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Control in Dormancy or Eradication of Cancer Stem Cells:  
Mathematical Modeling and Stability Issues

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**Highlights**

- Modeling the cell cycle and population cell dynamics taking into account: coexistence between normal and mutated stem cells, overproliferation of cancer stem cells and sensitivity to the immune system.
- The study of existence of different steady states, including: unhealthy cells eradication and cancer cells dormancy (i.e. control in dormancy of abnormal cells).
- Construction of different types of suitable strict Lyapunov-like functionals for nonlinear delay differential-difference systems.
- Deriving stability conditions of steady states in different biological situations: a particular focus on the scenario of cancer dormancy.
- Numerical simulations, biological discussions and some therapeutic insights in the paradigmatic/exemplary case of hematopoiesis and acute myeloid leukemia.

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