



Surfaceome Profiling Of Advanced Prostate Cancer To Identify Target Antigens For Immune-Based Therapy

Tech ID: 29785 / UC Case 2018-571-0

SUMMARY

Dr. Witte and colleagues at UCLA have developed a novel approach to identify surface biomarkers and targetable antigens in prostate cancer by combining multiple omics analyses across different cell lines.

BACKGROUND

Prostate cancer is the most common non-skin cancer diagnosed in men. Despite the prevalence of this disease, the heterogeneity and plasticity of advanced prostate cancer has hindered the identification of therapeutic targets. Previously identified cell-surface targets for prostate cancer appear to vary in expression between different cancer subtypes. Adding to this, cancer biomarkers and protein targets are notoriously difficult to validate and rarely succeed in being approved for the clinic.

In recent years, the development of next-generation sequencing (NGS) techniques and mass spectrometry (MS) have provided detailed information about gene and protein expression profiles in disease, respectively. These tools produce data with high sensitivity and have become the basis for gene/protein identification platforms throughout the medical field. However, novel strategies utilizing these tools are necessary to further develop their use for therapeutic target identification in cancer.

INNOVATION

UCLA researchers have developed an analytical method to identify potential surface biomarkers and therapeutic targets that utilizes data from both NGS and MS analyses. The combination of these two datasets is rare due to the limited sensitivity of MS data as compared to RNA-sequencing. This approach was capable of identifying novel surface proteins that are specific to different subtypes of prostate cancer.

APPLICATIONS

- ▶ Surface protein biomarker identification for various diseases
- ▶ Identification of therapeutic targets in different diseases

ADVANTAGES

- ▶ Identification of high-confidence protein targets
- ▶ Targets identified are specific enough to distinguish cancer subtypes

STATE OF DEVELOPMENT

The researchers have demonstrated this approach to work in identifying target proteins in different prostate cancer lines. These targets were validated for potential therapy and the results are expected to be submitted for publication soon.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20210236548	08/05/2021	2018-571
European Patent Office	Published Application	3781592	02/24/2021	2018-571

CONTACT

UCLA Technology Development Group
ncd@tdg.ucla.edu
tel: 310.794.0558.



INVENTORS

- ▶ Witte, Owen N.

OTHER INFORMATION

KEYWORDS

Prostate cancer, biomarker, cancer target, antigen, surface marker, surfaceome, proteomics, proteome, RNA-sequencing, transcriptome

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Bioinformatics
 - ▶ Proteomics
- ▶ **Research Tools**
 - ▶ Bioinformatics

RELATED CASES

2018-571-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Nucleic Acid Tetramers For High Efficiency Multiplexed Cell Sorting](#)
- ▶ [Mouse Model Deficient for the Proton Sensing Gpcr T-cell Death-associated Gene 8 \(tdag\)](#)
- ▶ [Anti-Human Deoxycytidine Kinase \(dCK\) Monoclonal Antibody](#)
- ▶ [Novel Non-Immunogenic Positron Emission Tomography Gene Reporter](#)
- ▶ [Targeted Mass Spectrometry Approaches To Detect Kinase Pathways For Personalized Medicine](#)
- ▶ [G2A GPCR Deficient Mouse Model and G2A Monoclonal Antibody](#)
- ▶ [Proton-sensing G Protein-coupled Receptor 4 Knockout](#)
- ▶ [Derivation Of A Human Neuroendocrine Prostate Cancer Cell Line With Defined Oncogenic Drivers](#)
- ▶ [Novel Polyclonal Antibody to Detect a Bruton's Tyrosine Kinase Phosphorylation Site](#)
- ▶ [Non-Immunogenic Positron Emission Tomography Gene Reporter Systems](#)

Gateway to Innovation, Research and Entrepreneurship

UCLA Technology Development Group

10889 Wilshire Blvd., Suite 920, Los Angeles, CA 90095

<https://tdg.ucla.edu>

Tel: 310.794.0558 | Fax: 310.794.0638 | ncd@tdg.ucla.edu

© 2018 - 2021, The Regents of the University of California

[Terms of use](#)

[Privacy Notice](#)

