Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on

Transautophagy: Research and Translation of Autophagy Knowledge 2020

CALL FOR PAPERS

Autophagy is an essential mechanism to sustain homeostasis at cellular and organismal levels. Concerning human health, an increasing number of examples underline its value as a novel therapeutic target since autophagy modulation may potentially become an effective new strategy to combat cancer, neurodegeneration, and infection. Beneficially, autophagy modulation may also slow down age-related tissue decline. A relationship between redox disorder and autophagy signaling has already been described but is still not well characterized. Oxidative stress can arise in cells because of different reasons; among them are metal imbalance and perturbation or perforation of cellular membranes by various insults. In addition, it has been recently hypothesized that amyloid prefibrillar oligomers and proteostasis constitute a metabolic balance between synthesis and degradation of proteins, with protein misfolding and accumulation of the aggregated proteins shifting the balance. All these processes are in a direct or indirect way relying on good performance of autophagy to clear the cells of unnecessary burdens and thus rejuvenate them.

In the recognition of the intense increase of autophagy research in health and disease European network called Transautophagy (COST Action CA15138) has been created to promote multidisciplinary research on autophagy and to exploit this knowledge for biomedical and biotechnological purposes. The spectrum of expected outcomes ranges from recommendations for healthy aging or disease prevention to the discovery of new therapies, bio-based components, or nanodevices capable of selectively modulating autophagy.

This Special Issue aims to collect high quality papers interesting to the broader audience of this journal. We are inviting authors to contribute high quality research articles and reviews.

Potential topics include but are not limited to the following:

- Crosstalk between ROS and autophagy signaling
- Autophagy as a regulatory mechanism of protein aggregation and oxidative stress
- Role of metals-to-protein aggregation in oxidative stress associated autophagy
- Mechanism of action of antioxidant substances on autophagy modulation
- Lipid composition of membranes and interaction of lipid rafts with misfolded species
- Sensors of protein aggregation and oxidative stress in a cell and main signaling pathways
- Overview about possible autophagy-based approaches to promote healthy aging
- Compendium procedures for stage specific assessment of autophagy activity
- Basic knowledge on autophagy to improve molecular understanding of the main mechanisms that regulate autophagy pathways
- Autophagy analyses and modulation
- Functions and dysfunctions of autophagy in cellular and animal models of human diseases with the ultimate objective of providing the basis for the development of novel biomedical applications
- Review of collecting data derived from the analysis of autophagy modulation in preclinical models of disease
- Translation of research results into benefits to patients by tackling i) biomarker discovery, ii) development of strategies to foster healthy aging, and iii) development of therapeutic strategies to treat a variety of diseases

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.hindawi.com/submit?specialIssue=757403.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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