
A phase I trial of intratumoral administration of CCL21-gene modified dendritic cell (DC) combined with intravenous pembrolizumab for advanced NSCLC

Grant Award Details

A phase I trial of intratumoral administration of CCL21-gene modified dendritic cell (DC) combined with intravenous pembrolizumab for advanced NSCLC

Grant Type: Clinical Trial Stage Projects

Grant Number: CLIN2-10784

Project Objective: Complete a phase I trial of intratumoral administration of CCL21-gene modified dendritic cell (DC) combined with intravenous pembrolizumab for advanced NSCLC

Investigator:

Name:	Steven Dubinett
Institution:	University of California, Los Angeles
Type:	PI

Disease Focus: Cancer, Lung Cancer, Solid Tumors

Human Stem Cell Use: Adult Stem Cell

Award Value: \$11,815,315

Status: Active

Grant Application Details

Application Title: A phase I trial of intratumoral administration of CCL21-gene modified dendritic cell (DC) combined with intravenous pembrolizumab for advanced NSCLC

Public Abstract:**Therapeutic Candidate or Device**

Combination therapy with adenoviral CCL21 gene-modified DC and pembrolizumab

Indication

Patients with confirmed and measurable stage IV NSCLC expressing PD-L1 in less than 50% of cells who are naïve to systemic treatment for NSCLC.

Therapeutic Mechanism

The central rationale this approach is to utilize in situ vaccination with intratumoral injection of functional antigen presenting cells that take advantage of the full repertoire of available tumor antigens. We, and others, have found that this can convert the tumor site into a lymph node-like environment and thus promote specific T lymphocyte activation both locally and systemically.

Unmet Medical Need

~80% of NSCLC patients treated with anti-PD-1 do not respond. We have found that IT injection of Ad-CCL21-DC can induce tumoral CD8 T lymphocyte, enhance tumor antigen presentation in situ, and trigger systemic antitumor immunity. This supports the rationale for combination therapy.

Project Objective

Completion of phase 1 combination therapy

Major Proposed Activities

- GMP manufacture of gene modified autologous cellular product
- phase 1 dose escalation and expansion cohorts for combination therapy
- Monitoring of clinical and immune responses

Statement of Benefit to California:

Each year many Californians are diagnosed with lung cancer. The majority of patients are diagnosed with advanced disease. Because 5 year survival in advanced disease is less than 5%, lung cancer is the state's leading cause of cancer related death. This combination therapy could afford a major opportunity for a new and effective therapy for the 80% of patients who do not respond to immunotherapy. This form of therapy may also be broadly applicable to other types of malignancies.

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