

# The Antigen Display on *Bacillus* Endospore (ADOBE) System a Noninvasive Biodegradable Microparticle Display System

C.J. Pritzl<sup>1</sup> and D.E. Hassett<sup>1,2</sup>

<sup>1</sup>Molecular Microbiology and Immunology/Veterinary Pathobiology Joint Graduate Program, University of Missouri, Columbia, MO

<sup>2</sup>Department of Veterinary Pathobiology, University of Missouri, Columbia, MO

The development of safe and effective vaccines and adjuvants remains an important global public health goal. The Antigen Display on Bacillus Endospore (ADOBE) system, developed at the University of Missouri's College of Veterinary Medicine, is a unique, non-replicating, microparticle-based antigen delivery platform with inherent adjuvant properties. Killed spores can be readily engineered to present single or multiple antigens to the immune system. Bioactive targeting molecules and molecular adjuvants can also be co-displayed with the immunogen on the spore surface to enhance specific innate or acquired immune responses. The combination of a strong natural adjuvant and an easily produced microparticle delivery vehicle makes ADOBE-based vaccines excellent candidates for preclinical development against a large number of human and veterinary diseases.

Because virtually any molecule of interest can be covalently attached to the outer spore surface, the ADOBE method also allows for the use of spores as biodegradable solid-phase platforms for use in diagnostic tests, molecular imaging, biocatalytic reactions, and the identification, quantification, and or purification of specific compounds from a complex mixture of compounds.

We are currently looking for corporate as well as academic collaborators that are interested in capitalizing on the ADOBE methodology for the development of novel biopharmaceuticals to diagnose, treat and prevent infectious and metastatic diseases.