DeMay Biotech, LLC
UConn Technology Incubator
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Caroline Dealy, PhD, CEO
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Industry: Pharmaceuticals
- *Rheumatoid Arthritis*

Management:
- *Executive Leadership*

Caroline Dealy, PhD
co-Founder and CEO
Assoc Professor UConn Health
Depts of Biomedical Engineering, Orthopedic Surgery, Cell Biology & Reconstructive Sciences

- *Advisors and Key Collaborators*

Nita Maihle, PhD
co-Founder
Professor and Director,
U Mississippi Cancer Center

Tom Gerson, MBA
Strategic Advisor, finance

Susan Froshauer, PhD
Strategic Advisor, drug development

S. Laksminarayanan, MD
Clinical Advisor
John Dempsey Hospital
Chief, Rheumatology

Thuryya Arayysi, MD
Clinical Advisor
Weill-Cornell Medical Center
Director, MERAC: Middle East Rheumatoid Arthritis Consortium

Finance:
- Current funding: $100,000 from UConn & coFounders
- Seeking $300,000-$400,00 in seed funds to reach year one commercial and technical milestones

Intellectual Property:
- We anticipate filing a provisional patent on the commercial product within 6 months, and full patent within 1 year.

Executive Summary: Rheumatoid arthritis (RA) is a serious, systemic, inflammatory disease that causes pain, mobility loss and permanent joint damage for 1.5M adults in the US[1]. The disease tends to strike in mid-life, and affects women 3 times more often than men[1]. As there is no cure, the goal of treatment is remission from active disease signs. In many patients, disease signs are controlled by available drugs for only a few years, leading to chronic relapse[2]. Current treatments suppress the immune system but are not designed to target disease signs in the joints. We are developing a transformative biotherapeutic for rheumatoid arthritis that targets a key, validated, disease mechanism in the joints. Our treatment will be used as an *adjunct* to immunosuppression, to achieve better disease control, and to reduce chronic relapse that causes disabling pain and joint damage for rheumatoid arthritis patients.

Market Opportunity: The clinical challenge of RA treatment leads to an economic burden of $39B in annual US healthcare and disability costs[3], and drives an $18B US market for RA drugs (2017). The US & Europe RA market has a 4% CAGR and will reach $29B by 2025[4].

Products in Pipeline: Our product is a biologic (protein-based) drug. It is based on a natural human protein. The commercial stabilized version of the protein will confer optimal activity and a clinical dosing regimen in the range of other rheumatoid arthritis drugs, administered by sub-cutaneous self-injection every 2-4 weeks.

Commercial / Technical Milestones: Year one commercial milestone: produce the commercial product and file IP. Year one technical milestone modify the protein to prolong stability, and confirm continued activity in cell and animal models.

Competition: No RA therapeutics are yet designed to specifically target disease signs in the joints[4]. As an *adjunct* therapeutic, our product will be used as a partner product to existing immunosuppressants, suggesting a future opportunity for strategic alliance or acquisition.

Financial Projections: With IND and FDA approvals, successful Phase I safety profile and demonstrated efficacy in Phase 2a trials, based on comparables, we anticipate acquisition at $300-500M in 7-8 years.

1. *Arthritis by the Numbers*; Arthritis Foundation; https://www.arthritis.org
2. *Relapse rates in patients with rheumatoid arthritis in stable remission: interim results from the prospective randomized controlled RETRO study*"; Hasckal et al., Annals of the Rheumatic Diseases*; 75.1 (2016): S. 45-51.*
3. Current Medical Research Opinion. *Societal cost of rheumatoid arthritis patients in the US;* Birnbaum et al, 2010; 26(1): 77-90.
4. https://www.globaldata.com/store/report/gdhc143pidr--pharmapoint-rheumatoid-arthritis-global-drug-forecast-and-market-analysis-to-2025/
5. *Fibroblasts as therapeutic targets in rheumatoid arthritis and cancer*. Juarez et al; Swiss Med Weekly 2012, 142: w13529
6. *Synovial fibroblasts 2017.* Ospelt C. Rheumatic & Musculoskeletal Diseases. RMD Open 2017;3: e000471.