Testing HIV Molecular Biology In In Silico Physiologies.

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Abstract

The natural and medical sciences have strongly benefited from technological advances that help to create and store more raw information than can be effectively processed. In particular, this rapid growth has created a strong need for a flexible and far-reaching approach to cross-database simulation. The paper uses a highly simplified example, called the 'TinyMouse' simulator, to explain the design and functioning of interactive cross-database simulators that can be applied to prototype experiments with animal models of human disease, such as the hu SCID mouse model for the Acquired Immune Deficiency Syndrome (AIDS). Work in progress is discussed to extend 'TinyMouse' into 'CyberMouse', an informational organism that synthesizes factual databases of the murine neuro-endocrine-immune system.

Introduction

The natural and medical sciences have strongly benefited from technological advances that help to create and store more raw information than can be effectively processed. In particular, this rapid growth has created a strong need for a flexible and far-reaching approach to cross-database simulation.

We have previously described a software thinktank, called the Cellular Device Machine Development System (CDM-DS), for building cross-database simulators with the capacity to predict complex dynamical behaviors (Sieburg, 1987).

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