**Rapid Detection of *Klebsiella pneumoniae* Carbapenemase (KPC) Producing Isolates Using the BACcel™ Digital Microscopy System**

C-A. Burnham1, S. Metzger1, A. Shamshayaev2, R. Collins1, D. Howson2

1 Department of Pathology & Immunology, Washington Univ. School of Medicine, St. Louis, MO; 2 Accelerate Diagnostics Inc., Tucson, AZ

**INTRODUCTION:** Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) is a global threat. A recent report by the CDC demonstrated that the proportion of *K. pneumoniae* isolates with carbapenem resistance has increased from 1.6% in 2001 to 10.4% in 2011 (MMWR. 2013. 62: 165-170). One field of view (FOV) was classified as ETP resistant (22/23) or susceptible (24/24) in comparison to DD. Compared to KPC PCR, the method was 100% sensitive and an “inhibition score,” a statistical measure of clone division rates, in MEM ± NPBA- treated samples was 0.54 (±0.19) and -0.75 (±0.38) for KPC-negative isolates.

**RESULTS:** Using the BACcel method, isolates were classified as ETP resistant (23/23) or susceptible (24/24) (Table 2). Compared to KPC PCR, the method was 100% sensitive and specific using MPA/NA inhibition score for classification of isolates as KPC positive (92/93) or negative (99/100). The test inhibition score (≤0.75) for KPC-positive strains was not observed for KPC-negative isolates (≤0.25)

**CONCLUSIONS:** The BACcel system detects carbapenem resistance in *K. pneumoniae* in 1 hour, allowing for rapid diagnosis in CLIs. Further studies are necessary to characterize the specificities and speed of KPC for MADM detection in CRKP isolates.