DISTRIBUTION OF PRC1 PROTEIN IN A CELL POPULATION ORIGINATED BY A SINGLE ANCESTOR

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ABSTRACT

In this paper we describe a mathematical model of dynamics of PRC1 protein level in cells that undergo unequal division. It is based on a branching-within-branching process, which reflects both fluctuations arising from transcription and translation processes in single cells and stochastic distribution of cellular content in two progenies after cell division. Simulation results are used to analyze heterogeneity in population of cells with respect to the amount of PRC1 protein. Results are compared with data from biological experiments.

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