

L-type calcium channel β subunit modulates angiotensin II responses in cardiomyocytes

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Angiotensin II regulation of L-type calcium currents in cardiac muscle is controversial and the underlying signaling events are not completely understood. Moreover, the possible role of auxiliary subunit composition of the channels in Angiotensin II modulation of L-type calcium channels has not yet been explored. In this work we study the role of CaV β subunits and the intracellular signaling responsible for L-type calcium current modulation by Angiotensin II. In cardiomyocytes, Angiotensin II exposure induces rapid inhibition of L-type current with a magnitude that is correlated with the rate of current inactivation. Semi-quantitative PCR of cardiomyocytes at different days of culture reveals changes in the CaV β subunits expression pattern that are correlated with the rate of current inactivation and with Angiotensin II effect. Overexpression of individual β subunits in heterologous systems reveals that the magnitude of Angiotensin II inhibition is dependent on the CaV β subunit isoform