

## عنوان مقاله:

Optimization of drug dosage in cancer patients by using Bees Algorithm and Genetic Algorithm

## محل انتشار:

کنفرانس بین المللی یافته های نوین پژوهشی در مهندسی صنایع و مهندسی مکانیک (سال: 1394)

تعداد صفحات اصل مقاله: 15

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## خلاصه مقاله:

This paper has suggested a practical mathematical model by considering non-specific cell cycle for drug resistance in chemotherapy of the cancer. In this model, two models have taken into account to occupy the medicine elimination of the cancerous cells. This study aims to investigate the role of cancerous cells resistance to any of both types of medicines in development of the cancer and creation of populations' resistance to any medicine by using above-mentioned model. One of the main specifications of this model is displaying the development process of a unique cell and turning it into cancerous cells. By such a view, one could study the role of inherent resistance and or acquired resistance of cancerous cells comparing to chemotherapy in different stages of development and or inhibition of the cancer. Using exploratory searching methods, this thesis provided a methodology for optimizing the chemotherapy of cancer in a mathematical model with non-specific cell cycle. This study used two intelligent optimizing algorithms including bee algorithm and genetic algorithm as tools used in optimal control. The general objective of this study includes controlling the development of resistant cells by using minimum amount of medicine comprised from two different cytotoxic factors. Results indicate that modern exploratory optimization methods including above algorithms are considered as proper selection for optimizing the complex systems and provide effective solution for preparing a proper schedule for injecting the medicine to control the development of cancerous cells.

## کلمات کلیدی:

optimization, bee algorithm, genetic algorithm, drug resistance, cancer chemotherapy, mathematical modeling of the cancer

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/429876>



