

Equine Herpesvirus Type 1-Mediated Oncolysis of Human Prostate Cancer Cells

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Prostate cancer is the fifth leading cause of death in men globally. An intriguing option for cancer treatment is oncolytic virotherapy, in which native or genetically modified viruses are used as anti-cancer agents. In this study, we investigated the oncolytic potential of the animal virus equine herpesvirus type 1 (EHV-1) on human prostate cancer cell lines, PC-3, LNCaP, and C4-2B. We first measured the amount of virus mediated cell death at 24, 48, and 72 hours. Cell death steadily increased in each cell line from 24-72 hours with total cell death at 72 hours on PC-3 cells ranging from 84% to 90% for the 4 EHV-1 strains, 75% to 85% on LNCaP, and 83% to 88% on C4-2B. In addition to the cell death assays, the amount of virus produced in these cell lines was also measured at 24, 48, and 72 hours. To date, we have collected virus yield data for the 24 hour time point with the 4 EHV-1 strains on the 3 cancer lines and the yields range from 3.3×10^5 pfu/mL to 4.9×10^6 pfu/mL indicating that EHV-1 is able to productively infect each of the three prostate cancer cell lines.

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