



Research project summary

Development of a multi-mechanistic virus-based therapeutic platform for pancreatic cancer

- Principal Investigator: Carolina Ilkow
- Co-investigator: Avijit Chatterjee
- Awarded \$573,750 from the Canadian Institutes of Health Research (CIHR) in May 2017
- Summary reproduced from the CIHR website in the language provided

The cure rate for pancreatic cancer remains less than 6% and 75% of patients die within the first year of diagnosis. Sadly, these statistics have not changed in the past 3 decades despite tremendous progress in our understanding of the genetic causes of pancreatic cancer and the complexity of its tumour microenvironment. Currently, surgical resection provides the only potential long-term cure for pancreatic cancer; however only 15% to 20% of patients have tumours that are amenable for this highly debilitating procedure. Furthermore, pancreatic cancer is partially characterized by early metastases, which severely limit the success of surgical resection. Oncolytic viruses are a new and exciting class of anti-cancer therapeutic agents due to their specific predilection to infect and kill cancer cells. Virus-based therapies are showing moderate but promising benefit to pancreatic cancer patients in early clinical trials. Yet resistance due to the unique biology of pancreatic tumors is one of the biggest challenges for developing breakthrough therapies against pancreatic cancer. One of the most active areas of research to overcome such resistance is the use of combinatorial approaches aimed at stimulating the patient's immune system to fight against cancer cells while also inducing a potent and selective cytotoxic effect in the tumor. Successful execution of this project will lead to the generation of an oncolytic virus platform suited not only to kill pancreatic cancer cells but also to sensitize the tumor environment to targeted anti-cancer drugs. We expect that the combination of virus-based immunotherapy and anti-cancer drugs is an effective two-pronged attack that enhances direct killing of cancer cells and also breaks the tolerance of the immune system for pancreatic cancer, leading to a novel and potentially effective therapeutic approach for patients who currently have little hope of long-term survival.

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