Orios®

Viable Bone Matrices

A Viable Autograft Alternative.

SPINAL elements®

Orios® | Family of Viable Bone Matrices

The Orios family of viable bone matrices offers alternatives to autograft[1] that provide key elements ideal for bone formation:

- An osteoconductive three-dimensional scaffold with cortical and cancellous components.
- A demineralized bone scaffold with osteoinductive potential which provides exposure of signaling molecules and bone morphogenetic proteins.[2]
- Viable spine-derived cells for osteogenic supplementation.

Key Features & Benefits

- Allograft scaffold that provides a microenvironment for osteogenesis
- Viable cell population for osteogenic supplementation, with a minimum of 150,000 viable cells per cc of bone scaffold[3]
- Preparation with a proprietary DMSO-free cryoprotectant that allows for consistent delivery of viable allograft to the patient, with an average cell viability consistently exceeding 80% post-thaw[3]
- OR ease of use with no rinsing or decanting steps required, and 4-hour working window for implantation after cell thaw without loss of cell viability
- Availability in 3 unique scaffold blends to meet a wide variety of surgeon preferences and procedures: Orios Moldable Plus, Orios Moldable, Orios Bone Matrix.

Cell Preservation: A Different Approach

- Proper preservation of cellular allografts requires strict adherence to recovery and processing protocols.
- In each of the Orios viable bone matrices, viable spine-derived cells are collected from the vertebral body region of the donor and preserved with the use of a next-generation DMSO-free cryoprotectant.

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Figure 1:
DMSO-free cryoprotectant coats the cells to prevent crystalline damage

Figure 2:
Orios Representative Sample

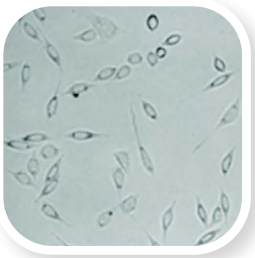
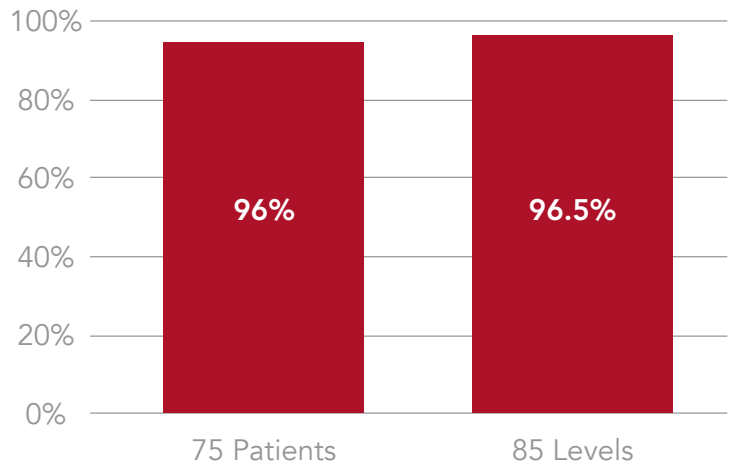


Figure 3:
2.5% DMSO Media Sample

Evidence-based Application: Fusion

MIS-TLIF study demonstrated 96% fusion at 12 months.[4]



Operating Room Ease of Use

No rinsing or decanting steps required	Average cell viability consistently exceeds 80% post-thaw[3]	Minimum of 150,000 viable cells per cc of allograft[3]	Four (4) hour working window for implantation after thaw without loss of cell viability

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Orios Moldable Plus

Robust, fibrous moldability

Cortical shavings, crushed cancellous chips, and demineralized cortical bone microparticulate scaffold blend

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Mixture creates a cohesive, fibrous consistency

Part Number	Size
BORMP025	2.5cc
BORMP005	5cc
BORMP010	10cc
BORMP015	15cc

Orios Moldable

For tight, defect packing

Cortical and cancellous bone microparticulate scaffold blend

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Mixture creates a cohesive, wet sand consistency

Part Number	Size
BORSM025	2.5cc
BORSM005	5cc
BORSM010	10cc

Orios Bone Matrix

For moldable paste applications

Cortical and cancellous bone microparticulate scaffold blend with bone gel mixture

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Mixture easily passes through a large or open bore syringe

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Hydrophobic properties make it more resistant to lavage

Part Number	Size
BORS025	2.5cc
BORS005	5cc
BORSM010	10cc

1. MLR data on file at VIVEX Biologics, Inc.
2. Gruskin, E. et.al., Demineralized bone matrix in bone repair: history and use. Advanced Drug Delivery Reviews, 2012. 64:1063-1077.
3. Data on file at VIVEX Biologics, Inc.
4. Tally, William C, et al., Transforaminal Lumbar Interbody Fusion with Viable Allograft: 75 Consecutive Cases at 12-Month Follow-Up. International Journal of Spine Surgery, 2018. Vol. 12, No. 1 p. 76-84.

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