

From basic mechanisms to clinical applications in heart protection, new players in cardiovascular diseases and cardiac theranostics: meeting report from the third international symposium on “New frontiers in cardiovascular research”

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Abstract

© 2016, The Author(s). In this meeting report, particularly addressing the topic of protection of the cardiovascular system from ischemia/reperfusion injury, highlights are presented that relate to conditioning strategies of the heart with respect to molecular mechanisms and outcome in patients' cohorts, the influence of co-morbidities and medications, as well as the contribution of innate immune reactions in cardioprotection. Moreover, developmental or systems biology approaches bear great potential in systematically uncovering unexpected components involved in ischemia-reperfusion injury or heart regeneration. Based on the characterization of particular platelet integrins, mitochondrial redox-linked proteins, or lipid-diol compounds in cardiovascular diseases, their targeting by newly developed theranostics and technologies opens new avenues for diagnosis and therapy of myocardial infarction to improve the patients' outcome.

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Keywords

Cardiomyocyte signaling pathways, Cardioprotection, Cardiovascular disease, Co-morbidities, Drug targeting, Endothelial permeability, Extracellular RNA (eRNA), Heart regeneration, Induced pluripotent stem cells, Ischemia-reperfusion injury, Lipid metabolism, MicroRNAs (miRNAs), Mitochondria, Remote ischemic conditioning