



## ONCOLYTIC VIRUSES AND METHODS FOR TREATING NEOPLASTIC DISORDERS

ID# 2009021

### HIGHLIGHTS

- A vaccinia virus vaccine ( $\Delta F4L\Delta J2R$ ) engineered for safety and designed to replicate precisely in rapidly dividing cells
- Bladder cancer candidate UAB-211 infects BCG-resistant cells and outperforms BCG in animal models.
- Animal data in a highly aggressive bladder cancer model shows a 50% long-term complete response
- $\Delta F4L\Delta J2R$  vaccinia + radiation has shown efficacy in an animal model of glioblastoma

### OPPORTUNITY

University of Alberta researchers have developed a strain of vaccinia virus with a mutation in the ribonucleotide reductase (RR) small subunit ( $\Delta F4L\Delta J2R$ ). This modification makes the virus preferentially replicate in host cancer cells, which are known to over-expresses the small subunit of RR.

#### Pre-clinical data

- The safety and efficacy of UAB-211 have been tested in orthotopic and immune-competent tumor models. It infects BCG-resistant cells and outperforms BCG in a rat bladder cancer model.
- cGMP master virus seed production completed.
- Complete QC analysis conducted by a qualified third party
- High-dose testing of UAB-211 in a rat model

### COMPETITIVE ADVANTAGE

- infects BCG-resistant cells and outperforms BCG in an animal model of aggressive bladder cancer
- Scalable manufacturing process, GMP master virus bank available
- Developed in consultation with an advisory board of oncologists, researchers, and patient advocates
- Positive pre-CTA meeting conducted with Health Canada
- Third-party technical/financial evaluations available under CDA

### PUBLICATIONS

- [Radiation combined with oncolytic vaccinia virus provides pronounced antitumor efficacy and induces immune protection in an aggressive glioblastoma model](#)
- [Deletion of F4L \(ribonucleotide reductase\) in vaccinia virus produces a selective oncolytic virus and promotes anti-tumor immunity with superior safety in bladder cancer models](#)
- [Vaccinia virus-encoded ribonucleotide reductase subunits are differentially required for replication and pathogenesis](#)
- [Targeting Nucleotide Biosynthesis: A Strategy for Improving the Oncolytic Potential of DNA Viruses](#)
- [Deciphering the Immunomodulatory Capacity of Oncolytic Vaccinia Virus to Enhance the Immune Response to Breast Cancer](#)



## IP STATUS

- US Patents
  - [8.679.509](#)
  - [9.370.550](#)
- Europe Union
  - [2451945](#)
- Hong Kong
  - [1.170.769](#)
- Canada: Patent Pending

## INVENTOR

- Dr. [David Evans](#)

## MORE INFORMATION

Joanna Preston  
Associate Director, Licensing  
Technology Transfer Services, University of Alberta  
[jpreston@ualberta.ca](mailto:jpreston@ualberta.ca)  
780.265.1075