On the Modeling the Immune Response to Cancer Cells: Asymptotic Analysis

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This works deals with the modeling of immune activation and the immune response to the evolution of cancer cells. A mathematical model is proposed on the basis of mathematical methods of the Kinetic Theory for Active Particles (a KTAP approach). Firstly we focussed on the mathematical framework suitable for derivation of the model. Then a qualitative analysis is carried out to prove the existence of the solution of the Cauchy problem related to the model. We pay special attention to the dynamic of tumor cells contrasted by the immune system, which activates by Cytokinin signals. We show how parameters and initial conditions influence the asymptotic behavior of the solution.

References


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