

Julie Lovchik, Ph.D. - Research Assistant Professor

Bio:

Julie Lovchik received a Ph.D. in immunology from the University of Texas Southwestern Medical Center in Dallas, TX. She completed post-doctoral fellowships at both the University of New Mexico Health Sciences Center in Albuquerque, NM, and at the Experimental Immunology Branch, National Institutes of Health in Bethesda, MD. Currently, she is a Research Assistant Professor at the University of New Mexico, Health Sciences Center.

Research Interests:

Dr. Lovchik's research interests are in host-pathogen interactions, predominantly in regards to pathogens that are acquired via the respiratory route and considered potential biothreat agents. In particular, one of her main research goals has been to better understand the roles of certain *B. anthracis* virulence factors, and their impact on the pathophysiology of anthrax in different host species. These studies are conducted utilizing site-directed deletion mutants that lack individual genes for reported virulence factors. The results of these studies are important with regard to designing and testing future drug and vaccines candidates against anthrax.

Another major function of the lab over the past ten years has been to test the efficacy of potential vaccines and therapeutics against various biothreat agents for multiple university investigators and pharmaceutical companies in connection with DARPA, DTRA, and NIH/NIAID contracts. These types of experiments provide the first step in helping companies to meet FDA regulations for demonstrating drug effectiveness *in vivo*.

Other work in the lab in collaboration with Dr. Terry Wu is focused on the development of a next generation vaccine against tularemia, and identification of new therapeutic drug candidates for tularemia and melioidosis. In addition, Dr. Lovchik has been involved in developing new potential diagnostic devices for detection of biothreat agents through collaborations with investigators at the University of Nevada at Reno which resulted in a patent filing, and a portable diagnostic device developed in collaboration with investigators at Sandia National Laboratories which was selected as a 2014 R&D100 Award recipient.

Key Publications:

1. Hutt JA, Lovchik JA, Drysdale M, Sherwood RS, Brasel T, Lipscomb MF, Lyons CR. 2014. Lethal factor, but not edema factor is required to cause fatal anthrax in cynomolgus macaques after pulmonary spore challenge. *Am J Pathol.* 184:3205-3216
2. Lovchik JA, Drysdale M, Koehler TM, Hutt JA, Lyons CR. 2012. Expression of either Lethal Toxin or Edema Toxin alone is Sufficient for *B. anthracis* Virulence in a Rabbit Model of Inhalational Anthrax. *Infect Immun.* 80:2414-2425.
3. AuCoin DP, Sutherland MD, Percival AL, Lyons CR, Lovchik JA, Kozel TR. 2009. Rapid detection of the poly-gamma-D-glutamic acid capsular antigen of *Bacillus anthracis* by latex agglutination. *Diagn Microbiol Infect Dis.* 64(2):229-32]
4. Heninger, S., M. Drysdale, J. Lovchik, J. Hutt, M.F. Lipscomb, T.M. Koehler, and C.R. Lyons. 2006. Toxin-deficient mutants of *Bacillus anthracis* are lethal in a murine model for pulmonary anthrax. *Infect. Immun.* 74:6067-6074.
5. Lyons, C.R., J.A. Lovchik, J. Hutt, M.F. Lipscomb, E. Wang, S. Heninger, L. Berliba, and K. Garrison. 2004. Murine model of pulmonary anthrax: kinetics of dissemination, histopathology and mouse strain susceptibility. *Infect. Immun.* 72:4801-4809.