

Immune diagnostic for Coronary Artery Disease



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Medical technology and devices



> TRL 3-4
> Pre-Clinical

Problem

Early detection of coronary artery disease (CAD) remains a challenge due to the asymptomatic nature of early disease stages. Current diagnostic methods such as CT coronary angiograms involve radiation exposure and procedural risks. There is a need for a non-invasive, accurate diagnostic tool that can identify CAD in its early stages, particularly in patients without standard modifiable risk factors, to enable timely therapeutic interventions and improve patient outcomes.

Solution

We have developed an immune signature detectable by mass cytometry, correlating with the presence of CAD. This signature comprises altered proportions of specific peripheral blood immune cell subtypes. Mass cytometry analysis of circulating lymphocytes using a panel of markers can discriminate between patients with and without CAD. This immune signature is particularly predictive in individuals over 55 years, demonstrating potential as a non-invasive diagnostic tool for early CAD detection, avoiding radiation and procedural risks associated with current diagnostic methods.

Intellectual Property Status

This invention is the subject of PCT patent application PCT/AU2023/050886.

Potential Commercial Applications

A clinical diagnostic tool for early CAD detection; Can be integrated into existing cardiovascular risk assessment models; Could guide therapy decisions and patient management strategies; Developing new therapeutic targets for CAD treatment; and in precision medicine, offering personalized CAD risk assessment based on

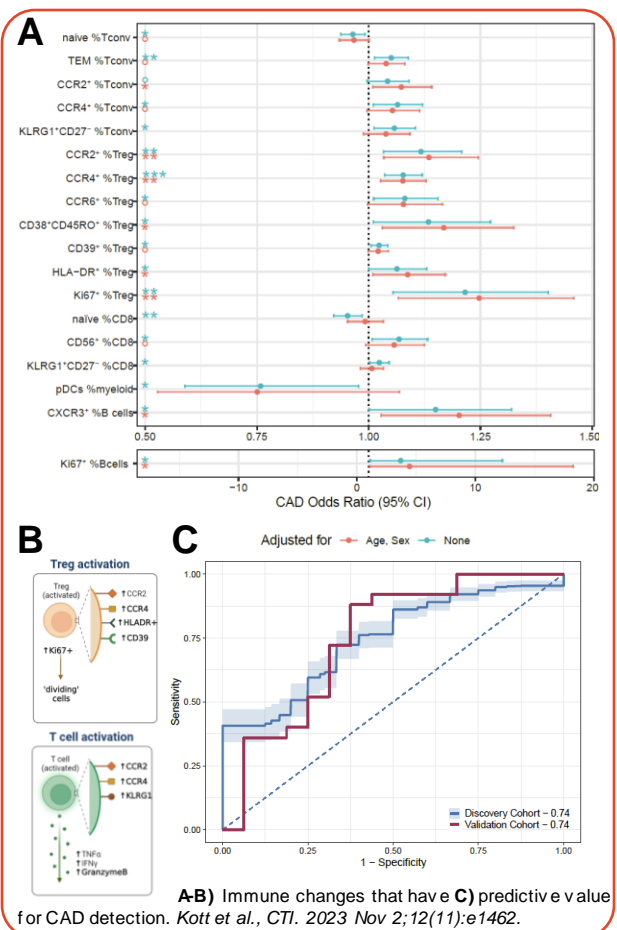
immune profile analysis.

Scientific Data

Additional data and information is available at: <https://doi.org/10.1002/cti.2.1462>

Inventors

Gemma Figtree, Katharine Kott, Ellis Patrick, Stuart Grieve, Jean Yang, Barbara Fazekas de St Groth, Helen McGuire, Adam Chan



Contact Commercialisation Office

Name: Dr Taylor Syme
Position: Commercialisation Manager (Medicine & Health)
Email: taylor.syme@sydney.edu.au | Phone: +61 468 517 473
sydney.edu.au/innovation-and-enterprise