

Table S1. Patient characteristics

Patient	Age	Sex	Location (#)	Bone graft	Implant placement	Brand name of the implant
1	68	M	46	GBR	Simultaneous	Superline
2	53	F	14	GBR	Simultaneous	CMI
			46	GBR	Simultaneous	CMI
3	71	M	17	Sinus graft	Simultaneous	TS III CA
4	47	M	47	GBR	Simultaneous	Superline
5	56	M	13	GBR, ridge augmentation	Delayed	TS III CA
			14	GBR, ridge augmentation	Delayed	TS III CA
			25	GBR, ridge augmentation	Simultaneous	TS III CA
			27	GBR, ridge augmentation	Simultaneous	TS III CA
			45	GBR, ridge augmentation	Simultaneous	TS III CA
6	54	F	44	GBR	Simultaneous	Superline
			45	GBR	Simultaneous	Superline
7	58	M	37	GBR	Simultaneous	Superline
8	59	M	16	Sinus graft	Simultaneous	Implantium II
			46	GBR	Simultaneous	Implantium II
9	50	F	36	GBR	Simultaneous	Implantium II
10	39	M	15	Sinus graft	Simultaneous	TS III HA
			16	Sinus graft	Simultaneous	TS III HA
11	73	M	16	GBR	Simultaneous	TS III CA
12	40	F	17	GBR	Simultaneous	TS III CA
			36	GBR	Simultaneous	TS III CA
			46	GBR	Simultaneous	TS III CA
			47	GBR	Simultaneous	TS III CA
13	32	M	36	GBR	Simultaneous	Superline
14	72	M	22	GBR	Simultaneous	Implantium II
15	58	M	32	GBR	Simultaneous	MS
16	63	F	47	GBR	Simultaneous	Superline
17	68	M	26	Sinus graft	Simultaneous	TS III CA
18	75	F	34	GBR	Simultaneous	CMI
19	82	M	45	GBR	Simultaneous	Superline
			46	GBR	Simultaneous	Superline
20	59	M	47	GBR	Simultaneous	TS III CA
21	45	M	36	GBR	Simultaneous	Implantium II
22	64	M	26	Sinus graft	Delayed	CMI
23	77	F	35	GBR	Simultaneous	Superline
			36	GBR	Simultaneous	Superline

Location(#): Tooth number, Superline, Implantium II (Dentium, Suwon, Korea), TS III CA, TS III HA, MS (Osstem Implant Co., Busan, Korea), CMI (Neobiotec, Seoul, Korea)

Supplement

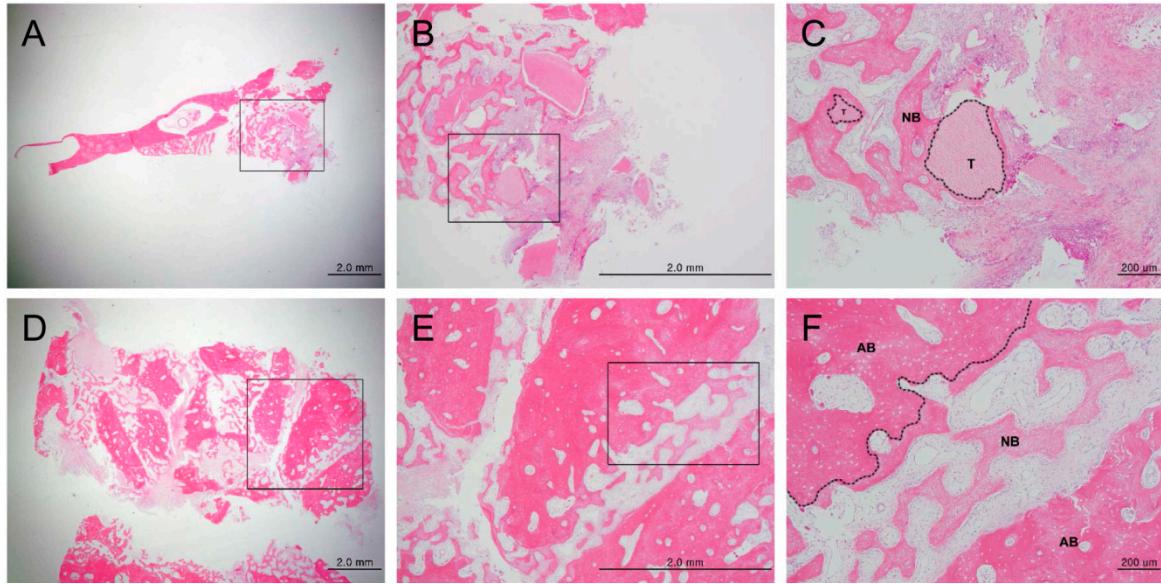


Figure S1. Histological analysis of new bone formation at the bone defect area after 2 weeks, by hematoxylin/eosin staining (Magnification, A,D: $\times 12.5$, B,E: $\times 40$, C,F: $\times 100$). A, B, C: experimental group (DDM fixed with rhBMP-2), D, E, F: control group (autogenous bone graft). Figures B and E are higher magnification views of the figures A and D, respectively. Figures C and F are higher magnification views of the figures B and E, respectively. C: The area enclosed within dotted line represents DDM fixed with rhBMP-2, and newly formed bone is observed around the DDM. F: The area enclosed within the dotted line indicates autogenous bone graft, and newly formed bone was found around the autogenous bone graft. Scale bars, 2.0 mm (A, B, D, E), 200 μm (D, F). T: DDM fixed with rhBMP-2, NB: new bone, AB: autogenous bone.

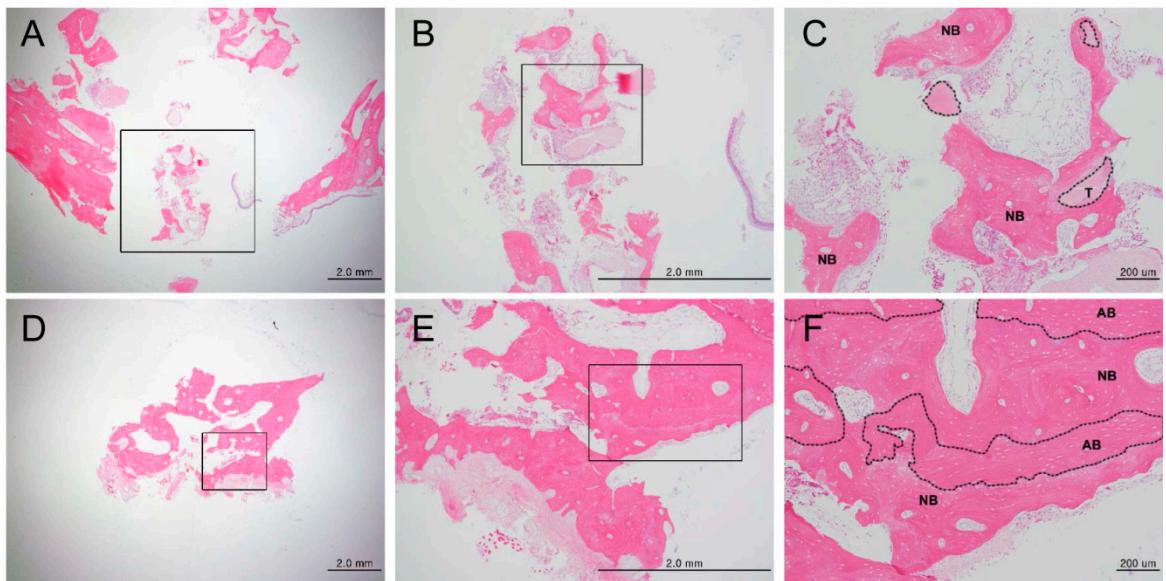


Figure S2. Histological analysis of new bone formation at the bone defect area after 12 weeks, by hematoxylin/eosin staining (Magnification, A,D: $\times 12.5$, B,E: $\times 40$, C,F: $\times 100$). A, B, C: experimental group (DDM fixed with rhBMP-2), D, E, F: control group (autogenous bone graft). Figures B and E are higher magnification views of the figures A and D, respectively. Figures C and F are higher magnification views of the figures B and E, respectively. C: The area enclosed within the dotted line represents DDM fixed with rhBMP-2, and newly formed bone seen around the DDM. F: The area within the dotted line indicates autogenous bone graft, and newly formed bone found around autogenous bone graft. Scale bars, 2.0 mm (A, B, D, E), 200 μm (C, F). T: DDM fixed with rhBMP-2, NB: new bone, AB: autogenous bone.