

ImmunoGrid: Towards a Clinically Relevant Systems Biology Model for the Human Immune System

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Abstract:

The aim of the ImmunoGrid (EU Project) is to establish an infrastructure for the simulation of the immune system at the natural scale that integrates processes at molecular, cellular and organ levels.

At the current stage of development the simulator is able to mimick the dynamics of the most important immune cells reacting against a generic pathogen (virus and bacteria among these). Moreover it also handle specific processes for HIV-1 infection and for mammary carcinoma of HER-2/neu transgenic mouse. The use of key grid technologies provides the opportunity to perform simulations which are orders of magnitude more complex than the current models. In my presentation I will provide a general overview of the ImmunoGrid project together with some result of previous simulations with a similar version of the code in the area of cancer immunoprevention.