A Unified Platform for Rapid Pathogen Detection, Species Identification, and Antimicrobial Resistance Mutation Profiling

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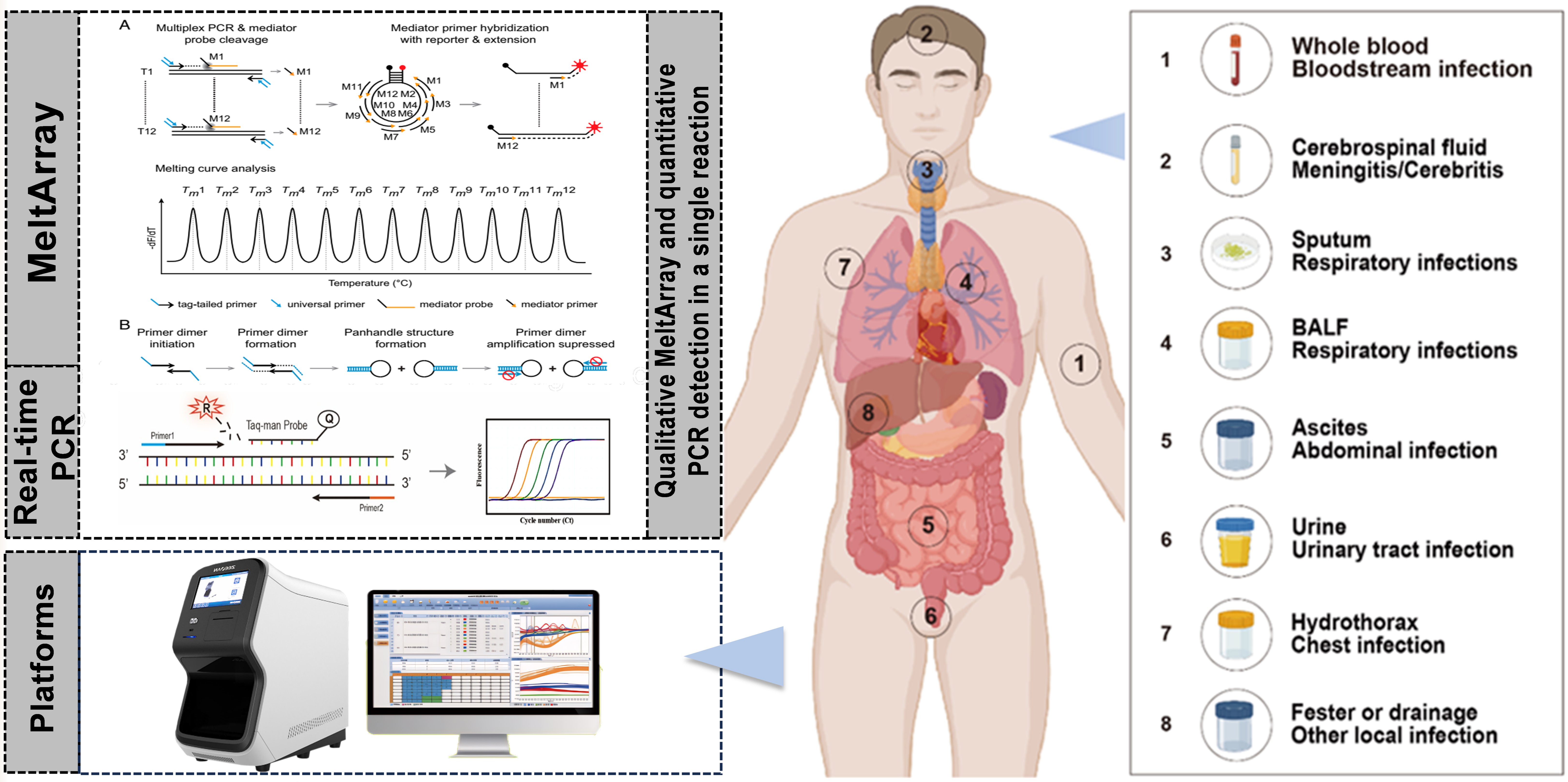
INTRO.

The complex etiology in critically ill patients warrants prompt response harnessed with an accessible and affordable diagnostic platform that enables pathogen identification, species/type discrimination and drug resistance status determination. While sequencing platforms have found wide applications in research settings, their use in intensive care units is difficult in terms of both cost and time consumption.

MATERIALS & METHODS



RESULTS & DISCUSSION

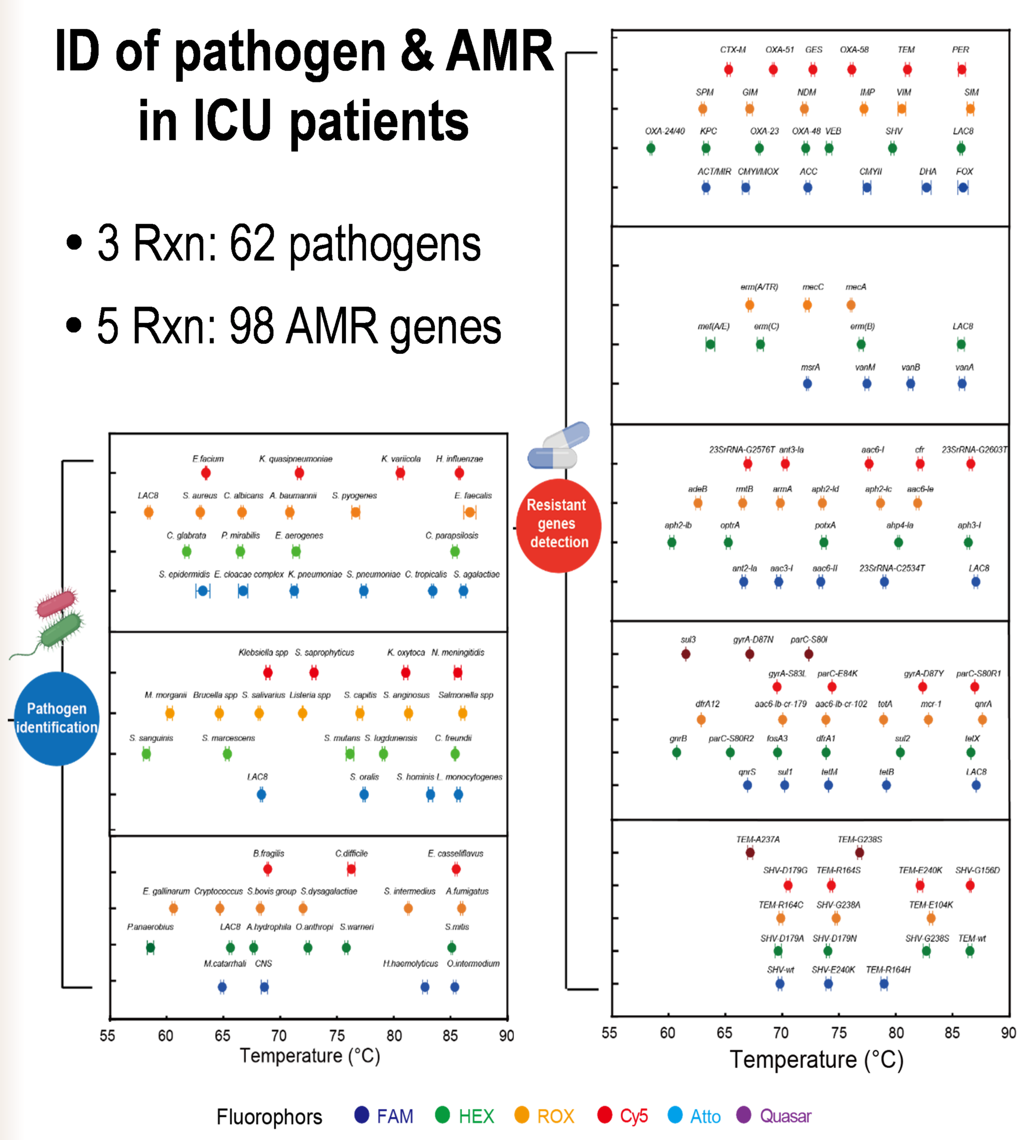


Fig 1. A united pathogens and AMR genes detection platform.

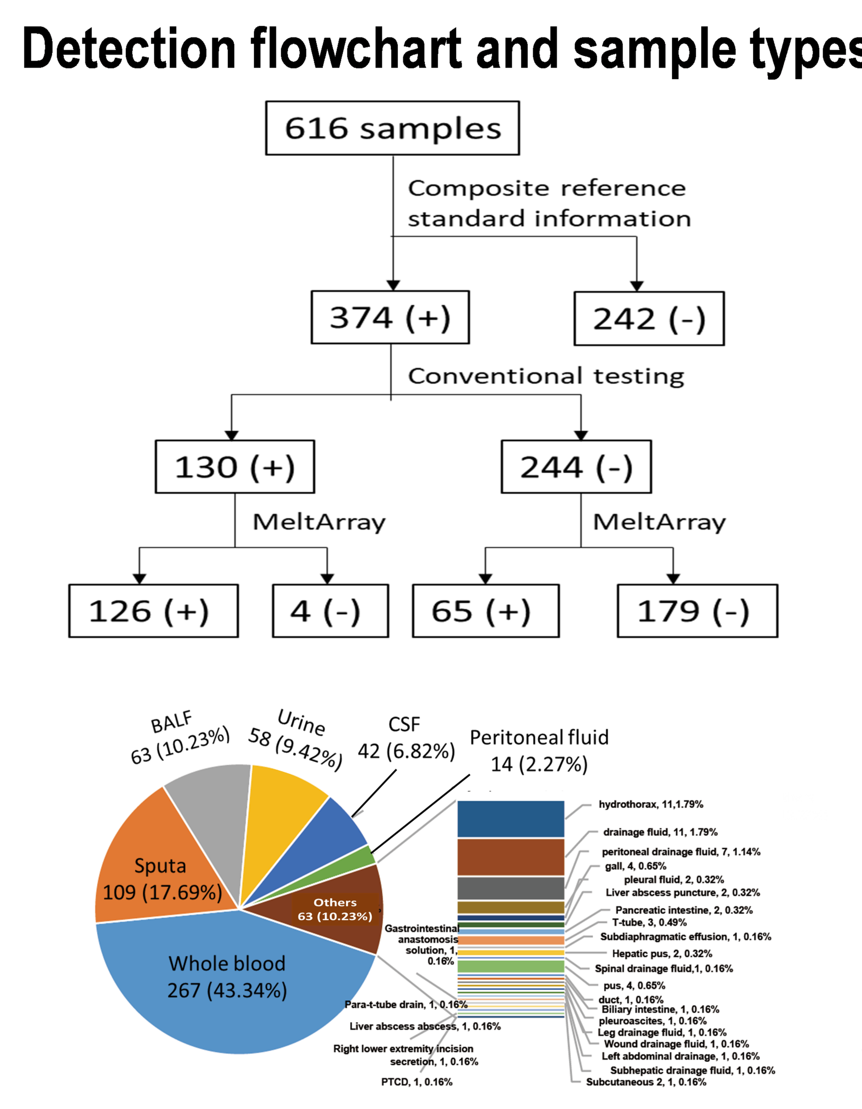


Fig 2. Clinical evaluation of MeltArray with ICU samples.

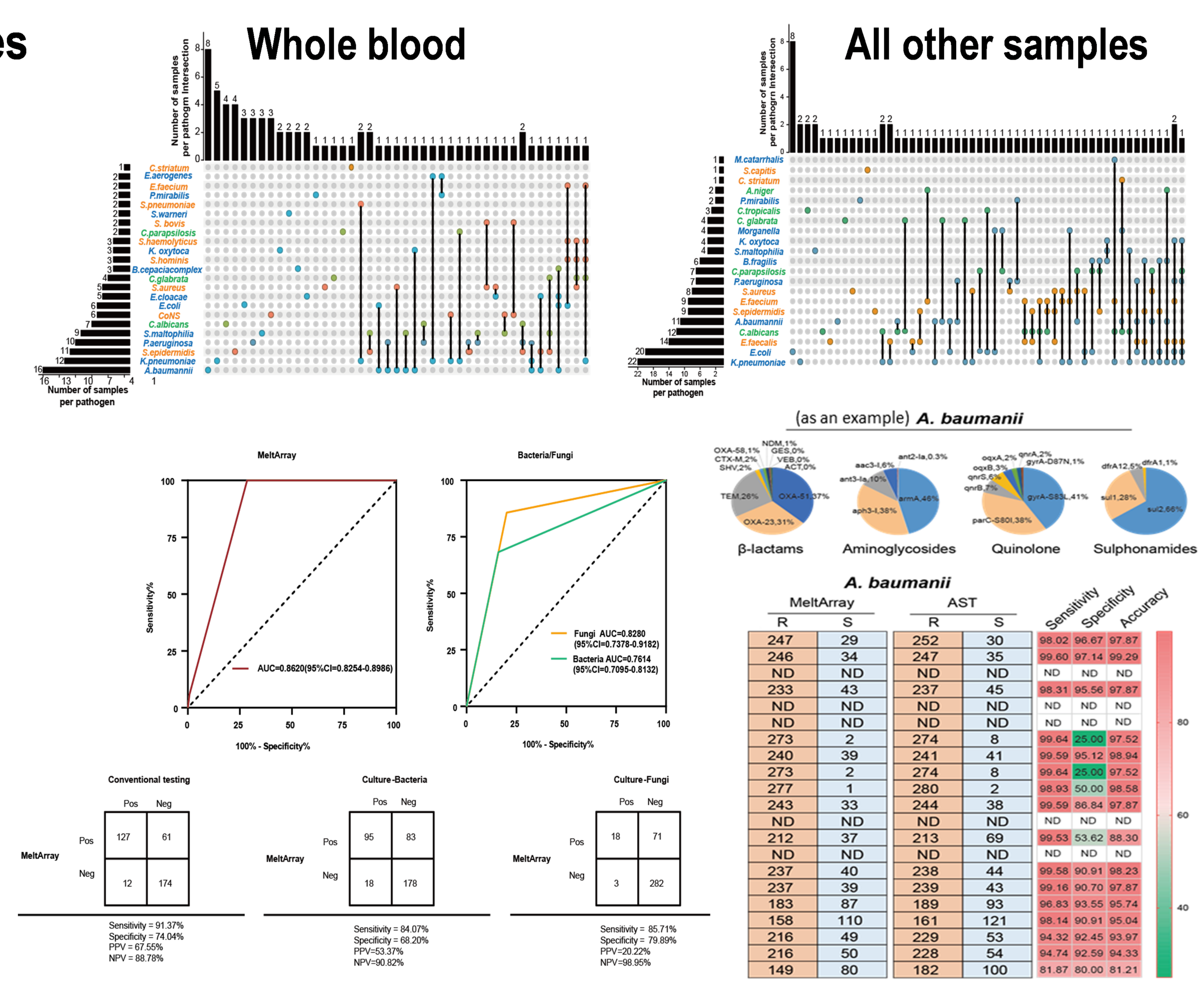


Fig 3. MeltArray vs conventional testing and drug susceptibility testing.

CONC.

Compared with current platform, MeltArray has the combined advantages of a short turnaround time, high sensitivity, wide pathogen coverage, and rapid antimicrobial resistance analysis. Implementation of the MeltArray approach may significantly improve current infectious diseases diagnosis and facilitate antibiotics stewardship programs.

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