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Systematical administration of *Clostridium ghonii* spores results in significant tumour regression and strong antitumour Th1 responses in TC-1 tumour bearing mice

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Up to 85% of solid cancers, once diagnosed, lost the opportunity to be operable. These cancers have anoxia regions that limit the effectiveness of conventional therapies, which however, provide a heaven for anaerobic bacteria. Our laboratory has adapted the spores of an extracellular *Clostridium ghonii* strain that caused targeted oncolysis by selectively germinating, multiplying and digesting away of the solid cancer extramatrics, cellular structure, and cancer cells, resulting in significant enhanced tumour regression. Other anaerobic bacteria also showed a Toll-like receptor 4-mediated an antitumor host response together with significant increases of intra-tumour IFNγ, CXCL9 and CXCL10 levels as well as more infiltration of macrophages, neutrophils, CD4+ and CD8+ T cells in C3H/HeN mice. In this report, we exployed a HPV E7 transformed TC-1 cell tumour bearing mice as a model and demonstrated that intratumoural and/or introvenous administration of a strain of a deviriative of *Clostridium ghonii* (DCG) spore leads to a significant tumour regression and a tumour local pro-inflammatory response characterized with increased levels of IL-6, IL-17 and IFNγ. IFNγ secreting T cells are also attracted to the tumour site. Low numbers of antigen specific T cells were elicited after DCG treatment are elicited by intravenous DCG treatment. The results suggested that both oncolytic effects and the anticancer immune respnses are contriuting to cancer regression. Furthermore, strategies for optimium combined oncolytic, ie.: oncotic therapy, if combined with a therapeutic vaccine, more antigen specific T cells may be attracted to the tumour site and therefore, may achieve better outcome for cancer treatment.

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