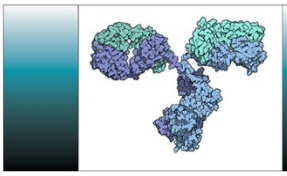
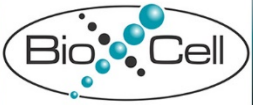


Research Highlight



Combination of vaccinia virus and PD-L1 blockade: A promising new cancer therapeutic approach

Both anti-PD1/PD-L1 therapy and oncolytic virotherapy have demonstrated promise, yet have exhibited efficacy in only a small fraction of cancer patients. Tumors with low levels of PD-L1 and lymphocytic infiltrates do not respond well to anti-PD-1/PD-L1 therapy.

To overcome this obstacle Dr. David L. Bartlett's group from the University of Pittsburgh Cancer Institute hypothesized that infection with an oncolytic poxvirus would attract T cells into the tumor and induce PD-L1 expression in the tumor microenvironment.

To test this, the authors first infected tumor bearing mice with oncolytic vaccinia virus and found that infection did indeed attract effector T cells and induced PD-L1 expression in the tumor tissue. Additionally, infection with oncolytic virus plus treatment with Bio X Cell's anti-PD-L1 (clone 10F.9G2) antibody resulted in a significantly reduced tumor burden and increased survival compared to monotherapy. The authors then depleted $CD4^+$ T cells, $CD8^+$ T cells, and neutralized IFNγ using Bio X Cell's anti-CD4 (clone GK1.5), anti-CD8 (clone 53-6.7), and anti-IFNγ (clone XMG1.2) antibodies respectively in infected anti-PD-L1 treated tumor bearing mice. The mice receiving either anti-CD8, anti-CD4, or anti-IFNγ died earlier from tumor progression than those receiving the dual treatment without depletion. These results demonstrated that both CD8+ and CD4+ T cells as well as and IFNγ all play essential roles in the therapeutic efficacy of the dual therapy.

See the article in Nature Communications: https://www.nature.com/articles/ncomms14754