The Future of Biotechnology

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THE FUTURE OF
BIOTECHNOLOGY

MEDIPOST

The Future of Biotechnology

MEDIPOST
We are committed to become a global biotechnology company

MEDIPOST has dedicated its focus on biotechnology from its foundation in year 2000 until today, in spite of numerous adversities, rises and falls within the stem cell area.

As a result, MEDIPOST has become a front-runner in the field of the biopharmaceuticals not only in Korea but also in the world. MEDIPOST with its state-of-the-art platform technology has led to the development and approval of the world’s first allogeneic stem cell therapy product – CARTISTEM®.

Biotechnology is considered to be the new growth engine to lead the future economy of Korea. In particular, stem cell-based therapeutics is considered to be the most pivotal cutting-edge industry area.

MEDIPOST recognizes the national and public expectations in the field both from within Korea and abroad, and continue to drive our efforts to achieve breakthrough for the treatment of intractable diseases through stem cells.

MEDIPOST continues its endeavors on clinical development and commercialization of stem cell therapeutics to improve quality of lives of many patients with intractable diseases not only in Korea, but also around the globe.

We sincerely thank you for your trust, encouragement and support and we will continue to devote ourselves to strengthen MEDIPOST’s position as the global leader in the field of biotechnology and regenerative medicine.

Yang, Yoon Sun
CEO and President
MEDIPOST Co., Ltd
MEDIPOST’s goal is to help patients to conquer intractable diseases through stem cell and regenerative medicine technology.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2014</td>
<td>Received US-FDA clearance for the Phase 1/2 clinical study of PNEUMOSTEM®, a stem cell therapeutic for the pulmonary disease in premature infants.</td>
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<tr>
<td>2013</td>
<td>Received clearance from the Ministry of Food and Drug Safety (MFDS) Korea for the Phase 1/2a clinical study of NEUROSTEM® - a stem cell therapeutic for Alzheimer’s disease.</td>
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<td>2012</td>
<td>Received the Grand Prize in The 1st Korea New Drug Award (The Minister’s Award from the MFDS Korea).</td>
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<tr>
<td>2012</td>
<td>Received product approval of CARTISTEM®, the world’s first allogeneic stem cell therapy drug, from the MFDS Korea and launched in Korean market for commercial use.</td>
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<tr>
<td>2011</td>
<td>Granted approval for the Phase 1/2a clinical study of CARTISTEM® by the US FDA - the first approval by the US FDA for any cord blood-derived stem cell product.</td>
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<td>2010</td>
<td>Conducted a “first-in-kind” clinical study of cord blood treatment for cerebral palsy in Korea.</td>
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<td>2009</td>
<td>Selected as an innovative case representing the biotechnology field in the AIC (Asia Innovation Conference) in 2009.</td>
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<td>2008</td>
<td>Supplied foreign countries with cord blood for transplantation - the first as a cord blood bank in Korea.</td>
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<td>2006</td>
<td>Opened the Seoul GMP facility for the manufacturing of stem cell drugs.</td>
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<td>2005</td>
<td>Awarded the Bronze Tower Prize for the Order of Industrial Service Merit.</td>
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<tr>
<td>2002</td>
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<td>2000</td>
<td>Received approval for the Phase 1/2 clinical study for PNEUMOSTEM® - a stem cell therapeutic for the pulmonary disease in premature infants.</td>
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These achievements highlight MEDIPOST’s commitment to innovation and excellence in the field of stem cell and regenerative medicine.
More than just the ‘possibility’, the dream of stem cell therapy has now been achieved. MEDIPOST is proud to possess the world’s leading technology in the field of stem cells.

- Stem cells
  Stem cells are the basic building blocks of the human body and have not yet been differentiated into particular types of cells. Once certain environmental conditions are met, stem cells have the ability to differentiate into various types of cells, and capacity to replenish themselves. They also have ability to secrete various growth factors promoting regeneration of damaged tissues.
  - Adult stem cells: Undifferentiated stem cells found in various tissues throughout the body since birth and they can be collected from the cord blood, bone marrow or fat tissues.
  - Embryonic Stem (ES) cells: Pluripotent stem cells derived from zygotes (fertilized eggs) within 14-days post-conception.
  - Induced-Pluripotent Stem (iPS) cells: Differentiated adult cells that have been artificially induced to become pluripotent cells that can differentiate into multiple types of cells.

- Stem cell therapeutics
  Stem cell therapeutics are pharmaceutical products manufactured by physical, chemical and/or biological manipulation of stem cells, including isolation and/or ex vivo expansion of stem cells.
  - Allogeneic therapeutics: Pharmaceutical products derived from another individual other than the recipients themselves and administered as a drug product.
  - Xenogeneic therapeutics: Pharmaceutical products derived from species other than human, manufactured as a drug product and administered to human patients.
  - Autologous therapeutics: Pharmaceutical products derived from an individual’s own tissue, manufactured as a drug product and returned to the same individual’s body.

MEDIPOST is proud to possess the world’s leading technology in the field of stem cells.

- Characteristic of the umbilical cord blood-derived stem cell therapeutics
  - The youngest, freshest and healthiest among adult stem cells.
  - Stem cells with high proliferative capacity and differentiation ability for multiple cell-types.
  - Enables mass manufacturing and commercialization of stem cell therapeutic as off-the-shelf products.
  - Induces little or no immune reaction; no concomitant use of immunosuppressants is required.
  - Requires advanced technical skills for cell culture compared to other types of stem cells.

The world’s most promising company in the field of stem cells

MEDIPOST holds 46 intellectual property rights, including 25 international patents granted by USA, EU and other countries.

- Performed 26 national research projects in the field of biotechnology.
- Invests 30-50% of the company’s annual revenue in R&D.
- Named as ‘the world’s most promising company in the field of stem cells’ (HSBC, 2013).
• Cord blood
Cord blood is the blood remaining in the newborn’s umbilical cord after birth. It can be collected at the time of birth, processed and stored (cryopreserved) upon collection. It is a valuable life resource that can be used for a treatment when a person or his/her family members is/are diagnosed with intractable diseases later on in life.

• Use of cord blood
Cord blood contains high number of hematopoietic stem cells that can generate all types of blood cells such as white/red blood cells and platelets. For this reason, cord blood is mostly used for the treatment of intractable blood-related diseases such as leukemia and aplastic anemia. Cord blood also contains Mesenchymal Stem Cells (MSCs) that can generate tissues including bone, muscle and nervous system. Therefore, the use of cord blood is being expanded into other disease areas such as cerebral palsy and developmental/pediatric disorders.

• Global Status of Cord Blood Bank
The therapeutic efficacy of cord blood is well established by medical communities around the world. In the U.S., more than 60 cord blood banks are in operation and many other countries around Asia, Europe, South America and Australia have cord blood banks in operation for families to store the cord blood units.

Global Status of Cord Blood Bank

Source: Parent’s guide

• MEDIPOST has been acknowledged for its stem cell technology and was invited to provide technical consultation for the establishment of The Seoul Municipal Public Cord Blood Bank (the first national public cord blood bank in Korea) in 2006.

Leading cord blood bank in Korea
The hematopoietic stem cells and other types of stem cells in cord blood are stored in cord blood bank and then supplied back when transplantation is needed for the treatment of diseases.

Supply rate of cord blood for transplantation: MEDIPOST had supplied cord blood for 512 units (approximately 58%) out of 890 units of cord blood transplantations in Korea with zero incidence of non-conformity case.

Cryopreservation technology: MEDIPOST achieves close to 100% on total nucleated cell viability upon thawing and release. (Data from 2012 Korea Association of Medical Technologists Academic Division’s Autumn Symposium)

Long-term storage stability: MEDIPOST executed ‘Transfer and Management of Cord Blood Agreement’ with the Seoul National University College of Medicine to prevent possible damages to stored cord blood units under unforeseen circumstances.

Achievement of active research: MEDIPOST has published outcome from the study for treating subjects with cerebral palsy using his/her own (autologous) umbilical cord blood units in 2011. In 2012, MEDIPOST has achieved a successful market-approval of the world’s first off-the-shelf stem cell therapy drug CARTISTEM® which is made using stem cells from the cord blood of an unrelated (allogeneic) donors.
STEM CELL THERAPY

(Allogeneic human Umbilical Cord Blood-derived Mesenchymal Stem Cells, hUCB-MSCs)

CARTISTEM®

- **Osteoarthritis**
  - **Indication**: For the treatment of knee articular cartilage defects in patients with osteoarthritis (ICRS grade IV) as a result of degenerative disease or repeated trauma.
  - **Pre- and post-administration of CARTISTEM®**: Damaged cartilage → 48 weeks post-administration.
  - **Advantage of CARTISTEM®**: The world's only stem cell therapy approved by a regulatory agency for the treatment of osteoarthritis.
  - **R&D Status**: Completed a Phase 1 clinical trial in Korea (2011), received clearance from the Ministry of Food and Drug Safety (MFDS) Korea for Phase 1/2a clinical trial (Samsung Medical Center, 2013), planned IND submission to the US FDA.

- **Indication**: Treatment and prevention of Dementia of the Alzheimer’s Type
- **R&D Status**: Completed a Phase 1 clinical trial in Korea (2011), received clearance from the Ministry of Food and Drug Safety (MFDS) Korea for Phase 1/2a clinical trial (Samsung Medical Center, 2013), planned IND submission to the US FDA.

- **Pre- and post-administration of NEUROSTEM® [animal study]**: Damaged Brain → Day 10 post-administration.

PNEUMOSTEM®

- **Clinical Indications**: 1) Bronchopulmonary Dysplasia (BPD) - developmental chronic lung disease 2) Acute Respiratory Distress Syndrome (ARDS)
- **R&D Status**: Completed Phase 1 clinical trial in Korea (2011), received clearance from the Ministry of Food and Drug Safety (MFDS) Korea for Phase 2 clinical trial (Samsung Medical Center and Asan Medical Center, 2012), designated as an orphan drug by US FDA (2013), designated as an orphan drug under development by the Ministry of Food and Drug Safety (MFDS) Korea (2014), received clearance for Phase 1/2 clinical trial by the US FDA (2014), planned submission for expedited market-approval of PNEUMOSTEM® to the MFDS Korea upon completion of Phase 2 clinical trial.

- **Pre- and post-administration of PNEUMOSTEM® [animal study]**: Damaged Lung → Day 5 post-administration.

The safety and efficacy of CARTISTEM® have been proven from the Phases 1 through 3 clinical trials.
**DIETARY SUPPLEMENTS**

**STEP 1**
Most trusted brand in the field of dietary supplements for pregnant women and nursing mothers.

**STEP 2**
Comprehensive premium dietary supplements brand for the families.

**STEP 3**
Strategic product development for the new stem cell drug pipeline.

**MEDIPOST MOVITA**
MEDIPOST MOVITA was adopted as a customized dietary supplement. It is manufactured by mixing quality raw materials in ideal compositions in order to meet dietary recommendations, with its excellent quality being widely recognized for safety and functionality. MOVITA is most preferred by pregnant women and nursing mothers with no synthetic coloring agents, preservatives, or sweeteners used in the products.

**COSMETICS**

**CELONIA**, functional cosmetics using culture media of the cord blood-derived stem cells as part of its raw materials.

**Pevonia®**
Pevonia® is an eco-luxury cosmetics brand sold across 100 countries and is available in Korea brought exclusively by MEDIPOST. Pevonia® is manufactured from natural plant and marine ingredients without using 10 of the well-known harmful ingredients such as artificial colorings and fragrances. It is also famous as the brand loved by Hollywood celebrities.

**PEVONIA®**

**CELONIA**
“CELONIA” brand was created with the meaning of “Stem Cells On Intelligent Action” referring to multiple rejuvenating actions from the factors secreted by the stem cells collected into the culture media. CELONIA is a product developed from the culture media of cord blood stem cells containing multiple growth factors prepared with MEDIPOST’s exclusive state-of-the-art technology to achieve and maintain revitalized and flourishing skin.

Exclusive domestic distribution rights for an environmentally-friendly and prestigious cosmetics brand Pevonia® from the USA.
SOCIAL RESPONSIBILITY

MEDIPOST is committed to protecting valuable human lives as our social responsibility.

The corporate philosophy of ‘Respect for Life’ and ‘Social Contributions’ has led MEDIPOST to improve the quality of lives by supporting research in the field of biotechnology, infertility and families with children suffering from pediatric cancer and cerebral palsy.

Major activities
- Supports Seoul National University College of Medicine with 3 billion KRW for basic research
- Supports multi-children families with 3.3 billion KRW for the storage of cord blood units
- Operates a Public Cord Blood Bank with the storage capacity for 10,000 units
- Complementary storage of the cord blood units of the siblings for patients with childhood leukemia
- Supports patients suffering from childhood cancers and intractable diseases with treatment costs
- Supports cerebral palsy children with complementary operations for cord blood transplant
- Supports 1,600 couples with difficulty in fertilization
- Supports various charities and public foundations
- Voluntary activities for providing daycare services in single mothers’ facilities
- Voluntary activities for providing entertainment-days for children with leukemia
- Campaigns for blood donation program

MEDIPOST, the company with most-well implemented entrepreneurship in Korea

“The most important task is to develop an innovative business model and in this respect, MEDIPOST is a great example among Korean companies on par with Apple of the USA.”

“A business with easy market access is always highly competitive. An innovative philosophy is the way to the successful business.”

“MEDIPOST is a model case of enterprise management in regards to its prominent social influences by improving the quality of life and its success in pioneering a new area.”

“A master of worldwide creative management”, Raffi Amit
(Professor, Businessman Science at Wharton School)

Weekly International Conference on Entrepreneurial Spirit, October, 2010, Seoul

MEDIPOST WORLD MAP

- Overseas Subsidiaries of MEDIPOST Co., Ltd
  MEDIPOST America Inc.: 9605 Medical Center Drive, Suite 109, Rockville, MD 20850, U.S.A
  MEDIPOST HK: Unit 1603-05, Tower2, Admiralty Centre, 18 Harcourt Road, Hong Kong

- Joint Venture Company: Wonsaeng Bio, 2957 Beitianmen Street, Taian, Sandung Province, China

- Patent acquisition: USA, Australia, Mexico, Japan, Singapore, China, England, France, Germany, Italy, Spain, Switzerland

- Export contract: Hong Kong, Macau, Thailand, Malaysia, Indonesia

- Partnerships: Russia, Czech Republic, Slovakia, Hungary, Croatia, Slovenia, Serbia, Ukraine, Azerbaijan, Kazakhstan, Belarus, France, England, Italy, Spain, Germany, Canada, Australia, New Zealand, China, India, Japan, United Arab Emirates

- Cord blood transplantation partnerships: USA, Canada, Sweden, Australia

- Clinical Trials: USA