

**COMPUTATIONAL AND EXPERIMENTAL PHYSIOLOGY: NOVEL POTENTIAL
ANTINEOPLASTIC COMPOUNDS AND CARDIOVASCULAR SYSTEM**

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Key words: computational and experimental physiology, antineoplastic compounds, cardiovascular system, cardiodynamics, oxidative stress, *in vitro*, *in vivo* and *ex vivo* techniques

ABSTRACT

During the last decades cardiovascular diseases and cancer become one of the leading causes of death worldwide. Both pathophysiological conditions are often connected during cancer therapy where there is a substantial risk for the deterioration of cardiovascular health due to cardiotoxicity of many antineoplastic agents. In the past, this risk was less evident due the life span of a patient with metastatic disease was often too short to make the cardiovascular complications a major matter of concern. However, now that progress has been made in terms of early diagnosis, therapy, and survival, cardiotoxicity of cancer therapy emerged as a pivotal issue. Different antineoplastic drugs can cause a wide spectrum of cardiovascular toxicities, particularly in long-term cancer survivors. Anthracyclines can cause irreversible type of cardiotoxicity through the production of reactive oxygen species (ROS) and reactive nitrogen species (RNS). Taken into consideration almost unavoidable appearance of antineoplastic cardiotoxicity, great attention has recently been focused on the synthesis and testing of new agents and ligands that would have a less cardiotoxic impact with same or even better antineoplastic effect. Developing of novel antineoplastic compounds as well as their investigations through various *in vitro*, *in vivo* and *ex vivo* experimental computational models can provide all the necessary data for clinical purposes, starting from chemical stability through an antineoplastic properties to effects on the function and morphology of the heart muscle and coronary circulation.

This Mini-symposium aims to present recent investigations in this field as well as guidelines for future researches.