

DEVELOPMENT OF LIVE BACTERIAL THERAPEUTICS

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“Bugs as Drugs” is an emerging therapeutic modality for treatment of diseases that are caused by or exacerbated by the bacteria inhabiting the human body. The rationale for pursuing these therapies is multi-fold, but largely revolves around the often-complex and multifactorial biology of these diseases, and poor druggability via conventional chemistry. For Seres’ treatment approach via ecologies of natural commensal organisms, the challenge is not to engineer pathways in individual organisms but rather to engineer a set of organisms that will work to shift a diseased microbiome to one resembling a healthy person’s. To accomplish this, a unique set of capabilities is required to identify strains of interest, screen leads and to test model ecologies. Our reverse translational approach relies on human and animal data sets, genetic sequence analysis techniques, computational models and libraries of bacteria. Finally, bioprocess, analytical and formulation know-how, along with cGMP manufacturing capability enables human clinical trial material generation and commercialization. Seres’ capabilities will be discussed, along with our approaches to, and progress in, product development.