

## Targeted Therapeutic for Metastatic Prostate Cancer

**Track Code:** 2020-FIGU-68875

**Categories:**

- Pharmaceuticals

**Keywords:**

- Cancer
- Cytokine
- Gene Therapy
- Heptapeptide
- IL-27
- IL-6
- IL-6-Ralpha
- Interleukin-27
- Ligand-Mediated Targeting
- Metastatic Cancer
- Oncology
- Prostate Cancer
- Sonoporation
- Targeted Therapeutic

Researchers at Purdue University have developed a targeted therapeutic option for treating metastatic prostate cancer, the second leading cause of cancer death for men in the United States. The cancer often metastasizes into the bone; however, treatment options targeting advanced metastatic prostate cancer are few, leaving patients with a poor prognosis. The Purdue researchers' technology targets both the primary tumor and the metastatic sites with the goal of patients' increased survival.

The Purdue technology is a gene therapy that delivers a protein conjugate combining a therapeutic cytokine suited for treating metastatic cancer with a peptide that specifically targets tumor tissue. This technology was tested in an ex vivo mouse model and showed 10-fold increase in binding to tumor cells relative to normal cells. Expression of this conjugate in a mouse model displays an 89 percent decrease in prostate tumor growth rate relative to the control. In addition, the researchers observed upregulation of genes associated with immune cell trafficking suggesting delivery of this conjugate has a beneficial impact on both targeted cells and neighboring cells at metastatic sites.

**Advantages:**

- Designed for Advanced Stage Cancer Treatment
- Targeted to Tumor Cells
- Enhances Expression of Immunogenic Genes

**Potential Applications:**

- Prostate Cancer
- Metastatic Control
- Bone Repair

**Related Publication:**

Ligand-Mediated Targeting of Cytokine Interleukin-27 Enhances Its Bioactivity In Vivo  
Mol Ther Methods Clin Dev. 2020;17:739-751  
doi:10.1016/j.omtm.2020.03.022

**People:**

- Figueiredo, Marxa L (Project leader)

**Intellectual Property:**

**Application Date:** January 1, 2021

**Type:** PCT-Gov. Funding

**Country of Filing:** WO

**Patent Number:** (None)

**Issue Date:** (None)

**Application Date:** January 30, 2020

**Type:** Provisional-Patent

**Country of Filing:** United States

**Patent Number:** (None)

**Issue Date:** (None)

**Contact OTC:**

Purdue Office of Technology Commercialization  
The Convergence Center  
101 Foundry Drive, Suite 2500  
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: [otcip@prf.org](mailto:otcip@prf.org)