

1. Record Nr.	UNINA9910373910503321
Titolo	The Cytoskeleton : Diverse Roles in a Plant's Life / / edited by Vaidurya Pratap Sahi, František Baluška
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-33528-3
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (156 pages)
Collana	Plant Cell Monographs, , 1861-1370 ; ; 24
Disciplina	571.654
Soggetti	Plant anatomy Plants - Development Cytology Botanical chemistry Plant physiology Plant Anatomy/Development Cell Biology Plant Biochemistry Plant Physiology Citosquelet Fisiología vegetal Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This book focuses on the plant cytoskeleton and its various cross-talks with other cellular components leading to its role in plant growth and development. It not only allows the geometric and signaling dimensions of cells, but is also very important in physiological processes. The book discusses the recent studies showing the role of actin and microtubule cytoskeleton interactions in cell-wall assembly and dynamics. The authors examine the role of both microtubules in the mechanics of plant cells, and actin filaments in the motility of chloroplasts. Based on recent advances in the study of the acto-myosin

complex using high-resolution microscopy, they propose a new model for intracellular transport in plants. Exploring an almost-forgotten field of bioelectricity in the context of the cytoskeleton, the book highlights connections between the dynamic actin filaments and the bioelectricity of membranes and demonstrates that the plant cytoskeleton is involved in the distribution of plant hormones. Lastly, it addresses the role of endomembrane -cytoskeleton interactions to show the importance of the cytoskeleton in organelle morphogenesis and cellular functions. Studies in various plant models have shown how the actin filament and microtubules control and coordinate plant cell growth and development. This book summarizes the mechanisms underlying these functions.
