



Auto-immune response in cancer patients

Cancer patients exhibit an immune response to their tumours at the earliest stages of progression – often before clinical symptoms are apparent. We have developed a platform to isolate and identify auto-antigenic proteins directly from patient plasma. Studies are ongoing to identify and characterize such proteins as specific markers of the early stages of tumour formation.

Cancer patients are known to develop tumour-reactive auto-antibodies as their immune system attempts to destroy tumorigenic cells. This immune response can precede a clinical cancer diagnosis by several years and has been observed for most types of cancers, including in ovarian cancer patients. It is believed that this immune response is highly dynamic, and evolves as a direct consequence of a complex interplay between the patient's immune system and the developing tumour tissue. Evidence also suggests that this process is dynamic, and that the tumour antigens recognized by the patient's immune response change considerably over time.

As a part of our program of ovarian cancer biomarker discovery, we have developed a novel strategy to isolate auto-antigenic molecules directly from cancer patient plasma samples. Such a strategy does not rely on the primary source of the tumour; rather, it employs the immune system to detect and remember changes that have been recognized during the tumour's development and growth. We hypothesize that this group of auto-antigenic proteins represent an important subset of cancer markers that will contribute to the detection of early stage disease.

Our current data suggests that there is a previously unrecognized set of tumour-specific antigens that are specifically targeted by the immune system during cancer progression.



Ongoing work in the laboratory includes the characterization of these antigens; the comparative analysis of patient samples to identify potential markers of diagnostic and prognostic relevance; and the development of novel markers in validation assays for clinical application. Such proteins may also have therapeutic or preventative applications.

Team – Auto-immune cancer response

- Dr Andrew N. Stephens
- Dr Adam Rainczuk
- Dr Katie Meehan
- Mrs Nicole Fairweather
- Ms Rebecca Crook

Collaborators – external

- Professor Tom W. Jobling, Head, Department of Gynaecological Oncology, Monash Medical Centre



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