



KOREA BLOOMCELL

—Advanced biopharmaceutical R&D Company.

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- (4) Proprietary Technology

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- (7) Alzheimer's & Dementia Market

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Business strategy

- (1) Developing the next generation of stem cell research
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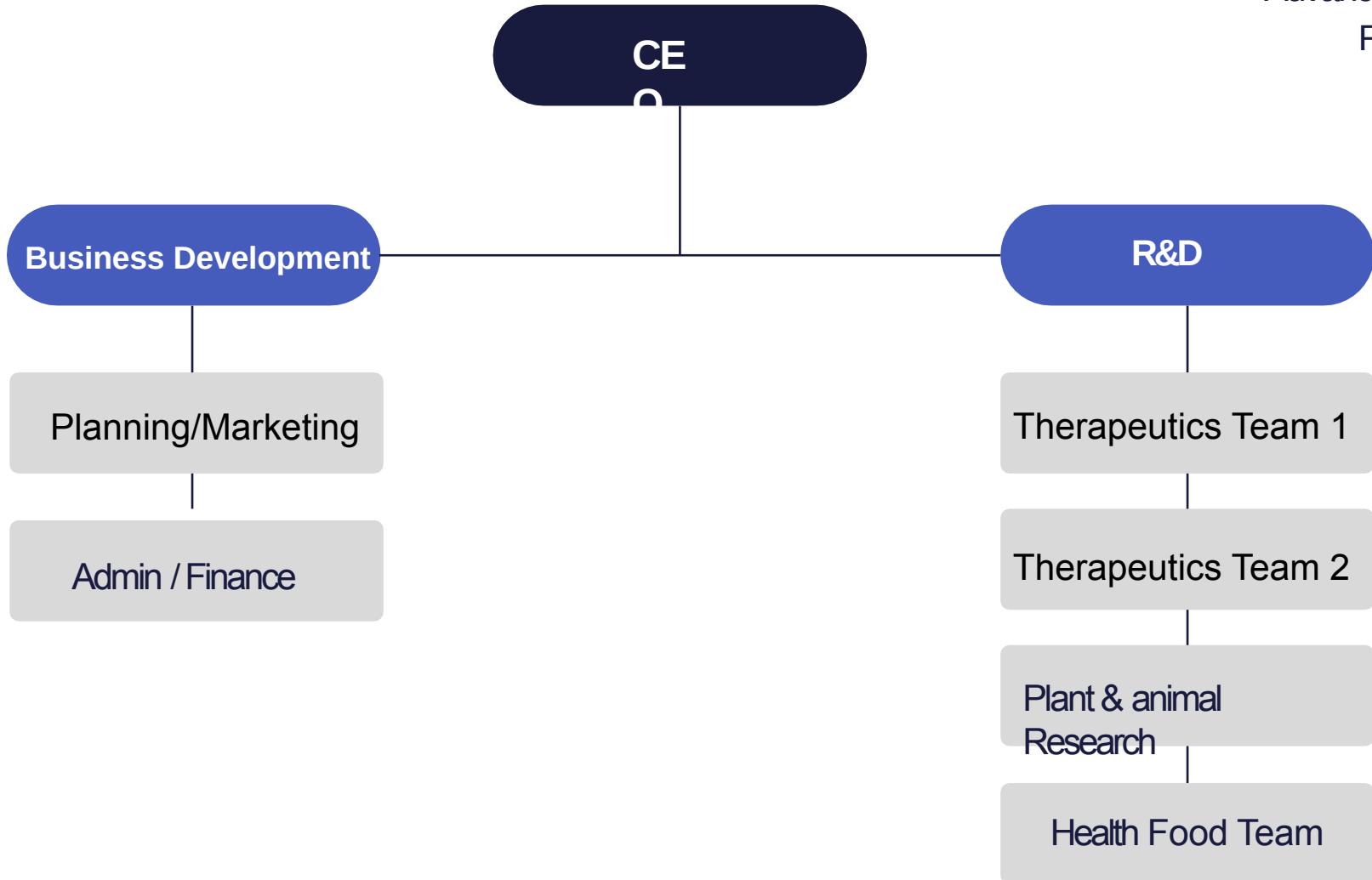
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About Us

- (1) Organizational Structure
- (2) Meet Our Leaders
- (3) Our Mission
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01 About Us

(1) Organizational structure



**KOREA
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01 About Us

(2) Meet Our Leaders

Dr. Chun-hong IM

CEO and Co-Director of Research center

Current Position:

- CEO and Co-Research Director at Korea BLOOMCELL.

Past Positions:

- Outpatient Professor at Tianjin Medical University, China.
- Researcher at the National Institute of Life Science and Technology, Zhongshan City, Guangdong Province, China.
- Research Director at New Generation Life Science Technology Co, a Sino-Korean joint venture affiliated with the National Institute of Life Science and Technology, Zhongshan City, Guangdong Province, China.
- President of Zhongshan New Generation Life Science Technology Co.
- Deputy Director at Peking Medical Center, Yilao City, Shandong Province, China.
- Representative Director of Xinlong Technology.
- Co-Representative Director of N-CLONTEC Co., Ltd., Ichao City, Shandong Province.
- Head of Oxford Stem Cell Laboratory, University of Oxford, UK.

Educational Background:

- University of Oxford, UK - Pathology.
- Head of Oxford Stem Cell Laboratory, University of Oxford, UK.

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Dr. Chul-gi Min

Co-Director of Research center

Current and Past Position:

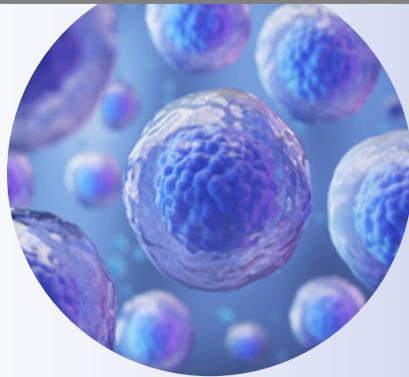
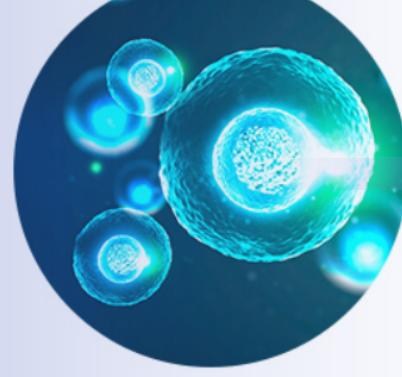
- Co-Director of the Korea BloomCell Joint Research Institute.
- Ph.D. in Biology from the California Institute of Technology (Caltech), USA.
- Graduated with a degree in Biotechnology from Seoul National University.
- Served as an exchange professor at the University of California.
- Currently, the Director of the B-IT Fusion Biotechnology Consortium.
- Former Professor in the Department of Life Science at Ajou University.
- Visiting Professor at Dankook University.

Key Research Areas:

- Stem Cell Induced Differentiation.
- Genetic Therapy involving Growth Factors.
- Immunotherapy.

Leverage proprietary technology to make high-cost treatments affordable, and gain market share

Utilizing decades of research and data based on our proprietary technology to separate exosomes from stem cells.
Research and development of treatments for cancer, Alzheimer's and senile dementia, which are the most intractable diseases of mankind,
immune enhancers, and ingredients for health functional foods and cosmetics.

Experience & know-how in stem cell research**Exosome isolation technology and raw materials****Development of therapeutics**

- Established R&D Center in Oxford, London, UK
- Established a stem cell therapy research center in Songdo, Incheon
- Partnered with stem cell research centers in major countries around the world
- Established **Ichao Stem Cell Therapy Research Center** in China
- Held a stem cell therapy seminar
- Acquired a patent for stem cell therapy development

- Possessing original technology unique to Korea BloomCell
- Continuous development research through independent technology and research

- Cancer- Alzheimer's Disease / Senile Dementia
- Nutraceuticals- Cosmetic ingredients

01

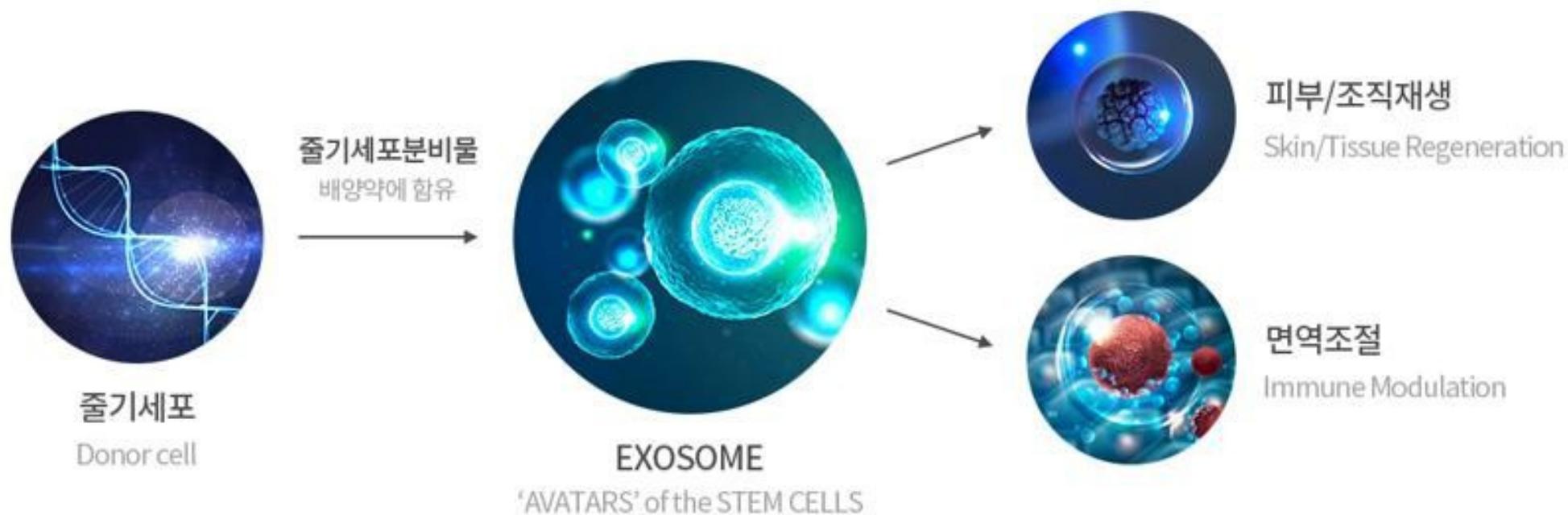
About Us

(4) Proprietary Technology

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Exosomes not only promote the circulation of RNA and essential proteins among cells (including fibroblasts, keratinocytes, immune cells, etc.) but also play a role in delivering numerous growth factors, cytokines, and genetic materials. **This aids in the restoration of skin tissue and enhances the improvement of skin cells.**



줄기세포 배양액의 0.5% 핵심성분

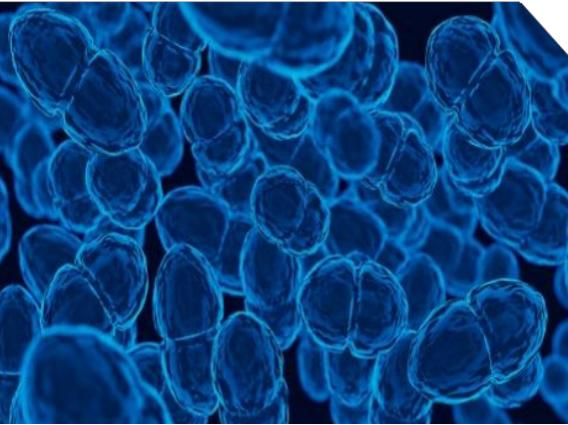
01 About Us

(4) Proprietary technology



Owns original technology for exosome-isolated stem cells

Possession of original technology to separate exosomes from cord blood stem cells enables mass production of exosomes with enhanced tissue regeneration and inflammation suppression efficacy, rather than simple exosomes.



Reducing the cost of producing therapeutics solution

Utilizing membrane-free cell mass culture source technology and 3D stereoscopic culture technology Enables safe mass culture multiplication in an environment similar to the human environment, reducing the price of therapeutics.



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Mass Culture Multiplication Techniques

Separation and culture of exosomes with 2-3 times enhanced functions compared to existing competitors' products is possible

Possess a cancer treatment

Completed preclinical experiments on gene therapy that extracts cells from the ascites of cancer patients and stops cancer cells from proliferating, and has data solutions for conquering cancer. (Pre-clinical data is already available, which is an advantage in terms of clinical period and funds required)

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Business Area

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- (2) Membrane-free stem cell culture
- (3) Stem Cell Comparison
- (4) Stem Cell Utilization Plan - Therapeutic Drug Development
- (5) Therapeutic Drug Development Based on exosome isolation
- (6) CLEAN MEAT - Foie Gras

02 Business Area

① Stem Cell Cultivation

A "stem cell" is a cell that has the potential to produce a variety of tissue cells. Play important roles in keeping the body healthy, including healing, blood supply, immune regulation, and anti-apoptosis.

Emerging as a solution to intractable diseases

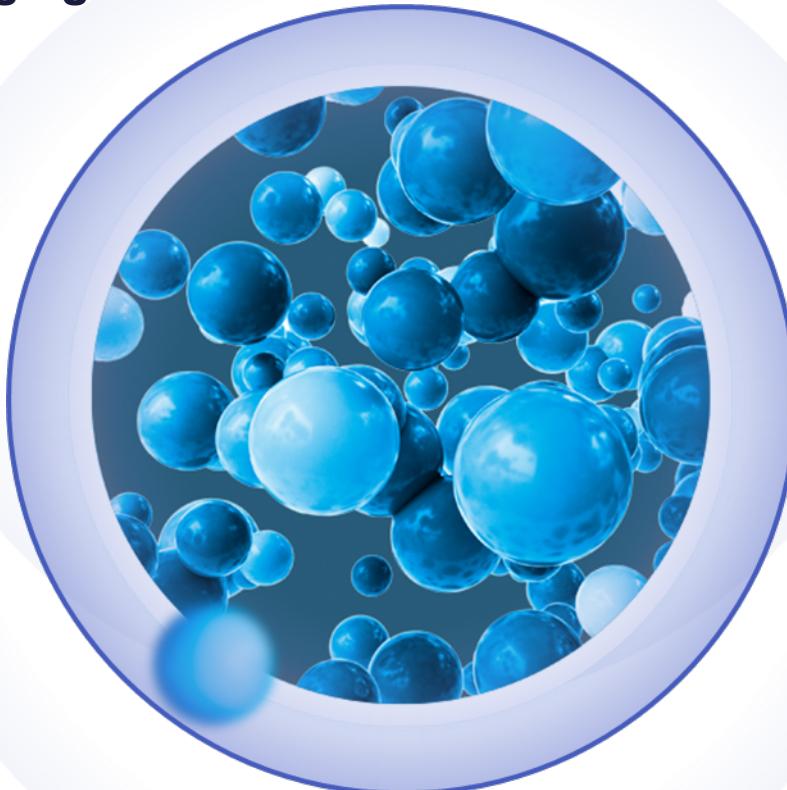
The power of stem cell

Self renewal

The ability to make cells that are identical to your own

Differentiation

Cell structure/function changes to fit the unique function of each tissue/cell the structure/function of a cell to fit its unique function.



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keeping the body healthy, including healing, blood supply, immune regulation, and anti-apoptosis.

Functions of Stem

Wound healing

Finding the site of a wound and regenerating damaged cells

Blood supply

Form blood vessels to supply clean blood

Immunomodulatory function

Govern the organs that control immunity

Specialized features

Healthy cells replace damaged cells

Peripheral secretion signals

Provide various useful secretions from stem cells

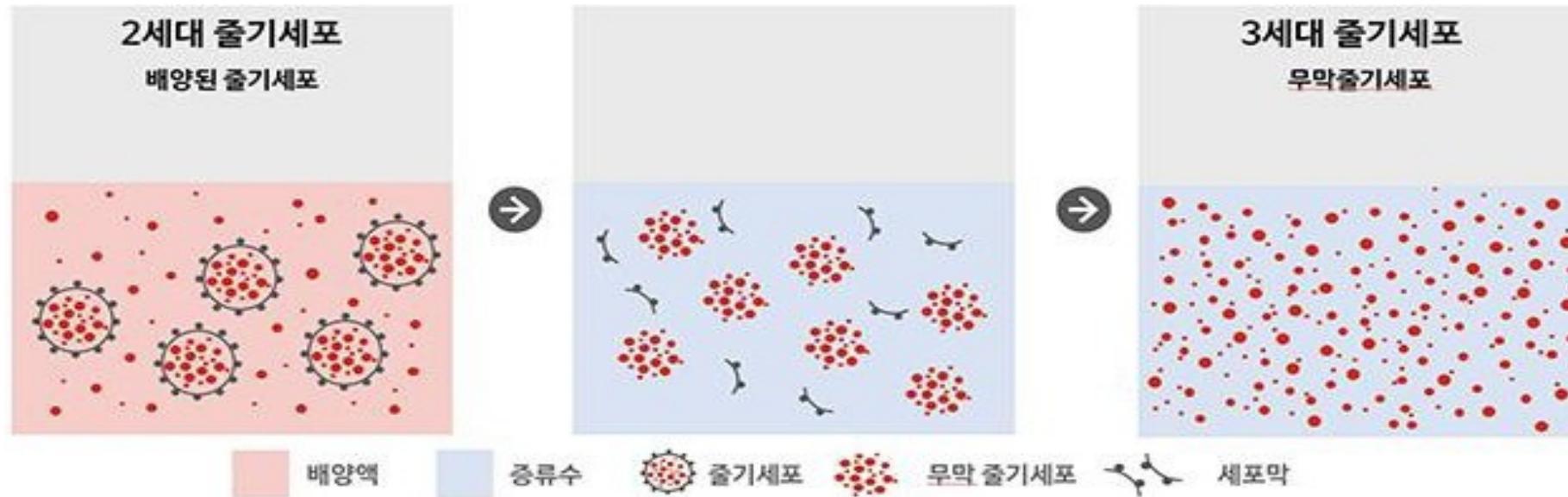
02 Business Area

(2) Membrane-free stem cell culture

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Stem cells with their cell membranes removed to eliminate antigens on the cell membrane 260 peptides rich in active ingredients that eliminate immune rejection. Stem cells derived from umbilical cord blood, containing a large quantity of biocompatible components can be used not only as an injection using freeze-drying technology, but also as a raw material for spore cultures, functional cosmetics, and oral treatments.

< Membrane-free stem cell = stem cell with cell membrane removed = protein >





Stem cells are divided into embryonic stem cells and adult stem cells.

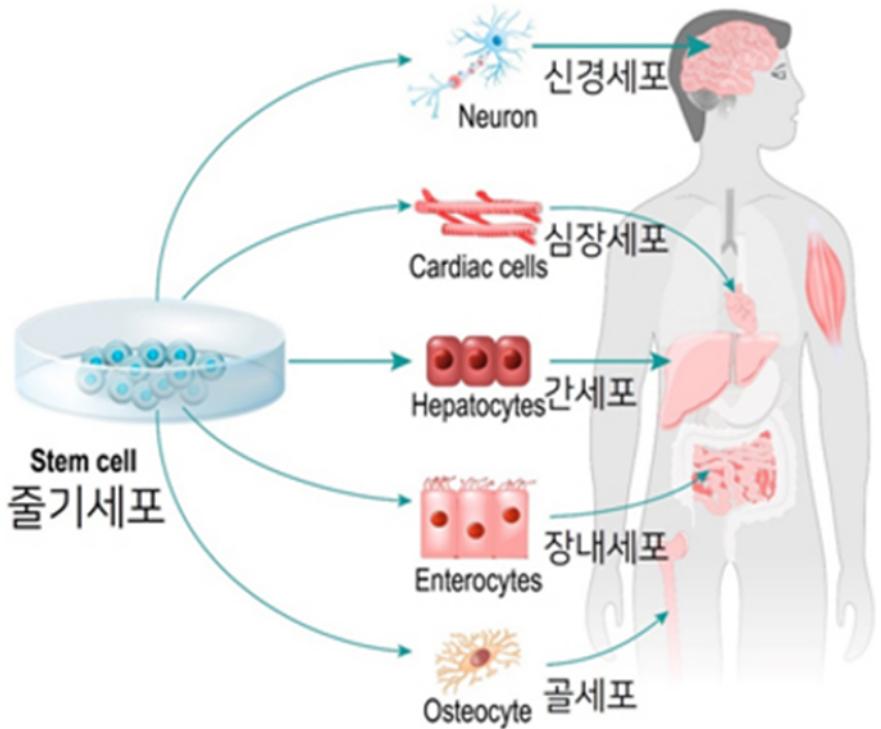
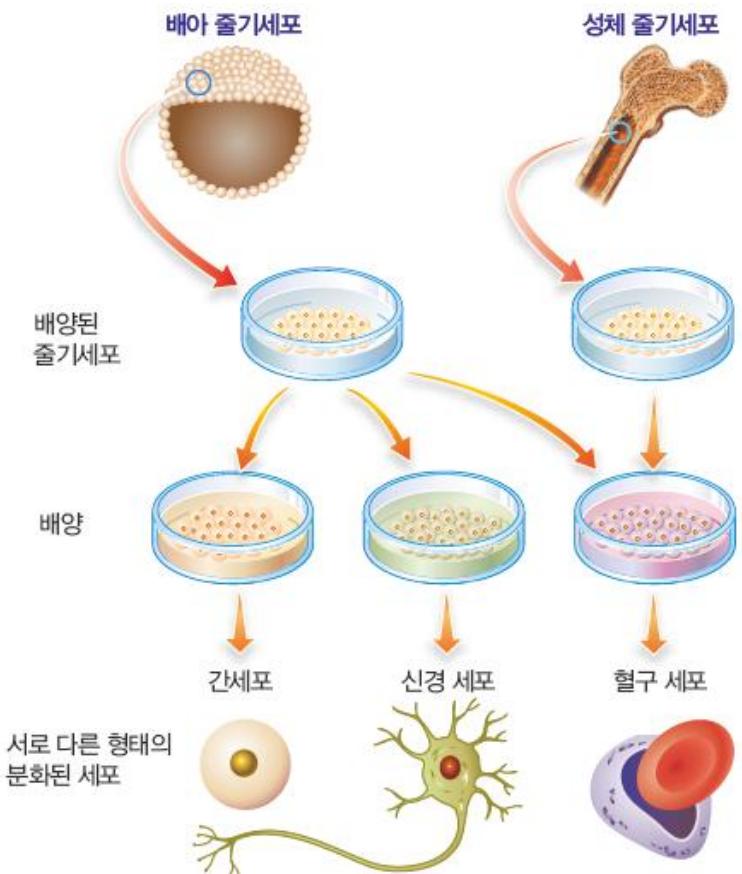


Umbilical cord stem cells are adult stem cells that are close to embryonic stem cells.

Item	Embryonic stem cells	Umbilical cord stem cell	Adult stem cells Hematopoietic stem cells	Adipose Stem Cells
Source	Ovum, Fertilized Egg	Umbilical cord	Umbilical cord blood	Fat
Ease of Supply	Difficult	Easy	Easy	Easy
Mass Production	Difficult	Easy	Difficult	Easy
Differentiation capabilities	Excellent (capable of differentiating into 210 human cell types)	Excellent (There are various human body Can differentiate into cells)	Deficient	Capable of differentiation into several cell types
Ethical issues	Yes	None	None	None
Teratogenicity	Yes	None	None	None
Graft rejection	Weak	Rarely	Weak	None
Stem cell content	High	High	Low	None

02 Business Area

(4) Stem Cell Utilization Plan - Therapeutic Development



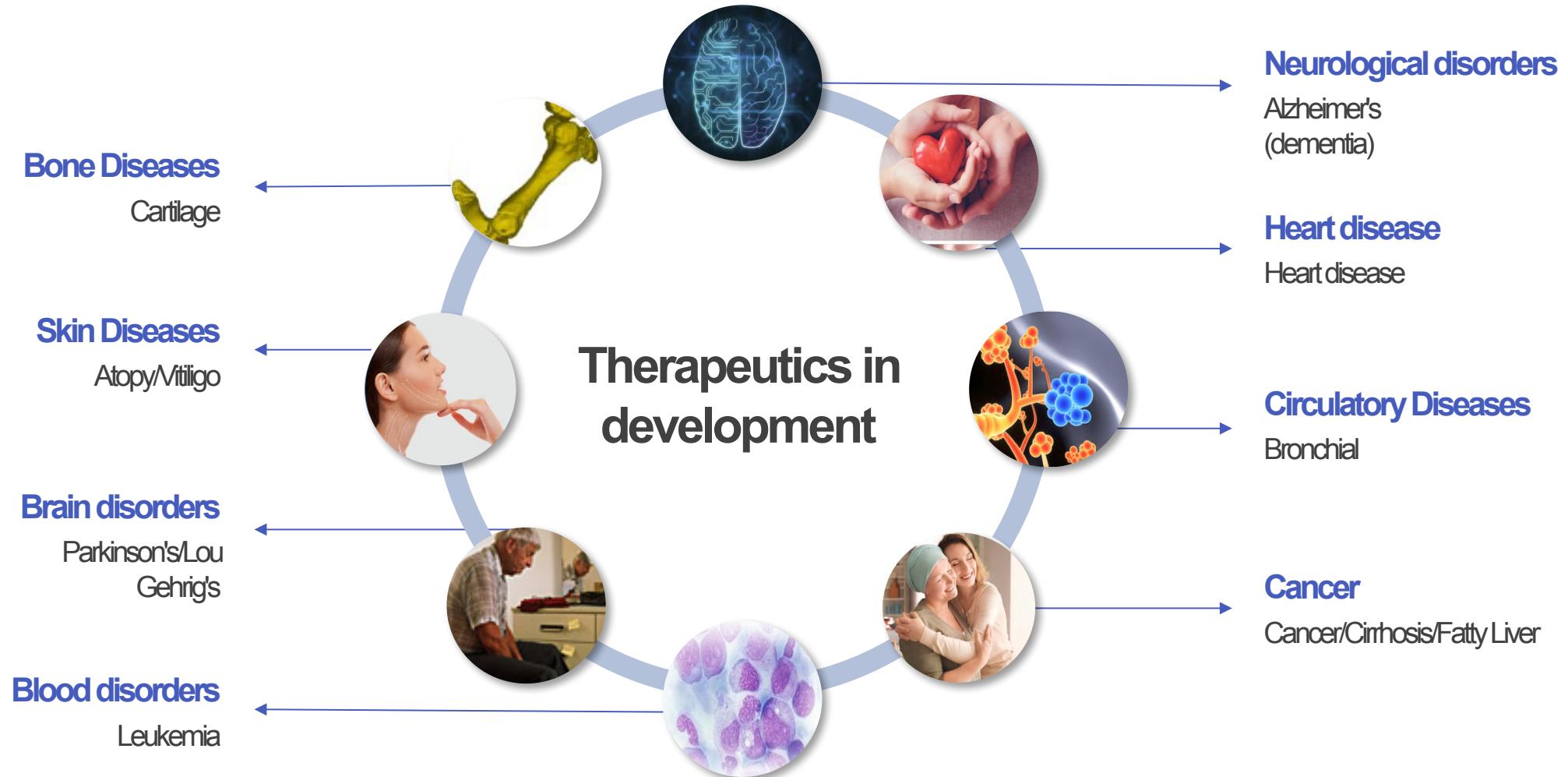
<U.S. News & World Reports
March 2009 Selected incurable diseases that can be treated with stem cell>

- ✓ Spinal Injuries
- ✓ Diabetes/Hypertension
- ✓ Heart disease
- ✓ Parkinson's disease
- ✓ Alzheimer's (dementia), autism
- ✓ ALS(Amyotrophic Lateral Sclerosis)
- ✓ Lung disease
- ✓ Arthritis / Acquired Arthritis
- ✓ Sickle Cell Anemia
- ✓ Cancer
- ✓ Repair all organs in the body
- ✓ Anti Aging

(4) Stem Cell Utilization Plan - Therapeutic Development

When stem cells are injected intravenously, they **differentiate into each organ such as cranial nerves, liver, stomach, spleen, spinal cord, skin, and cartilage, and then engraft and restore damaged cells to their original state - homing effect**

The technology is scientifically and clinically proven and **can be applied to all organs of the body**, from Alzheimer's to leukemia, skin, etc.



02

Business Area

(5) Development of therapeutics based on exosome isolation technology

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Isolates only 0.1% of exosomes from stem cell cultures based on proprietary exosome isolation source technology

This allows it to work effectively on purified, damaged skin to activate the skin's natural energy

Endoplasmic reticulum
plays a role in intercellular
signaling

Therapeutic benefits of stem cells,
such as regeneration,
immunomodulation, and anti-
inflammation

The active ingredients are delivered
to the cells more efficiently, so they
work right away.

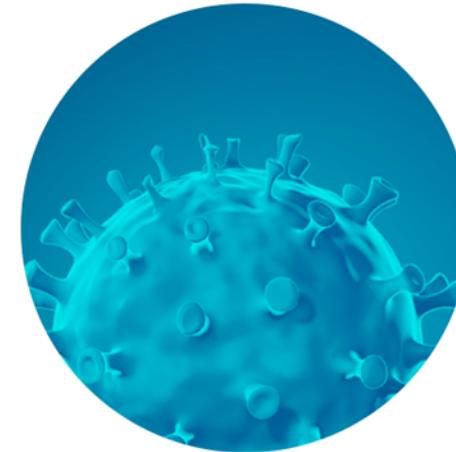


줄기세포



엑소좀

줄기세포 배양액의
0.1% 핵심성분



피부 / 면역세포

피부 / 조직 재생
면역 조절

(5) Development of therapeutics based on exosome isolation technology

Gene -therapy, a small caveolae containing RNA and protein carriers that are secreted for the purpose of intercellular signaling,
Scalable and flexible new materials for functional cosmetics, including anti-cancer and hair growth agents.

A new generation of promising new materials that secrete enzymes that attack cancer cells by breaking down their barriers.
Intracellular protein therapy is a new technology that enables the development of biologics against targets inside cells strategically based on exosome platforms.

✓ Applications of Skin Exosome Therapy

Treatment of skin conditions

- Rosacea Dermatitis (ROSACEA)
- Atopic dermatitis
- Acne

Scar and pore treatment

- Atrophic scar (Atrophic scar)
- Enlarged pore
- Pigmentation (PIH), burn treatment, etc.

Hair Loss Treatment

- Androgenetic alopecia
- Alopecia areata
- Female pattern baldness

Anti-Aging / Aesthetic Treatments

- Improve skin texture and tone
- Improve firmness and fine lines
- Improve and balance the skin's dermis layer



02 Business Area

(6) CLEAN MEAT - Foie Gras

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Meat that has been artificially cultured from animal stem cells.

Emerging as a viable alternative to meat from traditional animal agriculture in response to resource depletion, etc.

Minimize the environmental impact and carbon footprint of large-scale grazing, breeding, slaughter, and processing (95% reduction possible) Cultured and alternative meats will make up more than half of the meat market in the next 20 years

✓ How to use it

Foie Gras - Fatty Liver

- Global market size is approximately \$5 billion (KRW 6 trillion)
- Artificially producing fatty goose liver using stem cell culture technology
- A specialty served in France at Christmas and New Year's with red wine, it is one of the top three dishes in the world.
- Protein (11%) - Fat (44%) - High-calorie foods high in vitamin A
- Developing the best varieties for creating starter cells
- Liver can be cultured without serum

Production funding - totaling KRW 1 billion

Major Facilities

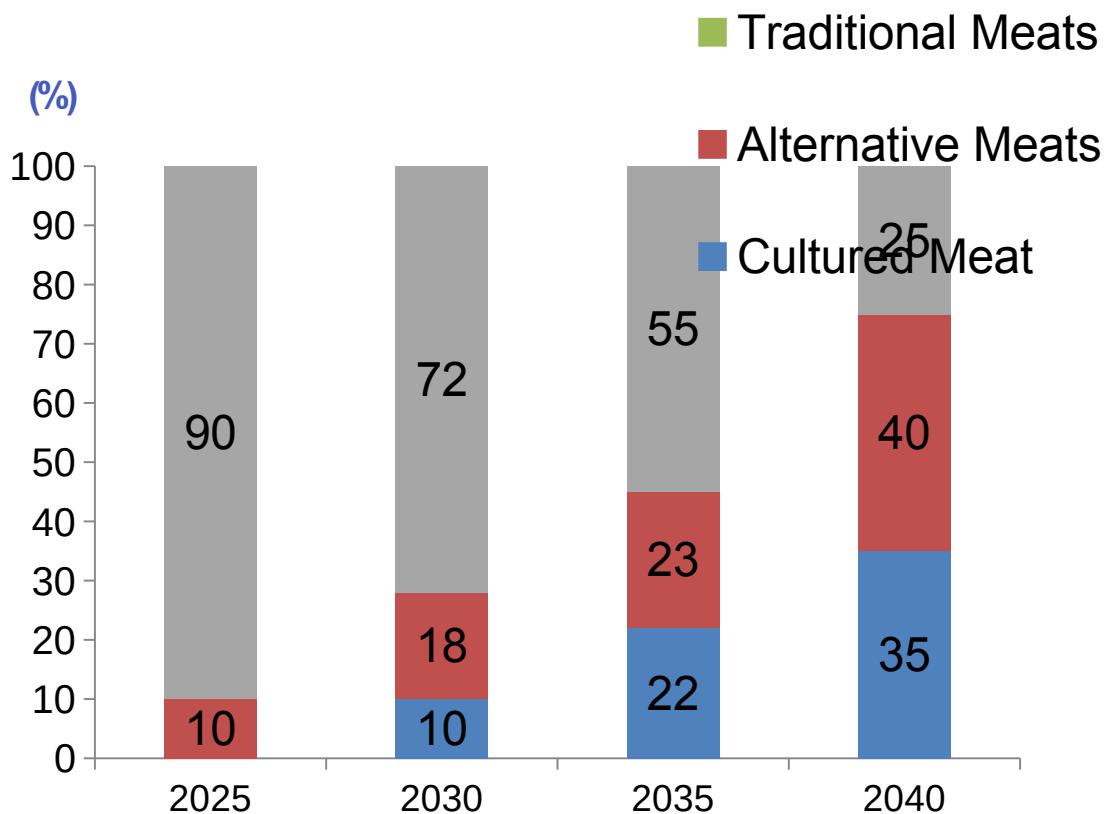
- Cell line culture container (clean container) 2set: 40 million won
- Container for cell culture (clean container) 5 set: 100 million won
- Other equipment (clean bench - centrifuge, etc.): 100 million won
- Consumables, reagents, etc.: KRW 100 million

02 Business Area

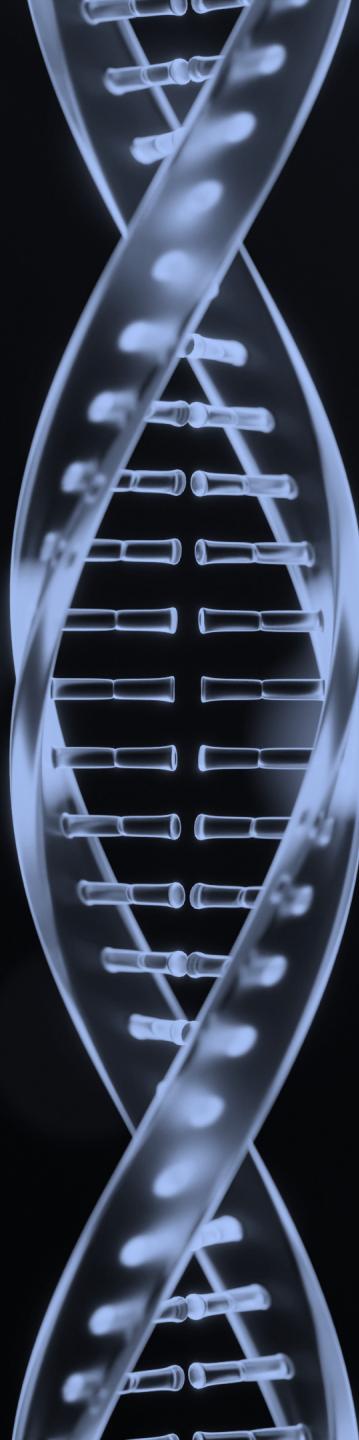
(6) CLEAN MEAT - Foie Gras

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✓ Global market size



Year	Size (\$)	Cultured Meat	Meat substitutes	Traditional Meats
2025	1.2 trillion	0	10	90
2030	1.4 trillion	10	18	72
2035	1.6 trillion	22	23	55
2040	1.8 trillion (approximately \$200 trillion)	35	40	25



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Market Analysis

- (1)The state of the global pharmaceutical market
- (2)Major drug market by therapeutic area
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- (5)The Global Market for Immuno-oncology
- (6)Immuno-oncology market size
- (7)Alzheimer's & Dementia Market

The biohealthcare industry is growing rapidly due to issues such as health, stable retirement, and longevity.

The global biohealth market is larger than the automotive and semiconductor markets combined.

BioHealth: KRW 8,800 trillion / Automotive: KRW 2,700 trillion / Semiconductors: KRW 510 trillion

✓ Market size comparison



Sources: IDC, VDA, WSTS

Biohealth Industry **KRW 8.800 trillion**

Automotive market **KRW 2,200 trillion**

Semiconductor market
KRW 510 trillion

03 Market Analysis

(2) Major drug market by therapeutic area

- ✓ Anti-cancer drugs are the largest market and will continue to grow in the future
- ✓ Global anticancer drug market to grow from \$104 billion in '17 to \$233 billion in '20
- ✓ Cancer is an aging disease, and the world's population is aging rapidly.
- ✓ Advances in technology have led to much more advanced diagnostics and treatments.
- ✓ Anti-cancer drugs account for 4 of the top 10 global sales and biopharmaceuticals for 8, driving the global pharmaceutical market

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Revenue by therapeutic area

(\$ billion, %) Source: Evaluatepharma

Top 10 Global Medicines

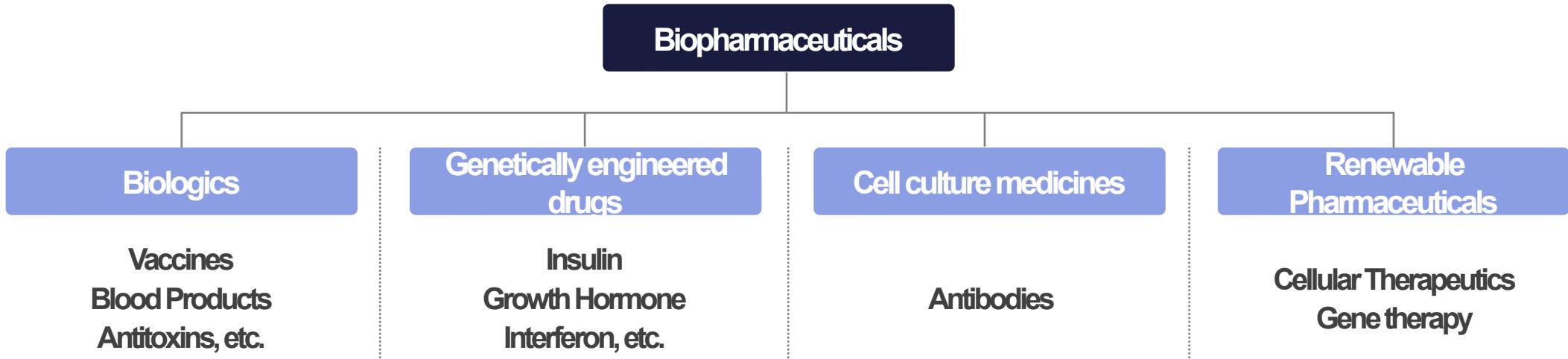
Source: Strategic Insights Into Biopharmaceuticals Industry

Treatment Area	Revenue in 2017	Expected revenue in 2024	Average annual growth rate 2017 to 2024
Cancer (Oncology)	1,040	2,330	12.2
Anti-diabetics	461	595	3.7
Autoimmune diseases (Anti-rheumatics)	557	567	0.2
Vaccines	277	446	7.1
Anti-virals	424	399	-0.9
Immunosuppressants	137	381	15.7
Bronchodilators	272	323	2.5
Dermatologicals	129	303	13.0
Sensory Organs	216	269	3.2
High blood pressure (AntiHypertensives)	230	244	0.8

NO	Product Name	Vendor name	Revenue (2017)	classification
1	Humira	Abbvie	18.4	Monoclonal antibodies
2	Revlimid	Celgene	8.2	Synthetic Drugs
3	Rituxan	Roche	7.5	Monoclonal antibodies
4	Herceptin	Roche	7.1	Monoclonal antibodies
5	Avastin	Roche	6.8	Monoclonal antibodies
6	Remicade	Johnson & Johnson (J&J)	5.8	Monoclonal antibodies
7	Prevnar 13	Pfizer	5.6	Vaccines
8	Enbrel	Amgen/Pfizer	5.4	Fusion Proteins
9	Lantus	Sanofi	5.2	Manufactured Synthetic Proteins
10	Lyrica	Pfizer	5.1	Synthetic Drugs

1) Biopharmaceuticals are evolving from antibody drugs to improved innovations

- ✓ Genentec's technology for synthesizing insulin using transgenic E. coli was commercialized in 1982 by Eli Lilly.
- ✓ Oso Biotech receives FDA approval for OsoClone, an antibody treatment for kidney transplant rejection, in 1987.
- ✓ Antibody medicines are currently achieving breakthroughs in conditions such as cancer and rheumatoid arthritis.
- ✓ Improved antibody medicines, such as bi-targeted antibodies and antibody/drug conjugates, are available and in development to increase the range and effectiveness of treatments.

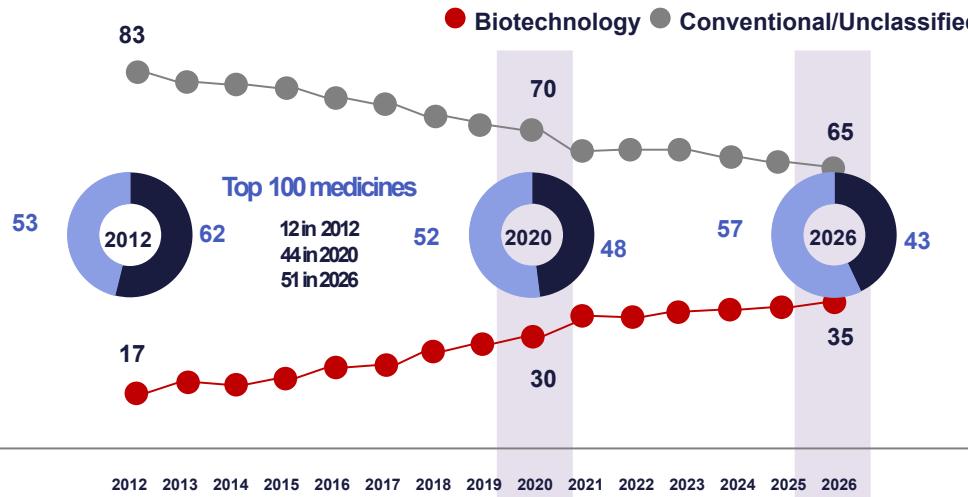
✓ Classification of biopharmaceuticals

2) Rapidly expanding biopharmaceutical and biosimilar markets

- ✓ The biopharmaceutical market will be \$311 billion in 2021
 - Biologics \$280.6 billion (90% share, 6.7% CAGR)
 - Biosimilars \$30.4 billion (10% share, 30.6% CAGR)
 - The biosimilars market is expected to grow at a CAGR of 30.6%, significantly higher than the prescription drug market.
- ✓ The ratio of chemicals to biopharmaceuticals is expected to increase from 70%:30% in 2022 to 65%:35% in 2026, with biopharmaceuticals taking the lion's share.

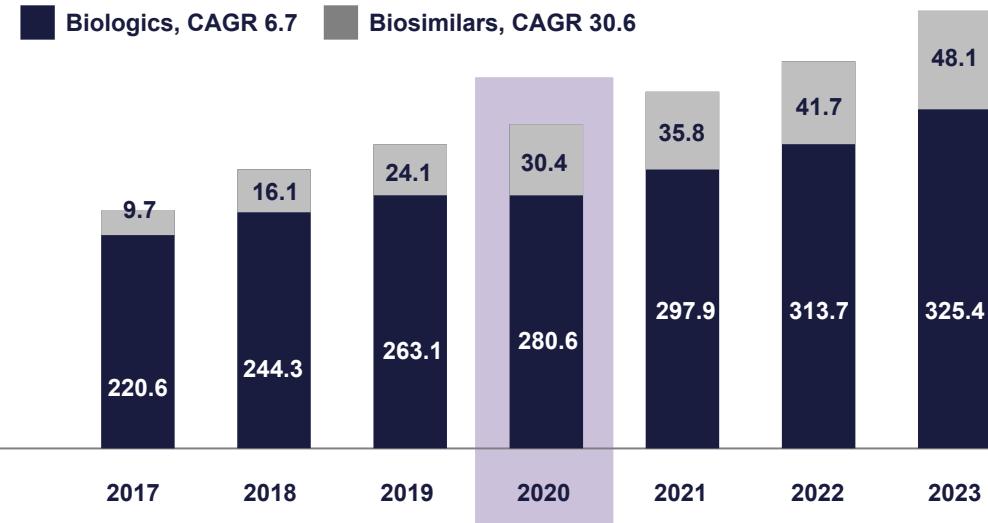
Chemical vs Biopharmaceutical Revenue Share & Size

Source: Evaluatepharma (%)



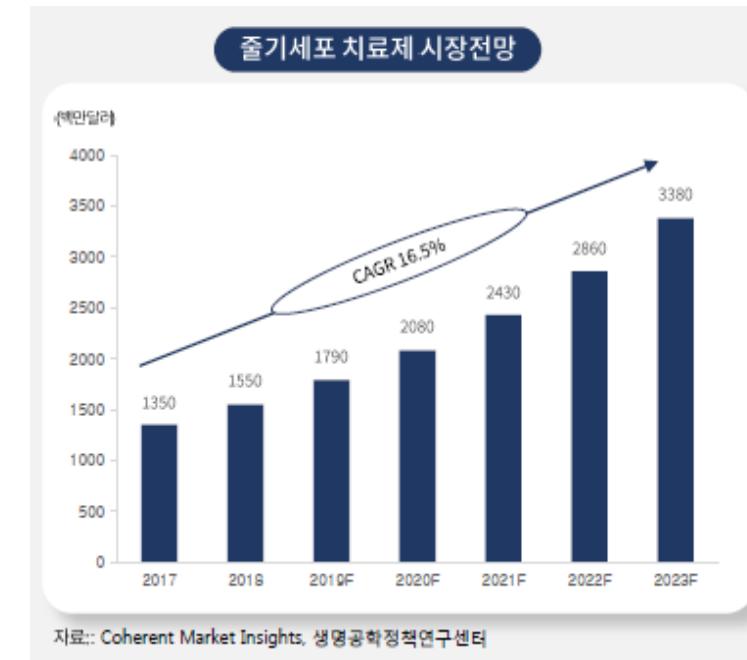
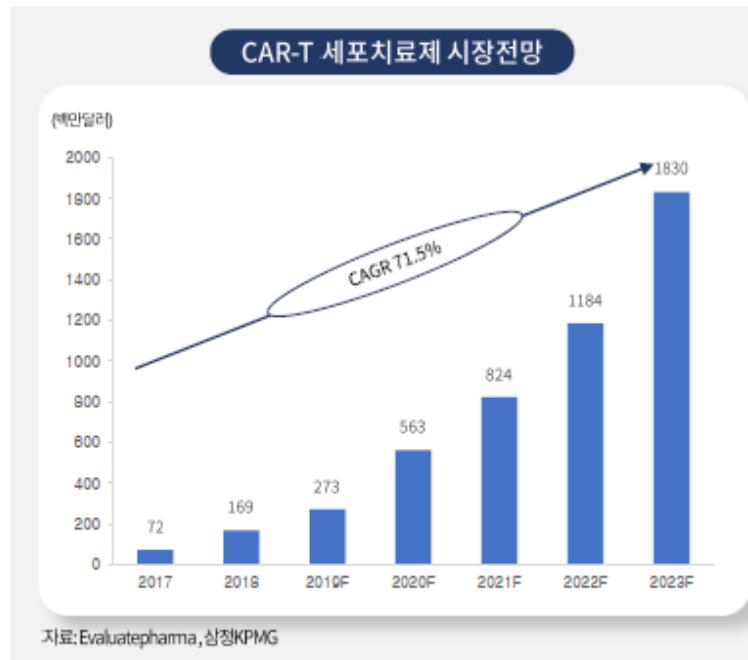
Global Biopharmaceutical Market Outlook

Source: Center for Biotechnology Policy Research (\$ billions)



3) Forecasting the market for next-generation biopharmaceuticals such as CAR-T

- ✓ Cellular therapies can be broadly categorized into immune cell therapies, such as CAR-T cell therapies, and stem cell therapies.
- ✓ CAR-T (Chimeric Antigen T Cells) cell therapy is a treatment in which T cells are isolated from a patient, genetically engineered to recognize and kill tumors, and then infused back into the patient.
 - The market size of CAR-T is expected to grow rapidly from \$72 million in '17 to \$1.83 billion by '23, at a CAGR of 71.5
- ✓ Stem cell therapy is the artificial infusion of stem cells into the body to repair damaged cells and tissues, making it a viable option for treating neurodegenerative diseases and repairing damaged organs.
 - Stem cell therapies will grow at a CAGR of 16.5% from \$150 million in '17 to reach \$3.38 billion in '23



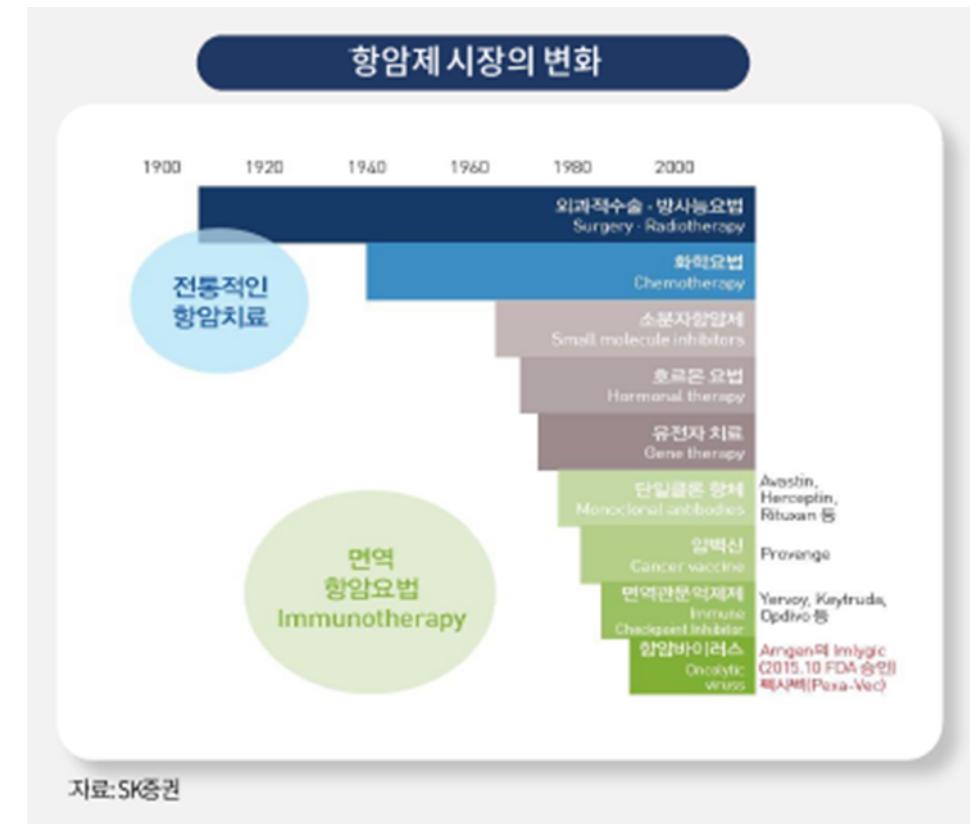
03 Market Analysis

(4) Anti-Cancer Market Trends

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3) Forecasting the market for next-generation biopharmaceuticals such as CAR-T

- ✓ Market shifts to immuno-oncology drugs that stimulate the immune system, have fewer side effects, and can be used in combination.
- ✓ Immuno-oncology treats cancer by stimulating the immune system; classified into active and passive treatments based on body system
- ✓ Passive therapy involves injecting components of the immune response into cancer patients to treat them.
 - Immune Checkpoint inhibitor, Immune Cell Therapy, etc.
- ✓ Active therapies actively activate an individual's antibodies and immune cells.
 - Cancer Vaccine, Immune System modulator, etc.



03 Market Analysis

(5) Global Market for Immuno-oncology

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- ✓ Immuno-oncology drugs are drugs that prevent cancer cells from evading the body's immune system or make immune cells better able to recognize and attack cancer cells.
- ✓ Unlike targeted therapies, it does not require a specific target to be used, so it can be applied to many patients.
- ✓ Because it works through the immune system, it has fewer side effects than traditional cancer drugs.
- ✓ The global immuno-oncology market is segmented into immunomodulators, anti-cancer vaccines, adoptive cell therapies, antibody-based targeted therapies, and anti-virals.

Immunomodulators

Includes immune gateway inhibitors and other immunomodulators (cytokines, etc.)

Anti-cancer vaccines

Tumor-specific antigens from cancer cells are given to cancer patients to activate their immune system.

Adoptive Cell Therapy

Acellular therapy in which the body's own immune cells are harvested, enhanced, genetically modified, and reintroduced.

Antibody-based targeted therapies

Exploit the properties of antibodies that selectively bind to target antigens
Monoclonal antibodies are designed to bind to specific parts of cancer cells and can be very effective in treating cancer.

Antiviral

A replicating, immunogenic virus that inserts specific genes that target genetically abnormal sites in cancer cells.

항암제 시장서 떠오르는 '면역항암제'…57조 '성장' 기대

700억 이상의 면역항암제 개발 등, 바이오리안 중심의 흐름분위기 대비 빠르다



최신기사
주니어트리뷴 홍보 콘텐츠 출판

국내 기관과 협력해 세계 최대 전시회인 코스모스에 출품되는 바이오리안 중심의 흐름분위기 대비 빠르다

ICOVA 발표에 따르면 2023년까지 항암제 시장 규모는 9.1% CAGR로 전세계 항암제 분야 전체 매출액 5000억 달러(57조 원) 규모로 성장할 것으로 예상된다

ICOVA 발표에 따르면 2010년 이전까지 면역항암제가 가장 주목 받았던 분야는 면역항암제 분야였다. 면역항암제는 2010년 이후 면역항암제는 면역항암제 분야가 주목 받았던 것으로 알려졌다.

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03

Market Analysis

(6) Global market size of immuno-oncology drugs

KOREA BLOOMCELL
Advanced biopharmaceutical
R&D company

- ✓ This is a market that is experiencing steady growth and is the main target market for KOREA BLOOMCELL.



[바이오] 암치료의 미래..커지는 면역항암제 시장 주목



'암 치료의 미래'로 불리는 면역항암제(cancer immunotherapy)는 암 자세를 공격하는 가성 항암제들과 '말을 걸리한다'는 항암면역단백질을 세포에 주입해 면역세포가 선택적으로 항체표적 치료제로 유도하는 것이 핵심이다. 그런즉 보다 좋은 적과 효과는 크다.

면역항암제 개발은 CTLA4 국제제 이뮨로즈합보더다. 이뮨로즈합보더는 2011년 미국 식품의약국(FDA)에서 전이성 Hodgkin 카르제로 승인받은면서 글로벌 개발사들의 면역치료제 시장 진출을 한창 가속화했다.

글로벌 의약품 시장조사기관 이밸류레이트파마(EvaluatePharma)에 따르면 면역항암제 시장 규모는 해마다 꾸준히 증가하고 있다. 2018년 450억 달러 규모를 성과를 19%로 끌어올리며 2024년(미래 5년간)은 480억 달러 규모로 이를 전망이다. 이는 575,600억 원 규모다. 전 세계 바이오 기업들이 앞다퉈 출전 시장에 뛰어드는 이유다.

현재 면역항암제는 MSD의 키트리ぞ마(성상동·정·블브루타주간), 모노클론항체의 텁디브로운등 니클로우강과 BMS의 면역관문억제제 아울리모티브, 도스의 티센트릭(성상동·정·아데브리주간), 머크·풀라이너의 바센시오(정분동·아벨루), 아스트라제네카의 임프지(성상동·정·미발루), 흥이 출시돼 있다.

면역항암제가 각광받는 이유는 무모보다 성공 때문. 과거 1세대 화학항암제는 면역세포만 공격하는 데 그치지 않았다. 예전 면역세포까지 막걸이 환자를 고생이 이런지면이 아니었다. 2세대 표적항암제라고 해서 면역세포를 침습하지 않고 면역세포를 표적으로 삼아 부작용은 낮고 치유율은 높았지만 내용 문제가 있었다. 계속 쓰면 내용이 생겨 고기가 물어드는 얘기다.

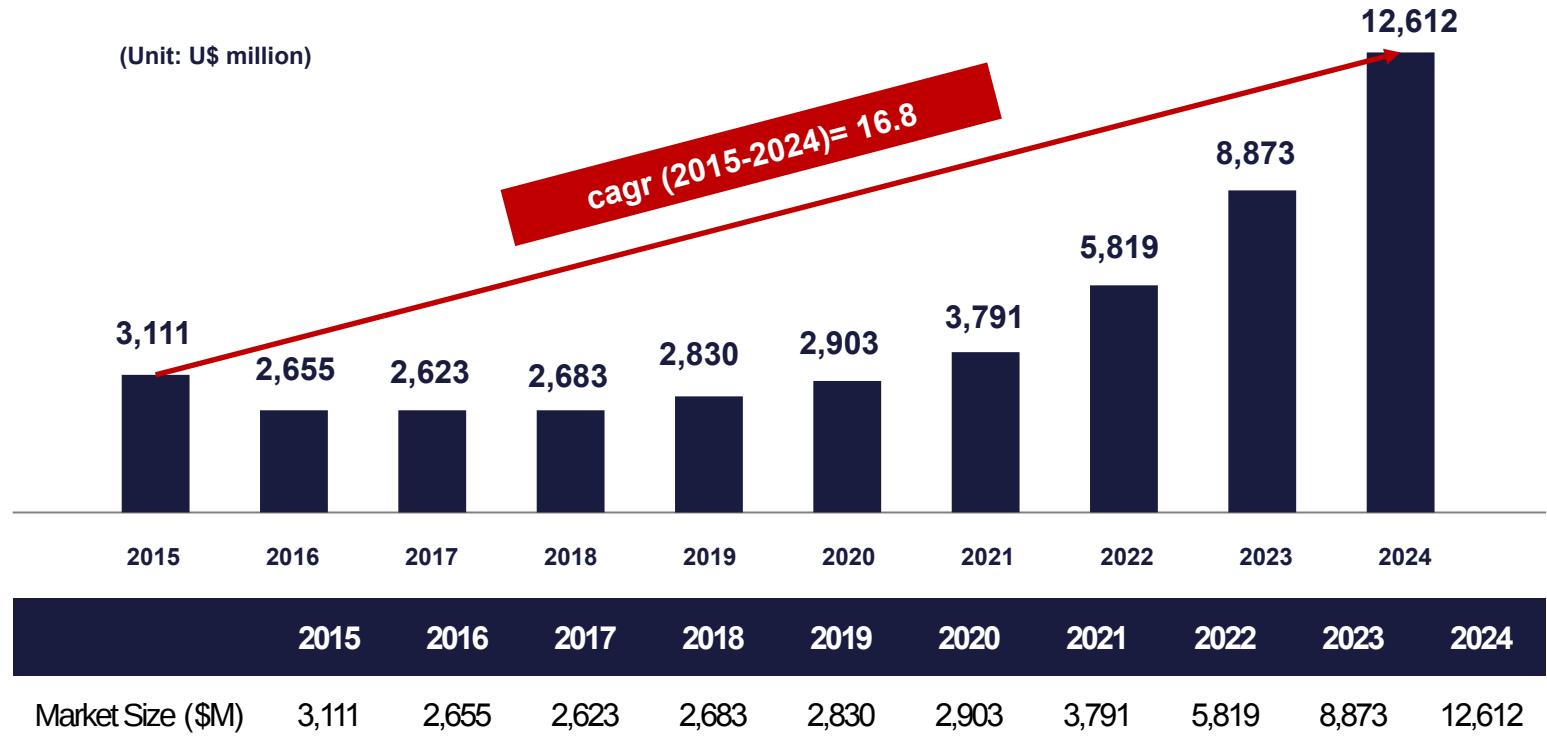
면역항암제는 이 같은 단점을 넘어서다. 방사선요법, 화학항암제, 표적항암제 등 기존 치료방법과 DNA 또는 면역세포 발달, 생장물질면역요법, 면역 단백질 등을 공격한다면 면역항암제는 다르다. 면역세포를 활성화시켜 면역세포를 기관 공격하고 항 주변 항암면역환경을 조성함으로써 저자 효과를 얻기란 무지지이다. 화학항암제가 2~3개월 표적항암제가 10~12개월을 치료 효과를 넘나드는 면역항암제는 그보다 치료 효과도 같다.

하지만 면역항암제가 민족화된 점이다. 과거 존재였다. 예전 면역세포, 비스도모프리제, 면역항암, 면역항암, 면역 세포를 날려 가지고 있으면 아주 적게 가능한 환자는 적다. 화학치료 비용도 평균 1000만원을 초과하는 고액이고, 일부 연구에 따르면 특성과 내용이 아주 없는 것은 아니라고 한다. 그런증 주가 구매가능성이 가장 좋다.

국내에선 유진양행, 현대약품, 보령제약, 에이비엘바이오, 이수약스, 맷트론, 파멥신, 중근당 등 10여 군이 개발 중이다.

(7) Alzheimer's & Dementia Market

- ✓ In 2020, the global market for Alzheimer's disease therapeutics was valued at approximately \$31.1 billion (~\$3.5 trillion), and is expected to more than quadruple by 2024 to form a market of approximately \$126.1 billion (~\$15.2 trillion).
 - Prevalence is expected to increase as the population ages, and demand for treatments will increase as diagnostics improve.
 - There is a growing awareness that Alzheimer's is a preventable disease that can be slowed through medication and management.



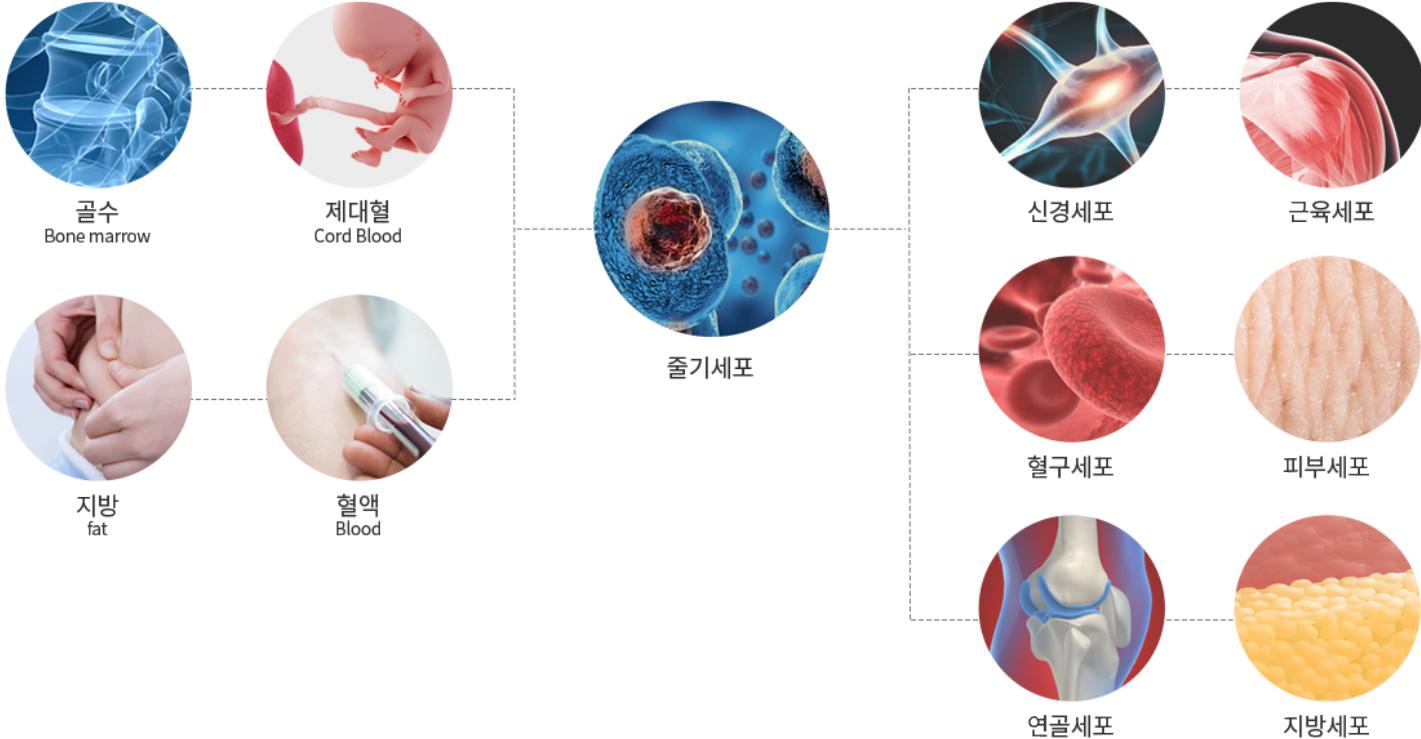
Source: Datamonitor Healthcare (2016)

0 **Business strategy**

- ## **4**
- (1) Developing the next generation of stem cell research
 - (2) Natural product bio-development production
 - (3) Gene editing technologies
 - (4) Development of membrane-free stem cell-based exosomes
 - (5) Development of freeze-drying process technology

04 Business strategy

Developing biomaterials and exosomes in addition to the stem cell business through its own cord blood stem cell exosome separation technology and membrane-free cell mass culture source technology.



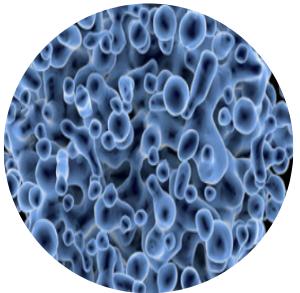
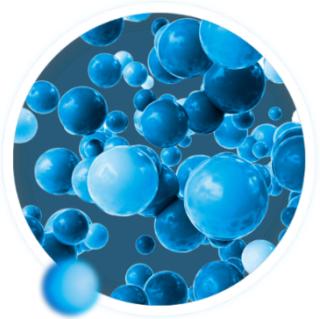
1.
Next Generation Stem Cells
Research and development

2.
Bio from natural products
Material Development
Production

3.
Gene
Editing techniques

4.
Protein therapy:
Development of membrane-
free stem cell-based
exosomes

5.
Cryobiology-based freeze-
drying process technology
development



1. develop next-generation stem cell research

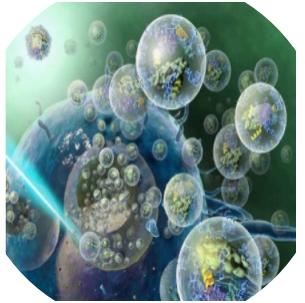
- ✓ Live Type Stem Cell Development with Lyophilization Development Technology
- ✓ Developing the next generation of anti-aging medicines, nutraceuticals (animal), and functional cosmetics using membrane free stem cells.
- ✓ Combining stem cells and artificial intelligence
 - Improve brain cells and brain function to diagnose, prevent, and treat Alzheimer's and dementia
 - Research and development of artificial organs using stem cells when organs are damaged

2. develop and produce natural product-derived biomaterials

- ✓ Development of functional cosmetics using plant stem cells
- ✓ Developing technology to mass-produce microbial-enabled proteins
- ✓ Developed technology for mass production of enzymatic biomaterials for food products

3. gene editing technology

- ✓ Molecular diagnostics, RNAi drug discovery
- ✓ Animal and plant stem cell culture techniques
- ✓ Cell injection development technologies



4. Protein therapy: Development of membrane-free stem cell-based exosomes

- ✓ At the heart of the development and treatment of human disease are proteins.
- ✓ Developing and applying protein therapies to restore function when proteins are excessive, deficient, or have lost their function (membrane-free stem cell-based exosomes)
- ✓ Developing Nanoparticles (Nanomaterials) Cancer Therapeutics via Exosomes



5. Developed Cryobiology-based freeze-drying process technology

- ✓ Antifreeze glycoproteins (AFPS) research and development
 - Extensive utilization of microbes preserved in permafrost
- ✓ Life-extension-based technologies to turn back the biological clock

0

Product release planning

5

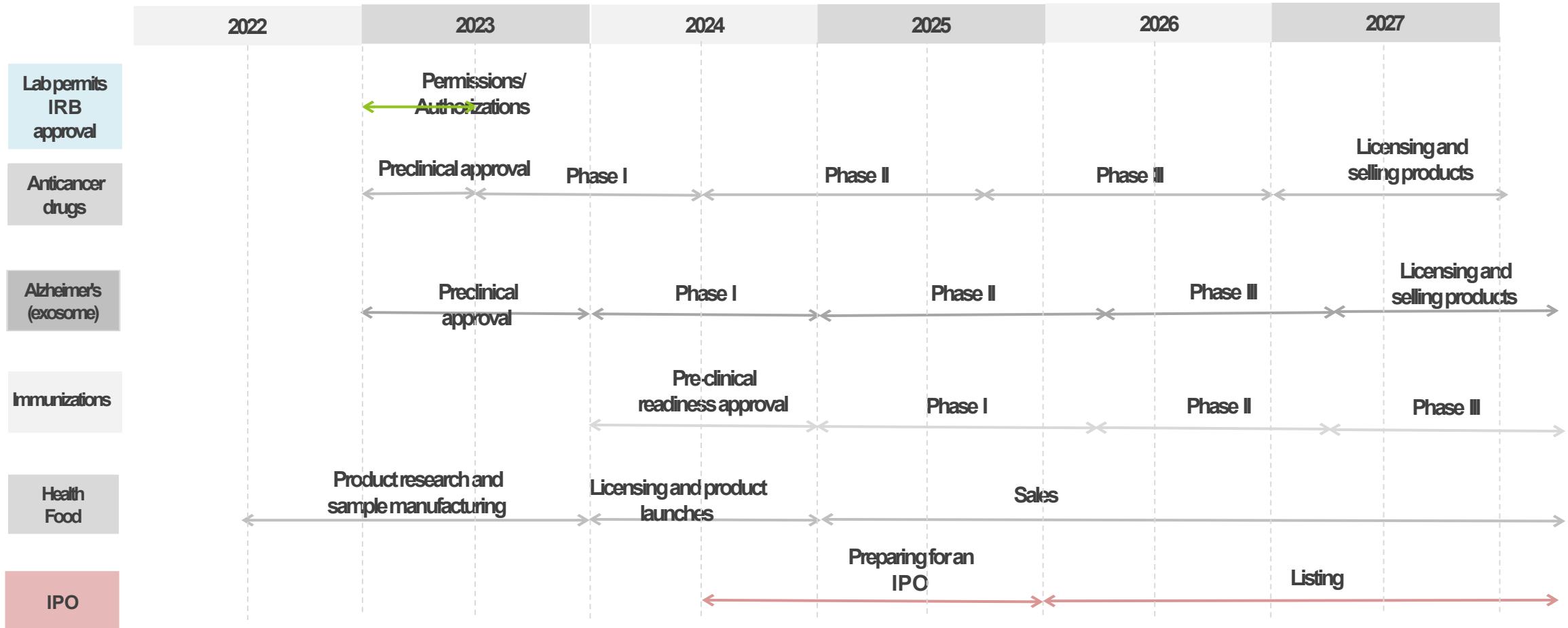
- (1) Timeline
- (2) Product launch planning
- (3) Next step



05 Product launch planning

(1) Timeline

KOREA BLOOMCELL
Advanced biopharmaceutical
R&D company



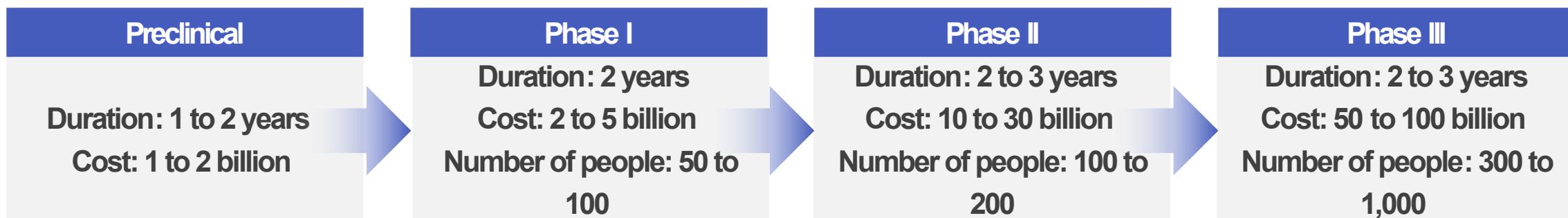
05 Product launch planning

(1) Timeline

Advanced biopharmaceutical
R&D company

Unit: KRW, people

Classification	2022				2023				2024				2025				2026				2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Anticancer drugs					Precclinical	Phase 1		Phase 2		Phase 3														
Alzheimer's (exosome)					Precclinical	Phase 1		Phase 2		Phase 3														
Immunizations									Precclinical	Phase 1		Phase 2		Phase 3										



05 Product launch planning

(1) Timeline

Eternals
Establish a domestic therapeutic/medical device sales network
ooo

Asia/America/Europe/Middle East, etc.
Securing export lines

Build collaboration

Stem Cells with a Difference
Original technology for exosome separation

Have a cancer treatment solution

Gain a technological edge

KOREA BLOOMCELL
Advanced biopharmaceutical R&D company

Mass Culture Multiplication Techniques
Reduce the cost of producing cures
* No additional research required

Lower initial investment

KOREA BloomCell
stemcell biopharmaceutical research corp.

05 Product launch planning

(2) Product Launch Planning

Anti-inflammatory and anti-aging patents

Reduced levels of **inflammatory** factors (**clinically studied**)

Increased cell survival against oxidative toxicity (**clinical trials completed**)

Excellent for moisturizing with increased Mrra of moisturizing factor AOP3
(Clinical trial completed)

Clinical anti-wrinkle, lifting care,
Anti-aging, including dermis affinity, moisturizing, etc.
Edelweiss Stem Cell Culture (Stem cell)

Adenosine

Ingredients registered for anti-wrinkle by the
Ministry of Food and Drug Safety

Antioxidant patents for skin and scalp protection
Increased cell survival and improved antioxidant efficacy
against excessive free radical (H₂O₂) oxidative toxicity that
leads to skin aging
Significant reduction in fine **dust** residue (**clinical trial completed**)
Helps homeostasis, soothe skin, and clean fine dust

Greenol

Pore-reducing and sebum-reducing patents
Helps remove inflammation, builds a film, and shrinks skin
Detoxifying, antiseptic, skin constricting, and hemostatic
(pore shrinkage/sebum control), anti-inflammatory

Tannin (Tannin Complex HR)

Niacinamide

KFDA whitening registered ingredients

Stem Cell Functional Ampoule
KRW 700.000



05 Product launch planning

(2) Product launch planning

Complete wrinkle reduction on the face and neck



Adenosine
KFDA-certified anti-wrinkle
ingredients

Anti-Wrinkle Ingredient
Thresholds
Contains more than 10 times the
highest amount (0.4%+)



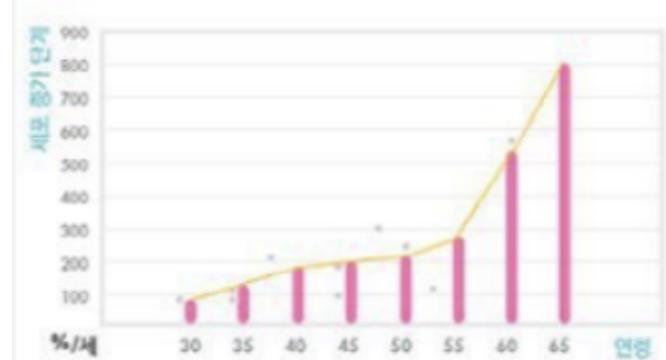
D-Panthenol
(D-Panthenol)

Cell division and wound healing
properties
Natural, non-irritating moisturizing
ingredients

Amazing skin rejuvenation from the inside out

[EGF U.S. Patent Clinical Trial Results].

Lotions formulated with EGF (0.1 ug/ml=0.00001%) had a **high of 872%** and an average of **284% higher cell growth** than lotions without EGF.



EGF (epidermal growth factor)_a key ingredient in stem cell cosmetics

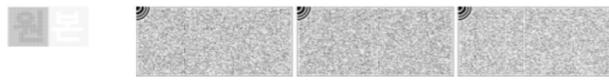
05 Product Launch Planning

(2) Product launch planning

KOREA BLOOMCELL
Advanced biopharmaceutical
R&D company

BE:20 Report card for tests with non-detectable harmful ingredients

시험 검사 성적서				
발행번호	PBRC23050335	접수번호	CG2305G0216-001	
검사원료일	2023-05-26	접수연월일	2023-05-22	
제품명	BE20			
(품목)제조번호	해당사항없음	품목제조신고번호		
유형·재질·품목 명	임플			
제조(수입)일	2023-05-19	유통(품질유지)기한	제조일로부터 2년	
성명	윤현식	업체명	주식회사 고성마	
의뢰자	(08501) 서울 금천구 가산디지털1로 225, 1106호 (가산동, 에이스 가산 포럼) 전화번호: 팩스번호: 전자우편:			
업체명				
제조원	소재지			
시험 검사목적	화장품 기타			
시험 · 검사 항목 및 결과				
시험 · 검사 항목	시험 · 검사 기준	시험 · 검사 결과	판정	비고
프레드니솔론(%)	불검출	불검출	상기실험확인함	
17-초산하드로코르티손(%)	불검출	불검출	상기실험확인함	
프로피온산풀루티카손(%)	불검출	불검출	상기실험확인함	
풀루란드레놀리드(%)	불검출	불검출	상기실험확인함	
21-초산베탠메타손(%)	불검출	불검출	상기실험확인함	
21-초산프레드니솔론(%)	불검출	불검출	상기실험확인함	
초산트리암시놀론(%)	불검출	불검출	상기실험확인함	
트리암시놀론아세토니드(%)	불검출	불검출	상기실험확인함	
21-해미호박산베글로메타손(%)	불검출	불검출	상기실험확인함	
21-초산베글로메타손(%)	불검출	불검출	상기실험확인함	
암시노나이드(%)	불검출	불검출	상기실험확인함	
베탠메타손(%)	불검출	불검출	상기실험확인함	



시험 · 검사 항목 및 결과				
시험 · 검사 항목	시험 · 검사 기준	시험 · 검사 결과	판정	비고
21-해미호박산메타손(%)	불검출	불검출	상기실험확인함	
초산디플로리손(%)	불검출	불검출	상기실험확인함	
21-프로피온산 베글로메타손(%)	불검출	불검출	상기실험확인함	
초산디플로리손(%)	불검출	불검출	상기실험확인함	
초산풀루드로코르티손(%)	불검출	불검출	상기실험확인함	
풀루오시놀론아세토니드(%)	불검출	불검출	상기실험확인함	
풀로베탠손부티레이트(%)	불검출	불검출	상기실험확인함	
17-프로피온산풀로베탠(%)	불검출	불검출	상기실험확인함	
21-해미호박산베탠메타손(%)	불검출	불검출	상기실험확인함	
21-초산하드로코르티손(%)	불검출	불검출	상기실험확인함	
엑사메타손(%)	불검출	불검출	상기실험확인함	
부데소니드(%)	불검출	불검출	상기실험확인함	
21-길초산베탠메타손(%)	불검출	불검출	상기실험확인함	
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17-프로피온산 베글로메타손(%)	불검출	불검출	상기실험확인함	
하드로코르티손부티레이트(%)	불검출	불검출	상기실험확인함	
17-길초산하드로코르티손(%)	불검출	불검출	상기실험확인함	
21-초산엑사메타손(%)	불검출	불검출	상기실험확인함	
모메타손푸로에이트(%)	불검출	불검출	상기실험확인함	
하드로코르티손(%)	불검출	불검출	상기실험확인함	
21-해미호박산하드로코르티손(%)	불검출	불검출	상기실험확인함	
21-길초산하드로코르티손(%)	불검출	불검출	상기실험확인함	



시험 · 검사 항목 및 결과				
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17-21-디프로피온산 베글로메타손(%)	불검출	불검출	상기실험확인함	
21-초산프레드니손(%)	불검출	불검출	상기실험확인함	
21-초산코르티손(%)	불검출	불검출	상기실험확인함	
17-21-디프로피온산베탠메타손(%)	불검출	불검출	상기실험확인함	

종합판정 : 상기실험확인함

시험검사원 : 이재환

시험검사책임자 : 김남길

비고 :

- * 위 판정은 의뢰된 시험 검사 항목만 대상으로 한 것입니다.
- * 지연이 부족한 경우 시험 검사 항목 및 결과를 별도로 작성 가능합니다.
- * 검사결과를 광고하거나 용기 포장 등에 표시할 때에는 시험 검사 성적서 전체 내용을 모두 표시하여야 합니다.

2023년05월26일

주식회사 오에이티씨(OATC Inc.)

서울 금천구 경인로 1190 (가산동, 디지털융합아이밸리) 비206호, 층206호, 801호~806호 905호~912호, 1010호, 1011호, 1103호, 1406호 Tel: 070-4044-8830 Fax: 02-2824-2629



03 / 03

05 Product Launch Planning

(2) Product launch planning

KOREA BLOOMCELL
Advanced biopharmaceutical
R&D company

Whitening and breakout relief in one step



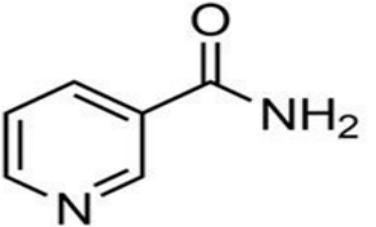
Beta-glucan (B-glucan)

Immune Boosting
Mushroom Extracts
Clear, even skin tone



Argan Oil

Protect skin from damage and
reduce breakouts
Reduces the appearance of
dark spots and blemishes



Niacinamide

Niacinamide (Vitamin B3)

Water-soluble vitamins with
melanogenic properties
KFDA-certified whitening
functional ingredients



Change after 3 months



I am a 24-year-old female with
systemic atopy.
The instep area is the most
severe, so I'm taking care of that.
September, October, November
2022
That's a change in just three
months.

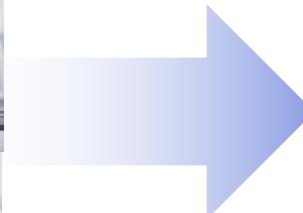
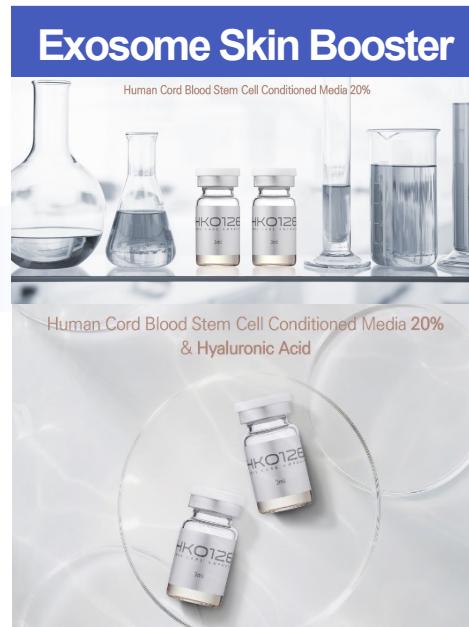


05 Product Launch Planning

(2) Product launch planning

Umbilical Cord Blood Stem Cells Exosomes Skin Booster

- ✓ Cord blood stem cell exosomes 100% (1,000,000 ppm)
- ✓ Korea Bloom Cell's unique exosome extraction and freeze-drying technology
- ✓ Contains approximately 260 ultra-high concentrations of growth factors and proteins, including cytokines, SDF-1, EGF-1, and more
- ✓ Activates skin cells + improves immunity + strengthens skin barrier and self-protection



- ✓ Completed development of exosome skin booster product along with stem cell ampoule, now preparing for mass production
- ✓ Sells atopic cosmetics for \$150,000 per vial (5ml) to hospitals and KRW 99,000 for B2C.

05 Product Launch Planning

(2) Product launch planning

1. Safe. (100% Organic (All Natural Herbal Ingredient))

This cream is a product made in a new way that is completely different from existing steroid-based ointments, creams, and moisturizing cosmetics. Unlike steroid products that have side effects when used for a long period of time, this cream has almost no side effects when used to improve atopic dermatitis, psoriasis, and various dermatitis because it is made of the highest quality raw materials that have passed safety tests and does not contain any chemicals.

2. Enhance the Internal Immune System

Most skin diseases such as atopic dermatitis and psoriasis are caused by an unhealthy internal state of the body that manifests itself on the skin. This product basically balances and strengthens the body's skin immune function to permanently eliminate the underlying cause of dermatitis.

3. eliminate the underlying cause of dermatitis such as atopy and psoriasis (Permanent Cure)

Dermatitis such as atopy and psoriasis are the result of toxins in the body manifesting on the skin. Moisturizing cosmetics such as ointments and creams on the market can only provide temporary improvement. The best way to get rid of dermatitis permanently is to remove the toxins from the body by taking them out of the body (Cure from inside out).

Human Systemic Blood Cells + Microbiome Rubin Atoless Cream is a combination of The result of this approach is a product that is clearly differentiated from existing products that provide a temporary fix.



A Torres Rubin Cream: 99,000

05 Product Launch Planning

(2) Product launch planning

KOREA BLOOMCELL
Advanced biopharmaceutical
R&D company

Rubin Cream Steroid Test Results



시험 검사 성적서				
발행번호	PBRC23050335	접수번호	CG2305G0216-001	
검사완료일	2023-05-26	접수연월일	2023-05-22	
제품명				
(품목)제조번호	해당사항없음	품목제조신고번호		
유형·재질·품목명	크림			
제조(디급)일	2023-05-19	유통(품질유지)기한	제조일로부터 2년	
성명	윤원식	업체명	주식회사 고성마	
의뢰자	(08501) 서울 금천구 가산디지털1로 225, 1106호 (가산동, 에이스 가산 포럼)	전화번호:	팩스번호:	전자우편:
업체명	제조원	제조일		
소재지				
시험 검사목적	화장품 기타			

시험 · 검사 항목 및 결과

시험 · 검사 항목	시험 · 검사 기준	시험 · 검사 결과	판정	비고
프레드니솔론(%)	불검출	불검출	상기실험확인함	
17-초산히드로코르티손(%)	불검출	불검출	상기실험확인함	
프로피온산플루티카손(%)	불검출	불검출	상기실험확인함	
플루란드레놀리드(%)	불검출	불검출	상기실험확인함	
21-초산베타메타손(%)	불검출	불검출	상기실험확인함	
21-초산프레드니솔론(%)	불검출	불검출	상기실험확인함	
초산트리암시놀론(%)	불검출	불검출	상기실험확인함	
트리암시놀론아세토니드(%)	불검출	불검출	상기실험확인함	
21-heimer박산베클로메타손(%)	불검출	불검출	상기실험확인함	
21-초산베클로메타손(%)	불검출	불검출	상기실험확인함	
암시노나이드(%)	불검출	불검출	상기실험확인함	
베타메타손(%)	불검출	불검출	상기실험확인함	



01 / 03



시험 · 검사 항목 및 결과				
시험 · 검사 항목	시험 · 검사 기준	시험 · 검사 결과	판정	비고
21-heimer박산액사메타손(%)	불검출	불검출	상기실험확인함	
초산디플로리손(%)	불검출	불검출	상기실험확인함	
21-프로피온산 베클로메타손(%)	불검출	불검출	상기실험확인함	
초산디클로리손(%)	불검출	불검출	상기실험확인함	
초산풀루드로코르티손(%)	불검출	불검출	상기실험확인함	
풀루오시놀론아세토니드(%)	불검출	불검출	상기실험확인함	
클로베틱스부티레이트(%)	불검출	불검출	상기실험확인함	
17-프로피온산클로베타솔(%)	불검출	불검출	상기실험확인함	
21-heimer박산베타메타손(%)	불검출	불검출	상기실험확인함	
21-초산하이드로코르티손(%)	불검출	불검출	상기실험확인함	
액사메타손(%)	불검출	불검출	상기실험확인함	
부데소니드(%)	불검출	불검출	상기실험확인함	
21-길초산베타메타손(%)	불검출	불검출	상기실험확인함	
17-길초산베타메타손(%)	불검출	불검출	상기실험확인함	
17-프로피온산 베클로메타손(%)	불검출	불검출	상기실험확인함	
하드로코르티손부티레이트(%)	불검출	불검출	상기실험확인함	
17-길초산히드로코르티손(%)	불검출	불검출	상기실험확인함	
21-초산액사메타손(%)	불검출	불검출	상기실험확인함	
모메타손후로에이트(%)	불검출	불검출	상기실험확인함	
하드로코르티손(%)	불검출	불검출	상기실험확인함	
21-heimer박산하드로코르티손(%)	불검출	불검출	상기실험확인함	
21-길초산하이드로코르티손(%)	불검출	불검출	상기실험확인함	



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시험 · 검사 항목 및 결과				
시험 · 검사 항목	시험 · 검사 기준	시험 · 검사 결과	판정	비고
베클로메타손(%)	불검출	불검출	상기실험확인함	
17,21-디프로피온산 베클로메타손(%)	불검출	불검출	상기실험확인함	
21-초산프레드니손(%)	불검출	불검출	상기실험확인함	
21-초산코르티손(%)	불검출	불검출	상기실험확인함	
17,21-디프로피온산베타메타손(%)	불검출	불검출	상기실험확인함	

종합판정 : 상기실험확인함

시험검사원 : 이재환

시험검사책임자 : 김남길

비고:

* 위 판정은 의뢰된 시험 검사 항목만 대상으로 한 것입니다.

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* 검사결과를 광고하거나 용기 포장 등에 표시할 때에는 시험 검사 성적서 전체 내용을 모두 표시하여야 합니다.

2023년05월26일

주식회사 오에이티씨(OATC Inc.)



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Tel: 070-4044-8830 Fax: 02-2624-2629



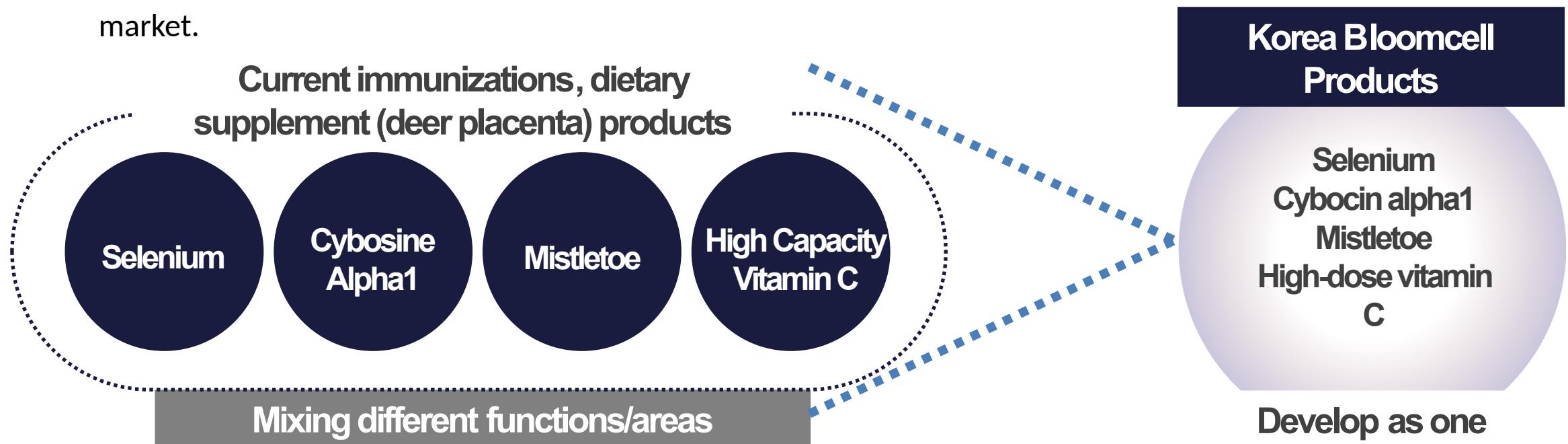
03 / 03

05 Product Launch Planning

(2) Product Launch Planning

Immunizations, Dietary Supplements (Deer Placenta)

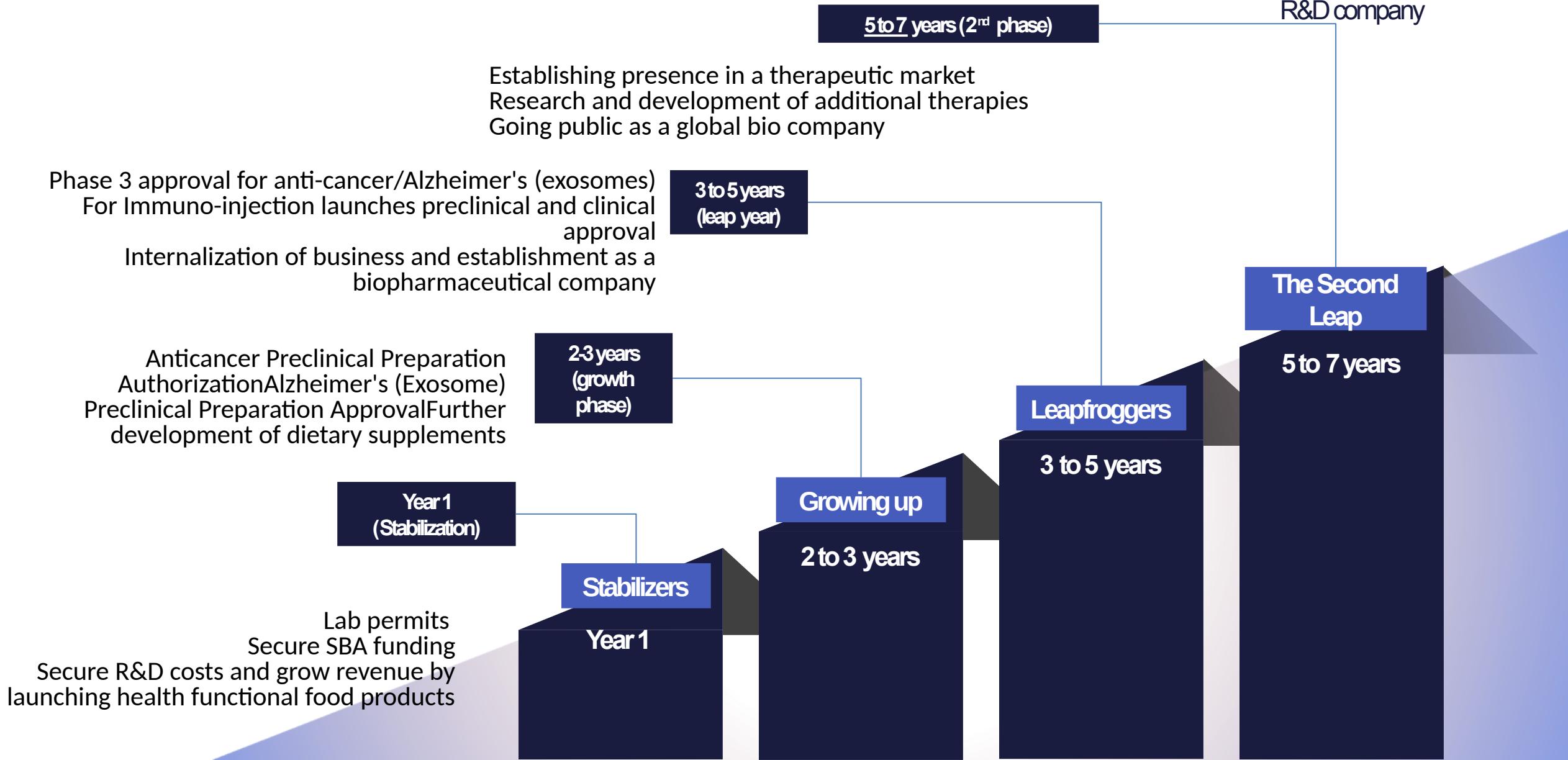
- ✓ Immune injections are prescribed to boost immunity in patients after cancer and oncology surgeries and to speed up healing of surgical sites, and are currently off-label.
- ✓ Currently, there are four products: Selenium, Cybosine Alpha 1, Mistletoe, and High-Dose Vitamin C. Korea Bloom Cell's upcoming products have four functions.
- ✓ (Selenium, Cybosine Alpha 1, Mistletoe, High-dose Vitamin C), which is expected to be easy to enter the market and market.



05 Product Launch Planning

(3) Next step

KOREA BLOOMCELL
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R&D company



0

Product sales and revenue

6

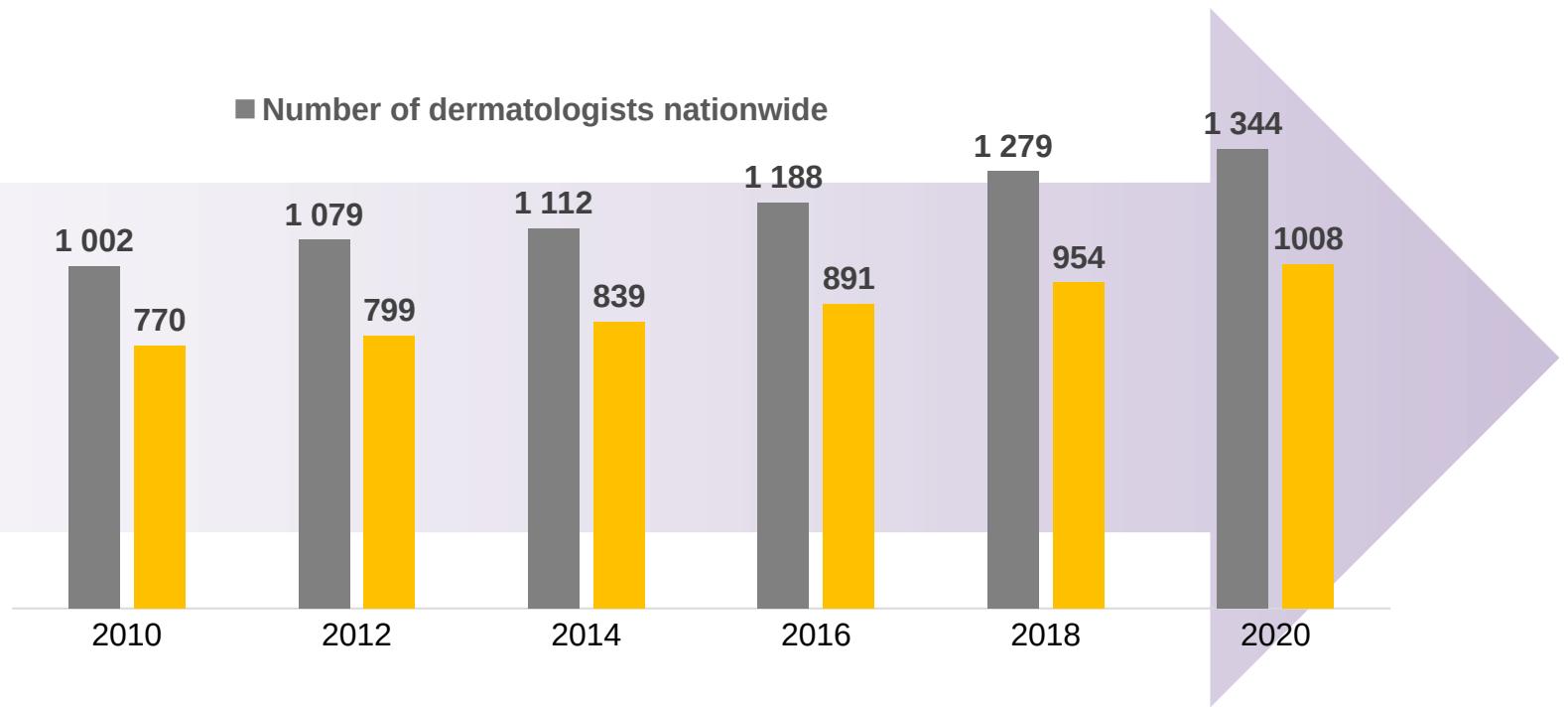
Planning

- (1) Product sales plan
- (2) Annual Sales

06 Product sales and revenue

(1) Product sales plan

- ✓ Exosome skin boosters are available for immediate delivery, especially for plastic surgery and dermatology
- ✓ National dermatology growth has been 34% over the past decade, with plastic surgery at 30%.
- ✓ Sell products to the ever-growing domestic dermatology/plastic surgery market



06 Product sales and revenue

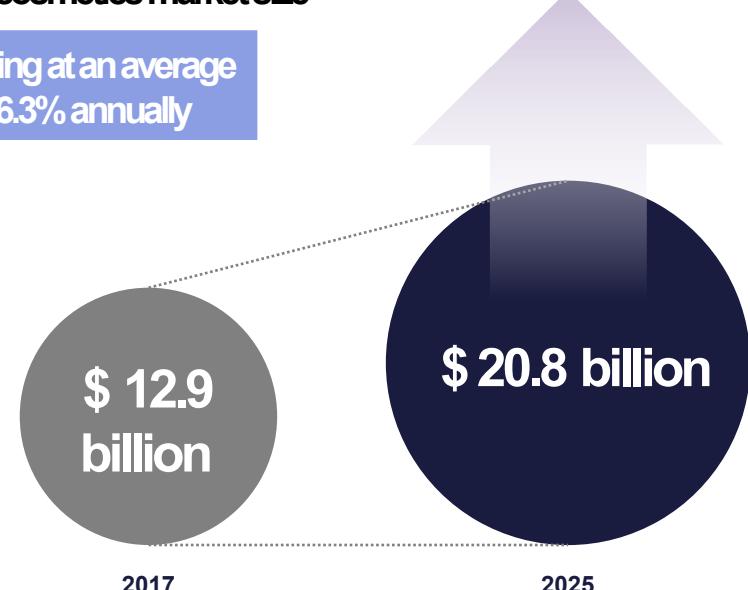
(1) Product sales plan

- ✓ Stem cells are being labeled as a 'green' technology that can replace animal testing and can be used to produce eco-friendly cosmetics such as 'vegan'.
- ✓ The company's exosome-based cosmetics have anti-aging properties, so it is tapping into this anti-aging market.

Global Vegan Cosmetics Market Growth Forecast (2018 to 2025)

Vegan cosmetics market size

Growing at an average
of 6.3% annually



Source: Grand View Research

Global Anti-Aging Therapeutic Services Market

Year-over-year growth (%)

4.7

5.2

5.7

6.2

7.5

Market Size (\$ 100 million)

625.3

657.6

695.3

738.2

855.5

2017

2018

2019

2020

2022

Source: Center for Biotechnology Policy Research

06 Product sales and revenue

(2) Annual Sales

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- ✓ In the case of stem cell ampoules, the price per unit is 350,000 won, and the total number of plastic surgeries and dermatologists in Korea is more than 2,300, and B2B sales are conducted to these companies.
- ✓ Estimated 20% of 2,300 companies as potential customers, with a goal of delivering to 460 companies
- ✓ Delivered an average of 1.8 deliveries per month to over 460 customers, 21 deliveries per year, and achieved over KRW 12.2 billion in revenue when combined with B2C sales.

	2024	2025	2026	2027
Stem Cell Functional Ampoules B2B sales volume	10,000	20,000	40,000	70,000
Stem Cell Functional Ampoules B2C sales volume	25,000	40,000	70,000	90,000
Sales total	35,000	60,000	110,000	160,000
Sales total (KRW)	12.25 billion	21 billion	385 billion	560 billion won

06 Product sales and revenue

(2) Annual Sales

KOREA BLOOMCELL
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R&D company

- ✓ Exosome skin booster is delivered to hospitals at a price of 150,000 won per unit, and B2B sales are conducted to more than 2,300 plastic surgeries and skin clinics nationwide.
- ✓ Expected high sales volume at a low price of KRW 150,000 compared to stem cell ampoules costing KRW 350,000 per unit
- ✓ Atopic cosmetics can be sold and delivered both B2B and B2C. Expected to expand sales volume from 2026 due to exports

	2024	2025	2026	2027
Exosome Skin Booster B2B sales volume	20,000	30,000	50,000	90,000
Exosome Skin Booster B2C sales volume	30,000	50,000	70,000	100,000
Sales of atopic cosmetics	50,000	80,000	100,000	120,000
Sales total (KRW)	12.45 billion	19.92 billion	279 billion won	403.8 billion

- ✓ In 2024-2025, clinical costs are expected to be in the range of KRW 220-600 billion, all of which can be offset by revenue.
- ✓ After all clinical trials are completed in 2026, we will start exporting not only domestically but also to full-scale overseas markets.
- ✓ In China, the total sales of cosmetics is KRW 71 trillion, so we are focusing on the North American and Chinese markets.

	Unit: KRW billion			
	2024	2025	2026	2027
Stem Cell Functionality Ampoule sales	12.25	21	38.5	56.0
Exosome Skin Booster Revenue	75	12.0	18.0	28.5
Sales of atopic cosmetics	4.95	7.92	99	11.88
Sales total	24.7	40.9	66.4	96.3

KOREA BLOOMCELL

첨단 바이오 의약품 연구 기업
Thank you.