EDITH COWAN UNIVERSITY

PROJECT DETAILS

Project Title:

Role of adherent-to suspension transition in the metastatic dissemination of melanoma

Project Summary:

Summary:

Although metastasis is the foremost cause of cancer-related death, a specialized mechanism that reprograms anchorage dependency of solid tumour cells into circulating tumour cells (CTCs) during the metastatic cascade remains elusive. The Adherent-to-Suspension Transition (AST) has been proposed as a reprogramming of adherent cells into suspension cells via the aberrant induction of hematopoietic transcriptional regulators, which are hijacked by solid tumour cells to disseminate into CTCs.

Here we aim to investigate melanoma dissemination by using a synthetic epigenetic reprogramming approach to alter AST factors. The project will use mouse models and de novo metastatic patient specimens to uncover how Adherent-Suspension Plasticity (ASP) dictates anchorage plasticity during the dissemination and colonization process within the metastatic cascade.

Expected Outcomes and Impact:

The results will uncover therapeutic strategies that target AST factors that can be deployed to abrogate CTC formation and suppress distant metastases specifically. These findings will underscore an important early mechanism by which cancer cells spread and highlight novel targets for the development of anti-metastatic therapies.

Preferred Applicant Skillset:

We are seeking a highly motivated and diligent HDR applicant who has demonstrated the capacity to work independently. A background in cancer research, genetic engineering and molecular biology is required.

Highly desirable skills:

- Experience in working with animals and managing animal research ethics,
- Experience with bioinformatics analysis using R, python and/or command line.

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