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Altri autori (Persone)	RioLuis A. del
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Peroxisome interactions and cross-talk with other subcellular compartments in animal cells -- Peroxisomes in human health and disease: metabolic pathways, metabolite transport, interplay with other organelles and signal transduction -- Aging, age-related diseases and peroxisomes -- Peroxisomes and the antiviral responses of mammalian cells -- Peroxisome proliferator-activated receptor- signaling in hepatocarcinogenesis -- Involvement of human peroxisomes in biosynthesis and signaling of steroid and peptide hormones -- Peroxisome Ca <sup>2+</sup> homeostasis in animal and plant cells -- The versatility of peroxisome function in filamentous fungi -- Essential roles of peroxisomally produced and metabolized biomolecules in regulating yeast longevity -- Metabolite transporters of the plant peroxisomal membrane - known and unknown -- Peroxisomes and photomorphogenesis -- Biosynthesis of vitamin K1 (phylloquinone) by plant peroxisomes and its integration into signaling molecule synthesis pathways -- Role of peroxisomes as a source of reactive oxygen species (ROS) signaling molecules -- Peroxisomes as a source of auxin signaling molecules -- Peroxisomes as cell generators of reactive nitrogen species (RNS) signal molecules -- Role of plant peroxisomes in the production of jasmonic acid-based signals -- Role of plant peroxisomes in protection against herbivores -- Function of Peroxisomes in Plant-Pathogen Interactions.
Sommario/riassunto	Peroxisomes are a class of ubiquitous and dynamic single membrane-bounded cell organelles, devoid of DNA, with an essentially oxidative

type of metabolism. Today it is known that fatty acid -oxidation is a general feature of virtually all types of peroxisomes, but in higher eukaryotes, including humans, peroxisomes catalyze ether phospholipids biosynthesis, fatty acid -oxidation, and glyoxylate detoxification, and in humans peroxisomes are associated with several important genetic diseases. Among the different new roles for human peroxisomes discovered in recent years are antiviral innate immunity, peptide hormone metabolism, brain aging and Alzheimer's disease, and age-related diseases. In fungi, new findings have broadened the number of secondary metabolites that are synthesized in peroxisomes, such as antibiotics and several toxins, and have evidenced their involvement in biotin biosynthesis, fungal development and plant pathogenesis. In plants, peroxisomes carry out different functions, apart from fatty acid -oxidation, mainly including photorespiration, metabolism of reactive oxygen, nitrogen and sulfur species, photomorphogenesis, biosynthesis of phytohormones, senescence, and defense against pathogens and herbivores. Two important characteristics of peroxisomes are their metabolic plasticity and capacity of sharing metabolic pathways with other cell compartments. In recent years, a function for peroxisomes as key centers of the cellular-signaling apparatus which could influence the regulatory network of the cell has been postulated. The diverse key physiological functions that have been demonstrated for peroxisomes from different origins strongly indicate the interest of studying the role of peroxisomes as a cellular source of different signaling molecules. This book presents recent advances in the function and metabolism of peroxisomes from human, animal, fungal and plant origin and their metabolic interconnection with other cell compartments, showing the central role played by peroxisomes as cell generators of different signaling molecules involved in distinct processes of high physiological importance.

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