Abstract

The creatine kinase (CK) is an important enzyme of cell energy metabolism in excitable tissue. It occurs in four isoforms. Two cytosolic isoforms are functional in mono and heterodimers and two mitochondrial isoforms reach tetramer and octamer forms. Its primary function is the regeneration of ATP close to ATPases and phosphocreatine pool from creatine and ATP, which gives its phosphate in places of acute requirements of high energy demand. Dysfunction of CK is connected with heart, muscle and neurological diseases and CK is often used as a clinical indicator. This work is focused to the role of CK in energy metabolism of hypoxia adapted myocardium. CK thanks to production of ADP in mitochondria decreases a membrane potential as well as production of reactive oxygen species (ROS). ROS cause most of damage during ischemic heart disease and infarct of myocardium. That’s why cardioprotective effects and CK itself during hypoxia are investigated.