Methods and Compositions for Treating Prostate Cancer with DNA Vaccines

INVENTORS • Douglas McNeel

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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 useful 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
• 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.