



Engineered Bacterium and Uses Thereof for Treating Cancer

WARF: P240261US02

Inventors: Jan Peter Van Pijkeren, Joel Greenberger, Michael Epperly, Amitava Mukherjee

The Invention

A UW-Madison researcher and colleagues have developed methods of using probiotic bacteria engineered to express IL-22 or IFN- β , alone or in combination with an immune checkpoint therapy and/or an irradiation therapy, for oral treatment of cancer. The inventors have demonstrated a further use for Dr. van Pijkeren's genetically-engineered gastrointestinal tract (GI) bacterium (e.g., *Lactobacillus reuteri*) that releases interleukin-22 (e.g., LR-IL-22). Both LR-IL-22 and ionizing irradiation each induce the PD-L1 immunotherapy target in ovarian cancer cells, and the combination of radiation and LR-IL-22 significantly increases numbers of infiltrating CD8+ T-cells and other beneficial immunocytes in ovarian cancer tumors. Dr. van Pijkeren produced the bacteria used for the method, and Dr. Greenberger discovered that recombinant *L. reuteri* can be isolated from ovarian tumors following oral administration.

Additional Information

For More Information About the Inventors

- [Jan Peter Van Pijkeren](#)

Tech Fields

- [Therapeutics & Vaccines : Biologics](#)
- [Therapeutics & Vaccines : Oncology](#)

For current licensing status, please contact Rafael Diaz at rdiaz@warf.org or 608-960-9847