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iFAST Wins £500,000 Biomedical Catalyst Grant from InnovateUK

- New diagnostics spinout company wins £500k grant to optimise and prove its technology for patients with bloodstream infections
- Proof of concept data shows iFAST technology gives equivalent results to 'Gold Standard' but in 3.5 hours compared with 48.
- iFAST to lead 12-month project alongside UK Health Security Agency and University of Southampton

iFAST Diagnostics Ltd, a new spinout from Southampton University (UoS) has won a £500k Biomedical Catalyst Grant from InnovateUK to help it commercialise its ground-breaking rapid Antimicrobial Susceptibility Test (AST) for patients with bloodstream infections.

The company, together with UKHSA, has already shown that it can produce accurate AST results for patients with urinary tract infections (UTIs), which are the most common type of bacterial infections, within 4-5 hours of a urine sample being provided. This compares with 24-72 hours for the current laboratory gold standard.

However, patients with bloodstream infections, a major cause of sepsis, tend to be sicker than those with UTIs and thus the benefits of a rapid AST are very important. In early proof of concept testing on a small number of patient samples at Southampton Hospital, the iFAST technology has been shown to deliver results in under 4 hours compared with the gold standard which can take over 48 hours.

Dr. Toby King, CEO of iFAST, commented: "We are thrilled to be awarded this grant by InnovateUK, in collaboration with our long-standing partners at UKHSA and UoS. We firmly believe that this

funding will provide the impetus we need to bring the test to market for patients with bloodstream infections, who tend to be the ones most at risk from antimicrobial resistance.”

Prof Hywel Morgan, from UoS said: “If the preliminary data are reproduced in larger numbers then once the test protocol is optimised, we should be able to produce a cheaper, higher throughput test that delivers the same results in a fraction of the current time, enabling doctors to make the appropriate clinical intervention on day 0, which will save many lives.”

Prof Mark Sutton, Group Leader at UKHSA added: “We have been working with the iFAST technology for a couple of years now and continue to be amazed by how broad and adaptable it is, despite fundamentally being a simple concept. We look forward to working with the team to make it a reality for these patients who really need a fast test.”

Antimicrobial susceptibility testing (AST) is a technique used to identify the most appropriate antibiotic for the particular organisms infecting the patient. It avoids unnecessary use of inappropriate antibiotics, speeds up treatment and saves lives, particularly in cases of Sepsis and MRSA. However, current gold standards for AST typically take 48-72 hours, a prolonged delay that means clinicians rely on empirical treatment with broad-spectrum antibiotics until analysis can be completed.

A decade of research at the University of Southampton has led to a revolutionary diagnostic test. The iFAST platform enables the rapid identification of antibiotic susceptibility and resistance within a few hours of taking a patient sample. iFAST measures the electrical properties of 5,000 individual bacteria in 30 seconds using multi-frequency impedance in a microfluidic chip. The approach gives clinicians the ability to rapidly identify effective treatments for patients within a single shift, without disrupting the workflow in the lab.

The company has recently built its first systems for evaluation in hospitals and laboratories in the UK and beyond, and is already selling systems for

research use. It expects to bring clinical systems to market in 2025. Importantly, the technology enables a higher throughput of tests, using a smaller laboratory footprint and is expected to be cost competitive with the current gold standard methods.

Bacterial resistance to antibiotics is a critical worldwide challenge, often mentioned as the potential next pandemic. It is one of humanity's most imminent threats and has many causes, including over-use of antibiotics and climate change, which is rapidly expanding disease vectors. Antimicrobial resistance caused over 1 million deaths in 2019, more than malaria or AIDs, and is predicted to cause over 10 million a year by 2050, more than cancer.

You can follow iFAST via their website iFASTDiagnostics.com or on LinkedIn at [@ifast-diagnostics](https://www.linkedin.com/company/ifast-diagnostics).