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Nota di contenuto	Cell and Molecular Biology of Centrosome Structure and Function -- The centrosome Cycle within the cell cycle -- Centrosome as center for proteolytic activity and dysfunctions associated with pathogenesis of human disease -- Centrosome dysfunctions in cancer -- Virus exploitation of centrosomes -- Centrosomes in reproduction --

Transition from centrosomal to non-centrosomal microtubule organization during cellular polarization -- External and environmental effects on Centrosomes -- Centrosomes and centrosome equivalents in other systems -- Non-centrosomal microtubule organization in plant cells.

Sommario/riassunto

The book provides a comprehensive overview of classic and modern approaches of centrosome research, including new aspects of centrosome functions focusing on primary cilia and their implications in numerous diseases. In addition, several chapters raise awareness of centrosomes in areas that have not yet fully considered the centrosome as an organelle that impacts other organelle functions directly or indirectly. It further relates centrosome functions to other research areas such as aging and stem cell research. Since its discovery almost 150 years ago the centrosome is increasingly being recognized as a most impactful organelle for its role, not only as primary microtubule organizing center (MTOC) but also as a major communication center for signal transduction pathways and as a center for proteolytic activities. Its significance for cell cycle regulation has been well studied and we now also know that centrosome dysfunctions are implicated in numerous diseases and disorders including cancer, cystic diseases of the kidney, liver fibrosis, cardiac defects, obesity and several other diseases and disorders. This new volume reviews the latest advances in the field and provides valuable background information that is readily understandable for the newcomer and the experienced centrosome researcher alike. Due to the interdisciplinary of the subject, it is a valuable resource for researchers and clinicians working in biomedical research, cell biology, cancer biology, reproduction and developmental biology, neuroscience and stem cell research. .