PURDUE INNOVATES | Office of Technology Commercialization

Ligand-mediated Targeting of Cytokine Interleukin-27 Enhances its Bioactivity

A targeted delivery system increases the effectiveness of Interleukin-27, a therapeutic cytokine.

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

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Category
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Biotechnology & Life Sciences/Cell & Gene Therapy Platforms
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