Methods and Compositions for Treating Prostate Cancer with DNA Vaccines

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a DNA vaccine for treating prostate cancer.

OVERVIEW

Prostate cancer is the second most common form of cancer among North American men. Current therapies for prostate cancer involve either removing the entire gland or treating it with radiation; however, microscopic metastatic disease often remains.

THE INVENTION

A UW-Madison researcher has developed a DNA vaccine for treating prostate cancer. The vaccine consists of a plasmid vector that contains a DNA sequence encoding the enzyme prostatic acid phosphatase (PAP) and a transcription regulatory element. PAP is expressed almost exclusively in prostate tissue. Serum levels of PAP are low in healthy individuals, but elevated in individuals with prostate cancer. When the vaccine is administered to a patient, it induces a cytotoxic immune reaction against cells expressing PAP. This leads to destructive prostatitis (inflammation of the prostate gland), killing the prostate cells.

APPLICATIONS

• Treating prostate cancer, including microscopic metastatic disease

KEY BENEFITS

• Induces both cellular and humoral immune reactions against PAP
• Selectively kills any PAP-expressing cells
• May eradicate microscopic metastatic disease following removal of the prostate’s primary malignant portion
• May be used as an auxiliary treatment to prostate removal or radiation therapy
• Relatively easy and inexpensive to manufacture
• Does not need to be individualized for patients
• Patients can be repeatedly immunized

THE WARF ADVANTAGE

WARF: A Leader in Technology Transfer Since 1925
Since its founding as a private, nonprofit affiliate of the University of Wisconsin–Madison, WARF has provided patent and licensing services to UW–Madison and worked with commercial partners to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.

The University of Wisconsin and WARF – A Single Location to Accelerate Translational Development of New Drugs

UW–Madison has the integrative capabilities to complete many key components of the drug development cycle, from discovery through clinical trials. As one of the top research universities in the world, and one of the two best-funded universities for research in the country, UW–Madison offers state-of-the-art facilities unmatched by most public universities.

These include the Small Molecule Screening Facility at the UW Comprehensive Cancer Center; the Zeeh Pharmaceutical Experiment Station, which provides consulting and laboratory services for developing formulations and studying solubility, stability and more; the Waisman Clinical Biomanufacturing Facility; the Wisconsin Institute for Medical Research, which provides UW–Madison with a complete translational research facility; and the innovative, interdisciplinary Wisconsin Institutes for Discovery, home to the private, nonprofit Morgridge Institute for Research and its public twin, WID, part of the university’s graduate school. The highly qualified experts at these facilities are ready to work with you to create a library of candidates for drug development.
• Less likely than viral vaccines to induce unwanted immune responses
• Can be administered intramuscularly, intravascularly, or intradermally

STAGE OF DEVELOPMENT

A phase I clinical trial has been completed successfully. No significant adverse effects were observed among the 22 subjects tested.

ADDITIONAL INFORMATION

Tech Fields
Pharmaceuticals & Vitamin D - Oncology & hematology
Pharmaceuticals & Vitamin D - Vaccines

CONTACT INFORMATION

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857.