

Sympano, Inc.

*Nanotechnology Enabled Point-of-care Diagnostic for Multidrug Resistant Pneumonia and Sepsis*

This project will apply the novel nanotechnology to the problem of multidrug resistant pneumonia and sepsis. Pneumonia is the second worldwide cause of death and first among children under 5 years old, and is the number one cause of sepsis. The mainstay of treatment is empiric antibiotic selection, which increases multidrug resistant organisms and may not appropriately address the cause of the patient's infection, thus potentially increasing mortality. The detection of four multidrug resistant causes of pneumonia will be accomplished within ten minutes at the point-of-care from a drop of blood, urine, and/or saliva. Synthetic solutions with resistant pneumonia biomarkers will be constructed. Analytical parameters including accuracy, precision, linearity, calibration, limit of blank, limit of detection, functional sensitivity, and interfering substances will be evaluated. The goal of the proposed research is to detect the multidrug resistant pneumonia biomarkers from synthetic solutions of blood, urine, and saliva.