

Abstract

The mitochondrial permeability transition pore (MPTP) is a non-specific voltage dependent channel which is located in the inner mitochondrial membrane. High calcium concentration and oxidative stress are main inducers of MPTP opening in a tissue which is affected by ischaemia and subsequent reperfusion. Morbidity and mortality of patients who suffer from acute myocardial infarction or cardiochirurgical operation, depends on the size of ischemic-reperfusion injury (IRI). The methods of IRI attenuation are based on the inhibition of the MPTP through pharmacological intervention or ischemic conditioning.

This thesis summarizes the current knowledge about the MPTP structure, regulation and its role in cardioprotection.

Key words: mitochondrial permeability transition pore, cardioprotection, ischemic conditioning, CsA, SAFE and RISK pathway