

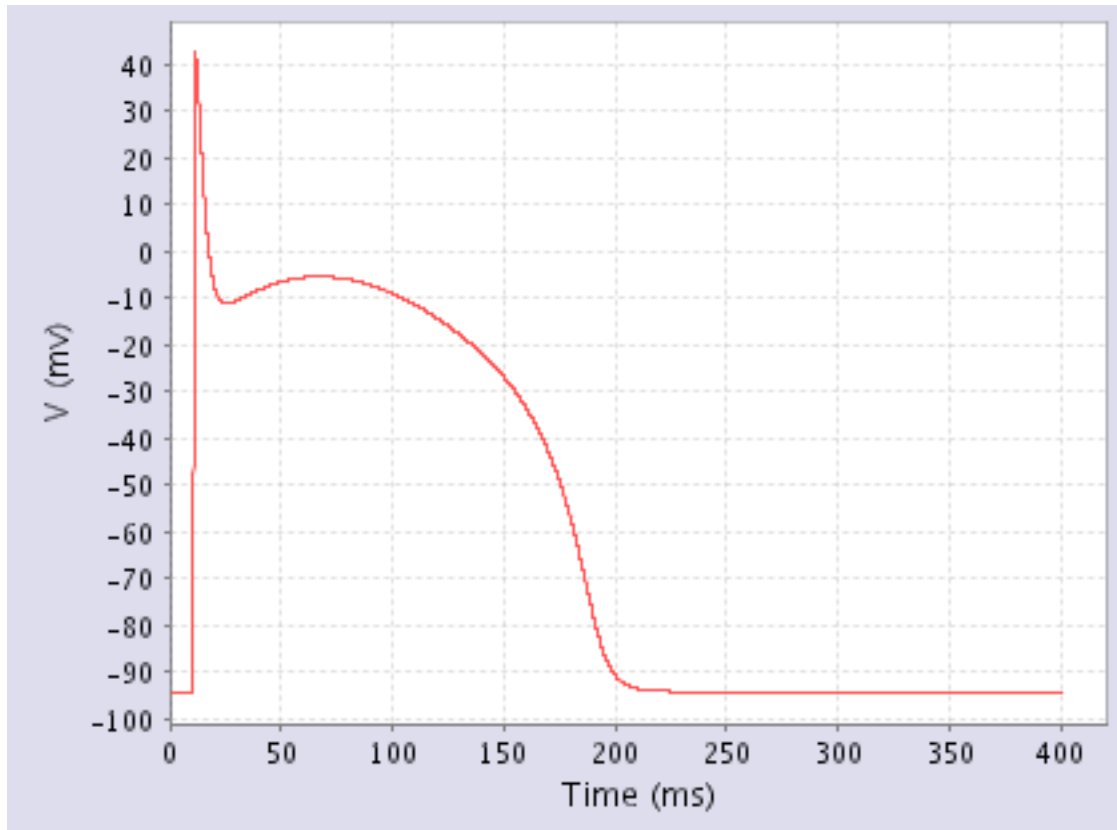
Canine Ventricular FMG02-SM

Simucore Model Based Upon: Fox, McHarg, Gilmour Model of Canine Ventricular Cardiac Action Potentials, 2002; v. 1.4

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1. Description



Example action potential (BCL = 400 ms).

The model is used to simulate canine ventricular action potentials. It uses modified current formulations from Luo-Rudy II guinea-pig and Winslow et al. canine ventricular models. The simplified Ca^{2+} handling is included.

Abstract excerpt: "...we developed a new ionic model using formulations of currents based on previous models and recent experimental data. Compared with existing models, the inward rectifier $\text{K}(+)$ current ($I(K1)$) was decreased at depolarized potentials, the maximum conductance and rectification of the rapid component of the delayed rectifier $\text{K}(+)$ current ($I(Kr)$) were increased, and $I(Kr)$ activation kinetics were slowed. The slow component of the delayed rectifier $\text{K}(+)$ current ($I(Ks)$) was increased in magnitude and activation shifted to less positive voltages, and the L-type $\text{Ca}(2+)$ current ($I(\text{Ca})$) was modified to produce a smaller, more rapidly inactivating current. Finally, a simplified form of intracellular calcium dynamics was adopted."

2. References

- Fox JJ, McHarg JL, Gilmour RF Jr.
Ionic mechanism of electrical alternans.
Am J Physiol Heart Circ Physiol. 2002 Feb;282(2):H516-30.
PMID: [11788399](#)

3. Ordering

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