

# MinerOss® Block Allograft now available fully hydrated



## Improved Clinical Experience

- Saves time as the product is pre-hydrated and ready for immediate implantation using a patent pending Aqueous Solution Preservation (ASP).
- Helps to reduce pain and can shorten the patients rehabilitation period by eliminating the need to harvest an autogenous graft.

## Aqueous Solution Preservation (ASP)

ASP eliminates the need for lengthy graft preparation and has demonstrated:

- Retention of the native biomechanical strength of the allograft<sup>1</sup>
- Preservation of the natural biologics structure of the tissue<sup>1</sup>
- Elimination of microcracks that can be formed during freeze-drying processes<sup>2</sup>

## Product Details

### applications

- bone remodeling
- block grafting procedures
- bony defects

### ordering information

<b>MO-BLH10</b>	MinerOss Block Allograft	15mm x 10mm x 10mm
<b>MO-BLH15</b>	MinerOss Block Allograft	15mm x 10mm x 15mm

For more information, contact your local Territory Manager or call Customer Care: **1.888.246.8338**  
Order 24/7 at [store.biohorizons.com](http://store.biohorizons.com)

**BIOHORIZONS**®

# Aqueous Solution Preservation (ASP), a novel solution for structural bone allografts<sup>1</sup>

## Introduction

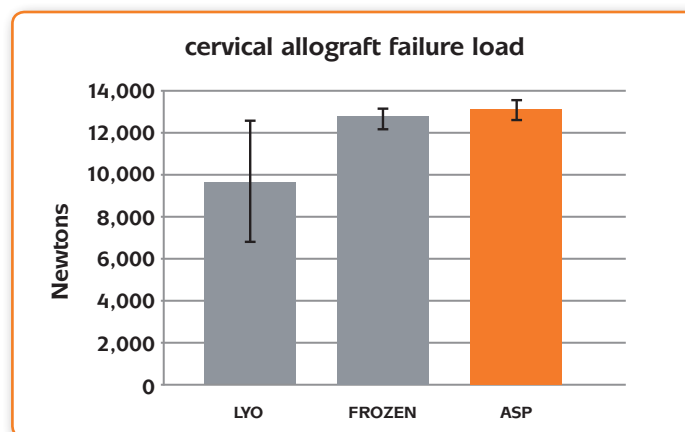
Structural musculoskeletal allografts have traditionally been preserved by freeze-drying and packaging in a dry state. While lyophilization imparts a suitable shelf-life, the freeze-drying process has been shown to significantly reduce the mechanical strength and toughness (the energy / work required to fracture) of the grafts.

As such, various hydrated preservation systems have been developed to address this limitation. These hydrated preservation systems negate the need for rehydration prior to implantation, thus facilitating ease and speed of use in the surgical theater. However, leaching of calcium ions from the allografts into the preservation media can degrade the mechanical strength of the grafts over time. This potentially increases the probability of intraoperative and postoperative mechanical failure.

To address this challenge we have developed a novel preservation system (aqueous, isotonic calcium chloride) that inhibits calcium leaching from allografts and preserves maximal strength following processing and subsequent room-temperature storage.

## Results

Biomechanical testing revealed cervical allografts preserved in ASP display equivalent mechanical strength to frozen grafts and superior mechanical strength to lyophilized grafts.



## Conclusions

Given the physiological demands structural allografts experience during and after implantation into the cervical, thoracic and lumbar spine as well as for other procedures, it is of the utmost importance to offer grafts with the maximal mechanical strength and toughness (resistance to fracture) to ensure successful clinical outcomes.

The results presented herein reveal that grafts stored in isotonic calcium chloride solution maintain enhanced structural strength and greater toughness as compared to grafts stored in normal saline or subjected to lyophilization. These data suggest the enhanced mechanical properties (strength and toughness) is the result of decreased calcium leaching from the grafts presumably driven by the equilibrium between calcium ions in the solution and within the grafts.

1. Smith, DA, Manda R, Duncan DW, Jenkins PA, Johnson HK, Pierce SL, Schallenberger MA. The Development and Evaluation of a Calcium Chloride Based Preservation Solution for Structural Bone Allografts. *AATB*. 2016, New Orleans, LA.
2. Voggenreiter G, Ascherl R, Blumel G, Schmit-Neuerburg KP. Effects of preservation and sterilization on cortical bone grafts. A scanning electronic microscope study. *Arch Orthop Trauma Surg*. 1994, 113, 294-296.

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