Abstracts

BT-001, AN ONCOLYTIC VACCINIA VIRUS ARMED WITH ARMED MYXOMA VIRUS DEMONSTRATES EFFICACY IN SYNGENEIC TUMOR MODELS ALONE AND IN COMBINATION WITH IMMUNE CHECKPOINT INHIBITORS

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Background Oncolytic Viruses (OV) selectively replicate in and lyse tumor cells and provide stimulation to the immune system. This represents a promising therapeutic option for cancer patients that do not respond well to treatment with immune checkpoint inhibitors. Myxoma virus (MYXV) is a member of the Poxv family of double stranded DNA viruses. The natural host of MYXV is a subset of rabbits and hares, but MYXV can infect cancer cell lines of humans and other species. The genome of MYXV is relatively large and is amenable to engineering for expression of transgenes making it an excellent oncolytic virus for introduction of immunomodulatory proteins.

Methods Armed MYXV were tested for oncolytic activity and transgene production in syngeneic mouse cancer models in vitro and in vivo. In vivo models were further assessed for activity when in combination with immune checkpoint inhibitors and for immune mechanisms of action contributing to the efficacy of armed MYXV.

Results Armed MYXV demonstrated oncolytic activity, transgene production capability and in vivo activity following intratumoral and intravenous administration of armed myxoma viruses in murine cancer models. Additional combination therapy with clinically relevant immune checkpoint inhibitors is demonstrated.

Conclusions Armed Myxoma viruses present an efficacious novel oncolytic viral therapy with the ability to modulate immune responses in murine cancer models. Additional combination therapy with clinically relevant immune checkpoint inhibitors is demonstrated.

Ethics Approval Animal studies we approved by OncoMyx and the TD2 IACUC.

http://dx.doi.org/10.1136/jitc-2020-SITC2020.0595