531 LMP2-TCR Transduction Therapy

Asset Overview

Product Type	Cell Therapy
Indication	Oncology
Current Stage	Preclinical
Target(MoA)	LMP2-TCR transduced T-cells
Brief Description	• HLA-A*1101 restriction makes this LMP2-TCR transduction therapy especially applicable to the Chinese population • Targeting the LMP2 viral epitope removes concern over on-target toxicity associated with most cell based therapies • Gene transfer approach for TCR clones enables significantly faster (48 h) preparation of patient derived T cells compared to alternative co-culture methods (9 weeks)
Organization	Cancer Research UK

Differentiation

□ **Cell therapy for the region-specific patients population**

- Cancer targeting cell therapies are being widely developed and taken into the clinic where they are proving to be potent treatment modalities to accompany or replace current standard of care
- Nasopharyngeal carcinoma (NPC) is unusually common throughout China and Southeast Asia, where it accounts for 63% of the 87,000 NPC cases worldwide
- In southern China it is the third most common cancer in men
- While radiotherapy is the first-line treatment for NPC, it is often diagnosed late
- 60%-90% patients present with late stage disease dramatically reducing survival rates
- In high incidence regions, relapse following primary treatment occurs in nearly 80% patients and is the leading cause of death from NPC
- Consequently there is a real need for novel approaches to treat NPC

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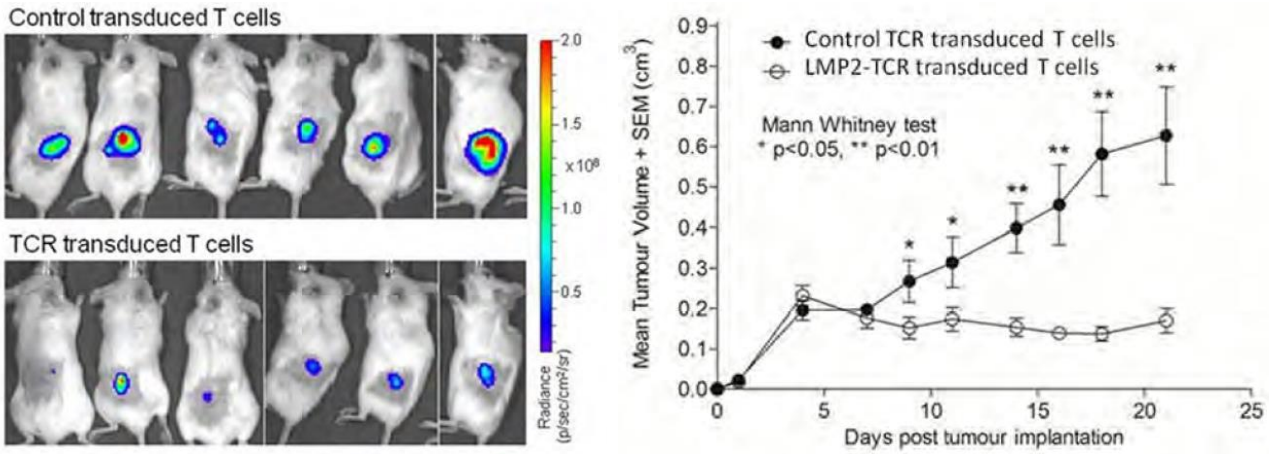
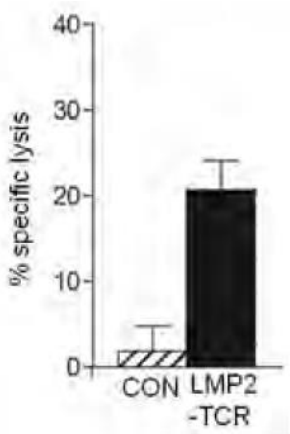
Key Data

Transduced T-cells expressing the target epitope significantly inhibit tumor growth *in vivo*.



Mice with HLA*A1101, LMP2 and luciferase expressing xenografts were treated with T-cells transduced with either a control TCR or the LMP2 TCR and monitored for 3 weeks. Quantification of the tumor volume via luminescence and caliper measurement shows the significant reduction in tumor size in mice treated with LMP2-TCR transduced T-cells compared to control transduced T cells.

LMP2-TCR transduced T-cells from NPC patients are cytotoxic to NPC cells.



T cells from two advanced NPC patients were transduced with a control TCR (CON) or the LMP2-TCR and co-cultured with NPC cell lines. Cytotoxicity (% specific lysis) after 5-8 hours was measured with chromium release assay. The graph shows a significant increase in lysis and therefore cytotoxicity in the LMP2-TCR co-cultures.

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Intellectual Property

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Status	Application Pending
Country	CN, SG, GB

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