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Título: Fractality in tumor growth from a generalization of the logistic-Gompertz dynamics

Resumo:

The dynamics between healthy and malignant cells at the avascular stage of growth is described by a set of chemical reactions representing the populations of both types of cells. We obtain a generalization of the logistic-Gompertz dynamics and study the consequences in terms of the properties of tumor growth associated with the Warburg effect, mitosis and nutrient and space apoptosis. As a result of the stochastic nature of this process, a fractal morphology is observed in this region. Our results are in agreement with the growth of tumor cell colonies experiments.