



RACP Foundation Research Awards

FINAL REPORT

Project / Program Title	Single-cell genomic interrogation of poor-risk Hodgkin lymphoma to annotate intraclonal heterogeneity and evolution at relapse	
Name	A/Prof Jake Shortt	
Award Received	2018 Robert Maple-Brown Research Establishment Fellowship in Haematology	
Report Date	28 Feb 2019	
Chief Investigator / Supervisor	A/Prof Jake Shortt	
Administering Institution	Monash University	
Funding Period	Start Date:	1 January 2018
	Finish Date:	31 December 2018

PROJECT SUMMARY

We have successfully performed intact nuclear extractions from formalin fixed paraffin embedded (FFPE) Hodgkin lymphoma (HL) samples and compared to results from FFPE cell blocks generated as control material from HL cell lines. Flow cytometry revealed clean DNA-content profiles for the extracted nuclei allowing cell sorting on the G2M peak. As the light scatter characteristics did not further differentiate HL from non-HL nuclei, we are now optimising a new technique to dissociate intact whole cells from FFPE. This will identify HL cells by surface antigen expression and offer broader applicability to other lymphomas. Genomic interrogation on patient FFPE samples will be performed once the sorting techniques are optimised. However, we have already designed a capture-based NGS panel including the top 10 most frequently mutated genes in HL which is being tested on bulk HL tumour DNA extracts prior to pure (sorted) lymphoma nuclei.

PROJECT AIMS / OBJECTIVES

SIGNIFICANCE AND OUTCOMES

Our FFPE-sorting technique will unlock the potential of archived pathology blocks for genomic research.

PUBLICATIONS / PRESENTATIONS