REPURPOSING TO SPEED CHEMICAL AND BIOLOGICAL MEDICAL COUNTERMEASURE DISCOVERY AND DEVELOPMENT

Developing And Characterizing Panels Of Single And Multi-drug Resistant Bacterial Surrogates For Use In Evaluating Novel And Repurposed Therapeutic Compounds

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Bacterial select agents such as Bacillus anthracis, Yersinia pestis, and Francisella tularensis, could pose a significant risk to our nation's military, especially if these strains harbor antimicrobial resistance markers that render stockpiled therapeutics ineffective. Although pharmaceutical companies are interested in exploring the use of novel and repurposed compounds to overcome resistance in these and other pathogens, the limited availability of single and multiple drug resistant bacterial select agents makes it difficult for companies to seek Federal Drug Administration approval for new therapeutic applications. Adhering to national and international prohibitions on the creation of antimicrobial resistant bacterial select agents, the United Sates Army Medical Institute of Infectious Diseases and the Los Alamo National Laboratory have assembled and characterized panels of avirulent (BSL-2) single and multi-drug resistant B. anthracis, Y. pestis, and F. tularensis surrogate organisms within the Biodefense Reference Material Repository for use by Department of Defense-sponsored labs in evaluating the efficacies of candidate therapies against drug resistant bacterial threat agents. The panel strains are produced and maintained in accordance with ISO 17034 standards and have been fully sequenced and evaluated for resistance with respect to various clinically relevant antibiotics.

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