.	Wuhan iRegene Therapeutics Co., Ltd.	CN	Changjiang Securities Company Limited	CN	n.a.	n.a.
Jan-22	Jan-22	n.a.	US$ 50	n.a.	n.a.	Century Therapeutics, Inc. (NasdaqGS:IPSC)	US	Bristol-Myers Squibb Company (NYSE:BMY)	US	n.a.	n.a.
Dec-21	Feb-22	n.a.	US$ 15	n.a.	n.a.	Innovacell K.K.	Japan	Yokohama Capital Co. Ltd, etc	JP	n.a.	n.a.
Nov-21	Nov-21	n.a.	US$ 11	n.a.	n.a.	EpiBone, Inc.	US	NetScientific plc (AIM:NSCI); EMV Capital Ltd	UK	n.a.	n.a.
Nov-21	Nov-21	n.a.	US$ 100	n.a.	n.a.	FibroBiologics LLC	US	Global Emerging Markets	US	n.a.	n.a.
Nov-21	Nov-21	n.a.	US$ 25	n.a.	n.a.	Help Therapeutics	CN	Jolmo Investment Management Co., Ltd.	CN	n.a.	n.a.
Nov-21	Dec-21	n.a.	US$ 29	n.a.	n.a.	Endogena Therapeutics, Inc.	US	Rejuveron Life Sciences AG	Switzerland	n.a.	n.a.
Oct-21	Mar-22	n.a.	US$ 99	n.a.	n.a.	Angiocrine Bioscience, Inc.	US	Cobro Ventures, inc.	US	n.a.	n.a.
Sep-21	Nov-21	US$ 34	n.a.	n.a.	n.a.	G-treeBNT Co., Ltd.	South Korea	A consortium led by HLB Inc	South Korea	6.3x	n.a.
Mar-21	Mar-21	n.a.	n.a.	n.a.	n.a.	Olympus' Regenerative Medicine Unit	Japan	Rohto	Japan	n.a.	n.a.
Dec-20	Dec-20	US$ 400	US$ 400	n.a.	n.a.	Integra LifeSciences	US	ACell	US	4.0x	n.a.
Oct-20	Oct-20	US$ 150	n.a.	n.a.	n.a.	Vedere Bio	US	Novartis	Switzerland	n.a.	n.a.
Oct-20	Dec-20	US$ 2,000	n.a.	n.a.	n.a.	Asklepios BioPharmaceutical	US	TPG	Germany	n.a.	n.a.

Sources: *Merger Market, Capital IQ, Windome banking Analysis, February 7, 2025*

Overview of Regenerative Medicine Transaction Multiples (2/3)

Announcement Date	Completion Date	Enterprise Value (in m)	Deal Value (in millions)	Equity Value (in millions)	Equity Value (in € millions)	Target	Country	Acquirer	Country	EV/Sales	EV/EBITDA
Sep-20	Pending	US$ 15	n.a.	n.a.	n.a.	Koligo Therapeutics	US	Orgenesis	US	n.a.	n.a.
Sep-20	Sep-20	US$ 108	n.a.	n.a.	n.a.	Novus Therapeutics (Undisclosed stake)	US	Consortium of investors incl. Janus Henderson, FMR, SVB Leerink led by BVF Partners	US	n.a.	n.a.
Aug-20	Feb-21	US$ 390	n.a.	n.a.	n.a.	Cellular Biomedicine Group (45.4% Stake)	US	Consortium of investors incl. GIC, Yunfeng Capital, TF Capital led by Mr Bizuo Liu	CN	n.a.	n.a.
Jul-20	Jul-20	n.a.	n.a.	n.a.	n.a.	Global Stem cell Technology	Belgium	Boehringer Ingelheim	Germany	n.a.	n.a.
Jun-20	Pending	n.a.	n.a.	n.a.	n.a.	Curasan	Germany	Donau Invest Beteiligungs	Austria	n.a.	n.a.
May-20	May-20	US$ 50,292	n.a.	n.a.	n.a.	Regeneron Pharmaceuticals (9.66% Stake)	US	Sanofi	France	6.4x	20.8x
May-20	Jun-20	US$ 642	n.a.	n.a.	n.a.	Stemline Therapeutics	US	Menarini	Italy	14.9x	n.a.
Mar-20	Jul-20	€ 239	n.a.	n.a.	n.a.	MolMed	Italy	AGC	Japan	7.0x	n.m.
Mar-20	Jul-20	US$ 350	n.a.	n.a.	n.a.	Immatics Biotechnologies	Germany	ARYA Sciences	US	n.a.	n.a.
Mar-20	Apr-20	US$ 4,386	n.a.	n.a.	n.a.	Forty-Seven	US	Gilead Sciences	US	n.m.	n.a.
Feb-20	Feb-20	US$ 44	n.a.	n.a.	n.a.	Matricel	Germany	Nobel Biocare	Switzerland	n.a.	n.a.
Jan-20	May-20	US$ 100	n.a.	n.a.	n.a.	Histogen Inc	US	Conatus Pharmaceuticals	US	n.a.	n.a.
Jan-20	Pending	US$ 490	n.a.	n.a.	n.a.	RTI Surgical Holdings, Inc. (OEM, Sports and Reconstructive surgery Implants divisions)	US	Montagu Prive Equity	UK	2.6x	n.a.
Jan-20	Jan-20	US$ 35	n.a.	n.a.	n.a.	Parcus Medical	US	Anika Therapeutics	US	n.a.	n.a.
Nov-19	Pending	US$ 14	n.a.	n.a.	n.a.	ALTuCell (51% stake)	US	Generex Biotechnology Corp	US	n.a.	n.a.
Jun-19	Jun-19	n.a.	n.a.	n.a.	n.a.	Century Therapeutics (undisclosed stake)	US	Bayer AG - Versant Ventures	Germany US	n.a.	n.a.
Jun-19	Jul-19	US$ 18	n.a.	n.a.	n.a.	ATEMs Co (33% stake)	South Korea	Hans Biomed Corporation	South Korea	n.m.	n.a.
Jun-19	Jun-19	US$ 78	n.a.	n.a.	n.a.	Stem Cell & Regenerative Medicine International, Inc. (60% Stake)	US	Astellas Institute for Regenerative Medicine	US	n.a.	n.a.
May-19	May-19	n.a.	n.a.	n.a.	n.a.	Silver Creek Pharmaceuticals, Inc. (Undisclosed Majority Stake)	US	HNKK Holding	US	n.a.	n.a.
Jan-19	Apr-19	US$ 76	n.a.	n.a.	n.a.	apceth Biopharma - Regen Business	Germany	Hitachi Chemicals	Japan	n.a.	n.a.
Jan-19	Jan-19	US$ 24	n.a.	n.a.	n.a.	Olaregen Therapeutix Inc. (51% Stake)	US	Generex Biotechnology Corporation	US	n.a.	n.a.
Jan-19	Jan-19	n.a.	n.a.	n.a.	n.a.	Regentys Corporation	US	Generex Biotechnology Corporation	US	n.a.	n.a.
Nov-18	Jan-19	US$ 77	n.a.	n.a.	n.a.	Asterias Biotherapeutics, Inc. (60.93%)	US	BioTime Inc	US	18.9x	n.a.
Oct-18	Jan-19	US$ 13	n.a.	n.a.	n.a.	Regenerative Medicine Solutions, LLC	US	Medovex Corporation	US	n.a.	n.a.
Sep-18	Sep-18	n.a.	n.a.	n.a.	n.a.	Luitpold Pharmaceuticals, Inc.	US	Lynch Biologics LLC	US	n.a.	n.a.
Sep-18	Dec-18	US$ 15	n.a.	n.a.	n.a.	Liberty Biopharma Inc.	Canada	Ideanomics	US	n.a.	n.a.
Aug-18	Dec-18	US$ 782	n.a.	n.a.	n.a.	Organogenesis Inc	US	Organogenesis Holdings Inc.	US	3.9x	n.m.
Aug-18	Sep-18	n.a.	n.a.	n.a.	n.a.	AgeX Therapeutics, Inc. (40.28%)	US	Juvenescence Limited	UK	n.a.	n.a.
Jul-18	Jul-18	n.a.	n.a.	n.a.	n.a.	Soluciones Bioregenerativas, SL	Spain	Fidia farmaceutici S.p.A.	Italy	n.a.	n.a.
May-18	May-18	n.a.	n.a.	n.a.	n.a.	Stemedica Cell Technologies, Inc.	US	Zhuhai Hengqin Jiuzhitang and Qihang Equity Investment Fund	CN	n.a.	n.a.
Apr-18	Apr-18	n.a.	n.a.	n.a.	n.a.	Magenta Therapeutics, Inc.	US	The Watermill Group; Casdin Capital, LLC; EcoR1 Capital LLC	US	n.a.	n.a.
Feb-18	Jan-18	n.a	n.a.	n.a.	n.a.	Progentix Orthobiology BV	Netherlands	NuVasive, Inc.	US	n.a.	n.a.
Feb-18	Apr-18	€ 103	n.a.	n.a.	n.a.	Universal Cells Inc.	US	Astellas Pharma Inc.	Japan	n.a.	n.a.
Jan-18	Apr-18	n.a.	n.a.	n.a.	n.a.	Boyalife Stem Cell Technology Co., Ltd.	CN	Shanghai Zhongneng Enterprise Development (Group) Co., Ltd.	CN	n.a.	n.a.
Jan-18	May-18	US$ 599	n.a.	n.a.	n.a.	Tigenix NV	Belgium + US	Takeda Pharmaceutical Company Limited	Japan	n.m.	n.a.
Sep-17	Sep-17	n.a.	n.a.	n.a.	n.a.	Axiogenesis AG	Germany	Eventide Asset Management, LLC	Netherlands	n.a.	n.a.
Sep-17	Oct-17	£8	n.a.	n.a.	n.a.	Hemogenyx Pharmaceuticals Limited	US	Silver Falcon Plc	UK	n.a.	n.a.
Aug-17	Sep-17	€ 72	n.a.	n.a.	n.a.	Calimmune, Inc.	US	CSL Behring	US	n.a.	n.a.
Aug-17	Sep-17	n.a.	n.a.	n.a.	n.a.	Stability Biologics LLC	US	Undisclosed bidder	n.a.	n.a.	n.a.
Aug-17	Nov-17	US$ 75	n.a.	n.a.	n.a.	Beijing Wenfeng Tianji Pharma Technology Co., Ltd.	CN	Guanhao Biotech Co., Ltd. (53.35% stake)	CN	n.a.	n.a.

Sources: *Merger Market, Capital IQ, Windome banking Analysis, February 7, 2025*

Overview of Regenerative Medicine Transaction Multiples(3/3)

Announcement Date	Completion Date	Enterprise Value (in m)	Deal Value (in millions)	Equity Value (in millions)	Equity Value (in € millions)	Target	Country	Acquirer	Country	EV/Sales	EV/EBITDA
Aug-17	Aug-17	n.a.	n.a.	n.a.	n.a.	Asterand Bioscience, Inc.	US	BioreclamationIVT, LLC	US	n.a.	n.a.
Jul-17	Aug-17	€ 30	n.a.	n.a.	n.a.	CellRight Technologies, LLC	US	Tissue Regenix Group Plc	UK	5.5x	19.0x
Jul-17	Feb-18	US$ 608	n.a.	n.a.	n.a.	Entellus Medical	US	Stryker	US	8.1x	n.a.
May-17	May-17	n.a.	n.a.	n.a.	n.a.	PharmCell B.V.	Netherlands	Lonza Group Limited	Switzerland	n.a.	n.a.
Mar-17	Mar-17	n.a.	n.a.	n.a.	n.a.	Novoheart Holdings Ltd.	Hong Kong	Woodrose Ventures Corporation	Canada	n.a.	n.a.
Jan-17	Mar-17	US$ 561	n.a.	n.a.	n.a.	Golden Meditech Holdings Ltd	CN	Acquisition vehicle led by Mr Kam Yuen	CN	20.4x	n.a.
Jan-17	Feb-17	US$ 198	n.a.	n.a.	n.a.	Derma Sciences Inc.	US	Integra LifeSciences	US	2.1x	n.a.
Dec-16	Jan-17	US$ 18	n.a.	n.a.	n.a.	Eastern Union Stem Cell & Gene Engineering Co., Ltd.	CN	Union Stem Cell & Gene Engineering Co., Ltd.	CN	7.0x	n.m.
Dec-16	Jan-17	US$ 16	n.a.	n.a.	n.a.	Tianjin Amcellgene Engineering Co., Ltd. (38% stake)	CN	Health & Biotech Group	CN	n.a.	n.a.
Dec-16	Feb-17	US$ 2900	n.a.	n.a.	n.a.	LifeCell Corporation	US	Allergan plc	Ireland	6.4x	10.7x
Nov-16	Nov-16	n.a.	n.a.	n.a.	n.a.	MTI-GlobalStem	US	Thermo Fisher Scientific Inc.	US	n.a.	n.a.
Nov-16	Nov-16	n.a	n.a.	n.a.	n.a.	Progenicare, LLC	US	Isto Biologics	US	n.a.	n.a.
Aug-16	Oct-16	US$ 28	n.a.	n.a.	n.a.	BioCardia Inc.	US	Tiger X Medical, Inc.	US	n.a.	n.a.
Aug-16	Aug-16	n.a.	n.a.	n.a.	n.a.	Stratatech	US	Mallinckrodt	Ireland	n.a.	n.a.
Jul-16	Aug-16	US$ 78	n.a.	n.a.	n.a.	BioD, LLC	US	Derma Sciences Inc	US	3.5x	n.a.
Jul-16	Jul-16	n.a	n.a.	n.a.	n.a.	Biosafe SA	Switzerland	GE Healthcare Ltd	UK	n.a.	n.a.
May-16	May-16	US$ 20	n.a.	n.a.	n.a.	RigeneranD Srl (49% Stake)	Italy	Principia SGR	Italy	n.a.	n.a.
Apr-16	Jun-16	US$ 5,800	n.a.	n.a.	n.a.	StemCentRx Inc	US	AbbVie Inc.	US	n.a.	n.a.
Apr-16	Apr-16	US$ 8	n.a.	n.a.	n.a.	Cytonet GmbH & Co. KG	Germany	PROMETHERA Biosciences S.A./N.V	Belgium	n.a.	n.a.
Jan-16	Jan-16	n.a	n.a.	n.a.	n.a.	LifebankUSA Inc.	US	Human Longevity, Inc.	US	n.a.	n.a.
Jan-16	Feb-16	€ 519	n.a.	n.a.	n.a.	Shandong Qilu Stem Cell Engineering Co Ltd	CN	NanJing Xinjiekou Department Store Co Ltd	CN	n.a.	n.a.
Dec-15	Jan-16	US$ 144	n.a.	n.a.	n.a.	Kuros Biosurgery Holding AG	Switzerland	Cytos Biotechnology AG	Switzerland	n.a.	n.a.
Nov-15	Dec-15	US$ 8	n.a.	n.a.	n.a.	Biopta Limited	UK	ReproCELL Incorporated	Japan	4.2x	n.a.
Nov-15	Feb-16	€ 14	n.a.	n.a.	n.a.	StemLife Berhad	Malaysia	Cordlife Group	Singapore	5.1x	n.a.
Nov-15	Feb-16	US$ 333	n.a.	n.a.	n.a.	Ocata Therapeutics	US	Astellas Pharma	Japan	n.m.	n.a.
Sep-15	Sep-15	US$ 31	n.a.	n.a.	n.a.	Novadip Biosciences	Belgium	Group of Investors	Belgium	n.a.	n.a.
Jul-15	Jul-15	US$ 7	n.a.	n.a.	n.a.	Coretherapix S.L.	Spain	Tigenix NV	Belgium	n.a.	n.a.
Jun-15	Aug-15	US$ 700	n.a.	n.a.	n.a.	CBR Systems, Inc.	US	AMAG Pharmaceuticals, Inc	US	5.7x	29.0x
Jun-15	Jun-15	n.a	n.a.	n.a.	n.a.	VivaBioCell S.p.A.	Italy	NantCell, Inc.	US	n.a.	n.a.
Jun-15	Jun-15	US$ 61	n.a.	n.a.	n.a.	Union Stem Cell & Gene Engineering Co Ltd (33% stake)	CN	Zhongyuan Union Stem Cell Bioengineering Co Ltd	CN	2.5x	12.5x
Jun-15	Nov-15	US$ 27	n.a.	n.a.	n.a.	CN iMyth Company Pte Ltd (51% Stake)	Taiwan	Albedo Ltd	Singapore	n.a.	n.a.
Apr-15	Pending	US$ 45	n.a.	n.a.	n.a.	Mesoblast Limited (4.71% Stake)	Australia	Celgene Corporation	US	34.3x	n.a.
Apr-15	Apr-15	n.a	n.a.	n.a.	n.a.	BioLife Cell Bank, Inc. (select assets)	US	American Cryostem Corporation	US	n.a.	n.a.
Apr-15	May-15	€ 74	n.a.	n.a.	n.a.	California Stem Cell, Inc.	US	NeoStem, Inc.	US	n.a.	n.a.
Mar-15	May-15	US$ 285	n.a.	n.a.	n.a.	Cellular Dynamics International, Inc.	US	FUJIFILM Holdings Corp	Japan	17.1x	n.a.
Mar-15	Apr-15	US$ 8	n.a.	n.a.	n.a.	StemCell Institute Inc (56.57% Stake)	Japan	TrimGen Holdings Co Ltd	Japan	n.a.	n.a.
Mar-15	Apr-15	US$ 13	n.a.	n.a.	n.a.	Tianjin Weikai Bioeng Ltd. (70% stake)	CN	Enlighten On Enterprise Limited	Hong Kong	n.m.	n.a.
Mar-15	Sep-13	US$ 68	n.a.	n.a.	n.a.	Prostemics Co Ltd	South Korea	KB No.3 Special Purpose Acquisition Company	South Korea	n.a.	n.a.
Jan-15	Jan-15	US$ 338	n.a.	n.a.	n.a.	Capricor Therapeutics (CAP-1002)	US	Janssen Biotech (J&J)	US	n.a.	n.a.
Jan-15	Aug-15	US$ 8	n.a.	n.a.	n.a.	AK (Suzhou) Biomedical Ltd. (82.4% stake)	CN	Enlighten On Enterprise Limited	Hong Kong	n.a.	n.a.
									Average	[redacted]	
									Median		
									High		
									Top Quartile		
									Lowest Quartile		
									Low		

Sources: *Merger Market, Capital IQ, Windome banking Analysis, February 7, 2025*

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