Construction of Tissue Microarrays for Cancer Research

Host School/Institute: Kolling Institute of Medical Research, Northern Clinical School
Project Code: NCS8

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Description of Project:

Tissue microarrays enable rapid analysis of molecular markers associated with disease. They are constructed by taking small core biopsies (approx. 1mm) from paraffin blocks of neoplastic and normal tissues and assembling them in an array format on a recipient paraffin block[1]. In this way, single slides may facilitate high throughput interrogation of over 100 specimens using techniques such as immunohistochemistry and *in situ* hybridisation. This project will involve the construction of tissue microarrays from mouse and human normal and cancer specimens using the Advanced Tissue Arrayer (ATA100; Chemicon Pty Ltd.). Further, it will involve the development of strategies to determine the best formats for tissue arrays, as well as databasing specimen information. If time permits, preliminary immunohistochemistry for expression of proteins such as BRCA1 and/or hybridisation to determine the presence of specific microRNAs will be performed. The person undertaking this project will work closely with members of the Functional Genomics Laboratory, Hormones and Cancer Group at the Kolling Institute, including tumour bank staff. They will also work with pathologists and technicians in Anatomical Pathology at Royal North Shore Hospital. The Kolling Institute is made up of over 250 researchers and is located in new state-of-the-art facilities at Royal North Shore Hospital.

[1]Permuth-Wey *et al.* Sampling strategies for tissue microarrays to evaluate biomarkers in ovarian cancer. Cancer Epidemiology Biomarkers & Prevention 2009; 18(1):28-34.

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