

COMPARISON OF NUMERIC SOLUTIONS IN THE MODEL OF CANCER CELL SPREADING WITH CHEMOTHERAPY AND IMMUNOTERAPY

by Nikenasih Binatari, S.Si., M.Si, Dwi Lestari, S.Si., M.Sc., Fitriana Yuli Saptaningtyas, S.Pd, M.Si

ABSTRACT

Cancer is a disease caused by unhealthy cells that divide uncontrollably and attack the surrounding tissue. It takes a good immune system to fight cancer, one way to increase the immune system against cancer is immunotherapy. In addition, one of the treatments that can be given to inhibit the spread of cancer cells is chemotherapy. As it is known that cancer is one of the causes of death that needs great attention. The spread pattern of cancer cells can be modeled in the form of mathematical equations, namely systems of differential equations. The purpose of this study was to determine the dynamics of cancer cells in a mathematical model of cancer spread with chemotherapy and imonotherapy. Determine the numerical model solution with the Differential Transform Method (DTM). Furthermore, numerical simulations will be carried out to obtain a model solution that is formed either by chemotherapy or immunotherapy. From the analysis, it is hoped that the spread of cancer cells can be controlled by the rate of drug concentration in chemotherapy or immunotherapy.

Kata Kunci: *Cemotherapy, Immunotherapy, DTM*