

The image is a scanning electron micrograph (SEM) of a bone's surface, showing a complex, porous, and interconnected structure. A horizontal band of bright green fluorescence highlights a specific region of the bone, likely representing a site of regeneration or a specific material interface. The text is overlaid on this green band.

# Regeneration

Bone Grafting & Soft Tissue Management

**Dentium**  
For Dentists By Dentists



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# Dentium

Regeneration

Products information

A scanning electron micrograph (SEM) showing a highly porous, interconnected network of bone graft material. The structure consists of thick, irregular walls forming a complex, interconnected lattice of large, irregular pores. The surface of the material appears rough and textured, with many small protrusions and indentations. The overall appearance is that of a highly porous, three-dimensional structure designed for bone ingrowth.

## Bone Graft Material

*OSTEON™ II*

*OSTEON™*

*OSTEON™ II Collagen*

*OSTEON™ Collagen*



# OSTEON™ II

## Application of OSTEON™ II

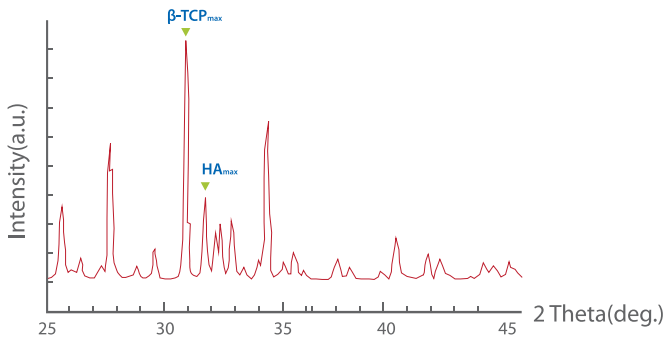
- Sinus Lift
- Ridge Augmentation
- Extraction Socket Grafting
- Cystic Cavities
- Periodontal Defect



## Composition of OSTEON™ II

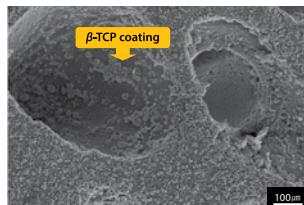
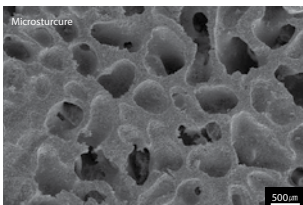
Osteoconductive biphasic calcium phosphate with higher  $\beta$ -TCP

**OSTEON™ II = HA 30% +  $\beta$ -TCP 70%**

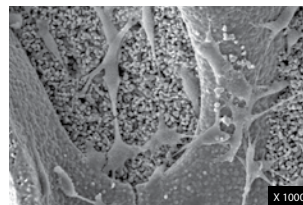


## Characteristics of OSTEON™ II

- Highly resorbable due to higher  $\beta$ -TCP content
- Convenient handling
- Excellent wettability
- Osteoconductive synthetic bone graft
- Pore Size : 250  $\mu$ m
- Porosity : 70%

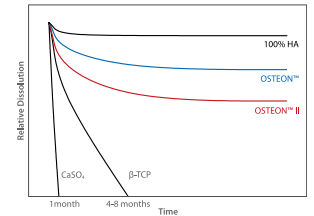


## Cell Adhesion Test



Osteoblasts attached & spread well

## In Vitro Dissolution Test



## Animal Test

12-weeks follow up in rabbit calvaria model



OSTEON™



OSTEON™ II

# OSTEON™

## Application of OSTEON™

- Sinus Lift
- Ridge Augmentation
- Extraction Socket Grafting
- Cystic Cavities
- Periodontal Defect

## Composition of OSTEON™

100% Synthetic bone graft : HA scaffold coated with  $\beta$ -TCP

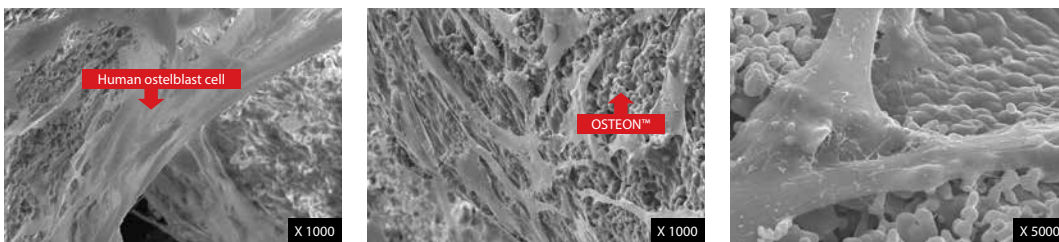
**OSTEON™ = HA 70% +  $\beta$ -TCP 30%**

## Characteristics of OSTEON™

- 100% synthetic bone graft
- Interconnected porous structure similar to that of human cancellous bone
- Osteoconductive material as a bone growth scaffold
- Pore Size : 300~500  $\mu$ m
- Porosity : 77%

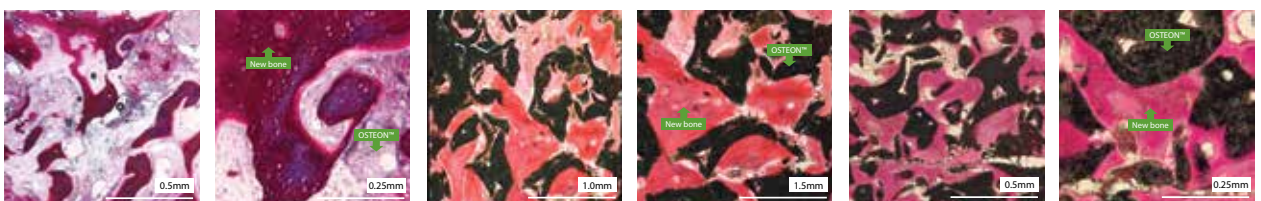


## Cell Adhesion Test



Osteoblast cell was well attached and spreaded on OSTEON™ surface.

## Human Histology



**6.5 months after sinus graft surgery**

OSTEON™ area = 1.24mm<sup>2</sup> (17.1%)  
New bone area = 1.63mm<sup>2</sup> (22.7%)

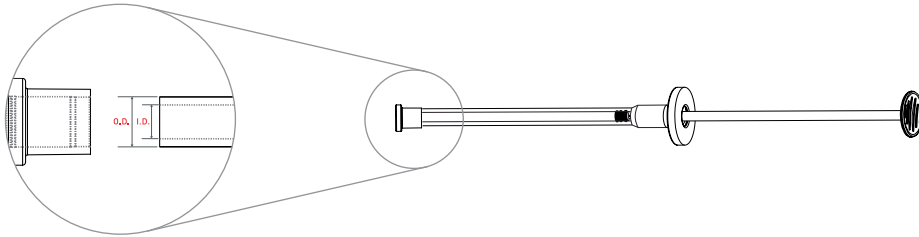
**10 months after sinus graft surgery**

OSTEON™ area = 3.04mm<sup>2</sup> (35.5%)  
New bone area = 2.38mm<sup>2</sup> (27.7%)

**21 months after sinus graft surgery**

OSTEON™ area = 6.30mm<sup>2</sup> (40.4%)  
New bone area = 5.12mm<sup>2</sup> (33.0%)

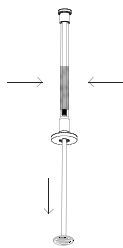
## Syringe Size



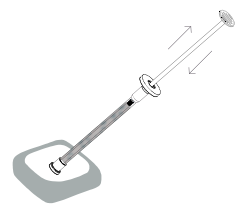
Product	Syringe outer diameter	Syringe inner diameter
OSTEON™ Sinus OSTEON™II Sinus	Ø7.0mm	Ø5.0mm
OSTEON™ Lifting OSTEON™II Lifting	Ø5.0mm	Ø3.4mm

## Application of OSTEON™

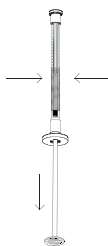
① Slightly retract the plunger and gently tap to loosen particles. Gently push plunger back into place.



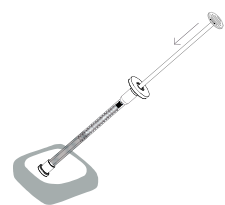
② Place syringe into a sterile dappen dish and retract plunger to draw liquid into the syringe.



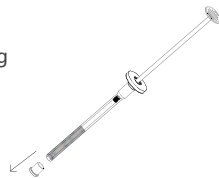
③ To optimize delivery, OSTEON™ should be wetted and loosened sufficiently.



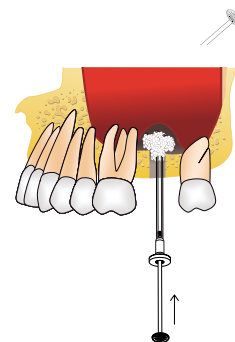
④ Expel excess liquid by applying very gentle pressure on the plunger.



⑤ When sufficiently hydrated, OSTEON™ will expel with ease from the syringe. Before injecting OSTEON™, remove the cap from the syringe.



⑥ Deliver OSTEON™ directly into the surgical site with the syringe.





# OSTEON™ II Collagen

## Application of OSTEON™ II Collagen

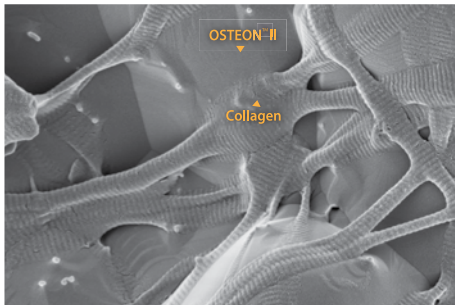
- Simple Grafting
- Ridge Augmentation
- Extraction Socket Grafting
- Cystic Cavities
- Periodontal Defect



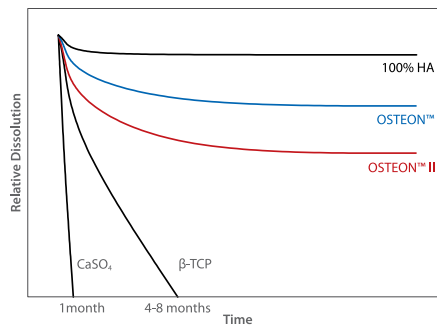
## Characteristics of OSTEON™ II Collagen

- Composed of synthetic bone graft material (OSTEON™ II) and natural Type I Collagen
- Moldable property to accommodate any shape or form
- Significantly reduce chairtime due to excellent handling and delivery
- Collagen content becomes resorbed over several weeks after the initial shaping
- OSTEON™ II is highly resorbable due to higher  $\beta$ -TCP content (HA: $\beta$ -TCP=30:70)

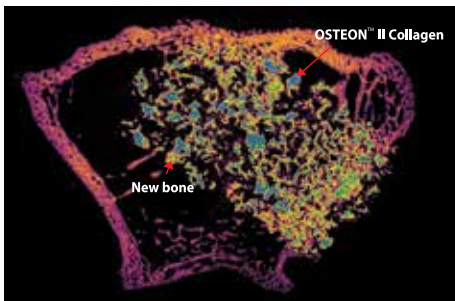
## Microstructure



## In Vitro Dissolution Test of OSTEON™ II



## Animal Test



- Animal: New Zealand White Rabbit
- Implantation Area : Femur
- Period : 6 Weeks
- Visual: CT Image

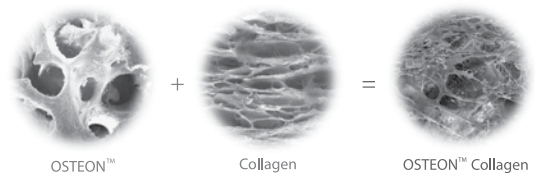
# OSTEON™ Collagen

## Application of OSTEON™ Collagen

- Sinus Lift
- Ridge Augmentation
- Extraction Socket Grafting
- Cystic Cavities
- Periodontal Defect

## Description

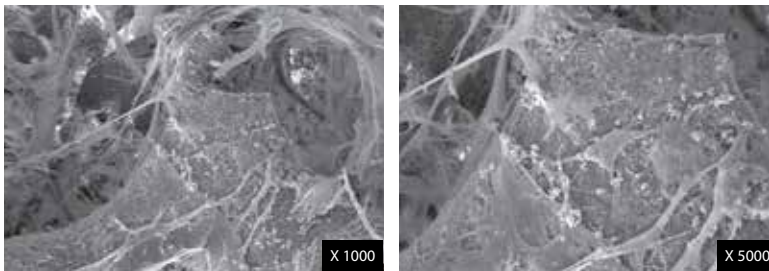
OSTEON™ Collagen is a bone void filler composed of synthetic bone (OSTEON™), and natural type I collagen.



## Characteristics of OSTEON™ Collagen

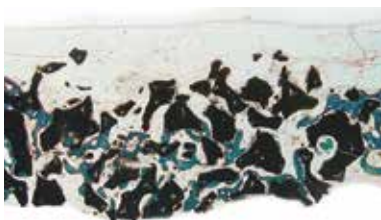
- Composed of synthetic bone graft material (OSTEON™) and natural Type I Collagen
- Moldable property to accommodate any shape or form
- Significantly reduce chairtime due to excellent handling and delivery
- Collagen content becomes resorbed over several weeks after the initial shaping
- Excellent new bone formation and space maintenance function

## Cell Adhesion Test



Osteoblasts cultured and permeated well on the OSTEON™ Collagen surface

## Animal Test



- Animals: new zealand white rabbit
- Implantation area: calvaria
- Period: 8 weeks
- Staining method: goldner trichrome

Scanning electron micrograph (SEM) showing a highly porous, fibrous network of collagen membrane material. The structure consists of interconnected fibers forming a mesh-like pattern with irregular, interconnected pores. The fibers vary in thickness and are densely packed in some areas, creating a complex, three-dimensional structure. The overall appearance is that of a porous, sponge-like material with a high surface area.

## Membrane Material

*Collagen Membrane*

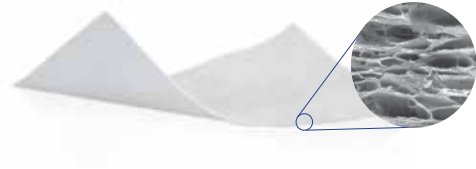
*HA Collagen Membrane*

*Collagen graft*

# Collagen Membrane

## Application of Collagen Membrane

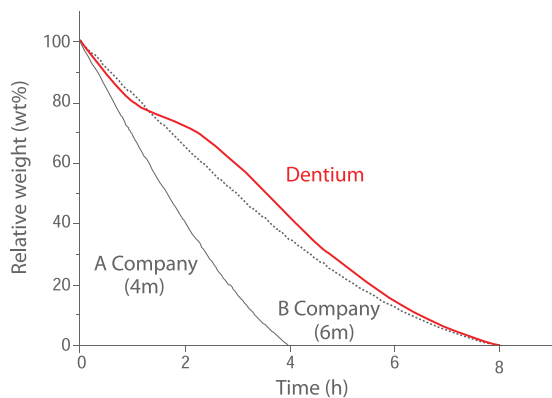
- Periodontal / Infrabony Defects
- Ridge Augmentation
- Extraction Socket Grafting
- Guided Bone Regeneration(GBR)
- Sinus Lift



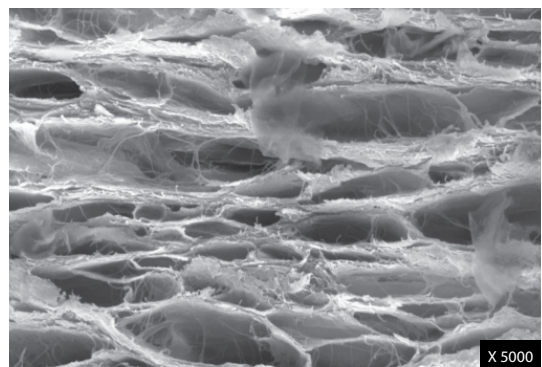
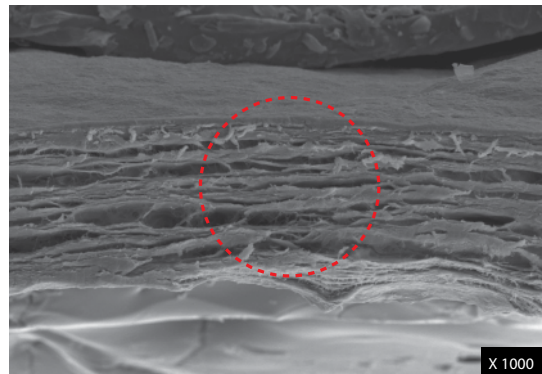
## Characteristics of Collagen Membrane

- Biodegradable barrier membrane for guided bone and tissue regeneration
- Highly pure Type I Collagen derived from bovine tendon sourced in New Zealand
- Thin membrane (300µm) with multiple layers for easy manipulation and high mechanical strength in surgery
- Resorption period of 6 months to provide enough time for stabilizing graft material and supporting bone growth

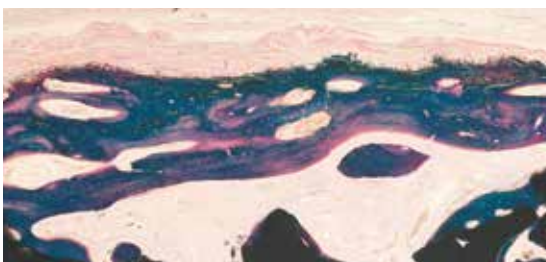
## In Vitro Dissolution Test



## Microstructure



## Animal Test



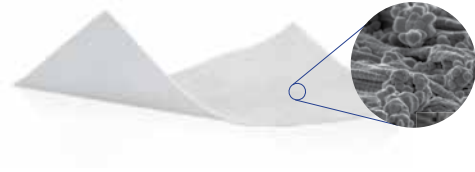
12 weeks follow-up in Rabbit Calvaria model



# HA Collagen Membrane

## Application of HA Collagen Membrane

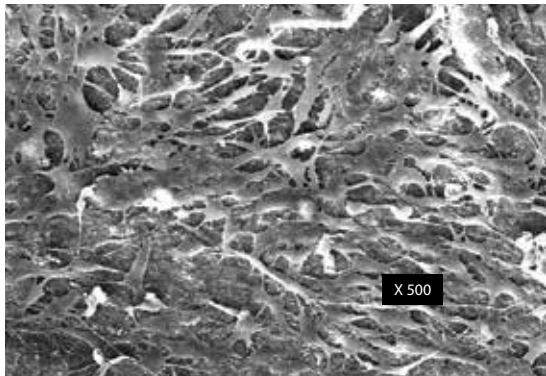
- Periodontal / Infrabony Defects
- Ridge Augmentation
- Extraction Socket Grafting
- Guided Bone Regeneration (GBR)
- Sinus Lift



## Characteristics of HA Collagen Membrane

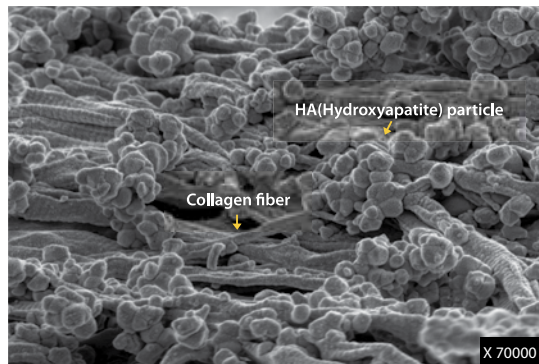
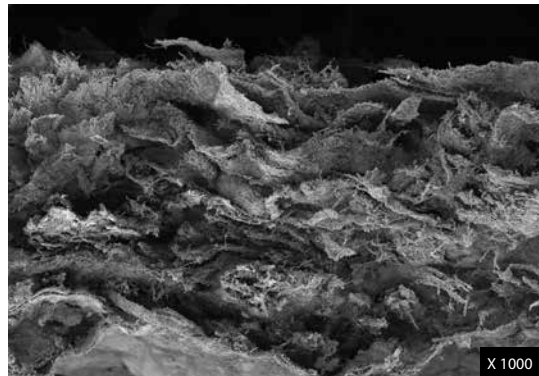
- Resorbable collagen membrane containing hydroxyapatite (HA) particles
- Highly pure Type I Collagen derived from bovine tendon sourced in New Zealand
- Highly osteoconductive due to the HA particles
- New bone formation through the membrane

## Cell Adhesion Test

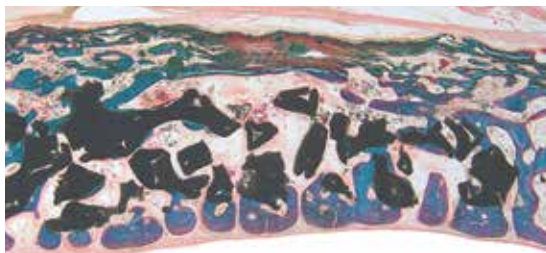


MC3T3 / E1 (Osteoblast cell)

## Microstructure



## Animal Test



12 weeks follow-up in Rabbit Calvaria Model



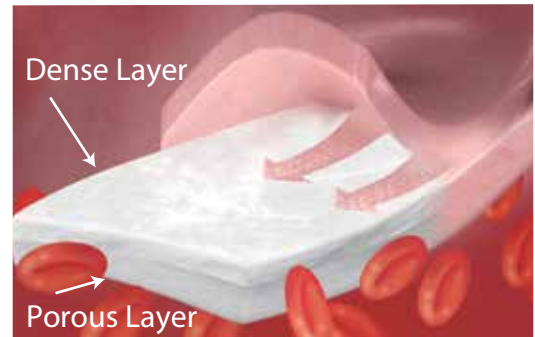
# Collagen graft 胶原膜

## Application of Collagen graft

- Soft tissue regeneration
- Hemostasis and stabilization blood clot
- Protect and heal the wound site

## Characteristics of Collagen graft

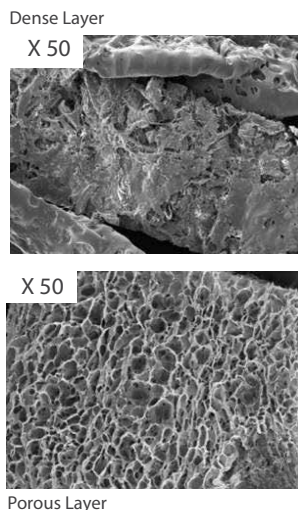
- Provide stabilized environment of soft tissue regeneration
- Double structure with porous and dense layer



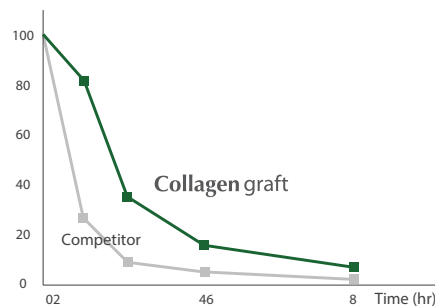
## Collagen graft Clinical Case



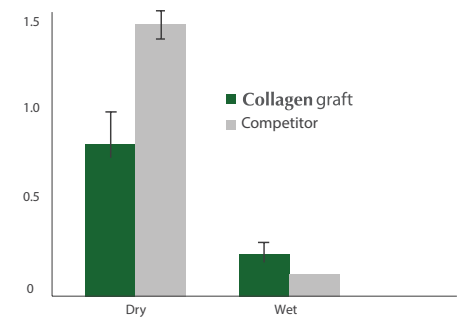
## Microstructure



## Degradation property



## Tensile Strength



MPa	Collagen graft		Competitor	
	Dry	et	Dry	Wet
	0.62	0.15	1.22	0.08

# Bone Material Products

## OSTEON™ II

Type	REF	Size (mm)	Volume (cc)
OSTEON™II (Vial type)	DT7G0205010	0.2~0.5	0.1/0.25/0.5 1.0/2.0
	DT7G0205025		
	DT7G0205050		
	DT7G0205100		
	DT7G0205200		
	DT7G0510010	0.5~1.0	0.1/0.25/0.5 1.0/2.0
	DT7G0510025		
	DT7G0510050		
	DT7G0510100		
	DT7G0510200		
DT7G1020010	1.0~2.0	0.1/0.25/0.5 1.0/2.0	
DT7G1020025			
DT7G1020050			
DT7G1020100			
DT7G1020200			
OSTEON™ II Sinus (Syringe type)	DT7G0510050SS	0.5~1.0	0.5~1.0
	DT7G1020050SS	1.0~2.0	1.0~2.0
OSTEON™ II Lifting (Syringe type)	DT7G0205025LS	0.2~0.5	0.25
	DT7G0510025LS	0.5~1.0	

## OSTEON™

Type	REF	Size (mm)	Volume (cc)
OSTEON™ (Vial type)	GBG0305025	0.3~0.5	0.25 / 0.5 1.0 / 2.0
	GBG0305050		
	GBG0305100		
	GBG0305200		
	GBG0510025	0.5~1.0	0.25 / 0.5 1.0 / 2.0
	GBG0510050		
	GBG0510100		
	GBG0510200		
	GBG1020025	1.0~2.0	0.25 / 0.5 1.0 / 2.0
	GBG1020050		
GBG1020100			
GBG1020200			
OSTEON™ Sinus (Syringe type)	GBG0510SS	0.5~1.0	0.5
	GBG1020SS	1.0~2.0	
OSTEON™ Lifting (Syringe type)	GBG0305LS	0.3~0.5	0.25
	GBG0510LS	0.5~1.0	

**OSTEON™ Collagen**

Type	REF	Size (mm)	Volume (cc)
OtSTEON™ Collagen Cylinder	GOCC0605	Ø6.0 x 5.0	0.5 ~ 1.0
	GOCC0610	Ø6.0 x 10.0	

**OSTEON™ II Collagen**

Type	REF	Size (mm)	Volume (cc)
OSTEON™ II Collagen Cylinder	OTCC0605M	Ø6.0 x 5.0	0.2~1.0
	OTCC0610M	Ø6.0 x 10.0	

**Collagen Membrane**

Type	REF	Size (cc)	Thickness (mm)
Collagen Membrane	GCM1020	10 X 20	0.3
	GCM1520	15 X 20	
	GCM2030	20 X 30	

**HA Collagen Membrane**

Type	REF	Size (cc)	Thickness (mm)
HA Collagen Membrane	GCHM 1020	10 X 20	0.3
	GCHM 1520	15 X 20	
	GCHM 2030	20 X 30	

**Collagen graft**

Type	REF	Size (cc)	Thickness (mm)
Collagen Graft	CSD 1010	10 X 10	3
	CSD 1020	10 X 20	
	CSD 1520	15 X 20	
	CSD 2030	20 X 30	
Collagen Graft (Round type)	CSD 10C	Ø10	

# The All-round Products in Bone Related Cases

Dentium's regeneration products are covering all round of the bone related clinical cases. Each of OSTEON™ series has characteristic and own materials it made for. Dentium's regeneration products are applicable to a variety of surgical parts. Series of regeneration products will take big role in the treatment area of GBR and considering expanding to practitioners and patients.

**OSTEON™ II**

**OSTEON™**

**OSTEON™ Collagen**

**OSTEON™ II Collagen**



β-TCP content



Convenient Operability



Preoperative



OSTEON™ II Collagen



Healing After 3 Months



Preoperative



OSTEON™ II & Collagen Membrane



Healing After 7 Months



Preoperative



OSTEON™ II Collagen



Healing After 8 Months



# Socket preservation

**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0605M



Pre-op



Extraction



OSTEON™ II Collagen



Post-op



Provisional restoration



Final prosthesis

**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0605M x 2ea



OSTEON™ II Collagen



After bone graft



Post-op



Healing 3months



Provisional restoration



Final prosthesis



Follow up 2 years 4 months



Follow up 3 years



# Immediate implantation

**Recommended treatment**

**OSTEON II**  
DT7G0510050 0.5cc

**Collagen Membrane**  
GCM1020



Pre-op

Implantation SuperLine 4012

OSTEON™ II



Collagen Membrane  
Post-op

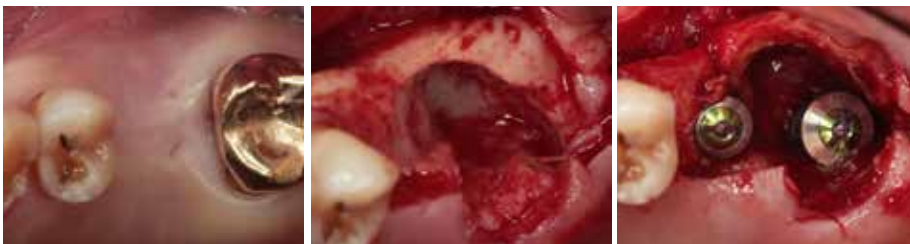
Healing 2 months, 2<sup>nd</sup> surgery

Final prosthesis

**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc

**Collagen Membrane**  
GCM1020



Pre-op

Extraction & Flap reflection

Implantation #26 SuperLine 5010  
#27 SuperLine 6012



Autogenous bone

OSTEON™ II

Collagen Membrane



Healing 3 months, 2<sup>nd</sup> surgery

Final prosthesis

Final prosthesis

**Recommended treatment**

**OSTEON II**  
DT7G0510025 0.25cc x 2ea  
**HA Collagen Membrane**  
GCHM1520 x 2ea



Flap reflection

Extraction

Implantation #11 SuperLine 4012  
#12 SuperLine 3612



OSTEON™ II,  
HA Collagen Membrane

After 3 months

Final prosthesis

**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc



Pre-op

Extraction

Implant guide



OSTEON™ II

Implantium II 3810

Post-operative



Healing 2 months

Final prosthesis

Final prosthesis

# Ridge preservation for delayed implant placement

**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0605M



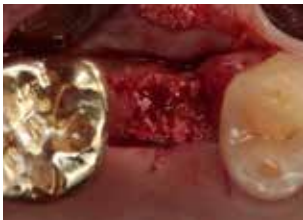
Extraction socket



OSTEON™ II Collagen,  
Post-op



Healing 2 months 1 week



Flap reflection



Implantation SuperLine 4508



Final prosthesis

**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0605M x 2ea



Extraction



OSTEON™ II Collagen



Post-op



Healing 2 months



Implantation NR Line 3611S,  
OSTEON™ II Collagen



Healing 3 months



2<sup>nd</sup> surgery



Final prosthesis



Final prosthesis



**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0610M  
OTCC0605M



Flap reflection



OSTEON™ II Collagen



Healing 3 months



Implantation SuperLine 4010



OSTEON™ II Collagen



Follow up 1 year 4 months

**Recommended treatment**

**OSTEON™ II Collagen**  
OTCC0610M



Extraction



OSTEON™ II Collagen



Post-op



Healing 1 year



Implantation SuperLine 5010



Post-op



Healing 2 weeks



Provisional restoration



Final prosthesis

# Ridge preservation for delayed implant placement

**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc

**Collagen Membrane**  
GCM1020



Pre-op



Implantation SuperLine 5008



Autogenous bone



OSTEON™ II



Collagen Membrane



Final prosthesis

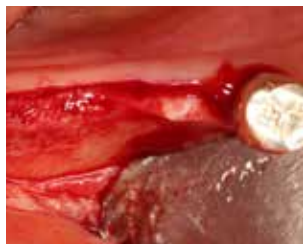
**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc

**Collagen Membrane**  
GCM1520



Pre-op



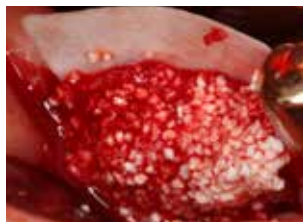
Flap reflection



Decortification



Implantation SuperLine 4508,  
Implantium 3810



OSTEON™ II, Collagen Membrane



Healing 4 month



Flap reflection



2<sup>nd</sup> Surgery



Final prosthesis



**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc

**OSTEON™ II Collagen**  
OTCC0605M



Pre-op



Implantation SimpleLine II  
654310S



OSTEON™ II Collagen



Healing 2 weeks



Final prosthesis



Follow up 11 months

**Recommended treatment**

**OSTEON™ II**  
DT7G0510050 0.5cc

**Collagen Membrane**  
GCM1020 x 2ea



Using spreader drill



Implantation #23 SuperLine 4010  
#24 SuperLine 4510



Autogenous bone graft



OSTEON™ II, Collagen Membrane



Collagen Membrane



Healing 5 months



2<sup>nd</sup> Surgery



Final prosthesis



Follow up 6 months

**Dentium**  
For Dentists By Dentists

# DENTIUM LONG-TERM CLINICAL DATA

2002

2003

2004

2005

2006

2007

2008



2002. 05. 17  
Pre-op



2002. 09. 04  
Post-op



2003. 03. 15  
Final prosthesis

2009

2010

2011

2012

2013

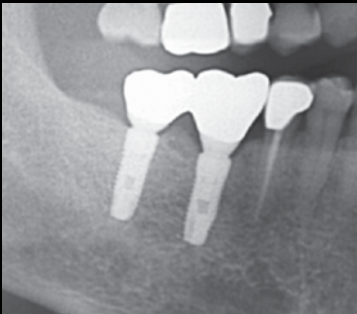
2014

2015

▶ 11 YEARS



2008. 04. 14  
5 years



2013. 12. 05  
11 years



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