

**EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]:** State **in layman's terms** the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized. Infectious diseases continue to be a threat to the human population. Not only are new diseases continuously emerging, such as SARS and bird flu, but in addition, well known culprits of infectious diseases like tuberculosis and malaria are becoming progressively resistant to current antibiotics. Therefore, there is an urgent need for the development of novel anti-infective drugs. We propose that certain fats may represent a whole new class of antibiotics. Some fats have been used for many years as food preservatives against spoiling, a process that is caused by germs, and we have exciting results from previous studies suggesting that natural body fats may be used in our own defense against germs. Here, we propose research that will not only contribute to the identification of genes important for the production and release of such defense fats, but will also contribute to the development of novel lipid-based drugs through the innovative biotech company Molecular Express, which specializes in drug delivery systems. The knowledge gained from our studies will be used in two subsequent major grant proposals, an independent research proposal and a small business grant proposal, which will continue our quest for new medicines against infectious diseases. The proposed project has substantial potential public benefits: it promotes the interaction between University and Biotechnology in California, links basic research with industrial applications, and may produce novel anti-infective drugs to improve public health.