

Oncolytic HSV-1 with enhancement of both oncolysis and safety

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Oncolytic virotherapy has attracted increasing attention due to recent approval of T-VEC by FDA. Although anti-tumor immune response is a critical mechanism for oncolytic virotherapy, strong oncolytic viral activity for extensive cell lysis and virus dissemination inside of tumor also play a pivotal role for better therapeutic efficacy. However, it has always been a challenge to create an oncolytic virus that is highly oncolytic but also tumor specific for safety. In past years, we have been developing strategies that allow not only to enhance the safety but also to increase oncolytic activity at the same time. Those strategies include transcriptional and translational dual regulation on essential viral gene expression, overcoming macrophage/microglia barriers for better viral spreading in the tumor mass and enhancing virus oncolytic activity by inhibiting both anti-viral and oncogene cellular signals by a small molecule. We would present examples of those strategies and show their effects in animal tumor models.

Biography

William Jia has completed his PhD in 1991 at University of British Columbia (UBC) in Molecular Neurosciences. He has been an Associate Professor since 1999 at UBC and an Associate Scientist of BC Cancer Research Centre. He has been a Conjoint Professor of Fudan University, Shanghai Institute of Pharmaceutical Industry and the VP (Research) for Shanghai Innovative Research Centre of Traditional Chinese Medicine (SIRC-TCM). He was the first in Canada and the first few scientists in the world using human Herpes Simplex Virus to treat cancer, which pioneered the field of oncolytic virotherapy for cancer treatment. He has developed one gene therapy drug for malignant gliomas has completed a phase I clinical trial in China. His most recent contribution is to raise the concept of transcription and translation dual regulated (TTDR) oncolytic viruses for cancer treatment. In the past years, he has received many awards and research funds. Since 1997, he has been a Scholar of Canadian Institute of Health Research. He has also received Petro Canada Young Inventors Award in 2007.

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