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# COWELL® REGENERATIVE SOLUTION

Inspire confidence through a comprehensive approach.

Ver. 26

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*Inspire confidence through a comprehensive approach.*

Ver. 26



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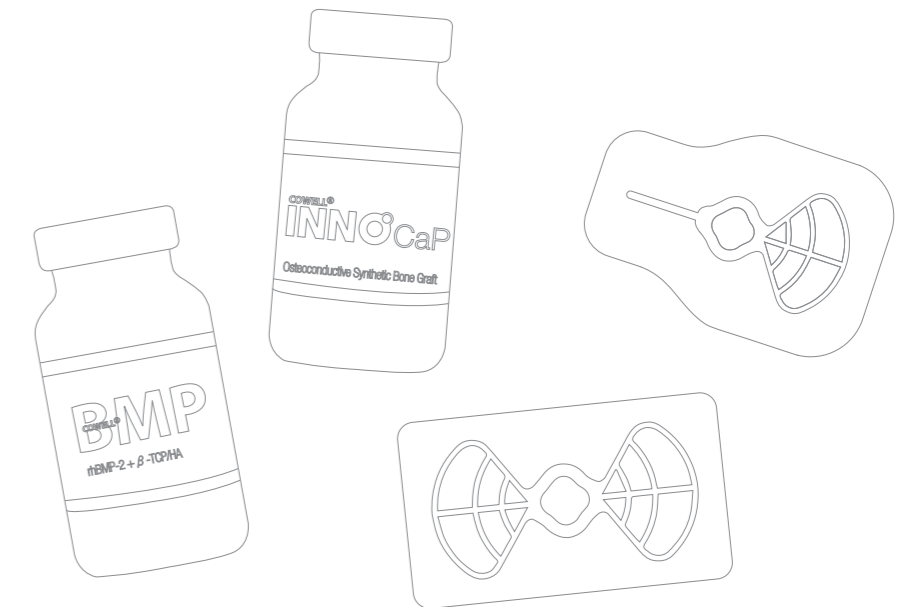
**CWA**  
Cowellmedi Co., Ltd.  
The pioneers in Dental Implant & E.rhBMP-2

## COWELL® REGENERATIVE SOLUTION

*Inspire confidence through a comprehensive approach.*

# COWELL® Regenerative Solution

- 004 • COWELL® BMP SERIES
- 012 • INNO CAP
- 014 • INNO OSS™ PLUS
- 015 • DIABONE
- 016 • MEGA DERM™ PLUS
- 018 • DIADERM® M
- 019 • BOSS® SYSTEM
- 022 • INNOGENIC™ NON-RESORBABLE MEMBRANES
- 025 • INNOGENIC™ AUTOBONE HARVESTER
- 030 • COWELL® BMP TREPHINE KIT



# COWELL® REGENERATIVE SOLUTION

## MegaDerm™ Plus

The acellular dermal matrix can carry out the functional blocks of the membrane due to its long absorption period (soft tissue penetration protection) and is the first in the world with the basement membrane layer removed to maximize the transplant engraftment rate.

## COWELL® BMP & INNO GF Kit

The world's first E.rhbm-2, (E.Coli derived Recombinant human bone morphogenetic protein type 2), as a growth factor that induces bone and cartilage formation. It is a retinoid mediator that plays a key role in osteoblast differentiation.

## INNO-CaP

Osteoconductive synthetic bone graft material consisting of CaP is completely resorpted and progressively replaced by vital bone in the healing period.

## DiaDerm® M

Biodegradable atelocollagen membrane is used for GTR & GBR operation. The product, made from high purity atelocollagen, has high biocompatibility, mechanical strength and resistance to enzymatic degradation and flexibility.

## INNO Oss™ Plus

Excellent Osteoinductive Potential

- > An Advanced Bone Structure
- > Physical Integrity and Superior Handling
- > Safety and Stability
- > Predictable Success Bone Remodeling

## INNO-Oss™ Plus

Allograft composed of 50% of cortical and the other 50% of cancellous FDBA has been proven out its efficiency and safety by the highest-level pharmacological standards of AATB and is being a global standard of allograft.

## BOSS® System

New concept for vertical and lateral bone augmentation. The product is composed of tenting abutment, screw and cover as well as guide post. Using the system with Wifi-Mesh is highly recommended.

## InnoGenic™ Autobone Harvester

Devised to harvest autogenous bone not only from the general site but also from the site where the implant will be placed. More than 1cc of bone chips can be harvested within 10 seconds.

## COWELL® BMP Trephine Kit

An easy-to-use kit containing drills for block-type bone collection and failed fixture removal in autogenous bone graft, and bone chip extraction prior to Implant Placement.

## INNO GF KIT

- INNO GF Vial I BCP Particle
- INNO GF Vial II rhBMP-2 Powder
- WFI (Water For Injection) 20ml to Dissolve
- Syringe 1ml for Applying rhBMP-2 Solution

## rhBMP-2 based Synthetic Bone Graft

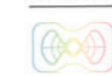
- INNO GF Vial I BCP Particle
- INNO GF Vial II rhBMP-2 Powder

## INNO CaP

Osteoconductive Synthetic Bone Graft

## Wifi-Mesh

Titanium reinforced PTFE membrane



## InnoGenic™ Non-resorbable membranes

The products consisting of Titanium reinforced PTFE membrane (Wifi-Mesh), PTFE membrane (PTFE-Mesh) and Titanium mesh (Ti-Mesh) are non-resorbable membranes to be applied over intraoral defects, especially, tooth extraction and bone augmented sites.

## DiaBone

A xenograft is perfectly fused to natural human bone. Diabone has fast blood penetration by giving great hydrophilicity and 3D dimensional structure which allow optimal cell attachment and blood absorption.

# COWELL® BMP Osteoinductive Bone Graft rhBMP-2 + BCP

## 1. Composition of COWELL® BMP

- COWELL® BMP is bone graft material based on the E.rhBMP-2 (E.Coli derived recombinant human bone morphogenetic protein type 2), developed for the first time in the world. COWELL®BMP is supported with 10 years of clinical data and over 40 studies.
- BCP as a carrier allows maintenance of space.

## 2. Features of COWELL® BMP

- Primary closure for soft tissue regeneration is not required.
- Regenerates adherent gingiva.
- Simplifies challenging bone grafting and soft tissue regeneration.
- Acts directly on stem cells.
- Induces bone regeneration without infection in extraction socket.
- Contains 1 mg of bone morphogenetic protein per 1g of the particle.  
(1g of autologous bone contains 2ng of bone morphogenetic protein)

## 3. Application

### A. Orthopedics

#### Bone grafts

- Fractures : Tibia, Radius, Ulna.
- Spine Fusion (Degenerative Disc Disease) :  
Interbody cage, Postolateral.

#### Injection Device

- Lengthening : Distraction Osteogenesis.
- Osteoporosis : Hip joint fracture.
- Bone Defect : Bone cyst.
- Bone Fusion : Foot/shoulder revision.

### B. Dentistry

#### Bone grafts

- Severely resorbed alveolar ridges.
- Tooth extraction socket.
- Alveolar bone loss.
- Maxillary sinus bone loss.
- Bone-inductive implant : Coted implant.
- Maxillofacial reconstruction.

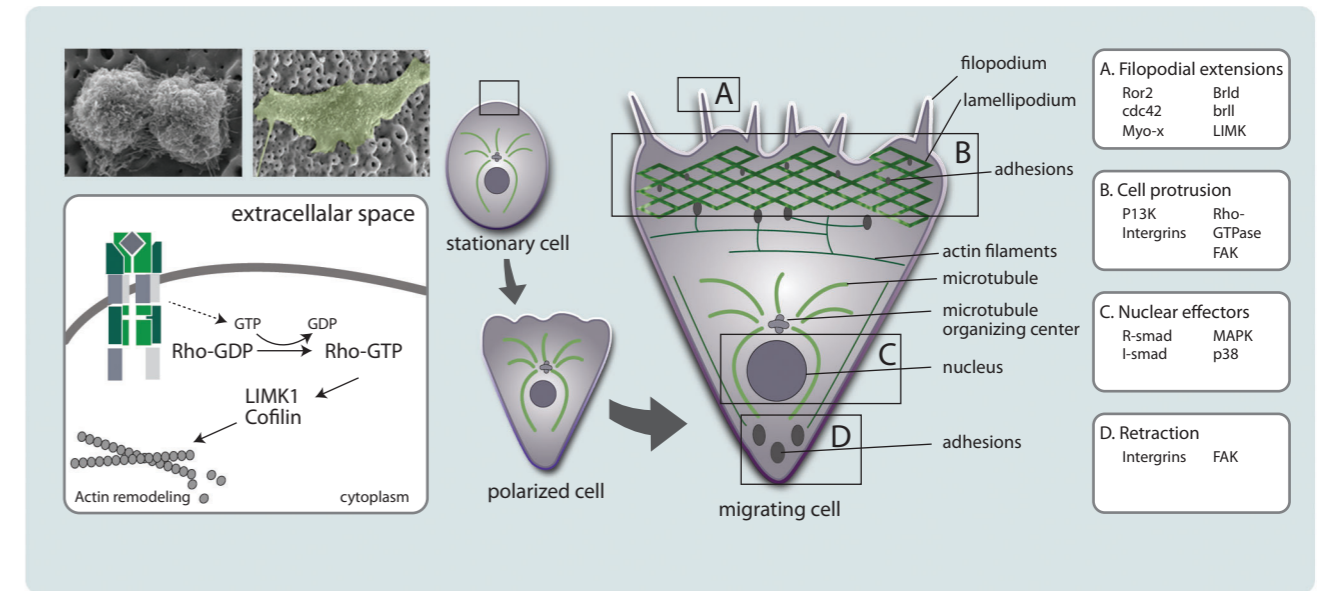
### C. Dermatology

#### Soft Tissue grafts

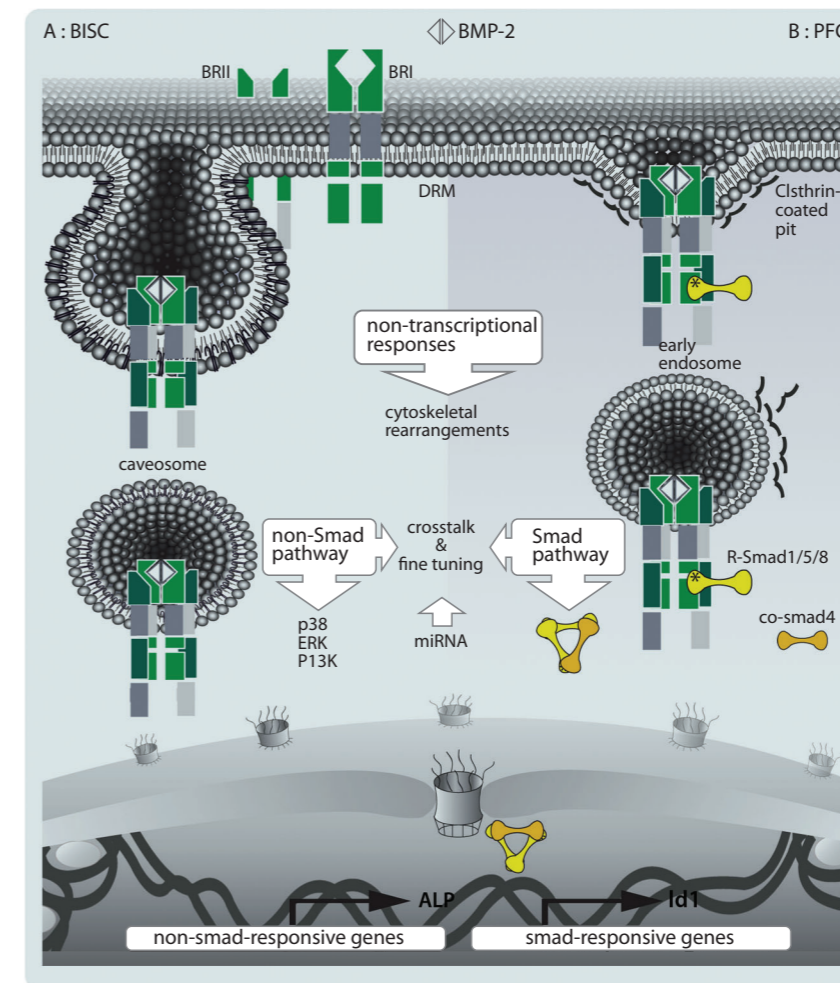
- Damaged skin regeneration.
- Diabetes ulcer.

## 4. Mechanism of Action of COWELL® BMP

### A. Migration of Cells with lamellipodia



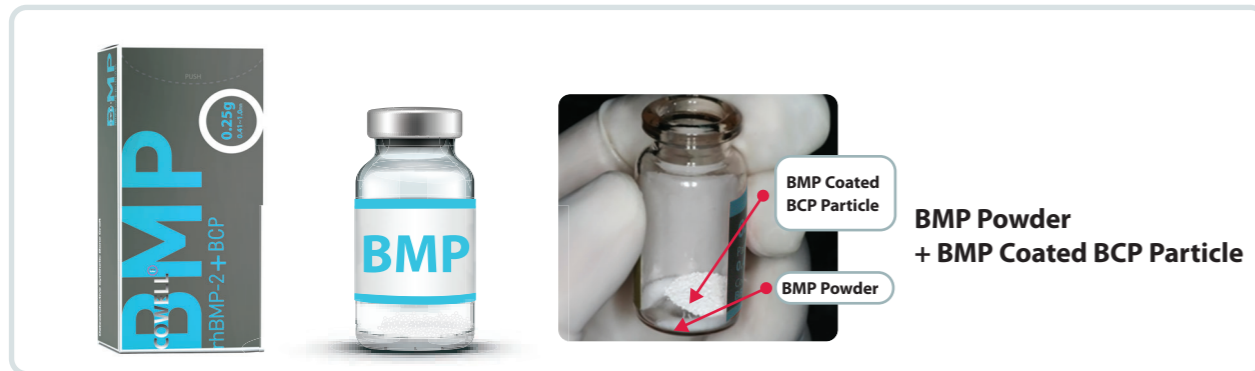
### B. Cellular mechanisms



- BMP-2 adheres to the membrane of stem cell and induces expression of genes of nucleus. Then, BMP-2 migrates to recipient site.
- BMP-2 growth factor, Twist-2 transcriptional factor, and VEGF growth factor synthesize and secrete endogenous growth factor.
- Proliferation of osteoblast of osteocyte, and proliferation of fibroblast in dermis and keratinocyte of the skin.
- Twist-2 transcriptional factor induces tissue regeneration in osseous tissue and adherent gingival area.

## 5. Product Type

### COWELL® BMP (One vial)



• Dose and particle size of the COWELL® BMP

Product Code	Particle Size
BB1010	0.41~1.0mm

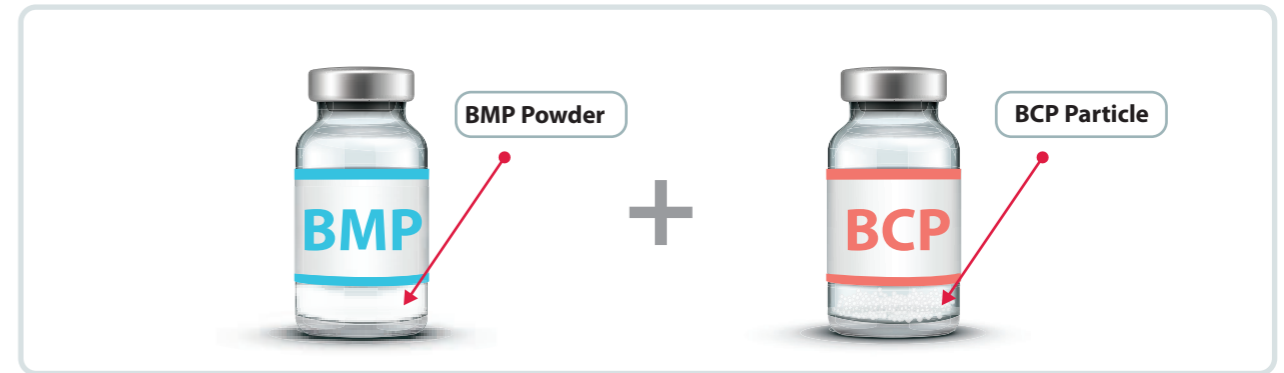
Product Code	Particle Size
BB1025	0.41~1.0mm

Product Code	Particle Size
BB1050	0.41~1.0mm

※ A vial of 0.1g can be used for less than one extraction socket, while 0.25g/0.5g can be used for maxillary sinus or for the wide bone defect area.

### COWELL® BMP Plus (Two vials)



• Dose and particle size of the COWELL® BMP Plus.

#### BMP 0.1mg

Product Code	BMP Dose	Particle Dose	Particle Size
EBB0125	0.1mg	0.25g	0.41~1.0mm
EBB0105	0.1mg	0.5g	0.41~1.0mm
EBB1110	0.1mg	1g	0.41~1.0mm
EBB1220	0.1mg	2g	0.41~1.0mm

#### BMP 0.25mg

Product Code	BMP Dose	Particle Dose	Particle Size
EBB2525	0.25mg	0.25g	0.41~1.0mm
EBB2505	0.25mg	0.5g	0.41~1.0mm
EBB1125	0.25mg	1g	0.41~1.0mm
EBB1225	0.25mg	2g	0.41~1.0mm

#### BMP 0.5mg

Product Code	BMP Dose	Particle Dose	Particle Size
EBB0525	0.5mg	0.25g	0.41~1.0mm
EBB0505	0.5mg	0.5g	0.41~1.0mm
EBB1150	0.5mg	1g	0.41~1.0mm
EBB1250	0.5mg	2g	0.41~1.0mm

#### BMP 1mg

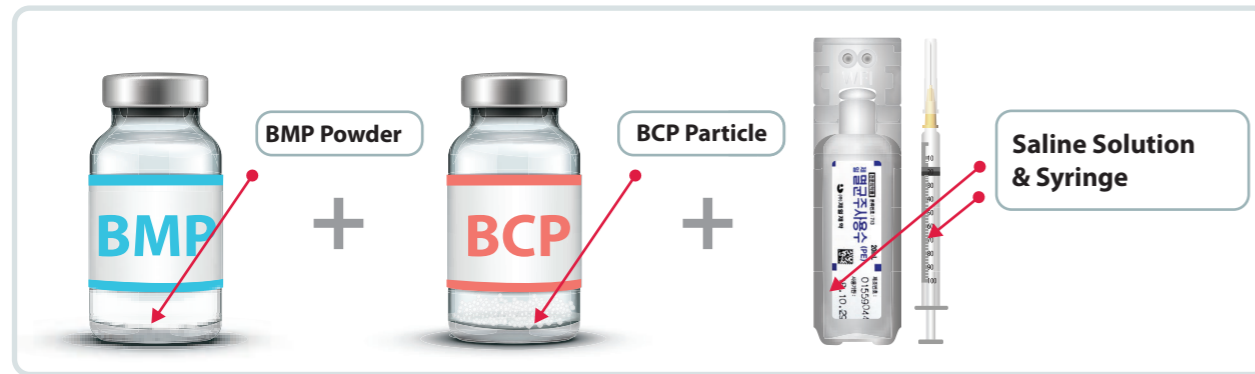
Product Code	BMP Dose	Particle Dose	Particle Size
EBB1025	1mg	0.25g	0.41~1.0mm
EBB1050	1mg	0.5g	0.41~1.0mm
EBB1011	1mg	1g	0.41~1.0mm
EBB1012	1mg	2g	0.41~1.0mm

#### BMP 2mg

Product Code	BMP Dose	Particle Dose	Particle Size
EBB2025	2mg	0.25g	0.41~1.0mm
EBB2050	2mg	0.5g	0.41~1.0mm
EBB2011	2mg	1g	0.41~1.0mm
EBB2012	2mg	2g	0.41~1.0mm



## INNO GF Kit (Two vials + Saline Solution + Syringe)



• Dose and particle size of the INNO GF Kit.

### BMP 0.1mg

Product Code	BMP Dose	Particle Dose	Particle Size
IBB0125	0.1mg	0.25g	0.41~1.0mm
IBB0105	0.1mg	0.5g	0.41~1.0mm
IBB1110	0.1mg	1g	0.41~1.0mm
IBB1220	0.1mg	2g	0.41~1.0mm

### BMP 0.25mg

Product Code	BMP Dose	Particle Dose	Particle Size
IBB2525	0.25mg	0.25g	0.41~1.0mm
IBB2505	0.25mg	0.5g	0.41~1.0mm
IBB1125	0.25mg	1g	0.41~1.0mm
IBB1225	0.25mg	2g	0.41~1.0mm

### BMP 0.5mg

Product Code	BMP Dose	Particle Dose	Particle Size
IBB0525	0.5mg	0.25g	0.41~1.0mm
IBB0505	0.5mg	0.5g	0.41~1.0mm
IBB1150	0.5mg	1g	0.41~1.0mm
IBB1250	0.5mg	2g	0.41~1.0mm

### BMP 1mg

Product Code	BMP Dose	Particle Dose	Particle Size
IBB1025	1mg	0.25g	0.41~1.0mm
IBB1050	1mg	0.5g	0.41~1.0mm
IBB1011	1mg	1g	0.41~1.0mm
IBB1012	1mg	2g	0.41~1.0mm

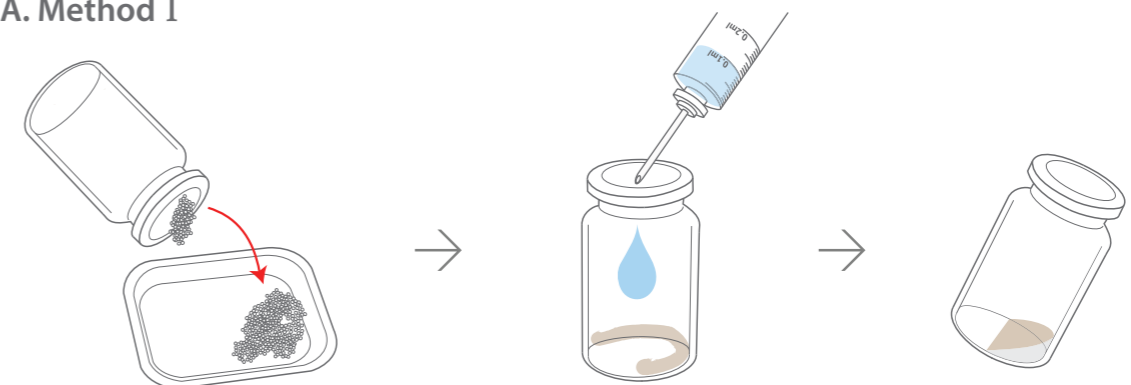
### BMP 2mg

Product Code	BMP Dose	Particle Dose	Particle Size
IBB2025	2mg	0.25g	0.41~1.0mm
IBB2050	2mg	0.5g	0.41~1.0mm
IBB2011	2mg	1g	0.41~1.0mm
IBB2012	2mg	2g	0.41~1.0mm

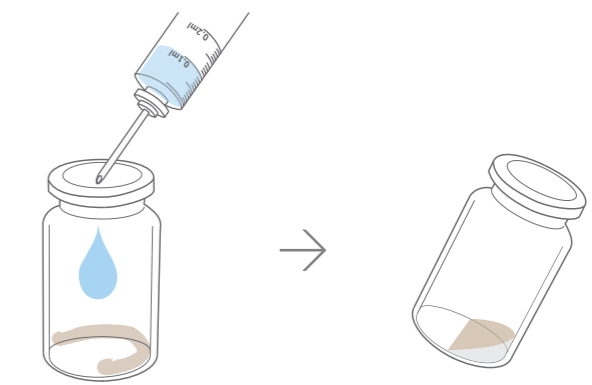


## 6. User Guide COWELL® BMP

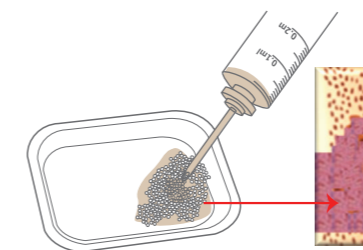
### A. Method I



a. Transfer BCP graft material (Vial I).



b. Inject distilled water into vial II with lyophilized rhBMP-2 powder in it and mix with the powder.

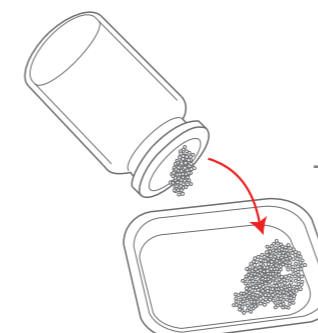


c. Mix BMP solution with BCP or plus autogenic / allograft and apply into the recipient site.

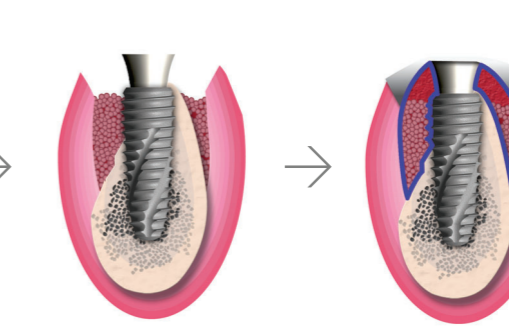


d. Cover the defect area using a barrier membrane or suture natural soft tissue without membrane.

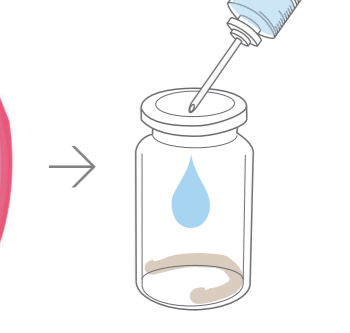
### B. Method II



a. Transfer BCP graft material (Vial I) into a container.



b. Apply BCP into the recipient site and cover the defect area using a barrier membrane or suture natural soft tissue without membrane.



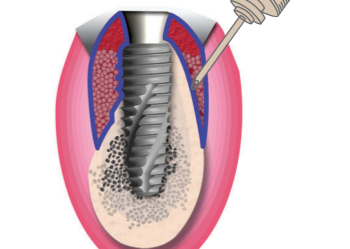
c. Inject distilled water into lyophilized rhBMP-2 powder (vial II).



d. Mix rhBMP-2 with distilled water (saline solution) and wait for 10 to 15 seconds before using.

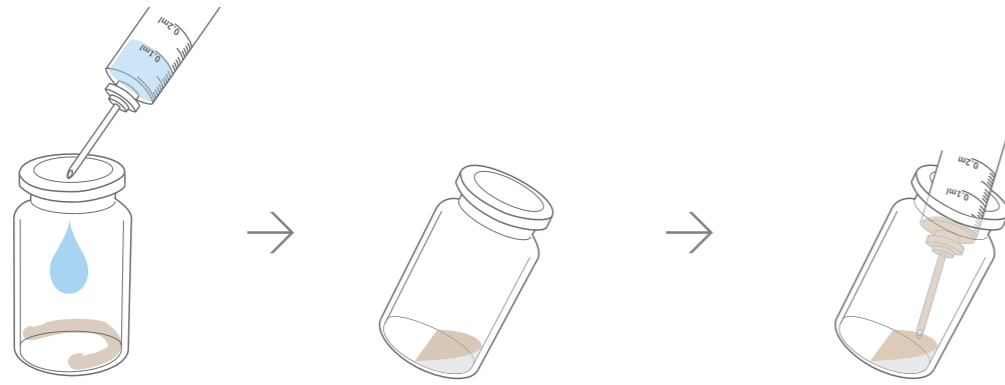


e. Aspirate the mixture using a syringe.



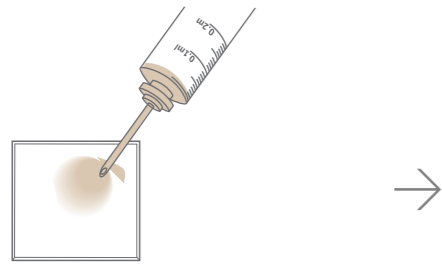
f. Inject BMP solution through soft tissue until needle of syringe reaches bone.

### C. Method III

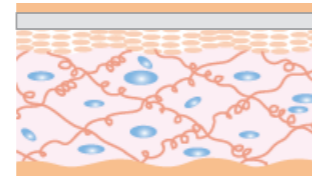


a. Inject distilled water into vial II with lyophilized rhBMP-2 powder in it and mix with the powder.

b. Aspirate the mixture using a syringe.



c. Hydrate BMP-2 solution into membrane.



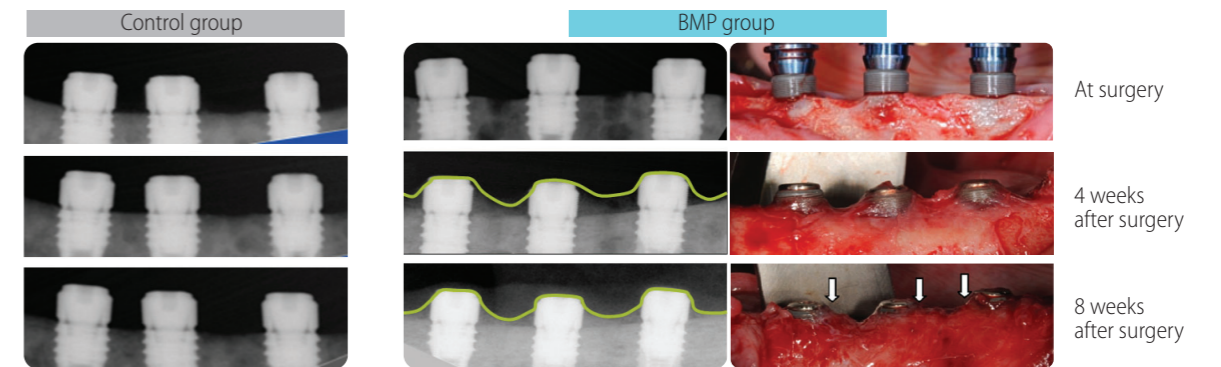
d. Apply BMP-2 solution soaked membrane to damaged site.

### Dose of distilled water to make the mixture (BMP-2 Solution)

BMP Dose	Distilled Water Dose	BMP Dose	Distilled Water Dose
0.1mg	0.1ml	2mg	1.6ml
0.25mg	0.2ml	5mg	4ml
0.5mg	0.4ml	10mg	8ml
1mg	0.8ml	20mg	16ml

## 7. Study Result on COWELL® BMP

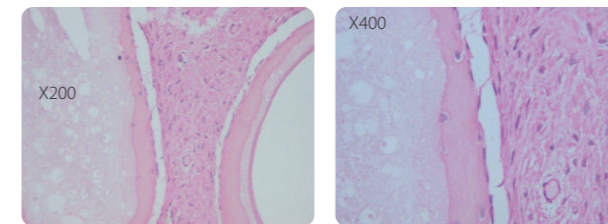
### In Vivo Study



Jung-Bo Huh, et al., Alveolar ridge augmentation using anodized implants coated with Escherichia coli-derived recombinant human bone morphogenetic protein 2 (Beagle dog).

- Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011.

### Histologic Findings : Tissue specimen collected approximately four months after the maxillary sinus grafting (human)



- New bone was formed around the graft material.
- No inflammatory reaction was observed in connective tissue.
- Proliferation of collagen fiber was observed.
- Proliferation of fibrocyte was observed.
- Osteoblast was observed on the surface of newly formed bone.

## 8. Clinical Data of COWELL® BMP

- Vertical height of surrounding bone was compared three months after grafting in extraction socket.
- The study was conducted at Seoul National University Bundang Hospital, Yonsei University Dental Hospital, and Korea University Guro Hospital.

Group		Average	SD	95%CI	†P value
Height	Control	-1.087	1.413	(-1.565, -0.609)	0.0006**
	Experiment	-0.059	0.960	(-0.384, 0.266)	
Width at 75% ESL	Control	1.405	1.753	(0.812, 1.998)	0.346
	Experiment	1.863	2.310	(1.081, 2.644)	
Width at 50% ESL	Control	0.542	1.157	(0.15, 0.934)	0.016*
	Experiment	1.239	1.249	(0.816, 1.662)	
Width at 25% ESL	Control	0.006	1.149	(-0.383, 0.395)	<0.0001**
	Experiment	1.279	1.387	(0.81, 1.749)	

ESL : Extraction Socket Level      \*,P<.05, \*\*,P<.01, †: Student t-test

Jung-Bo Huh, et al., Multicenter, randomized clinical trial on the efficacy and safety of Escherichia-coli-derived rhBMP-2 with β-Tricalcium phosphate and hydroxyapatite in human extraction sockets.

- J Adv Prosthodont 2011;4 -134.

# INNO-CaP Calcium Phosphate, Synthetic Bone Graft

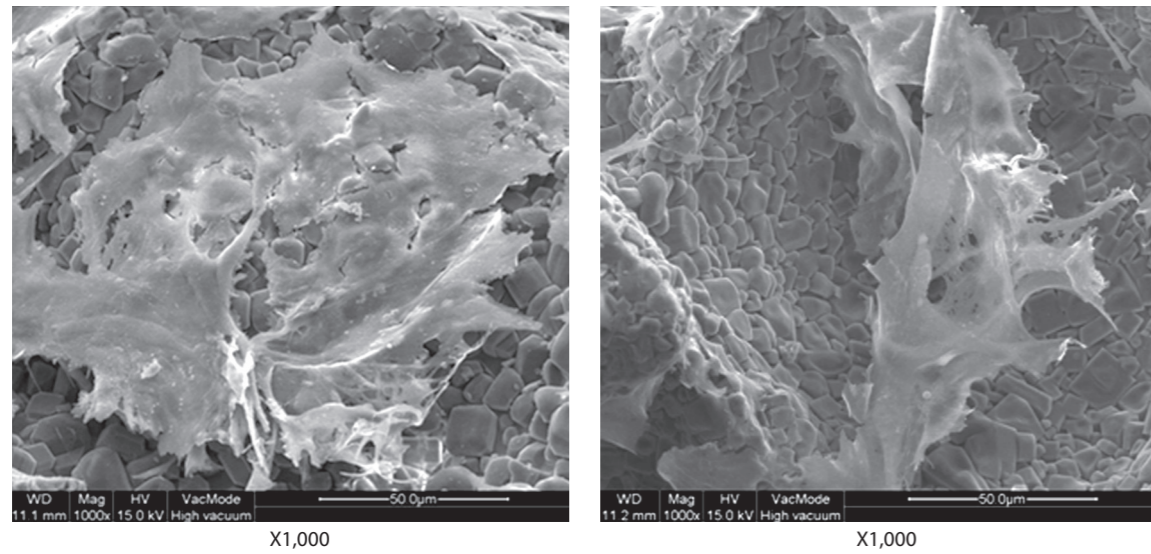
## Osteoconductive resorbable synthetic bone graft material

- INNO-CaP is an osteoconductive synthetic resorbable bone graft material consisting of Calcium Phosphate.
- INNO-CaP is completely resorpted and progressively replaced by normal-structured bone in the healing period.

## Excellent Biocompatibility and Conductivity

- The characteristic biocompatibility and conductivity of the INNO-CaP represent the most safety.

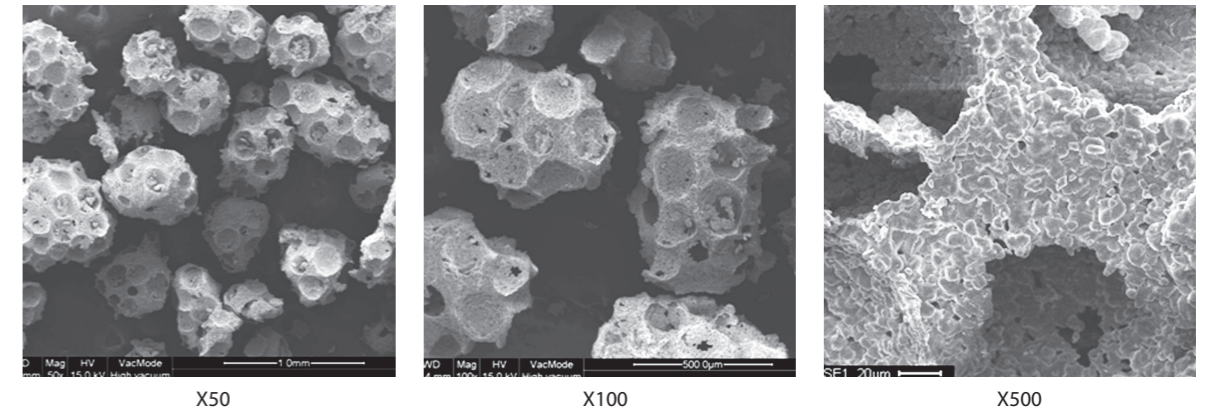
Cell culture SEM images (14 days)



## A porosity for new bone ingrowth

- The porosity promotes ingrowth of osteoblast, osteoclast and growth factors.

Particle surface SEM image



## Indications

### Sinus graft surgery

- For sinus graft, INNO-CaP is used alone or in combination with the other graft materials.
- Various healing period according to residual bone height.

residual bone height	less than 1 mm	2 ~ 4 mm	more than 4 mm
implant placement	post operation 9~12 months	post operation 6 months	simultaneous placement

### GBR (Guided Bone Regeneration)

- Minimize the amount of autogenous bone.
- Sub-graft materials.
- Vertical and lateral augmentation.
- Using with the COWELL® BMP is highly recommended.

## Dose and Particle Size

Product Code	Particle Size	Partide Dose
IG1025	0.41~1.0mm	0.25g
IG1050		0.5g
IG1001		1g
IG1002		2g
IG1425	1.0~1.4mm	0.25g
IG1450		0.5g
IG1401		1g
IG1402		2g





# INNO Oss™ PLUS Allograft

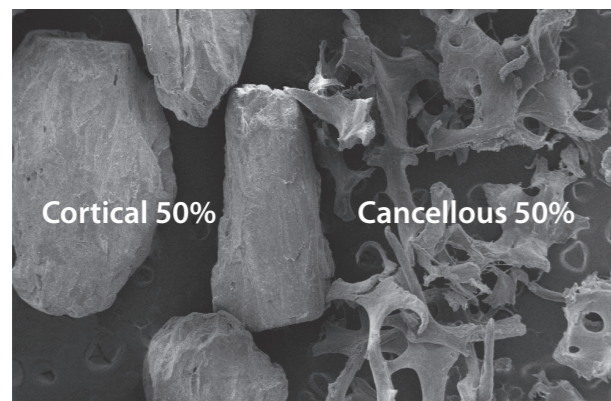
FDBA, Cortical 50% Cancellous 50%

## Product Features

- This product is made up of human tissue from trusted donors whose gender, age, and medical history were checked to ensure that their tissue could be used safely.
- It is an ideal combination of 50% cortical powder and 50% cancellous powder for bone induction.
- The 50% Cortical powder maintains the space of the transplanted area during the new bone formation due to the delayed absorption rate. [\[OsteoConduction\]](#)
- 50% Cancellous powder is rich in minerals and collagen that promote cell adhesion, bone remodeling, and vascular re-formation. [\[OsteoInduction\]](#)
- To prevent cross-infection by a different donor, the process is done by a single donor.
- Under the higher-level pharmacological standards (medical criteria) of the American Association of Tissue Banks (AATB), we sampled, processed, and distributed the allograft tissue.
- We recommend use of this product with the COWELL® BMP.



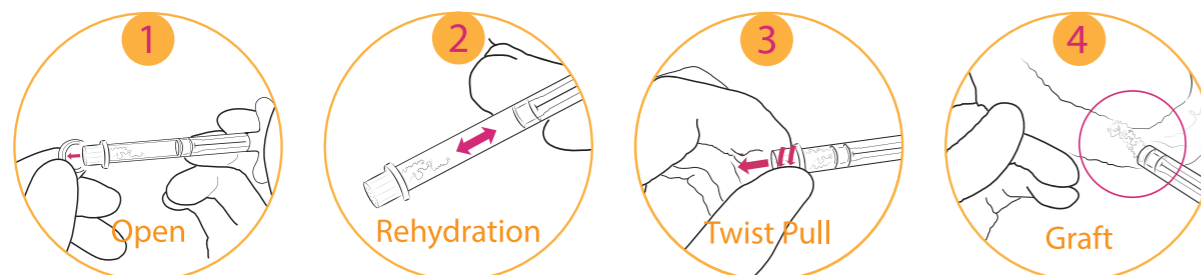
## SEM Image



## Dose and Particle Size

Product Code	Partide Size	Partide Dose
OSS3P	0.3~0.8mm	0.3 cc
OSS6P	0.3~0.8mm	0.6 cc

## Method of Use



Remove the syringe's rubber cap.

Hydrate it in saline solution.

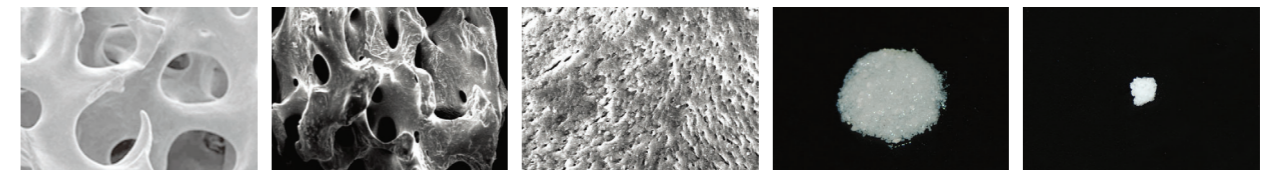
Turn and pull out the syringe cap to remove it.

Graft it in the desired area.

# DIA-BONE Bovine Bone Substitute

## A Bone 100% fused to Natural Human Bone

- Fast blood penetration.
- Great hydrophilicity.
- 3D mention structure.
- Easy to handle.
- Maximizes bone fusion.
- Mutually connected porous structure.
- Optimal cell attachment and blood absorption.
- Stimulates activity of osteoclast and osteoblast.



Human bone structure

Dia bone structure (x50)

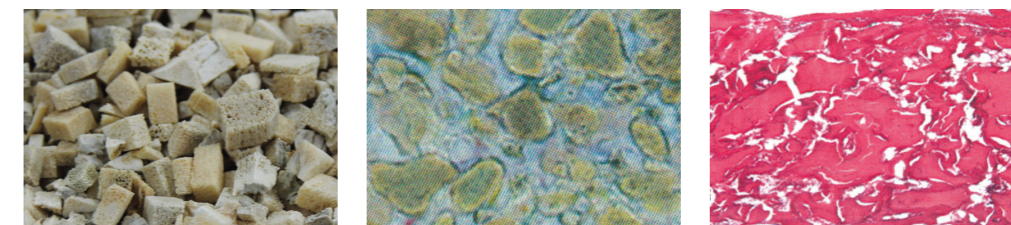
Dia bone structure (x1,500)

Hydrophilicity 1

Hydrophilicity 2

## Safe & Trustable Material

- Made of 100% bovine bone.
- Cleansing over 30 times to perfectly remove organic substances.
- Firmed bone formation as highly dense.
- 100% pure HA & 99.73% of bone crystallization.



Raw material

Graft test 1

Graft test 2

(New bone formation clearly observed around grafted bone site)

## Volume and Particle Size

Product Code	Particle Size	Volume
G2015	0.25~1.0mm	0.15g
G2025	0.25~1.0mm	0.25g
G2050	0.25~1.0mm	0.5g
G2100	0.25~1.0mm	1g
G2200	0.25~1.0mm	2g

Product Code	Particle Size	Volume
G5015	1.0~2.0mm	0.15g
G5025	1.0~2.0mm	0.25g
G5050	1.0~2.0mm	0.5g
G5100	1.0~2.0mm	1g
G5200	1.0~2.0mm	2g

# MEGA DERM™ PLUS Acellular Dermal Matrix

## Product Features

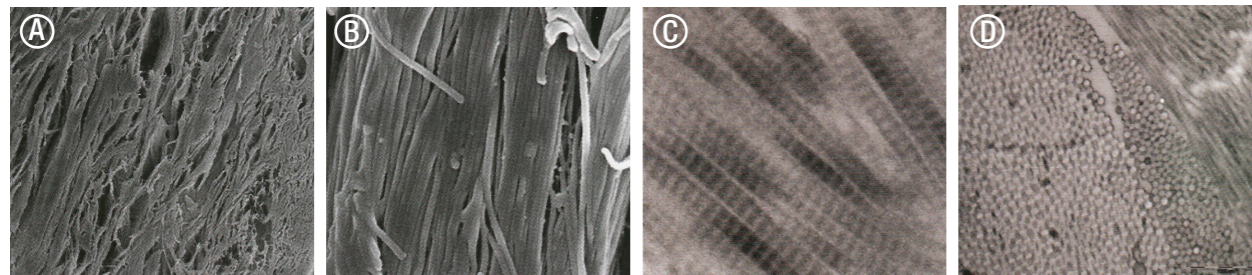
- This product can carry out the functional blocks of the membrane (soft tissue penetration protection) due to its long absorption period, and has excellent manipulability.
- Unlike other imported complete products, this product is produced under the stringent standards of the FDA in Korea.
- The world's first E-Beam sterilization can induce safe and prompt engraftment.
- E-Beam is safe and can be effectively sterilized without destroying the collagen structure.
- This product is the first in the world with the basement membrane layer removed (patent pending) to maximize the transplant engraftment rate.
- This shows the high engraftment rate after the transplant by maximizing the influx of fibroblasts and/or the neovascularization. (Patent Application No. 10-2012-0026616)



## Application

- Mucogingival Defect.
- Soft tissue formation around the implant area.
- Wide perforation in the Schneiderian membrane.

## SEM Images (These have kept the collagen structure after the E-Beam sterilization.)

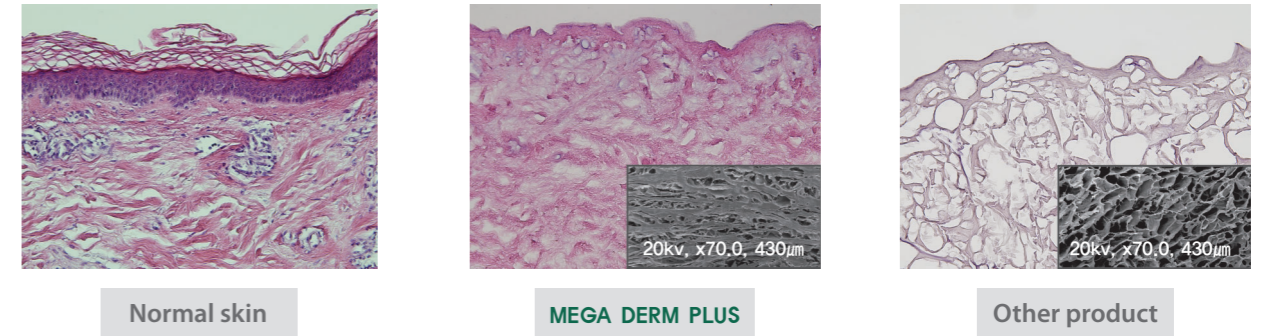


A. SEM (x200)      B. SEM (x20,000)      C. TEM (Transverse section)      D. TEM (Cross section)

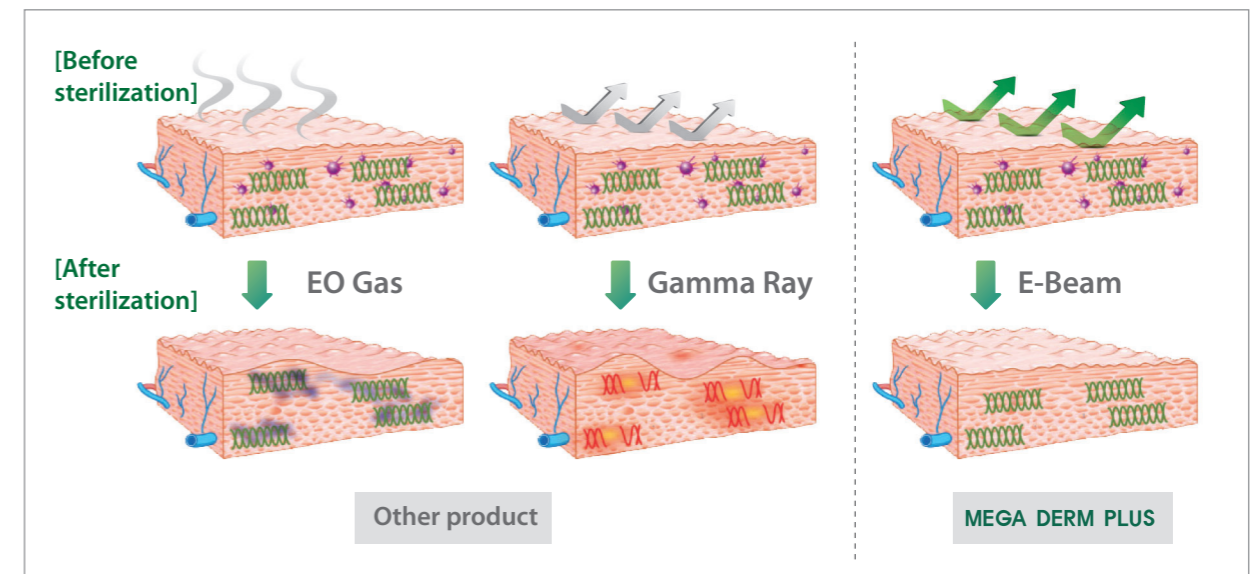
## Specifications

Product Code	Size	Thickness
D1520P	15 x 20mm	0.5~0.7mm
D1530P	15 x 25mm	0.5~0.7mm

## MEGA DERM PLUS three-dimensional structure of the dermis



## The world's first 'E-Beam' sterilization that does not destroy the collagen structure



- Bacteria removal
- Normal collagen
- Destroyed collagen
- EO chemical residue

# DIA-DERM® M Biodegradable Atelocollagen Membrane

## GTR(Guided Tissue Regeneration) GBR(Guided Bone Regeneration) membrane

- Diaderm® is a dental membrane used for GTR (Guided Tissue Regeneration) and GBR (Guided Bone Regeneration) operation.
- Diaderm® helps restoration of alveolar bone, and protect operation site from infiltration of an epithelial cell and exterior circumstances.
- Diaderm® made from high purity atelocollagen has high biocompatibility, mechanical strength, resistance to enzymatic degradation and flexibility.

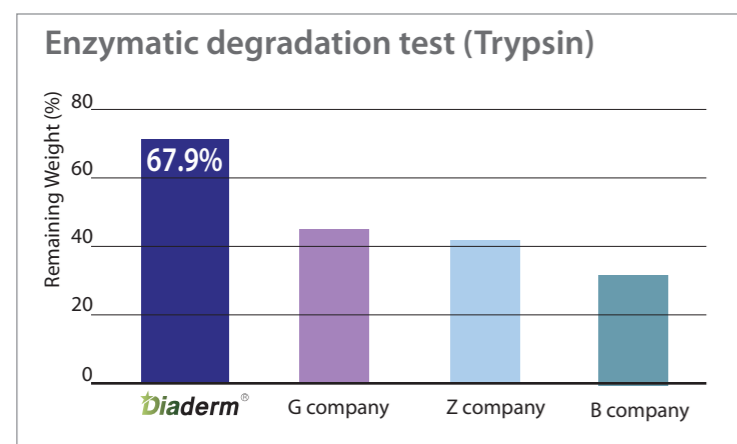
### Product Features

- High biocompatibility
- Induces restoration of tissue
- Closes wound site completely
- Sustains space for bone reproduction
- Easy to handle and operate



### Resistance against enzymatic degradation

- Diaderm® has higher resistance to enzymatic-degradation compared to products from other manufacturers.



### Storage and Shelf Life

- Store at 1-30°C
- Shelf Life : 3 years from the date of manufacture

### Specifications

Product Code	Size
AS-007020	15 X 30 mm

# BOSS®

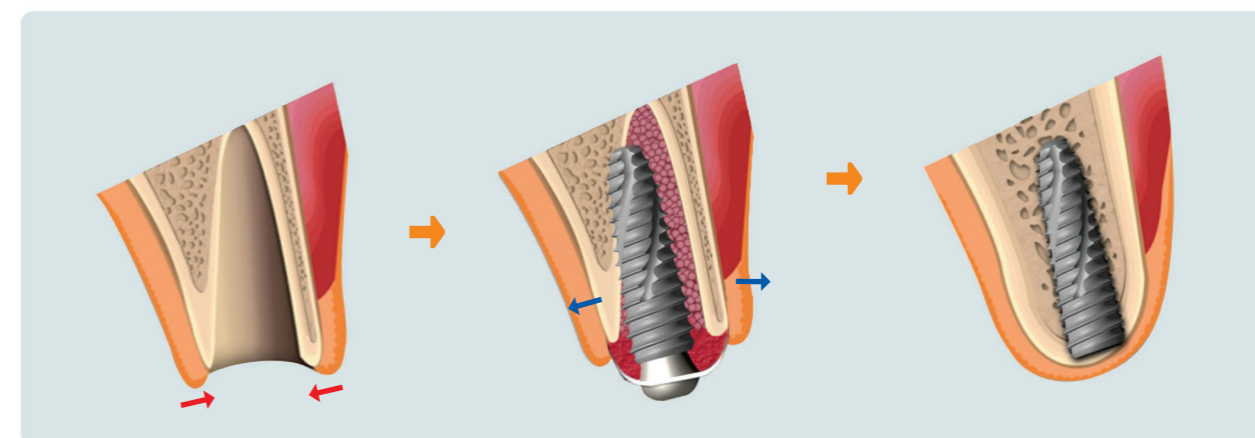
## BMP bone graft and **O**pen **S**heet **S**ystem

### Advantages

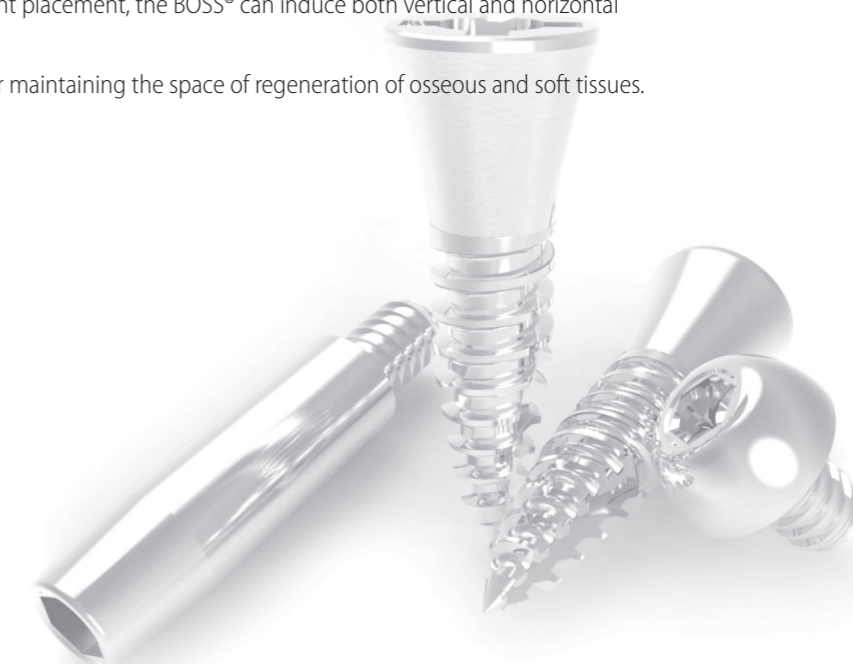
- Maintains the width and height of adherent gingiva.
- Offers superb mechanical support.
- Easy to customize for the application of various cases.
- Primary Closure may be not required.
- The result may come out the best using osteoinductive material.

### Introduction

#### Type 1 (BOSS® Abutment ) : Placement of implant in the extraction socket



- When residual bone is not sufficient for implant placement, the BOSS® can induce both vertical and horizontal augmentation upon implant placement.
- The BOSS® consists of abutment and guide for maintaining the space of regeneration of osseous and soft tissues.



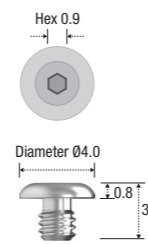
A. Structure of the product



Product Code	Length	Cuff
BSSB420	7.7	2
BSSB430	8.7	3
BSSB440	9.7	4

The body is connected to the fixture maintaining the space for regeneration of soft tissue.

Healing(Cover)



Product Code
BSSH001

The interface between body and the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh is fixed.

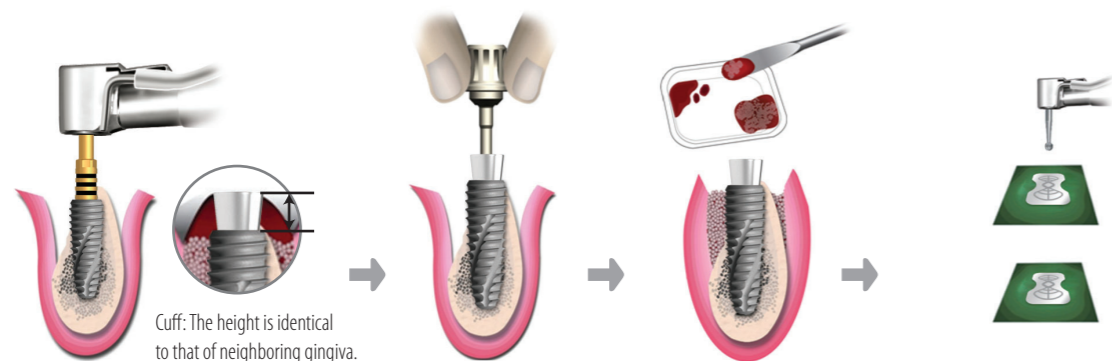
Temporary Post (Guide)



Product Code
BSST001

Before covering, the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh is shaped and the intraoral position of those is determined.

B. User Guide



Placement of implant.

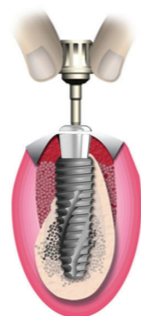
Adjust the height identical to that of neighboring gingiva. Connect using the 0.9 Hex driver.

Fill the blood-soaked bone graft material in the defective area.

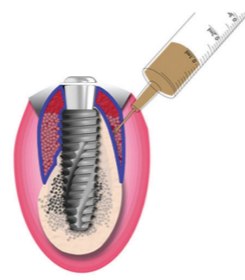
Modify the shape of the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh to prevent the bone graft material from escaping into the oral cavity.



Connect abutment body to the guide and place the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh.

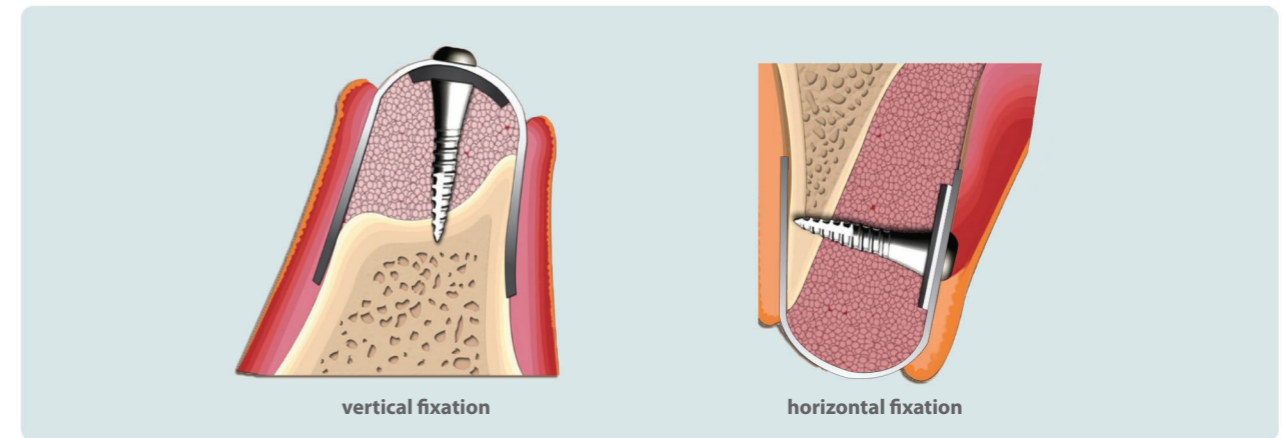


Fix the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh using the cover.



Suture the cover without additional incision (if the InnoGenic™ Wifi-Mesh is used, primary closer is required). The result shall be much more predictable and better if rhBMP-2 solution made by the COWELL® BMP is injected via gingiva into osseous tissue in the bottom.

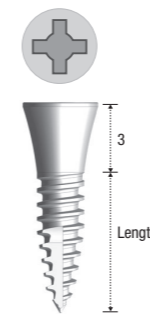
Type 2 (BOSS® Screw) : Placement of implant in cases other than the extraction socket



- When implant cannot be placed or when implant is to be placed after two sessions of bone regeneration procedure.
- Consists of screw that can be fixed onto osseous tissue and guide.
- Protects bone graft material against external force using the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh.

A. Structure of the product

Screw



Product Code	Length
BSSS2306	6
BSSS2310	10

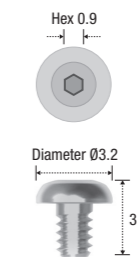
The product fixes onto osseous tissue using a dedicated screw driver.

Screw Driver



Product Code
KBSD01

Healing(Cover)



Product Code
2BSSC001

The interface between screw and the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh is fixed.

Temporary Post (Guide)



Product Code
2BSSG001

Before covering, the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh is shaped and the intraoral position of those is determined.

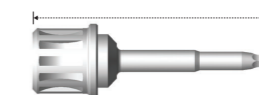
B. User Guide

- Select the screw with an appropriate width and height, and then fix using a dedicated screwdriver.
- Fill the blood-soaked bone graft material into the defective bone.
- Modify the shape of the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh to prevent the bone graft material from escaping into the oral cavity.
- Connect the screw and guide, place the InnoGenic™ Wifi-Mesh / PTFE-Mesh / Ti-Mesh, and then fix using the cover.
- Suture the cover without additional incision (If the InnoGenic™ Wifi-Mesh is used, primary closer is required). The result shall be much more predictable and better if rhBMP-2 solution made by the COWELL® BMP is injected via gingiva into osseous tissue in the bottom.

Instrument

0.9 Hex Driver

- For connecting the BOSS® Abutment and Cover.



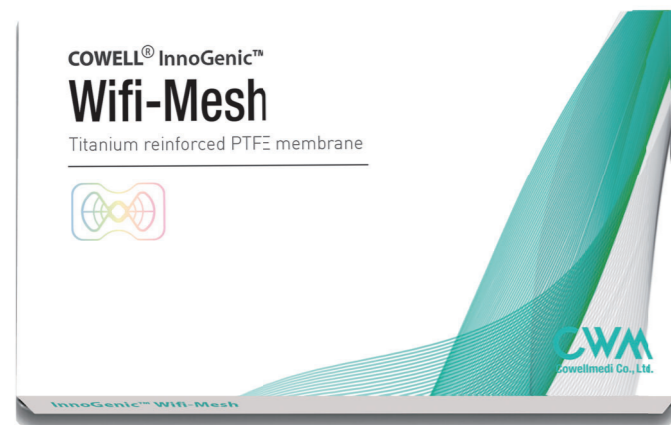
Product Code	Size
KHD0915	15
KHD0921	21
KHD0927	27

# InnoGenic™ Non-resorbable Membrane

## InnoGenic™ Wifi-Mesh and InnoGenic™ PTFE-Mesh

The InnoGenic™ Wifi-Mesh, PTFE-Mesh and Ti-Mesh are non-resorbable barrier membrane to be applied over intraoral defects, especially, tooth extraction and bone augmented sites. The InnoGenic™ Wifi-Mesh and PTFE-Mesh are made of proprietary 100% PTFE, the polytetrafluoroethylene (teflon) sheet which is a biologically inactive and tissue compatible material and the InnoGenic™ Wifi-Mesh is reinforced with titanium frames (Titanium Gr II, ASTM F 67) embedded between two layers of PTFE sheets.

### InnoGenic™ Wifi-Mesh



Product Code	Size	Thickness
BTP1424AA	14X24	0.25
BTP1424AB	14X24	0.25
BTP1525BB	15X25	0.25
BTP1725CA	17X25	0.25
BTP2030AB	20X30	0.25
BTP2530AB	25X30	0.25
BTP3040AB	30X40	0.25

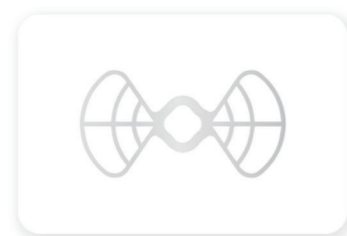


BTP1424AA

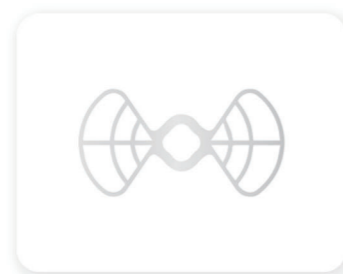
BTP1424AB

BTP1525BB

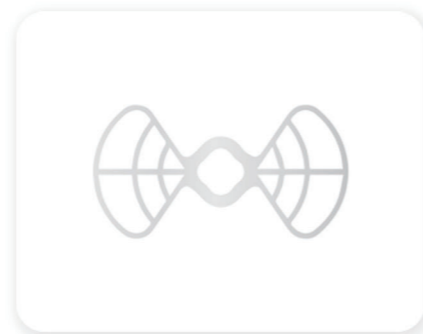
BTP1725CA



BTP2030AB



BTP2530AB



BTP3040AB

### Clinical Case using the Wifi-Mesh



• Periodontitis with local osteomyelitis of #45 & 47



• Bone graft using INNO-Oss™ Plus



• Shielding soft tissue penetration using Wifi-Mesh

3 months later

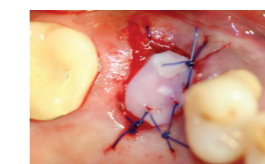


• Removal of Wifi-Mesh



• Dense periosteum layer has been formed

### InnoGenic™ PTFE-Mesh

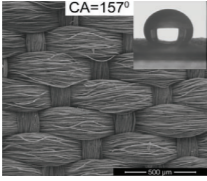
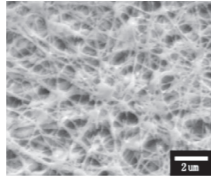
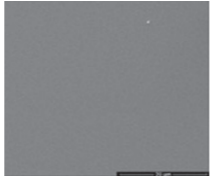


Product Code	Size	Thickness
TS17251	17 x 25	0.1
TS24301	24 x 30	0.1
TS17252	17 x 25	0.2
TS24302	24 x 30	0.2

### Features

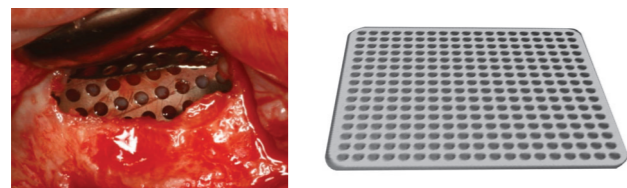
- **Non-resorbable** : Made of 100% non-resorbable material for users to modulate healing period.
- **Non-porous (0.0 μm) + Open Membrane Sheet Technique** : Prevention of infection or other possible defects caused from passage or integration of bacteria through porosity of plaster and it even allows to apply Open Membrane Sheet Technique.
- **Prevention of Displacement** : Not only being sutured along with gingival but also using **BOSS® Abutment and Screw** inserted and fixed into the hall of titanium frame allows displacement of the products.
- **Close to Transparency** : Observation of the healing of the underlying tissue through almost transparent PTFE surface allows more predictable result and helps determine removal time easier.
- **Easy to be Customized** : Easy to modify the shape according to shape and dimension of the defect.
- **Easy to be Removed** : Put a hook in the hole of the titanium frame of the InnoGenic™ Wifi-Mesh and in any center part of the InnoGenic™ PTFE-Mesh and remove.

## Comparison to other similar products sold in market

Classification	Product A	Product B	InnoGenic™ Wifi-Mesh & PTFE-Mesh
SEM Photograph			
Ultrastructure	Fiber	Filter	Sheet
Bacterial infection at exposure	Bacterial toxin penetration between filters at 50 µm intervals	Bacterial toxin penetration between filters at 2 µm intervals	No Bacterial toxin penetration thanks to non porous structure
Action on Exposure	Instant Removal	Removal on week 3 to 4	Safe for more than 6 weeks
Shielding Function against Fiber Cell	High	High	Extremely High
Shape-keeping Capability against External Force	Large Deformation	Shrinkable Deformation	No Deformation

## InnoGenic™ Ti-Mesh

- The InnoGenic™ Ti-Mesh is made of stamping titanium sheet, also Titanium Gr II, ASTM F 67, which is 100% commercially pure titanium. The InnoGenic™ Ti-Mesh is non-resorbable surgical mesh to be applied over intraoral defects, especially, tooth extraction and bone augmented sites.



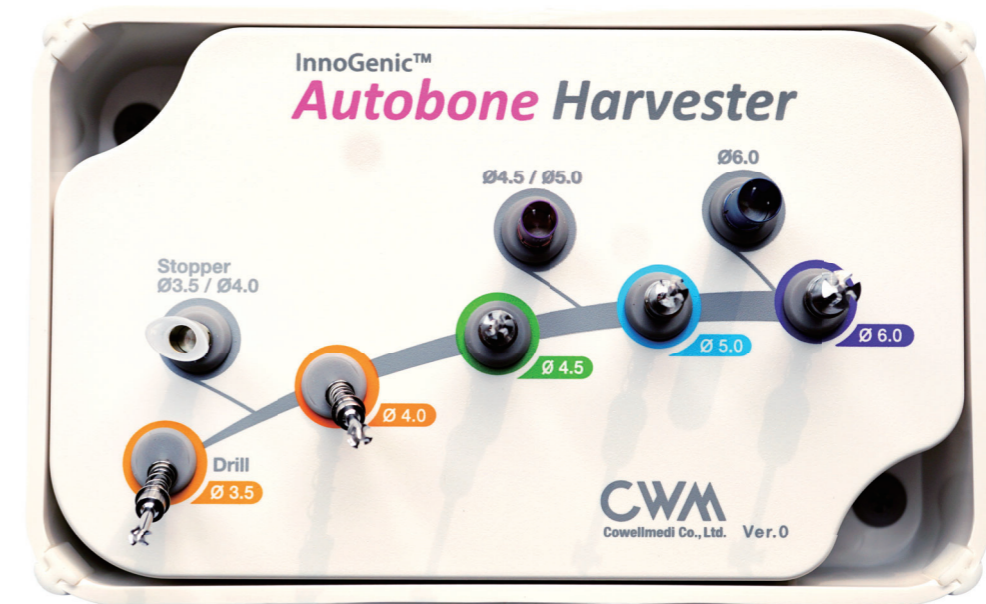
Product Code	Size	Thickness
TMP210	25 x 34	0.07
TMP211	25 x 34	0.1

## Features

- Easy to be Customized :** Easy to modify the shape according to shape and dimension of the defect.
- Prevention of Displacement :** Prevents displacement of the InnoGenic™ Ti-Mesh using **the BOSS® Abutment and Screw** inserted and fixed into the 1mm hole of the Ti-Mesh Frame.
- No Memory :** The problem of Majority of Titanium Meshes in the market is resilience of the products after certain time. Due to this problem, patients go through serious pain. The InnoGenic™ Ti-Mesh is, however, made after many times of stamping process, the InnoGenic™ Ti-Mesh does not come back to the original shape after shape is formed.

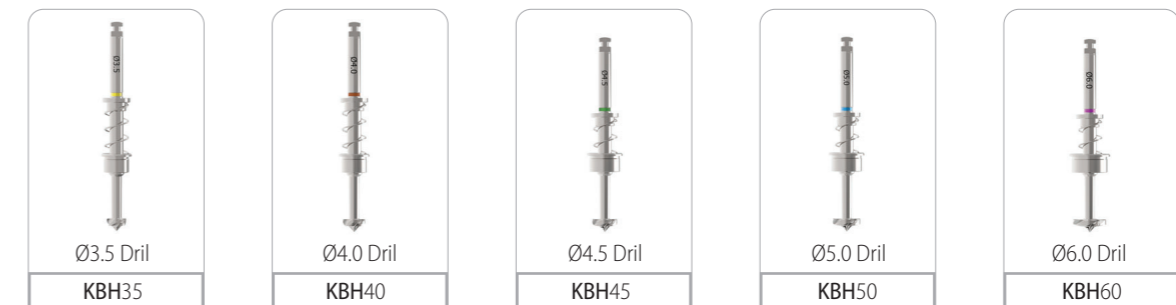
# InnoGenic™ Autobone Harvester

> Maximize Your Return On Minimal Investment, Guaranteed!

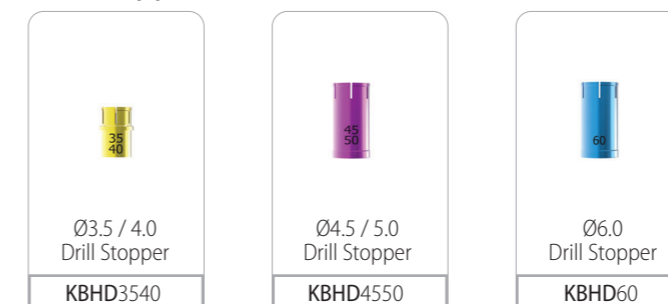


[KIAH001]

## Harvesting Drill



## Drill Stopper



## Silicon Shield



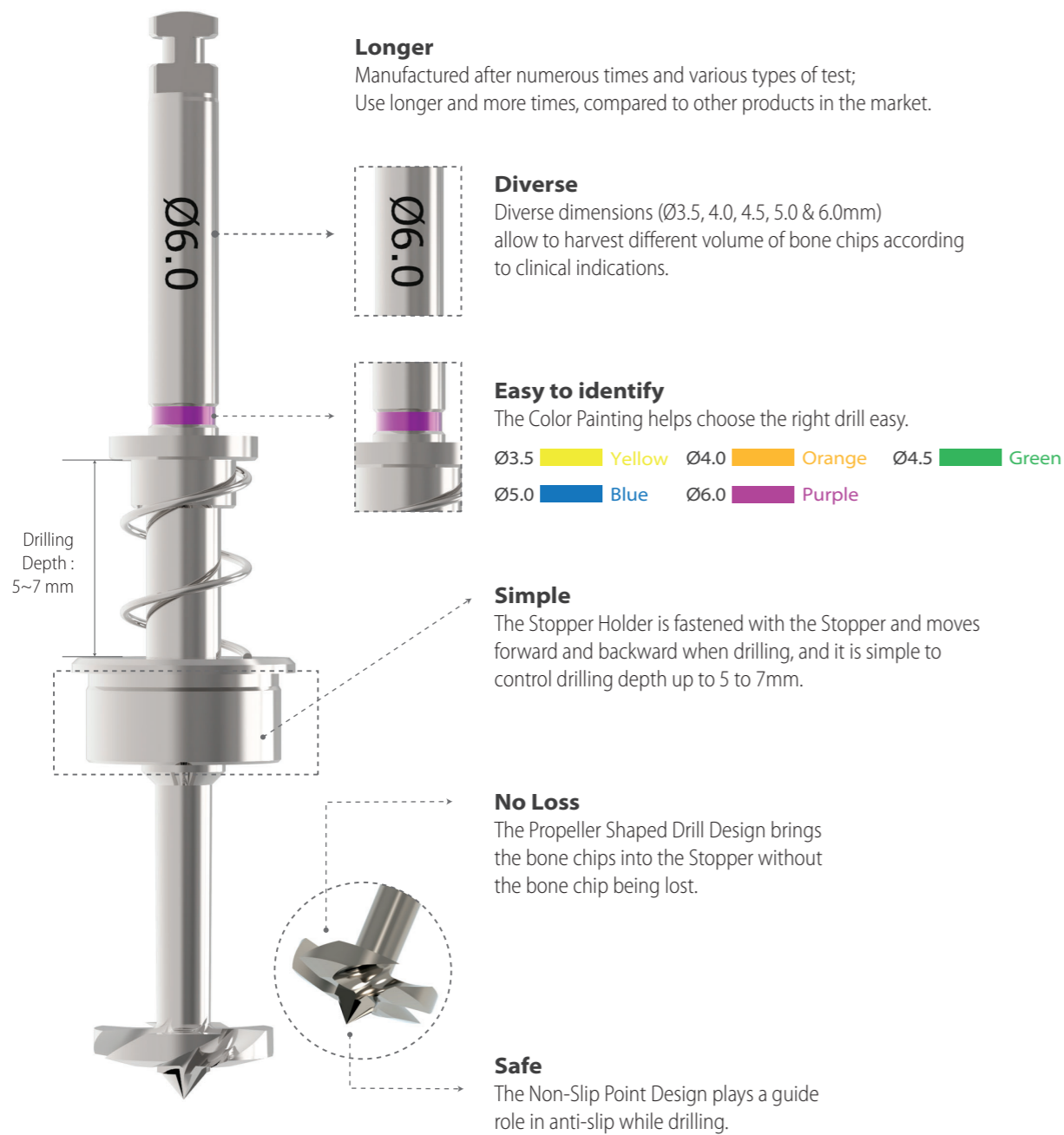
\* 1EA assembled with drill.  
5EA packed in the lower tray.

## Key Concepts

### Maximize your return on minimal investment

The key concept of the Autobone Harvester Plus to harvest a large amount of the autogenous bone chips from the implant site that can be wasted into the suction during implant drilling procedure.

## Features: Drill



## Features: Stopper & Silicon Shield

For Ø3.5 & 4.0 Drill



### Stopper

Used by fastening to the Stopper Holder of Ø3.5 & 4.0 Drill.



### Silicon Shield (\*Exclusive for Ø3.5 & 4.0)

- Used by fastening to Ø3.5 & 4.0 stopper.
- Prevents deviation of bone chips.
- Allows bone chip harvesting from the implant site.
- Reusable transparent silicon material allows to check drilling position and bone chips being harvested.



### Shield

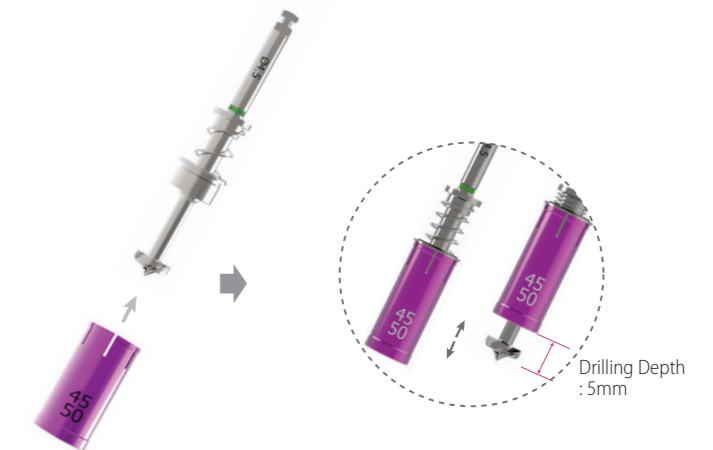
The lip-shaped shield is brought into close contact with the bone and makes sure with no bone chip loss while drilling.

For Ø4.5 & 5.0 Drill

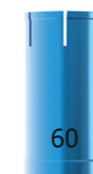


### Stopper

Used by fastening to the Stopper Holder of Ø4.5 & 5.0 Drill.

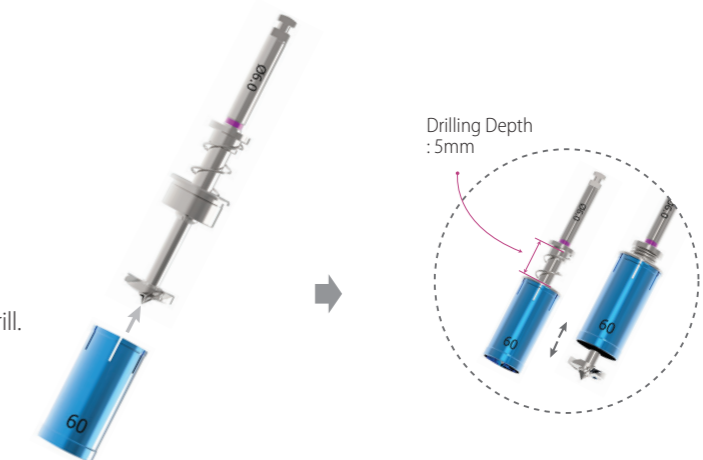


For 6.0 Drill



### Stopper

Used by fastening to the Stopper Holder of Ø6.0 Drill.



## Harvesting sequence :

Implant Site using Ø3.5/4.0

Harvesting Drill with the Silicon Shield



• Point drill to mark harvesting and implant site.

• Select Ø3.5/4.0 Drill and insert the Stopper into the selected Drill. And put the Shield on the Ø3.5&4.0 Stopper.

• Drill at 300 to 500RPM with irrigation and harvest bone chips.



• Disassemble the Silicon Shield, the Stopper and collect the bone chips for bone grafting.

• Use final drill (equal to or over Ø3.5/4.0) according to the drilling protocol of the manufacturer and treatment planning.

• Place the implant.



• Apply the harvested bone chips on the site.

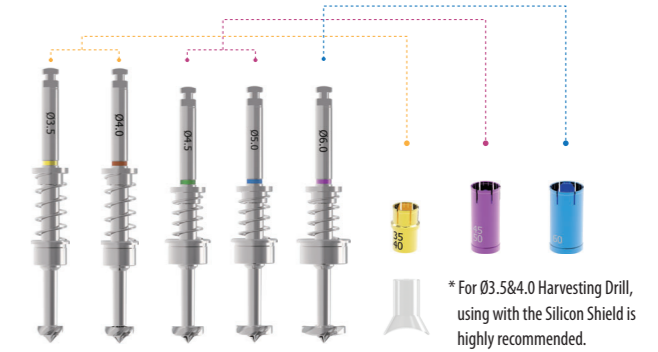
## Harvesting sequence :

Buccal Bone Harvesting

using Ø3.5/4.0/4.5/5.0/6.0

Harvesting Drill

Select the drill according to its diameter and clinical indications.



• Drill at 300 to 500RPM with irrigation and harvest autogenous bone chips.

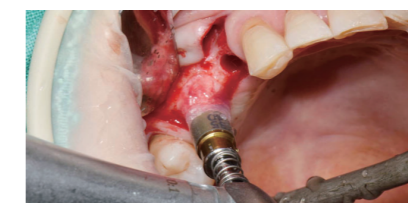
• Apply the harvested bone chips on the site.

## A Clinical Case using Ø3.5/4.0 Harvesting Drill

by Dr. Soohong Kim, DDS, Ph.D



Drilling at 300 RPM with irrigation was carried out after marking implant and harvesting position.



The Silicone Shield was brought into close contact with various types of bone level and prevented bone chip loss.



The amount of bone taken was easily ascertained, through the transparent Silicone Shield.



The bone was transferred to medical bowl after disassembling the Silicon Shield and Stopper. The amount of the bone was much more than expected.



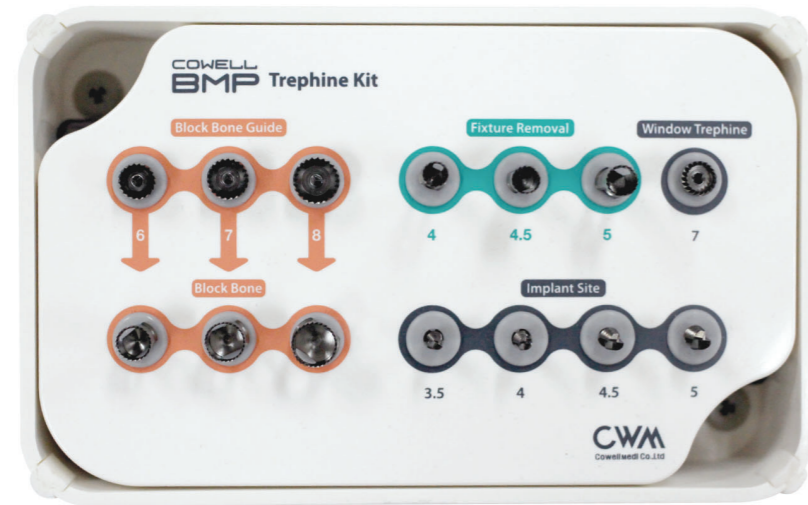
After the implant placement, healing abutments were connected and carried out GBR in the defected area.

\* 2 Step Harvesting: Drilling to 7mm is recommended after transferring bone chips to bowl since the Stopper & Silicon Shield are fully filled with bone chips while 4mm drilling.



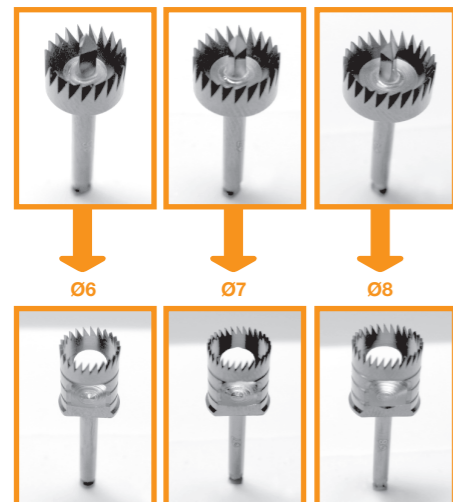
# COWELL® BMP TREPHINE KIT [KBT001]

> An easy-to-use kit containing drills for block-type bone collection and failed fixture removal in autogenous bone graft, and Bone Chip Extraction Prior to Implant Placement.



## Trephine Drill I: Block Bone Extraction

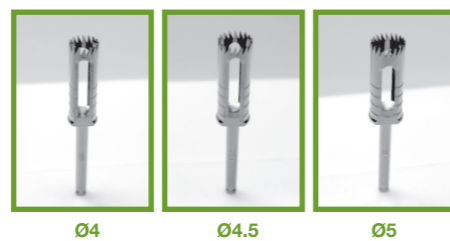
### Guide & Block Bone Trephine Drill



## Trephine Drill II: Failed Fixture Removal

Failed Fixture Removal

### Fixture Removal



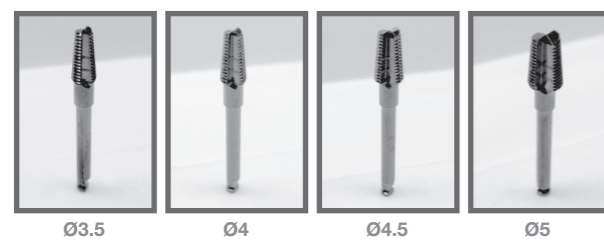
## Trephine Drill III: Window Opening for Lateral Window Approach

### Window Trephine



## Implant Site Drill: Sinus Lift & Bone Chip Extraction Prior to Implant Placement

### Implant Site



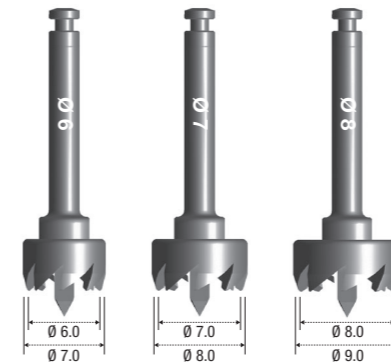
Product	Diameter	Code
Block bone Guide Drill	Ø 6.0 (Inner)	KBGT60
	Ø 7.0 (Inner)	KBGT70
	Ø 8.0 (Inner)	KBGT80
Block Bone Trephine Drill	Ø 6.0 (Inner)	KBT60
	Ø 7.0 (Inner)	KBT70
	Ø 8.0 (Inner)	KBT80
Fixture Removal Trephine Drill	Ø 4.2 (Inner)	KFRT40
	Ø 4.7 (Inner)	KFRT45
	Ø 5.2 (Inner)	KFRT50
Window Trephine Drill	Ø 7.0 (Outer)	KWTT60
Implant Site Drill	Ø 3.5 (Fixture)	KTIS35
	Ø 4.0 (Fixture)	KTIS40
	Ø 4.5 (Fixture)	KTIS45
	Ø 5.0 (Fixture)	KTIS50

## Trephine Drill I Block Bone Extraction

This drill allows the collection of block-type autogenous bone with a required size in the case of regenerating a wide bone defect and severe bone resorption.

### Block Bone Guide

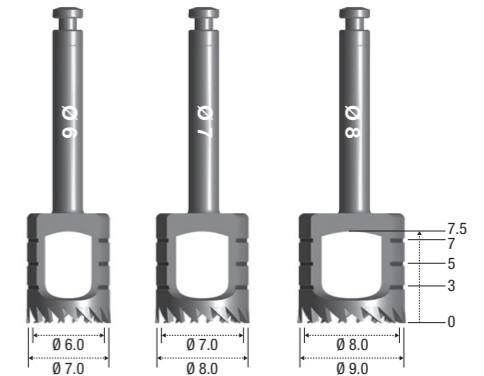
- > This guide helps the target block bone to be accurately positioned and the trephine drill to be stably engaged with the bone.
- > Desired rpm: 800~1,000 rpm.



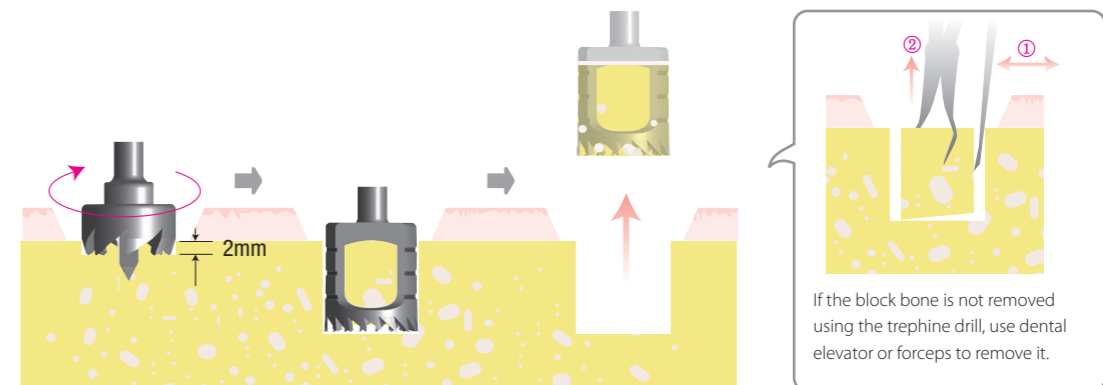
Diameter	Ø 6.0 (Inner)	Ø 7.0 (Inner)	Ø 8.0 (Inner)
	KBGT60	KBGT70	KBGT80

### Block Bone Trephine Drill

- > This drill is engaged with the bone groove with the help of the block bone guide to collect the block bone with a desired size.
- > Desired rpm: 800~1,000 rpm.

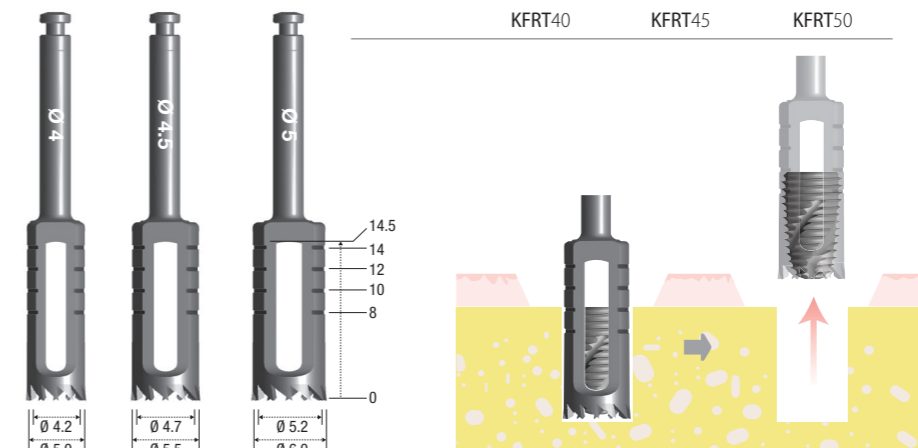


Diameter	Ø 6.0 (Inner)	Ø 7.0 (Inner)	Ø 8.0 (Inner)
	KBT60	KBT70	KBT80



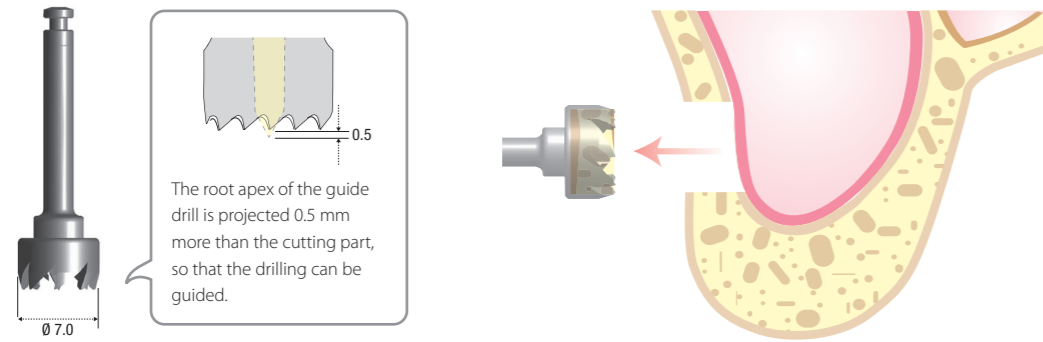
## Trephine Drill II Failed Fixture Removal

Diameter	Ø 4.2 (Inner)	Ø 4.7 (Inner)	Ø 5.2 (Inner)
	KFRT40	KFRT45	KFRT50



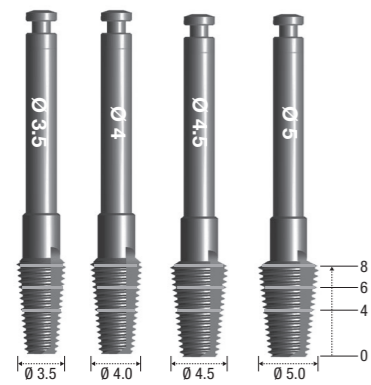
## Trephine Drill III Window Opening for Lateral Window Approach

Diameter	Ø 7.0 (Outer)
	KWTT60

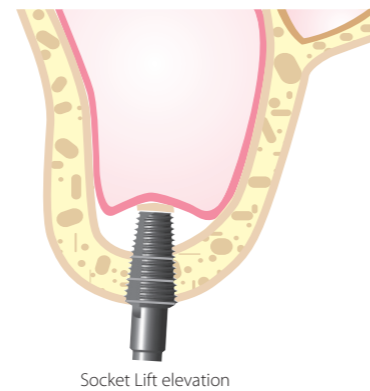
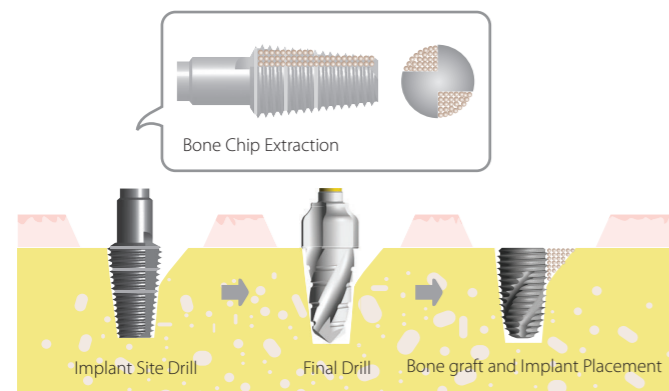


## Implant Site Drill Sinus Lift & Bone Chip Extraction Prior to Implant Placement

Diameter	Ø 3.5	Ø 4.0	Ø 4.5	Ø 5.0
	KTIS35	KTIS40	KTIS45	KTIS50



- > Used before the final drill is used (Simplified drilling sequence).
- > Advantageous for securing autogenous bone.
- > Less rpm drilling leads to low bone heating.
- > Also used as a sinus lift tool (socket lift elevation).
- > Desired rpm : 20~30 rpm.



COWELL® Regenerative Solution