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Taiwan develops microfluidic platform for rapid screening of diseases

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Personalized Antibiotic Screening Platform fAST automates both genotype and phenotype detections to identify bacteria within 1.5 hours and finish the multiple antibiotics combination test within 5 hours



Taiwan's Health and Biotech company MedFluid has developed the fastest, first-in-class antimicrobial susceptibility test that will aid in providing precise medical prescriptions to improve the health and well-being of patients.

Global research shows that 50% usage of antibiotics is inappropriate, and empirical treatment is one of the main causes. Empirical treatment usually gives 2~3 antibiotics at the same time to suppress unknown bacteria. However, no medical device currently in the market is able to conduct an antibiotics combination test to either confirm or predict if a combination is effective. Moreover, the current, time-consuming procedure for antimicrobial susceptibility test (AST) needs to be addressed urgently.

fAST: Platform for Rapid Detection and Screening of Disease Diagnoses

MedFluid's Personalized Antibiotic Screening Platform fAST automates both genotype and phenotype detections to identify bacteria within 1.5 hours and finish the multiple antibiotics combination test within 5 hours.

fAST / Automated bacteria identification and multiple antibiotics combination test. MedFluid used microfluidics as the core technique to develop the fAST in vitro diagnostic (IVD) system to support the precision medicine of antibiotics, targeting the emergence of antimicrobial resistance (AMR), which was one of the ten threats to global health identified by the WHO in 2019.

"We are the fastest first-in-class system on the market that can optimize three different kinds of antibiotic combinations, providing clinicians with accurate and personalized results," said Lee.

Building A Personalized Antibiotics Screening Platform

fAST has three major features, including sensitivity, rapidity, and flexibility. The optimized sensitivity lets users complete AST with only 1% of the samples required by current methods. Detection time has also been shortened to 5 hrs from the 24 hrs required by traditional methods. Moreover, fAST allows doctors to conduct personalized tests, even allowing combinations of up to 3 different kinds of antibiotics at once.

***Image Caption**: MedFluid was selected as a bridge to MassChallenge Taiwan Top 14 Startups, selected for Taiwan Tech Arena (TTA)'s 2019 Prototyping Program, and was a top-15 team in the MOST FITI Innovation & Startups Program.*