



## Poly lactide and Hydroxyapatite Compositions for Improved Bone Remodeling

*Howard University researchers have identified methods of preparing bone substitute compositions for fracture repair that overcome technical barriers to using polymer/calcium phosphate composites*

### Contact

Anne Marie Lyons  
TreMonti Consulting, LLC  
9302 Lee Highway  
Suite 306  
Fairfax, VA 22031  
703-447-4783  
[amlyons@tremonticonsulting.com](mailto:amlyons@tremonticonsulting.com)

Dan McCabe  
Associate General Counsel  
Howard University  
(202)806-2650  
[contracts@howard.edu](mailto:contracts@howard.edu)

### Inventors

Dr. Tongxin Wang et al.

### Potential Commercial Applications

New bone cement improves upon existing formulation  
Overcomes long-standing technical hurdle of retaining overall composite strength when combining elements

### Stage of Development

Physical characterization and *in vitro* strength/flexibility testing performed. Seeking partners and resources for *in vivo* testing.

### Status

Seeking development & licensing partners

### Background

Currently available bone substitutes for fracture repair such as calcium phosphate and polylactic acid suffer from technical limitations such as brittleness and potential to cause allergic reactions, and combining the two to overcome these barriers results in insufficient strength. Alternatively, metal substitutes require surgical removal, impair X-rays and CT scans, and possess load-bearing properties that can actually impair healing.

### Description of Technology

Dr. Wang and colleagues have identified methods of combining calcium phosphate with polylactic acid (PLA) that provide mechanical properties (strength and stiffness) that match those of natural bone. This process requires a novel method of combining PLA/CaPO<sub>4</sub> constituents that provides final material that will be well-tolerated *in vivo* and that possesses excellent osteoconductive properties. By this method, PLA is compatible with several isoforms of CaPO<sub>4</sub>. The inventors have completed physical characterization and strength/flexibility testing of the composites resulting from these methods, and have demonstrated properties consistent with requirements for bone substitutes. They are seeking partners for *in vivo* testing. The PLA/CaPO<sub>4</sub> bone substitute also has potential for mimicking bone in other tissue engineering applications.

### Opportunity

The methods and compositions described by Dr. Wang and colleagues are the subject of two patent applications. Partners are sought for further research and development, as well as licensing opportunities. Dr. Wang is available to discuss his invention under an appropriate confidentiality agreement.