T Cell Signature Predictive of Clinical Outcome with Immunomodulatory Treatment

Published date: June 2, 2018

Technology description

Using mass cytometry, UCSF investigators identified a population of T cells that can be quantitated in the blood of melanoma patient prior to treatment with anti-CTLA-4 antibody that is correlated with improved overall survival. The distinct set of biomarkers expressed in these T cells can be used to determine which patients to treat.

Furthermore, the investigators found that the T cells in the peripheral blood of melanoma patients who went on to respond to Ipilimumab express low levels of another set of biomarkers, which can predict the outcome in patients who have already begun treatment.

All of the biomarkers described above can be detected with conventional methodologies in clinical diagnostics, such as flow cytometry and are further described in the publications referenced below. Biomarkers to predict responsiveness to anti-CTLA-4 antibodies

Additional Information

Data Availability

Clinical trial data described in publications

Related Materials

Spitzer, M. H., Carmi, Y., Reticker-Flynn, N. E., Kwek, S. S., Madhireddy, D., Martins, M. M., ... & Fong, L. (2017). Systemic immunity is required for effective cancer immunotherapy. Cell, 168(3), 487-502.

Kwek, S. S., Kahn, J., Greaney, S. K., Lewis, J., Cha, E., Zhang, L., ... & Spitler, L. E. (2016). GM-CSF and ipilimumab therapy in metastatic melanoma: Clinical outcomes and immunologic responses. Oncoimmunology, 5(4), e1101204.

Additional Technologies by these Inventors

NOVEL ANTIGEN TARGETS IN AUTOIMMUNE DISEASES (LUPUS AND TYPE I DIABETES) USEFUL FOR VACCINE DEVELOPMENT AND TREATMENT

Prospective Isolation Of Tumor-Reactive Cytotoxic CD4+ T Cells For Bladder Cancer Therapy

Advantages

The anti-CTLA-4 antibody, Ipilimumab, also known as YERVOY, was FDA approved for the treatment of metastatic melanoma in 2011. Ipilimumab works by inhibiting CTLA-4, a protein on T-cells that prevents them from attacking cancer cells. Only about 10-20% of melanoma patients respond to Ipilimumab. Since Ipilimumab works by stimulating the immune system, it can cause severe, potentially fatal, side effects, such as stomach pain, bloating, constipation or diarrhea, but also fever, breathing or urinating problems. Thus, it is critical to develop a diagnostic to predict which patients will respond treatment. No such method exists to date.

In addition to melanoma, clinical trials for the treatment of non-small cell lung carcinoma (NSCLC), small cell lung cancer (SCLC), bladder cancer and metastatic hormone-refractory prostate cancer with Ipilimumab are underway. Therefore, these biomarkers to predict the responsiveness of tumors to anti-CTLA-4 antibodies could benefit many cancer patients.

Institution

University of California, San Francisco

Inventors

Jera Lewis
Lawrence Fong
Serena Kwek MacPhee

联系我们

叶先生

电 话：021-65679356
手 机：13414935137
邮 箱：yeyingsheng@zf-ym.com