

Aurora A and Plk1 belongs to the extended family of serine/threonine kinases controlling the cell cycle. Both are involved in the control of mitosis and contribute also to the regulation of meiotic division. Although the role of Aurora A in the resumption of meiosis after the first meiotic block seems to be, according to present studies, a bit questionable matter, it is virtually certain that AURKA plays an irreplaceable role in the construction of the spindle. In the oocytes with inhibited (by RNAi or small molecular inhibitors) or overexpressed Aurora A, abnormal spindles with aberrant number of poles or otherwise unusually shaped spindles are created. Disruption of Plk1 function in oocytes also leads to the appearance of damaged spindles. In addition, Plk1, almost certainly, plays a role in the timing of the nuclear membrane breakdown - at GVBD.