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Titolo	Neurotransmitters in plant signaling and communication // Frantisek Baluska, Soumya Mukherjee, Akula Ramakrishna, editors
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Descrizione fisica	1 online resource (VIII, 274 p. 31 illus., 26 illus. in color.)
Collana	Signaling and Communication in Plants, , 1867-9048
Disciplina	572.2
Soggetti	Botanical chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Seeing is Believing: Quantum Dot Visualization Provides New Insights into Indoleamine Signalling Networks -- Role of Signal Molecules under Stressful Environments -- Neurotransmitters in Signaling and Adaptation to Salinity Stress in Plants -- Serotonin in Plant Signalling and Communication -- Serotonin Control of Root Growth via ROS and Hormone Signalling -- Functional Correlation of Auxin and Serotonin in Plants: Possible Receptor Surrogacy? -- Dopamine in Plant Development and Redox Signalling -- L-DOPA and Dopamine in Plant Metabolism -- Beyond a Neurotransmitter: Physiological Role of Dopamine in Plants -- Melatonin and the Transmission of Light and Auxin Signals in Plants -- Prospective Role of Melatonin in Signalling and Alleviation of Stress in Plants -- Melatonin - Alternative Signal to Antioxidant Enzyme Modulation in Plants -- Glutamate: Physiological Roles and its Signalling in Plants -- Saga of Catecholamine and GABA through Prospecting Stress Tolerance in Plants.
Sommario/riassunto	This book provides a comprehensive update on the recent developments concerning the role of plant neurotransmitters in signaling and communication. Physiological investigations over the past few decades have demonstrated that plants employ neurotransmitters in various signaling pathways. Plant-based neurotransmitters (serotonin, melatonin, dopamine, acetylcholine, and GABA) share biochemical similarities with those in animal systems in terms of their chemical nature and biochemical pathways. Plant–environment

interaction associated with abiotic stress management, growth modulation, flowering, circadian rhythm, fruit ripening, and allelopathic interactions are a major focus of research in the field, and recent advances in genomic, transcriptomic, and metabolomic approaches have resulted in the deciphering of the molecular mechanisms associated with various neurotransmitters in plants. Other current and potential areas of investigation include the putative phytohormone phyto-melatonin, and receptor-mediated signaling in plant neurotransmitters. Providing an up-to-date overview of molecular crosstalk mechanisms between various neurotransmitters, the book offers essential insights to help readers gain a better understanding of the physiology of plant signaling and communication with the environment.

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