Personalized Live-attenuated Double-deleted Listeria monocytogenes

National Cancer Institute

Source

A proprietary, personalized live, attenuated, double-deleted (pLADD) strain of the Gram-positive bacterium Listeria monocytogenes encoding multiple, patient-specific neoantigens, with potential immunostimulatory and antineoplastic activities. Upon intravenous administration, the tumor-associated antigens (TAAs) expressed in pLADD are taken up by antigen-presenting cells (APCs), including dendritic cells (DCs), and are processed and presented to the immune system by both major histocompatibility complex (MHC) class I and II molecules. This activates the immune system and leads to both an innate immune response and the recruitment and activation of tumor-specific cytotoxic T-lymphocytes (CTLs) against the TAAs specifically expressed by the patient’s tumor cells, which eventually results in tumor cell lysis.