ANTI-CANCER EFFICACY IN A PRECLINICAL MODEL OF LUNG CANCER USING QBKPN SITE-SPECIFIC IMMUNOMODULATION

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The immune system is armed with the intrinsic capacity of recognizing and eliminating cells that have undergone malignant transformation. The observation that an intricate relationship exists between immune activation and cancer dates back to the 1700's, when spontaneous tumor remission was observed in some patients experiencing acute microbial infections. Building upon this history, Qu Biologics has discovered that repeated subcutaneous injection of an immunotherapy derived from specific species of killed bacteria known to commonly cause infection in a particular organ or tissue may provide an effective method for the treatment of cancers growing in that organ/body site. We hypothesize Qu's proprietary platform of immunotherapies, called Site-Specific Immunomodulators (SSI), stimulate the body's immune system to reverse the immune suppression and dysfunction in the tumor microenvironment, enabling effective anti-cancer immune responses. To test this hypothesis, we evaluated tumor growth and survival in preclinical lung cancer models.

Repeated subcutaneous administration of Qu's lung specific SSI, QBKPN, significantly reduced tumor burden at day 16 post-inoculation ($p<0.0001$), improving median survival by 10 days ($p<0.005$). Similar results were obtained using the B16 model, an aggressive and poorly-immunogenic melanoma cell line growing as metastatic-like lesions in the lungs, demonstrating the site-specific anticancer efficacy is independent of cancer type. Anticancer efficacy was associated with site-specific infiltration of newly recruited monocytes and neutrophils to the lung and mobilization of antigen presenting cells in the lung-draining lymph node. These data complement our compassionate use clinical experience with SSI and provide strong evidence that Qu's SSI platform may be an innovative cancer immunotherapy approach for reconstituting effective immunosurveillance in the tumour microenvironment and improving therapeutic outcomes for cancer patients. QBKPN is currently being studied in a Phase 2a clinical trial in patients with non-small cell lung cancer, in collaboration with the BC Cancer Agency (Trial NCT02256852).