ORTHOPEDIC
Bone & Skin Tissue Products

DBM Products
- SurFuse™
  Demineralized Bone Matrix - Gel / Putty
- ExFuse™
  Demineralized Bone Matrix with Cancellous Bone - Gel / Putty
- BellaFuse™ Inserter
  Demineralized Bone Matrix - Inserter
- BellaFuse™
  Demineralized Bone Matrix - Flexible Sheet
- MaxiGen™
  Demineralized Bone Matrix with Calcium Sulfate - Putty

DFDBA/FDBA Products
- D-Sure™ Block / Chip
  Demineralized Cancellous Bone - Sponge Block / Chip
- OsteoGrow™
  Demineralized Cortical Bone - Chip
- Pedi-Stick™
  Demineralized Cortical Bone - Stick
- SureChip™
  Cancellous Bone - Chip

Synthetic Products
- AlloHA™
  Hydroxyapatite from Human Bone
- OssCAT™
  Synthetic Bone of Dibasic CA

ADM
- AlloCover™
  Acellular Dermal Matrix - Sheet
The Global Leader of Bio Engineering

HansBiomed Corp.

Hans Biomed Head Office
- Establishment: September 1999
- Primary Manufacturing Goods: Allograft Tissue / Silicone Polymer Medical Devices / Bio Technology
- Location: 807, 55, Seongsuil-ro, Seongdong-gu, Seoul, Korea
- Company Website: http://www.HansBiomed.com

Hans Biomed Daeduk Institute
- Establishment: June 2002
- Total Area: 11,337 m²
- Total Floor Area: 2,500 m²
- Location: 64, Yuseong-daero 1628beon-gil, Yuseong-gu, Daejeon, Korea

Hans Biomed USA Branch Office
- Establishment: March 2011
- Primary Manufacturing Goods: Bone & Skin Products
- Location: 140 Sylvan Ave Suite #20k Englewood Cliffs, NJ 07632, USA
- Dressing room
- Production preparation room
- Raw material storage room
- Air conditioning room
- Bone processing room
- Bone pulverization room
- Primary packaging room
- Freeze-drying control room
- Production room
- Final packaging room
- Storage for final products
- Office & Archive

- Reagent preparation room
- E.O. sterilization room
- Production preparation room
- Storage for sterilizing equipments
- SureDerm production room
- Micronized production room
- Freeze-drying room
- Product packaging room

- Dressing room
- Clean shower C/S
- Production preparation room/raw material storage
- Production room No. 1
- Mandrel storage
- Washing room
- Shell storage/Patch room
- Production room No.2
- Q.C. facilities
- Storage for final products
- Final packaging room
HansBiomed Corp. was founded in 1993 with the specialized business project titled “wound healing and scar prevention”. Thanks to our young researchers’ creativity and hard work, we could secure the core technologies that are soon applied to manufacture the cutting-edge medical products. These products manufactured at the Hans Daeduk R&D Center are being exported to over 25 countries around the world.

Hans Achievement

1993 ~ 1999

- Production of burn treatments and compression garment for liposuction surgery
- Cooperative Research Agreement with KAIST on “Acellular Artificial Dermis R&D Project”
- Establishment of Hans Medical Corporation
- Development of human acellular dermal tissue, SureDerm™, first in Asia

2000 ~ 2003

- Completion of the largest tissue engineering facilities in Asia, Hans Daeduk R&D Center
- Quality Management System (ISO30011) certification
- Selected as the “World-class Product Certification Company” by the Ministry of Commerce, Industry and Energy
- “Venture Company Award” Winner given by Department of Health and Human Services
- First Asian human tissue allograft registered to US FDA
Established the First Domestic Tissue Bank

First KOSDAQ-Listed biocompany

First 510(K) Clearance in ASIA (DBM)

2004 ~ 2008

- Scar prevention and management product “Scar Clinic” launched in Korea
- First human tissue allograft safety management institution approved by the KFDA
- Received the first domestic license from KFDA for the establishment of “Tissue bank”
- As first in Asia, commercialized DBM (Demineralized Bone Matrix) products
  (Product name: SurFuse™-Gel/Putty, ExFuse™-Gel/Putty)
- As first in Asia, registered breast implants at CE
- Korea International Trade Association (“Tower of 100 Million Dollars in Export”)

2009 ~

- US FDA 510(k) clearance for “DBM allograft for orthopedic application (SurFuse™, ExFuse™)”
- Establishment of Hans Biomed USA, Inc.
- Winner of 18th Grand Prize of “Business Innovation [Prime Minister citation]”
- Listed in “KOSDAQ” as first in the industry
- Breast implants selected as Next Generation of World Class Product, organized by Ministry of Commerce, Industry and Energy
- “Technology Commercialization Award” organized by Daeduk Special District R&D Head Office
- “Sol-Gel drug supported multiple fractures bone fillers development, Minister of Knowledge Economy Award” hosted by NanoKorea
- Selected as the “Primary Export Business” by the Small and Medium Business Administration
- Awarded the “Prime Minister Award” for venture companies
- Selected as the “Best technology business enterprise” by Daejeon TechnoPark
Excellent Biocompatibility and Bone Formation

Orthopedic Allograft Bone

Cancellous Allograft - FDBA: Freeze Dried Bone Allograft

The structure of Open trabecular of Cancellous particle, like of host bone, contains mineral structure and collagen, so that it accelerates cells to be settled and a bone to be remodelled. Also this product creates ideal environment for fast revascularization and remodeling, as a result, healthy bones can be formed. Osteogenic progenitor cells from new blood vessels are differentiated into Osteoblast and cause a new bone around Trabecular of the grafted bone to be settled, and at the same time Osteoblast absorbs the grafted bone until the grafted bone substitutes with a new bone. This process, creeping substitution, helps to form healthy and strong bone.

Cortical Allograft - FDBA: Freeze Dried Bone Allograft

Cortical Bone is a compact type of bone tissue that used for supporting volume of bone for such procedures as sinus lift, ridge augmentation, and socket extraction. It provides fine lamellar structure and is effectively remodeled into natural bone. Absorption of cortical particles proceed with revascularization and enlarge canal space is filled with migrated oestoblast. Then, healthy and strong bone is formed.

Bone Block Allograft - FDBA: Freeze Dried Bone Allograft

Compared to the particle form of allograft, this block form of bones are ideal for recovering volume of Ridge, which has high absorbability. Cancellous bone parts of allograft are remodeled into a new bone through fast revascularization. In addition, the cortical bone parts provide framework for mechanical strength and forms part of healthy and strong bone by remodeling process, which ultimately facilitates the dental implantation. This block bone allograft eliminates the need of autologous bone extraction and therefore it decreases a possibility of secondary pains and complications from it. This then leads to a shorter period of patient’s recovery.

DBM Allograft - Demineralized Bone Matrix

DBM are demineralized bone matrix retaining growth factor and other proteins such as BMP, without lipid and mineral contents, so that it can form healthy and high quality new bone through its osteoinductive and osteoconductive potential. DBM is basically composed of demineralized bone particles and liquid carrier to helps the action of growth factor and to enhance its handling. DFDBA (Demineralized Freeze Dried Bone Allograft) are referred to the bone powder before this mixing process.
Cortical VS Cancellous Bone

<table>
<thead>
<tr>
<th></th>
<th>Cortical Allograft</th>
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<tr>
<td>Volume enhancement</td>
<td>★★★★☆</td>
<td>★★★★☆</td>
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<tr>
<td>Space maintenance</td>
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<tr>
<td>Osteoconductive</td>
<td>★★★☆</td>
<td>★★★☆</td>
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<tr>
<td>Osteoinductive</td>
<td>★★★☆</td>
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</table>

Cross section pictures of bone

Cortical

Cancellous

DFDBA (Demineralized Freeze Dried Bone Allograft)
# DBM Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Contents</th>
<th>Type</th>
<th>Size</th>
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<tbody>
<tr>
<td><strong>SurFuse™</strong></td>
<td>DFDBA</td>
<td>Gel Putty</td>
<td>1 cc 3 cc 5 cc 8 cc 10 cc</td>
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<td></td>
<td>CMC</td>
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<tr>
<td><strong>ExFuse™</strong></td>
<td>DFDBA</td>
<td>Gel Putty</td>
<td>1 cc 3 cc 5 cc 8 cc 10 cc</td>
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<td>Cancellous Bone</td>
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<tr>
<td></td>
<td>CMC</td>
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<tr>
<td><strong>BellaFuse™ Inserter</strong></td>
<td>DFDBA</td>
<td>Inserter</td>
<td>containers and even different sizes of products can be produced upon your request</td>
</tr>
<tr>
<td></td>
<td>Gelatin</td>
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<tr>
<td><strong>BellaFuse™</strong></td>
<td>DBM Flex</td>
<td>Flexible Sheet</td>
<td>20 x 40 x 2.5 mm 25 x 25 x 2.5 mm 25 x 50 x 2.5 mm 25 x 100 x 2.5 mm</td>
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<tr>
<td></td>
<td>DFDBA</td>
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<tr>
<td></td>
<td>Gelatin</td>
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<td><strong>MaxiGen™</strong></td>
<td>DFDBA</td>
<td>Putty</td>
<td>3 cc 5 cc 9 cc 10 cc 15 cc 20 cc</td>
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<tr>
<td></td>
<td>Calcium Sulfate</td>
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<td></td>
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<tr>
<td></td>
<td>CMC</td>
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DBM Products

- SurFuse™
  Demineralized Bone Matrix - Gel / Putty

- ExFuse™
  Demineralized Bone Matrix with Cancellous Bone - Gel / Putty

- BellaFuse™ Inserter
  Demineralized Bone Matrix - Inserter

- BellaFuse™
  Demineralized Bone Matrix - Flexible Sheet

- MaxiGen™
  Demineralized Bone Matrix with Calcium Sulfate - Putty
SurFuse™ Gel and Putty are strong mixture of DBM. They help forming normal healthy bone by stimulation of Mesenchymal Cell proliferation. Moreover, osteoblasts are formed by differentiation of Mesenchymal Cell proliferation. SurFuse™ Gel is injectable and easy to implant. The viscosity of Gel phase maintains the interface of graft surface. SurFuse™ Putty has the unique form called putty. It can be changed into any forms freely and fit into bone defect or between bone structures. Moreover, SurFuse™ Putty can be made into more matrixes with the mix of patient’s bone or bone marrow.

**Characteristics**

- High DBM contents
- No need of rehydration
- Osteoinduction
- Osteoconduction
- Change into any sizes and forms freely
- Easy use with high viscosity
- Excellent biocompatibility

**Application**

- Compensation and reconstruction of autograft bone
- Reconstruction of maxillofacial defect
- Spine fixation with adequate materials
- Bone fixation and filling in various sizes and forms of bone defect
- Spinal fusions
- Oncology
- Joint revision
- Long bone trauma
- Distal fractures
- Small bone procedure
- Craniomaxillofacial
**SurFuse™**

### Product Cat No. Size Particle Size Type Contents

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<tr>
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<td>SurFuse™</td>
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<td>200~850 µm</td>
<td>Gel</td>
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<td>SG3</td>
<td>3 cc</td>
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<td>SurFuse™</td>
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<td>Putty</td>
<td>DFDBA CMC</td>
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<td>SP3</td>
<td>3 cc</td>
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<td>SP10</td>
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* Rehydration is not required

1. Remove protective cap from syringe end.
2. Simply, implant the paste onto the treatment site. Shape the paste into a desired form before implantation.
**ExFuse™**

**Demineralized Bone Matrix with Cancellous Bone - Gel / Putty**

ExFuse™ Gel and Putty is DBM (Demineralized Bone Matrix) to which Cancellous Bone Chip is added. It helps to form normal healthy bone by stimulation of Mesenchymal Cell proliferation. Moreover, osteoblasts are formed by differentiation of Mesenchymal Cell proliferation. It is easy to implant, because it is made into a Putty type and a Gel type like SurFuse™. Using allograft bone, patients do not need to have secondary operation. Therefore, it helps reduce pain and give quick healing.

### Characteristics
- Containing Cancellous Bone
- No need of rehydration
- Osteoinduction
- Osteoconduction
- Change into any sizes and forms freely
- Easy use with high viscosity
- Excellent biocompatibility

### Application
- Compensation and reconstruction of autograft bone
- Reconstruction of maxillofacial defect
- Spine fixation with adequate materials
- Bone fixation and filling in various sizes and forms of bone defect
- Spinal fusions
- Oncology
- Joint revision
- Long bone trauma
- Distal fractures
- Small bone procedure
- Craniomaxillofacial
**Injectable Syringe Type**

1. Remove protective cap from syringe end.
2. Simply, implant the paste onto the treatment site. Shape the paste into a desired form before implantation.

**Specification**

<table>
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<td>200-850 µm</td>
<td>Putty</td>
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<tr>
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<td>EP3</td>
<td>3 cc</td>
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<td></td>
<td>EP10</td>
<td>10 cc</td>
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</table>
BellaFuse™ Inserter is demineralized human allograft bone product which has 50% of bone content which is effective for promoting bone formation. The BellaFuse™ Inserter Bone Graft component is used to fill the ALIF, Cervical and Lumbar Fusion Device. The purpose of demineralization is to stimulate bone formation. BellaFuse™ Inserter in a cage acts as a scaffold for the formation of new bone that the protein stimulates and is aseptically processed and provided in a sterile, single patient use package. BellaFuse™ Inserter will be customized to fit any cages and offers excellent handling and time-saving convenience for optimum bone regeneration. Clinicians will benefit from the pre-shaped, which is packaged in a handy container for easy delivery. In addition, the BellaFuse™ Inserter maintains its form and resists migration in a fluid environment.

**Characteristics**

- High DFDBA contents (Over 50%)
- No need of rehydration
- Osteoconductive ability
- Osteoinductive ability
- Customizable Size and Shape
- Excellent biocompatibility

**Application**

- Compensation and reconstruction of autograft bone
- Spine fixation with adequate materials
- Bone fixation and filling in various sizes and forms of bone defect
- Spinal fusions

- Oncology
- Joint revision
- Long bone trauma
- Distal fractures
- Small bone procedure
- Craniomaxillofacial
* contains and even different sizes of products can be produced upon your request.

**Pre-shaped to fit into any cage**

**Specification**

<table>
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<th>Product</th>
<th>Cat No.</th>
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<tbody>
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HansBiomed Corp. is committed to provide you the top of the line products with the most advanced biological technology under your brand. You order and we are able to fit your needs that may include package designs, containers and even different sizes of products can be produced upon your request.
BellaFuse™ Flexible Bone Sheet is flexible type of DBM which has higher content of allograft bone (over 50%) and is mixed with gelatin. Therefore it has excellent ability for bone regeneration. Additionally, it can be used without rehydration and can be shaped or cut any bone defect area.

**Characteristics**
- High DFDBA contents (Over 50%)
- No need of rehydration
- Osteoconductive ability
- Osteoinductive ability
- Sheets are easily handled (DBM Flex, DBM+Cortical Flex)
- Provides great Graft-to-host interface
- Excellent biocompatibility

**Application**
- Span small spaces between bone fragments
- Place over or pack into defects where bone formation is needed
- Compensation and reconstruction of autograft bone
- Reconstruction of maxillofacial defect
- Spine fixation with adequate materials
- Bone fixation and filling in various sizes and forms of bone defect
Flexible Bone Sheet Type

1. BellaFuse™ is a flexible DBM strip and is easily bent to both sides.
2. No rehydration is required prior to use and BellaFuse™ can be easily cut into or bent to desired size for implantation or desired form before implantation.

Specification

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<td>20 x 40 x 2.5 mm</td>
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<td>DBF25</td>
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<td>DBF50</td>
<td>25 x 50 x 2.5 mm</td>
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<td>DBF100</td>
<td>25 x 100 x 2.5 mm</td>
<td>Flexible Bone Sheet</td>
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<td>CDF100</td>
<td>25 x 100 x 2.5 mm</td>
<td>Flexible Bone Sheet</td>
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</table>
MaxiGen™ is composed of demineralized bone matrix (DBM) and Calcium sulfate (CS) in a CMC carrier. MaxiGen™ consists of medical grade calcium sulfate and demineralized bone matrix (DBM), provides optimal osteoinductivity and osteoconductivity. Demineralized bone matrix (DBM) stimulates new bone growth, and calcium sulfate supplies mechanical support for bone remodeling. Also, CMC carrier facilitates easy handling. Surgeons will custom blend the contents of MaxiGen™ to control the structural consistency depending on the condition of surgical sites.

**Characteristics**
- High DFDBA contents
- Calcium sulfate – provides robustness and hardness
- Osteoconductive ability
- Osteoinductive ability
- Highly cohesive – gives great injectability and handle-ability
- Excellent biocompatibility

**Application**
- Compensation and reconstruction of autograft bone
- Reconstruction of maxillofacial defect
- Bone fixation and filling in various sizes
- Fractures
1. Empty the powder (DFDBA + Calcium Sulfate + CMC) contained in brown glass bottle and saline into the mixing bowl.
2. Mix them well using a spatula provided.
3. Shape the mixture into a desired size and form.
* Desired amount of mixture can also be injected using a syringe provided

### Specification

<table>
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<tr>
<th>Product</th>
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<th>Particle Size</th>
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<td>Putty</td>
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<td>D-Sure™ Block-Chip</td>
<td>Demineralized Cancellous Bone</td>
<td>Block</td>
<td>10 x 10 x 10 mm, 12 x 12 x 12 mm, 14 x 14 x 14 mm, 10 x 10 x 20 mm, 12 x 12 x 22 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demineralized Cancellous Bone</td>
<td>Chip</td>
<td>5 cc, 10 cc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OsteoGrow™</td>
<td>Demineralized Cortical Bone</td>
<td>Chip</td>
<td>3 cc, 5 cc, 10 cc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedi-Stick™</td>
<td>Demineralized Cortical Bone</td>
<td>Stick</td>
<td>Ø 3.5 x 30 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SureChip™</td>
<td>Cancellous Bone</td>
<td>Chip</td>
<td>3 cc, 5 cc, 10 cc, 15 cc, 30 cc</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DFDBA / FDBA Products

- D-Sure™ Block / Chip
  Demineralized Cancellous Bone - Sponge Block / Chip

- OsteoGrow™
  Demineralized Cortical Bone - Chip

- Pedi-Stick™
  Demineralized Cortical Bone - Stick

- SureChip™
  Cancellous Bone - Chip
**D-Sure™ Block • D-Sure™ Chip**

**Demineralized Cancellous Bone Block**

**D-Sure™ Chip**

Demineralized Cancellous Bone Chip

---

**Characteristics**

- Demineralized Cancellous Bone Block 100%
- Rehydrate prior to use
- Osteoconduction
- Osteoinduction
- Provides great support and framework
- Excellent biocompatibility (100% Allograft Bone)

**Application**

- Spinal fusion and other general orthopedic surgeries
- Any bone defect area where the malleable bone void filler needed
- Maxillofacial defect reconstruction
- Spine fixation with adequate materials
- Bone fixation and filling in bone defects of various sizes and forms.

**Specification**

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Sure™ Block</td>
<td>GSB10</td>
<td>10 x 10 x 10 mm</td>
<td>Block</td>
</tr>
<tr>
<td></td>
<td>GSB12</td>
<td>12 x 12 x 12 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GSB14</td>
<td>14 x 14 x 14 mm</td>
<td></td>
</tr>
<tr>
<td>D-Sure™ Chip</td>
<td>GSF50</td>
<td>5 cc</td>
<td>Chip</td>
</tr>
<tr>
<td></td>
<td>GSF100</td>
<td>10 cc</td>
<td></td>
</tr>
</tbody>
</table>
OsteoGrow™ has osteoconductive and osteoinductive properties, it provides the full spectrum of factors needed to promote bone healing. It is used in void filling, fracture repair, spinal fusions, arthrodesis and more. All tissue grafts are collected aseptically and processed in a sterile, clean room with class 100. The DBM consists of cortical bone that has been ground to particle sizes of 1.5 – 3.3mm and demineralized. The demineralization procedure utilizes methods that have been shown to leave the matrix and endogenous bone growth factors in place. OsteoGrow™ is conveniently packaged for individual case management.

Advantages
- As effective as autograft in long term outcomes.
- Completely natural biological repair – fuses with, and eventually replaced by, the recipient’s own bone.
- Reduces OR time and is cost effective.
- Reduces patient pain and other morbidity (no need to obtain autograft).
- Demineralization exposes the native bone growth factors in the matrix so they are immediately available when implanted (bypasses resorption as the first step in bone healing).

Application
- Compensation and reconstruction of autograft bone.
- Reconstruction of maxillofacial defect
- Spine fixation with adequate materials
- Bone fixation and filling in various sizes and forms of bone defect

Specification

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Particle Size</th>
<th>Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>OsteoGrow™ Chip</td>
<td>OGC3</td>
<td>3 cc</td>
<td>3 – 5 mm</td>
<td>Chip</td>
<td>Demineralized Cortical Bone</td>
</tr>
<tr>
<td></td>
<td>OGC5</td>
<td>5 cc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OGC10</td>
<td>10 cc</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pedi-Stick™ is made of cortical bone composed of 100% demineralized allograft bone for improving osteoinduction and osteoconduction. In addition to that, it is used by the cutting edge freeze dried technology of HansBiomed Corp. for long-term storage and packaged for individual case management.

**Application**

- Spinal fixation for Osteoporosis patient
  - After inserted Pedi-Stick™ then it is crushed and spread into the screw thread. Afterwards Pedi-Stick™ particles prevent to loosen and falling the screws.
  - After fusion in the screw thread, it increases the bone density with new bone formation.
- Pedicle screw revision
- Spondylosyndesis (stimulate the synostosis by Osteoinduction)
  - For interbody fusion, inset between the cages
  - For lateral fusion, easy to use
- Kyphoplasty
  - After Kyphoplasty, fill up the pedicle hole.

**Specification**

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Particle Size</th>
<th>Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedi-Stick™ Stick</td>
<td>PDS30</td>
<td>ø 3.5 x 30 mm</td>
<td>200-850 µm</td>
<td>Stick</td>
<td>Demineralized Cortical Bone</td>
</tr>
</tbody>
</table>
Cancellous Bone offers an osteoconductive scaffold for promoting bone regeneration. Used either alone or as part of a composite bone graft, cancellous bone supplies a natural scaffold facilitating the attachment of osteogenic precursor cells. Cancellous Bones have good osteoconductive properties and are very well suited to fill defects in the bony structure. Due to their natural origin and optimal porosity, cancellous bone is readily remodeled by the human body and are replaced by new host bone.

**Characteristics**

- 100% Allograft Cancellous Bone Chip
- 3-dimensional lattice structure enables a fast revasculation
- Osteoconductive ability
- Osteoinductive ability
- Excellent biocompatibility

**Application**

- Bony void filler of the extremities and pelvis to prevent fractures
- Bone graft extender(extrtemities, spine, pelvis) with autograft or allograft
- Surgically created osseous defects or osseous defects created from traumatic injury to the bone
- Improved healing of fracture and nonunions

**Specification**

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Particle Size</th>
<th>Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>SureChip™ Chip</td>
<td>BC03</td>
<td>3 cc</td>
<td>4~10 mm</td>
<td>Chip</td>
<td>Cancellous Bone</td>
</tr>
<tr>
<td></td>
<td>BC05</td>
<td>5 cc</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>BC10</td>
<td>10 cc</td>
<td></td>
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<tr>
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<td>BC15</td>
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</tr>
<tr>
<td></td>
<td>BC30</td>
<td>30 cc</td>
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</tbody>
</table>
Synthetic Product

- AlloHA™
  Hydroxyapatite from Human Bone

- OssCA™
  Synthetic Bone of Dibasic CA
AlloHA™ is made from mineral powder of human bones. The main component of human bone minerals is hydroxyapatite, and essential elements for bone growth - sodium, magnesium and potassium ions - are included at the same ratio as present in the body and it ultimately provides the best micro-environment for new bone formation. AlloHA™ is the next-generation bone substitute with its excellent osteoinductive and osteoconductive abilities.

* AlloHA is derived from human bone mineral (Ca/P=1.72) which is suitable as biomaterial according to KFDA regulation: 1.5~2.0

· Porous structure has characteristic similar to human bone and provides enough space for new bone formation and proliferation of blood vessels.
· Large internal surface area provides the best environment for angiogenesis and osteogenesis.
· Scaffold promotes new bone formation through migration of bone cells.

Comparison of component AlloHA with other Synthetic materials

- Sodium, magnessium, phosphorus, potassium ions and iron are included at the same ratio as present in the body and it ultimately provides the best micro-environment for new bone formation. AlloHA is the next generation bone substitute with its excellent osteoinductive and osteoconductive abilities.

* AlloHA is derived from human bone mineral (Ca/P=1.72) which is suitable as biomaterial according to KFDA regulation: 1.5~2.0

Interconnected Pore Structure and Increased Inner Surface Area

- Porous structure has characteristic similar to human bone and provides enough space for new bone formation and proliferation of blood vessels.
- Large internal surface area provides the best environment for angiogenesis and osteogenesis.
- Scaffold promotes new bone formation through migration of bone cells.

Interconnected Pore Structure - Stabilizes bone structure and maintains its volume

- Interconnected pore structure stabilizes bone structure and preserves its volume for a long period of time.
Interconnected Pore Structure / Crystalline Structure

- Crystalline micro-structured surface supports adhesion of osteoblasts.
- Enables absorption of the blood, angiogenesis and new bone growth through its structure.

In accordance with patients’ medical condition and expectation

Variety of Product Line-up optimized for different indications

Mixcubes
Block
Putty

Specification

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Particle Size</th>
<th>Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlloHA™ Mixcubes</td>
<td></td>
<td></td>
<td>4~10 mm</td>
<td>Mixcubes</td>
<td>Hydroxyapatite Gelatin</td>
</tr>
<tr>
<td>AHCR500</td>
<td></td>
<td>5 cc</td>
<td></td>
<td></td>
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<td>AHCR1500</td>
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<td>AHCR3000</td>
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</tr>
<tr>
<td>AlloHA™ Block</td>
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<td></td>
<td>N/A</td>
<td>Block</td>
<td>Hydroxyapatite Gelatin</td>
</tr>
<tr>
<td>AHAB111</td>
<td></td>
<td>1x1x1 cm</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AHAB112</td>
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<td>1x1x2 cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHAB122</td>
<td></td>
<td>1x2x2 cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AlloHA™ Putty</td>
<td></td>
<td></td>
<td>200~850 µm</td>
<td>DBM Putty</td>
<td>Hydroxyapatite DBM</td>
</tr>
<tr>
<td>AHPU030</td>
<td></td>
<td>0.3 cc</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>AHPU050</td>
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<td>0.5 cc</td>
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<td></td>
<td></td>
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<tr>
<td>AHPU100</td>
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<td>1 cc</td>
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<tr>
<td>AHPU300</td>
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<tr>
<td>AHPU800</td>
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<td>8 cc</td>
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</tr>
<tr>
<td>AHPU1000</td>
<td></td>
<td>10 cc</td>
<td></td>
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</tbody>
</table>
OssCA™ is formulated with Dibasic Calcium Phosphate (DCP), which shows excellent biocompatibility and promotes bone regeneration.

**Outstanding Cell Adhesion Ability and Resorption Rate**

OssCa helps osteoblast to form new bone by releasing calcium and phosphate (CA-P). OssCar is biocompatible material with great cell adhesion property which makes bone forming cells easily attach. It makes acidic environment that promotes solubility of BMPs.

**Comparison of Emission ratio between Ca and PO₄**

<table>
<thead>
<tr>
<th>Component</th>
<th>[Ca]₁₀⁰₀</th>
<th>[PO₄]₁₀⁰₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>OssCA™ (Dibasic CA)</td>
<td>427.8</td>
<td>427.8</td>
</tr>
<tr>
<td>Hydroxyapatite (Synthetic)</td>
<td>1.11</td>
<td>0.67</td>
</tr>
<tr>
<td>β-TCP</td>
<td>0.8</td>
<td>0.58</td>
</tr>
</tbody>
</table>

Dibasic calcium phosphate, which is major content of OssCA™, dissolves slowly and provides 300-fold more calcium and phosphate ions than either tricalcium phosphate(TCP) or hydroxyapatite(HA).

**Excellent Biological Absorption**

OssCA™ (Dibasic Calcium Phosphate) Transplant

- After 6-12 weeks
- OssCA™ is 100% Dibasic Calcium Phosphate. It absorbs quickly and new bone formation occurs.

Hydroxyapatite (Synthetic) Transplant

- After 6-12 weeks
- Hydroxyapatite(Synthetic) doesn’t absorb quickly and remain itself at the grafted area for period of time.
· OssCA™ provides a moderately acidic environment which promotes solubility of endogenous bone morphogenic proteins (BMPs).
· Growth Factors (including BMPs) may remain available to bone healing in a moderately acidic environment.
· OssCA™ activates Growth Factors indirectly so that it can promote osteoinductive ability.


**Comparison of BMP(Bone Morphogenic Protein) Vitalization**

In accordance with patients’ medical condition and expectation

Variety of Product Line-up optimized for different indications

**Specification**

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>Particle Size</th>
<th>Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>OssCA™ Crush</td>
<td>OCC10</td>
<td>10 cc</td>
<td>4~10 mm</td>
<td>Crush</td>
<td>Calcium Phosphate, Gelatin</td>
</tr>
<tr>
<td></td>
<td>OCC15</td>
<td>15 cc</td>
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<td></td>
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<td></td>
<td>OCC20</td>
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<td></td>
<td>OCC30</td>
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<td></td>
</tr>
<tr>
<td>OssCA™ Block</td>
<td>OCB111</td>
<td>1x1x1 cm</td>
<td>N/A</td>
<td>Block</td>
<td>Calcium Phosphate, CMC</td>
</tr>
<tr>
<td></td>
<td>OCB112</td>
<td>1x1x2 cm</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>OCB122</td>
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</tr>
<tr>
<td></td>
<td>OCB222</td>
<td>2x2x2 cm</td>
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<td></td>
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</tr>
<tr>
<td>OssCA™ Flexible Sheet</td>
<td>OCF25</td>
<td>25x25 mm</td>
<td>200~850 µm</td>
<td>Flexible Sheet</td>
<td>Calcium Phosphate, Gelatin</td>
</tr>
<tr>
<td></td>
<td>OCF50</td>
<td>25x50 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OCF100</td>
<td>20x100 mm</td>
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</tbody>
</table>
ADM Product

- AlloCover™

Acellular Dermal Matrix
AlloCover™ is acellular human dermis, which is intended for the repair or replacement of damaged soft tissue. AlloCover™ can be used as a substitute for autograft with its equal usage, effect and safety while it solves donor site trauma followed by autograft. AlloCover™ is processed human skin by a special process of high technology. Main purpose of this technological process is to be easily transplanted without rejection by eliminating the immune response. When healing completed, AlloCover™ eventually becomes the patient’s own tissue.

### Specification

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat No.</th>
<th>Size</th>
<th>AVG Thickness</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlloCover™ SLS (Small Ligament Surgery)</td>
<td>AC302008</td>
<td>20 x 40 mm</td>
<td>1.0~1.39 mm</td>
<td>Small Ligament reinforcement of the hand and foot</td>
</tr>
<tr>
<td>AlloCover™ HAD (High Demand Augmentation)</td>
<td>AC302032</td>
<td>40 x 50 mm</td>
<td>1.0~1.39 mm</td>
<td>Rotator Cuff, Achilles Tendon, Quadriceps, Patella Tendon, Capsular Reinforcement</td>
</tr>
<tr>
<td>AlloCover™ SDC (Skin Defect Covering)</td>
<td>AC302048</td>
<td>50 x 100 mm</td>
<td>0.6~0.99 mm</td>
<td>Tendon, Rotator Cuff, Augmentation, Large Area Chronic Acute Defect Wound</td>
</tr>
</tbody>
</table>

### Characteristics

- Provides the same effect and safety as an autograft while reduces donor site trauma
- No reactivity: Graft remodels like autogenous tissue
- No migration: Graft integrates into surrounding tissue
- Cost effective: Graft reduces surgery time
- Easy to use: 10 minutes rehydration is the only requirement before operation, No test required
- Multiple usage: Can be used for a variety of surgical procedures with its own elasticity
- Long shelf life: 2 years under refrigeration
# Bone & Skin Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Composition</th>
<th>Commercially available forms</th>
<th>Claimed mechanism of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SurFuse&lt;sup&gt;®&lt;/sup&gt;</td>
<td>DFDBA, CMC</td>
<td>Gel, Putty</td>
<td></td>
</tr>
<tr>
<td>ExFuse&lt;sup&gt;®&lt;/sup&gt;</td>
<td>DFDBA, Cancellous Bone, CMC</td>
<td>Gel, Putty</td>
<td></td>
</tr>
<tr>
<td>BellaFuse™ Inserter</td>
<td>DFDBA, Gelatin</td>
<td>Inserter</td>
<td></td>
</tr>
<tr>
<td>BellaFuse™</td>
<td>DFDBA, Cortical Bone, Gelatin</td>
<td>Flexible Sheet</td>
<td></td>
</tr>
<tr>
<td>MaxiGen™</td>
<td>DFDBA, Calcium Sulphate, CMC</td>
<td>Putty</td>
<td></td>
</tr>
<tr>
<td>D-Sure&lt;sup&gt;®&lt;/sup&gt; Block-Chip</td>
<td>Demineralized Cancellous Bone</td>
<td>Sponge Block, Sponge Chip</td>
<td>Osteoconductivity, Biocompatibility, Osteoinduction</td>
</tr>
<tr>
<td>OsteoGrow™</td>
<td>Demineralized Cortical Bone</td>
<td>Chip</td>
<td></td>
</tr>
<tr>
<td>Pedi-Stick™</td>
<td>Demineralized Cortical Bone</td>
<td>Stick</td>
<td></td>
</tr>
<tr>
<td>SureChip™</td>
<td>Cancellous Bone</td>
<td>Chip</td>
<td></td>
</tr>
<tr>
<td>AlloHA™</td>
<td>Hydroxyapatite from Human Bone</td>
<td>Mixcubes, Block, Putty</td>
<td></td>
</tr>
<tr>
<td>OSSCA™</td>
<td>Synthetic Bone, Dibasic CA</td>
<td>Crush, Block, Flexible Sheet</td>
<td></td>
</tr>
<tr>
<td>AlloCover™</td>
<td>Acellular Dermal Matrix</td>
<td>Sheet</td>
<td>Biocompatibility</td>
</tr>
</tbody>
</table>
Distributors around the globe

Partner with Us

QUICK RESPONSE FOR YOUR MARKET NEEDS

HansBiomed Corp., as the first tissue bank listed in KOSDAQ, develops and produces a variety of human tissue allograft products. We have received US FDA 510(k) clearance to ensure the safety and quality of our products, and to ultimately provide you with only the safe and high quality allograft products.

Please do not miss this opportunity to meet best products and services by becoming our partner. Should you have any questions or inquiries, please do not hesitate to contact us. We will be more than happy to respond to any of your questions.