

As for me,  
I prefer to use my teeth!



Most of our patients want something special



## Product features of VacuaSonic® System

### ◆ Features of the tooth as a bone graft

Similar to a bone, a tooth consists of organic matter of Type I Collagen and minerals of Hydroxy Apatite (H.A.)

Although both are almost identical to each other in their ingredients, there are some differences. Type I Collagen of teeth has a dense structure, which helps osteoblast be attached to H.A. and propagate. A substance called DPP (Dentin Phosphophoryn), which is contained in Type I Collagen, promotes bone generation by increasing the activity of BMP, and DMP-1 (Dentin Matrix Protein) performs an important role in the calcification of tissues.

Unlike bones, the H.A. of teeth is comprised of high crystalline H.A in which absorption does not occur by itself, and osteoconduction can't be performed without processing.

### ◆ What is required to use a tooth as a graft material?

A rapid demineralization process that changes the high crystalline H.A of inorganic components into low crystalline H.A is required to attach osteoblast to graft materials and use the effective proteins that are abundant to dentin. If the period of demineralization exceeds 90 minutes, low crystalline H.A may be converted but the density of effective proteins is significantly decreased due to being exposed to acid for a long time. This makes it difficult to utilize the abundant effective proteins contained in the dentinal substance.

### ◆ What is the VacuaSonic® System?

VacuaSonic® System is a cutting edge system that converts teeth into the autogenous tooth bone graft within a short period of time through an effective demineralization process using vacuum and ultrasonic waves.

# Why should the autogenous tooth bone graft made of the patient's own teeth through the VacuaSonic® System be used?



Although the bone generation performance of the autogenous tooth bone graft made from your own teeth is outstanding, the performance of grafts varies significantly depending on how fast the demineralization process is successfully and effectively completed. The autogenous tooth bone grafts generated by the VacuaSonic® System delivers notable differences, even at the beginning of drilling.



As the tooth is stronger than metal, foreign substances are discharged when grinding, and sometimes they are stuck in the tooth. VacuaSonic® System separates and removes 100% of these foreign substances (iron powder).



100% sterilization is essential to use teeth as a graft material. The sterilization of the VacuaSonic System has strength of gamma sterilization at a level of 25kgray, which is an eco-friendly and powerful sterilization method that has been used by the European Tissue Bank with a long history of success. The VacuaSonic System also adopts a chemical sterile reagent that is free from any adverse actions caused by any remaining materials.



Up to 4 premolar teeth or 2 molar teeth can be treated in a single session. The technology is also more economical as it can generate 0.5cc of premolar tooth and 1cc of molar tooth.



Its quick treatment process requires only 30 minutes for powder type and 2 hours for block type, facilitating patient treatment as it enables immediate use right after tooth extraction.

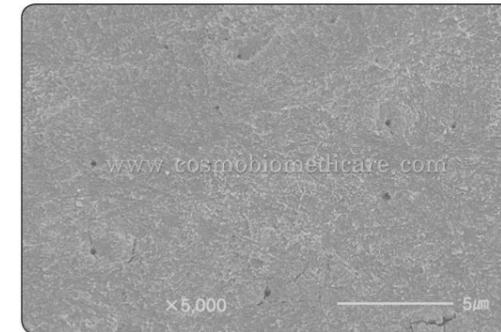


Individual processing at the dental clinic increases the trust of the patient.



## Experimental Results

### ◆ SEM Image

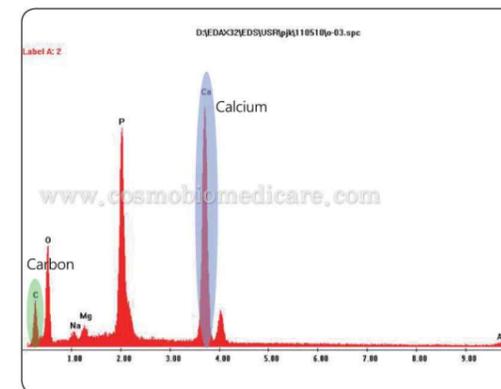


Before demineralization

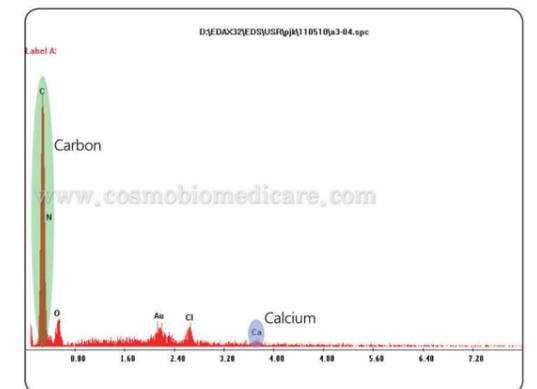


After demineralization

### ◆ Energy-Dispersive X-ray Spectroscopy data



Before demineralization



After demineralization

### ◆ Perfect sterilization



Before treatment



After treatment

**Your dental clinic can be a tooth bank**  
with VacuaSonic® System

# Clinical Cases

CASE 01



First visit



Pre OP.



Post OP.



4 months Post OP.



Final X-ray

CASE 02



First visit



Pre OP.



Post OP.



4 months Post OP.



Final X-ray

CASE 03



First visit



Pre OP.



Post OP.



5 months Post OP.



Final X-ray

CASE 04



First visit



Pre OP.



Post OP.



5 months Post OP.



Final X-ray

# Clinical Cases

CASE 05



First visit



Pre OP.



Post OP.



4 months Post OP.



Final X-ray

CASE 06



First visit



Pre OP.



Post OP.



4 months Post OP.



Final X-ray

CASE 07



First visit



Pre OP.



Post OP.

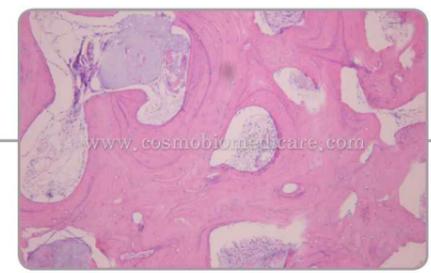


3 months Post OP.



Final X-ray

Historical slide  
(3 Months Post OP.)  
  
Customized  
Graft Materials



H&E X100

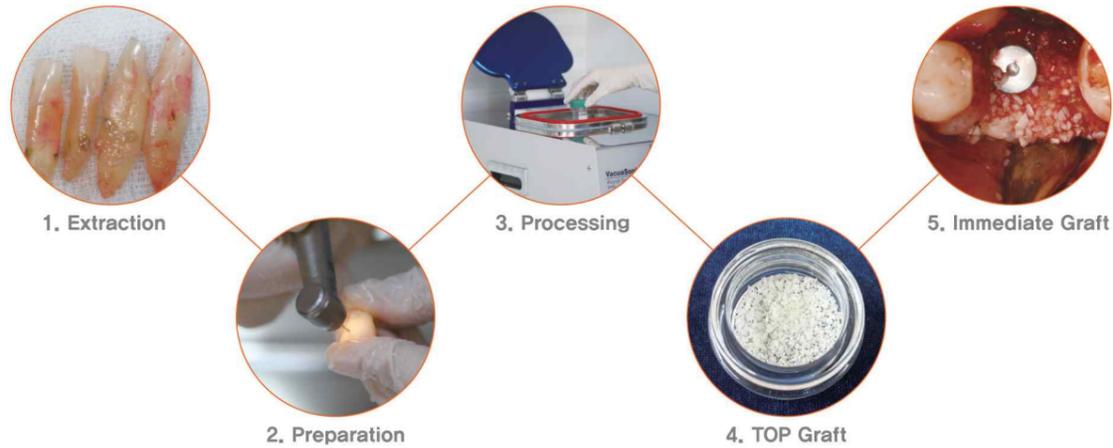


M&T X100

Discarded teeth can be recycled as a bone graft

**Keep your Teeth!**

All of these processes are possible within just **30** minutes!

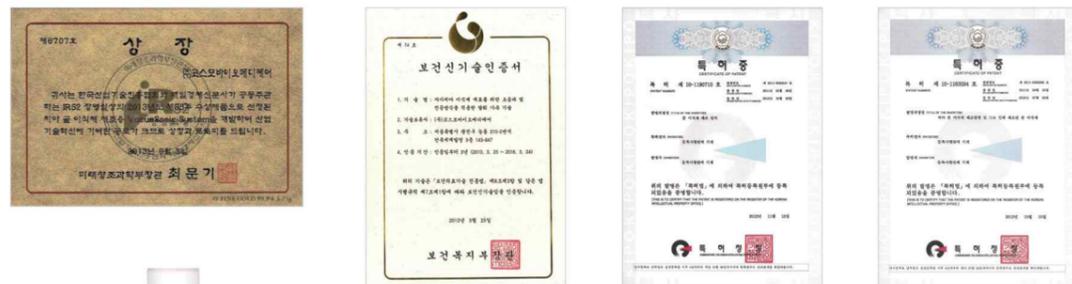


Nothing Better than Autogenous Tooth Bone Graft

**VacuaSonic® System** Features  
 Size 380mm(W) x 580mm(L) x 385mm(H)  
 Rapid demineralization through vacuum-ultrasonic accelerator



Intellectual property rights and awards of VacuaSonic® System



**What is the NET(New Excellent Technology)?**

The Minister of Health and Welfare certified the safety and functionality about the unprecedented technology as newly developed or an upgraded form of an existing technology related to public health, according to the Health and Medical Service Technology Promotion Act. The NET certification means that the country is guaranteed about the safety and functionality of VacuaSonic System.



**What is the IR52 award?**

The IR52 Jang Young-shil Award is the most prestigious technological achievement award in Korea for excellence in Science and technology level, such as the future creation, performance, quality, the difference between similar products, competitive, technological importance, originality, and safety check from the Ministry of Science, ICT and Future Planning. That has been proven safety and quality of VacuaSonic System.

For more information, please refer to our website at [www.cosmobiomedicare.com](http://www.cosmobiomedicare.com)

**Powder type reagent**



[ DecalSi® PDM ]

**Component**

5 reagents, 4 bioreactor caps, 2 dishes, 1 remover

**Process**

Demineralization ▶ Sterilization ▶ Washing (Total 30 Min.)

**Block type reagent**



[ DecalSi® DM ]

**Component**

6 reagents, 5 bioreactor caps

**Process**

Sterilization ▶ Demineralization ▶ Washing (Total 2 Hrs.)



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