Blood Based T Cell Biomarker For Cancer Diagnosis And Treatment

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INVENTION NOVELTY

In cancer care, specific characteristics of T cells can be used to measure a patient's response to immunotherapy. Using single-cell RNA-sequencing coupled with TCR sequencing, scientists at UCSF and Harvard detected CD8+ T cell clones shared between blood and tumor in mice and melanoma patients, characterized these matching clones in blood and tumor, and identified potential biomarkers for their isolation in the blood. Their method reveals specific protein signatures (biomarkers) on the surface of T cells that can be therapeutically targeted to treat melanoma and other forms of cancer. It presents a very attractive alternative to obtaining invasive biopsy samples from the tumor, and can be done much more quickly.

VALUE PROPOSITION

- Safer and less invasive than obtaining a tumor biopsy
- Minimizes delays in cancer diagnosis and treatment
- Can be easily applied in clinical trials for immunotherapies, thereby facilitating drug discovery

RELATED MATERIALS

- Single-cell analyses identify circulating anti-tumor CD8 T cells and markers for their enrichment - 10/01/2020

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20220347278	11/03/2022	2020-162

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OTHER INFORMATION

KEYWORDS

T Cell, Biomarkers, Blood-Based Diagnostic

CATEGORIZED AS

- Medical
  - Diagnostics
  - Disease: Cancer
  - Therapeutics

RELATED CASES

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