Contents

Vol. 39 No. 1 January 31, 2016

Overview

Overview on Peroxiredoxin

Sue Goo Rhee........................................................................................................................................1

Minireviews

Reciprocal Control of the Circadian Clock and Cellular Redox State - a Critical Appraisal

Marrit Putker, and John Stuart O’Neill....................................................................................................6

Thiol-Based Peroxidases and Ascorbate Peroxidases:

Why Plants Rely on Multiple Peroxidase Systems in the Photosynthesizing Chloroplast?

Karl-Josef Dietz......................................................................................................................................20

Kinetic Approaches to Measuring Peroxiredoxin Reactivity

Christine C. Winterbourn, and Alexander V. Peskin...........................................................................26

Microbial 2-Cys Peroxiredoxins: Insights into Their Complex Physiological Roles

Michel B. Toledano, and Bo Huang....................................................................................................31

Peroxiredoxins in Regulation of MAPK Signalling Pathways; Sensors and Barriers to Signal Transduction

Heather R. Latimer, and Elizabeth A. Veal ...........................................................................................40

Utilizing Natural and Engineered Peroxiredoxins As Intracellular Peroxide Reporters

Koen Van Laer, and Tobias P. Dick.......................................................................................................46

Distribution and Features of the Six Classes of Peroxiredoxins

Leslie B. Pool, and Kimberly J. Nelson ................................................................................................53

Multiple Roles of Peroxiredoxins in Inflammation

Bernard Knoops, Vasiliki Argyropoulou, Sarah Becker, Laura Ferté, and Oksana Kuznetsova........60

The Roles of Peroxiredoxin and Thioredoxin in Hydrogen Peroxide Sensing and in Signal Transduction

Luis E. S. Netto, and Fernando Antunes ................................................................................................65

Peroxiredoxins and the Regulation of Cell Death

Mark B. Hampton, and Karina M. O’Connor........................................................................................72