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STABILITY ANALYSIS OF CRITICAL POINTS TO CONTROL GROWTH OF TUMOR

IN AN IMMUNE-TUMOR-NORMAL CELL-DRUG MODEL

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ABSTRACT

In this paper we attempted to present a policy to control an immune cell-tumor cell-normal cell-drug model proposed by Pillis ET all. The drug administered to the patient in the form of chemotherapy is assumed to be time dependent and follows a definite rule. It is also assumed that the drug kills all types of cells. In this paper we assumed that the drug administration follows either of the three different mathematical laws viz. (1) Logistic law, (2) Exponential law and (3) Oscillatory law. Stability analyses of the tumor free critical points are done to find a range for the amount of drug to be administered to the patient.

KEYWORDS: Control an Immune Cell-Tumor Cell-Normal Cell-Drug Model