Special Issue

Molecular Regulation of Mitosis and Its Role in Disease

Message from the Guest Editors

Mitotic division involves a profound cellular reorganization essential for the precise repartition of the genome between daughter cells. The nuclear envelope is disassembled, the microtubule dynamics dramatically change to form the bipolar spindle and DNA is condensed into chromosomes. A protein complex in the centromeric region of the chromosomes is assembled to form the kinetochores, a structure that will function as a mechanical latch allowing their attachment to the spindle microtubules. The chromosomes are then precisely aligned on the metaphase plate, a mechanism that is under the control of the spindle assembly checkpoint (SAC). This surveillance signalling pathway is activated by unattached chromosomes and prevents the metaphase-to-anaphase transition by inhibiting the anaphase promoting complex (APC), the ubiquitin ligase responsible for securin and cyclin B degradation.

In this special issue of Cells, the mechanisms driving coordinated mitosis and the different signalling networks generating accurate kinetochore-dependent chromosome segregation, SAC activation/inactivation and cytokinesis will be discussed.

Guest Editors

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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