Value Proposition

**PerioCell** microspheres give dentists a completely new way to fight gum (periodontal) disease. Our technology works by targeting the damaging inflammation that is ultimately responsible for the tissue destruction and tooth loss often associated with this disease. Aside from tooth loss, periodontal disease also increases the incidence of cardiovascular disease, kidney disease, respiratory diseases, diabetes and even premature births. While dental techniques and tools have advanced, the standard treatment for gum disease (plaque removal) has not changed since its introduction in ancient Egypt. PerioCell succeeds by addressing the underlying cause.

Market Opportunity

An estimated **13 million Americans** suffer from this severe form of gum disease called refractory periodontitis. These patients have had little, if any, response to traditional deep cleaning (scaling and root planing) and adjunct antibiotics, likely because they suffer from autoimmune-like inflammatory conditions. It is estimated that the US spends **$3.25 billion** treating these patients annually. The demand for a new treatment modality is even more critical, given the compound annual growth rate of **6.4%** in this market. We believe dentists’ desire to retain their patients will lead to rapid adoption of PerioCell.

Competitive Landscape

Dentists will administer PerioCell to patients as an adjunct therapy during routine or deep cleanings. Current clinical adjunct therapies are all small molecule antibiotics (injected into the gum space or by pill). While PerioCell’s active ingredient is a recombinant protein, we estimate cost will match current therapies, such as Arestin®. The improved efficacy will drive sales given similar price points.

Technology

PerioCell microspheres are composed of a biodegradable poly(lactide-co-glycolide) shell encapsulating a small recombinant human protein called CCL22 (8 kDa). PerioCell microspheres sustainably release a gradient of CCL22 after placement within the gums. In turn, the gradient of CCL22 recruits the body’s regulatory cells to fight damaging inflammation and restore healthy gums.

Stage of Development

We have obtained strong preclinical data describing the efficacy and mechanism of action of PerioCell in both large and small animal models. We are currently developing the PerioCell manufacturing process to help launch and advance our startup toward clinical trials.

IP Status

1) PerioCell microspheres and methods, filed 2010
2) Additional microsphere formulations, filed 2013
3) Dental applicator, filed 2014

Funding

NIH R01 $1.2M, Wallace H. Coulter Foundation $500K
Dr. Charles Sfeir, DDS, PhD

Periodontist, Director of the Center for Craniofacial Regeneration and Associate Dean of Oral Biology at the University of Pittsburgh, Charles Sfeir’s research interests are focused on understanding and enhancing bone regeneration. Charles recently led a research team that licensed ReCaPP, a bioresorbable scaffold substitute for bone defects, currently nearing clinical trials.

Education

- DDS, Dental Surgery, Universite Louis Pasteur, 1990
- PhD, Molecular Biology and Biochemistry, Northwestern, 1996

Dr. Sayuri Yoshizawa, DMD, PhD

Research Assistant Professor in the Department of Oral Biology at the University of Pittsburgh, Sayuri’s research is focused on treating gum disease and bone tissue engineering.

Education

- DMD Dental Medicine, University of Pittsburgh, 2014
- PhD Bio-Pathological Science, Okayama University, 2007

Andrew Glowacki, BS

NIH F31 Pre-Doctoral Fellow, Andrew Glowacki’s PhD thesis research is focused on developing treatments for gum disease.

Education

- PhD-Candidate Chemical Engineering, University of Pittsburgh, expected 2015
- BS Chemical Engineering, Iowa State University, 2008