T-Cell Immunotherapy for Cytomegalovirus

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Description:

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Summary

Cytomegalovirus (CMV) re-activation is a substantial clinical problem in immune suppressed individuals, such as transplant patients. We have developed a novel immunotherapy that produces a CMV-specific therapy targeting CMV re-activation, via T Cell Receptors (TCR). The therapeutic efficacy of this TCR will be further examined through an MRC-funded Phase 1/2a clinical study, beginning in 2011.

The Technology and its Advantages

TCR is becoming an established area of therapy, particularly in Multiple Sclerosis and Rheumatoid Arthritis. Typically these therapeutics operate via cytotoxic killer T cells, which is known to be suboptima.

Our results show that this TCR therapy works through both cytotoxin killer T cells and helper cells. Thus, our TCR gene therapeutic can simultaneously produce CMV-specific killer cells and helper cells.

The therapeutic efficacy of this TCR is expected to be greater than that of a conventional TCR, which typically only works in killer T cells. Redirecting both killer T cells and helper T cells is expected to control CMV infection most efficiently.

Market Opportunity

CMV is a serious problem in transplantation medicine; for example, in liver transplantation CMV occurs in 50% of cases. The cost of treatment is high, with drug treatment alone having a direct cost in excess of $30k per patient. There are more than 27,000 transplants in the United Stated last year.

Intellectual Property Status

Patent application submitted 29th September 2009 (No. 0917094.5)

Further Information

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