

Collagen Putty

Type

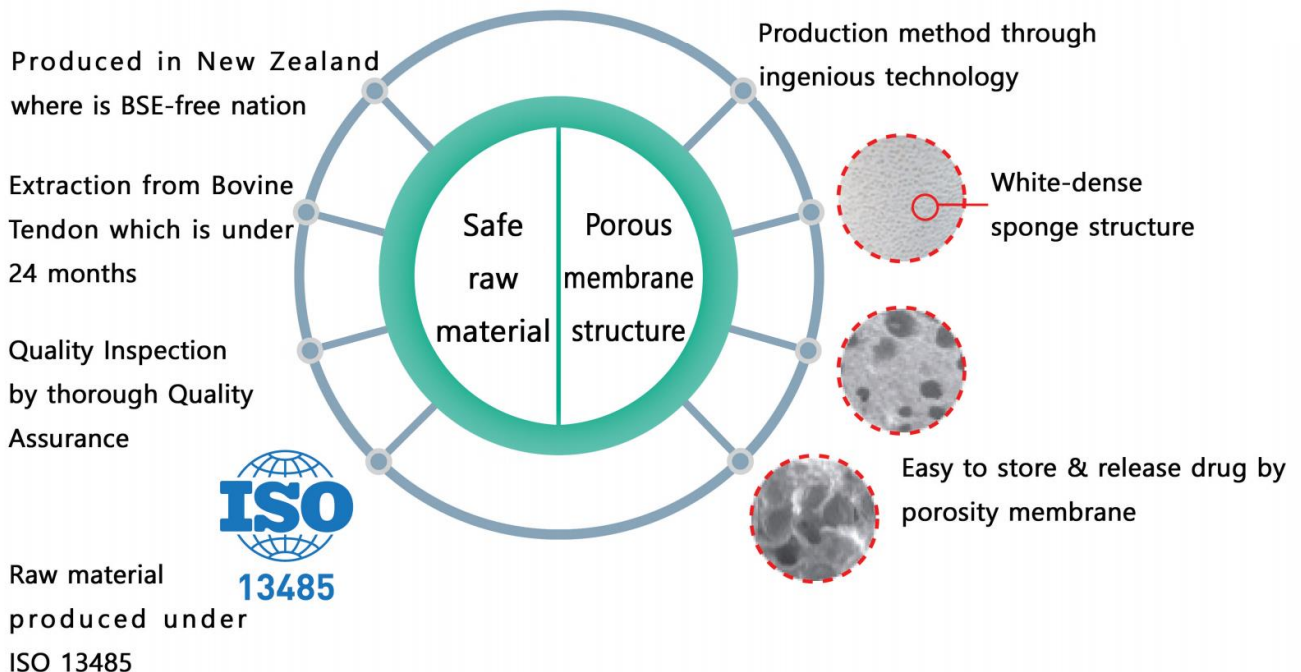


Collagen Putty Type

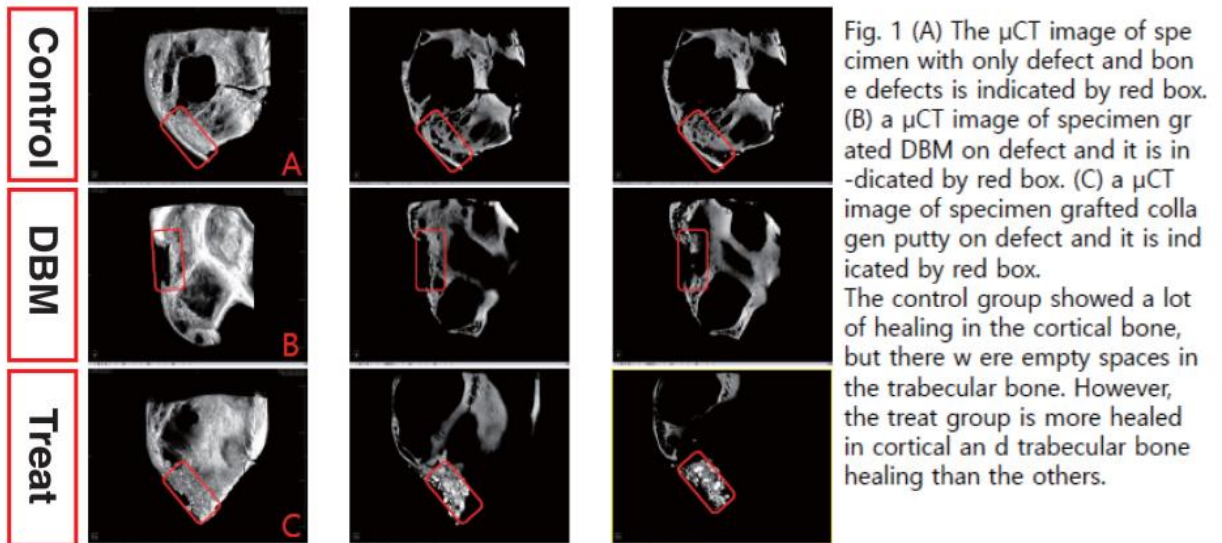
Main Features

- Mesoporous calcium phosphate bone graft material with 'Inter-linked Macro / Micro porous structure'
- Composition : 60% Hydroxyapatite / 40% β -Tricalcium phosphate (BCP : Biphasic Calcium Phosphate)
- Trabecular structure similar as human body cancellous bone & stable bone absorption to the interior of the body
- Blood vessel growth & osteoblast movement by linked Macro porous
- High autogenous bone occupancy ratio (about 80% porosity ratio -> about 80% autogenous bone occupancy ratio)
- Micro pore structure on bone surface is very favorable structure for osteoblast cohesion
- Optimized scaffold for 'bone-tissue engineered' bone regeneration
- Excellent biocompatibility to human body
- Excellent cell regeneration & adhesion
- Bone cell regeneration effect
- Good usability (easy for formation)
- Size of Particle : 1 ~ 2mm

Benefit in raw material & structure



Result for 3month specimen. - Micro Computed Tomography



< S대학병원 연구 결과 >

Result for 3month specimen. - Micro Computed Tomography

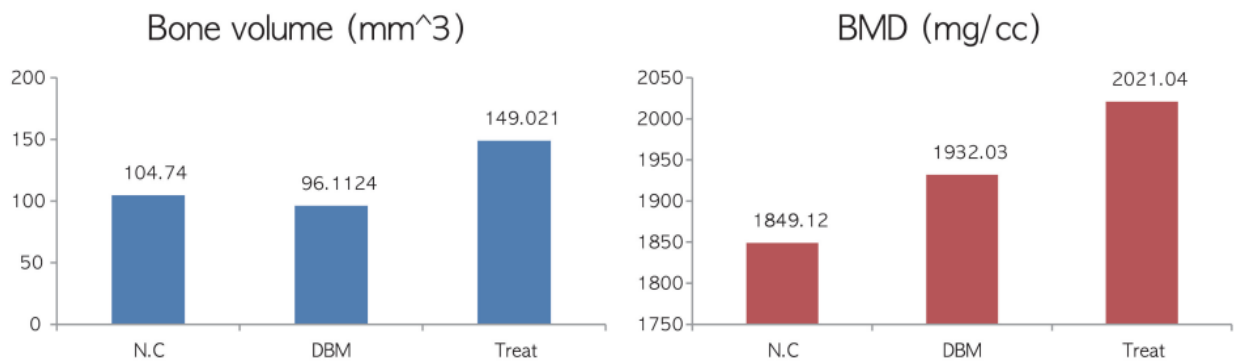
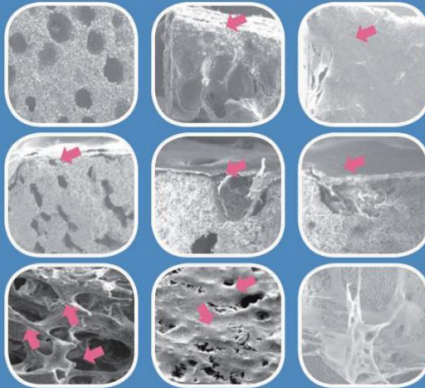


Fig. 2 The following are the Bone Mineral Density (BMD, mg/cc) and bone volume for each sample. Negative control = 1849.12, 104.74, DBM group = 2021.04, 149.021, Treat (grafted Collagen putty) 1932.03, 96.1124

	Bone volume (mm ³)	BMD (mg/cc)
N.C	104.74	1849.12
DBM	96.1124	1932.03
Treat	149.021	2021.04

Interconnected Macro / Micro pore system

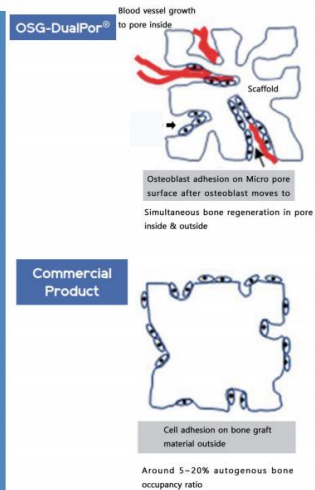
Cell culture behavior



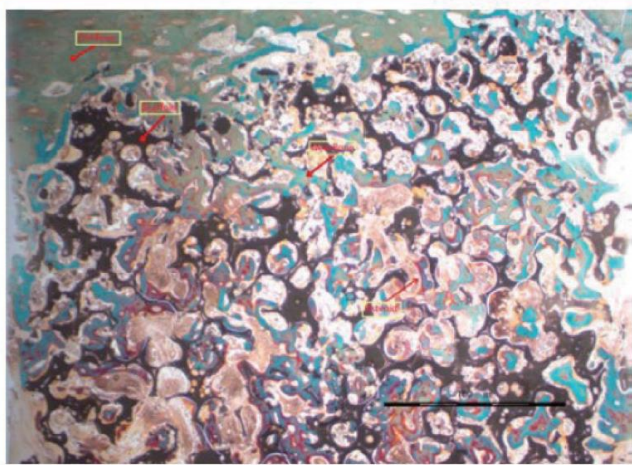
A company (US)
Osteoblast adhesion only on bone graft material outside by closed pore
No osteoblast in closed pore inside

B company (US)
Osteoblast adhesion only on bone graft material outside by closed pore
No osteoblast in closed pore inside

OssGen company (KR)
Homogenous osteoblast adhesion along endoskeleton by 'Inter-linked' open pore structure
New bone occupancy ratio: 80% (Much higher)



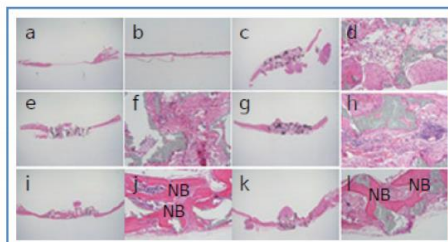
In-vivo Histology



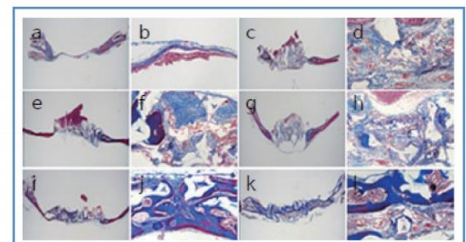
- Beagle dog model (6 month)
- Old bone (Upper left)
- Bone graft material (Brown color)
- New bone (Blue color)
- Osteoid (Ivory color around bone graft material)
- 80% porosity ratio of bone graft material -> 80% autogenous bone occupancy ratio (Higher among products in the inside and outside of the country)
- Simultaneous & homogeneous bone regeneration of bone graft material inside & outside through blood vessel growth & osteoblast movement to the inside of Macro/Micro porosity

Collagen Putty Type with Tissue Engineering

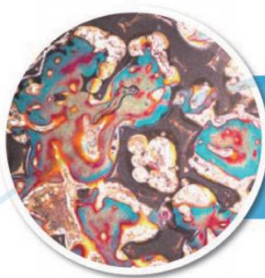
Courtesy of Prof. E. Park, KNU



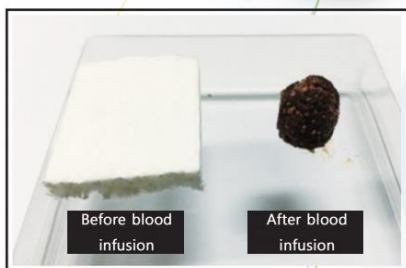
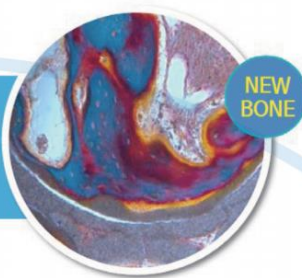
Immunohistochemical analysis of new bone at 10 weeks after surgery (New bone formation measured by H&E staining) (a, b) : defect only, (c, d) BCP only, (e, f) BCP+ATSC, (g, h) BCP+BMSC, (i, j) : BCP+ATSC+VEGF, (k, l) : BCP+BMSC+VEGF, * NB : New bone



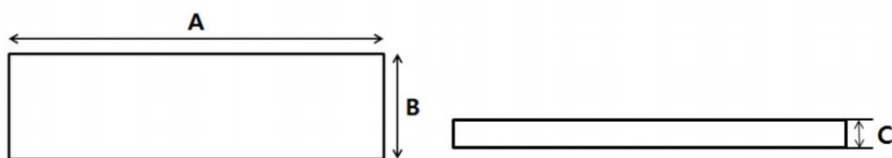
Immunohistochemical analysis of new bone at 10 weeks after surgery (New bone formation measured by masson's Trichrome staining) (a, b) : defect only, (c, d) BCP only, (e, f) BCP+ATSC, (g, h) BCP+BMSC, (i, j) : BCP+ATSC+VEGF, (k, l) : BCP+BMSC+VEGF, * collagen matrix formation



Excellent bone synostosis
between bone graft
material & new bone
(Osseointegration)



Easy to mold when the
patient's blood infusion



For Or tho- pe- dics	No	Model Name	Width	Length	Thickness	Weight
	1	DualPor Collagen Putty 1	1	1	0.5	0.257
	2	DualPor Collagen Putty 3	3	2.8	0.5	2.0
	3	DualPor Collagen Putty 5	5	2.8	0.5	2.80
	4	DualPor Collagen Putty 7	7	2.8	0.5	4.02
	5	DualPor Collagen Putty 10	10	2.8	0.5	5.37



Rm, 701, 708, Mediventure Center, 76, Dongnae-ro, Dong-gu, Daegu, 41061, Korea

Tel. +82-53-811-8191 Fax. +82-53-811-8192 E-mail : ossenglobal@gmail.com