## ▶ Asset Overview

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| **Product Type** | Cell therapy |
| **Disease Area** | Oncology |
| **Indication** | Solid tumors |
| **Current Stage** | Phase 1 completed |
| **Target** | combining EphA3-CAR and CMV |
| **MoA** | tumour regression in an orthotopic GBM |
| **Brief Description** | Adoptive T cell therapy is a promising treatment option for solid tumours but faces numerous obstacles<br>There are 3 components to QIMR's novel T cell therapy<br>QIMR developed a CMV-specific T-cell therapy for the treatment of solid tumours and transplant indications<br>QIMR completed 3 clinical trials using CMV immunotherapy in GBM and transplant patients with promising results<br>The CMV T cell therapy improved survival in primary GBM patients treated prior to progression<br>The CMV T cells can be used as a safe and effective delivery platform for adoptive immunotherapy |
| **Intellectual Property** | US20200316119A1 |
| **Publication** | - |
| **Inventors** | Rajiv Khanna, Corey Smith |

## ▶ Highlights

- EphA3 is a potentially safe, solid-tumour target for the CMV CAR T cell Platform
- Adoptive immunotherapy with EphA3 CAR T cells leads to complete tumour regression in an orthotopic GBM model
- Cellular immunotherapy combining EphA3-CAR and CMV-specific targeting will augment tumour-specific immunity and prevent immune escape
- Enrichment using the novel stemness marker CD49f will further enhance the efficacy of CMV-EphA3 CAR T cells
- T memory stem cells (Tscm) have emerged as a powerful tool for improving CAR T cell therapy efficacy and safety
- We identified CD49f as a marker for Tscm, and cells are more proliferative in vitro
- The CMV platform, EphA3 targeting and CD49f enrichment will combine to overcome hurdles in treating solid tumours with immunotherapy
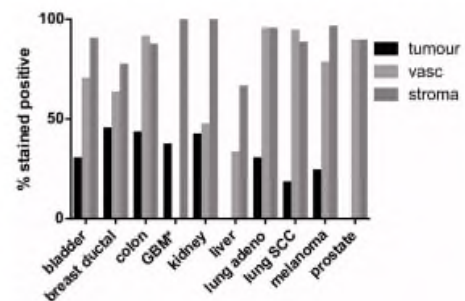
▶ **Key Data**

## EphA3 is a potentially safe, solid-tumour target for the CMV CAR T cell platform

- EphA3 promotes cancer stem cell self-renewal
- EphA3 is highly expressed on multiple cancer types, including GBM, NSCLC, colorectal prostate, renal and leukemia
- EphA3 is expressed in stromal and vascular tissues of human tumors but virtually undetectable expression in normal adult tissues and organs
- Targeting of EphA3 inhibits tumor growth by disruption of the architecture and function of the vascularised tumour microenvironment
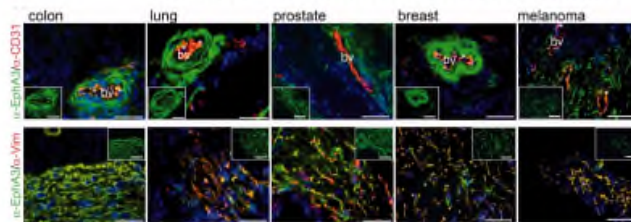


Cancer Res (2014) 74 (16): 4470–4481.

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