

Mitosis**Methods & Protocols****Andrew D. McAinsh (Ed)****Humana Press, Totowa, NJ, USA****Series: Springer Protocols****Methods in Molecular Biology, Volume****545, 2009****Pages: 346; €88.35****ISBN: 978-1-60327-992-5**

It is quite clear from the contents of this book that the remarkably fascinating phenomenon of mitosis (that captured, and still is capturing, the attention of entire generations of scientists) is still open to research. This is mainly due to our lack of knowledge of so many multifaced events of this extraordinarily complex process. The reader giving a glance through the Contents and Contributors sections is speechless: all of the first-class models (i.e., budding yeast, *Caenorabditis*, *Drosophila*, *Xenopus* and *Human*) are presented together with an astonishing variety of techniques (RNA interference, hydrodynamic analysis, live microscopy, electron tomography, laser microsurgery, knock-in / knock-out, to mention just a few) to functionally dissect at the molecular level what the editor, Andrew D. McAinsh, stress to be a: "phenomenally complicated process that involves hundreds, if not thousands, of protein components and regulatory steps that operate both in space and time to drive cell division".

The book do not cover mitosis in any plant cell species. However it deals optimally with both "open" mitosis (e.g., in animals, where the nuclear envelope breaks down before the chromosomes separate) and "close" mitosis (e.g., in yeast, where chromosomes divide within an intact nucleus) systems studied in model single-cell and multi-cellular organisms by combining genetic, biochemical and static-

live-imaging methodologies for a dynamic view of all of the mitotic events. Having included such a variety of models and techniques, it is able to capture the interests of both the beginners, graduate students and postdoctoral researchers, and those already established colleagues who need an up-to-date collection of methodological papers to address future researches. The fully understanding of the regulation of mitosis is still far away: just consider our lack of knowledge on the coordinated meeting between cytokinesis and mitosis, which may occur simultaneously but even may occur independently (e.g., during certain stages of *Drosophila* embryonic development) or the asymmetric division that characterize stem cells mitosis in certain histological niches. The book, well illustrated, is suggesting that there is still room for so many exciting studies, notably those that can clear up many aspects of other intriguing phenomena like germ cell mitotic proliferation and meiosis. To stress the need of further studies in mitosis, the reader can get profit from a visit to the mitoCheck site hosted by the EMBL (www.mitocheck.org) where a combined functional genomics, proteomics and chemical biology approach is presented: it's worth looking at the terrific "training" section devoted to symposia, workshops and practical courses (ranging from topics as "large DNA modification" or "working with monolithic columns"). Finally, to give credits to the in time publishing of this book, the reader can profitably go through the news and read "genome-wide view of mitosis" on *Nature* 464:684-685 (2010) commenting a paper by B. Neumann *et al.* *Nature* 464:721-727 (2010).

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