

Tentative Outline

Special Issue for Current Chemical Biology

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BIOMARKERS AND BIOPROTECTORS EFFECTIVENESS AGAINST ENVIRONMENTAL STRESS AGENTS

Aims & Scope:

Biomarkers and bioprotectors are two of the most innovative techniques to prevent and contrast environmental stress agents. Biomarkers are indicator of normal biological processes or pathogenic processes. Also, they can be indicator or pharmacologic responses to a therapeutic intervention. The World Health Organization (WHO) defined a biomarker as “any substance, structure, or process that can be measured in the body or its products and influence or predict the incidence of outcome or disease” (WHO, International Programme on Chemical Safety. Biomarkers in Risk Assessment: Validity and Validation, 2001). In their report on the validity of biomarkers in environment risk assessment, the WHO has stated that a true definition of biomarkers includes “almost any measurement reflecting an interaction between a biological system and a potential hazard, which may be chemical, physical, or biological. The measured response may be functional and physiological, biochemical at the cellular level, or a molecular interaction.”

Bioprotectors against environmental stress agents use a practice of protecting the natural environment and livings, in order to induce a benefit of both the environment and livings. Indeed, environment is being degraded due to humans activity, and the related phisico-chemical agents can affect humans health. Hence, governments have begun placing restraints on activities that may cause environmental degradation. In particular, scientist are studying protection measures against these environmental stress agents.

The aim of this thematic issue is to give a further contribution to describe how harmful action of environmental stress agents on livings, in particular on humans, can be highlighted and contrasted.

The results emerging from these contributions should suggest us the direction to plan further research about biomarkers and bioprotectors effectiveness against environmental stress agents.

Keywords:

Biomarkers, bioprotectors, stress agents, phisico-chemical agents.

Subtopics:

The scope of the issue encompasses, but is not restricted to, the following areas:

1. The use of biomarkers to highlight biological processes and response to external agents (change of pressure, temperature, etc.)
2. The use of biomarkers to highlight pathogenic processes and diseases.

3. Physical and biochemical analyses of simple organic systems under exposure to environmental stress agents and bioprotectors effectiveness.

4. Bio-protection of plants, animals, food and humans against environmental stress agents.

5. Theoretical modeling of the interaction among stress agents, organic matter and bio-protectors.

6. Medical applications and therapies performed by means of biomarkers

Schedule:

Tentative date of submission of manuscripts: August, 2018