

Available Models

XML files for available models are located at /xml and Java sources are at org.simBio.bio.

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1. Cardiac cell models

1.1. Kyoto model

- Ionic Mechanisms Underlying the Positive Chronotropy Induced by β 1-Adrenergic Stimulation in Guinea-pig Sinoatrial Node Cells: a Simulation Study ([Himeno et al., 2008](#)) can be simulated by XMLs at `/xml/himeno_et_al_2008/`.
- The analysis of intracellular Na^+ and Cl^- homeostasis during β 1-adrenergic stimulation of cardiac myocyte ([Kuzumoto et al., 2007](#)) can be simulated by XMLs at `/xml/kuzumoto_et_al_2007/`.
[Instructions](#)
- A model for ionic mechanisms of cardiac cell swelling ([Takeuchi et al., 2006](#)) can be simulated by XMLs at `/xml/takeuchi_et_al_2006/`. [Instructions](#)
- The analysis of NCX knockout ([Sarai et al., 2006](#)) can be reproduced at `/xml/sarai_et_al_2006/`.
- The gap junction model with calcium gate ([Oka et al., 2006](#)) can be simulated at `/xml/oka_et_al_2006/`.
- The volume regulation model ([Terashima et al., 2006](#)). All figures can be reproduced by XMLs at `/xml/terashima_et_al_2006/`.
- The E-C-Metabolism coupling model of ventricular cell ([Matsuoka et al., 2004](#)) can be simulated by `/xml/matsuoka_et_al_2004/model.xml`.
- The single Na channel and 1D cable model ([Sarai and Noma, 2004](#)) can be simulated by `/xml/sarai_noma_2004/SingleNaChannel.xml` and `/xml/sarai_noma_2004/1D_cable/conductor.xml`.
- The Ca^{2+} -mediated activation model of NCX ([Kuratomi et al., 2003](#)) can be simulated by `/xml/kuratomi_et_al_2003.xml`.
- The pacemaker cell model ([Sarai et al., 2003](#)) can be simulated by `/xml/sarai_et_al_2003/model.xml`.
- The excitation-contraction coupling model of guinea-pig ventricular cell ([Matsuoka et al., 2003](#)) can be simulated by `/xml/matsuoka_et_al_2003/model.xml`.

1.2. LRd model

The AP model of guinea-pig ventricular cell ([Faber and Rudy, 2000](#)) can be simulated by `/xml/faber_rudy_2000.xml`.

1.3. Noble 98 model

The E-C coupling model of guinea-pig ventricular cell ([Noble et al., 1998](#)) can be simulated by `/xml/noble_et_al_1998.xml`.

1.4. ten Tusscher model

The AP model of human ventricular cell ([ten Tusscher et al., 2004](#)) can be simulated by `/xml/tenTusscher_et_al_2004.xml`.

1.5. Kurata model

The AP model of human ventricular cell ([Kurata et al., 2005](#)) can be simulated by `/xml/kurata_et_al_2005.xml`.

2. Other models

- The squid axon model (Hodgkin and Huxley, 1952) can be simulated by `/xml/cor/Hodgkin_huxley_squid_axon_1952_modified.xml`.
- The cardiac contraction model ([Negroni and Lascano, 1996](#)) can be simulated by `/xml/negroni_lascano_1996/model.xml`.
- The voltage-dependent gap junction model ([Henriquez AP et al., 2001](#)) can be simulated by `/xml/henriquez_et_al_2001/model.xml`.
- The `/xml/cor/Vanderpol_model_1928.xml` is a test case of converting CellML into simBio by [COR](#)

3. Models written in CellML

[COR \(Cellular Open Resource\)](#) can convert models written in [CellML](#) into the simBio syntax. The folder `/xml/cor` contains some examples.