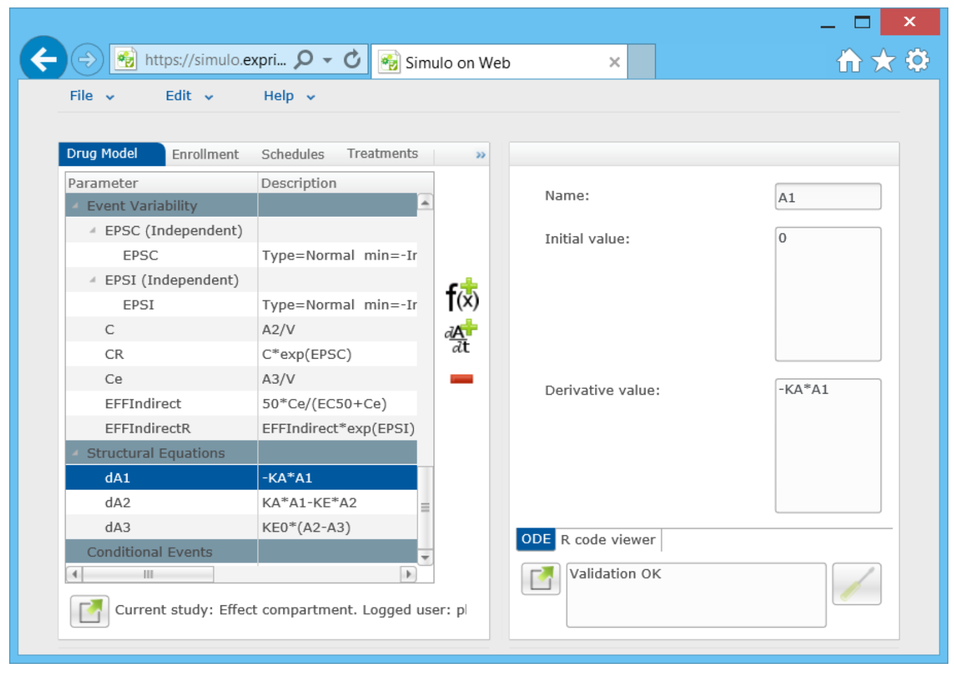
simulo

DRUG TRIAL SIMULATOR

Introduction

Simulo is a new **PK-PD-Disease model simulator**, providing a user-friendly interface available on the web. It was developed to be a shared and user-friendly platform, running simulations on a private dedicated computing cluster. It provides the ability to simulate and subsequently analyze clinical studies using public, published or custom-developed nonlinear mixed-effects models.



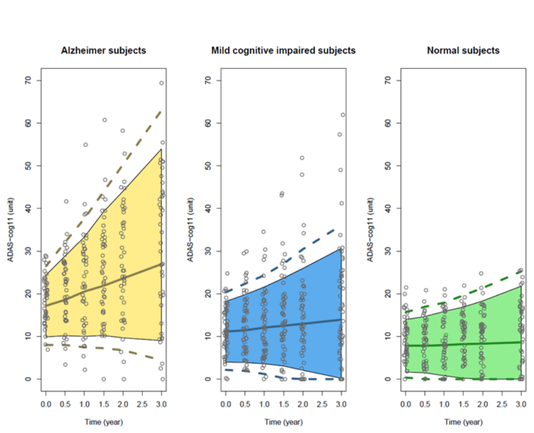
Key features

- Complex scripting encountered in classical tools is replaced by a straight-forward interface
- Models are shared between colleagues, which enables collaboration
- Simulo requires only a web browser. It is installed on Exprimo's servers and therefore the maintenance, validation and version control are kept centralized
- Very high flexibility thanks to its use of R code
- Simulo is able to define and organize complex treatments, dose adjustment, observations, inclusion/exclusion criteria…
- Simulo is comprised of three major parts allowing to build and understand a model easily:
  1. Drug model
  2. Protocol
  3. Simulations & Analysis
- On the top of that, Simulo has some tools valuable during the process of implementation:
  1. Live validation
  2. Live graphical simulations
  3. Scenario definition

Overview of demo models

Simulo has already faced an extensive use within Exprimo for client projects over the last 2 years and has been validated on more than 80 models.

Alzheimer's disease model



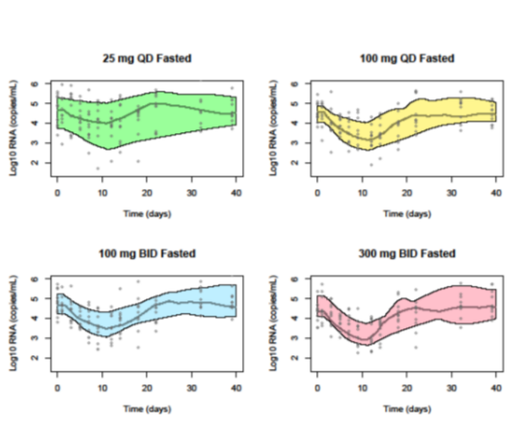
Adapted from:

Disease progression model for cognitive deterioration from Alzheimer's Disease Neuroimaging Initiative database

Kaori Ito, Brian Corrigan, Qinying Zhao, Jonathan French, Raymond Miller, Holly Soares, Elyse Katz, Timothy Nicholas, Bill Billing, Richard Anziano, Terence Fullerton; and the Alzheimer's Disease Neuroimaging Initiative

Alzheimer's & Dementia (2010) 1–10

Viral Kinetic Model



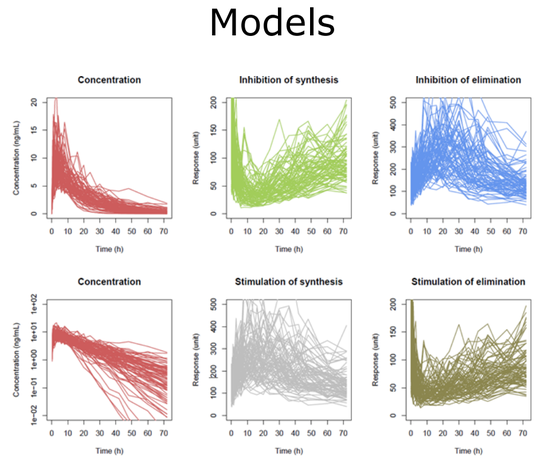
Adapted from:

The use of the SAEM algorithm in MONOLIX software for estimation of population pharmacokinetic pharmacodynamic-viral dynamics parameters of maraviroc in asymptomatic HIV subjects

Phylinda L. S. Chan, Philippe Jacqmin, Marc Lavielle, Lynn McFadyen and Barry Weatherley

J Pharmacokinet Pharmacodyn (2011) 38:41–61

Indirect Response Models



Adapted from:

Modelling physiological indirect response

SGS-Exprimo M&S training course

Ask us for a demo from our library

- Viral Kinetics HIV
- Alzheimer disease progression
- Parkinson disease progression
- SGLT2 Inhibitor Model
- Integrated Glucose Insulin Model
- Target-mediated drug disposition
- Indirect response models
- Effect compartment

Or challenge us to write a custom model you can try out <u>on your own device</u>!

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