T-cell Receptor Recognizing Renal Cell Carcinoma

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Technology description

Summary

Renal cell carcinoma (RCC) is the most common renal tumor with approximately 30,000 cases per year in the USA. The survival rate for this cancer is very low, where only 10% of patients survive because this carcinoma is resistant to most chemotherapies.
This technology describes a T cell receptor that was cloned from a human immune cell. This T-cell receptor recognizes a number of human kidney tumors and is not limited to use in patients with specific MHC types. This cell was able to kill other kidney cancer cells in other patients, and when this T-cell was introduced into other human immune cells, these cells also acquired the ability to kill kidney cancer cells. This invention also describes novel methods using dendritic cells to generate both CD4+ and CD8+ RCC- reactive T cells for use in antigen identification and therapeutic protocols. This is the first and only cloned T-cell receptor that recognizes a majority of human kidney tumors.
Market:
There are approximately 30,000 new estimated cases of renal cell carcinoma per year in the USA
The total market size in the USA in the range of $2 billion dollar

Application area

A therapeutic for patients suffering from renal cell carcinoma
A novel method using dendritic cells to prime T-cell responses
A novel method of constructing and inserting light chain genes of the T-cell receptor into other patient's T-cells

Institution

NIH - National Institutes of Health

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