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Altri autori (Persone)	JakobUrsula ReichmannDana
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Nota di contenuto	Chapter 1 The Chemistry of Thiol Oxidation and Detection -- Chapter 2 Radical Scavenging by Thiols and the Fate of Thiyl Radicals -- Chapter 3 Redox Homeostasis -- Chapter 4 Sulfenic Acids and Peroxiredoxins in Oxidant Defense and Signaling -- Chapter 5 Fluorescent imaging of redox species in multicellular organisms -- Chapter 6 Redox Proteomics -- Chapter 7 Computational redox biology: methods and applications -- Chapter 8 Redox regulation in plants: Glutathione and "Redoxin" related families -- Chapter 9 Prokaryotic Redox Switches -- Chapter 10 Combating Oxidative/Nitrosative Stress with Electrophilic Counterattack Strategies -- Chapter 11 Reactive Oxygen Species, Kinase Signaling, and Redox Regulation of Epigenetics -- Chapter 12 Redox regulation of stem cell function -- Chapter 13 Oxidative Stress in Infectious Diseases -- Chapter 14 Oxidative Stress in Aging -- Chapter 15 Oxidative Stress in Cancer -- Chapter 16 Redox Pathways as a Platform in Drug Development.
Sommario/riassunto	Many physiological conditions such as host defense or aging and pathological conditions such as neurodegenerative diseases, and diabetes are associated with the accumulation of high levels of reactive oxygen species and reactive nitrogen species. This generates a condition called oxidative stress. Low levels of reactive oxygen species,

however, which are continuously produced during aerobic metabolism, function as important signaling molecules, setting the metabolic pace of cells and regulating processes ranging from gene expression to apoptosis. For this book we would like to recruit the experts in the field of redox chemistry, bioinformatics and proteomics, redox signaling and oxidative stress biology to discuss how organisms achieve the appropriate redox balance, the mechanisms that lead to oxidative stress conditions and the physiological consequences that contribute to aging and disease.
