

1096-VG-44

Sanjeev Kumar* (sanjeevibs@yahoo.co.in), Dept. of mathematics, Dr. B.R. Ambedkar University, IBS, Khandari Campus, Agra, UP 282002, India. *The Tumors Cell Density and Immune Response System: A Mathematical Model.*

Complex mathematical models of cancerous growths have been developed, especially on solid tumors, in which growth primarily comes from cellular proliferation during the last 20 years. Consider a procedure for cancer therapy which consists of interaction between immune response (immune cells) and tumor cells without any specific drug. The cytotoxic T lymphocyte (CTL) and tumor necrosis factor (TNF) cause of the immune response. This process is modeled as a system of tumor cell density (TCD) and tumor necrosis factor (TNF). The purpose of this work is to establish a rigorous mathematical analysis of the model and to explore the density/concentration of tumor cell and immune response (TNF). The result suggests that although TCD capable to growth of tumor but the immune response is block to direct tumor growth. The model assumes that only two factors need be considered for such predictions: net growth rate and infiltrative ability. (Received June 13, 2013)