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Effect of cellular de-differentiation on the dynamics and evolution of tissue and tumor cells in mathematical models with feedback regulation

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## Highlights

- Healthy tissue and tumors have hierarchical tissue structures
- Regulatory feedback loops are operational in both healthy and tumor tissue
- Evolutionary dynamics are studied in tissue models with feedback regulation.
- De-differentiation of cells is found to reduce the fixation probability of mutants.
- This indicates that de-differentiation can slow down the rate of tumor evolution.

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