

Synergistic Wound Healing Therapy

A Pilot Study of Borate Glass Synthetic Graft with Autologous Platelet-
Rich Fibrin As a Wound Healing Model

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Challenges to Chronic Wounds

Impaired Healing

Chronic lower extremity wounds present significant clinical challenges characterized by dysfunctional extracellular matrix formation and inadequate angiogenesis.

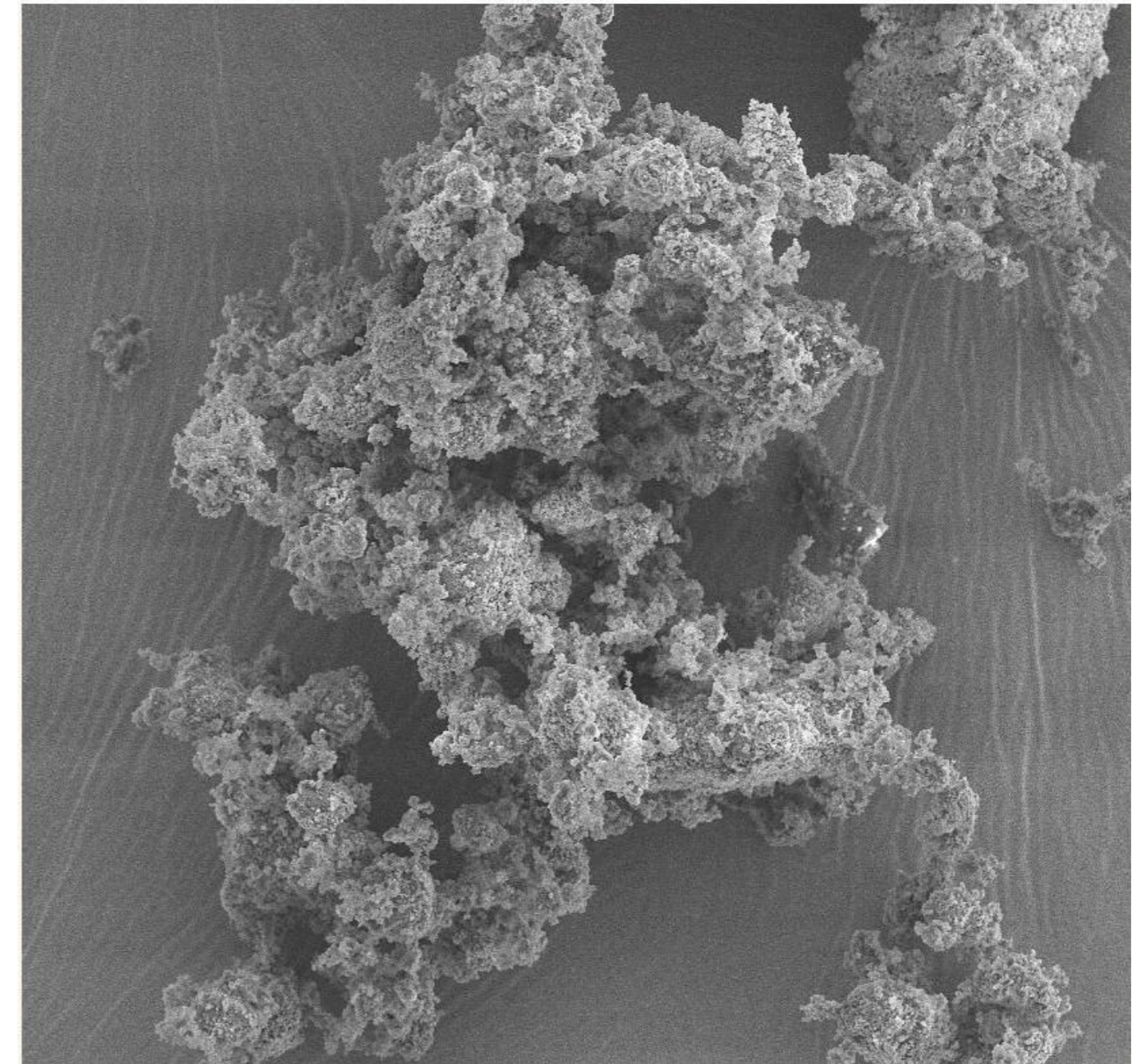
Persistent Inflammation

Prolonged inflammatory states and refractory responses to standard therapies necessitate advanced, multi-modal regenerative approaches.

The Dual-Action Solution

Structural & Biologic synergy

- **Borate-Based Matrix:** Controlled release of therapeutic ions and a 3D scaffold mimicking native fibrin.
- **Autologous PRF:** Delivers concentrated growth factors to enhance endothelial proliferation.
- **Combined Effect:** Targeted stimulation of angiogenesis and rapid tissue remodeling.





Pilot Proof-of-Concept Study

Evaluating safety and efficacy across diverse clinical etiologies.

Diverse Patient Etiologies



Venous & Diabetic

Addressing common vascular and metabolic wound sources.

Traumatic & Surgical

Managing post-operative and injury-related wound complications.

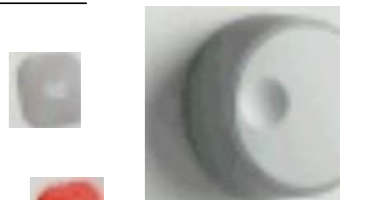


Atypical Types

Exploring therapy for refractory and complex atypical wounds.

PRP Preparation Protocol

- Utilizing the PurePRP GS-30 Pure System, venous blood was harvested via standard phlebotomy and processed through controlled centrifugation.
- This standardized preparation protocol ensures reproducible platelet concentration and growth factor content while maintaining viability.
- Approximately 8-12 cc of viable PRF was obtained.



The Borate-Based Scaffold



Biocompatible Architecture

Provides a biodegradable 3D scaffold with controlled release of **Calcium {Ca}** and **Borate** ions to stimulate cellular healing cascades.

PRF functions as a delivery system for **VEGF** and **PDGF**, essential for sustained angiogenesis.

Clinical Results at 4 Weeks



> 55%

Wound Closure Rate

Significant Mid-Point Progress

All five prototype-treated wounds demonstrated closure rates exceeding 55% within the first 4 weeks of trial therapy.

Safety Profile: Zero adverse reactions or side effects were reported throughout the pilot study duration.

Progress Relative to the Literature



Results align with PRP literature showing typical median complete closure times of 6-8 weeks.

Synergistic Healing Model

- Integrated Therapy
Combines structural synthetic scaffolding with autologous growth factor delivery for maximum efficacy.
- Refractory Solutions
Offers a rational approach for complex wounds that are unresponsive to standard treatment protocols.
- Preliminary Efficacy
Establishes feasibility for a novel regenerative medicine approach across multiple wound etiologies.

Final Study Conclusion

“The synergistic application of structural scaffolding with autologous growth factor delivery represents a rational approach to complex wound management.”

Questions?

Discussion & Further Inquiry

Synergistic Wound Healing Pilot Study