Cell cycle checkpoints Methods and protocols

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As it is well known at the end of each cell cycle step there are checkpoints to verify that DNA duplication and segregation (among other events) met every requirements before the cell is allowed to proceed to the next step. Multiple signaling molecules, notably cyclins and the cyclin-dependent kinases (CDKs), play major roles in the cell cycle checkpoint's control. To persuade the reader of the relevance of cell cycle regulation in her/his specific research, I strongly suggest to visit the Nobel prize website (http://www.nobelprize.org/nobel_prizes/medicine/laureates/2001/) and go through the lectures given by Leland H. Hartwell, Tim Hunt and Sir Paul M. Nurse when jointly awarded the Nobel prize in Physiology or Medicine (2001) for *their discoveries of key regulators of the cell cycle*. By doing this, the reader will get new insights for his researches and will forget the simple idea that the study of cell cycle checkpoints is important just for those need to detect DNA damage, those researchers mainly interested in p16, Rb, Cyclin B / CDK1 and p53 signaling or those studying one of the hallmark of cancer, the cell cycle deregulation. Not quite true, not only those studying tumorigenesis but even all those studying genome integrity (in its several multifacets aspects like genotoxicty, mutagenesis, karyotype rearrangements, stem cell renewal and differentiation to mention a few) will find out how cell cycle sensors, transducers and effectors are molecules embedded in their researches and worthy of investigations. Thanks to nineteen chapters, the book topics span methods and protocols that present several model organisms (yeast, Caenorhabditis, Drosophila, Xenopus, mouse, human) and a mass of techniques (including flow cytometry and indirect immunofluorescence) even for the *in vivo* live analysis of the cell cycle. Quite interesting to me the chapters devoted to *the evaluation of the spindle assembly checkpoint competence in mouse oocytes and that presenting methods to study cancer therapeutic drugs that target cell cycle checkpoints.*

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