induced increase in $[Ca^{2+}]_i$ is due to entry of extracellular Ca^{2+} via the sarcolemmal Na^+-Ca^{2+}-exchange system

Summary

Extensive work with melittin has shown that the venom has multiple effects, probably, as a result of its interaction with negatively changed phospholipids. It inhibits well known transport pumps such as the Na^+-K^+-ATPase and the H^+-K^+-ATPase. Melittin increases the permeability of cell membranes to ions, particularly Na^+ and indirectly Ca^{2+}, because of the Na^+-Ca^{2+}-exchange. This effect results in marked morphological and functional changes, particularly in excitable tissues such as cardiac myocytes. In some other tissues, eg, cornea, not only Na^+ but Cl^- permeability is also increased by melittin. Similar effects to melittin on H^+-K^+-ATPase have been found with the synthetic amphipathic polypeptide Trp-3.

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蜂毒肽对细胞膜跨膜离子转运的作用

R977.6

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关键词 蜂毒肽; 钠; 氯化物; 钙; 钠-钾-交换 ATP 酶; 氢-钾-交换 ATP 酶; 细胞膜