

## Editorial

# Oxidative Stress in Neurodegenerative Diseases and Ageing

**Marcos D. Pereira,<sup>1</sup> Krzysztof Ksiazek,<sup>2</sup> and Regina Menezes<sup>3</sup>**

<sup>1</sup> Department of Biochemistry, Institute of Chemistry, Federal University of Rio de Janeiro, 21941-909 Rio de Janeiro, RJ, Brazil

<sup>2</sup> Department of Pathophysiology, Poznan University of Medical Sciences, 60-781 Poznan, Poland

<sup>3</sup> Genomics and Stress Laboratory, Institute of Chemistry and Biological Technology (ITQB), 2780-157 Oeiras, Portugal

Correspondence should be addressed to Marcos D. Pereira, marcosdp@iq.ufrj.br

Received 10 July 2012; Accepted 10 July 2012

Copyright © 2012 Marcos D. Pereira et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Since Denham Harman has proposed the free radical theory of ageing, the knowledge and the understanding of the mechanisms of ageing process have increased remarkably. Over decades, this unavoidable phenomenon has also been linked, both causatively and consequently, with the development of several abnormalities, currently known as the “age-related diseases.” Oxidative Medicine and Cellular Longevity dedicates this special issue to illustrate the foremost findings concerning the role of oxidative stress in the vital aspects of a progressive dysfunction of human body during ageing. The purpose of this thematic issue is to provide an up-to-date text covering the most recent discoveries in the area, focusing on a deeper understanding of the signaling mechanisms that trigger neurodegenerative diseases, a multidisciplinary approach combining several scientific areas and finally an issue for a broad group of professionals, including physicians, pathophysiologists, biologists, biochemists, molecular biologists, and geneticists. This special issue provides a selection of review as well as original articles that emphasize the source and the engagement of free radicals in ageing and neurodegenerative diseases, other systemic diseases (e.g., Niemann-Pick disease type C and cancer), the biomarkers of oxidative radicals, the characterization of mechanisms underlying an abnormal iron metabolism, oxidative stress signaling related to age-related diseases, the emerging issue of the consequences of a mobile phone radiation, and the genetic link between the efficacy of DNA repair and the development of renal failure. The new therapeutical approaches for preventing age-related diseases and the use of different and relevant experimental models to decipher the relevance of oxidative stress to age-related neurodegenerative diseases will be also presented. Collectively, we hope that

the scientific problems covered by this special issue highlight the advances of seminal Harman’s theory stimulating the creation of a platform for a fruitful cooperation and discussion within the scientific community.

*Marcos D. Pereira  
Krzysztof Ksiazek  
Regina Menezes*



# Hindawi

Submit your manuscripts at  
<http://www.hindawi.com>

