

Cancer stem cells

1. Define two types of cells – cancer cells (CC) and cancer stem cells (CSC)
2. Initial condition – one cancer stem cell
3. Make sure that no cells stick to each other
4. In Python steppable implement cell growth. Both cell types grow at the same rate e.g. 0.1 voxel/MCS
5. Introduce rho parameter – the maximum number of times CC can divide. Keep track of how many times every given CC divided – you may use “Counter” key for the dictionary and decrement counter each time cell divides. When CC divides rho times kill this cell. – The rule does not apply to CSC – they always divide
6. Introduce ps parameter – the probability with which CSC can produce offspring CSC when CSC divides. By default= CSC produces CC offspring. Only CSC can produce CSC during mitosis. CC cells do not produce CSC cells.
7. Visualize “Counter” variable
8. Play with rho and ps parameters.