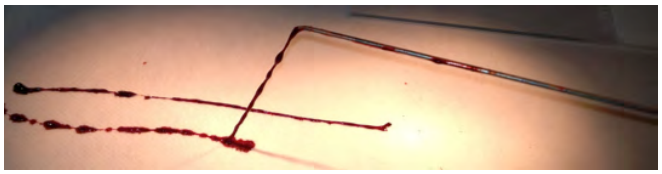
ClotMaster Flowable Biomatrix™

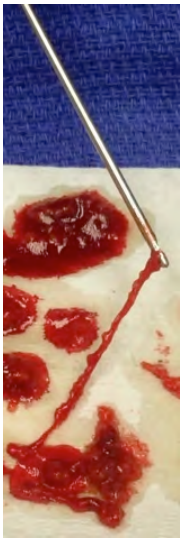
The safe, natural, alternative to PRP and artificial fillers.

10 minute prep time. No centrifuge or chemicals required. ClotMaster® creates a liquid fibrin matrix with the full compliment of cells and growth factors. Fibrin solids bind to the application site and offer slow release of factors as nature intended. Can be used as a carrier for other agents or materials as deemed appropriate by the physician.

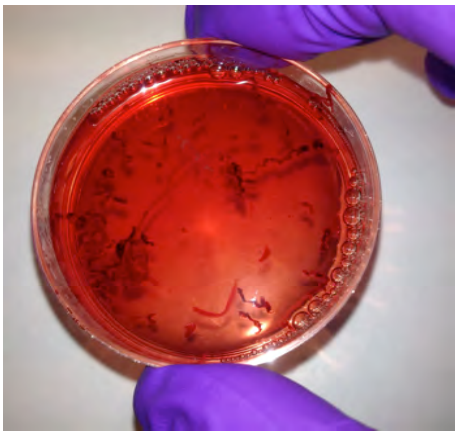
July 2015

Viscous high volume fibrin matrix with plasma, passes through 22G needle or larger leaving fibrin solids that offer matrix and bind growth factors for natural delivery over time.





Flowable Biomatrix can formed with whole blood or marrow aspirate (above) or with blood and lipo aspirate (right)



Lab test showing activated whole blood fibril solids after washing in saline

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Flowable Applications *

- Aesthetic filler or topical
- Osteo-Arthritis
- Orthopedic tendinopathies & inflammation
- Soft and Hard Tissue applications Orthopedics
- Urology and Uro-Gynecology
- Topical mask application for Wound Care, Plastic Surgery
- Surgical application in Dentistry & Oral surgery

*Statements have not been reviewed by FDA; product is not intended to prevent, treat, or cure any disease or condition

Concentrated ClotMaster Flowable Biomatrix vs. PRP

Platelets, once thought of as being responsible only for clotting, have been scientifically proven to be a reservoir of regenerative

As an alternative method to standard PRP*, Clot Master provides the full compliment of plasma, leukocytes, cytokines and growth factors in an activated fibrin matrix providing structure and sustained release of **Growth Factors** in an exogenous fibrin blood clot scaffold.

Immuno-histochemical staining of these types of fibrin networks has demonstrated “nests” of platelets that become trapped within the fibrin scaffold [1]. Furthermore, cytokines bind to fibrin such that the fibrin scaffold becomes a growth factor reservoir that may allow growth factor release slowly over many days to weeks [2].

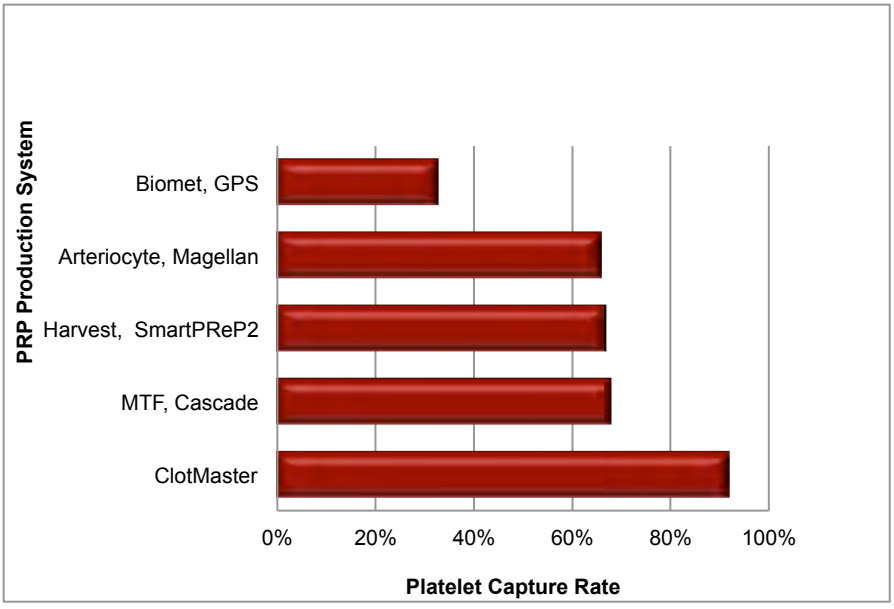
This exogenous fibrin blood clot can act as a stable mechanism for long-term direct delivery of growth factors and as a three dimensional native scaffold for cell adhesion and proliferation.

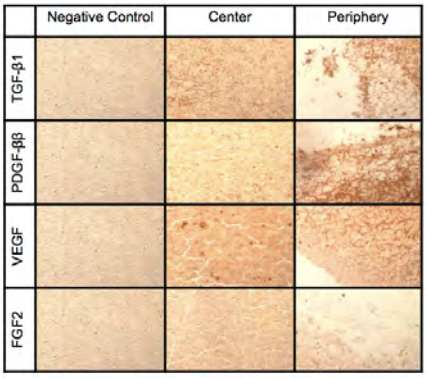
Figure 11. Summary table of advantages of ClotMaster™ clots™

Biologic Advantages	Technical Advantages	Cost Advantages
• Rich in platelets • Structural integrity of fibrin matrix • Rich in growth factors (TGF-B1, PDGF-BB, VEGF, FGF2) • Possible to use as scaffold for TE • Completely autologous (no exogenous activation required)	• Quick • Easy procedure • Consistent results • Requires no extra OR staff • Can suture to repair site • Versatility (different types of clot)	• Inexpensive

A study by Proctor, determined that the fibrin clot platelet capture rate to be 92% (below L). [3] This capture rate compares favorably to prior studies that have demonstrated platelet capture rates of traditional PRP ranging from 17-80% [4].

Results of immunohistochemical staining (below) indicate that TGF-β1, PDGF-ββ, VEGF, and FGF2, are present in human blood clots produced by the Hula Cup. This demonstrates that ClotMaster™ clots deliver the same healing growth factors found in PRP, and therefore have the potential to enhance healing [4]





REFERENCES

1.Visser, L et al., Veterinary Surgery. 2010; 39: 811-817.
2. Macri, L et al., Advanced Drug Delivery Reviews. 2007;59: 1366-1381.
3. Proctor, C Determination of the Platelet Capture Rate of Human Fibrin Blood Clot Alta Orthopaedics, Santa Barbara, CA 2014
4.Doodlesack, A The Characterization and Quantification of Bioactive Components In Human Blood Clots for Tissue Healing and Engineering Spring, 2014, Brown University Biology Master’s Thesis, Brown Biomed

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