

# Abstract

Cardiovascular diseases are one of the most frequently causes of morbidity and mortality in developed countries. An increase of oxidative stress is implicated by progression of heart diseases. Antioxidative enzymes protect the organism against them. The superoxide dismutases, the peroxiredoxins, the glutathione peroxidases and the catalase are advised to be used as the main antioxidative enzymes. The review is focused on the role of these antioxidative enzymes in the cardiovascular system. Antioxidative enzymes prevent the lipoperoxidation of biological membranes, the proteins inactivation, the DNA mutation and the apoptosis. It is well-known, that antioxidative enzymes positively influence a homeostasis of the vascular endothelium, prevent a burst of the cardiovascular disease and they are important for physiological functions, the morphology and the contractility of heart. The effect of antioxidative enzymes on the cardiovascular system is very complicated process and it still has not clarified all aspects of their action. A reseach of these enzymes is essential for understading the mechanisms of pathophysiological changes, which proceed into the cardiovascular system during the atherosclerosis, the myocardial infarction, the ischemic-reperfusion injury of the tissue and the calcification and stenosis of the valves.

Key words:

Cardiovascular diseases, oxidative stress, antioxidative enzymes, superoxide dismutases, peroxiredoxins, glutathione peroxidases, catalase