

Numerical solution for an extended multi-mutation and drug resistance model

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In this study, we extend a model that expresses intrinsic drug resistances to include SBS time required for mutation rate to take place and spatial effects of the involved cells. Furthermore, we show that the local stability condition(s) are (is) global stable. Since it is not that easy to solve the extended model analytically, we derive, analyze, implement, present a numerical solution and compare it with the solution of the original model.

Keywords: Mutations; drug resistance; chemotherapy; delay partial differential equations; stability analysis.