

Immune monitoring assays using spectral flow cytometry

Advanced assays for cell characterisation and immunophenotype monitoring.

Background

Immune panels that include 30+ markers improve the ability to perform exploratory or targeted deep immune profiling.

Technology

Over the last decade, there has been an explosion in technological advances, which has seen an expansion in both the number of commercially available fluorescent dyes tagged to antibodies and the instrumentation.

Waipapa Taumata Rau | The University of Auckland was an early adopter of the recently developed Cytex spectral analyser, The Aurora. The combination of sophisticated equipment and a highly experienced flow cytometry team has enabled researchers at the University of Auckland to develop the capability to run assays that reliably distinguish as many as 40 cell markers.

The Aurora's innovative detectors and spectral unmixing software mean we can detect at least 30 colours off as few as three lasers or over 40 colours off five lasers. This capability provides outstanding quality data and enables far more information to be garnered from precious patient samples.

Major advantages

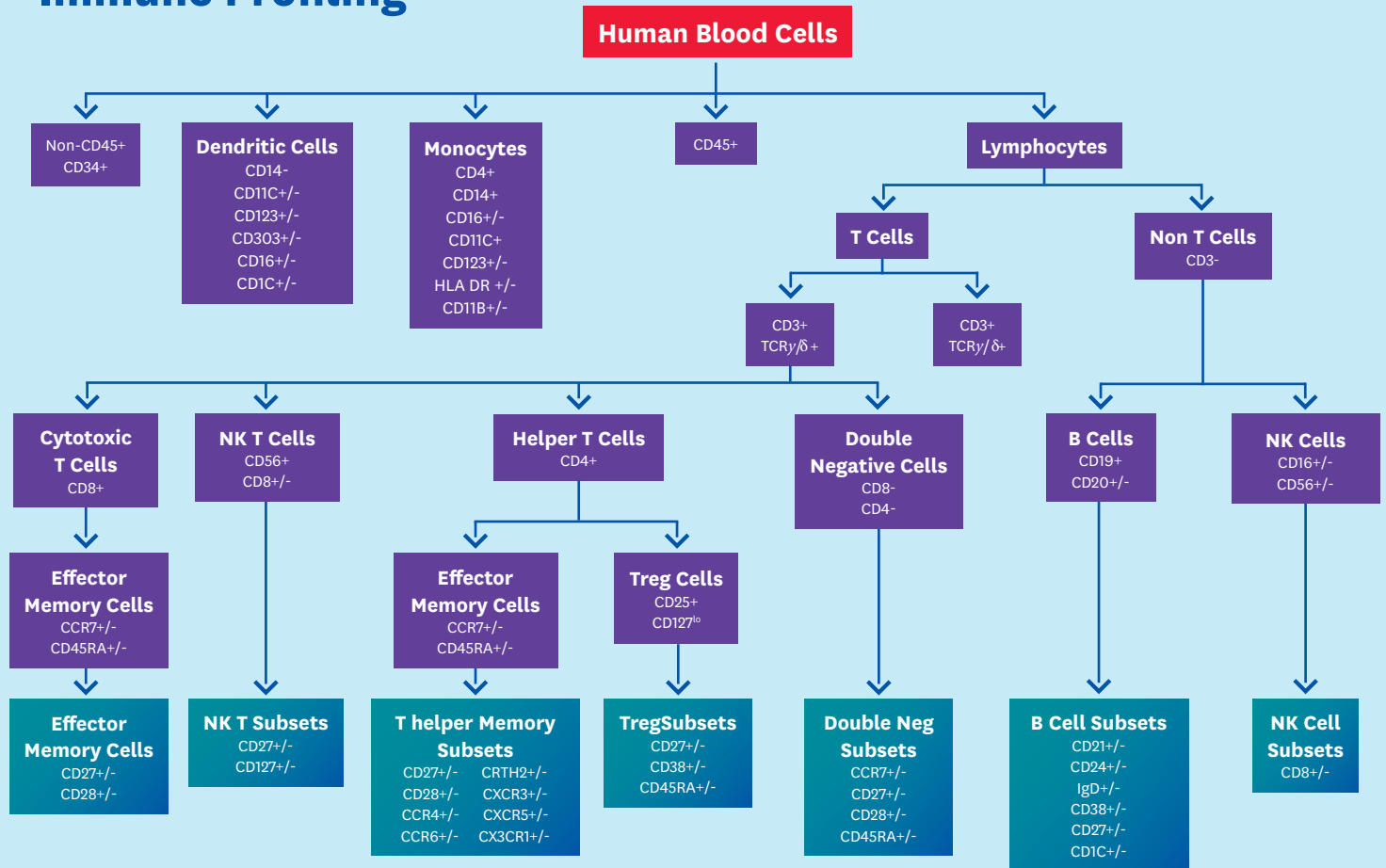
- More information collected from each sample.
- Ready-to-use immune panels from 26-40 colours.
- Ability to subtract cellular autofluorescence, which allows multicolour analyses of cultured cell products to be performed with ease.
- Pre-optimised reagent library allows for ability to rapidly customize existing panels or develop bespoke ones.

Applications

This unique capability enables various innovative applications in:

- Immune monitoring for drug/therapy trials (oncology, viral disease, vaccine responses, dietary interventions).
- Immune monitoring in whole blood or cryopreserved peripheral blood samples.
- Cell characterization from tissue biopsies (immune cells, stromal/stem cells).
- Characterization of cellular products for therapies (e.g., CAR T cells, mesenchymal cells).

Immune Profiling



Plus, subset/functional markers CD38, CD39, CD25, CD26, CD95, PD-1, HLA-DR, CD69, CCR2, CCR5, CX3CR1, + platelet exclusion: CD61/CD42b

UniServices

UniServices is a not-for-profit company of the University of Auckland that champions research and ideas with the power to change the world. From seeking out and bringing together partners in academic institutions, industry and government to build new knowledge and solutions through research; to whakatupu (nurturing) and commercialising the ideas and intellectual property that arise from the University of Auckland’s great minds, we act as the kaihono (those who join and link people to people, and people to projects) firmly entrenched in the ecosystem that bridges the world of academia with business, government and our communities.

University of Auckland

Waipapa Taumata Rau | The University of Auckland is New Zealand’s largest and leading university. The name Waipapa Taumata Rau, gifted to the University by Ngāti Whātua Ōrākei, refers to the ‘place of many peaks’ – places to strive for, ascend to and succeed. We also rank in the top 10 globally for sustainable development impact. The University supports economic growth locally and nationally through innovation and entrepreneurship, creating quality jobs and high-value businesses, and producing graduates that contribute to our economy and society for the benefit of all.

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