Products from Dentium

Introduction of Dentium Products (Regeneration / Implant / Digital Dentistry)
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Overview

Since the establishment of Dentium Co., Ltd. in Korea in June 2000, we have been manufacturing high quality dental implant products. In collaboration with leading clinicians, research institutes, and universities, the Dentium R&D center has developed a series of state-of-the art dental implant systems, focusing on efficiency. Our systems, including fixtures, surgical components, prosthetic components, and synthetic bone grafting materials, assist our customers in performing quick, accurate, and esthetic dental implantation.

As the evidence of our quest for providing the highest quality products, we have attained ISO13485 and CE certification. We have also met the good manufacturing standards (GMP) set forth by many countries worldwide, including the United States FDA. Our ultimate event, Annual Dentium Symposium and Annual Clinical Case Presentation have been attended by many dental professionals from around the globe and serve as the benchmark educational events.

In addition to our ever popular line of implant products, we entered into the world of bone grafting and regeneration. The bio materials line includes bone graft material, membrane, and growth factor and tissue engineering products based on our extensive research and development. The bio materials line is proof that we are continuously seeking ways to enhance our product line and services in order to assist the dental professional in providing their patients with a beautiful and healthy smile.

We would appreciate your ongoing feedback, as this will assist us in providing you with the highest level of service in the future.

Thank you.
History

2012
Jan  FDA acquired - OSTEON™ II
Jan  FDA acquired - SimpleLine II
Jan  FDA acquired - SlimLine

2011
Oct  OSTEON™ II Sinus/Lifting on market
Jul  OSTEON™ Collagen on market
May  FDA acquired - Collagen Membrane
Apr  rainbow™ Mill 2nd Edition on market
Apr  rainbow™ CAD/CAM System on market
Mar  OSTEON™ II on market

2010
Aug  iCT motor on market
Jun  Dentium CAD/CAM System on market
Apr  Collagen Membrane on market
Mar  SimpleLine II on market

2009
Dec  Awarded Prime Minister’s Citation by Korea National Health Industry & Development Institute
Dec  China SFDA acquired
Dec  SimpleLine on market

2008
Oct  MAD/MAM System on market

2007
Jun  SuperLine on market
Apr  FDA for OSTEON™ acquired
Apr  Russian Certificate acquired
Feb  Australian Certificate acquired

2006
Sep  SlimLine on market
Jun  Taiwan Certificate acquired
May  CE for OSTEON™ acquired
May  Canadian Certificate acquired
Jan  SimpleLine on market

2005
Feb  Indian Certificate acquired

2004
Jun  Dentium China was established
May  FDA acquired
Feb  Dentium USA was established

2003
Feb  ISO 13485 / CE Certificate acquired

2002
Aug  KFDA acquired
Aug  Company name was changed from Biostech Co. to Dentium Co. Ltd.

2001
Sep  ISO 9001 approval was acquired from NOA in UK

2000
Jun  Biostech Co. was established in Korea to develop and manufacture dental implants.
Dentium Co., Ltd. is the leading company as an implant expert by letting its safety and efficiency be internationally proven by ISO 13485, CE, FDA, and so on.
Vision

Leading Developer & Value Innovator

Developer providing customers with happiness and value in their lives
Innovator researching and developing continuously for customer’s satisfaction

Commitment to World Class Quality

Global Network

Dentium currently has its own corporate and branch offices in the U.S.A. and China and Dubai. Dentium exports its implant products to more than 60 countries through local distributors. Information on the local distributors and corporate offices of Dentium can be searched on our web page. (www.dentium.com)
R&D Center

Dentium R&D center in Korea consists of specialized researchers with the most advanced facilities for innovation. Also we precede the international technical development of implantology by diverse basic and clinical researches with the cooperation of the Governments, universities and hospitals.
Products
Regeneration

OSTEON™ II Collagen
OSTEON™ Collagen
HA Collagen Membrane
Collagen Membrane
OSTEON™ II (Sinus & Lifting)
OSTEON™ (Sinus & Lifting)
Sinus Balloon
OSTEON™ II Collagen

- Ridge augmentation
- Extraction site & osteotomy
- Cystic cavities
- Sinus lift
- Periodontal defect

Characteristics of OSTEON™ II Collagen

- OSTEON™ II collagen is a bone void filler composed of synthetic bonegraft (OSTEON™ II) and natural type I collagen.
- Moldable to various defect shape after being wet
- OSTEON™ II is highly resorbable due to higher β-TCP content (HA:β-TCP=30:70).
- Collagen is absorbed slowly over several weeks after helping the initial shaping

CT Image  SEM Image

Rabbit femur 6mm defect model, 6 weeks
OSTEON™ Collagen

• Ridge augmentation
• Extraction site & osteotomy
• Cystic cavities
• Sinus lift
• Periodontal defect

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

Characteristics of OSTEON™ Collagen
• Collagen coating enables easy handling, and thus shortened operation time
• Moldable to various defect shape after being wet
• Collagen dissolves after helping the initial handling
• Excellent new bone formation and space maintenance
• Hemostatic function
Cell adhesion Test
Osteoblasts spread well on the OSTEON™ Collagen

Animal Test
Rabbit calvaria model, 8 weeks

Clinical Case
Ridge augmentation

Full mouth rehabilitation
HA Collagen Membrane

- Resorbable collagen membrane containing hydroxyapatite (HA) particles
- Periodontal / Infrabony defects
- Ridge augmentation
- Extraction sites
- Guided Bone Regeneration (GBR) procedure
- Sinus lift

Characteristics of HA Collagen Membrane

- Resorbable barrier membrane
- Osteoconductive due to HA particles
- New bone formation through the membrane

Cell Adhesion Test
Microstructure

Animal Test
Rabbit calvaria model, 12 weeks

Clinical Case
GBR

Socket preservation
Collagen Membrane

- Thinner membrane (300 μm) with multiple layers for easy manipulation and sufficient mechanical strength in surgery.

- Resorption period of 6 months to provide enough time for stabilizing graft materials and supporting bone growth.

- Multiple-layered structure enables more effective bone regeneration by sparing enough space for hard tissue formation and facilitates proliferation of osteoblast.

![SEM Image](image-url)

**SEM Image**
Preclinical Data

- Rabbit calvaria model, 6-12 weeks
- Degradation character in collagenase solution

Clinical Case

GBR

GBR
OSTEON™ II (Sinus & Lifting)

- Osteoconductive synthetic bonegraft
- Highly resorbable due to higher β-TCP content (HA:β-TCP = 30:70)
- Easy manipulation
- Excellent wettability

**OSTEON™ II = HA 30% + β-TCP 70%**

Cell Adhesion Test

Microstructure

Osteoblast attached & spreaded well
Animal Test
Rabbit calvaria model, 12 weeks

In Vitro Dissolution Test

Clinical Case
GBR
OSTEON™ (Sinus & Lifting)

• Interconnected porous structure similar to that of human cancellous bone
• Osteoconductive material as a bone growth scaffold

OSTEON™ = HA 70% + β-TCP 30%

Cell Adhesion Test

Syringe Type

• Easy & simple bone grafting
• Syringe type bone graft
• Crestal approach & lateral approach

Clinical Case
Sinus grafting - lateral approach
Sinus Balloon

Makes the sinus lift easy, and drastically reduce the possibility of membrane perforation.
Implant

S.L.A. Surface
SuperLine
SimpleLine II
SlimLine
Overdenture System
Harvest Drill & Stopper
Maxillofacial Implant
DASK (Dentium Advanced Sinus Kit)
Help Kit
S.L.A. Surface

- Higher bone-to-implant contact
- Faster bone formation on the surface

Fast new bone formation inside the threads. In vivo test

Human osteoblast

- Well attached and proliferated human osteoblasts

Cell number 3 X 10, after 7 days of cell culture
SuperLine

Immediate Implantation with Excellent Bone Response

- Easy implantation into the sockets immediately after extraction
- Early loading in posterior molars with excellent initial stability

Clinical Case
Short Implant

- Solution for short distance to the nerve line
- Ideal for cases involving heavy bone loss or lack of bone
- Efficient application to the sinus maxilla implantation
- Simple for immediate loading

* Launching new surgical kit specialized for short implants

![Short Implant Illustration]

Pre-op  Post-op  After 17months
SimpleLine II

Abutment Screw Hole Size: 2.3mm

- More aesthetic
- Easy to create occlusal surface
- More flexible for insertion path
- More bite surface

SCA Abutment

Overcome the limit of tissue level implantation with the SCA Abutment

- Able to reproduce emergence profile
- Effective soft tissue management

Clinical Case

<table>
<thead>
<tr>
<th>SCA Abutment</th>
<th>Hole size: 2.3mm</th>
<th>Emergence profile</th>
</tr>
</thead>
</table>
**SlimLine**

**One-Piece Design**

- Torque can be adjusted using the ridge spreader for hard bone case
- For narrow bone ridge
- Self-tapping function

Denture item
mini ball, mini female

Mini ball type & fix type
Overdenture System

Ball Attachment

Interchangeable (Large & Small female)

- **Mini ball**: Mini ball size (Ø1.8)
  - Mini o-ring type denture socket
  - Minimal-size denture socket

- **Tilting angle**: Up to ±15 degrees of angled tilting freedom for path way of implant.
Positioner

- For multiple-unit and full-arch restorations
- **Self aligning**: Self aligning mechanism allows easy and convenient denture placement
- **Tilting angle**: Tilting type (±10°) / Non tilting type (±5°)
- **Four different retention options**: 100gf, 300gf, 500gf and 1,000gf

Magnetic Attachment

- Lowest vertical height
- Horizontal stability
- Easy insertion
New Item

Harvest Drill & Stopper

- 2 blades drill makes efficient autobone harvest
- One time drilling makes the final hole
- Innovative drill tip design for easy start of drilling with minimum vibration
New Item

Maxillofacial Implant

- Short length (4mm/6mm) fixtures for maxillofacial applications
- S.L.A. surface
- Easy to install/uninstall by the sunken type magnetic abutments
- Stoppers are included in the surgical kit for convenient usage
- Compatible with the abutments for SimpleLine II

Ø 3.4 / 3.8

G/H 2.0 mm

Singled thread length 4.0 / 6.0 mm

Ø 4.3 / 4.8
DASK (Dentium Advanced Sinus Kit)

- Simple & easy access to sinus cavity
- Minimal risk of membrane perforation
- Broad exposure of bony walls with special tools

Clinical Case

Crestal approach

Lateral approach

Wall-off technique

Thin-out technique
Help Kit

5 Tools in 1 Kit
(Screw Remover / Abutment Hex Remover / Screw Tap Repair / Fixture Remover / Cover & Abutment Screw Remover)

• Easy solution for critical problems which might occur in the prosthetics process
• Compatible with most dental implant products globally available now
• Heavy duty with robust design and proven material

Screw remover | Abutment hex remover | Screw tap repair

Cover & Abutment screw remover | Fixture remover
Digital Dentistry

Dentium Milling Center
rainbow™ CAD/CAM System
rainbow™ Transparent Block
rainbow™ CAD/CAM Block
Porcelain Powder for Zirconia
iCT injection
iCT motor
CTSCAN (Dentium Digital Dentistry System)
Dentium Milling Center

Optimized for the implant products from Dentium

• Customized zirconia abutment on titanium base
• Customized screw over the screw abutment
• Customized titanium abutment (Available on July 2012)

Better margin design and control
Natural and better emergence profile
Superior angulation

Zirconia abutment on titanium base  Screw retained prosthesis  CAD/CAM software

Internal grinding  Reaming – screw seat  Screw seat SEM
rainbow™ CAD/CAM System

State of the Art 5-Axis Orbital Milling Technology

Open System

- Precise milled screw retained restoration
- Integrated Dentium implant library
- Positive choices of tooth design on s/w library
- Passive fit with ti-base custom abutment
- Easy & comfortable to operate

Dentium library (Screw type)  Tooth library  SCRP restoration

Cut-back design  CT-viewer
New Item

rainbow™
Translucent Block

- Excellently aesthetic (Natural transparency)
- Prevent from porcelain chipping
  (Minimize of porcelain re-build possibility)
- Excellent marginal fitness owing to uniform shrinkage rate
- High flexural strength

rainbow™ CAD/CAM Block

- Excellent marginal fitness owing to uniform shrinkage rate (20%-x,y,z)
- Zirconia block with natural translucency
- High flexural strength
- Excellent fracture toughness
- 98mm diameter with 10, 12, 14, 16, 18, 20, 22, 24, 25, 26mm thickness

New Item
available on September 2012

Porcelain Powder for Zirconia

Porcelain powder for zirconia framework

- To fabricate an esthetic and natural prosthesis by applying onto only zirconia framework.
- According to VITA Lumin 16 shades, and total 64 colors of powder and 18 stains.
- Simple build-up technique.
**New Item**

**iCT injection**

Ergonomically designed for a confident grip

Free from dental fears
- Wireless portable injection device
- Easy anesthetic agent cartridge installation and removal
- Sterilizable anesthetic agent cartridge holder
- 3-levels adjustable injection speed

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**New Item**

**iCT motor (Up-grade)**

- 20% decrease in size from the previous model
- Foot pedal switches for hands free operation during surgery
- Strong maximum torque (70N-cm)
- Free voltage for reliable and stable torque and rotation

※ Above picture may look different with the actual product
CTSCAN
(Dentium Digital Dentistry System)

- Implant planning
- Automatic image compensation
- Dual CT / Pano modality
- Dedicated detectors for each modality
- Dicom 3.0 compatible

**CTSCAN Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Function</th>
<th>FOV size (cm)</th>
<th>Scan time (sec)</th>
<th>Recon time (minutes)</th>
<th>Pixel size (μm)</th>
<th>Focal spot (mm)</th>
<th>Dimension (W x D x H mm)</th>
<th>Patient position</th>
<th>Generator voltage</th>
<th>Generator current</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSCAN</td>
<td>CT + Pano</td>
<td>8 x 8</td>
<td>&lt;15 (Panoramic) 20 (Standard) 36 (High resolution) (CT)</td>
<td>&lt;0.3 (Typical), 2 (High resolution)</td>
<td>100 (CT), 27 (Pano)</td>
<td>0.5</td>
<td>980 x 1121 x 2293 ~ 1593</td>
<td>Standing, Wheelchair accessible</td>
<td>50 ~ 90 KVp</td>
<td>4 ~ 10 mA</td>
</tr>
</tbody>
</table>
Specifications are subject to change without prior notice.
Some products to be launched in the market after necessary approvals are also listed in this catalog.