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Emergence of radioresistance through selection for cancer stem cells in solid tumors

Tumor growth and progression is a complex phenomenon dependent on the interaction of multiple intrinsic and extrinsic factors. Necessary for tumor development is a small subpopulation of potent cells, so-called cancer stem cells, which also produce a distinct population of non-stem cancer cells. Both populations compete with each other yielding interesting tumor dynamics. During radiotherapy treatment the intrinsic tumor dynamics are perturbed, resulting in selection and expansion of resistant cancer stem cells.