ALLOSTEM®
ADVANCING THE NATURE OF BONE.
Natural bone is the ideal. AlloStem® works with nature to create a prepared allograft tissue with the desired attributes of autograft. Natural bone substrate and adult allograft stem cells are combined for an enhanced natural alternative.

Synthetic bone replacement products provide a suitable osteoconductive scaffold, but fail to provide critical growth factors or living cells. Demineralized bone products are osteoinductive, but fail to provide living cells. Synthesized proteins are osteoinductive, but are not inherently osteogenic. Autograft bone requires a second surgery site and a potentially painful recovery. AlloStem Cellular Allograft combines natural scaffold and growth factors with adult mesenchymal stem cells. The enhanced natural option – AlloStem.

WHY CHOOSE ALLOSTEM?

**SCAFFOLD, SIGNAL, AND CELLS**

AlloStem approximates autograft bone in that it provides the three key properties necessary for bone formation. Partially demineralized allograft bone, the foundation for the AlloStem tissue, provides a natural scaffold for new bone formation. Naturally occurring growth factors present in allograft bone have been shown to encourage osteogenic activity. The AlloStem tissue contains adult mesenchymal stem cells that naturally adhere to the bone substrate and may contribute to the formation of new bone.

**OSTEOSTEMIC POTENTIAL**

This unique combined allograft tissue is well suited to support the formation of new bone. Alkaline phosphatase assay results indicate robust osteogenic potential. New bone formation has been demonstrated in vitro using Alizarin Red staining.
Each AlloStem substrate is made up of partially demineralized allograft bone, and each offers substantial handling improvements as compared to non-demineralized allograft tissues. The unique intact graft configurations, either strips or cubes, are ideal for spanning gaps in boney structures. The large particle morselized AlloStem is compressible, making it well suited for filling odd size boney defects.

Demineralized allograft bone has a long history of clinical use, and is valued for providing growth factors beneficial to new bone formation. Intact demineralized cancellous bone has been found to contain levels of BMP – 2, 4, and 7 comparable to those previously identified in demineralized cortical bone (DBM) allograft.\(^v\)

Data shown is from internal research conducted on tissue processed to represent AlloStem. Conditions represented may not be confirmed for transplantable tissue.
AlloStem combines allograft stem cells recovered from human adipose tissue with partially demineralized allograft bone.

Mesenchymal stem cells (MSCs) are shown to be present in large quantities within adipose tissue.\textsuperscript{vi} MSCs recovered from adipose tissue have been shown to be equivalent to those recovered from other tissues in terms of morphology, gene expression and pluripotency.\textsuperscript{vii} These naturally adherent cells will bond with appropriately prepared scaffold, and have been shown to contribute to bone formation when combined with an osteoconductive material.\textsuperscript{vii}

MSCs recovered from adipose tissue are combined with cancellous bone resulting in a combined tissue with consistent cell numbers regardless of individual donor characteristics including age, gender, and Body Mass Index.\textsuperscript{viii}

Data shown is from internal research conducted on tissue processed to represent AlloStem. Conditions represented may not be confirmed for transplantable tissue.
This 41 year old female presented with L4-5 and L5-S1 disc bulges, L5 radiculopathy, and a pre-operative VAS score of 50mm. The patient underwent L4-5 and L5-S1 360 degrees fusion using AlloStem tissue. CT scans indicate early bone formation at three months (see arrows) and a progressive fusion at six-months post-op. The patient's VAS score was 0mm at both post-operative visits.

This 52 year old female with a traumatic fracture of the distal tibia failed an initial fusion attempt, and presented with broken hardware and a chronic non-union. In an initial surgery the hardware was removed, the site debrided and packed with bone cement. Subsequent reinstrumentation and bone grafting using structural bone and AlloStem resulted in successful fusion. Arrows indicate area of fusion at junction of structural allograft and host bone.


ALLOSTEM CONFIGURATIONS

CUBES
10mm x 10mm x 10mm (1cc)
1, 5 and 10cc

STRIPS
20mm x 25mm (2 per pouch-4cc)
20mm x 50mm (1 per pouch-4cc)

MORSELIZED
5 and 10cc
AlloSource, a non-profit organization, offers more than 200 types of precise bone, skin, soft-tissue and custom-machined allografts for use in an array of life-saving and life-enhancing medical procedures. Committed to honoring the gift of donation, the company delivers unparalleled expertise and customer service to its network of surgeons, partners and the country’s most reputable organ procurement organizations.

Leader in live cell tissue processing including fresh skin allografts for severe burns, fresh cartilage tissue for joint repair and adult mesenchymal stem cells.

For more information, please call 720. 873. 0213 or visit allosource.org

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