

Gompertzian Stochastic Model With Delay Effect To Cervical Cancer Growth

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ABSTRACT

In this paper, a Gompertzian stochastic model with time delay is introduced to describe the cervical cancer growth. The parameters values of the mathematical model are estimated via Levenberg-Marquardt optimization method of non-linear least squares. We apply Milstein scheme for solving the stochastic model numerically. The efficiency of mathematical model is measured by comparing the simulated result and the clinical data of cervical cancer growth. Low values of Mean-Square Error (MSE) of Gompertzian stochastic model with delay effect indicate good fits.

KEYWORDS: Stochastic processes; Cancer; Biomedical modeling; Optimization

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