

THE NATURAL CHOICE FOR OPTIMIZING HEALING



Advancells
G R O U P
Shaping the Future

Reaping the Biological Benefits of Autologous Stem Cells

Advancells BMC Technologies is the leader in developing point-of-care platforms to concentrate autologous stem cells, growth factors, and accessory cells to help optimize the conditions for healing. Advancells BMC PRP system is today the gold standard in making use of Autologus bioactive cells derived from peripheral blood in hospital and office setting.

Advancells BMC continues its leadership with the introduction of Advancells BMC concentrator Kit for concentrating stem cell from bone marrow aspirate.



Advancells BMC mission is to further expand and enhance the use of autologous bioactive cells to help optimize the conditions for healing and improved patient outcomes.

Iliac Crest: The Gold Standard

All bone formation is dependent on the recruitment of endothelial progenitor cells (EPC's), hematopoietic stem cells (HSC's), mesenchymal stem cells (MSC's) and their supporting accessory cells to the defect site – Total Nucleated Cells.

Iliac crest autograft is often considered the gold standard for bone grafting. The iliac crest contains bone marrow which is a rich source of the regenerative cells needed for angiogenesis, and optimal bone formation and healing, including:

Endothelial Progenitor Cells :: Stimulate angiogenesis, release BMP-2 and BMP-6, and up-regulate the production of BMP-2 ¹

Hematopoietic Stem Cells :: Orchestrate bone formation and directly convert to stromal MSC's (CD34⁺)^{2, 3, 4}

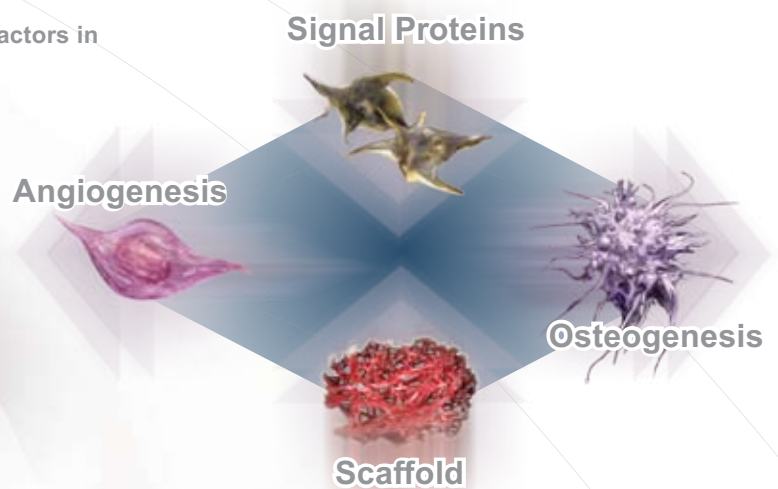
Mesenchymal Stem Cells :: Convert to osteoblasts in support of new bone formation^{2, 3, 4, 5}

Platelets :: Mediate cell-to-cell adhesion through the release of various adhesion and growth factors such as SDF-1^{± 6}

Lymphocytes :: Support the migration and proliferation of EPC's⁷

Granulocytes :: Release vascular endothelial growth factors in support of angiogenesis⁸

Essential Healing Factors



Efficiently and effectively concentrates
regenerative cells while retaining cellular viability and potential



Autograft without the Morbidity

Iliac crest autograft is a rich source of regenerative cells for bone formation. However, harvesting autograft is traumatic, time-consuming, and associated with significant morbidity in as many as 30% of the cases.⁹

The cellular composition of autograft and concentrated nucleated cells from marrow aspirate are virtually equivalent. Transplanting these concentrated regenerative cells in a scaffold mimics autograft.

BMAC vs. Autograft			
	Autograft	Bone Marrow Aspirate	Advancells BMC
Total Nucleated Cells/mL	56 x 10 ⁶ (n=10) ¹⁰	19 x 10 ⁶ (n=10) ^{10, 11}	72 x 10⁶ (n=200) ^{10, 11}
BMP-4*, pg-mL	144 (n=3) ¹¹	19 (n=11) ¹¹	180 (n=11) ¹¹

* The production of BMP's are up-regulated in the fracture site, derived from HSC's, and members of the TGF- β superfamily of proteins.

BMAC is a minimally invasive procedure that significantly reduces patient morbidity at the harvest site and saves operating room time.

The Advancells BMC concentrate system can be used with any recommended centrifugation system thereby eliminating the need of autograft by efficiently concentrating and recovering regenerative cells while retaining their cellular viability and proliferative potential.

Superior Performance

Studies have shown healing is compromised in the absence of cellular concentration, particularly with patients that have significant comorbidities^{12,13,14}. The Advancells BMC system produces the highest cell yields available while concentrating the full complement of cells.

Advancells BMC System:

- ❖ Concentrates all the key cells in their natural ratios
- ❖ Keeps cells in their natural plasma for maximum viability
- ❖ Enables the clinician to adjust the cell dose/volume
- ❖ Concentrates cells in less than 20 minutes at point-of-care
- ❖ Produces consistent and reliable nucleated cell loads



Aspirate



Concentrate



Deliver

References

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Advancells BMC

A System You Can Trust

Advancells BMC

- :: Multifunction, point-of-care platform for concentrating autologous cells
- :: Delivers 100% pure bone marrow aspirate concentrate
- :: One-button operation
- :: 20-minute automated process



Advancells BMC Procedure Packs

- :: All-inclusive procedure packs based on clinical need (standard kit shown above)
- :: Efficient Bone marrow collection tubes with crystalized anti coagulant.

To arrange an evaluation or more information,
visit us at www.advancellsgroup.com or write to us at info@advancells.com