

Abstract

Cardiovascular diseases such as myocardial infarction or heart failure are one of the main causes of death in today's developed world. These diseases are accompanied by pathophysiological changes in the cell, which are very often associated with changes in adrenergic receptor signalling and mitochondrial function. Therefore, these functional units have been intensively studied in an attempt to discover the effective treatment. Currently, endogenous protective mechanisms are known to increase the resistance of heart to the pathophysiological states, and some of the mechanism targets directly into the mitochondria. In particular, the reduction in excessive production of reactive oxygen species and the decrease in sensitivity of mitochondrial permeability transition pore opening has been repeatedly described. Many of the contributing signalling pathways are related to adrenergic receptors. Thus, the aim of the present work is to link knowledge about the role of adrenergic signalling in cardioprotective mechanisms directed to mitochondria.

Key words: heart, adrenergic signalization, mitochondria, cardioprotection