Mathematical Biology Seminar

Monday, January 15, 2024

3 pm MDT - 457 CAB (in person)

Join Zoom Meeting

https://ualberta-ca.zoom.us/j/98497695684?pwd=SG5pcUVRS0xucW5xd0xBTm1VVCtEUT09

Meeting ID: 984 9769 5684
Passcode: 32123

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Mathematical Modelling of Reovirus in Cancer Cells

Reovirus is a nonpathogenic virus that inhabits the enteric tract of mammals.It is a double-stranded RNA virus that showed the ability to naturally infect and lyse tumors under in vitro and in vivo conditions. Unmodified reovirus (T3wt) is currently being evaluated as an anti-cancer therapy in more than 30 clinical trials in different types of cancer such as metastatic breast cancer, prostate cancer, and colorectal cancer. Dr. Maya Shmulevitz from Li-Ka Shing Institute of Virology, University of Alberta and her PhD student Francisca Cristi focus in their laboratory to improve reovirus as a cancer therapy. In collaboration with them, we are trying to answer the following questions via mathematical modelling:

Q1: How far does the virus spread depending on the binding rate?
Q2: How does the viral wave speed depend on the binding rate?
Q3: How does reducing the binding rate affect the plaque size?