**TCS/25/25 - Rapid detection of acute rejection in kidney transplants through a novel bedside test**

A kidney transplant is often the best option for a better quality and quantity of life for patients whose kidneys have stopped working effectively, but around one in eight patients will experience rejection. Early detection is critical to ensure the best outcomes, but the standard way to check whether rejection is occurring is a kidney biopsy - an invasive procedure that involves removing a tissue sample from the transplanted kidney. The procedure can be painful, carries risks for patients, and takes time to process.

A rapid bedside test to detect acute rejection does not currently exist. Delays between the onset of abnormal transplant function -found on routine blood tests- and diagnosis are common. This delay causes significant anxiety for patients and leads to decision regret around their transplant. We have developed a novel test that can identify kidney rejection from a patient's urine sample within one hour using inexpensive equipment. Our initial work has shown that our test is accurate and highly acceptable to patients.

We will bring together experts in kidney medicine, translational chemistry and healthcare technology to determine how our test can be used to identify quickly and effectively early stages of rejection in patients with a kidney transplant across Scotland. This novel test will provide doctors with an accessible way to provide personalised patient care and reduce the impact of acute rejection on a patient's long-term health.