

# Mathematical modelling of tumor growth : cell models and incompressible limit

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The recent biomechanical theory of cancer growth considers solid tumors as liquid-like materials comprising elastic components. In this fluid mechanical view, the expansion ability of a solid tumor into a host tissue is mainly driven by either the cell diffusion constant or the cell division rate, the latter depending either on the local cell density (contact inhibition), on mechanical stress in the tumor, or both. The incompressible limit of such models leads to a geometrical model of Hele-Shaw type. For such model, we study the existence of traveling waves explaining the expansion of tumor in tissue.

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