SimCells, a Multi-Cellular Simulator using Multicore Devices

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Simulating the dynamics of multicellular systems is useful to understand their mechanisms. It also becomes more and more relevant as new data are massively.

The simulator presented in this conference can simulate millions of virtual interacting cells which are individually capable of migration, division, apoptosis, deformation and signalization. These virtual cells are aided by smaller entities which represent macromolecules (individuals and groups) and extracellular components.

SimCells has an advanced graphical user interface where entities can be created, parametrized, programmed (thanks to a simple graphical language), counted (with graphs of population) and added into their virtual environment (using a 2D and 3D modeler).

This simulator is freely available at http://virtulab.univ-brest.fr