

# Mathematical Study and Periodic Dynamics in a Hematopoietic Stem Cells Disease Model with Chemotherapy

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In this paper, we consider a model describing the dynamics of Hematopoietic Stem Cells (HSC) disease with chemotherapy. The model is given by a system of three ordinary differential equations with discrete delay. Its dynamics is studied in term of local stability of the possible steady states for the cases with/without drug intervention term. We prove the existence of periodic oscillations for each case when the delay passes trough a critical values. In the end, we illustrate our results by some numerical simulations.

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