# ONCOLYTIC EFFECT OF NEWCASTLE DISEASE VIRUS IN TREATMENT OF BREAST CANCER

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- **Abstract:**

  Breast cancer is one of the most worldwide spreading types of cancer and comes in the second grade after lung cancer in causing death among women. Due to the defects of the currently available cancer medications it had to generate a new era of highly effective medications that have minimal side effects and one of those new medications is the virotherapy which lately was admitted to be a new hopeful therapy for cancer patients.

  Oncolytic viruses (OVs) are natural or reformed viruses that can selectively, effectually and definitely invade malignant cells and kill them in vivo and in vitro via various mechanisms including direct lysis, apoptosis, autophagy, toxic protein expression, necrosis, and immune response stimulation.

  Our study will focus on Newcastle disease virus (NDV) destroys the cancer cells by two mechanisms (i) Immunostimulatory mechanism. (ii) Oncolytic mechanism.

  LaSota strain , a low virulence attenuated lentogenic strain, was revealed to induce the immune system against the cancer cells when it's administrated in form of vaccination but its oncolytic activity is not clear yet but some studies mentioned that it's an oncolytic virus.

  In this study we will test the possible oncolytic properties of NDV laSota strain which is a lentogenic (low virulent) commercially available NDV vaccine in Egypt and is widely used as avian vaccine NDV infection.

  The murine mammary carcinoma cell line develops tumor when injected into the mammary fat pad of Balb/c mice and constitute an established model for preclinical drug testing. This model is appropriate for cancer immunotherapy research as the host is immune competent.