



Empowering You to Live with Confidence



Expanding the Possibilities of a Better Tomorrow



So You Can Share More Time with Those You Love

EHL
EHL
BIOTECHNOLOGY
INSTITUTE
BIO
IMMUNE CELL



The Value of Life Sciences—Adding, Multiplying, and Sharing

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E

**Aesthetics is about adding confidence to life.**

EHLBIO goes beyond outward beauty to explore the moments when confidence and dignity are restored.

H

**Health is about multiplying possibilities.**

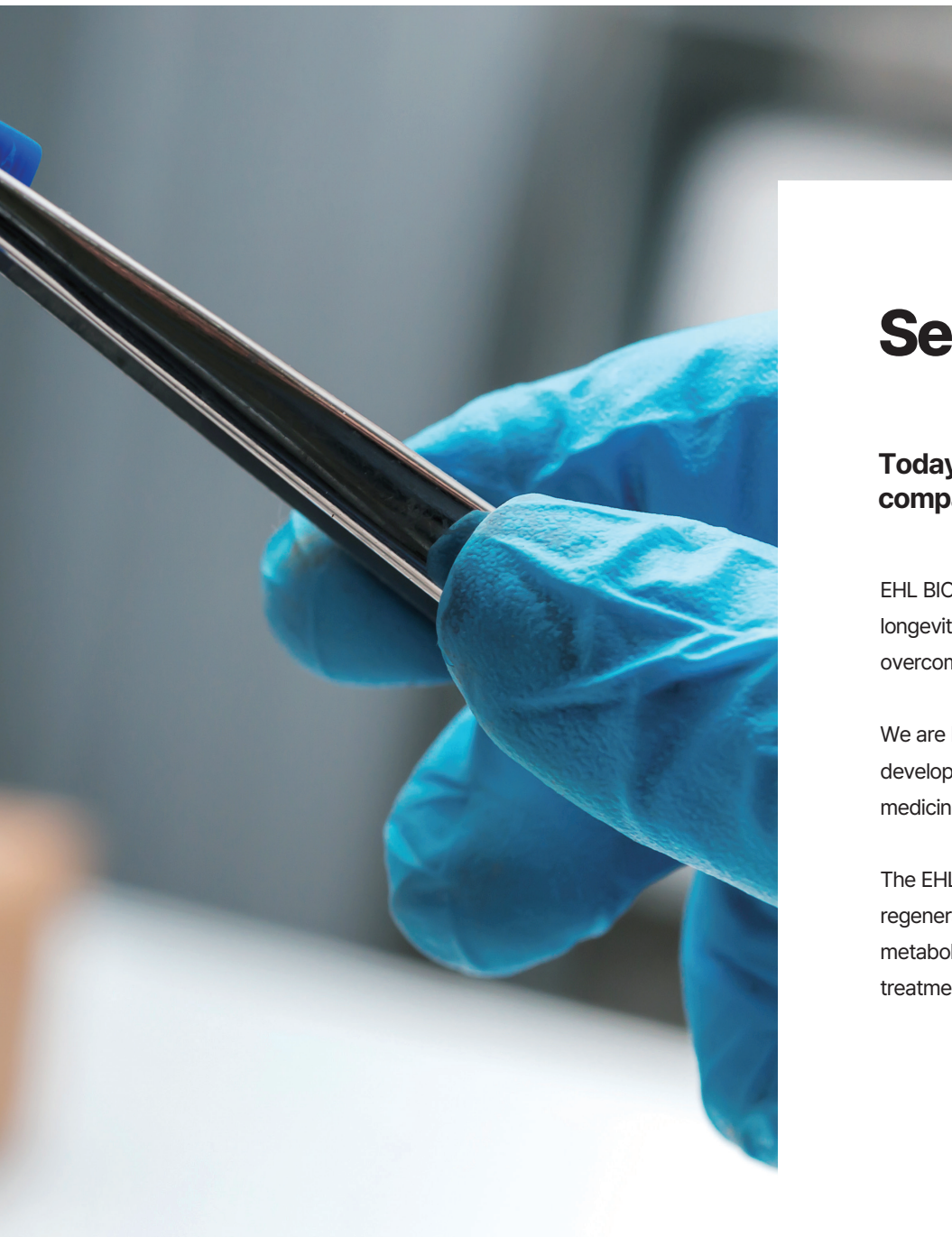
We help healthy cells, healthy recovery, and healthy daily living expand the possibilities of life.

L

**Longevity is about sharing more time.**

It is not simply about living longer, but about creating more time to laugh and be together with the people we love.





See the Future at EHL!

Today, EHL continues its dynamic rise as a biotechnology company attracting worldwide attention.

EHL BIO is a research and development institute established to extend human longevity and help people lead younger, healthier lives by developing solutions to overcome disease and aging.

We are leading the commercialization of innovative treatments by combining the development of stem cell and immune cell therapies—key areas of future regenerative medicine—with groundbreaking medical cell therapy technologies.

The EHL BIO Research Institute is dedicated to research and development in regenerative medicine for the treatment of neurological, osteoarticular, cardiovascular, metabolic, and autoimmune diseases, as well as anti-aging, health promotion, hairloss treatment, and aesthetic dermatology.





EHL Protects You.

Personalized medical care cannot be easily replicated. It requires the knowledge, technology, and expertise gained through years of bringing cell therapies into clinical practice. A personalized solution designed for your body begins with your own cells.



Regenerative Medicine (Regenerative Medicine)

Regenerating damaged tissues and organs

- 1 Adipose-Derived Stem Cells** | World's First Phase III IV Trial
 - Stem cell therapy for diseases caused by impaired organ or tissue function (liver cirrhosis, diabetes, hypertension, Parkinson's disease, rheumatoid arthritis, and other intractable diseases)
 - Anti-aging treatment
- 2 Urine-Derived Stem Cells (KLOCELL)** | World-First Trial
 - Demonstrates superior efficacy in treating kidney, urinary, and reproductive system disorders compared with other stem cells
 - First in the world to demonstrate that UDSCs are stem cells that secrete Klotho (Published in an international journal / Patent granted)
 - World's first KLOCELL clinical trial for chronic diseases planned
- 3 EPC (Vascular Endothelial Cells)**
 - Cells designed to restore damaged vascular endothelial function and promote blood vessel regeneration
 - Used to improve microcirculation and support recovery through angiogenesis

Defensive Medicine (Defensive Medicine)

Protection against cancer and viruses

- 1 N.K**
 - Representative immune cells of the first line of defense (innate immunity), capable of recognizing abnormal cells and immediately detecting and eliminating cancer cells, virus-infected cells, and other abnormal cells
- 2 D.C**
 - Professional antigen-presenting cells involved in both innate and adaptive immunity, primarily presenting antigens to T cells
- 3 T**
 - Cells that express T-cell receptors (TCRs) capable of recognizing specific antigens on cancer cells and virus-infected cells

Anti-Aging Medicine (Anti-aging Medicine)

Healthy longevity and anti-aging medicine

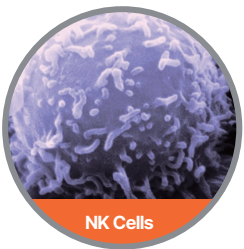
- 1 KLOSOME® (Method-of-Use Patent / Composition-of-Matter Patent / Trademark Registration)**
 - Anti-aging effects of Klotho protein
 - Skin-regenerative efficacy of stem cell-derived exosomes

Immune Cells

Immune cells protect our bodies naturally.

Types of Immune Cells

Immune cells mainly include macrophages and NK cells, which are involved in innate immunity; T cells and B cells, which are involved in adaptive immunity; and dendritic cells and gamma delta T cells, which participate in both immune responses.



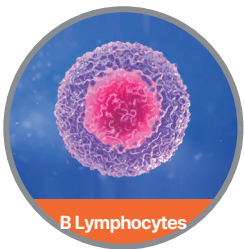
NK Cells

Attacks virus-infected cells and tumor cells



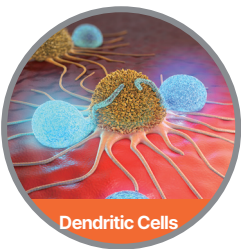
Macrophages

- Phagocytosis and bactericidal activity
- Removal of foreign substances and cellular waste
- Antigen presentation and antiviral activity
- Anticancer activity



B Lymphocytes

Antibody production



Dendritic Cells

The most potent antigen-presenting cells against cancer cells

Immunity protects the body from foreign substances or abnormal self-derived substances.

Under normal conditions, it eliminates foreign substances to develop immunity and removes cancer cells and waste products to maintain health.

However, insufficient immune activity can lead to chronic infectious diseases or cancer, while excessive immune activity can cause allergies or autoimmune diseases.

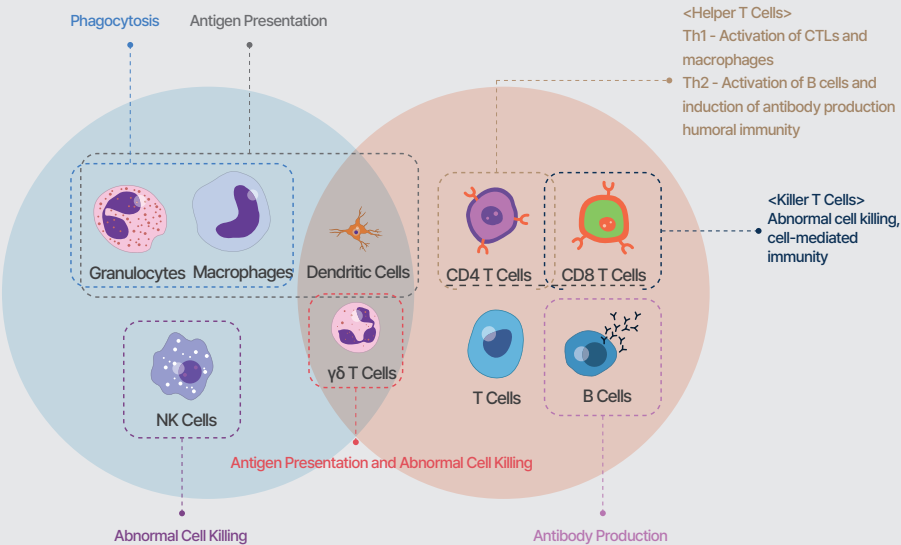
Classification of Immune Cells

Innate Immunity

A natural immune response that occurs to protect and restore the body when tissue damage or bacterial invasion is detected (e.g., inflammation)

Adaptive Immunity

Immunity formed through learning and memory while responding to pathogens, with a specific memory response (e.g., influenza vaccination)



Cancer Cells

Immune cells attack cancer cells and viruses.

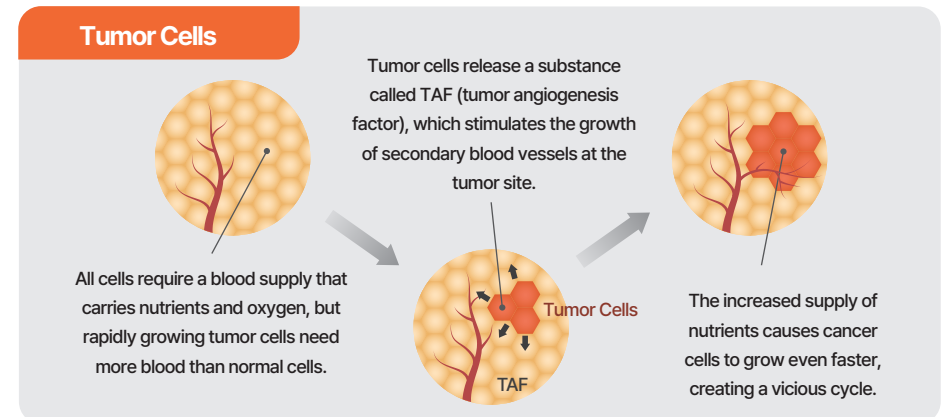
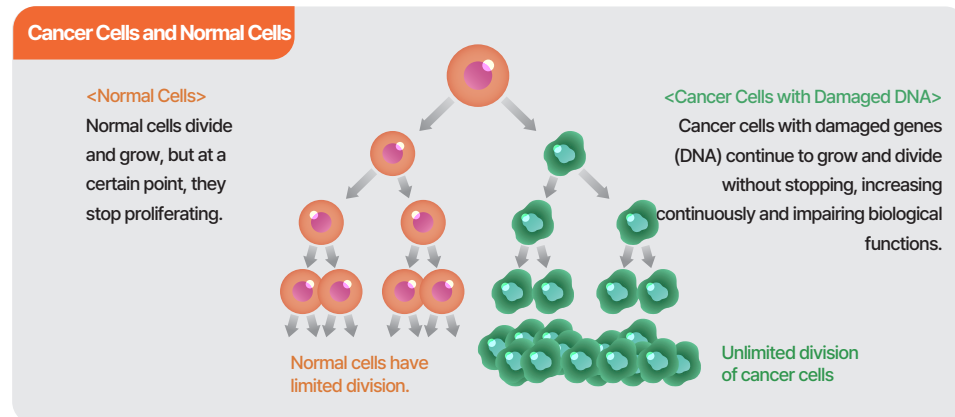
Normal cells have the ability to repair themselves when their DNA is damaged, and when repair is difficult, they undergo cell death on their own.

However, cancer cells develop mutations in which DNA is repaired in a form different from the original,

and continue to divide abnormally and unnecessarily, destroying normal cells and causing disease.

As mutations continuously accumulate over years or decades, rather than occurring only once or twice, 5,000 cancer cells are produced every day.

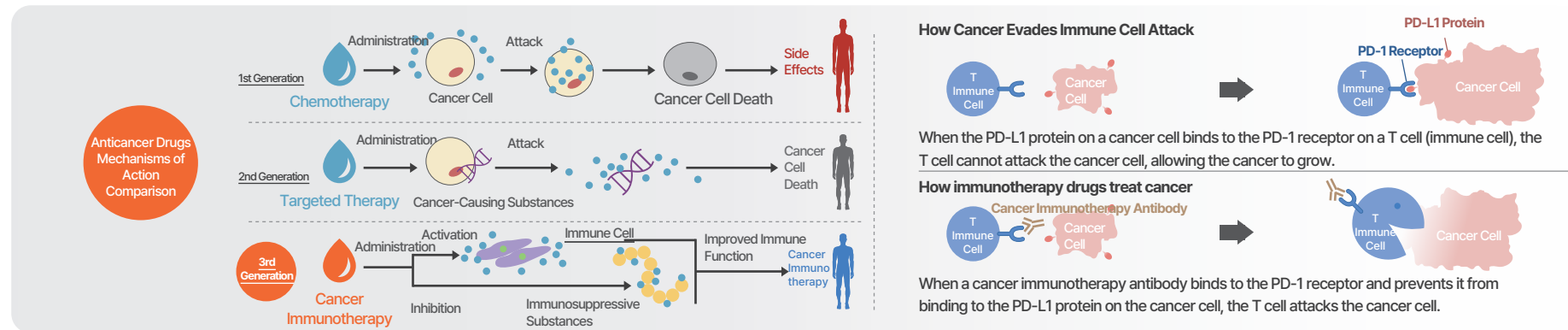
When immune function is normal, up to 10 million tumor cells can be eliminated, and approximately 1 billion tumor cells are required before cancer can be detected.



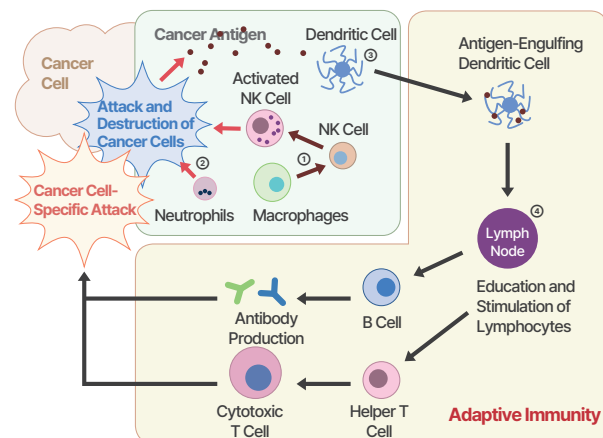
Cancer Immunotherapy

A New Paradigm in Cancer Treatment Led by EHL.

Advances in Anticancer Therapies



Immune Cell Responses to Cancer



- ① Activated macrophages activate NK cells.
- ② When activated macrophages, NK cells, and other immune cells destroy cancer cells, cancer antigens are taken up by dendritic cells.
- ③ Dendritic cells that have engulfed cancer antigens present the antigens on their cell surface, and
- ④ B cells produce antibodies.
- ⑤ **Cancer cells are attacked through cancer antigen-specific immune responses. → Adaptive Immunity**

NK Cells

Among immune cells, NK cells are closely associated with cancer.

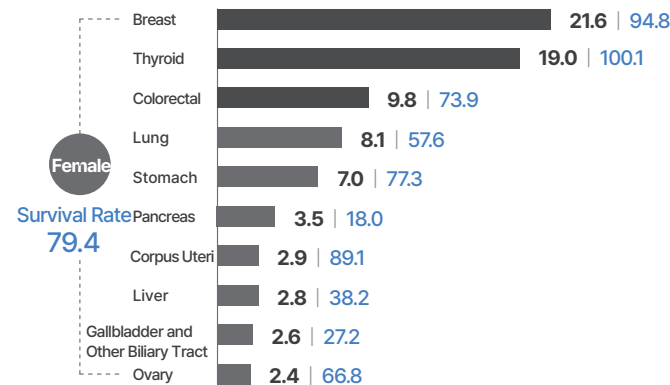
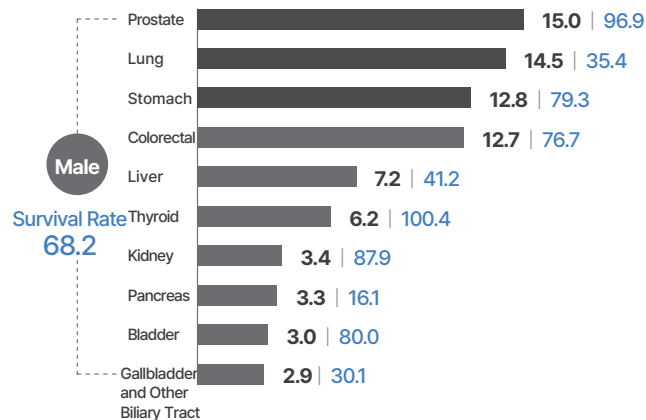
NK (Natural Killer) cells are a type of white blood cell in the blood that plays a role in innate immunity. They mature in the bone marrow and are also known as “natural killer cells.” The primary function of NK cells is to directly attack and eliminate virus-infected cells and cancer cells.

Cancer Statistics

If Koreans live to their expected lifespan, an estimated 44.6% of men, or approximately 1 in 2, and 38.2% of women, or approximately 1 in 3, will develop cancer. (Source: National Cancer Center, based on the 2023 National Cancer Registry Statistics)

Incidence Proportions and 5-Year Relative Survival Rates for Major Cancers by Sex

2023 Incidence Proportion (%) / 2019–2023 5-Year Relative Survival Rate (%)



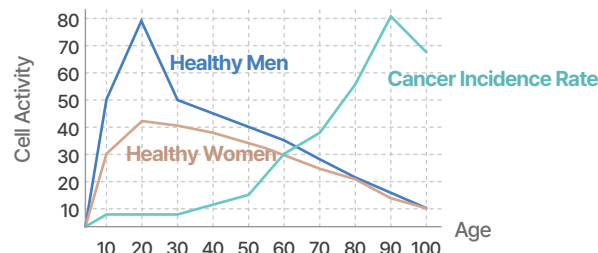
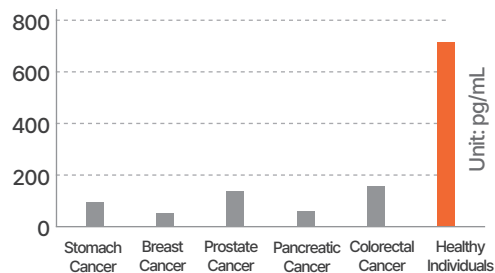
* Survival Rate

- This is the 5-year relative survival rate of cancer patients diagnosed between 2019 and 2023.
- The gray bars indicate the incidence proportions (%) of major cancers in 2023.
- The blue numbers indicate the 5-year relative survival rates (%) for the corresponding cancer types.
- Relative survival rates may exceed 100%.

Source: Ministry of Health and Welfare-Korea Central Cancer Registry (National Cancer Center)

Comparison of NK Cell Activity Between the General Population and Patients with Five Major Cancers

Studies have shown that cancer patients with higher NK cell activity have higher survival rates.

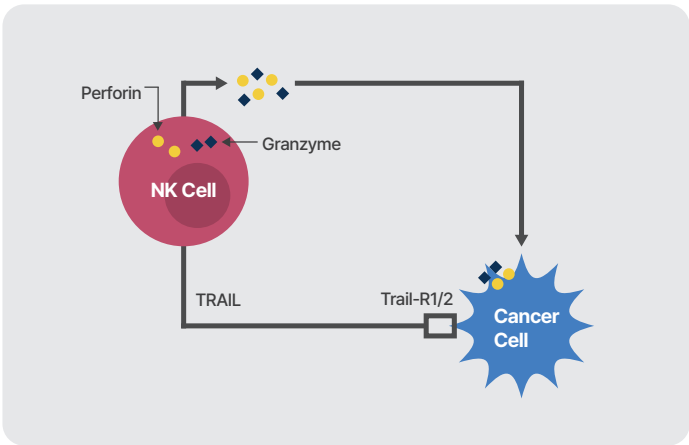
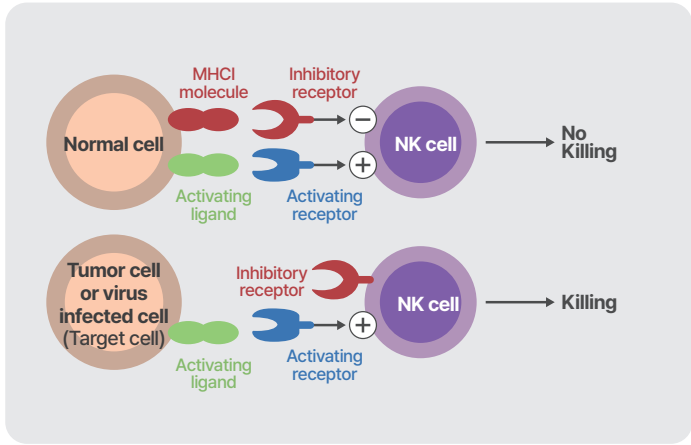


EHL NK Cells Are Different.

Super NK Cell Therapy

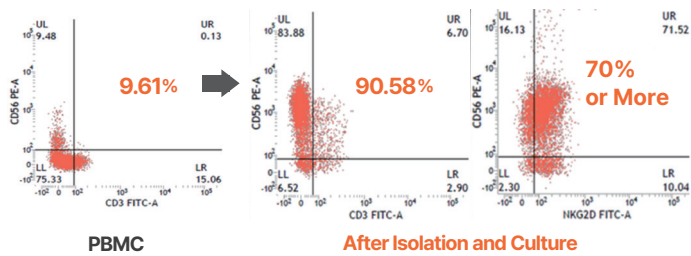
When NK cells recognize cancer cells, secreted perforin facilitates cell membrane permeabilization, while granzyme induces the apoptosis pathway.

EHL Super NK Cells demonstrate superior performance compared with competing products. This reflects EHL BIO's continuous research and development efforts to enhance NK cell activity and purity.

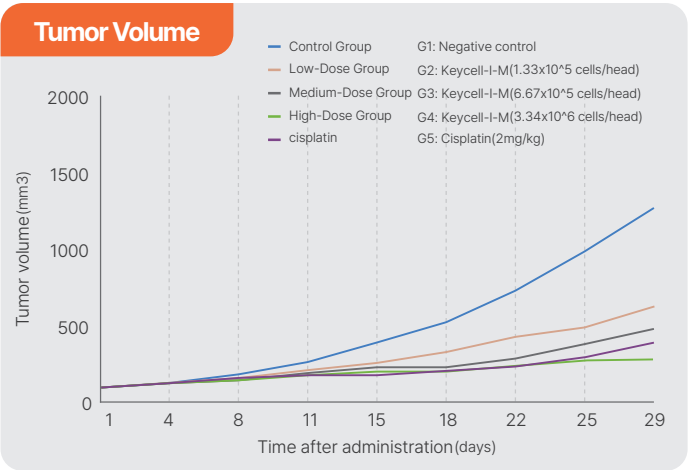


Anticancer Activity of EHL Super NK Cells

- Through an isolation and culture process, NK cells—which account for approximately 10% of PBMCs—are expanded to comprise more than 90% of the cell population (purity above 90%).
- More than 70% of the cells express NKG2D, an NK cell activation marker, demonstrating superior NK cell characteristics compared with those of other companies.
- Studies have shown that high-dose NK cells produce significantly greater anticancer effects even when compared with the conventional chemotherapy agent cisplatin.



	Before Culture	After Culture
NK Cell Count	9.4x10 ⁶	9.95x10 ⁹
NK Cell Proportion	9.61%	90.58%



NK Cells

Another Role of NK Cells, Immune Cleansing

NK, the Zombie Cell Eliminator

Our bodies contain “zombie cells”—senescent or damaged cells—that no longer function but remain without dying.

These cells can cause inflammation, negatively affect surrounding cells, and interfere with tissue recovery and regeneration.

By recognizing and eliminating these zombie cells, NK cells help clear the tissue environment and promote robust cellular activity.



OPEN ACCESS

EDITED BY
Laura Senovilla,
Spanish National Research Council (CSIC),
Spain

REVIEWED BY
Mariana Pavel-Tanasa,
Grigore T. Popa University of Medicine and
Pharmacy, Romania
Ling Ni,
Tsinghua University, China

*CORRESPONDENCE
Lin Kang
✉ lin.kang@celularity.com

[†]These authors have contributed
equally to this work and share
first authorship

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Senescence, NK cells, and cancer: navigating the crossroads of aging and disease

Marina Gergues¹, Rafijul Bari¹, Sharmila Koppiseti,
Anna Gosiewska, Lin Kang* and Robert J. Hariri

Research and Development, Celularity Inc., Florham Park, NJ, United States

Cellular senescence, a state of stable cell cycle arrest, acts as a double-edged sword in cancer biology. In young organisms, it acts as a barrier against tumorigenesis, but in the aging population, it may facilitate tumor growth and metastasis through the senescence-associated secretory phenotype (SASP). Natural killer (NK) cells play a critical role in the immune system, particularly in the surveillance, targeting, and elimination of malignant and senescent cells. However, age-related immunosenescence is characterized by declining NK cell function resulting in diminished ability to fight infection, eliminate senescent cells and suppress tumor development. This implies that preserving or augmenting NK cell function may be central to defense against age-related degenerative and malignant diseases. This review explores the underlying mechanisms behind these interactions, focusing on how aging influences the battle between the immune system and cancer, the implications of senescent NK cells in disease progression, and the potential of adoptive NK cell therapy as a countermeasure to these age-related immunological challenges.

KEYWORDS

cellular senescence, NK cells, adoptive immunotherapy, NK cell therapy, cancer

1 Introduction

The World Health Organization (WHO) estimates that by 2050, over 2 billion people will be aged 60 or older (1). However, while overall age increases, the number of years in good health remains constant, suggesting that the extended years are often accompanied by illness. As shown in [Figure 1](#), aging is associated with cellular senescence, age-related various diseases, genetic mutations, and increased cancer incidence, whereas physical fitness progressively declines. Research indicates that the incidence of chronic diseases such as heart disease, diabetes, neurodegeneration, and cancer increases steeply with older age (2). With this increased prevalence of age-related disease comes associated healthcare costs. For instance, the economic burden of dementia is projected to rise from \$263 billion in 2019 to \$1.6 trillion by 2050 (3). Similarly, the cancer-attributable costs in the United States are projected to increase from \$183 billion in 2015 to \$246 billion by 2030 (4). These trends highlight an urgent need for effective healthcare strategies to address the challenges posed by an aging population as part of this demographic shift.

Senescent Cells, NK Cells, and Cancer: The Role of Immunity at the Crossroads of Aging and Disease

Gergues M, Bari R, Koppiseti S, Gosiewska A, Kang L and Hariri RJ (2025) Senescence, NK cells, and cancer: navigating the crossroads of aging and disease. *Front. Immunol.* 16:1565278. doi: 10.3389/fimmu.2025.1565278

NK Cells

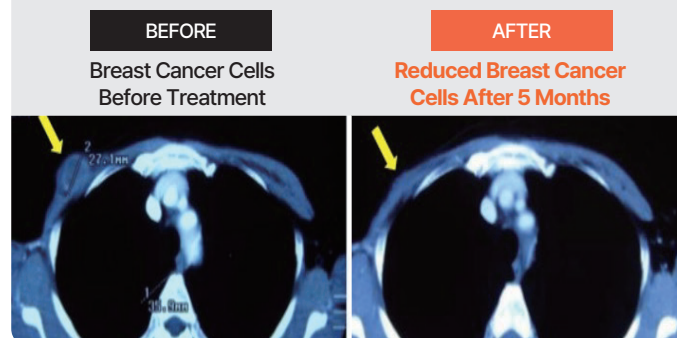
A Wide Range of Cancers Can Be Treated with Super NK Cells.

NK cell immunotherapy involves extracting NK cells from a patient's blood, culturing them ex vivo, and then administering them back to the patient.

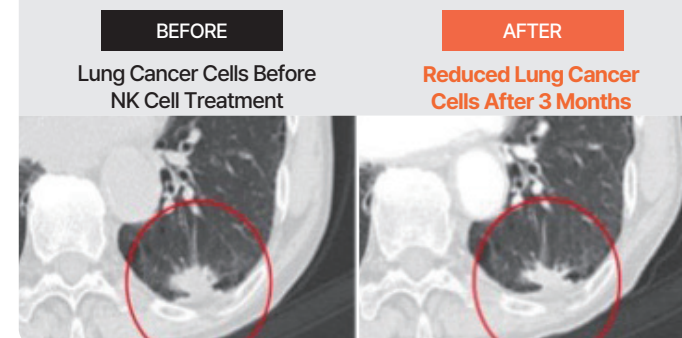
In addition to treating cancer, it helps improve the quality of life of patients whose condition has been adversely affected by chemotherapy side effects.

Super NK Cell Treatment Cases

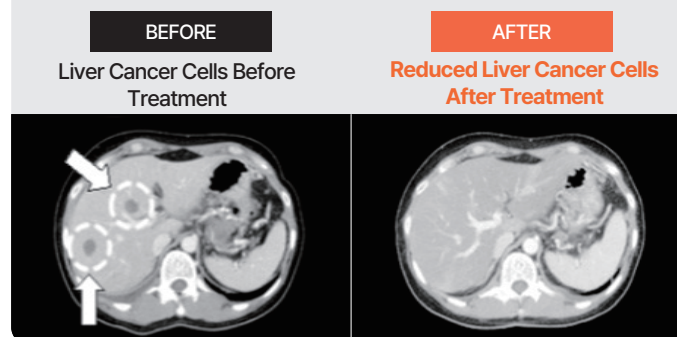
Case 1 Breast Cancer Before and After NK Cell Treatment



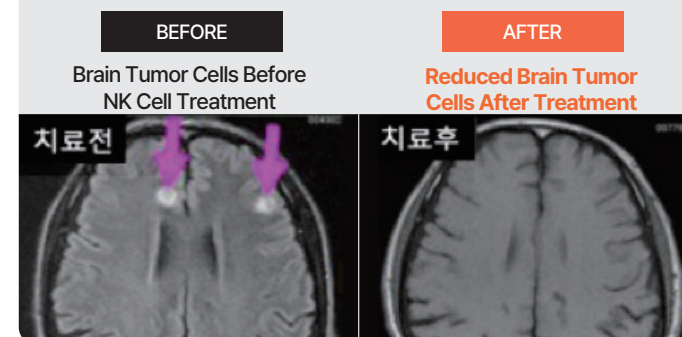
Case 2 Lung Cancer Before and After NK Cell Treatment



Case 3 Liver Cancer Before and After NK Cell Treatment



Case 4 Brain Tumor Before and After NK Cell Treatment

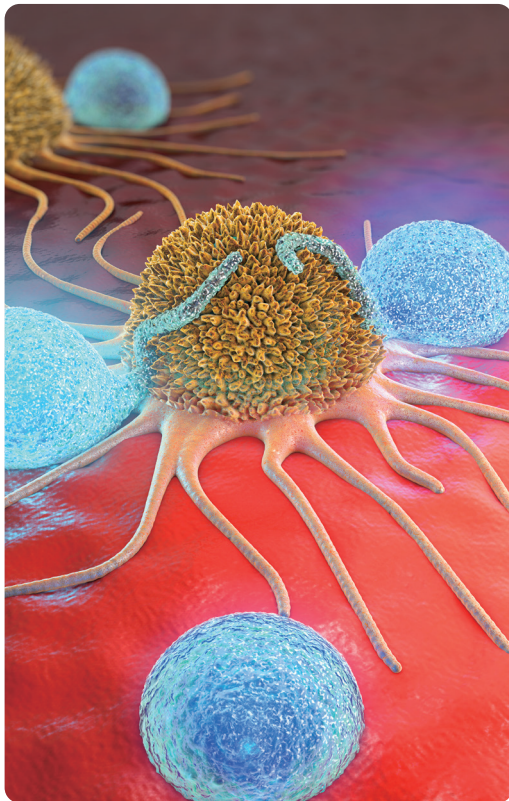


What Are Dendritic Cells?

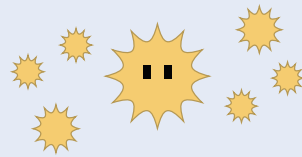
Dendritic Cells are antigen-presenting cells of the immune system.

Dendritic Cell Vaccine

The most powerful antigen-presenting cells, enabling the immune system to recognize cancer cells.

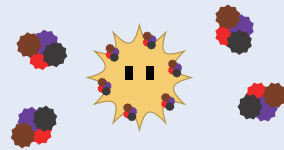


01



Monocytes, the precursors of dendritic cells, are collected from the mononuclear cell layer of the patient's blood.

02



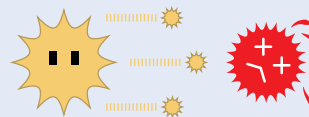
The dendritic cells are trained to recognize cancer targets (cancer antigens) and activated to function as commanders of the immune system.

03



The dendritic cell vaccine is administered into the patient's lymph nodes.

04



The dendritic cells enable lymphocytes to recognize the target cancer and activate cytotoxic T cells and B cells, directing them to attack only the cancer cells.

Dendritic Cells

Dendritic Cell Vaccine Essential for Preventing Cancer Recurrence and Metastasis

Dendritic Cell Treatment Cases

Dendritic cells, the commanders of the immune system, identify cancer cells and present cancer-specific antigens to killer T cells, directing them to attack only the cancer cells.

The role of dendritic cells in cancer treatment can therefore be considered indispensable.

Case 1 Bladder Cancer → Liver Metastasis

BEFORE

A Patient with Bladder Cancer That Had Metastasized to the Liver

AFTER

Metastatic Cancer Cells Eliminated After 18 Weeks of DC Vaccine Therapy

Case 2 Bladder Cancer → Para-Aortic Lymph Node Metastasis

BEFORE

A Patient with Bladder Cancer That Had Metastasized to the Lymph Nodes

AFTER

Tumor Size Reduced by 50% Following DC Vaccine Therapy

Case 3 Glioblastoma

BEFORE

A Tumor Originating from Glial Cells in the Brain

AFTER

Tumor Size Reduced After Six Treatments with a DC Vaccine Plus T Cells

Case 4 Pancreatic Cancer

BEFORE

DC Vaccine + GEM/S-1 Combination

AFTER

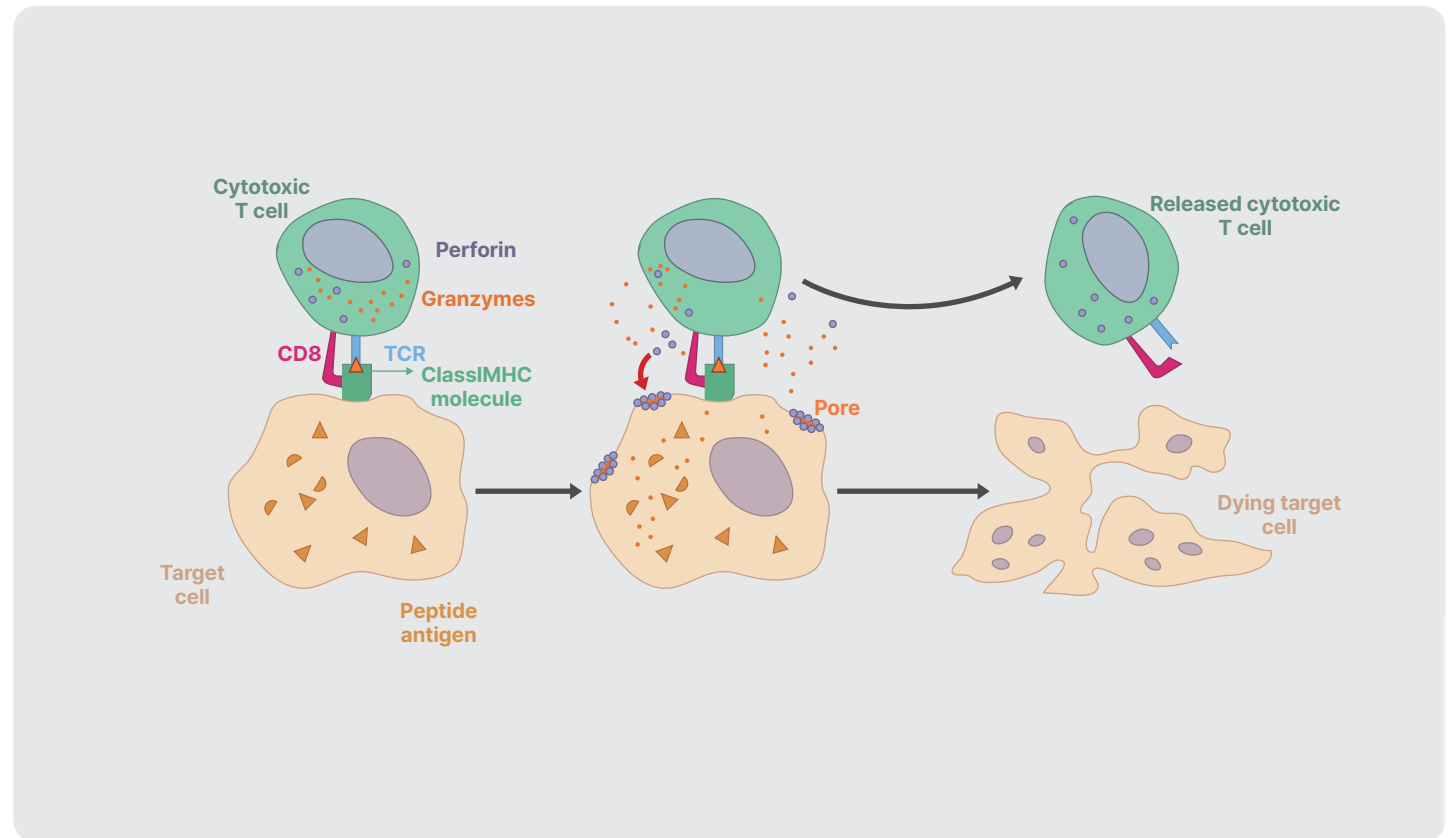
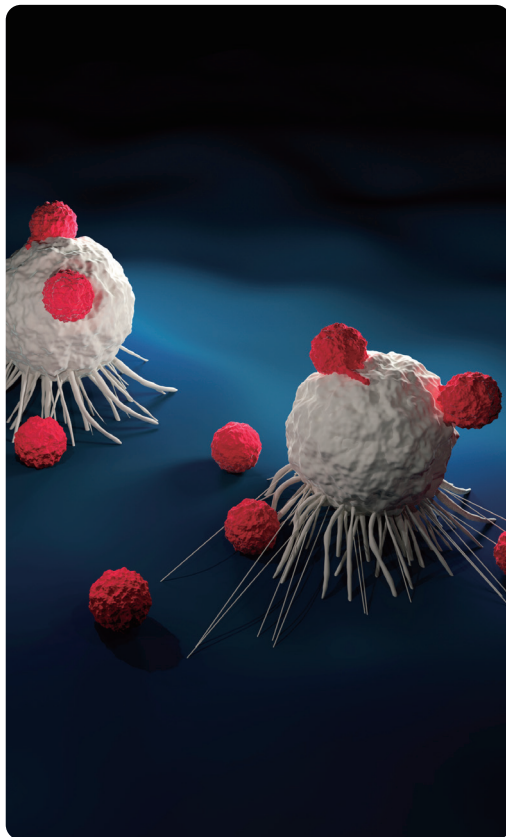
In Two Advanced Pancreatic Cancer Patients, Blood Cancer Antigens Decreased by Over 99% (Two Pancreatic Cancer Drugs)

What Are T Cells?

T cells originate from bone marrow-derived progenitor cells, but are named T cells because they mature in the thymus. T cells account for approximately 60–80% of all lymphocytes and kill cancer cells in an antigen-specific manner.

T-Cell Therapy

T cells express T-cell receptors (TCRs) that recognize specific antigens and selectively kill cancer cells and virus-infected cells.



T Cells

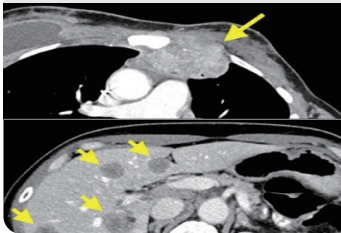
A Wide Range of Cancers Can Be Treated with T-Cell Therapy.

T-Cell Therapy Treatment Cases

Case 1 Breast Cancer → Liver Metastasis

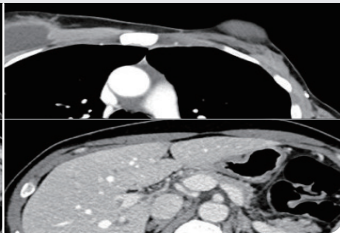
BEFORE

A Patient with Breast Cancer
That Had Metastasized to the Liver



AFTER

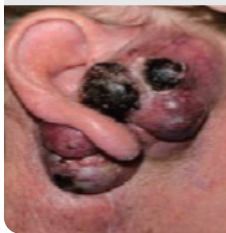
14 Months After T-Cell Therapy
Disappearance of Cancerous Tissue in the
Breast and Liver



Case 2 Malignant Melanoma

BEFORE

Malignant Transformation of
Melanocytes or Nevus Cells (Mole Cells)



AFTER

Approximately 2 Months After T-Cell Therapy
Most Multiple Tumors Disappeared



Case 3 Malignant Melanoma

BEFORE

Malignant Melanoma Occurring as
Multiple Tumors in Various Organs



AFTER

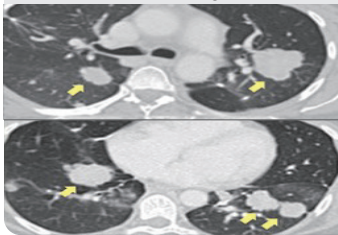
Approximately 3 Years After T-Cell Therapy
Complete Remission of Multiple Tumors



Case 4 Bile Duct Cancer → Metastasis to the Liver and Lungs

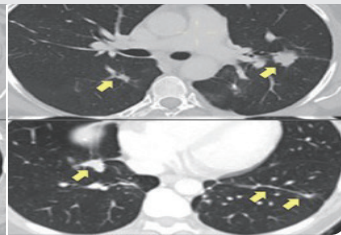
BEFORE

A Patient with Bile Duct Cancer
That Had Metastasized to the
Liver and Lungs



AFTER

20 Months After T-Cell Therapy
Reduction in Tumor Size and Number



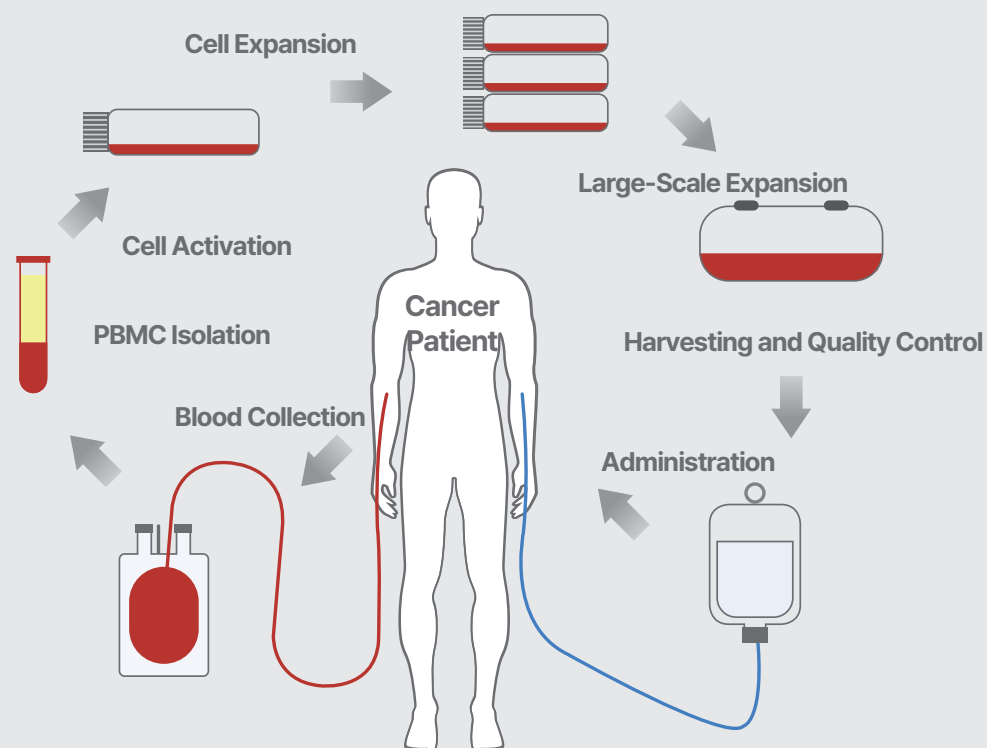
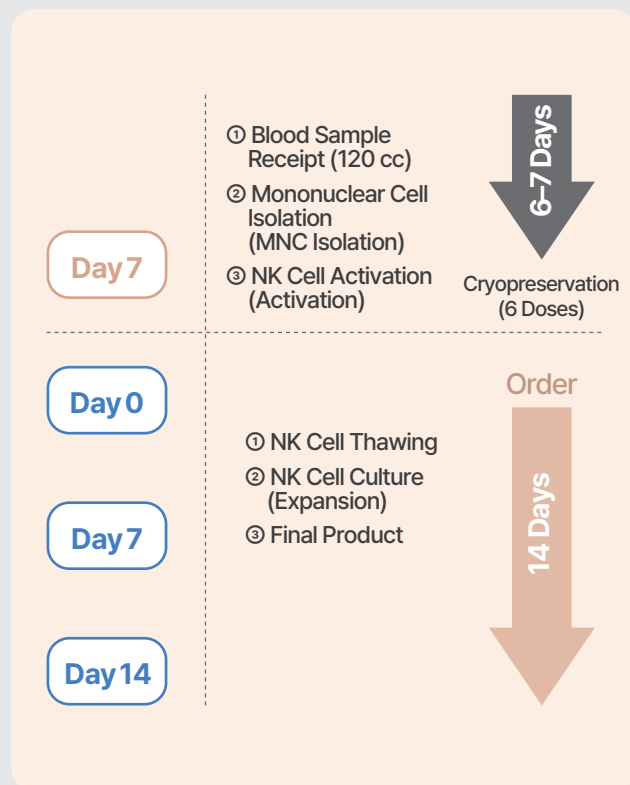
Immune Cell Storage Program

Now, Preserving Your Immune Cells Is Important.

EHL BIO Super NK Cell Culture Process

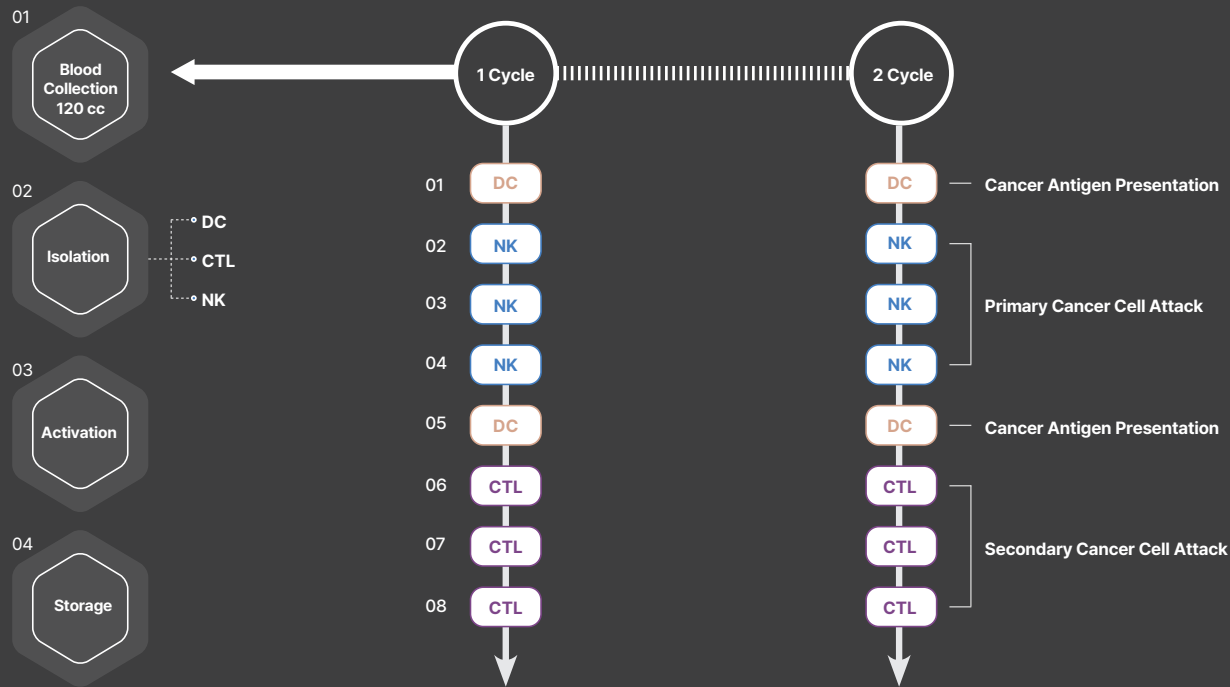
The number of immune cells decreases with age, and in cancer patients, it falls to approximately one-third of the level found in healthy individuals. Compared with people with high NK cell activity, cancer incidence is 1.7 times higher in men and twice as high in women with low NK cell activity.

Cancer incidence also increases when the immunosuppressive capacity of Th2 cells declines or when levels of IL-10, a factor that suppresses chronic inflammation, decrease. Therefore, it is important to preserve immune cells while you are young and healthy.



EHL's Exclusive 'Premium Trinity' Immune Cell Therapy Program

Product	Immune Cell Composition	Number of Sessions	Package Details	Notes
Trinity	DC + NK + CTL	16 Sessions	*Non-Storage Program : Comprehensive blood testing covering approximately 53 items (including tumor marker tests for five major cancers)	*Treatment performed after consultation with a medical specialist *Airfare and meals not included
		8 Sessions		
S-NK	Super NK	6 Sessions		
		3 Sessions		
		2 Sessions		
		1 Session		



EHL remains steadfast. Steadfastness ultimately becomes expertise.

No technology is perfected overnight.

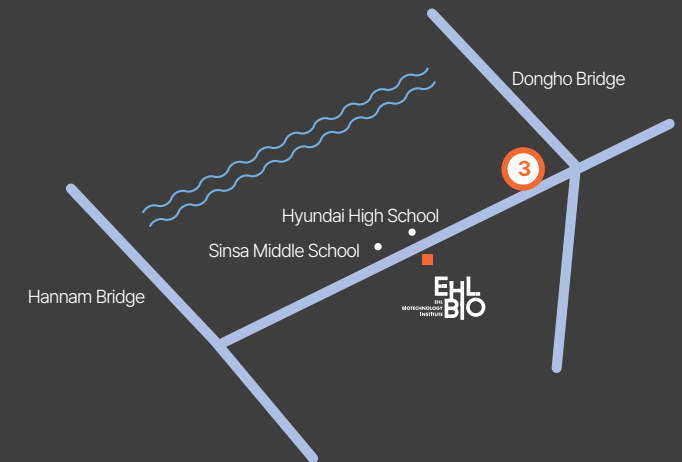
Through years of research and repeated validation, EHL continues to turn the potential of cell therapy into reality.



Those who have
experienced illness know
how joyful and precious
everyday life can be.

EHL Bio
Protects You.



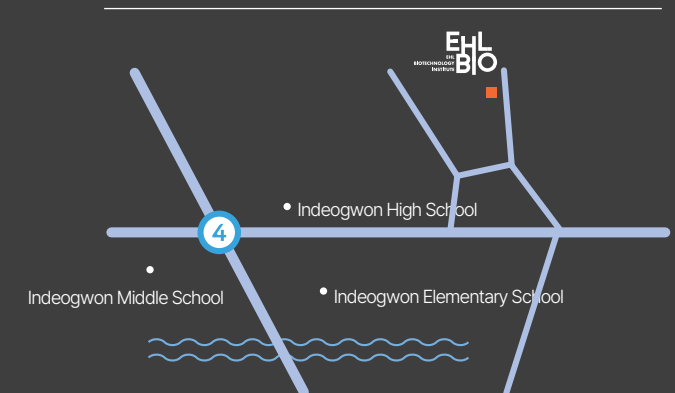


EHL Cell Center

136 Apgujeong-ro, Gangnam-gu, Seoul, EHL Building

440 m from Exit 5 of Apgujeong Station

TEL 02-532-9855 | FAX 02-514-8027



Head Office & Research Institute

Rooms 411-412, Building B, Indeogwon IT Valley,

40 Imi-ro, Uiwang-si, Gyeonggi-do

Near Indeogwon Station, Subway Line 4

TEL 02-535-9883-4

FAX 070-4009-6979



www.ehlbio.co.kr

The Value of Life Sciences—
Adding, Multiplying, and Sharing
EHL Bio