

The Research Progresses of Biophysical Properties and Gating Mechanisms of BK Channel*

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Abstract Large conductance Ca^{2+} activated potassium channels are regulated by both intracellular Ca^{2+} and membrane potential. BK channel couples membrane voltage with the intracellular signal system, that plays important roles for cellular functions. BK channel is widely and densely expressed in various tissues of many species. Recent studies have demonstrated that BK channel was expressed in cardiomyocytes and involved in the regulation of cardiac systolic and diastolic. In this work, we present some progress in the study of coupling between BK channel and L-type Ca^{2+} channel gating and the function of cardiomyocyte BK channels as well as the response to substrate stiffness. These reports will help to understand the pathophysiology of mechano-sensitive ion channel-associated heart diseases.

Key words cardiomyocytes, BK channels, substrate stiffness

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