

BIO4™

The Next Generation Viable Bone Matrix

From the creators of the original allograft cellular bone matrix

Lot tested for the presence of VEGF (vascular endothelial growth factor)[1]

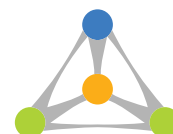
Ready to use out of the package; no decanting is required and thaws in 15 minutes

Differentiated handling compared to competition

Contains on average at least 600,000 cells (endogenous bone forming cells including mesenchymal stem cells, osteoprogenitors and osteoblasts) per cc[1]

Lot tested for 70% cell viability post-thaw[1]

Non-immunogenic[1]

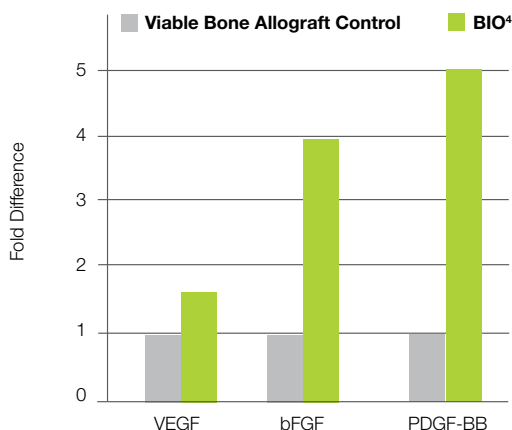


BIO4™

BIO⁴TM

BIO⁴ is a viable bone matrix containing endogenous bone forming cells including mesenchymal stem cells, osteoprogenitor cells, osteoblasts, osteoinductive and angiogenic growth factors. BIO⁴ possesses all four characteristics involved in bone repair and regeneration: osteoconductive, osteoinductive, osteogenic and angiogenic.[1,2]

1 Scaffold + 1 Cells + 2 Signals = BIO⁴



BIO⁴ showed higher amounts of angiogenic signals using ELISA compared to similar bone allograft formulations.[1]

BIO⁴ contains naturally occurring angiogenic growth factors, such as the vascular endothelial growth factor (VEGF), platelet-derived growth factor (PDGF) and basic fibroblast growth factor (bFGF), which have been reported to be important for bone repair at sites of damaged bone.[3,4]

The innovative principle behind BIO⁴ is to provide the next generation cellular allograft that relies not only on the conventional three ingredients for bone formation in autograft bone: scaffold, cells and signals (see chart below), which are present in bone allograft products, but also preserves the endogenous signals (growth factors) for supporting angiogenesis.

	OSTEOCONDUCTIVE SCAFFOLD	OSTEOINDUCTIVE SIGNALS (Growth Factors)	OSTEOGENIC VIABLE CELLS	ANGIOGENIC SIGNALS (Growth Factors)
Synthetic Ceramics	•			
Cancellous Bone (Allograft)	•			
Deminerlized Bone	•	•		
BMPs		•		
Platelet Derived Growth Factor (+TCP)[5]	•			•
Allogeneic Morphogenetic Protein[6]	•	•		
Cellular Bone Allografts[7,8,9]	•	•	•	
Autograft	•	•	•	•
BIO⁴	✓	✓	✓	✓

Ordering Information

PS51001	PS51002	PS51005	PS51010
1cc	2.5cc	5cc	10cc

¹Osiris Report – Data on File, ²Roberts and Rosenbaum, “Bone grafts, bone substitutes and orthobiologics”, Organogenesis (2012), ³Stevenson et al., “Factors affecting bone graft incorporation”, Clin Orthop Relat Res. (1996), ⁴Dimitriou et al., “Current concepts of molecular aspects of bone healing”, Injury (2005), ⁵Augment® Bone Graft Package Insert - LBS114-00 2/201, ⁶OsteoAMP Regulatory Information – 46-21000, ⁷Osteoecel Plus – Nuvasive brochure, ⁸Trinity Evolution – TE-1005 PL-US - Orthofix, ⁹Cellentra package insert

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