

93-SEPARASE Deregulation AND CHROMOSOME NONDISJUNCTION IN TUMORS

The separase protease severs the cohesion between sister chromatids and ensures progression towards anaphase. Deregulation of separase has been shown to lead to incomplete removal of cohesin, which results in prolongation of the metaphase, which in turn leads to the formation of anaphase bridges and to cytogenetically abnormal daughter cells. Chindo et al., in their article in Cell Reports ([Cell Reports 34, 108652, 2021](#)) used a probe to very accurately detect the activation/suppression of separase activity during the metaphase-anaphase transition. Their data indicates that prolonged metaphase in cancer cells can lead to early and insufficient activation of separase, leading to nondisjunction of chromosomes in the anaphase.