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## **PATIENTS SUGGESTION LEADS TO NEW BRITISH COMPANY DEVELOPING THE WORLD'S FIRST 'HOME USE' BLOOD POTASSIUM TEST KIT**

- **Cambridge University spin out company wins funding prize**
- **Potential impact on tens of millions of people worldwide**

A fast, accurate and low-cost test for blood potassium levels, which can be used at home and has the potential to improve the safety, health and lifestyle of tens of millions of people worldwide, is being developed by Kalium Health.

Kalium, a Cambridge University spin out company has won the £25,000 Armourers & Brasiers Venture Prize to support the commercialisation of its materials science research.

Kidney diseases, as well as heart disease and treatments for high blood pressure, can be associated with potentially dangerous abnormalities of bodily potassium levels. Maintenance of potassium levels, within defined limits, is crucial to health as severe high or indeed low potassium can lead to heart rhythm abnormalities and sudden death.

“Currently, there is no medically approved, accurate blood potassium test available for use outside of hospital or centralised lab settings,” explained Professor Fiona Karet, a co-founder of Kalium, and Professor of Nephrology at the University of Cambridge. “This deprives millions of people with renal or cardio-vascular conditions, and their healthcare teams, of the opportunity to monitor and improve their health and well-being.”

“This ‘home test’ idea originated from patients at Addenbrooke’s Hospital who were asking to monitor their own blood potassium levels,” said Professor Karet. “We took this on board and are now developing a test-kit that enables blood electrolyte measurement in a small fingerprick drop of blood.”

The Kalium test kit will function in a similar way to a glucometer commonly used by diabetics. It will comprise an electronic reader linked to a smartphone, plus a single use disposable test-strip. This kit will be used by patients themselves, giving them the type of control over their lives and diets that millions of diabetics have enjoyed for decades. It can also be used by GPs and specialists who need a quick and convenient check of the patient’s potassium to better manage clinical decisions. And, also companies developing new medicines could benefit from having the device available in clinical trials.

The platform technology is based on miniaturized electrochemical sensing and will enable both healthcare providers and patients to obtain results instantly with hospital-grade accuracy at the point-of-care or at home. This will allow them to take action to reduce health risks.

“In the community, patients are currently dependent on trips to a hospital or community blood-taking services and centralised lab-based testing, and these are associated with inconvenience and a delay in obtaining results,” explained Professor Karet.

Patient groups which can be expected to benefit most from a new home test include dialysis and pre-dialysis chronic kidney disease patients, as well as those with inherited kidney disorders. Others include renal transplant recipients on immunosuppressants as well as some patients with severe eating disorders and intestinal failure as well as up to 25million patients worldwide on commonly-used medications such as ACE inhibitors or diuretics, which affect potassium.

Kalium, was launched last year with the project originating at the University of Cambridge, in a collaborative effort between researchers in the Cambridge Institute for Medical Research and the Department of Chemistry.

“The £25,000 prize will help buy critical equipment needed to address key technical challenges in commercialising the research,” said Professor Bill Bonfield CBE FRS, chairman of the Armourers and Brasiers Venture Prize judging panel. “Our prize looks to encourage scientific entrepreneurship in the UK and provides funding to help innovative developments like this realise their potential.”

The main initial funding that enabled the work to get off the ground came to the University of Cambridge from Kidney Research UK, with other contributions from Addenbrooke's Kidney Patients Association, Addenbrooke's Charitable Trust, Cambridge Enterprise, The Babraham Research Campus Accelerate@Babraham programme, Accelerate Cambridge and The Wellcome Trust Developing Concept Fund.

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**Notes to Editors:****About Armourers and Brasiers' Company**

The judging panel chaired by Professor Bonfield comprises senior scientists and representatives from the venture capital industry who are members of the Armourers and Brasiers' Company.

The Armourers and Brasiers' Company is a leading supporter of Materials Science education and research in the UK. Its Venture Prize is aimed at helping scientists commercialise the early stage research and the exploitation of new and exciting ideas. The Company also seeks to encourage education in science from primary to postdoctoral levels supporting schools and universities throughout the UK. [www.armourershall.co.uk/venture-prize](http://www.armourershall.co.uk/venture-prize)