

Novel cancer immunotherapy platform: next generation DC1 cell therapy

The Problem

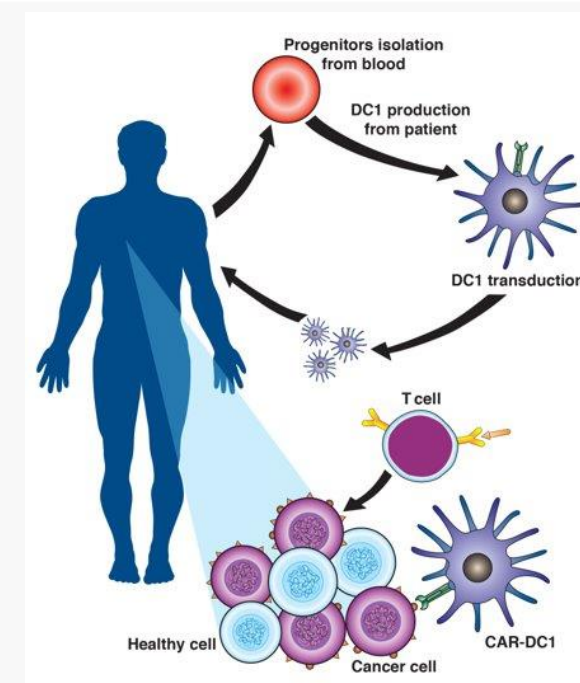
- Dendritic cells (DCs) are powerful immune regulators that hold a lot of promise as novel cell-based anti-cancer therapies.
- To date, cell therapies based on DCs have exhibited limited efficacy.
- Generation of sufficient numbers of the appropriate DC subset has been a major limitation.

The Solution

- Use the type 1 DC (DC1) subset bearing superior antigen-presenting capability, engineered with a proprietary CAR design for:
 - Better tumour infiltration
 - Activation of immune system to kill tumour cells
 - Recognition of multiple tumour antigens (epitope spreading)
 - Longer persistence of therapeutic response
- Use novel culture conditions to generate DC1 cells at scale.

Our Program

- Progress: Identified lead candidate CAR construct and generated strong preliminary POC data for tumour control
- Next steps: Further proof of concept data on *in vivo* tumour control including benchmarking with current therapies, improve human DC1 culturing scalability and investigate a lipid nanoparticle approach
- Vision: a pipeline of targeted CAR-DC1 therapies for solid cancers



CAR-DC1s home better to tumours and activate a polyclonal, tumour-lytic T-cell response

Our Team

Prof. Stephen Nutt, CAR-DC development
Dr. Shengbo Zhang, CAR-DC development
Prof. Shalin Naik, DC biology and manufacturing
Dr. Cindy Audiger, DC biology and manufacturing

Dr. Amanda Woon, Entrepreneur Scientist
Dr. Ewa Michalak, Senior Business Development
Manager michalak.e@wehi.edu.au