Abstract

In this study, a simulation of tumor growth was performed included with its effect on radiotherapy stochastically or simulation based on probability. This simulation adopted Cellular Automata model in the form of two-dimensional discrete spatial grid. Of the Cellular Automata form, then the simulation that possible to perform is with microscopic approach or counting cells individually instead as a unit. Furthermore, this simulation will be adopted model in the form of rules derived from three component model for tumor. This three component model is the model that separate tumor cells into three types, these are Proliferating cells, Quiescent cells and Dead cells. From the results obtained, this model can approach the result of simulation with three component model with RMSE about 0.211cm^3 for tumor growth simulation without radiotherapy, whilst tumor growth simulation with radiotherapy, the results are mixed about 0.093cm^3 to 0.258cm^3 depends on dose given.