IMMUNOMODULATORY STRATEGIES TO TREAT PERIODONTAL DISEASE

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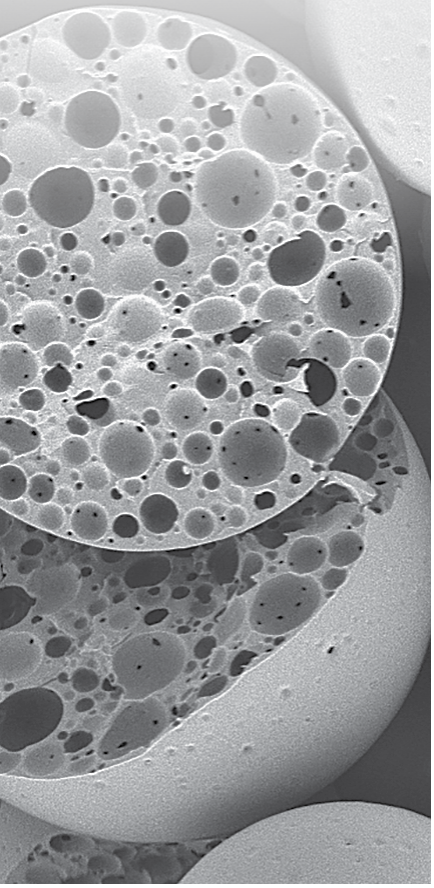

Clinical Need – Periodontitis is one of the most pressing oral health concerns today, affecting nearly half of adults over the age of 30 in the U.S. When left untreated, patients may require dental implants and bone grafting procedures. Antibiotics are currently used as an adjunct therapy to scaling and root planing (SRP), which remain the current gold standard of care for periodontitis. However, recent insights highlight the central role of chronic inflammation in the pathology of periodontal disease and it is this overactive immune response that is responsible for most of the damage and disease progression. Thus, new treatment modalities that target inflammation directly in the oral mucosa are greatly needed.

Solution – A team at the University of Pittsburgh led by Dr. Steven Little and Dr. Charles Sfeir, DDS has identified a non-antibiotic, controlled release microparticle systems that repairs the underlying immune-dysfunction responsible for tissue degeneration in periodontitis. This work has led to the founding of Oraxsys Therapeutics, a biotechnology company that is building on Dr. Little and Dr. Sfeir's work to further develop a microparticle-based therapeutic that recruits regulatory T cells to the oral mucosa, controls chronic local inflammation, and induces immune-homeostasis, thereby reducing the destruction caused by periodontitis and promoting tissue regeneration.

Competitive Advantage – By targeting the underlying chronic inflammatory pillar of periodontitis (a novel treatment strategy that would synergize with SRP), an immune-modulatory, controlled release product, is thought to overcome the current limitations in the treatment of periodontal diseases, peri-implantitis, and other oral inflammatory conditions.

ITP Support – The goal of the work under the ITP program is to develop clinical-grade manufacturing and sterilization protocols to produce quality-controlled product for pharmacokinetic testing and toxicology studies in support of an IND submission and ultimately clinical testing.

FOUNDATIONAL PUBLICATION

Glowacki et al. Prevention of Inflammation-Mediated Bone Loss in Murine and Canine Periodontal Disease via Recruitment of Regulatory Lymphocytes. Proc Natl Acad Sci USA 2013

INTELLECTUAL PROPERTY

US8,846,098 Artificial Cell Constructs for Cellular Manipulation

ANTICIPATED REGULATORY PATHWAY

IND

ANTICIPATED COMMERCIALIZATION STRATEGY

In development with MPWRM Cores

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