

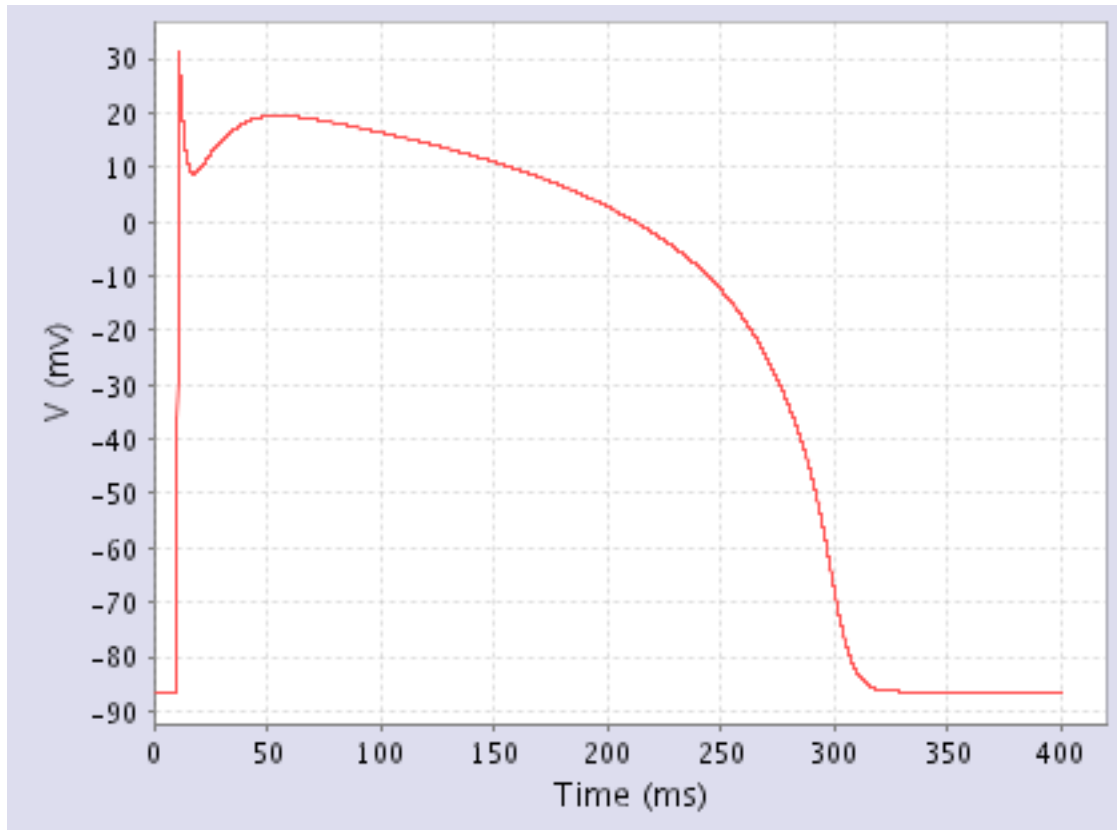
ten Tusscher, Noble, Panfilov Model of Human Ventricular Cardiac Action Potentials, 2004

v. 1.4

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1. Description



Example action potential (BCL = 400 ms).

This model simulates human ventricular action potentials. This model is based on the up-to-date experimental data for human ventricular myocytes, and contains original Ca^{2+} release component. Yet, the model is computationally-efficient which makes it suitable for large-scale spatial simulations.

Abstract excerpt: *"In this article we introduce a mathematical model of the action potential of human ventricular cells that, while including a high level of electrophysiological detail, is computationally cost-effective enough to be applied in large-scale spatial simulations for the study of reentrant arrhythmias. The model is based on recent experimental data on most of the major ionic currents: the fast sodium, L-type calcium, transient outward, rapid and slow delayed rectifier, and inward rectifier currents. The model includes a basic calcium dynamics, allowing for the realistic modeling of calcium transients, calcium current inactivation, and the contraction staircase."*

2. References

- ten Tusscher KH, Noble D, Noble PJ, Panfilov AV.
A model for human ventricular tissue.
Am J Physiol Heart Circ Physiol. 2004 Apr;286(4):H1573-89.
PMID: [14656705](#)

3. Ordering

- [Order](#) this model via a secure site.