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## The Microtubule Cytoskeleton in Chromosome Segregation and Beyond

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### Message from the Guest Editors

Dear Colleagues,

Faithful chromosome segregation during cell division is accomplished by a microtubule-based molecular machine termed the mitotic (or meiotic) spindle. Defects in spindle assembly and positioning may lead to cell death or genomic abnormalities—the underlying causes of diseases, such as developmental disorders and cancer. Emerging evidence suggests that microtubule assembly in quiescent and differentiated cells involves certain spindle assembly proteins (or their paralogs) and may require the activity of mitotic protein kinases. The microtubule-targeting agents are among the most effective drugs used in cancer chemotherapy, and also show great promise for treating neurodegenerative disorders. Comprehensive knowledge of how the microtubule cytoskeleton is formed and functions in dividing and quiescent cells may substantially advance our understanding of disease pathogenesis and help develop new effective treatments. We hope this Special Issue of *Cells* will be a step towards achieving this goal. We invite your contributions related to (but not limited to) studies of spindle assembly, chromosome segregation, mitotic surveillance mechanisms, microtubule nucleation, dynamics, and organization, and the microtubule-targeting and antimitotic agents.

Dr. Vladimir Joukov  
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*Guest Editors*

