2020 Research Awards

Project Title:

The development of a tumour GPS for head and neck cancer and lung cancer

Lead Investigator:

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Collaborative Project Team:

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Project Summary:

Immunotherapies help your immune system to work harder and make it easier to destroy cancer cells. For head and neck cancers and lung cancers, there is a subset of patients that respond well to this form of therapy. Therefore, an innovative approach to identify patients likely to benefit from treatment will translate to clinical outcomes for patients. Identifying the benefit of treating these patients with immunotherapy prior to commencement of treatment is likely to target treatment to those likely to achieve the greatest benefit, in turn reducing the healthcare burden and patient associated toxicities of ineffective therapies. Providing the correct therapy is of utmost importance in delivering personalised care.

This project aims to spatially profile tumour tissue samples and understand how the mutational landscape assessed in a biopsy influences patient response to immunotherapy. The ability to spatially understand the tumour and immune cell interactions at this depth has not been previously possible and demonstrates a highly innovative approach for the selection of patients for immunotherapy.

Research Benefits:

In our proposed approach, we envisage profiling tumour biopsy samples from head and neck and lung cancer patients using highly multiplexed imaging. This novel technology is leading to fundamental changes in how tissue samples are analysed to understand the complex tissue architecture, which can lead to the development of techniques to identify patient responders from non-responders based on their individual tumour characteristics.

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