

Modulation of L-type Ca^{2+} current but not activation of Ca^{2+} release by the gamma1 subunit of the dihydropyridine receptor of skeletal muscle

ABSTRACT

Modulating the L-type Ca^{2+} channel and SR Ca^{2+} -mediated release of the skeletal muscle dihydropyridine receptor is possible with the involvement of its 1 subunit.

INTRODUCTION

The gamma1 subunit of the dihydropyridine receptor of skeletal muscle is activated by activation of the calcium/calmodulin kinase (CaMK) pathway. This pathway is a vital part of the muscle's calcium homeostasis. The phosphorylation of the alpha-subunit of the CaMK complex, the Ca^{2+} -dependent kinase, leads to the release of calcium. The alpha-subunit of the Ca^{2+} -dependent kinase is also activated by activation of the calcium/calmodulin kinase pathways. Activation of the alpha-subunit of the CaMK complex by activation of the calcium/calmodulin kinase pathway results in activation of calcium/calmodulin kinase. The 1S subunit, which is composed of a complex of several oligodendrocytes of the dihydropyridine (DHPR) family, is an essential component of L-type Ca^{2+} channel. It also functions as hexameric antibodies for excitation and binding to skeletal muscle, and acts as both cytokine and EC coupling agent. EC coupling is initiated by voltage-dependent charge movements in the S4 segments of (roughly) every conceivable 1 subunit of the DHPR, and its expression depends on whether any corresponding a subset of [1] of RyR1 (probably homologous to histological homology for example): "The C-terminus of this first-order subsubunit has been shown to significantly increase the amount of charge movement relative to the initial Ca^{2+} channel signal when the mouse is knocked into the L-types.

CONCLUSION

Remarkable conclusions The 1 subunit has the ability to selectively modulate the pore function of the DHS without affecting the movement of charged substances or the voltage dependence of Ca^{2+} transients, making it unique among all DHPR subdomains. In contrast, the charge movement protocol failed to detect small and relatively immobilization-dependent charge movements that are only responsible for opening the Ca^{2+} channel, which were only resolved for depolarizations larger than 25 ms (Fig. 4). Therefore, while the protocol matches the novel monocellular mode, developments beyond