

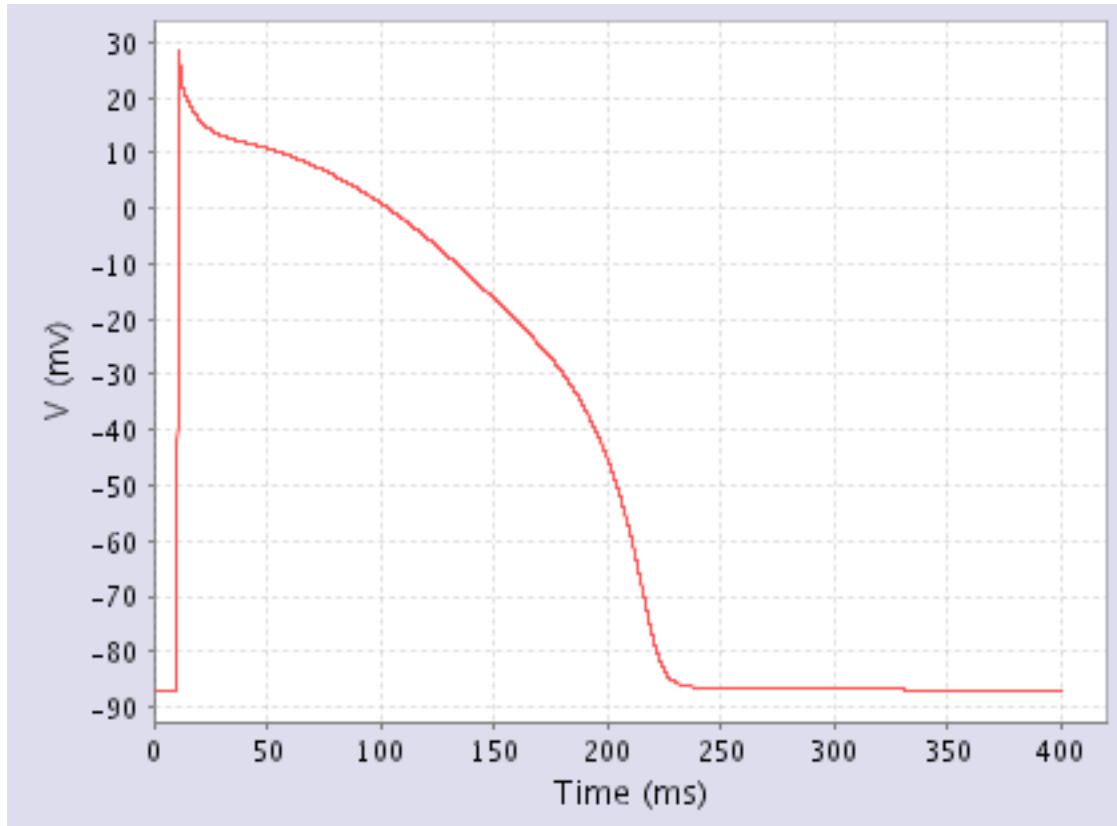
Canine Ventricular HR04-SM

Simucore Model Based Upon: Hund-Rudy Model of Canine Ventricular Cardiac Action Potentials, 2004; v. 1.4

Table of contents

1 Description.....	2
2 References.....	3
3 Ordering.....	3

1 Description



The model is used to simulate canine ventricular action potentials. It is similar to Luo-Rudy II guinea-pig ventricular model but includes two transient-outward currents (I_{to1} and I_{to2}), late Na^+ current (I_{NaL}), and Cl^- -dependent background current and transporters. The Ca^{2+} handling was updated and includes Ca^{2+} /calmodulin dependent protein kinase (CaMKII) Ca^{2+} binding and restricted Ca^{2+} subspace formulation.

Abstract excerpt: "A novel theoretical model of the canine ventricular epicardial action potential and calcium cycling was developed and used to investigate ionic mechanisms underlying Ca^{2+} transient (CaT) and action potential duration (APD) rate dependence. The Ca^{2+} /calmodulin-dependent protein kinase (CaMKII) regulatory pathway was integrated into the model, which included a novel Ca^{2+} -release formulation, Ca^{2+} subspace, dynamic chloride handling, and formulations for major ion currents based on canine ventricular data."

2 References

- Hund TJ, Rudy Y.
Rate dependence and regulation of action potential and calcium transient in a canine cardiac ventricular cell model.
Circulation. 2004 Nov 16;110(20):3168-74.
PMID: [15505083](#)

3 Ordering

- [Order this model](#) or [request further information](#).