

MATHEMATICAL MODELS FOR BETTER UNDERSTANDING OF CANCER INITIATION AND PROGRESSION

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ABSTRACT

Development of cancer is a complex multi-step process involving mutation and selection for cells with progressively increasing capability for proliferation, survival, invasion and metastasis. Mutation and selection can be explained when represented as mathematical equations. The objective of this review is to discuss how a mathematical frame work is used to describe the process of cancer initiation and progression and provide a quantitative understanding of the dynamics of tumorigenesis with respect to mutation, selection, genetic instability and tissue architecture.

Keywords: *Genetic instability, Mathematical model, Tumorigenesis, Tumor-suppressor gene.*