



Project Title: Role of RNA binding proteins in cancer cell immortality		Code: CMRI5
Host School / Institute: Children's Medical Research Institute		Address: 214 Hawkesbury Road, Westmead, NSW 2145
Certificates & Clearances required: No		
Primary Supervisor: Dr Alexander Sobinoff		
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Co-Supervisor/team: Dr Sobinoff's research group within the Telomere Length Regulation Unit at the Children's Medical Research Institute (CMRI) consisting of two PhD students, an honours student and a research assistant.		
Project Type: Laboratory based		
Project Category: Cancer; Ageing		
Skills / Attributes of a successful student: Keen interest in cancer cell biology. Practical experience in molecular biology is welcomed but not essential. The student will be trained in all aspects of relevant laboratory methods. The student should be willing to work hard and ask lots of questions.		
Project Keywords: Cancer Biology; Cellular Biology; Molecular Biology; Telomeres		
<p>Project Description: Each time your cells divide, telomeres—specialised DNA/protein structures that protect the ends of your chromosomes—become progressively shorter. When our telomeres become too short, our cells will cease to divide and eventually die. As cancer cells divide uncontrollably, telomere shortening acts as a barrier to tumour formation. To become immortal and invade the surrounding tissue, cancer cells must find a way to maintain their telomere length.</p> <p>You will be working as part of a team of researchers focused on identifying and exploiting vulnerabilities in cancer cell telomere biology with the goal of developing new therapies for cancer treatment. Your project will involve elucidating mechanisms of cancer cell immortality as part of our strategy for dealing with tumour re-population and immortalisation after conventional chemotherapy. You will be performing a range of techniques covering multiple aspects of molecular/cellular biology, biochemistry, and microscopy. These include live cell imaging to analyse cell cycle dynamics, telomerase activity assays, telomere-FISH, and co-immunoprecipitation experiments.</p> <p>This project will give you hands-on experience in cutting-edge microscopy and telomere-based techniques. You will also gain experience in bacterial/mammalian cell culture, PCR and image processing. As part of the group, you will also be exposed to the development and adaptation of scientific techniques to address unique questions that arise from your, and others, research.</p>		