

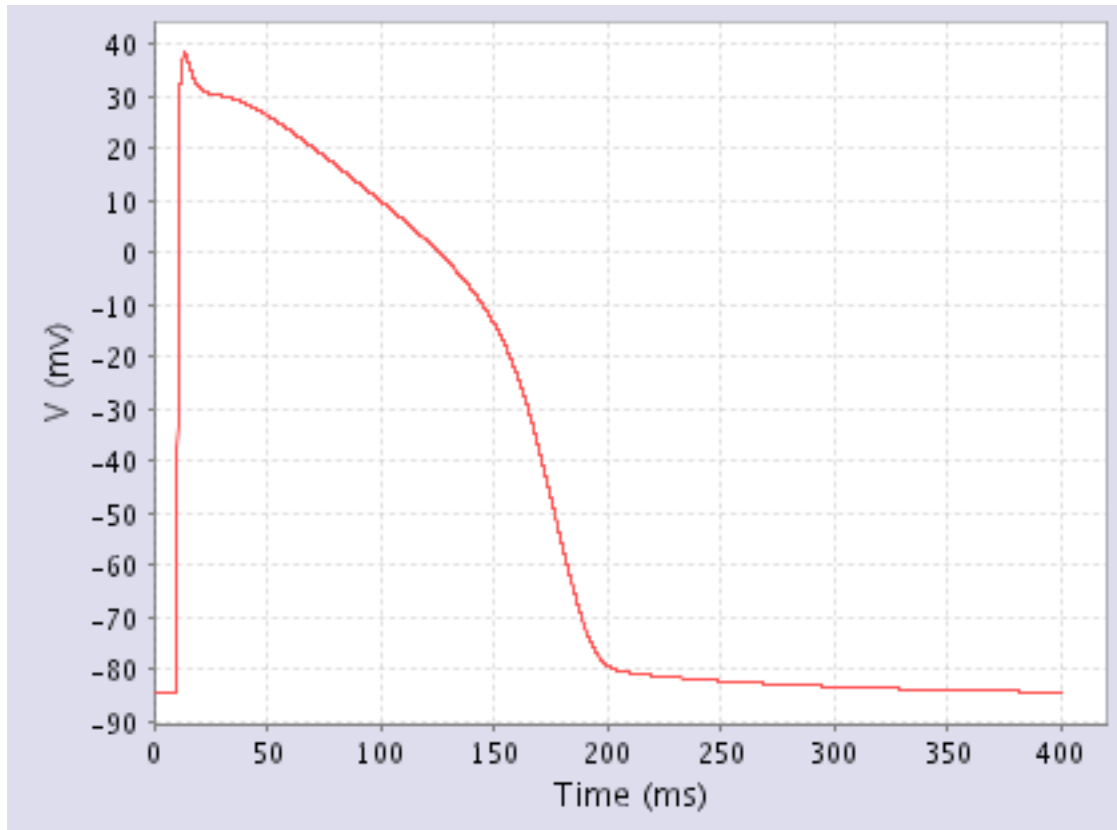
# **Puglisi-Bers Model of Rabbit Ventricular Cardiac Action Potentials, 2001**

**v. 1.4**

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## 1. Description



Example action potential (BCL = 400 ms).

This model simulates rabbit ventricular action potentials. It is based on Luo-Rudy II model and adds two new outward currents: transient-outward current carried by potassium, and  $\text{Ca}^{2+}$ -activated  $\text{Cl}^-$  current carried by chloride. These currents contribute to the characteristic early repolarisation of the rabbit ventricular action potential. In addition, maximal conductance of the slow component of the delayed-rectifier potassium current was decreased by 50% to account for the smaller current amplitudes recorded in rabbit ventricular myocytes.

Abstract excerpt: *"The model reproduces normal rabbit ventricular myocyte currents, Ca transients, and APs. We also changed parameters to simulate data from heart failure (HF) myocytes, including reduced transient outward ( $I_{to}$ ) and inward rectifying K currents ( $I_{K1}$ ), enhanced Na/Ca exchange expression, and reduced sarcoplasmic reticulum Ca-ATPase function, but unaltered Ca current density. These changes caused reduced Ca*

*transient amplitude and increased AP duration (especially at lower frequency) as observed experimentally."*

## 2. References

- Puglisi JL, Bers DM.  
LabHEART: an interactive computer model of rabbit ventricular myocyte ion channels and Ca transport.  
Am J Physiol Cell Physiol. 2001 Dec;281(6):C2049-60.  
PMID: [11698264](#)

## 3. Ordering

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