



magellan®

## BUILT TO CONCENTRATE

Magellan® is an **autologous concentration system** that delivers concentrated platelets and cells at the point of care.

isto  
BIOLOGICS

# DELIVER PERSONALIZED MEDICINE

Every patient has a unique biology with inherent variability, so you need a solution that is customized for each patient. Go beyond the standard of care and deliver a personalized biologic with the Magellan Autologous Concentration System.

## CUSTOMIZED AUTOLOGOUS THERAPY

The fully-automated Magellan system uses proprietary BioAdaptive technology and customizable concentration factors to yield a tailored autologous solution for each patient.

### Concentrates up to 14x Baseline<sup>1,2</sup>

Provides high concentrations of platelets, growth factors and progenitor cells

### BioAdaptive Processing™

Smart technology adjusts processing based on patient biology to optimize results

### Customizable Concentration

Users determine potential concentration factor by selecting input and desired output volumes

### Automation Ensures Quality

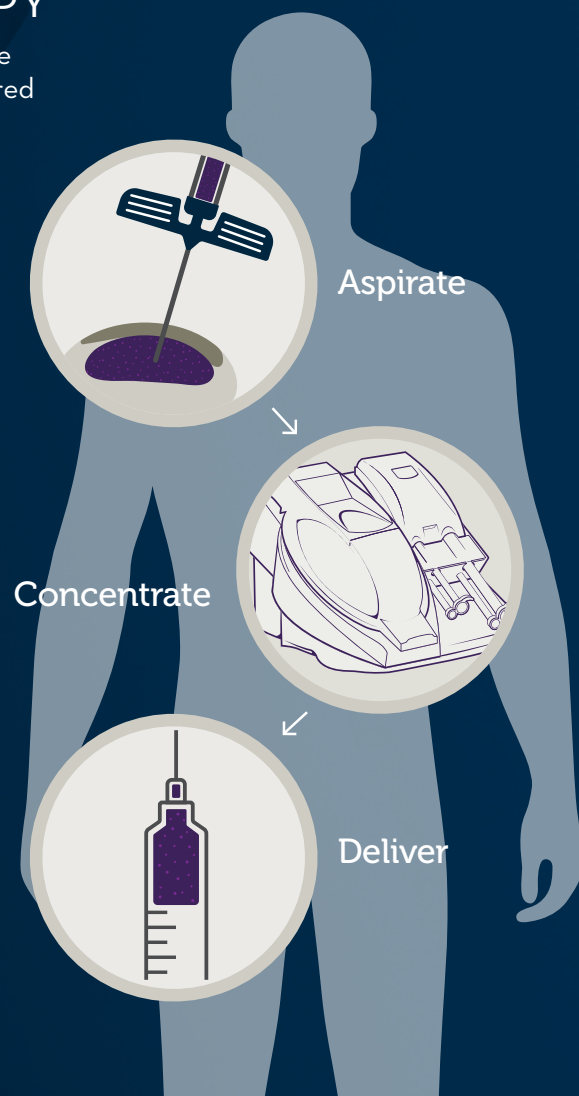
Fully-automated, closed system concentrates more consistently than manual systems

### Flexible & Cost-Effective

Processes up to three cycles per patient using a single kit, with flexibility to process bone marrow and whole blood

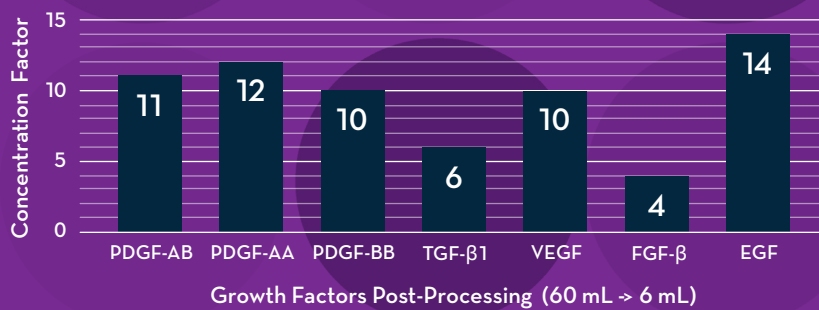
### FDA Cleared for Orthopedic Applications

Processed marrow and blood can be mixed with allograft or autograft



# MAGELLAN CONCENTRATES REGENERATIVE POTENTIAL

AMPLIFY ESSENTIAL GROWTH FACTORS UP TO 14X BASELINE<sup>2</sup>



## PDGF

Platelet-Derived Growth Factor

## TGF-β

Transforming Growth Factor–Beta

## VEGF

Vascular Endothelial Growth Factor

## FGF-β

Fibroblast Growth Factor–Beta

## EGF

Epithelial Growth Factor

Platelets release various growth factors that influence cellular processes, including proliferation and differentiation, angiogenesis, and tissue repair<sup>2,3</sup>.

## PROVEN TO CONCENTRATE VIABLE PROGENITOR CELLS

Data featuring Magellan MAROMax™ demonstrates increased concentrations of MSC & HSC and IL-1Ra when compared to BMA and whole blood<sup>4,5</sup>.

- MSCs can differentiate into osteoblasts and chondrocytes<sup>6</sup>
- HSCs support blood vessel formation<sup>7</sup>
- IL-1Ra is reported to neutralize pain triggers<sup>5,8</sup>

**97%** cell viability<sup>4</sup>

Processing yields viable cells

**5–6x** MSC & HSC concentration<sup>9</sup>

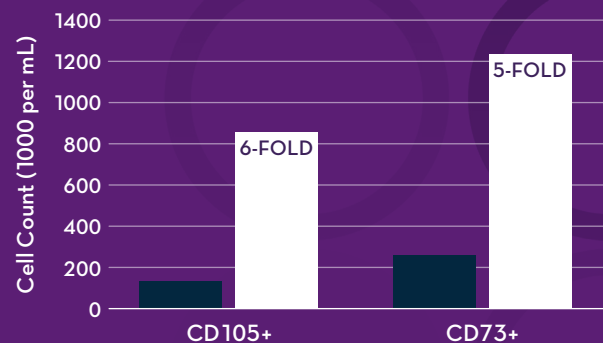
Confirmed by characterization of CD markers 73+, 105+, 34+ or 133+ via flow cytometry

**94%** reduction in Red Blood Cells (RBC)<sup>9,10</sup>

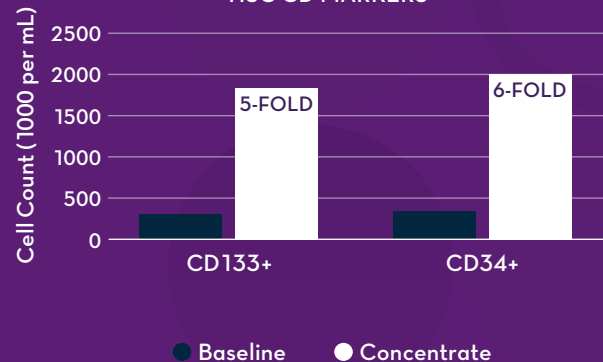
BioAdaptive processing yields superior performance

## CELL CHARACTERIZATION OF MAROMAX<sup>9</sup>

### MSC CD MARKERS



### HSC CD MARKERS



● Baseline ● Concentrate

# CONCENTRATE AT THE PUSH OF A BUTTON

Magellan employs cutting-edge technology to produce a customized biologic quickly and easily.

## SUPERIOR TECHNOLOGY. SUPERIOR PERFORMANCE.

### Fully Automated

Simple one-button start for ease of use

### Closed System

Minimal breaks in sterile barrier promote safety

### BioAdaptive Processing

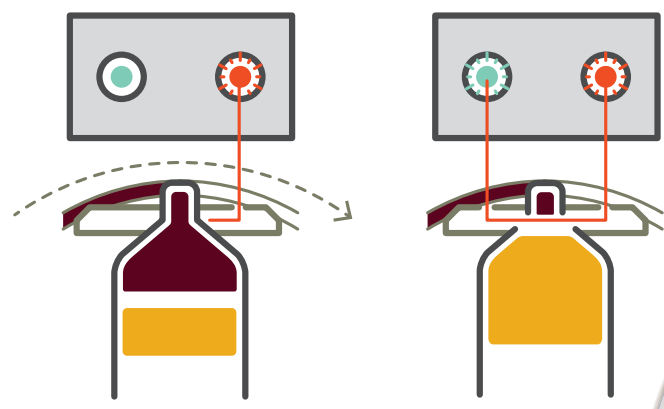
Works with optical sensors to tailor processing parameters based on each patient's hematocrit

### Optical Sensors

Identify the cellular fraction to eliminate error and optimize results

### Selectable Output

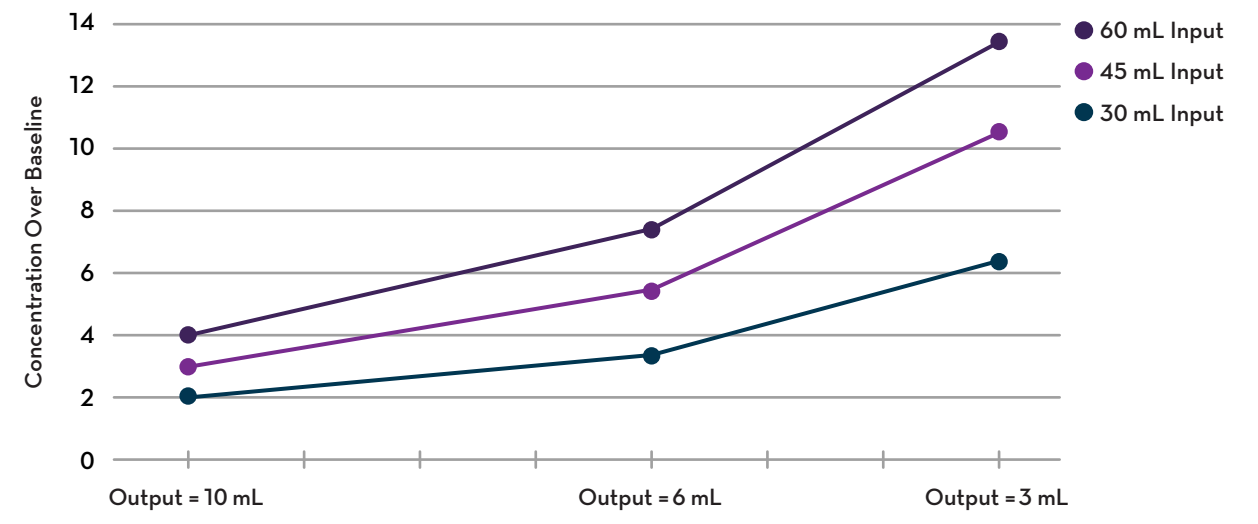
Allows users to define desired therapeutic volumes (3-10 mL per cycle)



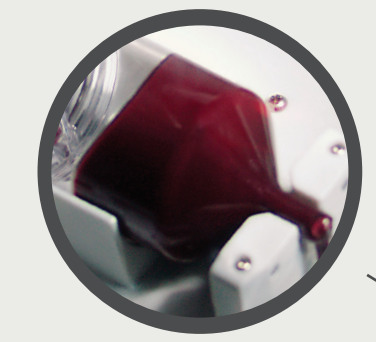
Optical Sensors



## CUSTOMIZE POTENTIAL CONCENTRATION FACTORS



**HIGH INPUT VOLUMES + LOW OUTPUT VOLUMES = HIGHEST CONCENTRATION!**  
Users can process 30-60 mL per cycle (up to 180 mL per patient) and select final output volume between 3-10 mL per cycle (up to 30 mL per patient) to customize final concentration.



Input Bone Marrow Aspirate (BMA) or Blood



Red Blood Cells (RBC) Separated



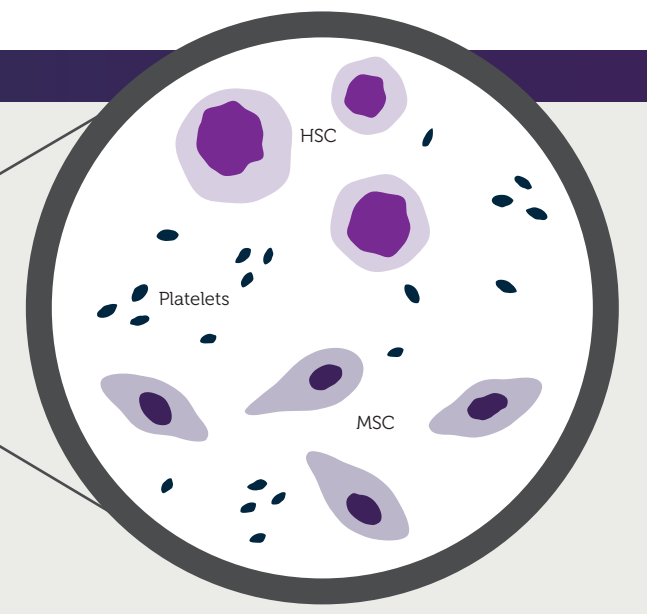
RBCs Extracted



Buffy Coat Is Concentrated



Nucleated Cells, Platelets & Growth Factors Ready for Immediate Use





## ONE SYSTEM PROVIDES FLEXIBILITY & COST SAVINGS

### PROCESS BONE MARROW & WHOLE BLOOD

**Magellan MARO Kits** allow users to recover progenitor cells (MSCs & HSCs), platelets, white blood cells and growth factors. Platelet-poor plasma available with every spin.

**MagellanPRP™ Kits** allow users to recover platelet-rich plasma (PRP) containing white blood cells, platelets and growth factors, or platelet-poor plasma containing matrix proteins and platelets. Leukocyte-reduced PRP also available.

### BOTH MARO AND PRP KITS ARE AVAILABLE FOR USE WITH THE MAGELLAN SYSTEM

- Concentrates up to 14x Baseline
- BioAdaptive Processing™
- Customizable Concentration
- Automation Ensures Quality
- Flexible & Cost-Effective
- Processes 30-180 mL Using a Single Kit
- FDA Cleared for Orthopedic Applications

**Offer your patients a personalized biologic.  
Use Magellan on your next case, 888.705.ISTO.**

#### References

1. AMSI Source: TS-0078-182. 2. Patel A, et al. Evaluation of autologous platelet-rich plasma for cardiac surgery: outcome analysis of 2000 patients. *J Cardiothorac Surg*. 2016. 11(1):62. doi: 10.1186/s13019-016-0452-9. 3. Castillo T, et al. Comparison of growth factor and platelet concentration from commercial platelet-rich plasma separation systems. *The American Journal of Sports Medicine*. 2011. 39(2):266-271. 4. Shapiro S, et al. A prospective, single-blind, placebo-controlled trial of bone marrow aspirate concentrate for knee osteoarthritis. *The American Journal of Sports Medicine*. 2017. 45(1):82-90. doi: 10.1177/0363546516662455. 5. Cassano JM, et al. Bone marrow concentrate and platelet-rich plasma differ in cell distribution and interleukin 1 receptor antagonist protein concentration. *Knee Surg Sports Traumatol Arthrosc*. 2016. doi: 10.1007/s00167-016-3981-9. 6. Pittenger MF, et al. Multilineage potential of adult human mesenchymal stem cells. *Science*. 1999. 284(5411):143-147. doi: 10.1126/science.284.5411.143. 7. Kalka C, et al. Transplantation of ex vivo expanded endothelial progenitor cells for therapeutic neovascularization. *PNAS*. 2000. 97(7):3422-3427. 8. Bessler H, et al. Postoperative pain, morphine consumption, and genetic polymorphism of IL-1β and IL-1 receptor antagonist. *Neuroscience Letters*. 2006. 404(1-2):154-158. 9. AMSI Source: TS-001A-008. 10. AMSI Source: TS-0078-103.

#### Indications

The Magellan Autologous Platelet Separator System is designed to be used in the clinical laboratory or intraoperatively at the point of care for the safe and rapid preparation of platelet-poor plasma and platelet concentrate (platelet-rich plasma) from a small sample of a mixture of blood and bone marrow. The plasma and concentrated platelets produced can be used for diagnostic tests. Additionally, the platelet-rich plasma can be mixed with autograft and/or allograft bone prior to application to an orthopedic site (BK040068). The Magellan Ratio Dispenser Kit is intended for the application of fluids, as deemed necessary by the surgeon's determination of the clinical use requirements, to facilitate the preparation of soft tissue prior to repair (K041830).

#### Disclaimer

The platelet-rich plasma prepared by this device has not been evaluated for any clinical indications. Platelet-rich plasma prepared from a mixture of whole blood and bone marrow may contain higher levels of plasma-free hemoglobin than platelet-rich plasma prepared from whole blood.



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