Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on

From Regulated Cell Death to Adaptive Stress Strategies: Convergence and Divergence in Eukaryotic Cells

CALL FOR PAPERS

Regulated cell death (RCD) encompasses different active forms of cell death ranging from apoptosis to necrosis or autophagy that are governed by distinct and highly sophisticated molecular pathways. An event intimately associated with RCD and RCD associated pathologies, such as neurodegenerative or proliferative disorders, is oxidative stress. A better understanding of how a cell responds to RCD-inducing oxidative stress will undoubtely uncover novel adaptive stress strategies, thereby providing more insights towards pro-RCD therapies. To uncover the complex network of the different and often interwoven RCD pathways and their association with oxidative stress, as well as for drug discovery purposes, the budding yeast Saccharomyces cerevisiae is successfully used as a model organism. In addition, the analysis of cell death routes solely present/induced in yeast and other fungi might point to novel therapeutic strategies to combat fungal infections.

We invite investigators to contribute with original research articles as well as reviews that address the molecular mechanisms underlying the induction and execution of RCD upon diverse types of stress and their association with oxidative stress, in natural scenarios such as aging or disease, or after challenge with external toxins. Besides that, analysis of adaptive stress strategies or tolerance mechanisms elicited by different organisms under RCD stress or oxidative stress in general will be of interest. Focus can be on mammalian cell setups as well as on yeast and other eukaryotes. In addition, translational aspects focusing, for instance, on the discovery of novel therapies for RCD-based pathologies or to fight fungal infections, combination therapy targeting RCD tolerance mechanisms, and/or the *in vivo* efficacy of mono- or combination therapy in animal disease models will be highly relevant.

Potential topics include but are not limited to the following:

- The identification of novel RCD executors
- The identification of adaptive responses to RCD or oxidative stress in diverse eukaryotic cells
- The interplay between different forms of RCD and how this connects to aging and disease
- Signals directing cells towards specific fates (survival or death), including the autophagy/apoptosis checkpoint, its regulation, and function in relation to disease
- RCD-related disease models based on human cellular models as well as on different yeast species such as *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, and *Candida albicans*
- Novel drugs/technologies to manipulate RCD associated with oxidative stress in a therapeutic context, including RCD-inducing antifungals and anticancer drugs, with a focus on tackling drug resistance

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/omcl/frcd/.

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

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