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Autore	Pandey Girdhar K
Titolo	Global Comparative Analysis of CBL-CIPK Gene Families in Plants // by Girdhar K. Pandey, Poonam Kanwar, Amita Pandey
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Collana	SpringerBriefs in Plant Science, , 2192-1229
Disciplina	581.35
Soggetti	Plant genetics Plant physiology Plant anatomy Plant development Plant science Botany Plant Genetics and Genomics Plant Physiology Plant Anatomy/Development Plant Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Basic terms and overview of contents -- Genomic Organization -- Distribution and Expression in Plants -- Protein Structure and Localization -- Biochemical Properties of CBLs and CIPKs -- Protein Interactions -- Funtional Role of CBL-CIPK in Nutrient Deficiency -- Functional Role of CBL-CIPK in Abiotic Stresses -- Functional Role of CBL-CIPK in Biotic Stress and ROS Signaling -- Fuctional Role of CBL-CIPK in Plant Development -- Application and Future Perspectives of CBL-CIPK Signaling.
Sommario/riassunto	Calcium plays pivotal role in regulating the physiological as well as developmental processes in plants. Till now, several calcium sensors have been discovered, which regulate the diverse signaling pathways involved in plant growth and development. One of the major calcium sensors CBL (calcineurin B-like) is decoding the calcium signal during

various environmental stresses in plants. Calcium mediated signal is transduced downstream by CBL-interacting protein kinases (CIPKs), which generally phosphorylate the target proteins such as transcription factors or transporters/channel leading to a response. Mutant based approach has provided valuable information in the functional analysis of individual members of CBL and CIPK gene family in Arabidopsis. Both CBL and CIPK gene families have previously been identified and characterized in Arabidopsis and rice. Identification and characterization of CBLs and CIPKs in other plant species such as *Oryza sativa*, *Pisum sativum*, *Cicer arietinum*, *Zea mays*, *Populus euphratica*, *Vitis vinifera*, *Malus domestica*, *Gossypium hirsutum*, *Sorghum bicolor*, *Brassica napus*, *Vicia faba*, *Phaseolus vulgaris*, *Ammopiptanthus mongolicus* and *Triticum aestivum* are still in juvenile stage. Overall, Global Comparative Analysis of CBL-CIPK Gene Families in Plants is a comprehensive study focused on the diverse role of CBL-CIPK module in different stress signaling and also to identify a newly emerging role of this calcium-signaling module in plant growth and development across different plant species. In addition, beside Arabidopsis, it will provide backbone of knowledge to perform a detail molecular investigation in crop plant species and could possibly enable in designing strategies to tame abiotic stress tolerance and development in important agronomical crop plants. This book will act as handy and informative source in this field for students as well as advanced researchers.
