

I would like to thank the RCPA Foundation for their generous support during my PhD at the Walter and Eliza Hall Institute of Medical Research. My research focuses on multiple myeloma (MM), a malignancy of antibody-secreting plasma cells, that is currently incurable. The immunomodulatory drugs (IMiDs), one of the most effective classes of drugs in MM, have recently been found to lead to the degradation of two related proteins: Ikaros and Aiolos. Ikaros and Aiolos are transcription factors that are essential for normal B lymphocyte development, however their role in a plasma cell, and particularly why their loss leads to MM cell death, is currently unknown. In my PhD, I have investigated the role of these transcription factors in multiple myeloma to gain further understanding into the action of the IMiDs. I have used CRISPR-Cas9 genome editing technology to delete these genes in human myeloma cell lines in order to gain further insight into their gene regulatory networks. In the final stages of my PhD I am trying to translate these findings into improvements in patient care through the identification of therapeutic agents that will result in synergistic MM cell death in combination with loss of Ikaros/Aiolos (or IMiD treatment).