MEDIA RELEASE

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ATTENTION: Chiefs of Staff, News Directors

Smart research to improve drug tests

Drug tests are about to get a whole lot faster and smarter thanks to a device to be created by a University of Tasmania researcher.

Dr Michael Breadmore of UTAS School of Chemistry's Australian Centre for Research on Separation Science (ACROSS) has been granted $705,000 over five years from the Australian Research Council (ARC) Discovery project (DP0984745), to develop a microfluidic device to test for drugs and metabolites in biological fluids.

This device will improve testing of pharmaceutical with the applications of pharmaceutical, forensic science – particularly the detection of performance enhancing substances, and therapeutical drug monitoring.

A microfluidic device is small, portable and relatively cheap to produce. This means the device developed by Dr Breadmore will be available for on-site and point-of-care testing.

"Currently these analyses are performed in specialised analytical laboratories with highly trained operators. They involve a number of labour intensive and complex steps," Dr Breadmore said.

"The development of the new device aims to speed up the process, requires smaller samples and would be of great benefit in rural and regional areas, particularly with therapeutic drug and forensic testing."

Dr Breadmore said therapeutic drug monitoring is performed for about 40 drugs around the world for such illnesses as cardiovascular disease, schizophrenia and HIV/AIDS. Drug concentrations to manage these conditions must remain at a steady state despite life events including pregnancy, illness and emotional and physical stresses.

"Thus fast and accurate monitoring is essential to maintain health, and this device would help with this," he said.

"This has the potential to significantly improve patient treatment particularly as samples do not need to be sent to a central laboratory for analysis - a process which can take weeks - nor does the patient need to leave the comfort of their home."

Similarly the improved speed device would assist in forensic issues.

Dr Breadmore said it would lead to faster apprehension of offenders and identification of supply chains.

“The development of this technology has clear and obvious benefits to both the individual and the community as a whole,” he said.

Dr Breadmore was also awarded a QEII fellowship from the ARC. QEII fellowships are available to researchers with up to eight years experience who have shown exceptional promise and capability in their work.

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